PRIMARY LEADERSHIP DEVELOPMENT COURSE MOBILIZATION, NOV 2003

C 1

BOOK 2A Updated 25 Feb 04

Instructor Book, Training Support Packages

PLDC MOBILIZATION COURSE

"NO ONE IS MORE PROFESSIONAL THAN I"

The Army Training System (TATS) Courseware

Prepared by
The United States Army Sergeants Major Academy
Fort Bliss, Texas 79918-8002

FOR THE ARMY SCHOOL SYSTEM (TASS) INSTITUTIONS

FIELDING DATE: As Directed

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

Instructor Book 2A 15 Sep 2004

CHANGE SHEET 2

1. Synopsis. This change sheet provides the changes USASMA made to the PLDC Modified Instructor Book 2A.

2. USASMA removed and replaced the following pages in the TSPs in Book 2A due to change sheets that USASMA made to the Training Supports Packets (TSP):

TSP	CS #	REMOVED PAGES	INSERTED PAGES
L231	1	1 thru 8	1 thru 8
L232	1	1 thru 7	1 thru 7
T240	1	1 thru 9	1 thru 9
T224	2	1 thru 9	1 thru 9
T221	1	1 thru 7	1 thru 7

3. Additional changes that need explaining: none.

4. File this sheet in front of the book for reference purposes.

5. Approval of change sheet.

Name/Signature	Rank	Position	Date
/s/Frank W. Berta	GS11	Training Specialist	15 Sep 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	15 Sep 04
/s/Marion Lemon	SGM	Chief, CDDD	15 Sep 04

This page intentionally left blank

Instructor Book 2A

CHANGE SHEET #1

1. Synopsis. This change sheet directs changes in the PLDC Mobilization Instructor Book 2A.

2. Pen and Ink changes: None.

3. Page Change: Replace the attached Cover Page (Front and Back).

4. Change that needs explaining: Due to an update to the PLDC TSP T221, Risk Management, remove TSP T221 Risk Management, dated Oct 03, and replace it with the attached TSP T221 Risk Management dated Dec 03.

5. File this sheet in front of Book 2A for reference purposes.

6. Approval of change sheet.

Name/Signature	Rank	Title	Date Signed
/s/Frank W. Berta	GS09	Training Specialist	2 Mar 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	2 Mar 04
/s/George V. Bucher	GS11	Chief, Course Management Division	2 Mar 04
/s/Marion Lemon	SGM	Chief, Curriculum, Design, and Development Division	2 Mar 04

This page intentionally left blank

INTRUCTOR / STUDENT RECOVERABLE MATERIAL

This instruction material is ACCOUNTABLE/RECOVERABLE. Instructors and students MUST TURN IN this material upon course completion or upon reassignment to other duties.

The Army School System (TASS) Institutions are responsible for the issue and control of this material.

To receive additional or replacement material requires that a WRITTEN JUSTIFICATION be forwarded to ATSC through Command Channels.

Instructor book 2 is broken down into six books (Book 2A, 2B, 2C, 2D, 2E, and 2F). This is Instructor Book 2A.

This instructor book contains the following Training Support Packages: (NOTE) The order given below is in the same order as the recommended sequence found in the Course Map in the Course Management Plan.

TSP#	Title
L231	Commandant's Orientation
L232	Introduction to PLDC
T240	Suicide Prevention
T224	Physical Fitness
T221	Risk Management

Printed and distributed by: U.S. Army Training Support Center, Training Media Support Directorate, Training Medial Management Team, Fort Eustis, VA 23604-5168

This page intentionally left blank

L231 COMMANDANT'S ORIENTATION OCT 03

U.S. ARMY SERGEANTS MAJOR ACADEMY

Primary Leadership Development Course (PLDC)

The Army Training System

TRAINING SUPPORT PACKAGE

"NO ONE IS MORE PROFESSIONAL THAN I"

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

L231 16 Aug 04

Commandant's Orientation

CHANGE SHEET 1

1. Synopsis. This change sheet corrects minor administrative errors in the L231, Commandant's Orientation, Training Support Package.

2. Pen and ink changes: none.

3. Page change(s): Remove old pages and insert revised page(s) as indicated.

Remove Pages	**Insert Pages**
1 thru 8	1 thru 8

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	**Rank**	**Position**	**Date**
/s/Karen M. Wilson	GS09	Training Specialist	16 Aug 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	16 Aug 04
/s/Marion Lemon	SGM	Chief, CDDD	16 Aug 04

This page intentionally left blank

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	L231 / COMMANDANT'S ORIENTATION
Effective Date	01 Oct 2003
Supersedes TSP(s) / Lesson(s)	C200, Commandant's Orientation, Jan 00. C200-RC, Commandant's Orientation, Jun 01.
TSP Users	600-PLDC, Primary Leadership Development Course 600-PLDC (MOD), Primary Leadership Development Course Modified
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	Users are invited to send comments and suggested improvements on DA Form 2028, *Recommended Changes to Publications and Blank Forms.* Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to: COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FT BLISS TX 79918-8002 Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil
Security Clearance / Access	Unclassified
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

L231 Commandant's Orientation

This TSP Contains

TABLE OF CONTENTS

PAGE

Preface 2

Lesson Section I Administrative Data 4

Section II Introduction 7

Terminal Learning Objective - Recognize PLDC course completion requirements, NCOA standards, and local command policies. 7

Section III Presentation 9

Section IV Summary 11

Section V Student Evaluation 12

Appendix A - Viewgraph Masters (N/A) A - 1

Appendix B - Test(s) and Test Solution(s) (N/A) B - 1

Appendix C - Practical Exercises and Solutions (N/A) C - 1

Appendix D - Student Handouts (N/A) D - 1

COMMANDANT'S ORIENTATION
L231 / Version 1
01 Oct 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
600-PLDC	1	Primary Leadership Development Course
600-PLDC (MOD)	1	Primary Leadership Development Course Modified

Task(s) Taught(*) or Supported

Task Number	Task Title
None	

Reinforced Task(s)

Task Number	Task Title
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods	
	9 hrs	/ Lecture
Test	0 hrs	
Test Review	0 hrs	
Total Hours:	9 hrs	

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)

Lesson Number	Lesson Title
None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

Number	Title	Date	Additional Information
	COURSE MANAGEMENT PLAN	01 Oct 03	

Student Study Assignments

Before class--

- None.

During class--

- Listen to lecture.

After class--

- No requirements.

Instructor Requirements

1:160, CSM.

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

ID Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
6730-00-577-4813 SCREEN, PROJECTION	1:160	1:2	No	1	No
6730-00-P53-8147 Projector, Overhead	1:160	1:2	No	1	No

* Before Id indicates a TADSS

Materials Required

Instructor Materials:

- TSP.
- Commandant's notes.
- Media--at discretion of commandant/NCOA.

Student Materials:

- Pen or pencil and writing paper.

Classroom, Training Area, and Range Requirements

CLASSROOM, GEN PURPOSE, 1500SF, 175PN

Ammunition Requirements

Id	Name	Exp	Stu Ratio	Instr Ratio	Spt Qty
None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Commandants are responsible for writing their own orientations. Commandants, as a minimum, will prepare and include the following topics as part of their orientation supporting this TSP--

- Reasons for attending PLDC.
- Safety.
- Course graduation requirements.
- Standards of conduct.
- Overview to identify and prevent sexual harassment.
- Local command policies.
- In addition, the commandant will:
  - Conduct the orientation in accordance with this TSP, and the CMP.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
/s/Colyer, Donald /t/Colyer, Donald	GS09	Training Specialist	
/s/Barnes, Ronnie G. /t/Barnes, Ronnie G.	MSG	Course Chief, PLDC	
/s/Lawson, Brian H. /t/Lawson, Brian H.	SGM	Chief, NCOES	
/s/Lemon, Marion /t/Lemon, Marion	SGM	Chief, CDDD	

SECTION II. INTRODUCTION

Method of Instruction: Lecture
Technique of Delivery: Large Group Instruction
Instructor to Student Ratio is: 1:160
Time of Instruction: 5 mins
Media: At the discretion of the commandant

Motivator

FM 22-100 states, "Leaders of character and competence act to achieve excellence by developing a force that can fight and win the nation's wars and serve the common defense of the United States." That is why you are here, to begin your training to become a leader--a warrior leader--of character, competence, and professionalism; a leader who will always exhibit the warrior's ethos.

We want you to begin PLDC with a clear understanding of exactly what this academy and the Army expects of you, so you can successfully complete the course and fulfill the Army's goal in developing leaders.

This is your first step in the NCOES process where you will build upon your base of values, ethics, and warrior ethos. You will learn the values, attributes, skills, and actions that make up what you must BE, what you must KNOW, and what you must DO to be a leader. The "BE, KNOW, DO"--coupled with warrior ethos--are the leader requirements for you as a future leader as outlined in FM 22-100.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements. At the completion of this lesson, you [the student] will:

Action:	Recognize PLDC course completion requirements, NCOA standards, and local command policies.
Conditions:	As a PLDC attendee in an auditorium.
Standards:	Recognized PLDC course completion requirements, NCOA standards, and local command policies to include: • Reasons for attending PLDC. • Safety. • Course graduation requirements. • Standards of conduct. • Identify and prevent sexual harassment. • Local command policies. IAW local SOPs, command policies, and the course management plan.

Safety Requirements	None
Risk Assessment Level	Low
Environmental Considerations	**NOTE:** It is the responsibility of all soldiers and DA civilians to protect the environment from damage. None
Evaluation	None
Instructional Lead-In	None

SECTION III. PRESENTATION

NOTE: Learning Step / Activities (LS/A) 1 thru 5 are mandatory during peacetime POI training for all Active Component (AC) and Reserve Component (RC) NCOAs. LS/A 6 is mandatory only for AC NCOAs during peacetime POI training and omitted during Mobilization POI training.

1. Learning Step / Activity 1. Reasons for attending PLDC

Method of Instruction:	Lecture
Technique of Delivery:	Large Group Instruction
Instructor to Student Ratio:	1:160
Time of Instruction:	10 mins
Media:	At the discretion of the commandant

Commandants will write this portion of the TSP.

2. Learning Step / Activity 2. Safety

Method of Instruction:	Lecture
Technique of Delivery:	Large Group Instruction
Instructor to Student Ratio:	1:160
Time of Instruction:	5 mins
Media:	At the discretion of the commandant

Commandants will write this portion of the TSP.

3. Learning Step / Activity 3. Graduation Requirements

Method of Instruction:	Lecture
Technique of Delivery:	Large Group Instruction
Instructor to Student Ratio:	1:160
Time of Instruction:	5 mins
Media:	At the discretion of the commandant

Commandants will write this portion of the TSP.

- Brief students on USASMA's graduation policy described in the PLDC Course Management Plan.
- Students must understand testing policies, to include retesting and what will happen should they fail a written or performance exam.

4. Learning Step / Activity 4. Standards of Conduct

Method of Instruction:	Lecture
Technique of Delivery:	Large Group Instruction
Instructor to Student Ratio:	1:160
Time of Instruction:	10 mins
Media:	At the discretion of the commandant

Commandants will write this portion of the TSP.

- Brief students on what you expect their behavior and demeanor to be while attending the course. This will include any type of honor system you may have established at your academy.
- Students must understand what will happen should they fail to maintain acceptable conduct.

5. Learning Step / Activity 5. Overview to identify and prevent sexual harassment

Method of Instruction: Lecture
Technique of Delivery: Large Group Instruction
Instructor to Student Ratio: 1:160
Time of Instruction: 10 mins
Media: At the discretion of the commandant

Commandants will write this portion of the TSP.

- Use your Academy's and local SOPs.
- PLDC TSP L227 (Equal Opportunity/Sexual Harassment) can assist you in developing this portion of your orientation brief.

Break: TIME: 00:50 to 01:00. End of lesson for RC only, AC continues with LS/A 6 after the break.

NOTE: Learning Step / Activity 6 is mandatory during peacetime POI training for AC NCOAs only. AC NCOAs will omit this learning step during Mobilization POI training.

6. Learning Step / Activity 6. Brief local command policies

Method of Instruction: Lecture
Technique of Delivery: Large Group Instruction
Instructor to Student Ratio: 1:160
Time of Instruction: 8 hrs
Media: At the discretion of the commandant

NOTE: Schedule break times as necessary.

Commandants will write this portion of the TSP.

- Use your Academy's and local SOPs.

SECTION IV. SUMMARY

Method of Instruction: Lecture
Technique of Delivery: Large Group Instruction
Instructor to Student Ratio is: 1:160
Time of Instruction: 5 mins
Media: At the discretion of the commandant

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review / Summarize Lesson

None

Transition to Next Lesson

Congratulations on your selection to attend the Primary Leadership Development Course. If you follow the rules and guidelines that I just briefed and you work hard, you will successfully complete this course.

SECTION V. STUDENT EVALUATION

Testing Requirements	**NOTE:** Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan. None
Feedback Requirements	**NOTE:** Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

Appendix A Viewgraph Masters (N/A)

Appendix B Test(s) and Test Solution(s) (N/A)

Appendix C Practical Exercises and Solutions (N/A)

Appendix D Student Handouts (N/A)

L232 INTRODUCTION TO PLDC OCT 03

U.S. ARMY SERGEANTS MAJOR ACADEMY

Primary Leadership Development Course (PLDC)

The Army Training System

TRAINING SUPPORT PACKAGE

"NO ONE IS MORE PROFESSIONAL THAN I"

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

L232 16 Aug 04

Introduction to PLDC

CHANGE SHEET 1

1. Synopsis. This change sheet corrects minor administrative errors in the L232, Introduction to PLDC Training Support Package.

2. Pen and ink changes: none.

3. Page change(s): Remove old pages and insert revised page(s) as indicated.

Remove Pages	**Insert Pages**
1 thru 7	1 thru 7

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	**Rank**	**Position**	**Date**
/s/Karen M. Wilson	GS09	Training Specialist	16 Aug 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	16 Aug 04
/s/Marion Lemon	SGM	Chief, CDDD	16 Aug 04

This page intentionally left blank

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	L232 / INTRODUCTION TO PLDC
Effective Date	01 Oct 2003
Supersedes TSP(s) / Lesson(s)	C201, Introduction to PLDC, Mar 00.
TSP Users	600-PLDC, Primary Leadership Development Course 600-PLDC (MOD), Primary Leadership Development Course (Modified)
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	Users are invited to send comments and suggested improvements on DA Form 2028, *Recommended Changes to Publications and Blank Forms.* Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to: COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FT BLISS TX 79918-8002 Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil
Security Clearance / Access	Unclassified
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

None

This TSP Contains

TABLE OF CONTENTS

PAGE

Preface 2

Lesson Section I Administrative Data 4

Section II Introduction 4

Terminal Learning Objective - Recognize the PLDC course contents and the background of each group member. 7

Section III Presentation 9

Enabling Learning Objective A - Identify the contents of PLDC 9

Enabling Learning Objective B - Communicate the military background of each group member 15

Section IV Summary 16

Section V Student Evaluation 17

Appendix A Viewgraph Masters A - 1

Appendix B Test(s) and Test Solution(s) (N/A) B - 1

Appendix C Practical Exercises and Solutions (N/A) C - 1

Appendix D Student Handouts (N/A) D - 1

Introduction to PLDC
L232 / Version 1
01 Oct 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
600-PLDC	1	Primary Leadership Development Course
600-PLDC MOD	1	Primary Leadership Development Course (Modified)

Task(s) Taught(*) or Supported

Task Number	Task Title
None	

Reinforced Task(s)

Task Number	Task Title
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods	
	2 hrs	/ Conference / Discussion
Test	0 hrs	
Test Review	0 hrs	
Total Hours:	2 hrs	

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)

Lesson Number	Lesson Title
None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

Number	Title	Date	Additional Information
	COURSE MANAGEMENT PLAN	01 Oct 03	

Student Study Assignments

Before class--

- Read Student Handout 1, Advance Sheet, Appendix D.

During class--

- Participate in classroom discussion.

After class--

- None.

Instructor Requirements

1:8, SSG, PLDC graduate, ITC, and SGITC qualified

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

ID Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
6730-00-577-4813 SCREEN, PROJECTION	1:16	1:2	No	1	No
6730-00-P53-8147 Projector, Overhead	1:16	1:2	No	1	No
7110-00-132-6651 CHALKBOARD	1:16	1:2	No	1	Yes
7520-01-424-4867 EASEL, DISPLAY AND TRAINING	1:16	1:2	No	1	Yes
7530-00-619-8880 PAD, WRITING PAPER	1:16	1:2	No	1	Yes

* Before Id indicates a TADSS

Materials Required

Instructor Materials:
- TSP.
- Any equipment required by the NCOA's SOP.

Student Materials:
- Advance Sheet.
- Pen or pencil and writing paper.
- Any materials required by the NCOA's SOP.

Classroom, Training Area, and Range Requirements

CLASSROOM (40X40 PER 16 STUDENTS)

Ammunition Requirements

Id	Name	Exp	Stu Ratio	Instr Ratio	Spt Qty
None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

You must know the information in this TSP well enough to teach from it, not read from it.

Before class--

- Read and study all TSP material and be ready to conduct the class.

During class--

- Conduct the class in accordance with this TSP.

After class--

- None.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
/s/Karen M. Wilson /t/Wilson, Karen M.	GS09	Training Specialist	26 Jun 03
/s/Ronnie G. Barnes /t/Barnes, Ronnie G.	MSG	Chief, PLDC	26 Jun 03
/s/Brian H. Lawson /t/Lawson, Brian H.	SGM	Chief, NCOES	26 Jun 03
/s/John W. Mayo /t/Mays, Albert J.	SGM	Chief, CDDD	26 Jun 03

SECTION II. INTRODUCTION

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Motivator

The ultimate goal of the Army is success in battle. Your job is to help achieve that success. America may call upon you to lead and fight. You must be ready to lead and fight anywhere and under any condition. Your soldiers deserve a strong leader--a warrior leader--to train and lead them into combat. This means you must attain a high level of competence. Also, you must attain the highest level of professionalism by demonstrating all that the Soldier's Creed stands for. Not only must you demonstrate the warrior ethos, but you must also instill in your soldiers that the team consists of warriors. Warriors place the mission first; they never quit; and always train. They are discipline soldiers who are physically and mentally tough and proficient in maintaining their arms, equipment, and themselves. They must always stand ready to deploy, engage, and destroy the enemies of America and live the Army values, while setting the example of professionalism for the world to see.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements.
At the completion of this lesson, you [the student] will:

Action:	Recognize the PLDC course contents and the background of each group member.
Conditions:	In a classroom environment.
Standards:	Recognized the PLDC course contents and introduced self to group.

Safety Requirements	None
Risk Assessment Level	Low
Environmental Considerations	**NOTE:** It is the responsibility of all soldiers and DA civilians to protect the environment from damage. None
Evaluation	This is not a testable lesson.
Instructional Lead-In	This lesson is an introduction to PLDC. This introduction is in two parts. The first part is a cadre presented briefing of the objective of PLDC. In part two you will introduce yourself to the other students in your group. The primary focus of this lesson is to provide you with an overview of the course of instruction.

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

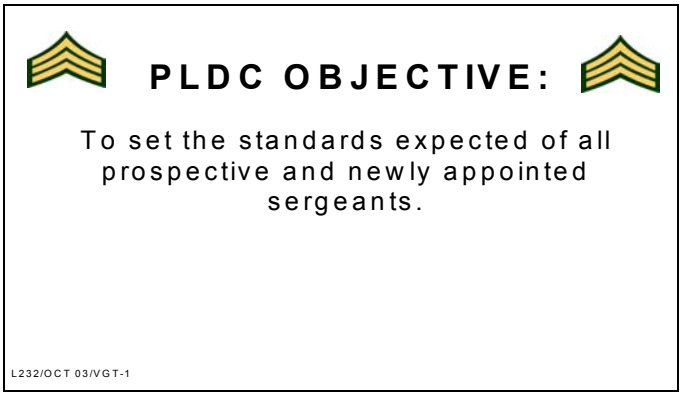
ACTION:	Identify the contents of PLDC.
CONDITIONS:	In a classroom environment.
STANDARDS:	Identified the contents and objective of PLDC.

1. Learning Step / Activity 1. Objective

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 45 mins
Media: VGT-1 thru VGT-10

We will begin our discussion by looking at the objective of PLDC and the three major areas of instruction. Since all NCOs, regardless of their branch of service, or job assignment, have the same responsibilities as a leader, we will address these responsibilities throughout the course.

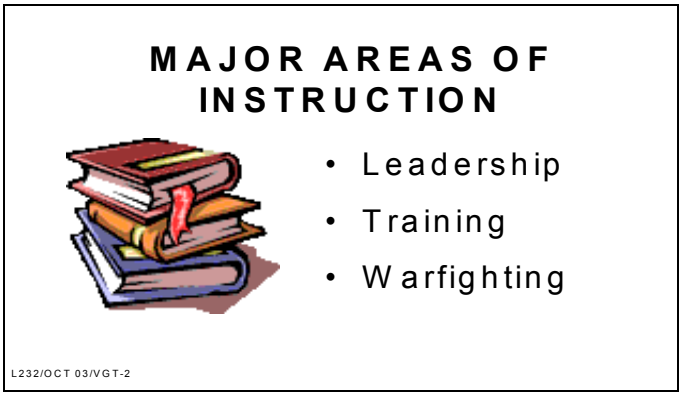
SHOW VGT-1, PLDC OBJECTIVE



NOTE: Call on a student to read the PLDC objective.

REMOVE VGT-1

SHOW VGT-2, MAJOR AREAS OF INSTRUCTION

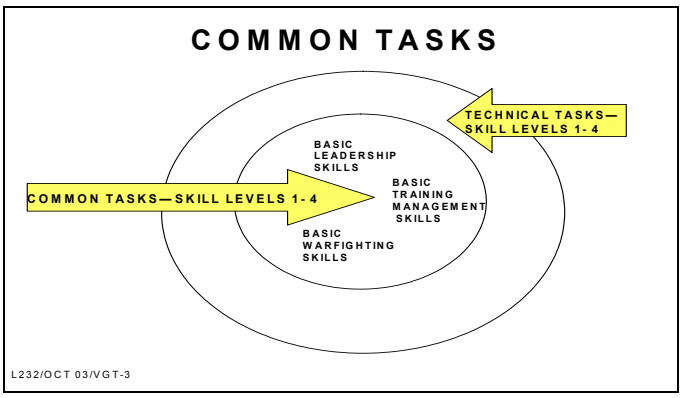


NOTE: Call on another student to read the major areas of instruction.

REMOVE VGT-2

Now we will talk about the design of PLDC.

SHOW VGT-3, COMMON TASKS



This VGT shows the common and technical skills that all soldiers must have to do their job. At the center of the target is the common core of tasks, for example, basic leadership, training management, and warfighting skills. The common core is knowledge that all soldiers, regardless of MOS, must have.

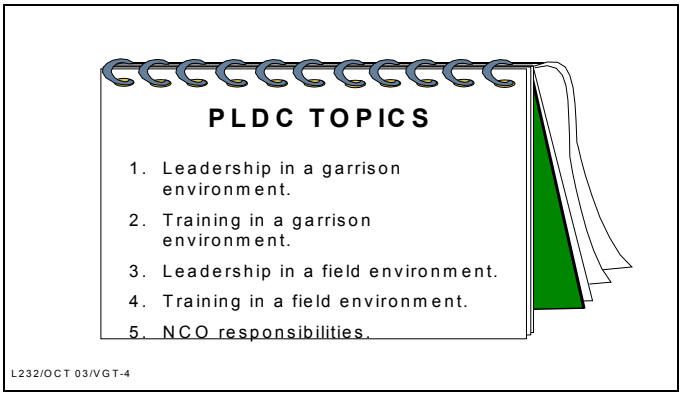
We take the tasks from this area (specifically targeted to Skill Level 2) for training in PLDC. Since it is your duty to train your soldiers, our focus will be on how you should train your soldiers to perform these tasks. Prequalification in task performance is your responsibility.

The outer circle of the target represents the technical tasks that a soldier must know in order to do his specific job. These tasks vary from MOS to MOS and number in the thousands. Since this is not an MOS specific course, we will not teach any technical tasks.

REMOVE VGT-3

The skills you learn in PLDC will increase your self-confidence, your leadership ability, and your sense of responsibility as an NCO. This will further enhance your capabilities as a leader. We will test you in all the following areas.

SHOW VGT-4, PLDC TOPICS



NOTE: Call on individual students to read the topics.

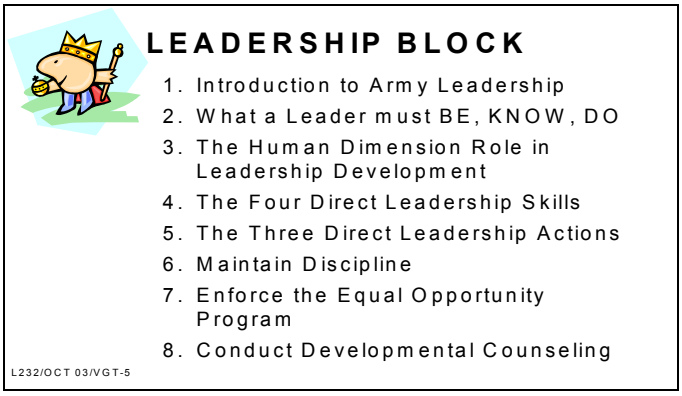
To fulfill the objective of PLDC, we will teach you the topics depicted on the VGT. Each of you will have ample opportunities to demonstrate your ability to lead and train soldiers in the field and in garrison.

REMOVE VGT-4

The next two VGTs depict the 14 lessons that make up the leadership block.

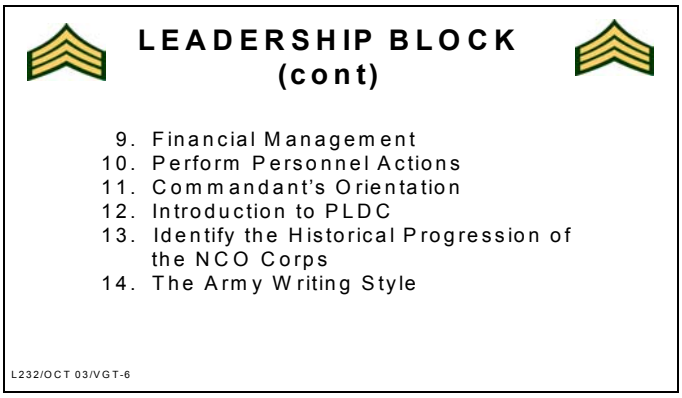
NOTE: Call on students to read the 14 lessons in the leadership block of instruction.

SHOW VGT-5, LEADERSHIP BLOCK



REMOVE VGT-5

SHOW VGT-6, LEADERSHIP BLOCK (cont)



REMOVE VGT-6

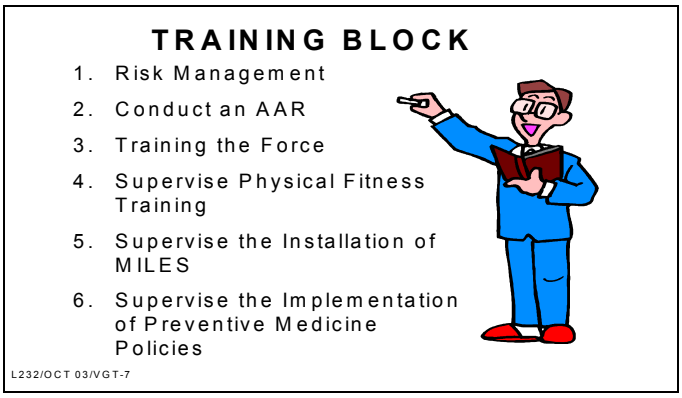
The next block of instruction we will discuss is training.

NOTE: You may want to comment on a specific lesson.

As you will see on the next two VGTs, there are 12 lessons that make up the training block of instruction.

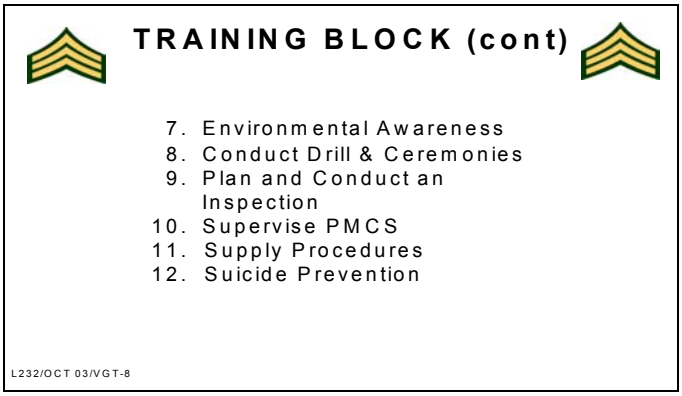
NOTE: Call on a student to read the 12 lessons from the VGTs.

SHOW VGT-7, TRAINING BLOCK



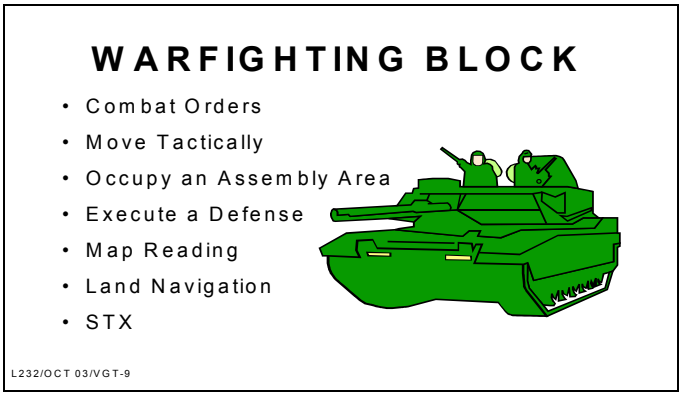
REMOVE VGT-7

SHOW VGT-8, TRAINING BLOCK (cont)



REMOVE VGT-8

SHOW VGT-9, WARFIGHTING BLOCK

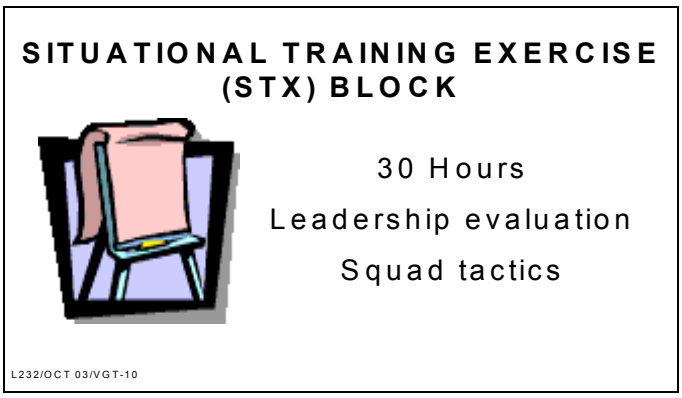


The VGT depicts the 7 lessons that make up the warfighting block.

NOTE: Call on students to read the 7 lessons in the warfighting block of instruction.

REMOVE VGT-9

SHOW VGT-10, SITUATIONAL TRAINING EXERCISE (STX) BLOCK



The Situational Training Exercise (STX) is a culmination of everything you will learn here at the academy. For 30 hours you will participate in a situational training exercise where you must perform as a leader. We will grade you on your ability to use the skills you learn here and to accomplish any mission or task we give you. During this exercise you will receive an evaluation that will grade you on your capability to lead soldiers. Study hard, apply yourself, don't be reluctant to try, and you will do well.

REMOVE VGT-10

Break: TIME: 00:50 to 01:00

B. ENABLING LEARNING OBJECTIVE

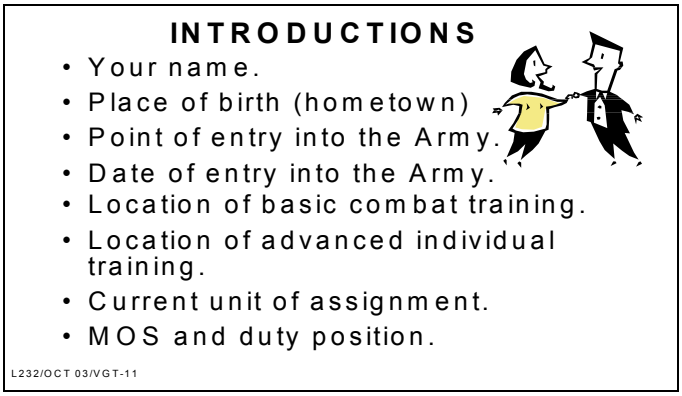
ACTION:	Communicate the military background of each group member.
CONDITIONS:	In a classroom environment.
STANDARDS:	Identified and introduced the students in the group to each other.

1. Learning Step / Activity 1. Introductions

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 45 mins
Media: VGT-11

Now that we have discussed the contents of PLDC, we can introduce ourselves to each other. Each one of you will introduce yourself to the other members of your group.

SHOW VGT-11, INTRODUCTIONS



During your introduction, include the information depicted on the visual aid. Limit your introduction to three and one-half minutes to five minutes.

NOTE: Leave the VGT on the screen during all of the introductions. The SGL should introduce himself first.

REMOVE VGT-11

SECTION IV. SUMMARY

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review / Summarize Lesson

You can see by the introductions that all of you come from varying backgrounds. You also hold a variety of MOSs. The different MOSs and the experience level that each of you have will make you a valuable member of the group. Each of you should use your experience to help the other members of your group. This will enable your group to perform as a team throughout the course of instruction.

SECTION V. STUDENT EVALUATION

Testing Requirements	**NOTE:** Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan. This is not a testable lesson.
Feedback Requirements	**NOTE:** Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed. None

Enabling Learning Objective A

VGT-1, PLDC OBJECTIVE

PLDC OBJECTIVE:

To set the standards expected of all prospective and newly appointed sergeants.

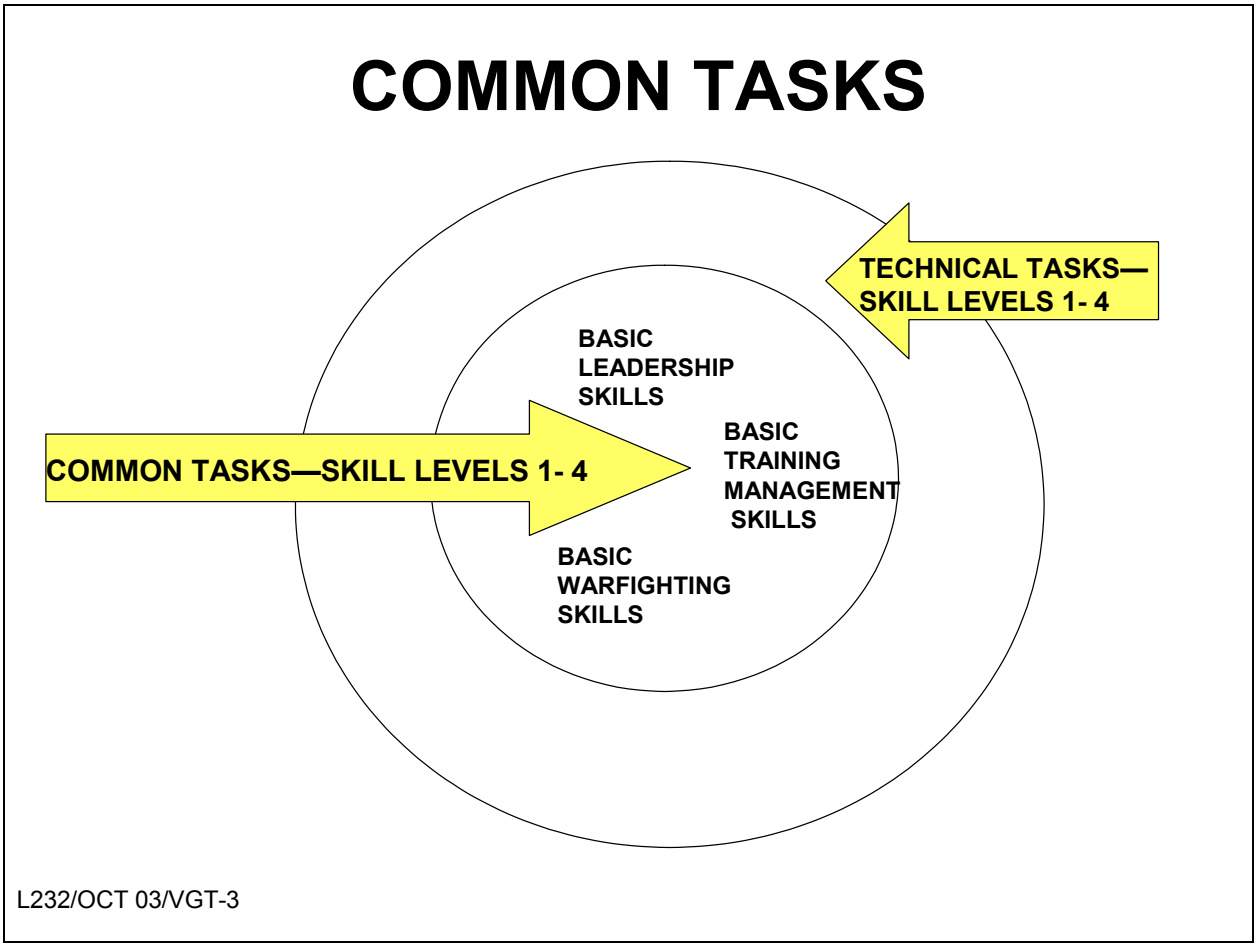
L232/OCT 03/VGT-1

MAJOR AREAS OF INSTRUCTION

- Leadership
- Training
- Warfighting

L232/OCT 03/VGT-2

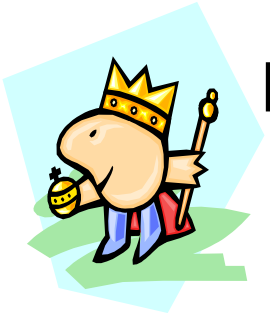
VGT-3, COMMON TASKS



PLDC TOPICS

1. Leadership in a garrison environment.
2. Training in a garrison environment.
3. Leadership in a field environment.
4. Training in a field environment.
5. NCO responsibilities.

L232/OCT 03/VGT-4



LEADERSHIP BLOCK

1. Introduction to Army Leadership
2. What a Leader must BE, KNOW, DO
3. The Human Dimension Role in Leadership Development
4. The Four Direct Leadership Skills
5. The Three Direct Leadership Actions
6. Maintain Discipline
7. Enforce the Equal Opportunity Program
8. Conduct Developmental Counseling

L232/OCT 03/VGT-5

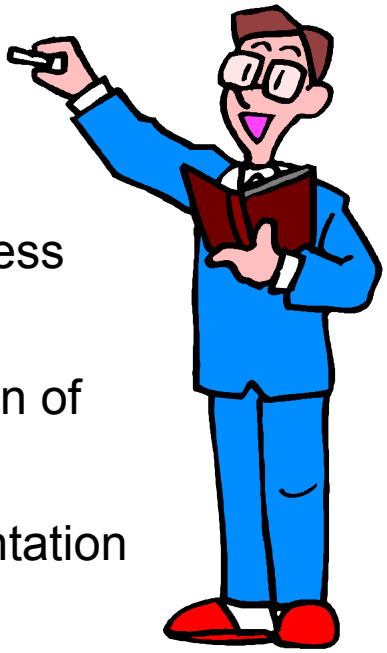
LEADERSHIP BLOCK (cont)

9. Financial Management
10. Perform Personnel Actions
11. Commandant's Orientation
12. Introduction to PLDC
13. Identify the Historical Progression of the NCO Corps
14. The Army Writing Style

L232/OCT 03/VGT-6

TRAINING BLOCK

1. Risk Management
2. Conduct an AAR
3. Training the Force
4. Supervise Physical Fitness Training
5. Supervise the Installation of MILES
6. Supervise the Implementation of Preventive Medicine Policies



L232/OCT 03/VGT-7

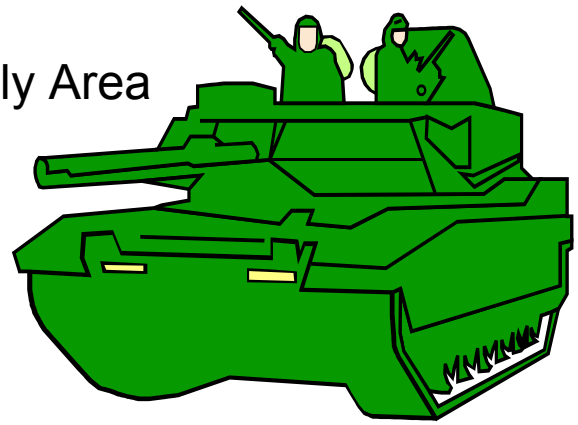
TRAINING BLOCK (cont)

7. Environmental Awareness
8. Conduct Drill & Ceremonies
9. Plan and Conduct an Inspection
10. Supervise PMCS
11. Supply Procedures
12. Suicide Prevention

L232/OCT 03/VGT-8

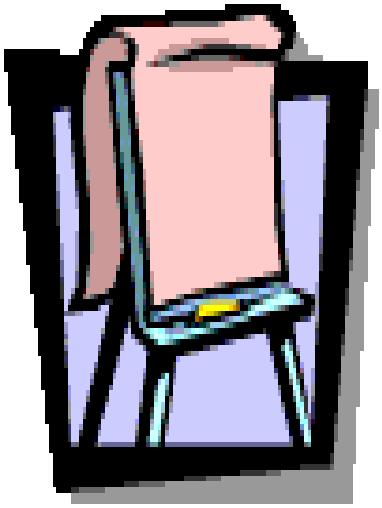
WARFIGHTING BLOCK

- Combat Orders
- Move Tactically
- Occupy an Assembly Area
- Execute a Defense
- Map Reading
- Land Navigation
- STX



L232/OCT 03/VGT-9

SITUATIONAL TRAINING EXERCISE (STX) BLOCK



30 Hours

Leadership evaluation

Squad tactics

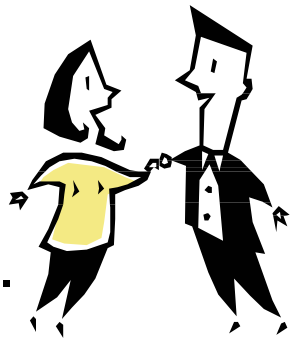
L232/OCT 03/VGT-10

Enabling Learning Objective B

Learning Step 1

VGT-11, INTRODUCTIONS

INTRODUCTIONS



- Your name.
- Place of birth (hometown).
- Point of entry into the Army.
- Date of entry into the Army.
- Location of basic combat training.
- Location of advanced individual training.
- Current unit of assignment.
- MOS and duty position.

L232/OCT 03/VGT-11

Appendix B Test(s) and Test Solution(s) (N/A)

Appendix C Practical Exercises and Solutions (N/A)

HANDOUT FOR LESSON 1: L232 version 1

This Appendix Contains

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2

Student Handout 1

This student handout contains the Advance sheet.

Student Handout 1

Advance Sheet

Lesson Hours

This lesson consists of two hours of small group instruction.

Overview

During this lesson you will learn the course contents of PLDC and introduce yourself to your fellow soldiers in your group.

Learning Objective

Terminal Learning Objective (TLO).

Action:	Recognize the PLDC course contents and the background of each group member.
Conditions:	In a classroom environment.
Standard:	Recognized course contents and introduced self to group.

ELO A Identify the contents of PLDC.
ELO B Communicate the military background of each group member.

Assignments

The student assignments for this lesson are:

- Read Student Handout 1, Advance Sheet.

Additional Subject Areas Resources

None

Bring to Class

- All reference material received.
- Pencil or pen and writing paper.

Note to Students

It is your responsibility to do the homework prior to class. PLDC expects you to come to class prepared. You will participate in small group discussion. We expect you to participate in the discussion by providing information you learned from your study, and from your personal and observed experiences. Failure to study and read the assignments will result in your inability to participate with the rest of the group. Failure to prepare also affects the group in its ability to discuss fully the information by having your input and experiences.

This page intentionally left blank

T240 SUICIDE PREVENTION OCT 03

U.S. ARMY SERGEANTS MAJOR ACADEMY

Primary Leadership Development Course (PLDC)

The Army Training System

TRAINING SUPPORT PACKAGE

"NO ONE IS MORE PROFESSIONAL THAN I"

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

T240 20 AUG 04

Suicide Prevention

CHANGE SHEET 1

1. Synopsis. This change sheet corrects minor administrative errors in the T240, Suicide Prevention Training Support Package.

2. Pen and ink changes: none.

3. Page change(s): Remove old pages and insert revised page(s) as indicated.

Remove Pages	**Insert Pages**
1 thru 9	1 thru 9

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	Rank	Position	Date
/s/Billy R. Williams	GS-9	Training Specialist	20 Aug 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	20 Aug 04
/s/Marion Lemon	SGM	Chief, CDDD	20 Aug 04

This page intentionally left blank

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	T240 / SUICIDE PREVENTION
Effective Date	01 Oct 2003
Supersedes TSP(s) / Lesson(s)	None
TSP Users	600-PLDC, Primary Leadership Development Course 600-PLDC (MOD), Primary Leadership Development Course (Modified)
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	Users are invited to send comments and suggested improvements on DA Form 2028, *Recommended Changes to Publications and Blank Forms.* Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to: COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FT BLISS TX 79918-8002 Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil
Security Clearance / Access	Unclassified
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number	Task Title
Individual	
081-831-9018	Implement Suicide Prevention Measures
081-831-9028	Implement A Suicide Prevention Program

This TSP Contains

TABLE OF CONTENTS

PAGE

Preface 2

Lesson Section I Administrative Data 4

Section II Introduction 7

Terminal Learning Objective - Define the Army's suicide prevention goal. 8

Section III Presentation 10

Enabling Learning Objective A - Define the Army's Suicide Prevention Goal. 10

Enabling Learning Objective B - Identify suicidal behaviors. 13

Enabling Learning Objective C - Identify the Army Suicide Prevention Model. 19

Enabling Learning Objective D - Identify local helping services available to soldiers. 24

Section IV Summary 28

Section V Student Evaluation 30

Appendix A - Viewgraph Masters A - 1

Appendix B - Test(s) and Test Solution(s) (N/A) B - 1

Appendix C - Practical Exercises and Solutions (N/A) C - 1

Appendix D - Student Handouts D - 1

Suicide Prevention
T240 / Version 1
01 Oct 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
600-PLDC	1	Primary Leadership Development Course
600-PLDC MOD	1	Primary Leadership Development Course (Modified)

Task(s) Taught(*) or Supported

Task Number	Task Title
	INDIVIDUAL
081-831-9018 (*)	Implement Suicide Prevention Measures
081-831-9028 (*)	Implement A Suicide Prevention Program

Reinforced Task(s)

Task Number	Task Title
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods	
	2 hrs	/ Conference / Discussion
Test	0 hrs	
Test Review	0 hrs	
Total Hours:	2 hrs	

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)

Lesson Number	Lesson Title
None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

Number	Title	Date	Additional Information
SUI-1	ARMY SUICIDE PREVENTION - A GUIDE FOR INSTALLATION UNITS	01 Jul 2002	Draft Version
SUI-2	SUICIDE PREVENTION LEADER TRAINING	01 Jul 2002	Draft Version

Student Study Assignments

Before class--

- Read Student Handout (SH-2) chapters 1 thru 3 and 5.
- Read Student Handout (SH-3).

During class--

- Participate in class discussion.
- Observe a TVT on suicide prevention.

After class--

- Turn in recoverable materials.
- Participate in an after action review for lesson.

Instructor Requirements

1:8, SSG, PLDC graduate, and ITC and SGITC qualified

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

ID Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
5820-00-P54-5863 TV COLOR, 19 Inch.	1:16	1:2	No	0	No
5820-00-T39-0694 VCR	1:16	1:2	No	0	No
6730-00-577-4813 SCREEN, PROJECTION	1:16	1:2	No	0	No
6730-00-P53-8147 Projector, Overhead	1:16	1:2	No	0	No
7110-00-132-6651 CHALKBOARD	1:16	1:2	No	0	Yes
7520-01-424-4867 EASEL, DISPLAY AND TRAINING	1:16	1:2	No	0	Yes
7530-00-619-8880 PAD, WRITING PAPER	1:16	1:2	No	0	Yes
PIN 701299 TVT SUICIDE PREVENTION	1:16	1:2	No	0	No

* Before Id indicates a TADSS

Materials Required

Instructor Materials:
- VGTs: 1 thru 19.
- TSP.
- TVT 8-93: Suicide Prevention, 19 Minutes.
- Army Suicide Prevention - A Guide for Installations and Units, (Draft).
- Suicide Prevention Leader Training, (Draft).

Student Materials:
- Pen or pencil and writing paper.
- All reference material issued for this lesson.

Classroom, Training Area, and Range Requirements

CLASSROOM (40X40 PER 16 STUDENTS)

Ammunition Requirements

Id	Name	Exp	Stu Ratio	Instr Ratio	Spt Qty
None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Before class--

- Read all TSP material.
- Issue reference materials at least three three days before class.
- Schedule TVT at the end of ELO A.

During class--

- Use the questions provided to generate discussion among the students.
- The instructor may need to create additional questions to ensure student participation continues throughout the lesson material.
- Cover all learning objectives.

After class--

- Collect all recoverable material.
- Report any lesson discrepancies to the Senior Instructor.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
/s/Karen M. Wilson /t/Wilson, Karen M.	GS09	Training Specialist	15 Jul 03
/s/Brian H. Lawson /t/Barnes, Ronnie G.	MSG	Course Chief, PLDC	15 Jul 03
/s/Brian H. Lawson /t/Lawson, Brian H.	SGM	Chief, NCOES	15 Jul 03
/s/Albert J. Mays /t/Mays, Albert J.	SGM	Chief, CDDD	15 Jul 03

SECTION II. INTRODUCTION

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Motivator

NOTE: Keep in mind that the introduction of a very sensitive topic requires an equally sensitive approach. You must assume that the class may include people who were touched by suicide, and some class members who have seriously contemplated or attempted suicide. Give care when discussing this topic.

The Army's strength rests with our soldiers, civilians, retirees, and their families, each being a vital member of our institution. Suicide is detrimental to the readiness of the Army and is a personal tragedy for all those affected. Therefore, suicide has no place in our professional force.

We all realize the daily stress and burdens placed upon our soldiers, civilians and their family members. What defines us, as an institution, is our compassion and commitment to promoting a healthy lifestyle by emphasizing physical, spiritual, and mental fitness. This contributes to the overall well-being of the force and readiness of the Army. Therefore, we must remain cognizant of the potential suicidal triggers and warning signs so that we can raise awareness and increase vigilance for recognizing those whom might be at risk for suicidal behaviors. Furthermore, we must create a command climate of acceptance and support that encourages help-seeking behavior as a sign of individual strength and maturity prevention at every Army unit.

Suicide among our soldiers and their family members is a serious growing problem. Suicide prevention must be the business of every leader, supervisor, soldier, and civilian employee in the United States Army. To facilitate this effort, there is a need for a coordinated program for suicide prevention at every Army unit.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Describe the Army's Suicide Prevention Program.
Conditions:	As a squad leader, in a classroom or unit environment, given a squad and student handouts.
Standards:	Described the Army's Suicide Prevention Program by-- • Defining the Army's suicide prevention program goal, • Identifying suicidal behaviors, • Understanding the Army suicide prevention model, • Identifying local services available to soldiers, IAW Army Suicide Prevention - A Guide for Installations and Units (Draft) and Suicide Prevention Leader Training (Draft).

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

None

Evaluation

You will take a written examination. The examination will contain questions from this lesson. You must correctly answer at least 70 percent of the questions on the examination to receive a GO. Failure to achieve a GO on the examination will result in a retest. Failure of the retest could result in your dismissal from the course.

Instructional Lead-In

The Soldier's Creed states the following:

I am an American Soldier.
I am a Warrior and a member of a team. I serve the people of the United States and live the Army Values.
I will always place the mission first.
I will never accept defeat.
I will never quit.
I will never leave a fallen comrade.
I am disciplined, physically and mentally tough, trained, and proficient in my warrior tasks and drills.
I always maintain my arms, my equipment, and myself.
I am an expert, and I am a professional.
I stand ready to deploy, engage, and destroy the enemies of the United States of America in close combat.
I am a guardian of freedom and the American way of life.
I am an American Soldier.

Suicide prevention is everyone's business. You must understand the potential for suicides and increase awareness for recognizing individuals who are at risk or exhibit self-destructive behavior. It is your responsibility as a squad leader to help your soldiers understand how to identify at-risk individuals, recognize the warning signs, and know how to take direct action. Then, you must act to provide immediate assistance to prevent the destructive behavior of the soldier. Anyone who is contemplating suicide is often incapable of reaching out to help themselves. If the situation ever presents itself to you, get involved and use your chain of command to assist you with providing help for the soldier.

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Define the Army's suicide prevention goal.
CONDITIONS:	As a squad leader, in a classroom or unit environment, given a squad and student handouts.
STANDARDS:	Defined the Army's suicide prevention goal by reviewing the CSA statement, IAW the Army Suicide Prevention - A Guide for Installations and Units.

1. Learning Step / Activity 1. Army Suicide Prevention Program

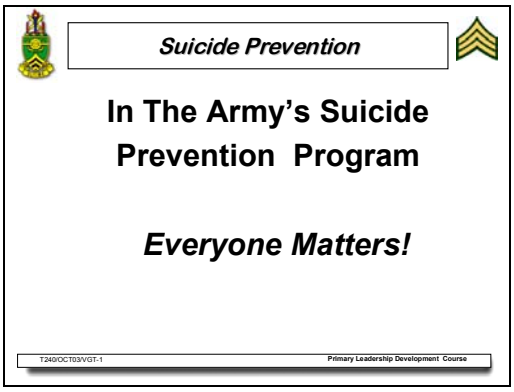
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 35 mins
Media: VGT-1 thru VGT-4, TVT 8-93, Suicide Prevention, (19 mins)

NOTE: Schedule TVT 8-93 to start after VGT-4, the CSA statement. After the film is over, allow time for a 5-minute discussion. The TVT is 19 minutes.

Suicide prevention must be the business of every leader, supervisor, soldier,

and civilian employee in the United States Army.

SHOW VGT-1, SUICIDE PREVENTION



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1

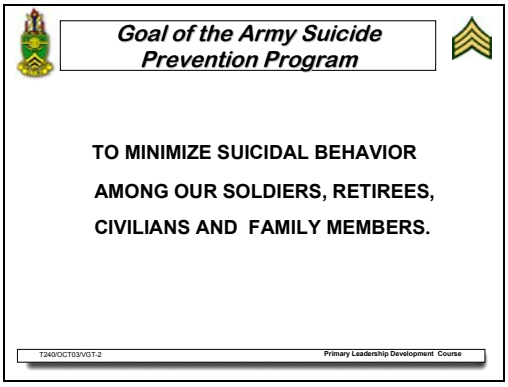
NOTE: Use the information contained on the slide to generate a brief discussion. Ensure the discussion includes how suicide is everyone's responsibility.

REMOVE VGT-1

QUESTION: What is the goal of the Army Suicide Prevention Program (ASPP)?

ANSWER: See VGT-2.

SHOW VGT-2, GOAL OF THE ARMY SUICIDE PREVENTION PROGRAM



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1-2

NOTE: Ask the students to turn to para 1-2 and lead a short discussion on the goal of the Army Suicide Prevention Program.

The goal of any Army Suicide Prevention Program is to minimize suicidal behavior among our soldiers, retirees, civilians, and family members. Suicide behavior includes self-inflicted fatalities, non-fatal self-injurious events and suicidal ideation.

Suicide prevention is an evolving science. It is your responsibility as squad leaders to utilize the best-known available methodology in caring for our soldiers, retirees, civilians, and family members. Measure the successes of our efforts by the confidence and conscience of knowing that—

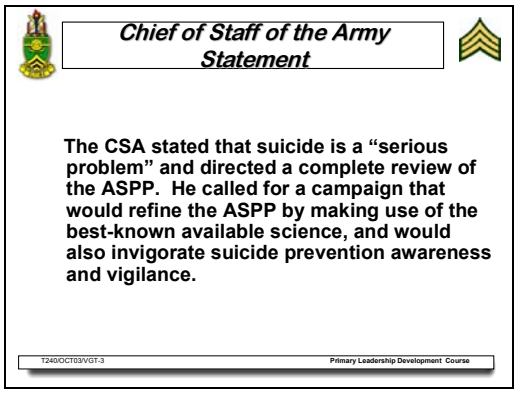
- ✓ we have created and fostered an environment where all soldiers, identify civilians and family members at risk for suicide quickly so they can receive successful intervention and appropriate care;
- ✓ encourage and accept help-seeking behavior as a sign of individual strength, courage and maturity, and taught and reinforced by all leaders is positive life-coping skills.

NOTE: Summarize and clarify any questions students may have on the goal of the Army Suicide Prevention Program.

REMOVE VGT-2

In 2000, following a 27% increase in the number of reported suicides within the Army during 1997-1999, the CSA, General Eric K. Shinseki, stated that suicide is a "serious problem" and directed a complete review of the ASPP.

SHOW VGT-3, CHIEF OF STAFF OF THE ARMY STATEMENT



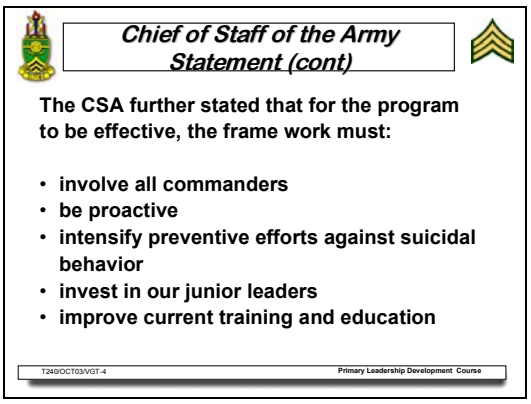
Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1-3

NOTE: Ask a student to read VGT-3 and ask another student to explain the CSA statement. Clarify any questions the students may have up to this point.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1-3

REMOVE VGT-3

SHOW VGT-4, CHIEF OF STAFF OF THE ARMY STATEMENT, (cont)



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1-3

You can see the CSA has issued clear guidance, and he is giving the Suicide Prevention Program his highest attention. This is to ensure that you and your leaders protect our soldiers and civilians.

NOTE: Ask the students to explain the CSA statement in their own words and clarify any misunderstandings they may have.

REMOVE VGT-4

Now we will watch a TVT on suicide prevention. The TVT will serve as our next class discussion on suicide prevention issues and concepts.

NOTE: Show TVT, "Suicide Prevention" (19 minutes). When the video is over, conduct a 5-minute review discussing the issues and elements that address the Army's policy on suicide prevention.

NOTE: Ask the students to discuss the TVT and how it relates to any of their own experiences.

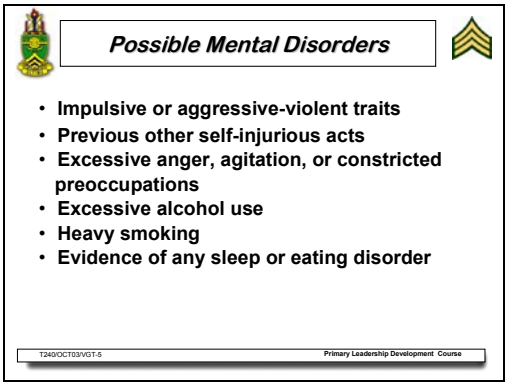
B. ENABLING LEARNING OBJECTIVE

ACTION:	Identify suicidal behaviors.
CONDITIONS:	As a squad leader, in a classroom or unit environment, given a squad and student handouts.
STANDARDS:	Identified suicidal behaviors by: • reviewing possible mental disorders, • reviewing potential suicide triggers, • reviewing suicide warning and danger signs, IAW the Army Suicide Prevention - A Guide for Installations and Units (Draft).

1. Learning Step / Activity 1. Identify Mental Disorders, Triggers, and Immediate Danger Signs

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 20 mins
Media: VGT-5 thru VGT-9

SHOW VGT-5, POSSIBLE MENTAL DISORDERS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-2

Now let's review the possible mental disorders. You need to realize that soldiers enter into the Army with varying levels of life-coping skills. Leaders should not assume that all soldiers entering the Army can adequately handle the inherent stress of military service, or even life in general, especially if they are already predisposed to psychiatric disorder. It is unrealistic for a leader to understand the genetic composition of their soldiers or know their complete developmental history. Leaders can make proper assessments of their life-coping skills by observation and personal dialogue focused on learning and understanding their soldier's background.

Now we will look at the common causes of suicide and inform you of the common danger and warning signs so you can properly anticipate suicidal or other dysfunctional behavior and make preemptive referrals to professional mental health care providers before a crisis ensues.

Mental disorders are, "health conditions that are characterized by alterations in thinking, mood, or behavior, which are associated with distress and/or impaired functioning and spawn a host of human problems that may include disability, pain, or death." Mental disorders occur throughout society affecting all population demographics including age, gender, ethnic groups, educational background, and even socioeconomic groups. In the United States, approximately twenty-two percent of those between the ages of 18 – 64 years had a diagnosis of some form of mental disorder.

Mental illness is more common than cancer, diabetes, or heart disease, filling almost 21 percent of all hospital beds at any given time. In fact, the number one reason for hospitalizations nationwide is a biological psychiatric condition.

Mental disorders also affect our youth. At least one in five children and adolescents between 9 – 17 years has a diagnosable mental disorder in a given year, extremely impaired are about five percent.

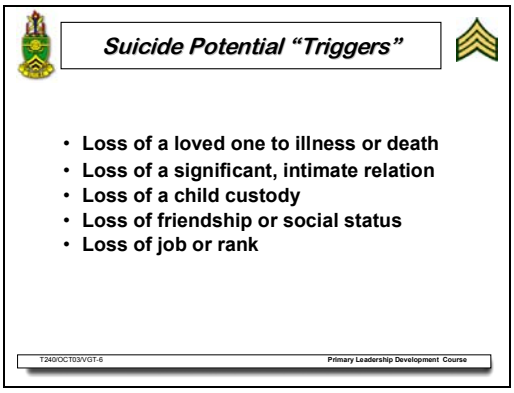
Mental disorders vary in severity and disabling effects. However, current treatments are highly effective and offer a diverse array of settings. The treatment

success rate for schizophrenia is sixty percent, sixty-five percent for major depression, and eighty percent for bipolar disorder. This compares to between 41-52 percent success rates for the treatment of heart disease.

NOTE: Summarize and clarify any questions the students may have about possible mental disorders.

REMOVE VGT-5

SHOW VGT-6, SUICIDE POTENTIAL "TRIGGERS"



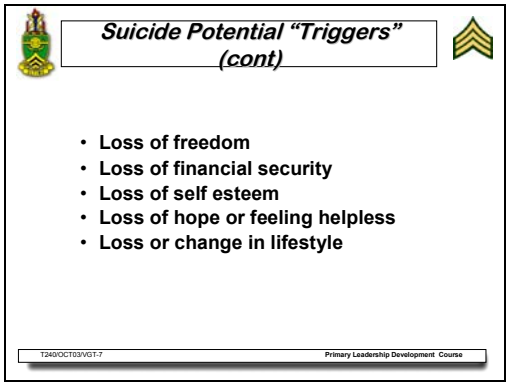
Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-5

NOTE: Call on a student to read the bullets on VGT-6 and then clarify any misunderstanding they may have.

REMOVE VGT-6

NOTE: Call on a student to read VGT-7 and generate a brief discussion on each bullet.

SHOW VGT-7, SUICIDE POTENTIAL"TRIGGERS" (cont)



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-5

Small unit leaders have the most crucial role in establishing and determining the conditions of the soldier's work environment. You should strive to have a positive influence on them by being a proper role model for them to emulate. For some soldiers, their role and camaraderie within their unit and the relationship with their first line supervisor might be the only positive, life-sustaining resource available to them in times of adversity. Therefore, everyone should take this responsibility seriously.

Although it is the responsibility of the professional mental health care provider to diagnose a mental disorder, there are certain warnings that may indicate an underlying mental disorder. You need to be aware of these indicators that might indicate the presence of a mental disorder, which places the soldier at risk for suicide or other dysfunctional behaviors.

Leaders who spot such behavior and/or suspect that one of their soldiers is suffering from a mental disorder should notify their chain of command so that the commander can decide upon making a referral to a mental health care provider. It is important to note that persons with mental disorders are often unable to appreciate the seriousness of their problem, because the disorder frequently distorts their judgment. Therefore, they must rely upon others for assistance.

Obviously, a common theme associated with all these potential triggers for suicide is some form of a loss. As leaders, you must realize that each individual will handle a particular life stressor differently. Therefore, you should anticipate potential “life crises” and ensure that the individual has the proper resources to handle the adversity. This might include appointing a “life-line” buddy to watch over the individual until the crisis has passed or referral to the unit chaplain or other professional counselors.

NOTE: Clarify any questions students may have up to this point.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-4 and para 2-5

REMOVE VGT-7

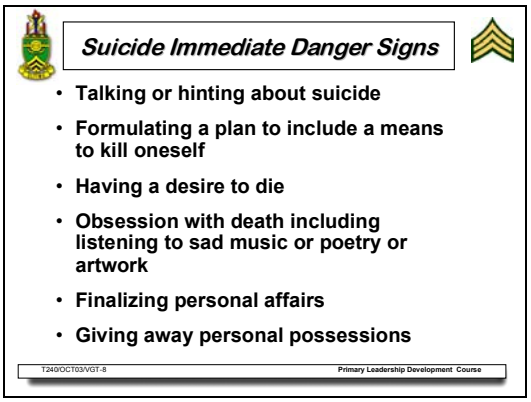
Break: TIME: 00:50 to 01:00

To the “well adjusted” person, suicide is an irrational act. This attitude, however, might interfere with a person’s ability to promptly intervene if they assume that everyone shares their opinion. Some consider suicide a method of ending or escaping from pain or other problems.

Let’s look at the immediate danger signs that may indicate suicide behavior is imminent and what you, as leaders, should look out for.

NOTE: Direct the students to para 2-7. Using the information on VGT-8 to generate a short discussion on the immediate danger signs.

SHOW VGT-8, SUICIDE IMMEDIATE DANGER SIGNS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-7

Anyone, especially first line supervisors, who recognize these warning signs, must take immediate action. The first step should be to talk to the individual, allow them to express their feelings, and ask them outright and bluntly, “Are you considering suicide?” or “Are you thinking about killing yourself?” If their response is “yes,” then required are immediate life-saving steps, such as ensuring the safety of the individual, notifying your chain of command or chaplain, and calling for emergency services or escorting the individual to a mental health officer.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-7

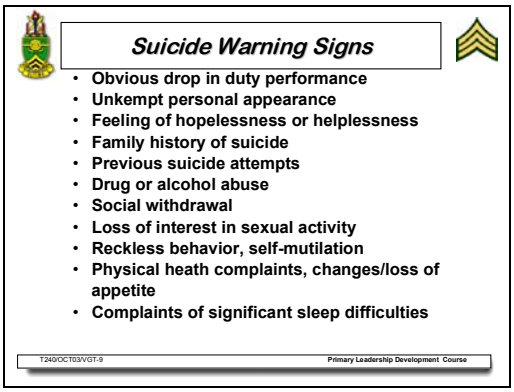
REMOVE VGT-8

NOTE: Direct students to para 2-8. Use the information on para 2-8 to lead a short discussion on the feeling and emotions that might precede suicide. Ensure the discussion covers the most common feelings listed in the para 2-8.

NOTE: Ask one student to read each bullet on VGT-9 and generate a brief discussion.

Now let's look at the suicide prevention warning signs. The list on the VGT contains some warning signs that might precede suicide behavior. Although not as serious as the danger signs previously listed, do not disregarded warning signs because they require immediate personal intervention. As a squad leader, you must also be aware of the suicide warning signs.

SHOW VGT-9, SUICIDE WARNING SIGNS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-8

It is the responsibility of all leaders and the duty of all soldiers to watch for these danger and warning signs and realize that they might not be capable of helping themselves and, therefore, require immediate action.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-8

NOTE: Ensure the students understand the difference between suicide danger and warning signs. Clarify any questions the students may have up to this point.

REMOVE VGT-9

C. ENABLING LEARNING OBJECTIVE

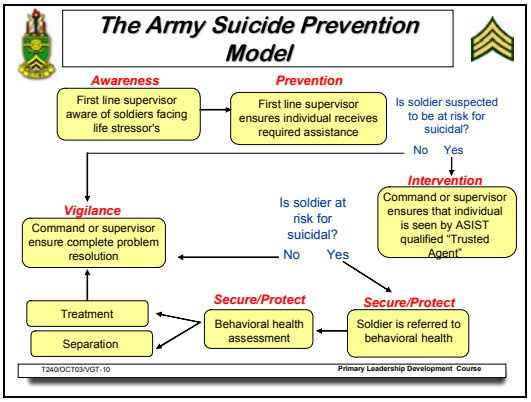
ACTION:	Understand the Army Suicide Prevention Model.
CONDITIONS:	As a squad leader, in a classroom or unit environment, given a squad and student handouts.
STANDARDS:	Understood the Army Suicide Prevention Model by: • reviewing the prevention barrier, • reviewing the intervention barrier, • reviewing the secure barrier, • reviewing the continuity of care barrier, IAW the Army Suicide Prevention - A Guide for Installations and Units (Draft).

1. Learning Step / Activity 1. The Suicide Prevention Model and Barriers

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 20 mins
Media: VGT-10 thru VGT-14

NOTE: Ask students to turn to para 3-1 and review the Army Suicide Prevention Model. Generate a brief discussion on the barriers of the suicide model.

SHOW VGT-10, THE ARMY SUICIDE PREVENTION MODEL



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1

Let's review the barriers of the Army Suicide Prevention Model. The Army Suicide Prevention Model focuses on maintaining the individual readiness of the soldier. Occasionally, through normal life experiences, a person enters a path that if followed, and without interruption or intervention, could allow a normal life stressor or mental disorder to become a life crisis, which might lead to thoughts of suicide and eventually suicidal behavior and possible injury or death. Parallel to the suicidal path

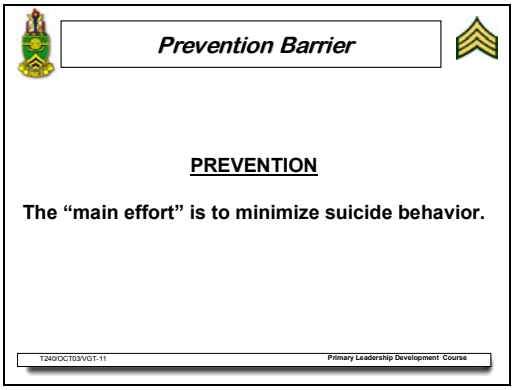
is a “safety net” that represents the Army’s continuity of care. As the actual suicidal risk escalates, so does our response by becoming more directive and involving more professional health-care providers. To prevent a person from progressing down the suicidal path are three “barriers.” They are: prevention, intervention, and secure. These barriers target specific programs and initiatives for varying degrees of risk to block any further progress along the suicidal path. Provided below is a quick outline of each of these “barriers.” For more detailed strategies read Chapters 4, 5, and 6.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1

NOTE: Clarify any questions that the students may have on the Suicide Prevention Model.

REMOVE VGT-10

SHOW VGT-11, PREVENTION BARRIER



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1a

Let’s review the prevention barrier. Prevention is our “main effort” to minimize suicidal behavior. It focuses on preventing normal life stressors from turning into a life crisis. “Prevention programming” focuses on equipping the soldier with the coping skills to handle overwhelming life circumstances that can sometimes begin a dangerous journey down a path to possible suicidal behaviors. This barrier allows the individual to operate “in the green” or at a high state of individual readiness. Prevention includes establishing early screening to establish baseline mental health and offer specific remedial programs before the occurrence of possible dysfunctional behavior. Prevention is absolutely dependent on caring and proactive small unit

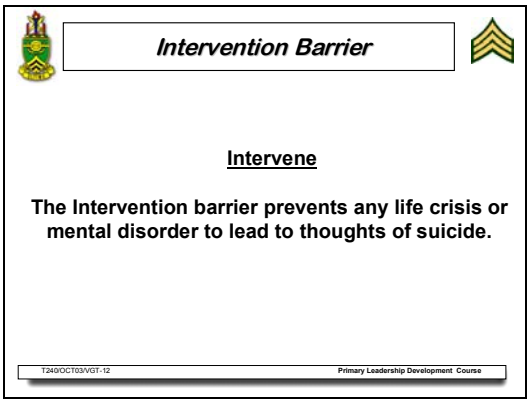
leaders who make the effort to know their subordinates, including estimating their ability to handle stress, and offer a positive, cohesive environment which nurtures and develops positive life coping skills.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1

NOTE: Clarify any questions that the students may have about the prevention barrier.

REMOVE VGT-11

SHOW VGT-12, INTERVENTION BARRIER



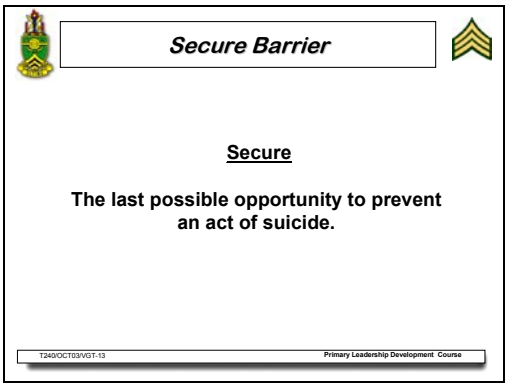
Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1b

Now let's review the intervention barrier. Intervention is the barrier that prevents any life crisis or mental disorder to lead to thoughts of suicide. It recognizes that there are times when one should seek professional assistance/counseling to handle a particular crisis or treat a mental illness. In this area, early involvement is a crucial factor in suicide risk reduction. Intervention includes alteration of the conditions, which produced the current crisis, treatment of any underlying psychiatric disorder(s) that contributed to suicidal thoughts, and follow-up care to assure problem resolution. Commanders play an integral part during this phase, as it is their responsibility to ensure that the particular problem or crisis is resolved before assuming that the threat has passed. This barrier is color-coded "yellow" because it warrants caution and the individual readiness is not to an optimal level since the individual may become distracted by the life crisis.

NOTE: Clarify any question that the students may have to the intervention barrier.

REMOVE VGT-12

SHOW VGT-13, SECURE BARRIER



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1c

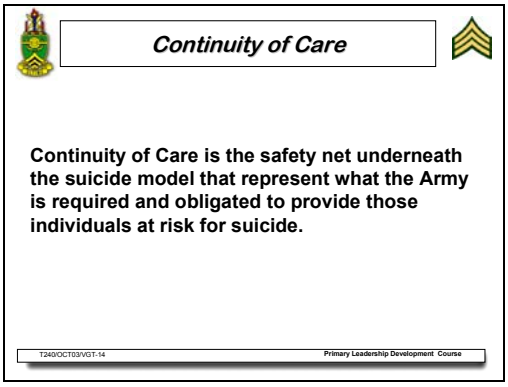
The third and final barrier we will look at in this model is perhaps the last possible opportunity to prevent an act of suicide. This occurs when an individual is at risk for suicidal behavior. When someone becomes suicidal, then someone must secure and protect them before they can harm themselves and/or others. This is "tertiary prevention" and requires immediate life-saving action. The focus within this area will be to educate everyone to recognize the suicidal danger and warning signs and if recognized, take immediate, life-saving action. This barrier is color-coded red due to the severity of the situation. The individual is considering or has already decided to commit suicide and is in imminent danger of harming him or herself, or possibly others as well.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1c

NOTE: Clarify any question that the students may have to secure barrier.

REMOVE VGT-13

SHOW VGT-14, CONTINUITY OF CARE



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1d

The last part of the model we will look at is the continuity of care. The safety net underneath the suicidal path within the model represents the continuity of care required and obliged by the Army to provide those individuals at risk for suicide. It starts with awareness of the impact and magnitude of suicide within the Army. It continues with training, education, and ensuring constant vigilance of those who might be at risk for suicide. As the risks increases, so does the level of required care, including referrals to professional gatekeepers and if appropriate, in-patient care until assurance of problem resolution. Required for the most intensive care will be for those who actually commit a suicide act, ranging from medical care and psychiatric therapy (for non-fatal suicide acts) to bereavement counseling for surviving family members and personal counseling for unit members for completed suicides.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1d

NOTE: Clarify any question that the students may have to the continuity of care.

REMOVE VGT-14

NOTE: Summarize and clarify any question the students may have with the barriers of the Army Suicide Prevention Model.

D. ENABLING LEARNING OBJECTIVE

ACTION:	Identify local helping services available to soldiers.
CONDITIONS:	As a squad leader, in a classroom or unit environment, given a squad, and student handouts.
STANDARDS:	Identified local helping services available to soldiers by: • reviewing installation gatekeepers, • reviewing soldiers and leaders checklist, IAW the Army Suicide Prevention - A Guide for Installations and Units (Draft).

1. Learning Step / Activity 1. Installation Gatekeepers and checklists

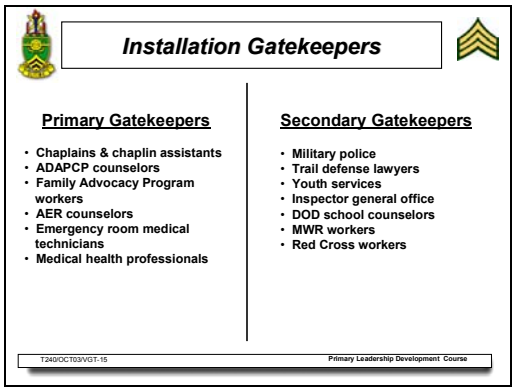
Method of Instruction: Conference / Discussion
Technique of Delivery; Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 15 mins
Media: VGT-15 thru VGT-18

NOTE: Ask students to turn to para 5-3c and generate a brief discussion on the installation gatekeepers.

All Army leaders will receive training on the current Army policy toward suicide prevention, how to refer their subordinates to the appropriate helping agency, and how to create an atmosphere within their commands of encouraging help-seeking behavior. Civilian supervisors will also receive training that focuses on referral techniques/protocols for their employees.

Now let's review the local helping personnel, the installation gatekeepers:

SHOW VGT-15, INSTALLATION GATEKEEPERS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 5-3c

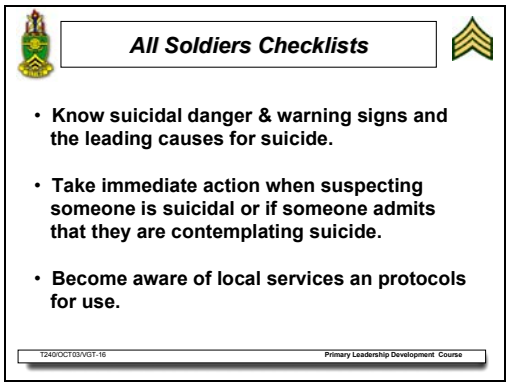
Installation gatekeepers are individuals who in the performance of their assigned duties and responsibilities provide specific counseling to soldiers and civilians in need; they receive training in recognizing and helping individuals with suicide-related symptoms or issues. Identify gatekeepers as either a "primary gatekeeper" (those whose primary duties involve primarily assisting those in need and more susceptible to suicide ideation) or "secondary gatekeepers" (those who might have a secondary opportunity to come in contact with a person at risk).

NOTE: Summarize installation gatekeepers and clarify any questions the students may have.

As squad leaders you should also make up a checklist that will assist you in making the correct steps in the suicide prevention program.

NOTE: Ask the students to turn to Appendix B and lead a brief discussion on the soldiers and first line supervisor checklist.

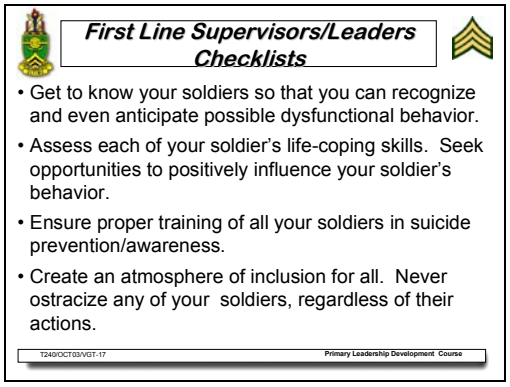
SHOW VGT-16, ALL SOLDIERS CHECKLISTS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), Appendix B.

REMOVE VGT-16

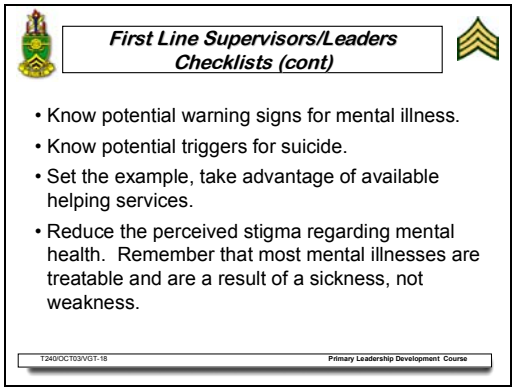
SHOW VGT-17, FIRST LINE SUPERVISORS/LEADERS CHECKLISTS



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), Appendix B.

REMOVE VGT-17

SHOW VGT-18, FIRST LINE SUPERVIORS/LEADERS CHECKLIST (cont)



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), Appendix B.

As a squad leader you must be vigilant in recognizing and helping your soldiers who may be stressing or suicidal. Suicide can affect anyone, regardless of rank, age, sex, MOS, race or ethnicity. Although there are no select demographics that will accurately predict suicidal behavior with certainty, it is important to examine the Army suicide population in an attempt to infer potential suicide risk indicators for use in prevention efforts (an updated briefing of the previous calendar year as well as the current monthly Army suicide statistics and demographics are found at the Army G-1 HRPD website). Vigilance and awareness must extend to everyone in the Army. It is

also important not to use demographics to “profile” or “discriminate” at-risk populations.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), Annex G.

SECTION IV. SUMMARY

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: VGT-19

Check on Learning

QUESTION: What should be the goal of the Army Suicide Prevention Program?

ANSWER: To minimize suicidal behavior among our soldiers, retirees, civilians, and family members.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 1-2

QUESTION: Leaders who spot or suspect one of their soldiers or civilians is suffering from a mental health disorder should take what action to correct the problem?

ANSWER: Notify their chain of command.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-2

QUESTION: As a leader you must be able to recognize suicide triggers and danger signs. Which of the following elements is a danger sign that suicidal behavior is imminent?

ANSWER: Giving away personal possessions.

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 2-7

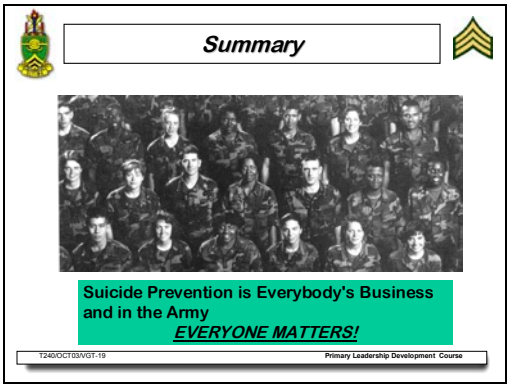
QUESTION: What kind of continuity of care does the Army represent to maintain an individual readiness posture parallel to the suicide path?

ANSWER: Safety net

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft), para 3-1

Review / Summarize Lesson

SHOW VGT-19, SUMMARY



Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft).

Suicide prevention is the commander's program and the responsibility of every soldier at all levels. The success of the Army Suicide Prevention Program (ASPP) rests upon proactive, caring and courageous soldiers, leaders, family members, and Army civilians who recognize the imminent danger and then take immediate action to save a life.

Suicide prevention is everybody's business and in the Army, EVERYONE MATTERS!

Ref: Army Suicide Prevention - A Guide for Installations and Units (Draft)

REMOVE VGT-19

NOTE: Summarize the lesson and clarify any misunderstanding the students may have about the Army Suicide Prevention Program.

SECTION V. STUDENT EVALUATION

Testing Requirements

NOTE: Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan.

You will take a written examination. The examination will contain questions from this lesson. You must correctly answer 70 percent or more of the questions on the examination to receive a GO. Failure to achieve a GO on the examination will result in a retest. Failure of the retest could result in your dismissal from the course.

Feedback Requirements

NOTE: Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

Inform the students where their examination will take place, as posted on the training schedule, and when they will receive feedback on the test. Include any retest information.

Enabling Learning Objective A

Learning Step 1

VGT-1, Suicide Prevention

Suicide Prevention

In The Army's Suicide Prevention Program

Everyone Matters!

VGT-2, Goal of the Army Suicide Prevention Program

Goal of the Army Suicide Prevention Program

TO MINIMIZE SUICIDAL BEHAVIOR AMONG OUR SOLDIERS, RETIREES, CIVILIANS AND FAMILY MEMBERS.

Chief of Staff of the Army Statement

The CSA stated that suicide is a "serious problem" and directed a complete review of the ASPP. He called for a campaign that would refine the ASPP by making use of the best-known available science, and would also invigorate suicide prevention awareness and vigilance.

Chief of Staff of the Army Statement (cont)

The CSA further stated that for the program to be effective, the frame work must:

- **involve all commanders**
- **be proactive**
- **intensify preventive efforts against suicidal behavior**
- **invest in our junior leaders**
- **improve current training and education**

Enabling Learning Objective B

Learning Step 1

VGT-5, Possible Mental Disorders

Possible Mental Disorders

- **Impulsive or aggressive-violent traits**
- **Previous other self-injurious acts**
- **Excessive anger, agitation, or constricted preoccupations**
- **Excessive alcohol use**
- **Heavy smoking**
- **Evidence of any sleep or eating disorder**

T240/OCT03/VGT-5 **Primary Leadership Development Course**

Suicide Potential "Triggers"

- **Loss of a loved one to illness or death**
- **Loss of a significant, intimate relation**
- **Loss of a child custody**
- **Loss of friendship or social status**
- **Loss of job or rank**

Suicide Potential "Triggers" (cont)

- **Loss of freedom**
- **Loss of financial security**
- **Loss of self esteem**
- **Loss of hope or feeling helpless**
- **Loss or change in lifestyle**

Suicide Immediate Danger Signs

- **Talking or hinting about suicide**
- **Formulating a plan to include a means to kill oneself**
- **Having a desire to die**
- **Obsession with death including listening to sad music or poetry or artwork**
- **Finalizing personal affairs**
- **Giving away personal possessions**

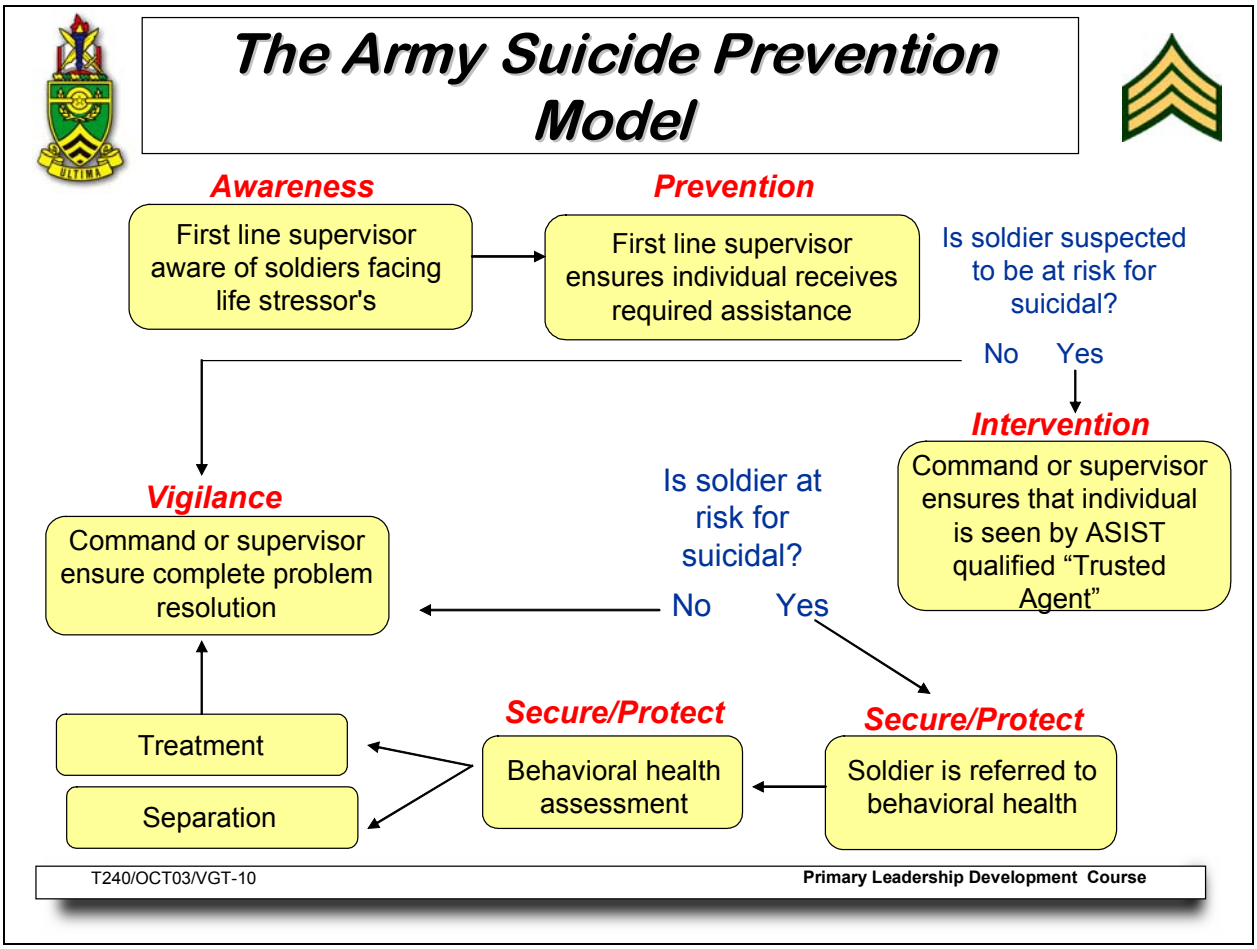
Suicide Warning Signs

- **Obvious drop in duty performance**
- **Unkempt personal appearance**
- **Feeling of hopelessness or helplessness**
- **Family history of suicide**
- **Previous suicide attempts**
- **Drug or alcohol abuse**
- **Social withdrawal**
- **Loss of interest in sexual activity**
- **Reckless behavior, self-mutilation**
- **Physical heath complaints, changes/loss of appetite**
- **Complaints of significant sleep difficulties**

Enabling Learning Objective C

Learning Step 1

VGT-10, The Army Suicide Prevention Model



Prevention Barrier

PREVENTION

The "main effort" is to minimize suicide behavior.

Intervention Barrier

Intervene

The Intervention barrier prevents any life crisis or mental disorder to lead to thoughts of suicide.

Secure Barrier

Secure

The last possible opportunity to prevent an act of suicide.

Continuity of Care

Continuity of Care is the safety net underneath the suicide model that represent what the Army is required and obligated to provide those individuals at risk for suicide.

Enabling Learning Objective D

Learning Step 1

VGT-15, Installation Gatekeepers

Installation Gatekeepers

Primary Gatekeepers

- Chaplains & chaplin assistants
- ADAPCP counselors
- Family Advocacy Program workers
- AER counselors
- Emergency room medical technicians
- Medical health professionals

Secondary Gatekeepers

- Military police
- Trail defense lawyers
- Youth services
- Inspector general office
- DOD school counselors
- MWR workers
- Red Cross workers

T240/OCT03/VGT-15 Primary Leadership Development Course

All Soldiers Checklists

- **Know suicidal danger & warning signs and the leading causes for suicide.**
- **Take immediate action when suspecting someone is suicidal or if someone admits that they are contemplating suicide.**
- **Become aware of local services an protocols for use.**

First Line Supervisors/Leaders Checklists

- Get to know your soldiers so that you can recognize and even anticipate possible dysfunctional behavior.
- Assess each of your soldier's life-coping skills. Seek opportunities to positively influence your soldier's behavior.
- Ensure proper training of all your soldiers in suicide prevention/awareness.
- Create an atmosphere of inclusion for all. Never ostracize any of your soldiers, regardless of their actions.

First Line Supervisors/Leaders Checklists (cont)

- Know potential warning signs for mental illness.
- Know potential triggers for suicide.
- Set the example, take advantage of available helping services.
- Reduce the perceived stigma regarding mental health. Remember that most mental illnesses are treatable and are a result of a sickness, not weakness.

Summary

Suicide Prevention is Everybody's Business and in the Army

EVERYONE MATTERS!

This page intentionally left blank

Appendix B Test(s) and Test Solution(s) (N/A)

Appendix C Practical Exercises and Solutions (N/A)

This Appendix Contains

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1
SH-2, Draft Army Suicide Prevention - A Guide for Installations and Units (Draft)	SH-2-1 thru SH-2-50
SH-3, Draft Suicide Prevention Leader Training Slides	SH-3-1 thru SH-3-16

Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of two hours of group discussion.

Overview Suicide prevention must be the business of every leader, supervisor, soldier, and civilian employee in the United States Army.

Learning Objective Terminal Learning Objective (TLO).

Action:	Describe the Army's Suicide Prevention Program.
Conditions:	As a squad leader, in a classroom or unit environment, and given Army Suicide Prevention - A Guide for Installations and Units (Draft), and Suicide Prevention Leader Training.
Standards:	Described the Army's Suicide Prevention Program by-- • Defining the Army's suicide prevention program goal. • Identifying suicidal behaviors. • Understanding the Army suicide prevention model. • Identifying local services available to soldiers. IAW Army Suicide Prevention - A Guide for Installations and Units (Draft), and Suicide Prevention Leader Training.

ELO A Define the Army's Suicide Prevention Program Goal.
ELO B Identify Suicidal Behaviors.
ELO C Understand the Army Suicide Prevention Model.
ELO D Identify Local Services Available to Soldiers.

Assignment The student assignments for this lesson are:

- Read SH-2, Army Suicide Prevention - A Guide for Installations and Units (Draft), Chapters 1 thru 3 and 5.
- Read SH-3, Suicide Prevention Leader Training (Draft).

Additional Subject Area Resources None

Bring to Class

- Pen or pencil and writing paper.
- All reference material received for this lesson

Student Handout 2

ARMY SUICIDE PREVENTION – A GUIDE FOR INSTALLATIONS AND UNITS

This Student Handout Contains

This student handout contains 49 pages of material from the following publication:

Army Suicide Prevention – A Guide for Installations and Units (Draft), July 2002

Cover Sheet	page SH-2-2
Deputy Chief of Staff, G-1, Statement	page SH-2-3
Summary	page SH-2-4
Contents	page SH-2-5
Chapters 1 thru 7	pages SH-2-6 thru SH-2-31
Annex A, Strategies	pages SH-2-32 thru SH-2-37
Annex B, Checklists	pages SH-2-38 and SH-2-39
Annex C, Suicide Risk	pages SH-2-40 and SH-2-41
Annex D, Definitions	pages SH-2-42 thru SH-2-45
Annex E, Abbreviations/Acronyms	pages SH-2-46 and SH-2-47
Annex F, References	page SH-2-48
Annex G, Useful Web Sites	page SH-2-49

Disclaimer: The training developer downloaded the material from the U.S. Army Publishing Directorate Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

RECOVERABLE PUBLICATION

YOU RECEIVED THIS DOCUMENT IN A DAMAGE-FREE CONDITION. DAMAGE IN ANY WAY, TO INCLUDE HIGHLIGHTING, PENCIL MARKS, OR MISSING PAGES WILL SUBJECT YOU TO PECUNIARY LIABILITY (STATEMENT OF CHARGES, CASH COLLECTION, ETC.) TO RECOVER PRINTING COST.

Headquarters, Department of the Army, G-1

Army Suicide Prevention – A Guide for Installations and Units

Draft

July 2002 Version

Army Suicide Prevention – A Guide for Installations and Units

1. The Army's strength rests with our soldiers, civilians, retirees, and their families, each being a vital member of our institution. Suicide is detrimental to the readiness of the Army and is a personal tragedy for all those affected. Therefore, suicide has no place in our professional force!

2. We all realize the inherent stress and burdens placed upon our soldiers, civilians and their family members. What defines us as an institution is our compassion and commitment to promoting a healthy lifestyle by emphasizing physical, spiritual and mental fitness. This contributes to the overall well-being of the force and readiness of the Army. Therefore, we must remain cognizant of the potential suicidal triggers and warning signs so that we can raise awareness and increase vigilance for recognizing those whom might be at risk for suicidal behaviors. Furthermore, we must create a command climate of acceptance and support that encourages help-seeking behavior as a sign of individual strength and maturity.

3. Suicide prevention, like all leadership challenges, is a commander's program and every leader's responsibility at all levels. However, the success of the Army Suicide Prevention Program (ASPP) rests upon proactive, caring and courageous soldiers, family members and Army civilians who recognize the imminent danger and then take immediate action to save a life. We need your help to minimize the risk of suicide within the Army to stop this tragic and unnecessary loss of human life. Suicide prevention is everybody's business and in The Army, EVERYONE MATTERS!

JOHN M. LE MOYNE
Lieutenant General, GS
Deputy Chief of Staff, G-1

Headquarters
Department of the Army
Washington, DC
November 2002

Army Suicide Prevention – A Guide for Installations and Units

Summary. This booklet contains the framework to build and organize suicide prevention programs within Army Installations. It represents a refinement of the Army Suicide Prevention Program (ASPP) as currently prescribed in AR 600-63 and DA PAM 600-24. It explains new initiatives and offers recommendations, strategies and objectives for reducing the risk of suicidal behavior within the Army.

Suggested Improvements. The proponent agency of this program is Headquarters, Department of the Army, G-1. Users are encouraged to send comments and suggested improvements directly to DAPE-HRP, 300 Army Pentagon, Room 2B659, Washington D.C. 20310-0300, ATTN: The Army Suicide Prevention Program Manager.

CONTENTS
(Listed by paragraph number)

Chapter 1
Introduction

Magnitude of the Problem, 1-1
ASPP Goal, 1-2
CSA Statement, 1-3

Chapter 2
Understanding Suicide Behavior

A Model for Explaining Dysfunctional Behavior, 2-1
Mental Disorders, 2-2
Developmental History, 2-3
Influence of the Current Environment, 2-4
Suicide Triggers, 2-5
Reasons for Dying, 2-6
Suicide Danger Signs, 2-7
Suicide Warning Signs, 2-8
Resources for Living, 2-9

Chapter 3
The Army Suicide Prevention Model

General Overview, 3-1
Prevention, 3-1a
Intervention, 3-1b
Secure, 3-1c
Continuity of Care, 3-1d

Chapter 4
Prevention

Identifying High Risk Individuals, 4.1
Caring and Proactive Leaders, 4.2
Encouraging Help Seeking Behavior, 4.3
Teach Positive Life Coping Skills, 4.4

Chapter 5
Intervention

Suicide Awareness and Vigilance, 5-1
Applied Suicide Intervention Skills Training (ASIST), 5-2
Five Tiered Training Strategy, 5-3
All Soldiers Training, 5-3a
Leaders Training, 5-3b
Gatekeepers Training, 5-3c
Unit Ministry Team Training, 5-3d
Combat Stress Control Teams, 5-3e
Mental Health Care Professional Training, 5-3f
USACHPPM Suicide Prevention Resource Manual, 5-4
Installation Suicide Prevention Committee, 5-5
ASPP Accountability, 5-6

Chapter 6
Secure

Safeguard, 6.1
Behavioral Health Treatment, 6-2
Behavioral Health Assessment, 6-3

Chapter 7
Post-intervention Measures

Installation Suicide Response Team, 7-1
Army Suicide Reporting Procedures, 7-2
Army Completed

Annex A - Strategy Matrixes
Annex B - Checklists
Annex C - Suicide Risk Comparison of Age Cohorts
Annex D – Definitions
Annex E – Abbreviations/ Acronyms
Annex F – References
Annex G – Useful Web Sites

Chapter One – Introduction

"A leader is a dealer in hope"
Napoleon

1-1. Magnitude of the Problem

During the 1990's, the Army lost an equivalent of an entire battalion task force to suicides (803 soldiers). This ranks as the third leading cause of death for soldiers, exceeded only by accidents and illnesses. Even more startling is that during this same period, five-times as many soldiers killed themselves than were killed by hostile fire.

To appreciate the magnitude and impact of suicide, consider that most suicides have a direct, lasting impact on between 6-7 intimate family members (spouse, parents, children), and numerous others including relatives, unit members, friends, neighbors, and others in the local community.

1-2. Army Suicide Prevention Program Goal

The goal of any Army Suicide Prevention Program is to minimize suicidal behavior among our soldiers, retirees, civilians and family members. Suicide behavior includes self-inflicted fatalities, non-fatal self-injurious events and suicidal ideation.

Suicide prevention is an evolving science. It is our responsibility to utilize the best-known available methodology in caring for our soldiers, retirees, civilians and family members. The success of our efforts will be measured by the confidence and conscience of knowing that:

- ✓ we have created and fostered an environment where all soldiers, civilians and family members at risk for suicide will quickly be identified and receive successful intervention and appropriate care;
- ✓ where help-seeking behavior is encouraged and accepted as a sign of individual strength, courage and maturity, and;
- ✓ where positive life-coping skills are taught and reinforced by all leaders.

1-3. CSA Statement

In 2000, following a 27% increase in the number of reported suicides within the Army during 1997-1999, the CSA, General Eric K. Shinseki, stated that suicide is a "serious problem" and directed a complete review of the ASPP. He called for a campaign that would refine the ASPP by making use of the best-known available science, and would also invigorate suicide prevention awareness and vigilance. He further stated that for the program to be effective, the framework must:

- involve all commanders
- be proactive
  - intensify preventive efforts against suicidal behavior
- invest in our junior leaders
  - improve current training and education

Chapter Two - Understanding Suicide Behavior

"We cannot possess what we do not understand."
Goethe

2-1. A Model for Explaining Dysfunctional Behavior

Human behavior is an action influenced by one's genetic composition, shaped by developmental history, and usually as a reaction to a particular stimulus within the environment. The model provided in Figure 1 graphically illustrates how one's genetics, background and current environment can contribute to dysfunctional behavior. Some individuals are born predisposed towards psychiatric illness and/or substance abuse, which makes them more susceptible or vulnerable for certain types of dysfunctional behavior, including suicide. Childhood experiences filled with abuse, trauma, and/or neglect during the crucial, formative stages of personal development will also have a detrimental affect on the development of positive life-coping skills. A "non-supportive environment," whether at work or home, filled with stress, resentment, ridicule, or ostracized from family or friends, might also be conducive to dysfunctional behavior.

A Model for Understanding
Dysfunctional Health-Risk Behaviors

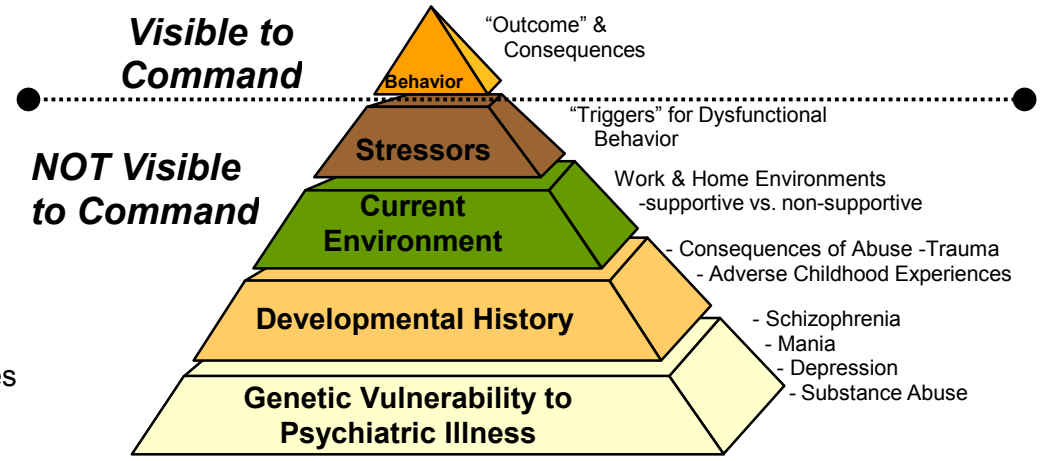


FIGURE 1

Leaders should realize that soldiers and civilians enter into the Army with varying levels of life-coping skills and resiliency as determined by their genetic disposition, developmental and environmental influences. Leaders should not assume that all soldiers and civilians entering the Army can adequately handle the inherent stress of military service or even life in general, especially if they are already predisposed to psychiatric disorder. Although it is unrealistic for a leader to understand the genetic composition of the soldier and civilian, or know their complete developmental history, leaders can make proper assessments of their life-coping skills by observation and personal dialogue focused on learning and understanding the soldier's background. This chapter is designed to explain the causes of suicide and inform leaders of common danger and warning signs so they can properly anticipate suicidal, or other dysfunctional behavior, and make preemptive referrals to professional mental health care providers before a crisis ensues.

2-2. Mental Disorders.

Mental disorders "are health conditions that are characterized by alterations in thinking, mood, or behavior, which are associated with distress and/or impaired functioning and spawn a host of human problems that may include disability, pain, or death."[1] Mental

disorders occur throughout society affecting all population demographics including age, gender, ethnic groups, educational background and even socioeconomic groups. In the United States, approximately twenty-two percent of those between the ages of 18 – 64 years had a diagnosis of some form of mental disorder.[2] Mental illness is more common than cancer, diabetes, or heart disease, filling almost 21 percent of all hospital beds at any given time. In fact, the number one reason for hospitalizations nationwide is a biological psychiatric condition. Mental disorders also affect our youth. At least one in five children and adolescents between 9 – 17 years has a diagnosable mental disorder in a given year, about five percent of which are extremely impaired.

Mental disorders vary in severity and disabling effects. However, current treatments are highly effective and offer a diverse array of settings. The treatment success rate for schizophrenia is sixty percent, sixty-five percent for major depression, and eighty percent for bipolar disorder. This compares to between 41-52 percent success rate for the treatment of heart disease.

In 1996, the Assistant Secretary of Defense for Health Affairs commissioned Dr. David Schaffer, a leading authority on suicide prevention, to analyze the Department of Defense Suicide Prevention Programs. He completed his study that included an in-depth analysis of each service suicide prevention program, in 1997. A key point stressed by Dr. Schaffer was that most suicides are associated with a diagnosable psychiatric disorder such as depression and/or substance abuse. These disorders generally manifest themselves in some form of clinical depression, a disorder that can increase suicidal risk (often in combination with substance abuse), anxiety, impulsiveness, rage, hopelessness and/or desperation.

Although it is the responsibility of the professional mental health care provider to diagnose a mental disorder, there are certain behaviors that indicate an underlying mental disorder. Leaders should be cognizant of these warning behaviors that might indicate the presence of a mental disorder which place soldiers at risk for suicide or other dysfunctional behavior. They are:

- impulsiveness or aggressive-violent traits,
- previous other self-injurious acts,
- excessive anger, agitation, or constricted preoccupations,
- excessive alcohol use,
- heavy smoking, and
- evidence of any sleep or eating disorder.

Leaders who spot such behavior and/or suspect that one of their soldiers or civilians is suffering from a mental disorder should notify their chain of command so that the commander can decide upon making a referral to a mental health care provider. It is important to note that persons with mental disorders are often unable to appreciate the seriousness of their problem, as the disorder frequently distorts their judgement. Therefore, they must rely upon others for assistance.

2-3. Developmental History

Developmentally, the home/family environment where reared will influence one's behavior. Unfortunately, many of today's youth are growing up in "non-traditional" homes, without two consistent parenting figures. This can be detrimental to the

development of “well-adjusted” individuals capable of handling life’s general stresses and potentially lead to dysfunctional behavior, including suicide. According to Tondo and Baldessarini,[3] the suicide rate for America’s youth is higher in single-parent families, especially when the father is not present. This is particularly alarming considering that over 40% of the youth today are from “non-traditional” homes,[4] which could explain why the suicide rate among America’s youth is rising.

Childhood abuse or neglect might also adversely affect the positive development of life-coping skills and lead to dysfunctional behavior. A research article released in 1998 by the American Journal of Preventive Medicine commonly referred to as “The ACE Study,” (adverse childhood experiences) stated that there was a “strong graded relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death.”[5] These adverse childhood experiences include psychological, physical or sexual abuse, and exposure to dysfunctional behaviors including living with a substance abuser, someone with a mental illness, domestic abuse, or criminal activity. As exposures to ACEs increased, so did the risk of several health-related problems including smoking, obesity, depression, use of illegal drugs, promiscuity, and even suicide. According to Legree[6] in a report published in 1997, the consequences of these adverse childhood experiences could cause friction within the Army as those recruits that have been abused can:

- have a significant distrust of authority figures,
- have an over-reliance on self,
- tend to form sexualized relationships prematurely,
- have a increased risk for substance abuse,
- not easily transfer loyalty to institutions such as the Army, and
- have a “me-oriented” attitude, often seeking short-term payoffs.

Other studies indicate that adverse childhood experiences may be prevalent within our recruits. A U.S. Naval Behavioral Health Research Study released in 1995 reported approximately 40% of all Naval recruits self-report having been raised in homes where they were physically and/or sexually abused and/or neglected.[7] In the same study, 45.5 percent of all female recruits reported having a sexual assault before entering the service.

Although today’s youth tend to be more technologically astute than previous generations, generally they have less developed relationship skills, especially in anger management. With the prevalence of personal computers and multiple televisions within the household, many of American’s youth are spending less time personally interacting with others, which can lead to deficiencies in the development of healthy social skills. As with physical and mental skills and abilities, recruits enter the Army with varying levels of social and life coping skills. A prudent leader will recognize this fact, attempt to assess those assigned to his or her care, and determine who might require remedial assistance and mentoring.

2-4. Influence of the Current Environment

The Army’s opportunity for intervention and influencing behavior begins when the soldier or civilian reports to initial entry training (IET) (or equivalent) and lasts beyond their term of service. This intervention can either have a positive or negative influence on their behavior. Small unit leaders should strive to positively impact constructive life coping skills and create an environment filled with support, respect and acceptance,

where individuals feel they are an integral part of a team. This supportive environment can potentially block certain types of dysfunctional behavior by providing soldiers and civilians a support system and adequately equipping them to properly handle life's stressors. The results or reward of a supportive environment (represented in the top left "output" box in Figure 2) will be a better-adjusted individual. Conversely, if the small unit leader creates an environment where negative life coping skills are reinforced or positive life coping skills are ignored, such an environment could then possibly contribute to dysfunctional behavior (represented in the top right "output" box in Figure 2).

Small unit leaders have the most crucial role in establishing and determining the conditions of the soldier and civilian's work environment. These leaders should strive to have a positive influence on them by being a proper role model for them to emulate. For some soldiers and civilians, their role and camaraderie within their unit and the relationship with their first line supervisor might be the only positive, life-sustaining resource available to them in times of adversity. Therefore, everyone should take this responsibility seriously.

Senior leaders are responsible for the development of junior leaders to ensure that they are aware of the importance of being a proper role model and fostering a positive work environment. Commanders and senior Non-commissioned officers and civilian leaders should constantly assess their junior leaders' ability to positively influence behavior. It could be a disastrous mistake to assume that all junior leaders are reinforcing positive life coping skills in the presence of their soldiers and civilians, especially considering that over half of the Army suicides within CY 2001 were in the rank of Sergeant or above (including commissioned officers).

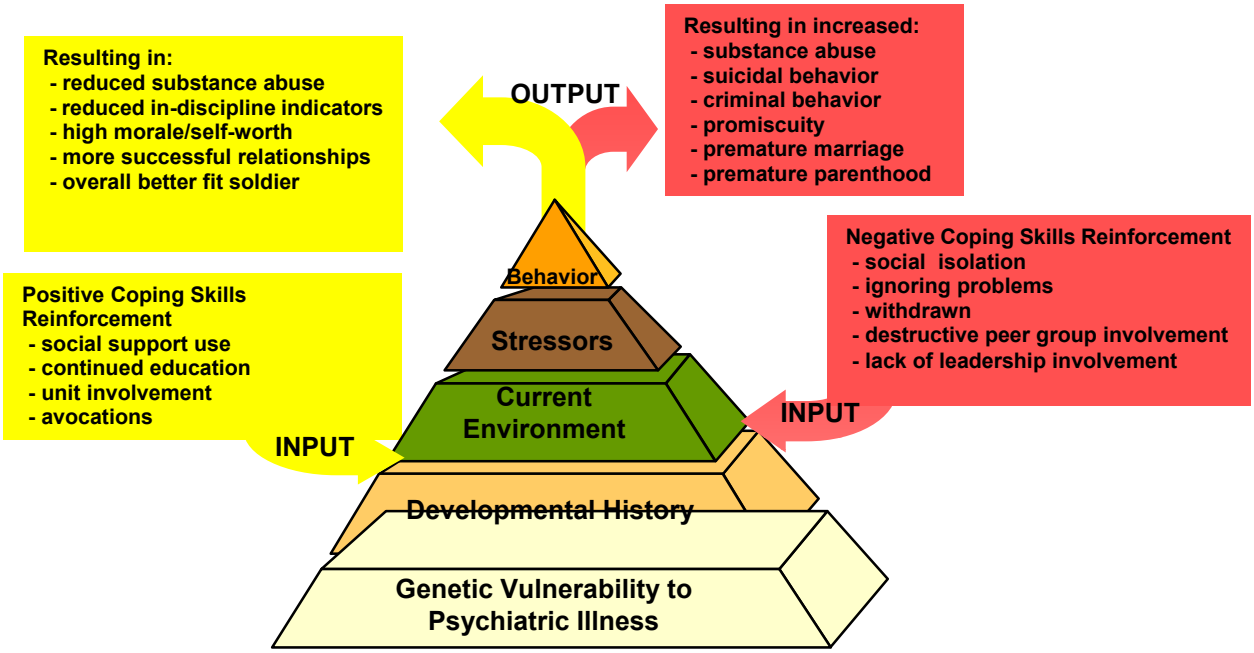


FIGURE 2

Not all suicidal behavior is preventable, but time invested in the positive behavioral development of our soldiers can yield many benefits, especially for younger soldiers.

2-5. Suicide "Triggers"

Although psychiatric illness or substance abuse contributes to a majority of all suicides, the timing of suicide behavior and a significant emotional event, particularly those involving a loss, separation or any change in one's self-esteem and confidence are often linked together.

A review of Army psychological autopsies reveal that approximately seventy-five percent of all soldiers that commit suicide were experiencing "significant problems" within a personal, intimate relationship. In addition, about half had just received or were pending some form of legal action (whether civilian or UCMJ). Approximately forty-two percent were experiencing financial problems and thirty-four percent were known to be suffering from either drug or alcohol abuse problems. Many of the soldiers that completed suicides were experiencing more than one of the problems mentioned above. Leaders must realize that each individual will handle a particular life stressor differently. Some will require assistance, which can range from talking with a friend, to professional counseling. Ignored, or left without any assistance, the stressor can turn into a "life crisis," which could lead to suicide ideation or behavior. Therefore, all leaders should anticipate potential "life crises" and ensure that the individual has the proper resources to handle the adversity. This might include appointing a "life-line" buddy to watch over the individual until the crisis has passed or referral to the unit chaplain or other professional counselors.

Provided below is a list of potential triggers for suicide.

- Loss of a loved one to illness or death.
- Loss of a significant, intimate relationship (divorce, separation, break-up).
- Loss of a child custody battle.
- Loss of friendship or social status (social isolation or ostracism).
- Loss of a job, rank (UCMJ or civilian legal action, separation).
- Loss of freedom (incarceration).
- Loss of financial security (pay loss/reduction, gambling debts, bankruptcy).
- Loss of self-esteem (humiliation, pass over for promotion or schooling).
- Loss of hope or feeling helpless.
- Loss or change in lifestyle (unwanted PCS, major deployment).

Obviously, a common theme for all these potential triggers for suicide is associated with some form of a loss.

2-6. Reasons for Dying

To the "well adjusted" person, suicide is an irrational act. This attitude however might interfere with a person's ability to promptly intervene if they assume that everyone shares their opinion. Some consider suicide a method of ending or escaping from pain or other problems. An understanding of the psychodynamics of suicide is crucial for understanding and potentially predicting suicidal behavior. Dr. Tondo and Baldessarini in an article in Psychiatry Clinical Management,[3] explained suicide psychologically "as an excessive reaction arising from intense preoccupation with humiliation and disappointment that is driven by punitive and aggressive impulses of revenge, spite, or self-sacrifice, wishes to kill and be killed, or yearning for release into a better experience through death."

As previously mentioned, a review of the psychological autopsies revealed that many suicides occurred during or immediately following a problem with an intimate relationship. Some of these suicides could be explained as "death as retaliatory abandonment," a termed coined by Dr. Hendin.[8] In these particular cases, the suicide victim attempts to gain an "illusory control over the situation in which he was rejected." By committing suicide, the victim believes that they will have the final word by committing the final rejection, thus maintaining "an omnipotent mastery through death." An example could be a person who commits suicide following a loss of an intimate relationship where the spouse or significant other initiated the break-up. Here the person attempts to regain control over the situation and dictate the final outcome, which is to reject life.

Another potentially common reason for suicide within the Army is "death as a retroflexed murder" where according to Hendin; the suicide stemmed from anger and was an indirect attempt at revenge against another person. An example could be a soldier returns from an extended deployment and discovers that their spouse is (or was) having an affair. The soldier's feelings turn into a "murderous rage" which leads to suicide. In this example, suicide represents an inability to repress violent behavior, perhaps due to an "overt desire to murder," and allows the "murderous rage" to act out in a violent act against oneself.

Dr. Hendin also explains suicidal reasoning as "death as self-punishment," which he notes is more frequent in males. In these cases, perceived or actual failure causes "self-hatred" which leads to suicide as a form of "self-punishment." Hendin notes that this reaction is more common in men who place extremely "high and rigid" standards for themselves. An example could be a soldier who is pending UCMJ action, or perhaps possible separation from the Army and feels that they have failed and whether through humiliation or embarrassment, feels that they don't deserve to live.

Jobes and Mann[9] examined Suicide Status Forms from various counseling centers and determined that they could categorize suicidal patient's reasons for dying and that these categories vary with responses. They then listed the most frequent categories or reasons for dying which are listed below in descending order beginning with the most frequent.

- Escape – general. General attitudes of giving up or needing a "rest."
- General descriptors of self. References to self such as "I feel awful" or "I'm not worth anything."

- Others/relationships. References to other people such as “I want to stop hurting others” or “retribution.”
- Feeling hopeless. Statements referring to hopelessness such as “Things may never get better” or “I may never reach my goals.”
- Escape-pain. Statements about lessening the pain such as “I want to stop the pain.”
- Feeling alone. Statements that reflect loneliness such as “I don’t want to feel lonely anymore.”

2-7. Suicide Danger Signs
The list below contains immediate danger signs that suicide behavior is imminent.

- Talking or hinting about suicide.
- Formulating a plan to include acquiring the means to kill oneself.
- Having a desire to die.
- Obsession with death including listening to sad music or poetry or artwork.
- Themes of death in letters and notes.
- Finalizing personal affairs.
- Giving away personal possessions.

Anyone who recognizes these warning signs must take immediate action. The first step should be to talk to the individual, allow them to express their feelings and asked them outright and bluntly, “are you considering suicide?” or “are you thinking about killing yourself?” If their response is “yes” then immediate life-saving steps are required, such as ensuring the safety of the individual, notifying the chain of command or chaplain, calling for emergency services or escorting the individual to a mental health officer.

The most important point to consider is to never ignore any of these suicide danger signs or leave the suicidal person alone. After all, you might be the last person with the opportunity to intervene.

2-8. Suicide Warning Signs
The list below contains some warning signs that might precede suicide behavior. Although not as serious as the danger signs previously listed, they should not be disregarded and also require immediate personal intervention. The list includes:

- Obvious drop in duty performance.
- Unkempt personal appearance.
- Feelings of hopelessness or helplessness.
- Family history of suicide.
- Made previous suicide attempts.
- Drug or alcohol abuse.
- Social withdrawal.
- Loss of interest in hobbies.
- Loss of interest in sexual activity.
- Reckless behavior, self-mutilation.
- Physical health complaints, changes/loss of appetite.
- Complaints of significant sleep difficulties.

These signs signal that the person might be experiencing a life-crisis and requires assistance. It is the responsibility of all leaders and the duty of all soldiers and civilians to watch for these danger and warning signs and realize that they might not be capable of helping themselves and therefore, require immediate action.

In addition to the warning signs provided above, there are certain feelings or emotions that might precede suicide. The following is a list of possible feelings or attitudes that the individual at risk for suicide might be feeling. This does not suggest that everyone who has these feelings are at risk, but these feelings persist, then it could signal that the person is having difficulty coping with what ever has initiated the feelings. The most common feelings are:

- hopelessness or helplessness
- angry or vindictive
- guilty or shameful
- desperation
- loneliness
- sad or depressed

Leaders, soldiers and civilians must be confident that the "life crisis" has resolved itself before assuming that the person is no longer suicidal based solely upon the person's behavior. Some individuals might appear to be over their crisis, when in fact, they only appear "normal" because of the relief they feel in having decided on how they are going to resolve their problem through suicide.

2-9. Resources for Living.

Certainly, it is important to understand what causes suicide behavior, but it is also vitally important to understand those resources that offer protection against dysfunctional, self-injurious behavior. Tondo and Baldessarini provide the following list of protective factors against suicide.

- Intact social supports, including marriage.
- Active religious affiliation or faith.
- Presence of dependent young children.
- Ongoing supportive relationship with a caregiver.
- Absence of depression or substance abuse.
- Living close to medical and mental health resources.
- Awareness that suicide is a product of illness, not weakness.
- Proven problem-solving and coping skills.

Just as important as recognizing reasons for suicidal behaviors are reasons for living. Jobes and Mann categorized the top reasons for living in the list provided below (in descending order beginning with the most prominent).

- Family. Any mention of a family member's love.
- Future. Statements that express hope for the future.
- Specific plans and goals. Future oriented plans.
- Enjoyable things. Activities or objects that are enjoyed.
- Friends. Any mention of friends.

- Self. Statements about qualities of self such as “ I don’t want to let myself down.”
- Responsibilities to others. Any mention of obligations owed to others or the thought of protecting others.
- Religion. Statements referring to religion.

Leaders should understand what serves as a source of strength or life-sustaining resource for the soldier and civilian and use them when counseling them through a particular crisis. Also, by understanding a soldier or civilian’s life resources will alert the leadership to potential problems when one of those resources have been removed or is in danger.

Chapter Three – The Army Suicide Prevention Model

"Knowing is not enough, we must apply.
Willing is not enough, we must do."
Goethe

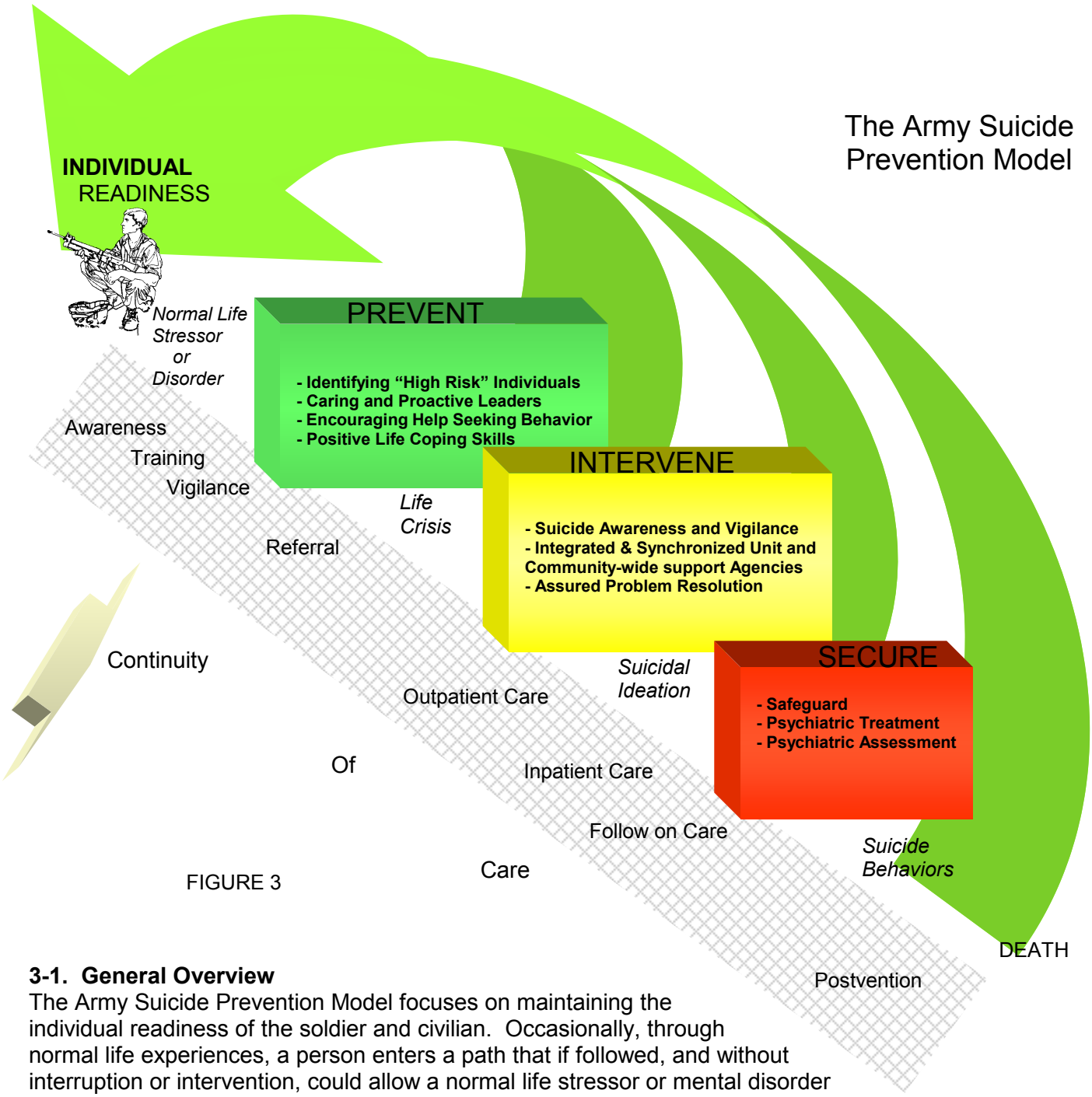


FIGURE 3

3-1. General Overview

The Army Suicide Prevention Model focuses on maintaining the individual readiness of the soldier and civilian. Occasionally, through normal life experiences, a person enters a path that if followed, and without interruption or intervention, could allow a normal life stressor or mental disorder to become a life crisis, which might lead to thoughts of suicide and eventually suicidal behavior and possible injury or death. Parallel to the suicidal path is a "safety net" that represents the Army's continuity of care. As the

actual suicidal risk escalates, so does our response by becoming more directive and involving more professional health care providers. To prevent a person from progressing down the suicidal path are three "barriers" which are: prevention, intervention, and secure. These barriers target specific programs and initiatives for varying degrees of risk to block any further progress along the suicidal path. Provided below is a quick outline of each of these "barriers" with more detailed strategies following in Chapters Four, Five, and Six.

3-1a. Prevent. Prevention is our "main effort" to minimize suicidal behavior. It focuses on preventing normal life "stressors" from turning into a life crisis. "Prevention Programming" focuses on equipping the soldier and civilian with the coping skills to handle overwhelming life circumstances that can sometimes begin a dangerous journey down a path to possible suicidal behaviors. This barrier allows the individual to operate "in the green" or at a high state of individual readiness. Prevention includes establishing early screening to establish baseline mental health and offer specific remedial programs before the occurrence of possible dysfunctional behavior. Prevention is absolutely dependent on caring and proactive small unit leaders who make the effort to know their subordinates, including estimating their ability to handle stress, and offer a positive, cohesive environment which nurtures and develops positive life coping skills.

3-1b. Intervene. Intervention is the barrier that prevents any life crisis or mental disorder to lead to thoughts of suicide. It recognizes that there are times when one should seek professional assistance/counseling to handle a particular crisis or treat a mental illness. In this area, early involvement is a crucial factor in suicide risk reduction. Intervention includes alteration of the conditions, which produced the current crisis, treatment of any underlying psychiatric disorder(s) that contributed to suicidal thoughts, and follow-up care to assure problem resolution. Commanders play an integral part during this phase as it is their responsibility to ensure that the particular problem or crisis has been resolved before assuming that the threat has passed. This barrier is color-coded "yellow" because it warrants caution and the individual readiness is not to an optimal level since the individual might be distracted by the life crisis.

3-1c. Secure. The third and final barrier in this model is perhaps the last possible opportunity to prevent an act of suicide. This occurs when an individual is at risk for suicidal behavior. When someone becomes suicidal, then someone must secure and protect them before they can harm themselves and/or others. This is "tertiary prevention" and requires immediate life-saving action. The focus within this area will be to educate everyone to recognize those suicidal danger and warning signs and if recognized, take immediate, life-saving action. This barrier is color-coded "red" due to the severity of the situation. This individual is considering or has already decided to commit suicide and is in imminent danger of harming him or herself, or possibly others as well.

3-1d. Continuity of Care. The safety net underneath the suicidal path within the model represents the continuity of care that the Army is required and obliged to provide those individuals at risk for suicide. It starts with awareness of the impact and magnitude of suicide within the Army. It continues with training, education, and ensuring constant vigilance of those who might be at risk for suicide. As the risks increases, so does the level of required care, including referrals to professional gatekeepers and if appropriate, in-patient care until assurance of problem resolution. The most intensive care will be required to those who actually commit a suicide act, ranging from medical care and

psychiatric therapy (for non-fatal suicide acts) to bereavement counseling for surviving family members and personal counseling for unit members for completed suicides.

The Army Suicide Prevention Model is to assist those who have any ambivalence towards dying. All leaders should understand that no suicide prevention plan will completely eliminate suicidal behavior. Despite our best efforts, there will always be some, whether through their genetic predisposition and/or their developmental history, who will be more susceptible to suicidal behavior. Some will travel down the path to suicide without ever displaying any recognizable danger signs. Some travel down the path very quickly and don't want any intervention. Suicide is an individual decision and therefore, ultimately, the responsibility of the individual. However, that doesn't relinquish our obligation, but only serves as a challenge to be vigilant and aware so that we can identify all who are at risk and apply the appropriate level of intervention.

Chapter Four – Prevention

A commander should have a profound understanding of human nature…
Sir Basil Liddell Hart

PREVENT

- **Identifying "High Risk" Soldiers**
  - Pre-screening for Adverse Childhood Experiences
- **Caring and Proactive Leaders**
  - Understanding Potential "Triggers"
  - Sense of Unit Belonging/Cohesion
- **Encouraging Help-Seeking Behavior**
- **Teach Positive Life Coping Skills**
  - Total Physical, Spiritual, and Mental Health
  - Avoidance of Stress-inducing Behaviors

TABLE 1

4-1. Identifying "High Risk" Individuals
This phase begins with pre-screening upon arrival for initial entry training (IET) within the Army to identify those individuals considered high risk for suicidal behavior. Today's recruits enter the Army with varying resiliency levels to handle stress, anger and intimate personal relationships. As previously discussed, some are predisposed to dysfunctional health risk behaviors. Recognizing that the baseline mental health of our inductees may be less than optimum requires proactive identification and targeted education/intervention and ongoing mentoring by unit leadership. This intervention will assist the first term soldier and civilian in avoiding some of the normal pitfalls that can lead to mental health dysfunction and subsequent early attrition. These pitfalls include:

- Premature marriage
- Premature parenthood
- Excessive debt
- Substance abuse
- Dysfunctional behaviors resulting in UCMJ
- Authority difficulties
- Inability to form positive supportive relationships
- Excessive time demands relative to time management skills
- Family of origin problems-acute and unresolved from past
- Dissonance between expectations and reality

4-2. Caring and Proactive Leaders
Although our first line of defense will be our soldiers and civilians," truly our most valuable player in suicide prevention will be the small unit leader or first line supervisor. These leaders must recognize that the most important resources entrusted to their care are their soldiers and civilians. Suicide prevention requires active and concerned leaders who express a sincere interest in the overall welfare of their subordinates. This includes taking the time to learn as much as they can about the personal dynamics of their subordinates. They must be able to recognize serious personal problems before they manifest themselves as dangerous dysfunctional behavior(s). Leaders should be trained to recognize the basic symptoms of a serious mood disorders such as depression and substance abuse. The intent is not to train leaders to make a clinical diagnosis, but rather to alert the chain of command of a particular concern, so that the commander can make an informed, "pre-emptive" decision to make a referral to a professional MHO. In addition, all leaders should be familiar with those stressors and

potential suicidal "triggers" and know when one of their soldiers or civilians are experiencing a crisis and might be at risk.

All leaders should strive to create and foster an environment of acceptance and cohesion for all members of their unit or section. No one should ostracize or make any member of a unit feel unwelcomed, regardless of their action. Everyone should feel that they are a valuable part of the team and that others depend on them. This is especially true when someone is facing a problem or potential life crisis, whether personal or professional.

4-3. Encouraging Help Seeking Behavior

All leaders should encourage help seeking behavior within their subordinates, without fear of repercussions. Many senior soldiers and civilians fail to seek professional assistance from a MHO for fear of reprisals, embarrassment, guilt, or shame. According to a 1998 DoD Survey of Health Related Behaviors Among Military Personnel, only 24 percent of soldiers surveyed believed that receiving mental health counseling would not hurt their career. It is therefore easy to understand that although 17.8 percent of soldiers feel that they have needed mental health counseling in the past, only 5.6 percent actually sought and received help.

DoD Survey of Health Related Behavior

	ARMY	DOD	
Perceived Need for Mental Health Counseling		**17.8%**	**17.6%**
Receipt of Mental Health counseling **from military mental health professional**	**5.6%**	**5.2%**	
Perceived Damage to Career			
Definitely Will	17.7%	20.7%	
May or May Not	**58.1%**	**59.8%**	
Definitely Will Not	**24.2%**	**19.5%**	

Clearly, for our suicide prevention program to be effective, we have to reduce the perceived stigma of seeking mental health counseling. We can reduce the stigma by first ensuring against inadvertent discrimination of soldiers and civilians who receive mental health counseling, and secondly by supporting confidentiality between the individual and MHO. Both of these objectives will require comprehensive and command-supported efforts to review policies and procedures.

Confidentiality in the face of suicide risk must strike a balance between safeguarding the individual and/or the public and protecting their privacy rights. In order to enhance the ASPP and overall effectiveness of the mental health care services, commanders will respect and honor prescribed patient-doctor's privacy rights as prescribed in DoD Regulations, and applicable statutes, including Privacy Act, 5 U.S.C. 552a. Therefore, confidential mental health care communications shall, except as provided by DoD Regulations, not be disclosed. Exceptions to this general rule include, but are not limited to:

- when the patient has given their consent, or
- when the mental health professional believes that a patient's mental or emotional condition makes the patient a danger to himself or herself, or to any other person, or

- when the mental disorder indicates a degree of impairment otherwise suggesting unsuitability for retention in military service, or
- in the case of an adjustment disorder of a military member during the member's initial 180 days of military service, or
- military necessity to ensure the safety and security of military personnel, family members, or government property.

Therefore, mental health professionals will inform the responsible unit commander when one of their soldiers or civilians is at an elevated risk for suicide, or at risk for other dangerous behavior, or if the commander referred the individual. Otherwise, the individual's privacy takes priority and the Army will respect it.

4-4. Teach Positive Life Coping Skills Development

Prevention also includes developing the soldier and civilian's mental resiliency, emphasizing avoiding premature stress-inducing decisions (i.e., as getting married too young, or starting a family). It is important for all leaders to recognize that mental wellness is a component of the triad of overall individual fitness (physical and spiritual being the other two).

Positive life coping skills training may include alcohol abuse avoidance, financial management, stress and anger reduction, conflict management, and parenting and family life skills such as the Building Strong and Ready Families (BSRF) seminar originated within the 25th Infantry Division. BSRF offers married couples an opportunity to strengthen their relationship through various instruction and exercises. The seminar was targeted for those newly married couples who were interested in improving their communication skills and generally being better equipped to handle the stresses of married life, including child rearing. Programs such as BSRF are a great example of how to develop life-coping skills and will indirectly have a positive impact on reducing suicidal behavior.

Chapter Five – Intervention

The only thing that can save a human life is a human relationship!

5-1. Suicide Awareness and Vigilance

INTERVENE

- **Suicide Awareness and Vigilance**
  - Targeted Training for Specific Audiences
- **Integrated & Synchronized Unit and Community-wide support Agencies**
  - Accountability for Prevention Programs
- **Assured Problem Resolution**

This phase deals with individuals who are dealing with a particular crisis, that left untreated, can lead to suicidal behavior. Suicide intervention can involve anyone. The strategy of the ASPP is to train everyone in basic suicide awareness so they can spot someone who is displaying suicidal warning or danger signals and know what actions to take to protect the person at risk. Leaders will ensure that all of their subordinates have received this training at some point in their career. Conduct refresher training as required.

5-2. Applied Suicide Intervention Skills Training (ASIST)

Raising awareness and vigilance will invariably increase the number of "false-positives" or those who identified as at risk for suicide, but are not actually considering suicide. These "false-positives" could overwhelm community mental health resulting in increased workloads and longer referral times for those who are actually at risk. To reduce the number of "false-positives" and to assist the commanders in making an informed determination of suicidal risk, will require professional training (such as Living Works Applied Suicide Intervention Training – ASIST). This training must be easily accessible to the unit commanders, (a minimum of one person trained in every battalion). Such training is not just limited to chaplains. During Desert Shield and Storm, V Corps units sponsored many ASIST Workshops for unit leadership and civilians in preparation for an expected increase in the number of potential 'at-risk' individuals.

Founded as a partnership in 1983, Living Works Education is a public service corporation dedicated to providing suicide intervention training for front-line caregivers of all disciplines and occupational groups. The Living Works objective is to register qualified trainers in local communities, who in turn can prepare front-line gatekeepers with the confidence and competence to apply immediate "first-aid" suicide intervention in times of individual and family crises. The ASIST workshops include instruction on how to estimate suicidal risk and apply an intervention model that reduces the immediate risk of suicide. The purpose of ASIST is not to produce personnel qualified to diagnose mental disorders, or to treat suicidal individuals, but rather provide the immediate first aid response for those individuals until such time they can be referred to a trained, professional mental health care provider.

ASIST "T-2" is a two-day workshop that commanders should offer to all military and civilian gatekeepers. Each T-2 course is limited to approximately thirty individuals and requires two "T4T" level trainers.

ASIST T4T's. Each major installation should have at least two ASIST T4T qualified trainers that could conduct the ASIST T-2 workshops on their installations or within their geographical region. One of these two should be the installation Family Life Chaplain. Family Life Chaplains work closely with allied helping professionals within the installation and local community. In addition, part of their responsibilities include training Chaplains and their assistants assigned to Unit Ministry Teams. Family Life Chaplains have also received additional training that would enhance the ASIST training and would therefore be excellent candidates to sponsor and conduct the training. To become an ASIST "T4T" qualified trainer requires attendance of the five day trainers course taught by Living Works Education.

For every Family Life Chaplain in an installation, there should be an allied helping professional or mental health professional who will be the ASIST T4T training partner. This could be someone within the Family Advocacy Program, another Chaplain assigned to the post or installation, the Community Health Nurse, or any professional civilian or military counselor. Consider longevity, demeanor, ability (time) to conduct the workshops when deciding who should become an ASIST T4T.

ASIST Workshops. Each installation T4T team must conduct at least three ASIST workshops in the first year following the T4T qualification training. Priority candidates for this training are the primary and secondary installation gatekeepers as specified in para 6.3c.

For more information on Living Works, visit their web-site (address provided in Annex H).

5-3. Five Tiered Training Strategy

This training will be specialized, multi-tiered five specific groups, each with different responsibilities within ASPP. Figure 4 reflects these.

Army Suicide Awareness Training Model

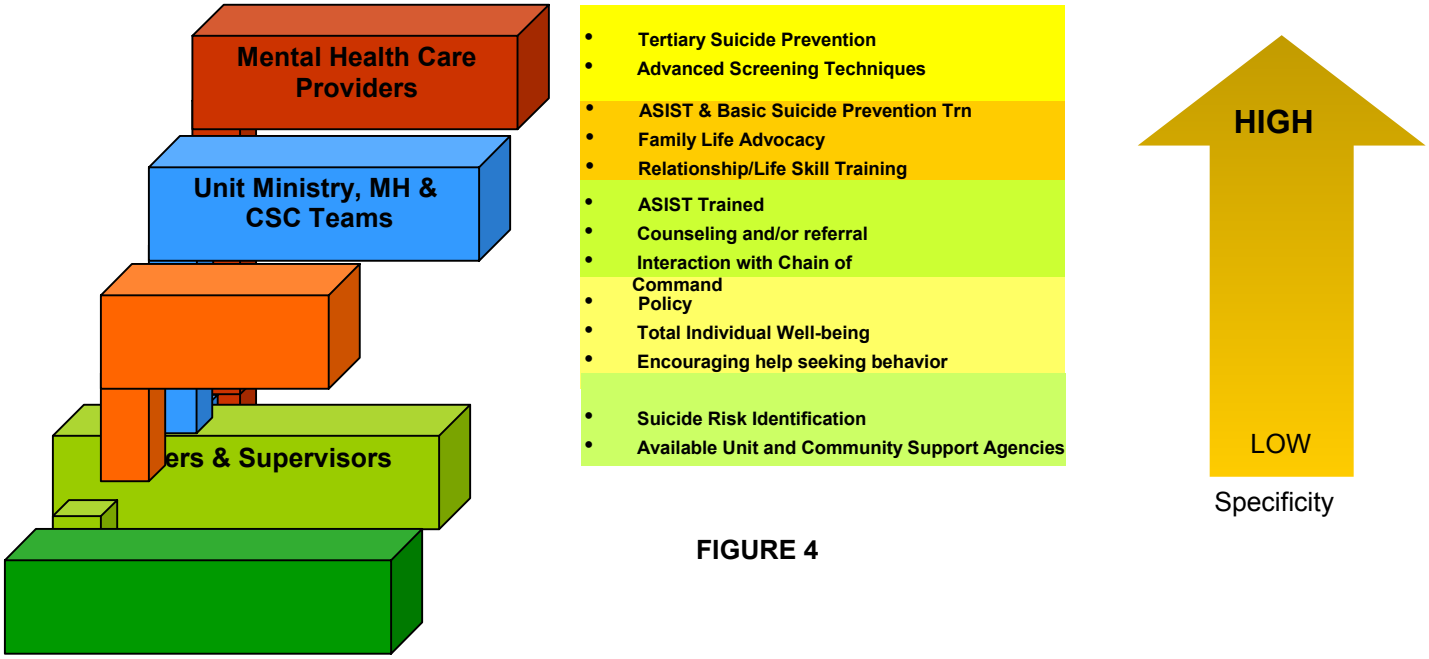


FIGURE 4

5-3a. Soldiers & Army Employees. All Army soldiers and civilian employees shall receive basic training stressing the importance of mental health, stress reduction, and life coping skills. They will also learn how to recognize suicide behavior and mental disorders that place individuals at elevated risk of suicide and how to react when they spot these issues. Most suicidal individuals give definite warnings of their suicidal intentions, but others are either unaware of the significance of these warnings or do not know how to respond to them. All soldiers and civilians should receive training on how to properly identify these warning signs and know what action to take.

They must realize they may be the only and/or last hope to save a fellow soldier or civilian. Many psychological autopsies reveal that those who committed suicide had told one of more of their fellow peers, but they did not believe the individual was serious or were embarrassed or afraid to intervene. Army units should turn to either their Unit Ministry Team, brigade or division mental health, combat stress control unit on post, or local mental health section for qualified instructors. Civilian supervisors should arrange training directly through the Installation Chaplains Office or local mental health department.

Unit commanders should also encourage suicide prevention training to all spouses through the Family Readiness Groups or other unit or installation spouse education/familiarization education classes/programs.

5-3b. Leadership Training. All Army leaders shall receive training on the current Army policy toward suicide prevention, how to refer their subordinates to the appropriate helping agency, and how to create an atmosphere within their commands of encouraging help-seeking behavior. Civilian supervisors will also receive training that focuses on referral techniques/protocols for their employees.

5-3c. Installation Gatekeepers. Installation gatekeepers, those individuals who in the performance of their assigned duties and responsibilities provide specific counseling to soldiers and civilians in need, will receive training in recognizing and helping individuals with suicide-related symptoms or issues. Gatekeepers can be identified as either a "primary gatekeeper" (those whose primary duties involve primarily assisting those in need and more susceptible to suicide ideation) and "secondary gatekeepers" (those whose might have a secondary opportunity to come in contact with a person at risk). The table below describes examples of each.

Primary Gatekeepers	Secondary Gatekeepers
Chaplains & Chaplain Assistants	Military Police
ADAPCP Counselors	Trial Defense Lawyers
Family Advocacy Program workers	Youth Services
AER Counselors	Inspector General Office
Emergency room medical technicians	DoD School Counselors
Medical Health Professionals	MWR Workers
Red Cross Workers	

5-3d. Unit Ministry Teams. Chaplains and their assistants belonging to each Unit Ministry Team will assume the lead in providing suicide prevention and awareness training for their respective units. All chaplains and assistants will therefore receive basic suicide prevention/awareness and ASIST T-2 Training as determined by the Chief of Chaplains. Utilizing the USACHPPM's resource manual as a guide, each UMT should develop lesson

plans to provide the suicide prevention/awareness training to all ranks at the platoon and company level, and NCOPD and OPDs at the battalion level.

5-3e. Combat Stress Control Teams. The 85th Medical Detachment, Combat Stress Control, following the example first set by the Medical Activity and 1st Cavalry Division in the 1980s, conducts a "Combat Stress Fitness Course" once or twice a month at Fort Hood for soldiers referred directly from their units or by way of the mental health clinics. For five duty days, the students participate in classes and practical exercises on stress management, anger management and other life skills, taught by the CSC unit mental health officers and enlisted specialists in a military, not patient care, atmosphere. Finishing the course earns a certificate of completion which has positive value for advancement. Graduates of the course who entered as candidates for chapter separation from the Army have returned months later as soldiers of the quarter, to inspire the new class. The 98th CSC Detachment at Fort Lewis periodically conducts a similar program, both in garrison and in the field during field exercises. At Fort Bragg, the 528th CSC Detachment provides "train the trainer" courses to prepare unit leaders to give their own classes to the troops, including stress control and suicide prevention.

5-3f. Mental Health Professionals. Mental Health Care Professionals will develop advanced screening techniques that the command can use to identify soldiers and civilians in need of assistance with coping skills development and or who are potentially high risk for suicides. Mental health professionals, working with the Unit Ministry Teams, are required to actively educate leaders in suicide prevention and awareness.

5-4. USACHPPM Suicide Prevention Resource Manual
US Army Center for Health Promotion and Preventive Medicine has developed an excellent Suicide Resource Training Manual complete with lesson plans and slides. All units should use this resource manual in the preparation and execution of their suicide prevention training. An electronic version of this manual is available on the USACHPPM's web site (address provided in Annex H).

5-5. Integration and Synchronization – The Installation Suicide Prevention Committee
To integrate the available "pool of resources" within an installation and local community and synchronize these resources throughout the individual unit suicide prevention programs require a central controlling agency. This responsibility should fall to some form of a standing committee on each major installation and separate activity. This committee's main responsibilities are to establish, plan, implement, and manage the installation ASPP. It will maximize and focus available resources and ensure that the local unit ASPPs are "nested" within the overall installation plan.

In the Surgeon General's Call to Action, the Surgeon General places much emphasis on increasing awareness and enhancing intervention services at the community level. It is important that whatever the form of the local program, responsibilities must be clearly established and the installation commander closely monitors and supervises the progress of their specific suicide prevention program.

The intent of establishing an Installation Suicide Prevention Committee is to focus installation and community assets towards assisting in suicide awareness and prevention. Involvement of local agencies and unit training will have a synergistic affect, which will result in minimizing suicidal behavior. Although the exact composition will depend on the specific local requirements, the garrison or installation commander

should chair the standing committee and might involve representatives from the agencies listed below. Members could serve as either permanent or "ad hoc" members as the situation dictates.

Chair: Installation or Garrison Commander

Possible Members:

-ACS	-Trial Defense/SJA	-Family Advocacy	-PAO
-Provost Marshal	-CID	-Dept of Psychiatry	-AAFES
-Post Chaplain	-MWR	-Dept of Psychology	-ADAPCP
-CPAC	-Youth Services	-DOD Schools	-IG
-Safety	-Dental	-Red Cross	
-Dept of Social Services			

In addition to determining the exact membership of the committee, it is the installation commander's prerogative to determine how often the committee will meet or if the committee's responsibilities are included within another previously established installation committee, such as an installation risk/injury reduction committee. The actual name, composition and activities of the committee are at the discretion of the installation commander. If the commander determines that the size, location, or composition of the installation wouldn't sufficiently support such a committee, then that particular commander will coordinate with another installation commander for inclusion within their suicide prevention committee.

The ISPC should form subcommittees that meet on a more frequent basis. Subcommittees might include those responsible for monitoring training and preparing reports to HQDA, another might focus on postvention suicide reaction and would be responsible for preparing or reviewing the suicidal surveillance reports, and dispatching a critical event response team that would facilitate the healing process, provide assistance in arranging unit memorials, and prevent possible contagion or "copy cat" suicides. Another subcommittee might focus on the education/training of suicide prevention at the installation level.

Another important function of the ISPC will be to link installation agencies through a communications network that can share crucial information on potential suicidal soldiers. At a minimum, this will include the Family Life Chaplain, family advocacy, SJA, CID, ADACP, Red Cross, Financial Counselors and social services. These links should feed into the local Army mental health council for consolidation and if warranted, notifying the individual's appropriate commander of the potential suicidal risk.

For detailed recommendations on establishing an installation suicide prevention standing committee, refer to Chapter 2, DA PAM 600-24, Suicide Prevention and Psychological Autopsy, 30 September 1988. Army divisions and other large activities with adequate support interested in considering establishing their own suicide prevention program (previously referred to Suicide Risk Management Teams) should refer to Chapter 3, DA PAM 600-24. This is available on-line at the Army Administrative Electronic Publication website at www.usapa.army.mil/gils/

5-6. Commander's Involvement/Responsibilities

Unit commanders are accountable for their suicide prevention programs. This includes ensuring the proper training of unit personnel and ensuring that all leaders are actively engaged in the personal welfare of their soldiers.

Once a soldier or civilian experiencing a "life crisis," is identified, it is the responsibility of the commander to ensure that that individual not only receives the proper crisis intervention, but that the problem has been fully resolved. The referral doesn't end the commander's intervention responsibility, but only initiates the involvement which continues until the commander is completely assured that the particular crisis or disorder has been resolved. This includes properly safeguarding the person at risk while they are receiving the required, professional assistance from mental health care providers.

BH professionals that are treating individuals at risk for suicide should keep the commander informed, as well as making recommendations for safeguarding the individual during the treatment, (if the treatment is outpatient care). Clear and expedient communications flow is crucial between those who are treating the individual at risk and the individual's commander to ensure disclosure of all appropriate information to enable an accurate diagnosis.

6-1. Safeguard

This is perhaps our last opportunity to successfully prevent the individual from taking his or her life. At this point, the individual is now considering suicide and is in immediate danger for self-injurious behavior. If any soldier or civilian ever hears another person mention that they are considering suicide, or make any statements of an intention to die, such as, "I wish I were dead," or are displaying any of the suicide danger signs as contained in paragraph 2-7 and warning signs as contained in paragraph 2-8, then it is their responsibility and moral obligation to act.

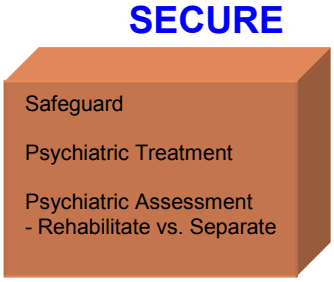


TABLE 4

If you suspect someone might be at risk for suicidal behavior, then the first step is to ensure the safety of the individual at risk. Talk to the individual, and listen. Ask the individual if they are considering suicide or "killing themselves." If their response is "yes," then ask if they have thought about how they would carry it out (a plan) and then determine if they have the resources to carry out the plan. This will enable you to determine the actual risk and will be useful information for the professional mental health care provider. If you believe the individual is at risk for suicide, then you must contact someone within the chain of command, a chaplain or UMT member, or the local medical treatment facility. Depending on the severity of the situation, you may have to contact the local emergency services including the military police. The main point to remember is to remain calm and don't panic and never leave the person at risk unattended.

Safeguarding for soldiers might include assigning a 24-hour watch over the individual until transfer of the individual to a local medical treatment facility or the risk has subsided. Also, if the commander feels that the individual is at risk for self-injurious behavior or is a potential danger to others, restrict the soldier to the unit area. If a soldier is determined to be at risk for suicide, and is placed on suicide watch, then other members within the unit must also be aware so that they unknowingly will not provide a method or means for the soldier to commit suicide. Commanders must also ensure that the soldier at risk does not have access to any means to commit suicide, which should include denying access to firearms, poisons, over-the-counter medications, alcohol, high places, rope, etc.

Commanders must realize that actions taken to protect a person or the public from potential harm, while shielding the at-risk person from public humiliation takes precedence over any other possible concern.

6-2. Behavioral Health Treatment

Ultimately, a professional mental health care provider at the local medical treatment facility will receive referrals for all individuals at risk for suicide. The professional mental health care provider will then determine or verify the actual risk and decide upon outpatient treatment or hospitalization.

6-3. Behavioral Health Assessment

Once admittance of a person to a hospital, it is the responsibility of the MHO to make an assessment the severity of the problem and a diagnosis on possible treatment and

prognosis for recovery. The MHO will make every effort to successfully rehabilitate the person and return them to duty. When appropriate, commanders should consider reassigning the person to another unit if in the opinion of the attending MHO and unit leadership that it would be beneficial to the person. Retain the person if successfully be rehabilitated. Mental health professionals will recommend initiation of separation procedures (medical or administrative) to the chain of command, if they assess unsuccessful rehabilitation of the person. In the case of separations, the mental health professional should recommend procedures to the commander for safeguarding the individual during the discharge, including whether or not the person is released back to his unit considering the impact on unit morale, readiness and possible contagion effects. The command will then make all efforts to prepare the person for the transition, with the priority on the individual's welfare.

Chapter Seven – Post-intervention Measures

It would be unrealistic to expect that any suicide prevention program will ever completely eliminate suicidal behavior. Despite our best efforts, there will always be some suicidal behavior that is unpreventable. In the event of an completed suicide, our efforts must focus on postvention strategies that expedite the healing process of surviving family members and members within the unit. Commanders must be aware of the potential danger of suicide contagion or "copy cat" behavior by other members within the command or, depending on the publicity of the suicide, within the installation.

7-1. Installation Suicide Response Team

The immediate time-period following a completed suicide can be very perilous as some members within the unit may feel some responsibility for the suicide and the possibility of suicide contagion also looms. Yet few company and even battalion level commanders have ever experienced a completed suicide within their units. To offset the risk, each major installation will establish policies and programs that offer immediate assistance to the commander following a completed suicide. This will include identifying members of an Installation Suicide Response Team (ISRT) that can offer assistance to the unit commander and or surviving members of a completed suicide. The membership of the ISRT will be determined by each ISPC, but at a minimum should include chaplains that can augment the UMT and help advise the commander regarding memorial services, and MHOs that can offer counseling and recommend procedures to expedite the recovery within the command. The goal of the ISRT isn't to replace the unit leadership or determine fault, but rather to advise and offer assistance.

7-2. Completed Suicide Reporting Procedures

IAW AR 600-63 & DA PAM 600-24, a psychological autopsy was required for all confirmed or suspected suicides, or those cases in which the manner of death is equivocal, or deaths resulting in accidents that are suspicious or when requested by the local USACIDC office. The purpose of the psychological autopsy was two-fold, to:

- provide the victim's commander with information about the death
- enable the Army to develop future prevention programs based upon lessons learned

However, the use of psychological autopsies has grown beyond its original function and now serves to promote the epidemiological study of suicide in the Army population. This is against the current DoD guidance which limits psychological autopsies for just those equivocal deaths or when ordered by either the medical examiner or the local USACIDC office. Therefore, a new multi-tiered reporting system will serve to provide the epidemiological study of suicide demographics, plus address any concerns or issues that the commander(s) might have concerning a confirmed or suspected suicide or determine the manner of the death. The three tiers of reporting are:

- Tier One - Army Completed Suicide Surveillance Report (CSSR)
- Tier Two - Army Suicide Analysis Report (SAR)
- Tier Three - Army Psychological Autopsy (PA)

7.2.a. Department of the Army Completed Suicide Report (CSR):

The purpose of the CSSR will be to capture the epidemiological data regarding the Army

suicide population. Beginning 1 January 2003, the CSR will be mandatory following every confirmed or suspected suicide of active duty soldiers, including ARNG and USAR soldier serving on active duty at the time of death.

The purpose of the CSR is not to assign blame. While understanding that determining any lessons learned is valuable, commanders should not take a “fault finding approach” to investigating suicides or suicide attempts, which would only serve to prolong the recovery period for the unit.

The CSR will be prepared by a MH professional, assigned by the local MEDCOM commander.

7.2.b. Army Suicide Analysis Report (SAR):
Completed by a trained MHO appointed by the local installation Director of Health Services (usually the hospital commander) after receiving a formal request from either from CID or victim's brigade commander or higher echelon commander at that installation. The SAR allows the commander an opportunity to present any concerns or questions regarding the death of a soldier or civilian to a professionally trained MHO. Any request for information would have a 30 day suspense for completion. This report would include the CSSR and additionally provide:

1) a narrative analysis which details both the developmental/historical events that predisposed the victim to suicide as well as a narrative description of the more current preceding antecedent precipitants.
2) a "lessons-learned" & recommendations section.
3) address any specific questions posed by the chain of command.

7.2.c. Army Psychological Autopsy (PA):
Completed only by a fellowship-trained forensic psychiatrist/psychologist. Initiated only at the request of the involved medical examiner doing the physical autopsy or CID investigator to resolve cases where there is an equivocal cause of death.

Annex A – Strategy Matrixes

STRATEGY 1: Develop Positive Life Coping Skills

OBJECTIVE	KEY ACTIONS
Instruct the "Understanding Dysfunctional Behavior Model" (as provided in Chapter 3) to officers and NCO's assigned to leadership positions	**1. Local MHO's develop a standardized briefing for ISPC's approval** **2. ISPC's publishes briefing on local web site or announces POC for scheduling the briefing** **3. Local commanders coordinate with local MHOs and conduct the training**
Encourage and support various life coping skills programs	**1. Identify pre-existing and emerging programs that focus on developing individual life coping skills such as: stress reduction, relationship building, financial management, preventing alcohol abuse** **2. Ensure that these programs are publicized and promoted throughout the installation and made available to soldiers (both active, reserves and retired), family members and Army civilian employees** **3. Evaluate successfulness of such programs. Share recommendations for improvements or information concerning new programs to HQDA for dissemination to other MACOMs & installations**
Build life resiliencies for those who respond to, counsel or treat suicidal patients or those exposed to suicides	**Develop services and programs, including training and education tailored for those who respond to suicides (emergency medical technicians, MP's, firefighters) or counsel those at risk (chaplains, counselors) that addresses their own exposure and potential risk. Include training/instruction on the unique requirements of providing initial assistance/counseling to surviving family members.**

STRATEGY 2: Encouraging Help Seeking Behavior

OBJECTIVE	KEY ACTIONS
Eliminate any policy which inadvertently discriminates, punishes or discourages a soldier from receiving mental health care	**All staffs and commands will conduct a complete policy review to identify any repercussions taken against soldiers for receiving mental health care. Validate those policies that should remain, eliminate those that are unwarranted.**
Educate commanders concerning confidentiality requirements as determined in objective 2.1 above	**Incorporate policy instruction in all PCC courses, including local installation company commander and 1SG Courses pre-command courses**
Ensure prompt and easy accessibility of Army and other helping agencies	**1. Educate soldiers, family members, Army civilian employees and retirees residing in the local community of the location and protocols for scheduling and receiving assistance from the available varying helping services (i.e., AER, American Red Cross, MH care)** **2. Incorporate education within installation in-processing procedures**
Foster a command climate that emphasizes help seeking behavior	**Periodic messages, announcements or statements from the senior leadership that encourages and recognizes help seeking behavior as a sign of individual strength and maturity**
Reduce the perceived stigma associated with receiving MH care	**Sponsor local programs that change perception toward mental care services. Programs should include adopting national programs, public service announcements and developing localized, targeted programs that involve varying media sources**
Increase visibility and accessibility to local civilian health and/or social services outreach program that incorporate mental health services and suicide prevention	**1. Coordinate with local civilian health and social services to identify which services and programs are available to soldiers and family members at risk for suicide.** **2. Develop promotional campaigns to publicize such services to soldiers, Army civilian employees and family members**

STRATEGY 3: Raising Awareness and Vigilance Towards Suicide Prevention

OBJECTIVE	KEY ACTIONS
Render assistance to those known or suspected of experiencing a major life crisis	**1. Develop systems that recognize when soldiers and civilian employees are experiencing a potential life crisis in an effort to anticipate potential dysfunctional behavior.** **2. Develop programs that can provide varying levels of supervision to soldiers recognized as experiencing a potential life crisis. Such programs can vary between assigning a "battle buddy" to help the individual through the crisis, to suicide watch if the individual has actual suicide ideations**
Educate all soldiers and Army civilian employees on basic suicide prevention, which at a minimum, will cover recognizing warning and danger signs and what action to take if they suspect someone is at risk for suicide	**1. Utilizing the USACHPPM Resource Manual on Suicide Prevention as a guide, educate all soldiers and Army civilian employees on basic suicide prevention. Although not mandatory, offer such training to family members.** **2. Ensure newly assigned soldiers and Army civilian employees have previously received the basic suicide prevention education. If not, provide training within 60 days upon reporting date.** **3. Incorporate basic suicide prevention in all IET training and OBC courses**
Instruct all NCO's, officers and Army civilian supervisors on recognizing symptoms of mental health disorder and potential "triggers" or causes of dysfunctional behavior	**1. Instruction will focus on educating leadership on the common symptoms of depression, substance abuse or other forms of mental disorder** **2. Incorporate formal education on 3.2 at all basic leadership courses (OBS, PLDC)**
Maintain Vigilance toward suicide prevention and awareness	**As required, conduct periodic "refresher" training or discussions on suicide prevention in preparation for an upcoming extended deployment or redeployment, or another highly stressful event, or as designated by commanders. Maintain vigilance by either formal training including presentations, small unit discussions or even through varying local and Army wide news services and media formats. ISPC can also promote various national programs such as National Suicide Prevention Week (normally in May) and National Mental Health Month (normally in October).**
Educate married soldiers and Army civilian employees on how to appropriately store and secure lethal means of self-harm	**Conduct public information campaign(s) or instruction designed to educate Army parents how to appropriately store and secure lethal means of self-harm including medications, poisons and firearms**
Educate all Army health care providers in suicide risk surveillance	**Educate all health care providers to identify potential suicidal danger and warning signs and what actions to take if they suspect one of their patients to be at risk**
Educate installation gatekeepers on recognizing behavioral patterns that place individuals at risk for suicide and equip them with effective intervention skills to effectively reduce the immediate risk	**Train and maintain at least 90% of all "primary gatekeepers" (as defined in para 6-3c) in ASIST (or similar professional training).** **Train and maintain at least 50% of all "secondary gatekeepers" (as defined in para 6-3c) in ASIST (or similar professional training)**
Educate all UMT and Family Life Chaplains suicide awareness and prevention	**Provide formal basic and advanced suicide prevention training for all UMT members. Training will include recognizing potential danger and warning signs, suicidal risk estimation, confidentiality requirements, how to reduce the immediate risk of suicide and how to conduct various suicide prevention training at the unit level**

Educate soldiers, Army civilian employees and spouses on the safe storage of privately owned firearms	**1. Determine which soldiers within a command has a privately owned firearm.** **2. Ensure those soldiers and Army civilian employees and their spouses that own personal firearms understand the importance of responsible firearm storage in preventing suicide and accidental homicide.** **3. Ensure soldiers seeking permission to purchase a firearm are not at risk for suicidal behavior or other dangerous behavior.** **4. Encourage those soldiers who own personal firearms stored off-post and are determined to be at risk for suicidal behavior or a danger to someone else, to store their weapon in the unit arms room or with a close friend until the crises has been resolved and the risk of suicide has been eliminated.**
Incorporate screening in medical treatment facilities	**Incorporate screening for depression, substance abuse and suicide risk as a minimum standard of care for assessment in primary care settings for all MEDCOM supported healthcare programs – as part of the clinical practice guidelines initiative being implemented in the AMEDD**

STRATEGY 4: Synchronizing, Integrating and Managing the Suicide Prevention Program

OBJECTIVE	KEY ACTIONS
Synchronize and integrate local community and installation suicide prevention programs	**1. Each ISPC will develop its own charter, which addresses formal and "ad hoc" membership of the committee.** **2. Each ISPC will develop and publish its own suicide prevention program plan. Forward a copy through the respective MACOM HQ to DAPE-HR-PR (ODCSPER)**
Reduce risk of contagion, provide counseling to surviving family members and expedite the unit personnel recovery	**Establish policies and procedures for the implementation of an Installation Suicide Response Team**

STRATEGY 5: Conduct Suicide Surveillance, Analysis and Reporting

OBJECTIVE	KEY ACTIONS
Capture data on the number of non-fatal suicide events such as attempts and gestures	**1. Determine pertinent data fields and develop the actual reporting format and procedures. Ensure format and procedures do not violate Federal, State or DoD regulatory or directives** **2. Implement reporting procedures** **3. Include statistics in monthly suicide surveillance update. Provide information to DCSPER and post information on the Army Suicide Prevention Web Site**
Conduct suicide surveillance in all Army MTF emergency rooms	**Ensure that health care providers that work in Army MTF emergency rooms receive proper training in identifying those individuals whose injuries might have been self-inflicted**
Increase percentage of soldiers keeping follow-up mental health appointments	**Establish procedures and guidelines that ensure soldiers keep their mental health care appointments, especially when considered at risk for suicide**
Identify and share effective suicide prevention programs	**Identify those proven programs and initiatives effective in reducing the risk of suicide and share those programs and initiatives with the various MACOMs. Programs will range from the installation level to MACOMs and also include "best-science methodology" as determined by the Surgeon General or other branches of the service.**
Assess availability of mental health and substance abuse treatment services for youth and DoD Schools	**Assess availability of mental health and substance abuse treatment services for youth to determined the need for school-based clinical services for DoD schools**
Improve reporting of suicidal behavior in news media	**1. All Army news services/media divisions will adopt recommendations/guidelines concerning reporting suicides as provided by the 1989 Health Resources and Services Administration workshop sponsored by the New Jersey Department of Health, or AAS, NIMH, CDC, or other established suicide prevention organization. The design of these recommendations is not to restrict the reporting of suicides, but change the manner in which the suicide is reported. These recommendations will minimize suicide contagion.** **2. Installation PAOs should be familiar with such guidelines and recommend that local news media adopt such guidelines when reporting about suicides within the installation or local community.**

Annex B - Checklists

The following checklists serve as a guide that will assist commanders in developing their own specific suicide prevention program.

All Soldiers.

As the first line of defense and perhaps the most important person in suicide prevention:

- ✓ Know suicidal danger & warning signs and the leading causes for suicides. Remain vigilant!
- ✓ Take immediate action when suspecting someone is suicidal or if someone admits that they are contemplating suicide.
- ✓ Become aware of local helping services and protocols for use.

First Line Supervisors/Leaders.

- ✓ Get to know your soldiers so that you can recognize and even anticipate possible dysfunctional behavior.
- ✓ Assess each of your soldier's life-coping skills. Seek opportunities to positively influence your soldier's behavior.
- ✓ Ensure proper training of all your soldiers in suicide prevention/awareness.
- ✓ Create an atmosphere of inclusion for all. Never ostracize any of your soldiers, regardless of their actions.
- ✓ Know potential triggers for suicide.
- ✓ Know potential warning signs for mental illness.
- ✓ Set the example, take advantage of available helping services.
- ✓ Reduce the perceived stigma regarding mental health. Remember that most mental illnesses are treatable and are a result of a sickness, not weakness.

Commanders

- ✓ Maintain vigilance. Ensure that members of your UMTs have knowledge of possible life crisis or pending UCMJ actions.
- ✓ Offer suicide prevention/awareness training for all spouses.
- ✓ Ensure all newly assigned soldiers are aware of the location and protocols for utilizing installation support agencies.
- ✓ Conduct OPD/NCOPDs for your units that focuses on some aspect of mental illness such as recognizing potential warning signs.
- ✓ Ensure that your UMTs have received formal suicide prevention training currently conducted at the Menninger Clinic and have also undergone the Living Works Applied Suicide Intervention Skills Training (ASIST) Workshop.
- ✓ Promote help-seeking behavior as a sign of strength. Working with the mental health provider, respect solder/counselor confidentiality when the soldier's mental health is not in question and when the soldier is not a threat to himself, not a threat to others, or if they are able to perform their prescribed duties.
- ✓ Develop well-defined procedures for registering and storing privately own weapons. Ensure procedures are in place that deny access to firearms during times of suicidal watch.
- ✓ Ensure any Guard or Reservists attached to your unit for deployment have received proper suicidal prevention training and screening prior to deployment.
- ✓ Ensure there are "family reunion" seminars for both soldiers and family members to assist in the successful integration of the soldier back into his family following an extended deployment.

Unit Ministry Teams (UMTs)

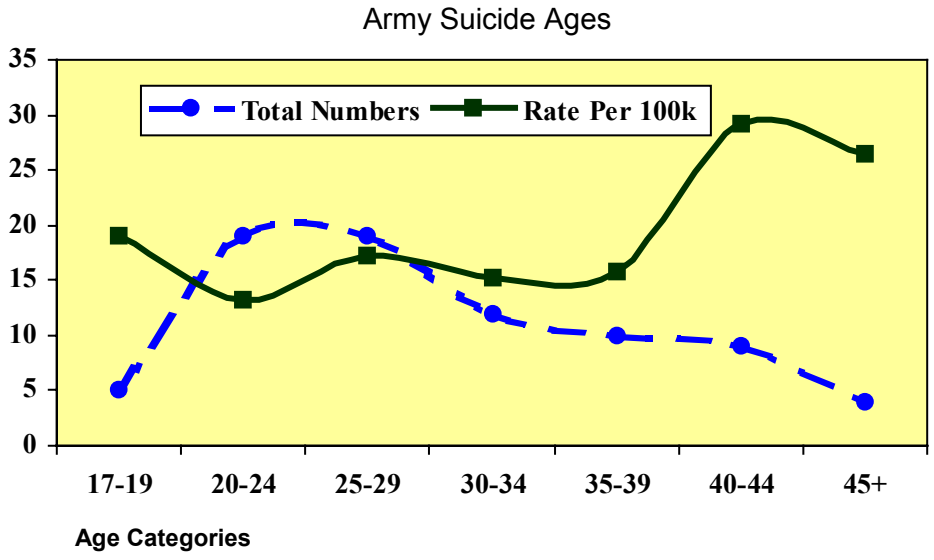
- ✓ Become ASIST T-2 trained
- ✓ Attend formal suicide prevention/awareness training hosted by the Chief of Chaplains (currently hosted by the Menninger Clinic in Topeka, Kansas)
- ✓ Download the USACHPPM Resource Manual for Suicide Prevention. Prepare suicide prevention/awareness training for "all ranks," OPDs and NCOPDs and spouses.
- ✓ Keep your commander informed on current suicide demographics. Explain those identified as "high" risk categories – such as those who are experiencing relationship problems, financial difficulties or pending UCMJ or other legal action.

Installation Suicide Prevention Standing Committee

- ✓ Establish suicide prevention program specifically tailored for your installation.
- ✓ Assist the installation and local commanders in implementing their preventative programs.
- ✓ Ensure that suicide prevention policies and procedures comply with applicable laws, regulations and directives regarding privacy and public information.
- ✓ Track the percentage of all assigned chaplains that have received the suicide prevention basic training at the Menninger Clinic.
- ✓ Ensure that all assigned commanders and senior NCOs are familiar with the availability of support agencies and the procedures for referral.
- ✓ Ensure that the availability of mental health personnel is adequate to meet the needs of the installation and that there is always someone available to conduct crisis intervention/assessment.
- ✓ Ensure that commanders are provided timely feedback from support agencies concerning the effectiveness of the treatment of their soldiers.
- ✓ Encourage stress management programs for soldiers and family members, especially during times of increased OPTEMPO or deployments.
- ✓ Track the number of ASIST T-4 (Trainer) and T-2 Level Crisis Intervention trained personnel on post.
    - Strive for at least two T-4 qualified trainers that can sponsor the T-2 level training. One of the two should be the Family Life Chaplain.
    - Strive for at least one ASIST T-2 trained personnel at each community support agency, SJA ,and MPs.
- ✓ Review and publicize emergency procedures available to all soldiers and family members such as Crisis Hotlines and suicide awareness cards.
- ✓ Ensure newly assigned soldiers are briefed on installation support agencies during in-processing.
- ✓ Are dependent school personnel trained in identifying and referring individuals at risk for suicide?
- ✓ Review surveillance reports and monitor the time that it takes to get soldiers into ADAPCP after identification of having an alcohol/drug problem.
- ✓ Establish procedures for creating an Installation Suicide Response Team

Annex C – Suicide Risk Comparison of Age Cohorts

Almost half of all suicides within the Army occur with soldiers 25 years of age or younger. However, maturity doesn't necessarily protect against suicidal behavior. In fact, older soldiers have a higher suicide rate than younger soldiers. As can be seen on Graph 1, although the greater incidence of suicides within the Army occur in younger soldiers (represented by the dashed line), the highest suicide rates occur in soldier over 40 (represented by the solid line).



GRAPH 1

By examining psychological autopsies, we find that younger soldiers are generally committing suicide as a result from insufficient or underdeveloped life coping skills. Suicides among older soldiers reveal a different profile of causes. These suicides often result from one or more clinical psychiatric disorders with associated problems that have accumulated over time. Many are facing a major life transition, such as a failed marriage or a promotion pass over. Others suffer from chronic substance abuse or a mood disorder. Unfortunately, many of these soldiers don't seek professional help, in part because of the perceived cultural and organization stigma associated with receiving mental health treatment.

To prevent both types of suicides requires two different, specific prevention strategies. Awareness training can generally prevent preplanned suicides as those who are planning their deaths usually give "warning: or "danger" signs that other, vigilant people should intercept. This strategy is contained in Chapter Six – Intervention.

Those unplanned, impulsive suicides are more challenging to prevent since the time from the decision, to the suicide act might be quick and not long enough for the potential suicide victim to display any warning signs. To prevent these types of suicide requires programs that prevent the individual from ever considering suicide as a viable option, which means developing their life coping skills so that when faced with a particular stressor, they will have the means to handle it without it turning into a crisis and potential suicide. This strategy is contained in Chapter Five – Prevention.

Younger Age Group	**Older Age Group**
Impulsive, lacks coping skills	**MDD (Major Depression) or serious heavy ETOH (alcohol) use**
Poor adjustment to military settings	**Good previous adjustment to Army**
Situational stressor	**Major loss or transition issue**
Suicidal behavior happens with little forethought	**Contemplating suicide for some time as part of a biological disease process**
Immature	**Mature person whose biology or complicated past (or often both) has caught up to him**
Engages in acting out behavior that is often hard for superiors to miss	**Quietly withdraws from those who might notice; behavior of social withdrawal and his accompanying internal feelings of shame are easy to miss**
First term of enlistment—not that concerned about career impact	**Career soldier; concerned that MH contact will be seen as weakness and will hurt his career**
Will often confide to anyone who is interested	**Shame, a symptom of MDD and often of ETOH dependence, makes it difficult to tell anyone and magnifies fears about "the Army" finding out**
Often lives in barracks and eats in dining facility; used to superiors being aware of details of his "personal life"	**Lives in housing or off base; has erected certain barriers between his duty day and his personal life**
	Assurances of confidentiality and assurances that getting treatment for a MH problem is not career damaging (stigma) become very important in combating the shame (which is part of the biological disease process) and thus allowing the soldier to feel it is "safe" to come forward and get help. **It is important that these beliefs are in place before the soldier gets depressed (thus the importance of this campaign which promotes both a culture change from above and a training component which gets the word out below). Once the soldier is clinically depressed the symptoms of shame and social withdrawal make it very difficult to reach him.**
Usually a facilitating "gatekeeper" helps him get to MH (chain of command or others)	**Usually self referred to MH; may have conferred with a colleague; tends to tell chain of command as a last resort or not at all**
Goes to MH with little thought of negative ramifications if directed or suggested by chain of command	**Has viewed MH as a place where problem soldiers go—often to facilitate separation from the service**
Early intervention may prevent acting out behavior and may facilitate development of more mature coping skills	**Early intervention prevents progression from mild depression to serious biological depression; both depression and early alcohol dependence, particularly in those who have previously made a good occupational and social adjustment; are usually very responsive to treatment**
Command is already aware of the problem since MH contact was either command directed or encouraged by a member of chain of command—a dialogue with MH is already underway	**Command is often not aware of the problem up front; if the problem is serious, the MH professional needs to inform command either with the patient's consent (which he is usually willing to give after he has overcome his shame and entered into treatment) or via a profile** **If it is a mild depression, the patient may choose to keep it confidential (like any other medical problem that is not going to interfere with his performance of duty)**
For the younger cohort, this tension (confidentiality vs. command's need to know) is less of an issue; command usually already knows; in those cases where they don't, the soldier is usually close to getting into some kind of difficulty, thus making it in his best interest to be proactive and letting his superiors know that he is addressing the underlying issues, before real trouble hits **For this cohort, MH contact, in actual practice, looks almost like ADAPCP and Family Advocacy, which are command programs**	**For the older cohort MH patient, here is a built in tension between these two essential components:** **Command's need to know (which is always there in the serious cases; it is the MH professional's responsibility to inform command—by profile if necessary)** **vs.** **Assurances of confidentiality** **(so important in countering the shame of clinical depression: makes it safe for the soldier [or for his colleague in whom he may have confided] to believe it is safe to "self refer" early in the process and get the needed care for a very treatable condition)**

Annex D – Definitions.

Anxiety disorder – an unpleasant feeling or fear or apprehension accompanied by increased physiological arousal, defined according to clinically derived standard psychiatric diagnostic criteria.

Behavioral health services – health services specially designed for the care and treatment of people with mental & behavioral health problems, including mental illness. Identical to the definition of mental health services.

Biopsychosocial approach – an approach to suicide prevention that focuses on those biological and psychological and social factors that may be causes, correlates, and/or consequences of mental health and mental illness and that may affect suicidal behavior.

Bipolar disorder – a mood disorder characterized by the presence or history of manic episodes, usually, but not necessarily, alternating with depressive episodes.

Cognitive/cognition – the general ability to organize, process, and recall information.

Comprehensive suicide prevention plans – plans that use multifaceted approaches to addressing the problem; for example, including interventions targeting biopsychosocial, social, and environmental factors.

Comorbidity – the co-occurrence of two of more disorders, such as depressive disorder with substance abuse disorder.

Connectedness – closeness to an individual, group or people within a specific organization; perceived caring by others; satisfaction with relationship to others, or feeling loved and wanted by others.

Contagion – a phenomenon whereby susceptible persons are influenced toward suicide behavior as a result of some other suicide behavior via personal proximity or other source of influential information.

Depression – a constellation of emotion, cognitive and somatic signs and symptoms, including sustained sad mood or lack of pleasure.

Epidemiological analysis – empirical examination of the incidence, distribution and potential risk factors for suicide.

Equivocal Death – a death in which the means or circumstances are unclear, uncertain, or undecided.

Gatekeepers – those individuals within a community who have face-to-face contact with large numbers of community members as part of their usual routine; they may be trained to identify persons at risk of suicide and refer them to treatment or supporting services as appropriate. Identified as either a “primary” or a “secondary” gatekeeper as defined in para 6-2b.

Health – the complete state of physical, mental, and social well being, not merely the absence of disease or infirmity.

Healthy People 2010 – the national prevention initiative that identifies opportunities to improve the health of all Americans, with specific and measurable objectives to be met by 2010.

Indicated prevention intervention – intervention designed for individuals at high risk for a condition or disorder or those who have already exhibited the condition or disorder.

Intentional – injuries resulting from purposeful human action whether directed at oneself (self-directed) or others (assaultive), sometimes referred to as violent injuries.

Intervention – a strategy or approach that is intended to prevent an outcome or to alter the course of an existing condition.

Means – the instrument or object whereby a self-destructive act is carried out.

Means restriction – techniques, policies, and procedures designed to reduce access or availability to means and methods of deliberate self-harm.

Methods – actions or techniques which result in an individual inflicting self-harm (i.e., asphyxiation, overdose, jumping).

Mental disorder – a diagnosable illness (using guidelines contained in the APA's DSM-IV or later editions) characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress that significantly interferes with an individual's cognitive, emotional, occupational or social abilities; often used interchangeably with mental illness.

Mental health – the capacity of individuals to interact with one another and the environment in ways that promote subjective well-being, optimal development and use of mental abilities.

Mental health problem – diminished cognitive, social or emotional abilities, but not sufficient to meet the criteria for a mental disorder.

Mental health services – health services that are specially designed for the care and treatment of people with mental health problems, including mental illness. Identical to the definition of behavioral health services.

Mental illness – see mental disorder.

Mood disorders – a term used to describe all those mental disorders that are characterized by a prominent or persistent mood disturbance; disturbances can be in the direction of elevated expansive emotional states, or, if in the opposite direction, depressed emotional states.

Morbidity – the relative frequency of illness or injury, or the illness or injury rate, in a community or population.

Non-fatal suicide events – any intent to inflict self-harm that does not result in death, but with apparent motivation to cause one's own death.

Personality disorders – a class of mental disorders characterized by deeply ingrained, often inflexible, maladaptive patterns or relating, perceiving, and thinking of sufficient severity to cause either impairment in functioning or distress.

Post-intervention – a strategy or approach implemented after a crisis or traumatic event has occurred.

Post-event data collection – required data collection and review process in the aftermath of a suicide to improve suicide prevention efforts.

Prevention – a strategy or approach that reduces the likelihood of risk of onset, or delays the onset of adverse health problems or reduces the harm resulting from conditions or behaviors.

Protective factors – factors that make it less likely that individuals will develop a disorder. Protective factors may encompass biological, psychological or social factors in the individual, family and environment.

Psychiatric disorder – see mental disorder.

Psychiatry – the medical science that deals with the origin, diagnosis, prevention, and treatment of mental disorders.

Psychology – science concerned with the individual behavior of humans, including mental and physiological processes related to behavior.

Public informational campaigns – large scale efforts designed to provide facts to the general public through various media such as radio, television, advertisements, newspapers, magazines, and billboards.

Rate – the number per unit of the population with a particular characteristic, for a given unit of time.

Resilience – capacities within a person that promote positive outcomes, such as mental health and well-being, and provide protection from factors that might otherwise place that person at risk for adverse health outcomes.

Risk factors – those factors that make it more likely that individuals will develop a disorder. Risk factors may encompass biological, psychological or social factors in the individual, family and environment.

Screening – administration of an assessment tool to identify persons in need of more in-depth evaluation or treatment.

Screening tools – those instruments and techniques (questionnaires, check lists, self-assessments forms) used to evaluate individuals for increased risk of certain health problems.

Selective prevention intervention – intervention targeted to subgroups of the population whose risk of developing a health problem is significantly higher than average.

Self-harm – the various methods by which individuals injure themselves, such as self-laceration, self-battering, taking overdoses or deliberate recklessness.

Self-injury – see self-harm.

Social services – organized efforts to advance human welfare, such as home-delivered meal programs, support groups, and community recreation projects.

Social support – assistance that may include companionship, emotional backing, cognitive guidance, material aid and special services.

Stigma – an object, idea, or label associated with disgrace or reproach.

Substance abuse – a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to repeated use. Includes maladaptive use of legal substances such as alcohol; prescription drugs; and illicit drugs.

Suicidal act (also referred to as suicide attempt) – a potentially self-injurious behavior for which there is evidence that the person probably intended to kill himself or herself; a suicidal act may result in death, injuries, or no injuries.

Suicide behaviors – includes a broad range of self-destructive or self-injurious behaviors, including threats, attempts and completions.

Suicidal ideation – self-reported thoughts of engaging in suicide-related behavior.

Suicidality – a term that encompasses suicidal thoughts, ideation, plans, suicide attempts, and completed suicide.

Suicide - death resulting from the intention of the deceased to cause his or her own death.

Suicide attempt – a potentially self-injurious behavior with a nonfatal outcome, for which there is evidence that the person intended to kill himself or herself; a suicide attempt may or may not result in injuries.

Suicide survivors – family members, significant others, or acquaintances who have experienced the loss of a loved one due to suicide.

Suicide threat - statement expressing or implying an intent to cause one's own death.

Suicide-related behaviors — intentional behaviors potentially resulting in serious injury or risk but may be motivated by an individual's desire for assistance rather than an intent to cause his or her own death.

Surveillance – Service directed data collection and review process designed to improve suicide prevention efforts through analysis and interpretation of health data with timely dissemination of findings.

Unintentional – term used for an injury unplanned or accidental injuries.

Universal preventive intervention – intervention targeted to a defined population, regardless of risk.

Annex E – Abbreviations/Acronyms

AAFES – Army Air Force Exchange Service

AAS – American Association of Suicidology

ACE – Adverse Childhood Experiences

ACS – Army Community Service

ADAPCP – Alcohol and Drug Abuse Prevention and Control Program

AIT – Advanced Individual Training

AMEDD – Army Medical Departments

ASIST – Applied Suicide Intervention Skills Training

ASPP – Army Suicide Prevention Program

BSRF – Building Strong and Ready Families

CDC – Center for Disease Control and Prevention

CFSC – Community & Family Support Center

CID – Central Investigative Division

CCH – Chief of Chaplains

CPO – Civilian Personnel Office

CSA – Chief of Staff, Army

CSSR – Completed Suicide Surveillance Report

CY – Calendar Year

DCSPER – Deputy Chief of Staff for Personnel

DoD – Department of Defense

ETOH – Ethyl Alcohol

FAP – Family Advocacy Program

GSW – Gunshot Wound

IET – Intial Entry Training

IG – Inspector General

IO – Investigating Officer

ISRT – Installation Suicide Response Team

ISPC – Installation Suicide Prevention Committee

MACOMs – Major Army Commands

MEDCOM – Medical Command

MH – Mental Health

MHO – Mental Health Officer

MP – Military Police

MTF – Medical Treatment Facility

MUSARC/RSC – Major United States Army Reserve Command/Regional Support Command

MWR – Morale, Welfare, and Recreation

NAMI – National Alliance for the Mentally Ill

NCHS – National Center for Health Statistics

NGB – National Guard Bureau

OCCH – Office of the Chief of Chaplains

ODCSPER – Office of the Deputy Chief of Staff for Personnel

ODPHP – Office of Disease Prevention and Health Promotion

OTSG – Office of the Surgeon General

PA – Psychological Autopsy

PAO – Public Affairs Office

RAP – Recruit Assessment Program

SAR – Suicide Analysis Report

SMA – Sergeants Major of the Army

SPRRC – Suicide Prevention Risk Reduction Committee

TJAG – The Judge Advocate General

TSG – The Surgeon General (Army)

TRADOC – Training and Doctrine Command

UCMJ – Uniform Code of Military Justice

UMT – Unit Ministry Team

USACHPPM – US Army Center for Health Promotion and Preventive Medicine

USACIC – US Army Central Investigation Command

USARC – US Army Reserve Command

USC – United States Code

VA – Veterans Administration

VCSA – Vice Chief of Staff, Army

WRAIR – Walter Reed Army Institute of Research

WRAMC – Walter Reed Army Medical Center

Annex F - References

1. Healthy People 2010, Office of Disease Prevention and Health Promotion, U.S. Department of Health of Human Services

2. National Alliance for the Mentally Ill Fact Sheet, October 2000

3. Tondo L, Baldessarini R, Suicide: An Overview, Psychiatry Clinical Management, Volume 3, 2001.

4. Zill, Robinson, The Generation X, American Demographics, 1995, 24-33.

5. Felitti V, Anda R, Nordenberg D, Williamson D, Spitz A, Edwards V, Koss M, Marks J, Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Deaths in Adults: The Adverse Childhood Experiences (ACE) Study, American Journal of Preventive Medicine, 1998; 14(4)

6. Legree, Generation X: Motivation, Morals, and Values, Army Research Institute Special Report, June 1997

7. Naval Health Research Center Report #95-26, Pre-enlistment Maltreatment Histories of U.S. Navy Basic Trainees: Prevalance of Abusive Behaviors, 1995

8. Hendin, H., Chapter 33, Psychiatric Emergencies, The Psychiatric Syndromes

9. Jobes D, Mann R, Reasons for Living versus Reasons for Dying: Examing the Internal Debate of Suicide, Suicide and Life-Threatening Behavior, Vol. 29(2), Summer 1999

Other References

Shaffer D, Suicide and Suicide Prevention in the Military Forces, A Report of a Consultation, Aug 97

National Strategy for Suicide Prevention, Goals and Objectives for Action, May 2001

<u>Military</u>

DA PAM 600-24, Suicide Prevention and Psychological Autopsy

AR 600-5, Health Promotion

AR 190-40, Serious Incident Report

DoD Suicide Prevention and Risk Reduction Committee Charter

Annex G – Useful Web Sites/Contacts

- American Assocation for Suicidology, (www.suicidology.org)
- American Foundation for Suicide Prevention, (www.afsp.org)
- Army Administrative Electronic Publication website, (www.usapa.army.mil/gils/)
- Living Works Education, (www.livingworks.net)
- Healthy People 2010, (www.health.gov/healthypeople)
- National Suicide Prevention Web site (copies of the National Strategy Summary Booklet) (www.mentalhealth.org/suicideprevention)
- ODCSPER Suicide Prevention Web Site, (www.odcsper.army.mil/default.asp?pageid=66f)
- Organization of Attempters and Survivors of Suicide in Interfaith Service, (www.oassis.org)
- Suicide Awareness\Voices of Education, (www.save.org)
- Suicide Prevention Advocacy Network, (www.spanusa.org)
- Surgeon General's Call to Action, (www.surgeongeneral.gov/library/calltoaction)
- U.S. Army Center for Health Promotion and Preventive Medicine, (chppm-www.apgea.army.mil)

Phone Numbers:

- **National Suicide Hotline: 1-800-suicide (800) 784-2433**

Army Suicide Demographics
Suicide can affect anyone, regardless of rank, age, sex, MOS, race or ethnicity. Although there are no select demographics that will accurately predict suicidal behavior with certainty, it is important to examine the Army suicide population in an attempt to infer potential suicide risk indicators for use in prevention efforts (an updated briefing of the previous calendar year as well as the current monthly Army suicide statistics and demographics can be found at the Army G-1 HRPD website). Our vigilance and awareness must extend to everyone in The Army. It is also important not to use demographics to "profile" or "discriminate" at-risk populations.

Suicide Methods
Suicide by self-inflicted gun shot wound (GSW) was the most common method chosen by soldiers, followed by hanging, carbon monoxide poisoning and drug overdose. Other methods include poisoning, burns, jumping and stabbing. Nationally, suicide by firearms was the most chosen method resulting in fifty-seven percent of all suicidal deaths in the United States. Generally, men tend to choose more violent, lethal means (GSW, hanging, and jumping). Women generally prefer less-violent means (drug overdose, and wrist cutting) but recent data suggest an increasing use of firearms by American women.

According to AAS, those who own a gun are 32 times more likely to commit suicide than those who do not own a gun. This figure doesn't suggest that people who own guns are more likely to be suicidal, but rather the potential impact of having an immediate, convenient and highly lethal means to carry out the suicide act once the decision has been made. In fact, approximately 83 percent of fatal gunshot wounds are associated with suicides, compared to 7 percent for homicides committed by relatives, 3 percent associated with accidents, and only 2 percent of deaths involving strangers. Purchasing a weapon is associated with a dramatic increase in the risk of suicide in the ensuring year following the purchase.

Student Handout 3

This Student Handout contains 15 pages of slides, 6 slides on each page, on current statistics and facts. Give this handout to the students to facilitate the presented instruction.

Suicide Prevention Leader Training

Every one matters!

Expectations

- I will:
  - ✓ Profile basic demographics for the Army Suicide Population
  - ✓ Offer a "101 level" explanation of suicide behavior
  - ✓ Explain your role in minimizing the risk of suicide for yourself and your soldiers

Suicide Statistics and Factoids

There are approximately 1 million suicides in the world every year.

That's one death to suicide every 40 seconds.

Trivia Question:

Which industrialized country is the only country in the world where the female suicide rate is higher than the male rate?

Trivia Question:

Which industrialized country is the only country in the world where the female suicide rate is higher than the male rate?

Answer: CHINA

There was 28,322 confirmed suicides within the United States during 2001

(that's one every 18 minutes)

One in every 100 deaths within the United States is by suicide

More Americans kill themselves, than are killed by others

Suicide: 11th leading cause of death*
Homicide: 16th leading cause of death*

(data provided by CDC for 2001)

Within the U.S., more deaths result from suicide than by drunken drivers

Within the U.S., 2 times as many people die from suicide than HIV

Depression is more widespread than heart disease, cancer and AIDS

During the Vietnam Conflict, four times the number of Americans died by suicide than died in combat.

In the past 20 years, 200,000 more people died of suicide than died of AIDS

Suicide is the SECOND leading cause of death within the United States for those between the ages of 25-34

Suicide is the THIRD leading cause of death within the United States for those between the ages of 15-24

Between 1952-1995, suicide among adolescents & youth increased 300%

American Association of Suicidology estimates that 80% of all suicides give some form of warning or signal before killing themselves

Approximately 80% of suicides that occur within the U.S. are males

Approximately 90% of suicides that occur within the U.S. are white

On average, there is a suicide attempt every minute within the United States

Within the United States, there are approximately 566,640 treated in emergency rooms every year for self-inflicted injuries

141,660 required hospitalization

The American Association of Suicidology estimates that 1 in every 17 Americans (6%) had thoughts of suicide in the past 12 months.

A 1999 survey of high school survey indicates that 8.3% of those surveyed reported making a suicide attempt within the past year. That's approximately 1.3 million students nationwide.

United States Army Suicide

Statistics and Factoids

CSA Statement:

"It is our responsibility to help our soldiers, families and civilians understand how to identify at-risk individuals, recognize warning signs and know how to take direct action."

General Eric K. Shinseki
Army Chief of Staff

Quote from a Soldier's Suicide Note

"Goodbye, because I'm going to stop the pain. No one wants to help so I feel that I only have one choice."

During the 1990's,

- 803 soldiers killed themselves

During the 1990's,

- suicide was the 2nd leading cause of death

During the 1990's,

5 times more soldiers died by suicide than by hostile fire

Only 1 in every 5 soldiers who commit suicide have been seen by an Army Behavioral Health Professional

According to a DoD Survey, 17.8% of those soldiers surveyed believed they needed some form of behavioral health counseling

According to a DoD Survey, 17.8% of those soldiers surveyed believed they needed some form of behavioral health counseling

- but only 5.6% actually went to a behavioral health professional

Trivia Question:

Who was the highest member with DoD to commit suicide?

Trivia Question:

Who was the highest member with DoD to commit suicide?

Secretary of Defense Secretary James Forrestal

Trivia Question:

Which rank within the Army has the highest suicide rate?

Trivia Question:

Which rank within the Army has the highest suicide rate?

Staff Sergeant
(Rate of 16 per 100K for CY 01)

Quote from a Soldier's Suicide Note

"The Army will help if you know how to help yourself. That's the problem, I don't know how to help myself."

The youngest soldier that killed himself last year was 18 years old.

The oldest soldier that killed himself last year was 52 years old.

10 Army employees and 8 Army spouses/family members were known to have committed suicide last year – the youngest was 14 years old.

A failed, intimate personal relationship is mentioned as a contributing factor in Army suicides in 75% of cases

50% of all soldiers who commit suicide were facing or had recently faced some form of legal or UCMJ action.

Firearms accounted for 67% of all suicides within the Army last year.

Quote from a friend to a soldier's father

"it's all right because they (the Army) are trained to take care of him."

The next day, PV2 Nolan Stites jumped from his 3rd floor barracks window and fell to his death.

Suicide Prevention Leader Training

Every one matters!

Can Suicide be Prevented?

- **CHALLENGES**: Soldiers who complete suicide:
  - Rarely seek help through the chain of command, Chaplaincy or Behavioral Health (< 1/5 of all completed suicides have seen BH).
  - Often don't show "classic" warning signs of suicide in the unit.
  - Frequently choose very lethal means and act privately, precluding rescue.

DoD Survey of Health Related Behavior

"Stigma"

	Army
Perceived Need for Mental Health Counseling:	17.8%
Receipt of Mental Health Counseling from military Mental Health Professional:	5.6%
Perceived Damage to Career:	
Definitely Will:	17.7%
May or May Not:	58.1%
Definitely Will Not:	24.2%

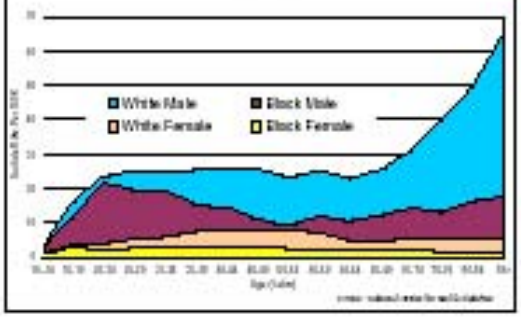
U.S. Leading Causes of Deaths - 1999

Age Groups

	1-14	15-24	25-34	35-44	45-54
1st	Unintentional Injury	Unintentional Injury	Unintentional Injury	Malignant Neoplasms	Malignant Neoplasms
2nd	Malignant Neoplasms	Homicide	Suicide	Unintentional Injury	Heart Disease
3rd	Homicide	Suicide	Homicide	Heart Disease	Unintentional Injury
4th	Congenital Malformations	Malignant Neoplasms	Malignant Neoplasms	Suicide	Cerebrovascular Dis.
5th	Heart Disease	Heart Disease	Heart Disease	HIV	Chronic Lower Respiratory Dis.
6th	Suicide	Congenital Malformations	HIV	Liver Disease	Diabetes Mellitus
7th	Chronic Lower Respiratory Dis.	Chronic Lower Respiratory Dis.	Diabetes Mellitus	Homicide	Liver Disease
8th	Other Neoplasms	HIV	Cerebrovascular Dis.	Cerebrovascular Dis.	Suicide

Source: National Center for Health Statistics, 2001

U.S. Suicide Rates by Age, Race, and Gender (1997)



Gender Comparison

- Males complete – females attempt
- Reasons:
  - Female rate of alcohol abuse 1/5 of males
  - Numerous & more flexible coping devices in females
  - Females have stronger negative attitudes towards completed suicides, more positive towards attempts
  - Females are more likely to seek help
  - Females have more extensive social support systems
  - Cultural emphases on males to be competitive, impulsive, decisive, and being "strong"
  - Women tend to have less access to lethal means
  - Failure in primary adult male role more visible and obvious than failure in primary female role

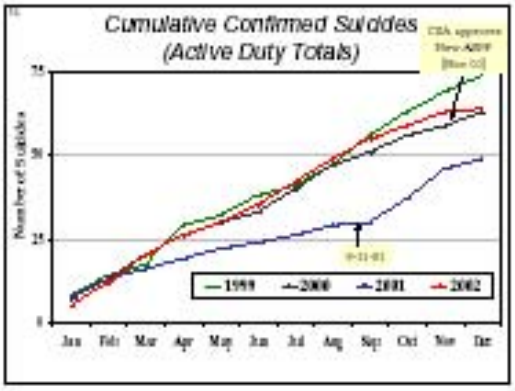
Race Comparison

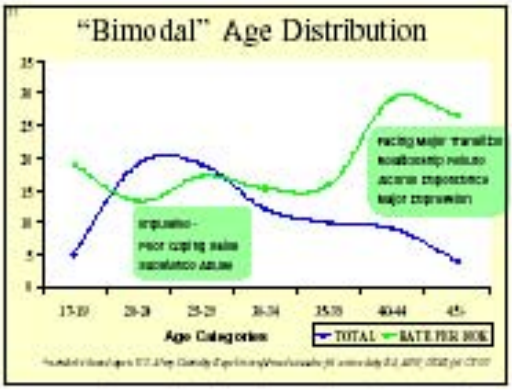
- Suicide rates higher in whites
- Reasons:
  - Societal discrimination causes a cultural response
    - Blacks externalize aggression, whites internalize
  - Historical discrimination created "survival strategy" centered on ties to family and church
  - Acceptability towards suicide higher in whites – "suicide is a white thing"

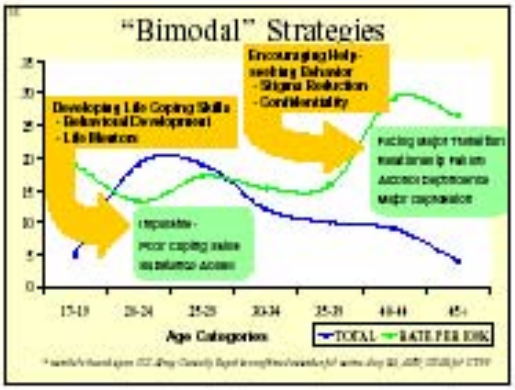
Magnitude of the Problem

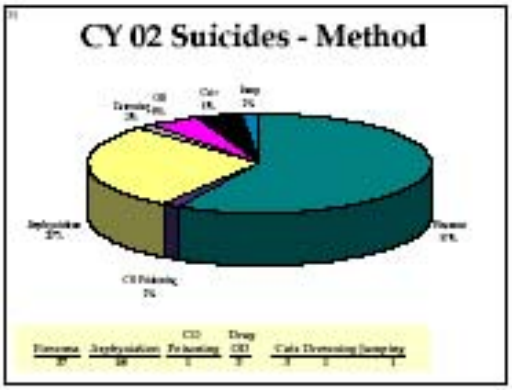
"People have one thing in common, they are all different."
ZEND

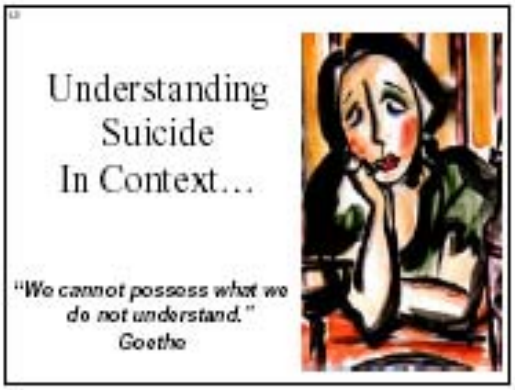
Army Active Duty Suicides
• Usually the 2nd or 3rd leading cause of death within the Army
# of Suicides
Calendar Year


Cumulative Confirmed Suicides
(Active Duty Totals)
Number of Suicides
1999
2000
2001
2002


"Bimodal" Age Distribution
Age Categories
TOTAL
RATE PER 100K


"Bimodal" Strategies
Developing Life Coping Skills
- Behavioral Development
- Life Mentors
Encouraging Help-seeking Behavior
- Stigma Reduction
- Confidentiality
Age Categories
TOTAL
RATE PER 100K


CY 02 Suicides - Method


Understanding
Suicide
In Context…
"We cannot possess what we do not understand."
Goethe

A Model for Dysfunctional Behavior

Psychiatric dx:
- Schizophrenia
- Mania
- Depression
- Substance Abuse

A Model for Dysfunctional Behavior

"The best predictor of future behavior is past behavior."

Resulting in varying degrees of life coping skills

Consider our "Inputs"

- Our current cohorts of DoD recruits arrive at IET with significant developmental "baggage"
  - approx. 40% self-report having been raised in homes where they were physically &/or sexually abused &/or neglected*
  - > 40% come from 'non-traditional' homes without 2 consistent parenting figures**
  - > 20% of HS students had seriously considered attempting suicide during a 12 month period***
  - 8% of HS students reported making a suicide attempt in the preceding 12 month period***

The ACE Study*

- The largest study of its kind ever done to examine the health and social effects of adverse childhood experiences throughout the lifespan

- Summary of Findings:
  - Adverse Childhood Experiences (ACE's) are very common
  - ACEs are strong predictors of health risk behaviors in adolescence and adult life (ie. substance abuse, etc.)

* Felitti, Anda, et al. Relationship of Childhood Abuse & Household Dysfunction to Many of Leading Causes of Death in Adults. American Journal of Preventive Medicine. 1998/14(4):245

"ACE" Study Population Data

Adverse Childhood Experiences (ACEs) are Common in the Population

Household Exposures:

Alcohol abuse	23.5%
Mental illness	18.8%
Battered mother	12.5%
Drug abuse	4.5%
Criminal behavior	3.4%

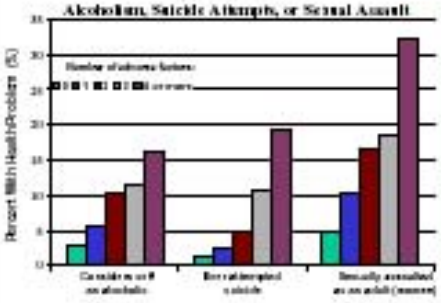
Childhood Abuse:

Psychological	11.0%
Physical	30.1%
Sexual	19.9%

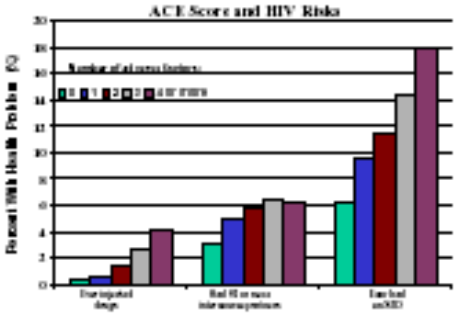
ACE SCORE	PREVALENCE
0	47.9%
1	24.9%
2	13.1%
3	7.3%
4 or More	6.8%

"ACE" Study Population Data

ACE Score and Alcoholism, Suicide Attempts, or Sexual Assault



"ACE" Study Population Data



A Model for Dysfunctional Behavior

A Model for Dysfunctional Behavior

Life-Cycle Behavioral "Pitfalls" of the 1st term Soldier

Behavioral "pitfalls" that can lead to dysfunction, potential suicide behaviors & premature attrition:

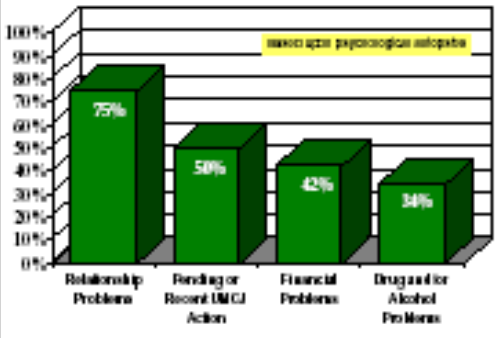
- Promiscuity & Impulsivity
- Premature marriage and Parenthood
- Family Violence
- Distrust/Disdain of authority figures; Loyalty issues
- Excessive debt & problems
- Dysfunctional behaviors resulting in UCMJ
- Inability to form positive supportive relationships
- Substance abuse & other major psychiatric disorders
- Family of origin problems - acute & unresolved from past

Potential Suicidal "Triggers"

LOSS OF:

- a loved one to illness or death
- a significant, intimate relationship
- a child custody battle
- friendship or social status (social isolation or ostracism)
- a job or rank (UCMJ or civilian legal action, separation)
- freedom (incarceration)
- financial security (pay loss, excessive debts, bankruptcy)
- self-esteem (humiliation, passover for promotion or schooling)
- hope (feeling helpless)
- or change in lifestyle (unwanted PCS, major deployment)

Potential "Triggers"



Psychological Reasons for Suicide

- **Death as retaliatory abandonment**
  - Killing self to "get back at" person who abandoned you.
- **Death as self-punishment**
  - Torturing/Killing self to atone for guilt/shame.

Potential Indicators/Predictors of Dysfunctional Behavior

- Impulsiveness or violent traits
- Previous self-injurious acts
- Excessive anger or agitation
- Excessive alcohol use
- Heavy smoking
- Sleeping or eating disorder

RISK

Highest when:

- The person sh[illegible] may get worse.
- The proble[illegible] and helplessness.
- Think[illegible] torment.
- Judg[illegible] fuel by use of alcohol or other substances.
- Lethal means are available.

Suicidal Danger Signs Include:

- Talking or hinting about suicide.
- Formulating a plan to include acquiring the means to kill oneself.
- Having a desire to die.
- Obsession with death including listening to sad music or poetry or artwork.
- Themes of death in letters and notes.
- Finalizing personal affairs.
- Giving away personal possessions.

DANGER SIGNS MUST BE ACTED UPON IMMEDIATELY!

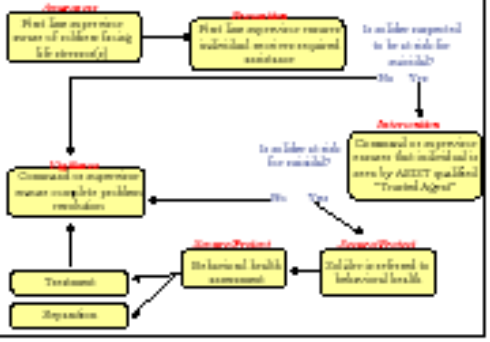
Suicidal Warning Signs Include

- Obvious drop in duty performance.
- Unkempt personal appearance.
- Feelings of hopelessness or helplessness.
- Family history of suicide.
- Made previous suicide attempts.
- Drug or alcohol abuse.
- Social withdrawal.
- Loss of interest in hobbies.
- Loss of interest in sexual activity.
- Reckless behavior, self-mutilation.
- Physical health complaints, changes/loss of appetite.
- Complaints of significant sleep difficulties.
- Frequent physical complaints and medical appointments

"Knowing is not enough, we must apply. Willing is not enough, we must do."

Goethe

Model for Unit Suicide Prevention



All Soldiers

- ✓ Know suicidal danger and warning signs and leading causes for suicides
- ✓ Become aware of local helping services
- ✓ Take immediate action when suspecting someone is at risk for suicide
- ✓ Never ostracize any member of your team
- ✓ REMAIN VIGILANT!

First Line Supervisors

- ✓ Get to know your soldiers
  - Assess solder's life-coping skills
  - Know when your soldiers are experiencing a "life crisis"
  - Anticipate dysfunctional behavior
- ✓ Know potential suicide triggers & warning signs for mental illness
- ✓ Promote help-seeking behavior
  - Assist in reducing stigma regarding mental health
  - Set the example - take advantage of helping services
- ✓ MAINTAIN AWARENESS AND VIGILANCE!

Commanders

- ✓ Offer suicide prevention/awareness training to spouses
- ✓ Conduct OPD's and NCOPD's that focus on some aspect of mental health
- ✓ Promote life-coping skills development & help-seeking behaviors
- ✓ Develop well-defined procedures for storing P.O.W.s
- ✓ Conduct "family reunion" seminars during extended deployments
- ✓ Ensure your UMT members are ASIST qualified

Summary

- **Suicide** is substantially **preventable** in the Army, IF:
  - we target those **at risk** of or currently suffering from treatable mental/behavioral disorders(primarily substance abuse/mood dz);
  - we minimize **stigma** associated with accessing mental health care;
  - leaders **know** and **care** about their peers & subordinate soldiers;
  - leaders constructively **intervene early** on in their soldier's problems;
  - leaders pay close attention & provide constructive interventions to those small % of peers and subordinates **facing major losses** from legal, marital, occupational or financial problems

If you come in contact with someone at risk:

- Remain calm – don't panic!
- **Listen!** Allow the person at risk an opportunity to share their thoughts. Shape the conversation around their feelings, not yours.
- Never leave the person at risk alone.
- Share what has happened with the soldier's chain of command.

Suicide Prevention
Leader Training

Every One Matters!

T224 PHYSICAL FITNESS OCT 03

U.S. ARMY SERGEANTS MAJOR ACADEMY

Primary Leadership Development Course (PLDC)

The Army Training System

TRAINING SUPPORT PACKAGE

"NO ONE IS MORE PROFESSIONAL THAN I"

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

T224 20 AUG 04

Physical Fitness

CHANGE SHEET 2

1. Synopsis. This change sheet corrects minor administrative errors in the T224, Physical Fitness Training Support Package.

2. Pen and ink changes: none.

3. Page change(s): Remove old pages and insert revised page(s) as indicated.

Remove Pages	**Insert Pages**
1 thru 9	1 thru 9

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	Rank	Position	Date
/s/Billy R. Williams	GS-9	Training Specialist	20 Aug 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	20 Aug 04
/s/Marion Lemon	SGM	Chief, CDDD	20 Aug 04

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

T224 2 AUG 04

Physical Fitness

CHANGE SHEET 1

1. Synopsis. This change sheet corrects errors in the 600 PLDC, and 600-PLDC Modified Course T224 Physical Fitness (TSP). The change the instructor to student ratio.

2. Pen and ink changes:

   a. Page 34, ELO J, Instructor to Student Ratio—

      AS READS: "1"

      TO READ: "1:8"

3. Page changes: none.

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	Rank	Title	Date Signed
/s/ Billy R. Williams Billy R. Williams	GS-9	Training Specialist	04 Aug 2004
/s/ Victor A. LeGloahec Victor A. LeGloahec	SGM	Chief, NCOES	04 Aug 2004
/s/ Marion Lemon Marion Lemon	SGM	Chief, Curriculum, Design, and Development Division	04 Aug 2004

This page intentionally left blank

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	T224 / PHYSICAL FITNESS
Effective Date	01 Oct 2003
Supersedes TSP(s) / Lesson(s)	P201, Physical Fitness Train the Trainer, Oct 99. P201-RC, Physical Fitness Train the Trainer, Jun 01.
TSP Users	600-PLDC, Primary Leadership Development Course 600-PLDC (MOD), Primary Leadership Development Course (Modified)
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	Users are invited to send comments and suggested improvements on DA Form 2028, *Recommended Changes to Publications and Blank Forms.* Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to: COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FT BLISS TX 79918-8002 Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil
Security Clearance / Access	Unclassified
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number	Task Title
Individual	
071-990-0007	Implement a Total Fitness Program in a Company
071-990-0009	Implement an Individual Total Fitness Program

This TSP Contains

TABLE OF CONTENTS

PAGE

Preface 2

Lesson Section I Administrative Data 4

Section II Introduction 8

Terminal Learning Objective - Conduct your team's/squad's/section's physical fitness training. 8

Section III Presentation 10

Enabling Learning Objective A - Identify the Army's Physical Fitness Training Program objective. 10

Enabling Learning Objective B - Recognize the components of fitness. 12

Enabling Learning Objective C - Identify the principles of exercise. 14

Enabling Learning Objective D - Determine how flexibility aids physical fitness. 16

Enabling Learning Objective E - Identify the FITT factors. 20

Enabling Learning Objective F - Demonstrate the extended rectangular formation. 29

Enabling Learning Objective G - Demonstrate push-up/sit-up improvement exercises. 30

Enabling Learning Objective H - Identify the steps for using an ability group run. 32

Enabling Learning Objective I - Conduct a physical fitness session. 33

Enabling Learning Objective J - Conduct the physical fitness training performance examination. 34

Section IV Summary 35

Section V Student Evaluation 36

Appendix A - Viewgraph Masters A - 1

Appendix B - Test(s) and Test Solution(s) B - 1

Appendix C - Practical Exercises and Solutions C - 1

Appendix D - Student Handouts D - 1

PHYSICAL FITNESS
T224 / Version 1
01 Oct 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
600-PLDC	1	Primary Leadership Development Course
600-PLDC MOD	1	Primary Leadership Development Course (Modified)

Task(s) Taught(*) or Supported

Task Number	Task Title
	INDIVIDUAL
071-990-0007 (*)	Implement a Total Fitness Program in a Company
071-990-0009 (*)	Implement an Individual Total Fitness Program

Reinforced Task(s)

Task Number	Task Title
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods	
	3 hrs	/ Conference / Discussion
	3 hrs	/ Demonstration
	4 hrs	/ Practical Exercise (Performance)
Test	4 hrs	
Test Review	0 hrs	
Total Hours:	14 hrs	

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)

Lesson Number	Lesson Title
None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

Number	Title	Date	Additional Information
AR 350-1	ARMY TRAINING AND EDUCATION	09 Apr 2003	
FM 3-21.5	DRILL AND CEREMONIES	07 Jul 2003	
FM 21-20	PHYSICAL FITNESS TRAINING	30 Sep 1992	w/C1

Student Study Assignments

Before class--

- Read SH-1.
- Read SH-2, pp 11 thru 13.
- Read SH-3, pp 1-1 thru 4-17.
- Skim SH-3, pp 5-0 thru 9-18, and 12-0 thru 13-2.
- Study, SH-4, p 2-7, para 2-4c.
- Read, SH-4, p 2-8, para 2-4d.

During class--

- Participate in classroom discussion and practical exercise.

After class--

- Review notes and lesson materials.
- Participate in performance evaluations.
- Turn in all recoverable materials.

Instructor Requirements

1:8, SSG PLDC graduate, ITC and SGITC qualified

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

ID Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
6730-00-577-4813 SCREEN, PROJECTION	1:16	1:2	No	0	No
6730-00-P53-8147 Projector, Overhead	1:16	1:2	No	0	No
7110-00-132-6651 CHALKBOARD	1:16	1:2	No	0	Yes
7520-01-424-4867 EASEL, DISPLAY AND TRAINING	1:16	1:2	No	0	Yes
7530-00-619-8880 PAD, WRITING PAPER	1:16	1:2	No	0	Yes
8415-01-217-5634 VEST, MICROCLIMATIC	1:1	1:8	No	0	No

* Before Id indicates a TADSS

Materials Required

Instructor Materials:

- VGT: 1 thru 12.
- TSP.

Student Materials:

- Reading materials listed on the Advance Sheet.

Classroom, Training Area, and Range Requirements

CLASSROOM (40X40 PER 16 STUDENTS)
PHYSICAL PROFICIENCY TEST AREA 30 YD X 30 YD

Ammunition Requirements

ID	Name	Exp	Stu Ratio	Instr Ratio	Spt Qty
None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Before class--

- Make sure that you will have the required resources on hand when you need them for this lesson.
- Familiarize yourself with all lesson materials.
- Issue SH-1, SH-2, SH-3, and SH-4 to students.
- Make sure you understand how to conduct the PE at App C and the test at App B.

During class--

- Conduct the class IAW this TSP and answer any questions generated by the students.

After class--

- Evaluate and counsel students after their performance evaluations.
- Collect all recoverable materials after the examination for this lesson.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
/s/ Donald Colyer Colyer, Donald	GS09	Training Specialist	7 Jul 03
/s/ Ronnie G. Barns Barnes, Ronnie G.	MSG	Course Chief, PLDC	7 Jul 03
/s/ Brian H. Lawson Lawson, Brian H.	SGM	Chief, NCOES	7 Jul 03
/s/ Albert J. Mays Mays, Albert J.	SGM	Chief, CDDD	21 Jul 03

SECTION II. INTRODUCTION

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Motivator

This lesson will provide you with the techniques and procedures you'll need to know so that you will have the confidence to safely conduct the Army's physical fitness program when you return to your units. The focus of this lesson is to enhance your knowledge of physical fitness and show you how to conduct a variety of fitness training exercises. You will be given the opportunity to perform many, if not all, of the different exercises, ending with a performance-oriented hands-on evaluation.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Conduct your team's/squad's/section's physical fitness training.
Conditions:	As a team/squad/section leader, in a classroom or field environment, given extracts from AR 350-1, FM 21-20 w/C1, and FM 3-21.5.
Standards:	Conducted your team's/squad's/section's physical fitness training IAW AR 350-1, FM 21-20 w/C1, and FM 3-21.5.

Safety Requirements

Take safety precautions appropriate for the physical training field environment during the performance evaluation. Make sure students are aware of local safety policies that could affect how they conduct physical training.

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

Make students aware of any local policies pertaining to environmental hazards that could affect how they conduct physical training.

Evaluation

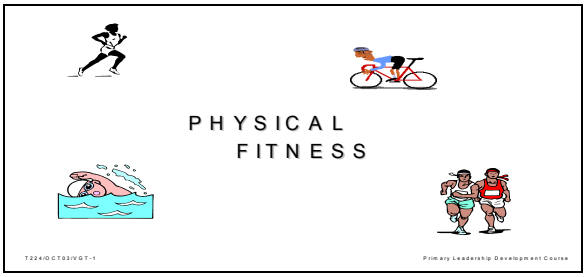
You will conduct a physical fitness training session to include placing the

group in the extended rectangular formation, conducting a warm-up, leading an exercise session, conducting a cool-down, and reassembling the formation. You must correctly perform 16 of the 23 performance steps to receive a "GO."

NOTE: Inform the students that their performance test evaluation will take place as posted on the training schedule and when they will receive feedback on the evaluation.

Instructional Lead-In

SHOW VGT-1, PHYSICAL FITNESS



Ref: AR 350-1

You are an American soldier, a warrior and a member of a team. You serve the people of the United States and live the Army Values. You always place the mission first and never accept defeat. You never quit nor leave a fallen comrade. You are disciplined, physically and mentally tough, trained and proficient in your warrior task and drills. You always maintain your arms, equipment, and yourself. You are an expert and a professional who stands ready to deploy, engage, and destroy the enemies of the United States of America in close combat. You are a guardian of freedom and the American way of life because you are an American soldier.

Throughout this course you will hear about your responsibilities as noncommissioned officers. These responsibilities are things that the Army, your leaders, and your soldiers expect you to perform. One of your many responsibilities is the well-being of your soldiers. This well-being includes their physical fitness development. A physically fit soldier performs better under harsh conditions and can adapt more quickly to the demanding rigors of combat.

REMOVE VGT-1

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the Army's Physical Fitness Training Program objective.
CONDITIONS:	As a squad leader, in a classroom environment and given an extract from AR 350-1.
STANDARDS:	Identified the Army's Physical Fitness Training Program objective IAW AR 350-1.

1. Learning Step / Activity 1. The Army's Physical Fitness Training Program objective

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 20 mins
Media: VGT-2 and VGT-3

NOTE: Direct students to SH-2, Extract from AR 350-1.

Before you can inform your soldiers of the Army's physical fitness objectives, you need to know what the objectives are yourself.

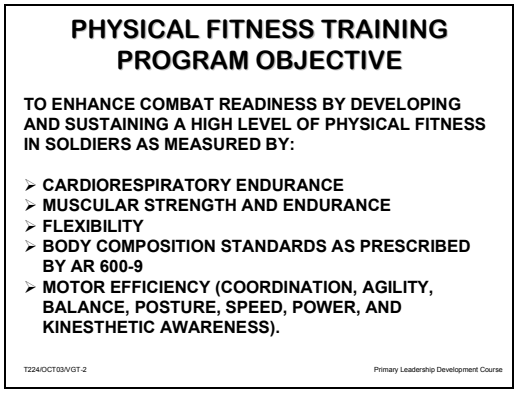
QUESTION: What is the objective of the Army's Physical Fitness Training Program?

ANSWER: See VGT-2 and VGT-3.

Ref: SH-2, AR 350-1, p 11, para 1-21

SHOW VGT-2, PHYSICAL FITNESS TRAINING PROGRAM OBJECTIVE

NOTE: Allow students to briefly discuss each statement on VGT-2.

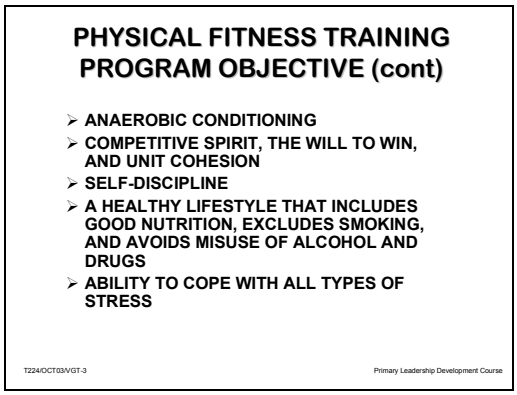


Ref: SH-2, AR 350-1, p 11, para 1-21

REMOVE VGT-2

SHOW VGT-3, PHYSICAL FITNESS TRAINING PROGRAM OBJECTIVE (cont)

NOTE: Allow students to briefly discuss each statement on VGT-3.



Ref: SH-2, AR 350-1, p 11, para 1-21

From our discussion we know that the Army expects physical fitness to be an integral part of every soldier's life. We also know that every noncommissioned officer must be familiar with FM 21-20, which is the Army's official publication for fitness doctrine, training, and testing. Commanders and supervisors must conduct physical fitness programs according to FM 21-20 and the units' missions. This means you and your soldiers must participate in these programs. Every soldier must meet the physical fitness standards, including you.

REMOVE VGT-3

CHECK ON LEARNING:

QUESTION: What is the objective of the Army's Physical Fitness Training Program?

ANSWER: To enhance the combat readiness by developing and sustaining a high level of physical fitness in soldiers.

Ref: SH-2, AR 350-1, p 11, para 1-21

B. ENABLING LEARNING OBJECTIVE

ACTION:	Recognize the components of fitness.
CONDITIONS:	As a squad leader, in a classroom environment and given an extract from FM 21-20 w/C1.
STANDARDS:	Recognized the components of fitness IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. Components of Fitness

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 25 mins
Media: VGT-4

Let's look at the components of fitness. For this we need to look in SH-3, FM 21-20 w/C1, p 1-3.

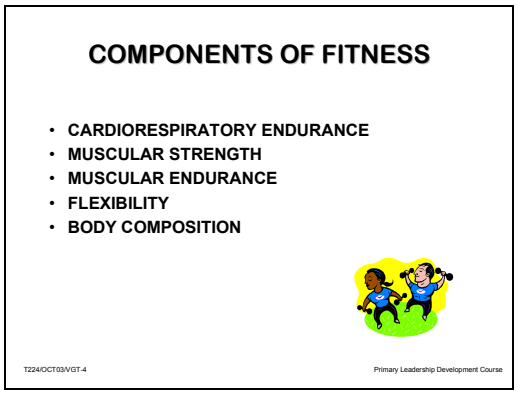
QUESTION: What are the components of fitness?

ANSWER: See VGT-4.

Ref: SH-3, FM 21-20 w/C1, p 1-3

SHOW VGT-4, COMPONENTS OF FITNESS

NOTE: Cover up all but the first item on the VGT. Uncover each bullet and discuss it. Refer the students to SH-3, FM 21-20 w/C1, page 1-3.



Ref: SH-3, FM 21-20 w/C1, p 1-3

Cardiorespiratory (CR) Endurance. Cardiorespiratory endurance is the efficiency with which the body delivers oxygen and nutrients needed for muscular activity. A few examples of muscular activity that require cardiorespiratory endurance are running, road marching, swimming, and bicycling.

Muscular Strength. Muscular strength is the greatest amount of force a muscle or muscle group can exert in a single effort, such as in weight training.

Muscular Endurance. Muscular endurance is the ability of a muscle of muscle group to perform repeated movements for an extended period of time, such as doing push-ups and sit-ups.

Flexibility. Flexibility is the ability to move joints or any group of joints through an entire, normal range of motion.

Body Composition. Body composition is the amount of body fat a soldier has in comparison to his total body mass.

When you are physically fit, you should have the ability to function effectively in physical work, training, and other activities and still have enough energy left over to handle any emergency that may arise.

Improving the first three components of fitness, shown on the VGT-4, will have a positive impact on body composition and will result in less fat. FM 21-20 classifies

factors of speed, agility, muscle power, eye-hand coordination, and eye-foot coordination as components of "motor" fitness. Improving these factors will affect your survivability on the battlefield. It will accomplish this by improving your physical capabilities and your and your soldiers' capabilities to physically perform the required tasks.

REMOVE VGT-4

CHECK ON LEARNING:

QUESTION: What are the five components of fitness?

ANSWER: Cardiorespiratory endurance, muscular endurance, muscular strength, flexibility, and body composition.

Ref: SH-3, FM 21-20 w/C1, p 1-3

Break: TIME: 00:50 to 01:00

C. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the principles of exercise.
CONDITIONS:	As a squad leader, in a classroom environment and given an extract of FM 21-20 w/C1.
STANDARDS:	Identified the principles of the exercise IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. Principles of Exercise

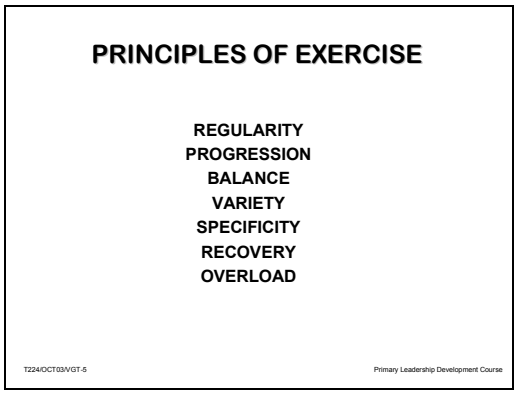
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 30 mins
Media: VGT-5

NOTE: Direct students to SH-3, FM 21-20 w/C1, p 1-4.

Now, let's take a look at the principles of exercise. Basic exercise principles are important for developing an effective program. The principles apply to everyone at all levels of physical training.

SHOW VGT-5, PRINCIPLES OF EXERCISE

NOTE: Uncover the principles of exercise one at a time as you discuss them with the students.



Ref: SH-3, FM 21-20 w/C1, p 1-4

Regularity. To achieve a training effect, a person must exercise often. One should strive to exercise each of the first four fitness components at least three times a week. Infrequent exercise can do more harm than good. Regularity is also important in resting, sleeping, and following a good diet.

Progression. The intensity (how hard) and/or duration (how long) of exercise must gradually increase to improve the level of fitness.

Balance. To be effective, a program should include activities that address all of the fitness components, since overemphasizing any one of them may hurt the others.

Variety. Providing a variety of activities reduces boredom and increases motivation and progress.

Specificity. You must gear training toward specific goals. For example, soldiers become better runners if their training emphasizes running. Although swimming is great exercise, it does not improve a 2-mile-run time as much as a running program does.

Recovery. You should follow a hard day of training for a given component of fitness by an easier training day or rest day for that component and/or muscle group(s) to help permit recovery. Another way to allow recovery is to alternate the

muscle group(s) exercised every other day, especially when training for strength and/or muscle endurance.

Overload. The workload of each exercise session must exceed the normal demands placed on the body in order to bring about a training effect.

REMOVE VGT-5

CHECK ON LEARNING:

QUESTION: Why should you use a variety of exercises during physical fitness training?

ANSWER: It reduces boredom and increases motivation and progress.

Ref: SH-3, FM 21-20 w/C1, p 1-4

QUESTION: Why is specificity an important part of exercise?

ANSWER: Because it gears the training toward one specific goal.

Ref: SH-3, FM 21-20 w/C1, p 1-4

D. ENABLING LEARNING OBJECTIVE

ACTION:	Determine how flexibility aids physical fitness.
CONDITIONS:	As a squad leader, in a classroom environment and given an extract of FM 21-20 w/C1.
STANDARDS:	Determined how flexibility aids physical fitness IAW FM 21-20 w/C1.

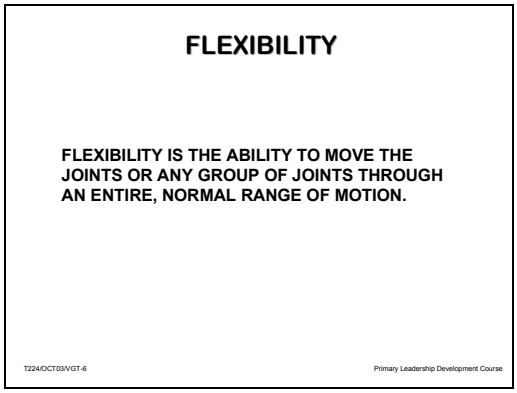
1. Learning Step / Activity 1. Determine How Flexibility Aids Physical Fitness

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 20 mins
Media: VGT-6 and VGT-7

NOTE: Direct students to SH-3, FM 21-20 w/C1, p 1-3.

Now let's return to the five components of fitness we discussed earlier and take a more detailed look at flexibility. This component of fitness is very important and you should take care not to exceed your limits of flexibility when you exercise. Let's see what flexibility is, as defined on our next VGT.

SHOW VGT-6, FLEXIBILITY



Ref: SH-3, FM 21-20 w/C1, p 1-3

NOTE: Ask a student to read the definition of flexibility aloud to the class. Ask the students to tell about any problems they have experienced with poor flexibility and related injuries.

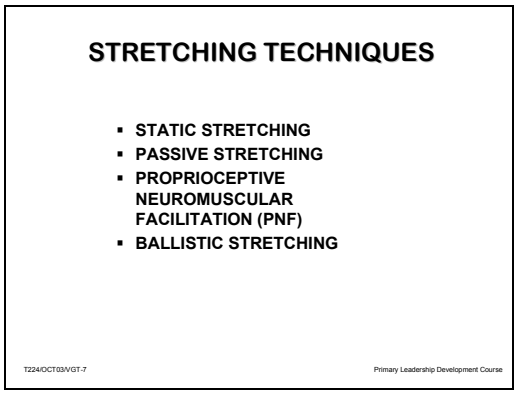
REMOVE VGT-6

NOTE: Direct students to SH-3, FM 21-20 w/C1, p 4-1

Now that we know the definition of flexibility, let's take a look at the different stretching techniques that will help improve your flexibility. There are various types of stretching exercises and techniques designed to develop flexibility. Most of these exercises fall under one of four general categories. You should understand the specifics of these four categories so you can choose the exercises that best suit your situation and meet the needs of you and your soldiers. The next VGT lists the four categories of stretching techniques.

SHOW VGT-7, STRETCHING TECHNIQUES

NOTE: Cover up all but the first item on the VGT. Uncover each bullet as you discuss it. Have the students explain in their own words the different stretching techniques.



Ref: SH-3, FM 21-20 w/C1, pp 4-1 and 4-2

REMOVE VGT-7

The warm-up and cool-down are very important parts of physical training sessions, and stretching exercises should be a major part of both. Before beginning any vigorous physical activity, you should prepare your body for exercise. The warm-up may help prevent injuries and maximize performance. The warm-up increases the body's internal temperature and heart rate. The chance of injury decreases when the soldier properly prepares the heart, muscles, ligaments, and tendons.

The cool-down helps you taper off gradually before stopping completely. The cool-down serves to gradually slow the heart rate and helps prevent pooling of blood in the legs and feet. During exercise, the muscles squeeze the blood through the veins. This helps return the blood to the heart. After exercise however, the muscles relax and no longer do this, and the blood can accumulate in the legs and feet. This can cause a person to faint. A good cool-down will help avoid this possibility. Soldiers should walk and stretch until their heart rate returns to less than 100 beats per minute. This usually happens five to seven minutes after the conditioning session.

The soldier should not limit flexibility training to just warm-up and cool-down periods. You should sometimes use an entire PT session to work on flexibility improvement.

NOTE: Refer the students to FM 21-20 w/C1, pp 4-2 thru 4-17 and give them a minute or two to scan the different stretching exercises.

CHECK ON LEARNING:

QUESTION: What is flexibility?

ANSWER: Flexibility is the range of movement of a joint or series of joints and their associated muscles.

Ref: SH-3, FM 21-20 w/C1, p 4-1

QUESTION: What are the four categories of stretching techniques?

ANSWER: Static, Passive, PNF, and Ballistic.

Ref: SH-3, FM 21-20 w/C1, pp 4-1 and 4-2

Break: TIME: 01:50 to 02:00

E. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the FITT factors.
CONDITIONS:	As a squad leader, in a classroom environment and given an extract of FM 21-20 w/C1.
STANDARDS:	Identified the FITT factors of physical fitness and determined individual heart rates IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. FITT Factors

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 45 mins
Media: VGT-8 thru VGT-12

NOTE: Direct students to SH-3, FM 21-20 w/C1, p 1-4.

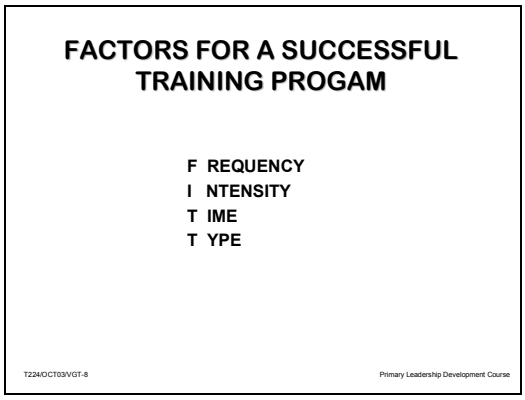
We know that the primary objective of our physical fitness training program is to improve the overall fitness of our soldiers. The only way to do this is to improve the five components of fitness. You have to make sure this happens for your soldiers by enforcing certain factors in your training program. A good way for you to remember these factors is to think "FITT," F-I-T-T.

QUESTION: What does the acronym "FITT" stand for?

ANSWER: Frequency, Intensity, Time, and Type.

Ref: SH-3, FM 21-20 w/C1, p 1-4

SHOW VGT-8, FACTORS FOR A SUCCESSFUL TRAINING PROGRAM



Ref: SH-3, FM 21-20 w/C1, p 1-5, Fig 1-1

NOTE: Refer the students to Fig 1-1, p 1-5, in FM 21-20. Discuss each factor. Make sure the students understand what each one means. You may ask them to explain each factor to promote discussion.

Frequency. To get a "training effect," you must exercise a targeted muscle group at least 3 times per week. You should stretch at every exercise session and use the "hard day/recovery day" principle if possible. The important thing is that you exercise consistently. For example, one week exercise on Monday, Wednesday, and Friday. The next week on Tuesday, Thursday and maybe Saturday, concentrate on strength and endurance training.

Intensity. Intensity relates to how hard you exercise, and it represents the degree of effort with which you train. Intensity is probably the single most important factor for improving performance. The more energy you expend per unit of time, the greater the intensity of exercise. To improve cardiorespiratory fitness, you need to sustain a training heart rate in the range of 60 to 90 percent of your heart rate reserve. If the intensity is less than 60 percent of the heart rate reserve, you probably will not produce any training effect. We'll look at the heart rate reserve and the training heart rate in a moment. For muscular strength and endurance, intensity refers to the amount of resistance you overcome.

Time. Time depends on the type of exercise you're doing. The Army standard for developing cardiorespiratory endurance is at least 20 minutes of exercise at the training heart rate (THR).

For muscular strength and endurance, time equates to the number of repetitions performed. For the average soldier, 8 to 12 repetitions with enough resistance to cause muscle failure will improve both strength and endurance. For warm-up and cool-down, you should hold stretches for 10 to 15 seconds. For flexibility development, hold them for 30 to 60 seconds.

Type. Type refers to the kind of exercise you're doing. If you follow the basic principles of exercise and the "FITT" factors, you should notice an increase in performance and overall fitness. This increase is the training effect. A training effect

is a series of physiological changes made by the body which makes it healthier, more efficient, stronger, and better able to perform. Remember: If your unit has specific fitness needs, your fitness training program should address those needs. The principles of exercise work with any and all types of fitness training. The proper use of "FITT" factors makes your program effective.

REMOVE VGT-8

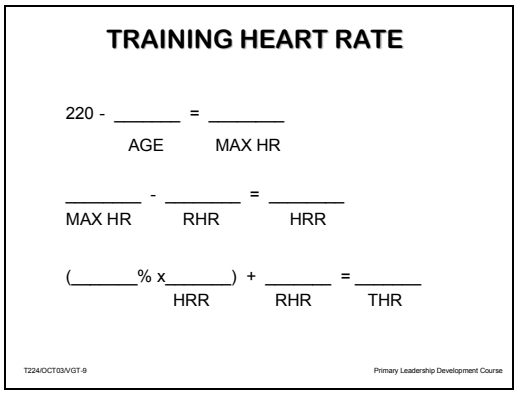
We mentioned a moment ago about the heart rate reserve or HRR and the training heart rate or THR. You need to know your training heart rate. This will tell you how hard you need to exercise in order to achieve a training effect. If you exercise and never reach your training heart rate, you won't improve your fitness.

QUESTION: How do you determine your training heart rate?

ANSWER: See VGT-9.

Ref: SH-3, FM 21-20 w/C1, p 2-3

SHOW VGT-9, TRAINING HEART RATE



Ref: SH-3, FM 21-20 w/C1, p 2-3

Every soldier is different, so each of you has to calculate your own training heart rate. We'll start with your current physical condition. This is important because it determines how much exercise you need to do to achieve a training effect. If you are in reasonably good physical condition, you should exercise at 70 percent of your heart rate reserve (HRR). If you are not in good shape, you should not use more than 60 percent of your HRR. If you are in excellent physical condition, you should start at

85 percent. As an example, let's assume we are in reasonably good physical condition, and you want to exercise using 70 percent of your HRR. The first step is to determine your maximum heart rate (MHR) based on your age. To do this, subtract your age from the number 220. The end result is your MHR. This is the maximum your heart should beat before suffering a dangerous overload.

NOTE: Allow students a moment to complete this calculation. You should do the calculation using your own age and writing on the chalkboard (e.g., 220 – 20 = 200). Ask if they have any questions; provide answers.

Next, we need to calculate our resting heart rate (RHR) in beats per minute. To do this, count your resting pulse for 30 seconds. Multiply that count by two. Completely relax before you take this count. If your count is 30, your RHR will be 60.

NOTE: Allow students a few moments to count their resting pulse for 30 seconds. If necessary, take a few moments and help them find their pulse on their wrist or near their Adam's apple. Monitor the time with a stopwatch or with the second hand on your wristwatch. Have students make a note of their RHR.

You should know your resting heart rate. Let's say it is 68. Take your RHR and subtract it from your maximum heart rate on the chalkboard. We said our maximum heart rate was 200. When we subtract our resting heart rate of 68 from 200, we get 132. This is our Heart Rate Reserve (HRR). Now that we have our heart rate reserve, we can calculate our training heart rate. We know that since we're in reasonably good physical condition, we want to exercise using 70 percent of our heart rate reserve.

QUESTION: What is 70 percent of a heart rate reserve of 132?

ANSWER: 92.4

You have to change the percentage into decimal form (e.g., 0.70) to make the calculation.

NOTE: Show the calculation: 0.70 x 132 = 92.4.

Add your (percent x HRR) 92.4 to the resting heart rate, 68, to determine the training heart rate. In this case, 92.4 + 68 = 160.4. Whenever your calculation ends in a fraction, you need to round it off to the nearest whole number. This brings our

training heart rate to 160. This means that for us to achieve a training effect, we need to exercise until our heart beats 160 times per minute.

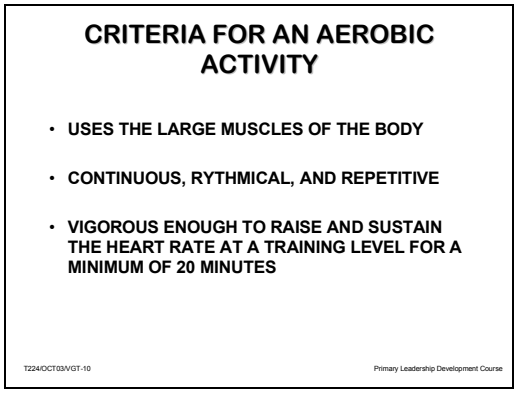
REMOVE VGT-9

Most people should have a training heart rate between 138 to 168 beats per minute. Your goal is to exercise within your training heart rate range, which is plus or minus 10 beats per minute. To determine if you are working within this range, exercise steadily for 5 minutes; then stop and check your pulse for 10 seconds. In 10 seconds, the heart rate should be between 23 to 28 beats. Multiply this by six to get the minute equivalent. This works out to 138 to 168 beats per minute. Remember: your training heart rate is your personal intensity-monitoring device. Use it and you will improve your fitness.

Turn to SH-2, FM 21-20 w/C1, p 2-5, Fig 2-2, and you will see that the chart makes it easy for you to determine your THR just by using your age and general fitness level.

The one component of fitness that directly affects all others is the cardiorespiratory system. To train this component you must stress or overload the system that delivers oxygen to the actual working muscles. We call this system the oxygen transport system. Since we use oxygen to create energy and aerobic literally means “with oxygen,” we call this aerobic training. You’ve probably heard it referred to as simply aerobics. For an activity to be aerobic, it must meet certain criteria.

SHOW VGT-10, CRITERIA FOR AN AEROBIC ACTIVITY



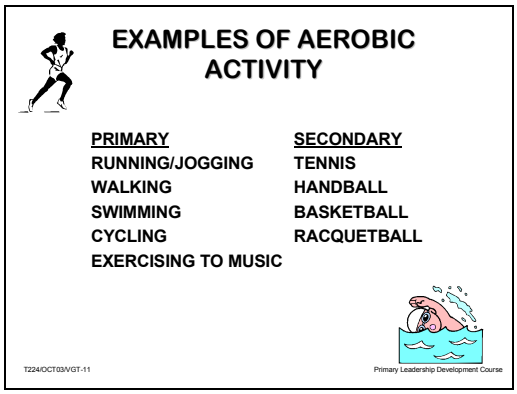
Ref: SH-3, FM 21-20 w/C1, p 2-0

You need a high level of CR fitness for prolonged, rhythmic use of the body's large muscle groups. A high level of CR fitness permits continuous physical activity without a decline in performance and allows for rapid recovery following fatiguing physical activity.

NOTE: After you've explained each item, have the students give some examples of aerobic activities that meet the criteria on the VGT.

REMOVE VGT-10

SHOW VGT-11, EXAMPLES OF AEROBIC ACTIVITY



Ref: SH-3, FM 21-20 w/C1, p 2-6

These are good activities to build up the cardiorespiratory component of fitness. You need to work these into your fitness program whenever possible. This is not an all-inclusive list; a number of other activities could meet the criteria to include cross-country skiing, hiking, and others. As you know, the Army relies mostly on running for

unit aerobic training. Whenever you can, you should consider your soldier's likes and dislikes when choosing an activity.

REMOVE VGT-11

NOTE: Refer the students to SH-3, FM 21-20 w/C1, p 1-7

Now, let's take a look at the phases of fitness conditioning.

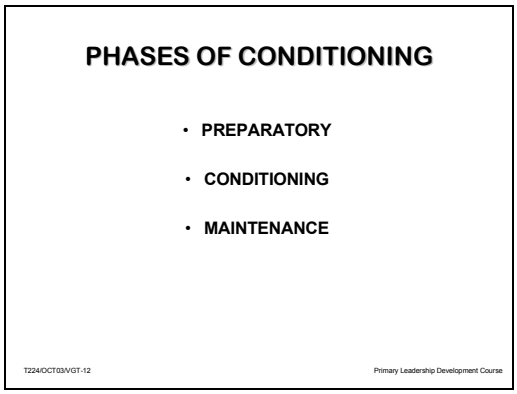
QUESTION: What are the three phases of conditioning?

ANSWER: Preparatory, conditioning, and maintenance.

Ref: SH-3, FM 21-20 w/C1, p 1-7

The progression of a soldier largely depends on his fitness level. A young healthy person may be able to start with the conditioning phase while those who have been exercising regularly my already be in the maintenance phase. Health status, age, needs, and goals are also factors. The aerobic component of any exercise program has three phases of progression (phases of conditioning).

SHOW VGT-12, PHASES OF CONDITIONING



Ref: SH-3, FM 21-20 w/C1, p 1-7

The first phase is **preparatory**. Initially, poorly conditioned soldiers should run, or walk if need be, three times a week for 10 to 15 minutes. They should walk at a pace that elevates their heart rate to a level equating to 60 percent using the percent of heart rate reserve method. Distribute your soldier's recovery days evenly throughout the week, and training should progress slowly. Soldiers should then lengthen their exercise session to 16 to 20 minutes and/or elevate their heart rate to

about 70 percent HRR. When soldiers can handle an intensity of 70 percent HRR for 20 to 25 minutes, they are ready for the next phase.

The second phase is **conditioning**. To reach the desired level of fitness, soldiers must increase the amount of exercise and/or workout intensity as their strength and/or endurance increases. Soldiers should start with the preparatory phase and gradually increase until they reach their desired level of fitness.

The last phase is **maintenance**. Maintenance phase sustains the high level of fitness achieved in the conditioning phase. The emphasis here is no longer on progression. You should always encourage soldiers to progress beyond minimum requirements. Maintaining an optimal level of fitness should become part of every soldier's life-style. Soldiers should continue this level throughout their lives.

REMOVE VGT-12

CHECK ON LEARNING:

QUESTION: What does the acronym "FITT" stand for?

ANSWER: Frequency, Intensity, Time, and Type.

Ref: SH-3, FM 21-20 w/C1, pp 1-4 thru 1-7

QUESTION: In the acronym "FITT" what do we mean by time?

ANSWER: The time spent exercising, at least 20 to 30 continuous minutes for CR and 8 to 12 repetitions with enough resistance to cause muscle failure.

Ref: SH-3, FM 21-20 w/C1, p 1-6

QUESTION: Why is it important to know your Training Heart Rate?

ANSWER: It is important because soldiers should gauge the intensity of their workouts. Using the THR lets soldiers find and prescribe the correct level of intensity.

Ref: SH-3, FM 21-20 w/C1, p 2-2

QUESTION: Do all soldiers start out at the progression phase of fitness conditioning?

ANSWER: No. Starting phases are different for individuals depending on their age, fitness levels, and previous physical activity.

Ref: SH-3, FM 21-20 w/C1, p 1-7

QUESTION: What are the three phases of conditioning?

ANSWER: Preparatory, conditioning, and maintenance.

Ref: SH-3, FM 21-20 w/C1, p 1-7

NOTE: Since you will conduct the remainder of this lesson on the physical fitness training field, at this time conduct the summary on p 35 of this TSP.

Break: TIME: 02:50 to 03:00

F. ENABLING LEARNING OBJECTIVE

ACTION:	Demonstrate the extended rectangular formation.
CONDITIONS:	As a squad leader, on a physical fitness training field and given an extract of FM 3-21.5.
STANDARDS:	Demonstrated the extended rectangular formation IAW FM 3-21.5.

1. Learning Step / Activity 1. Extended Rectangular Formation

Method of Instruction: Demonstration
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 1 hr
Media: None

NOTE: This part of the lesson allows the students to demonstrate the extended rectangular formation and warm-up/cool-down activities. Conduct this portion of the lesson outside the classroom. Have the students gather around you for the initial portion of this session. Tell the students that they will learn how to form and use the extended rectangular formation during their training sessions. Tell the students you will show them how to properly form the extended rectangular formation and how to perform proper warm up/cool-down activities.

Before you can do any type of organized physical training, you need to organize your soldiers for control and supervision. The best way to do this is to form them up in some type of formation. Basically, there are two different formations you can use to conduct physical fitness training. They are the circle and extended rectangular formation.

Here at PLDC we'll concentrate on the extended rectangular formation. There are eight commands you must give to put your soldiers into the extended rectangular formation for the physical fitness training session. You must give the proper commands in the proper order. Make sure when you form your group; you bring them to the position of attention before you begin your eight commands.

NOTE: Have the students form into two ranks. Using the eight commands listed in SH-4, FM 3-21.5, demonstrate forming the extended rectangular formation and leading several warm-up/cool-down exercises. Have one student at a time demonstrate the commands to form an extended rectangular formation and a few warm-up/cool-down exercises, then return to a normal interval formation. The students may pick their own warm-up and cool-down exercises or the instructors will give them the exercises to do. Ask the students if they have any questions.

CHECK ON LEARNING:

QUESTION: How many commands are there to form soldiers into the extended rectangular formation?

ANSWER: Eight commands.

Ref: SH-4, FM 3-21.5, p 2-7, para c(1) thru (8)

Break: TIME: 03:50 to 04:00

G. ENABLING LEARNING OBJECTIVE

ACTION:	Demonstrate push-up/sit-up improvement exercises.
CONDITIONS:	As a squad leader, on a physical fitness training field and given an extract from FM 21-20 w/C1.
STANDARDS:	Demonstrated push-up/sit-up improvement exercises IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. Push-Up/Sit-Up Improvement Exercises

Method of Instruction: Demonstration
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 1 hr
Media: None

NOTE: During this session the students will perform push-up and sit-up improvement exercises. After your discussion, use SH-3, FM 21-20 w/C1, pp 3-7 thru 3-9 and lead the students in push-up and sit-up improvement exercises using timed sets.

During this session we'll concentrate on improving push-up and sit-up performance. If your soldiers fail their APFT, it reflects badly on you. You are responsible for their development. This includes their physical fitness development.

Specificity is one of the principles of exercise. To get better at doing push-up and sit-ups, you have to practice doing push-ups and sit-ups. Most of us practice for these events during physical training, but we usually don't get the most out of our training time. In most units during PT, soldiers do push-ups and sit-ups for 2 minutes or do 15 repetitions of the 4-count push-up and/or count cadence for 15 to 20 sit-ups. You cannot maintain a level of fitness that assures success on the APFT with this

type training. You have to train at an intensity level that exceeds the minimum standard. Most soldiers are unable to do push-ups or sit-ups continuously for 2 minutes. A good alternative is to break down the 2-minute time frame into four 30-second sets. Your objective then is to do as many repetitions as you can per set. You'll find that you can do more repetitions in these short timed sets than you can if you did them for two continuous minutes.

NOTE: Conduct the PT session consisting of warm-up exercises, push-up/sit-up exercises, and cool-down exercises. Remain flexible during the activity session; the importance is the use of timed sets, not to test the muscle failure of the students. Conduct an AAR with the class after cool-down.

You'll get the most from your push-up and sit-up improvement training if you completely train all of the major muscle groups involved in the push-up and sit-up.

NOTE: Explain all of the major muscle groups involved in push-up improvement. See SH-3, FM 21-20 w/C1, p 3-10.

This session maximized the time spent doing push-up and sit-up improvement exercises. Keep in mind that a well thought out PT session is more challenging and beneficial to everyone concerned. By making the best use of the allotted time, your soldiers and the unit both achieve their goals. That goal is to develop physically fit soldiers capable of performing their missions on the battlefield.

CHECK ON LEARNING:

QUESTION: What's the best way to improve push-up or sit-up performance?

ANSWER: Specificity.

Ref: SH-3, FM 21-20 w/C1, p 1-4

H. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the steps for using an ability group run.
CONDITIONS:	As a squad leader, on a physical fitness training field and given an extract from FM 21-20 w/C1.
STANDARDS:	Identified steps for using an ability group run IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. Ability Group Run

Method of Instruction: Practical Exercise (Performance)
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 1 hr
Media: None

NOTE: During this session, the students will participate in a group run. Because of the 1:8 instructor to student ratio, it is not realistic to break down eight students into ability groups.

Traditionally, soldiers run in unit formations at a pace prescribed by the PT instructor. Unfortunately, the unit run is not challenging enough in intensity or duration to many soldiers. Ability group training allows everyone participating in the exercise to get the same training benefit. Ability group running lets soldiers train in groups of near-equal ability. The best way to assign soldiers to ability groups is to make a list, in order, of the unit's most recent APFT 2-mile-run times. The number of groups depends on the unit size, number of leaders available to conduct the runs, and range of 2-mile-run times. A company-sized unit broken down into four to six ability groups, each with a leader is the best for aerobic training.

NOTE: Brief the students on timing techniques and how they are to conduct the run. Conduct a warm-up session before starting the run. After the warm-up, form the group in a column of twos. Run to the left rear of the column for control. The run should last for about 30 minutes. Every 8 to 10 minutes, allow the students to check their training heart rate. Keep in mind that the pace of the group determines the length of the run. After the run, conduct a cool-down period.

Whenever possible, design your exercise sessions to the different fitness levels of your soldiers. Ability groups allow for this. Running is not the only type of exercise where you can use ability group training. There is: interval training, Fartlek training, last-man-up training, and cross country running. Ability group training allows you to get the maximum training effect from your limited training time.

CHECK ON LEARNING:

QUESTION: What is the best way to assign ability groups?

ANSWER: Make a list, in order, of the unit's most recent APFT 2-mile-run times.

Ref: SH-3, FM 21-20 w/C1, p 2-7

QUESTION: What are others types of training that you can use with ability groups?

ANSWER: Interval training, Fartlek training, last-man-up training, and cross-country training.

Ref: SH-3, FM 21-20 w/C1, pp 2-7 thru 2-10

Break: TIME: 05:50 to 06:00

I. ENABLING LEARNING OBJECTIVE

ACTION:	Conduct a physical fitness session.
CONDITIONS:	As a squad leader, on a physical fitness training field and given an extract from FM 21-20 w/C1.
STANDARDS:	Conducted a physical fitness session IAW FM 21-20 w/C1.

1. Learning Step / Activity 1. Conduct a Physical Fitness Session

Method of Instruction: Practical Exercise (Performance)
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 4 hrs
Media: PE-1

NOTE: This part of the lesson allows the students to demonstrate the extended rectangular formation and warm-up/cool-down activities.

NOTE: There are 4 hours of POI time allocated for the practical performance exercises. After explaining the practical performance exercise requirements to the students IAW PE-1 (App C), ask if they have any questions and provide answers. Choose one student per group of eight a day to lead PT. Two students will conduct a PT session daily. Evaluate each student using the Army Physical Fitness Training Performance Evaluation Sheet, Appendix C, p C-3.

CHECK ON LEARNING: The AAR conducted after each PT session serves as the check on learning for the LS/A. C 1

J. ENABLING LEARNING OBJECTIVE

ACTION:	Conduct the physical fitness training performance examination.
CONDITIONS:	As a squad leader, on a physical fitness training field, and given an extract from FM 21-20 w/C1 and FM 3-21.5.
STANDARDS:	Conducted the physical fitness training performance examination IAW App B of this TSP, FM 21-20 w/C1, and FM 3-21.5.

1. Learning Step / Activity 1. PT Training Session Examination

Method of Instruction: Test
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 4 hrs
Media: None

NOTE: There are 4 hours of POI time allocated for the physical fitness training performance examination. Explain the student evaluation (performance examination) from App B and SH-4 of this lesson. Conduct the physical fitness training performance examination IAW App B. Use the Army Physical Fitness Performance Test Sheet, in Appendix B, p B-3, to record the results of the student's evaluation.

NOTE: Conduct a break after each student performs the physical fitness training performance examination.

SECTION IV. SUMMARY

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review / Summarize Lesson

As noncommissioned officers, you are responsible for the well-being of your soldiers. Fitness/wellness is the foundation for all soldierly duties; whether on a battlefield or in an office, fitness is consideration for the well-being of your soldiers. This is a responsibility that the Army, your leaders, and your soldiers expect you to initiate and maintain.

SECTION V. STUDENT EVALUATION

Testing Requirements

NOTE: Describe how the student must demonstrate accomplishment of the TLO. See Appendix B for Performance Examination conducted during ELO J of this lesson.

Feedback Requirements

NOTE: Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

None

Terminal Learning Objective

VGT-1, Physical Fitness

PHYSICAL FITNESS

T224/OCT03/VGT-1

Primary Leadership Development Course

Enabling Learning Objective A

Learning Step 1

VGT-2, Physical Fitness Training Program objective

PHYSICAL FITNESS TRAINING PROGRAM OBJECTIVE

TO ENHANCE COMBAT READINESS BY DEVELOPING AND SUSTAINING A HIGH LEVEL OF PHYSICAL FITNESS IN SOLDIERS AS MEASURED BY:

- **CARDIORESPIRATORY ENDURANCE**
- **MUSCULAR STRENGTH AND ENDURANCE**
- **FLEXIBILITY**
- **BODY COMPOSITION STANDARDS AS PRESCRIBED BY AR 600-9**
- **MOTOR EFFICIENCY (COORDINATION, AGILITY, BALANCE, POSTURE, SPEED, POWER, AND KINESTHETIC AWARENESS).**

T224/OCT03/VGT-2 Primary Leadership Development Course

PHYSICAL FITNESS TRAINING PROGRAM OBJECTIVE (cont)

- ANAEROBIC CONDITIONING
- COMPETITIVE SPIRIT, THE WILL TO WIN, AND UNIT COHESION
- SELF-DISCIPLINE
- A HEALTHY LIFESTYLE THAT INCLUDES GOOD NUTRITION, EXCLUDES SMOKING, AND AVOIDS MISUSE OF ALCOHOL AND DRUGS
- ABILITY TO COPE WITH ALL TYPES OF STRESS

Enabling Learning Objective B

Learning Step 1

VGT-4, Components of Fitness

COMPONENTS OF FITNESS

- CARDIORESPIRATORY ENDURANCE
- MUSCULAR STRENGTH
- MUSCULAR ENDURANCE
- FLEXIBILITY
- BODY COMPOSITION

T224/OCT03/VGT-4

Primary Leadership Development Course

Enabling Learning Objective C

Learning Step 1

VGT-5, Principles of Exercise

PRINCIPLES OF EXERCISE

REGULARITY
PROGRESSION
BALANCE
VARIETY
SPECIFICITY
RECOVERY
OVERLOAD

T224/OCT03/VGT-5 Primary Leadership Development Course

Enabling Learning Objective D

Learning Step 1

VGT-6, Flexibility

FLEXIBILITY

FLEXIBILITY IS THE ABILITY TO MOVE THE JOINTS OR ANY GROUP OF JOINTS THROUGH AN ENTIRE, NORMAL RANGE OF MOTION.

T224/OCT03/VGT-6

Primary Leadership Development Course

STRETCHING TECHNIQUES

- STATIC STRETCHING
- PASSIVE STRETCHING
- PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION (PNF)
- BALLISTIC STRETCHING

Enabling Learning Objective E

Learning Step 1

VGT-8, Factors for a Successful Training Program

FACTORS FOR A SUCCESSFUL TRAINING PROGAM

F REQUENCY
I NTENSITY
T IME
T YPE

T224/OCT03/VGT-8

Primary Leadership Development Course

TRAINING HEART RATE

220 - _____ = _____

AGE MAX HR

_____ - _____ = _____

MAX HR RHR HRR

(_____% x_____) + _____ = _____

HRR RHR THR

T224/OCT03/VGT-9

Primary Leadership Development Course

CRITERIA FOR AN AEROBIC ACTIVITY

- **USES THE LARGE MUSCLES OF THE BODY**
- **CONTINUOUS, RYTHMICAL, AND REPETITIVE**
- **VIGOROUS ENOUGH TO RAISE AND SUSTAIN THE HEART RATE AT A TRAINING LEVEL FOR A MINIMUM OF 20 MINUTES**

EXAMPLES OF AEROBIC ACTIVITY

PRIMARY	SECONDARY
RUNNING/JOGGING	TENNIS
WALKING	HANDBALL
SWIMMING	BASKETBALL
CYCLING	RACQUETBALL
EXERCISING TO MUSIC	

T224/OCT03/VGT-11

Primary Leadership Development Course

PHASES OF CONDITIONING

- **PREPARATORY**
- **CONDITIONING**
- **MAINTENANCE**

Appendix B Test(s) and Test Solution(s)

Overview	This performance test measures the student's ability to properly conduct an Army Physical Fitness Training session.
Administrative Instructions	Be sure you have resolved any problems you may have encountered during PE-1. Ensure you have adequate copies of SH-3, extracted material from FM 21-20 w/C1, and SH-4, FM 3-21.5.
Personnel Requirements	Number of students to evaluate: Eight. Number of evaluators: One per group.
Equipment Required	You will not need any equipment unless required by your local SOP for conduct of this examination.
Classroom or Training Area	Physical training area large enough to accommodate a 1:8 instructor to student ratio for entire class size.
Evaluation Planning Time	Administrative: None. After Action Review: 5 minutes.
Break	According to local academy commandant’s time for personal hygiene.

Instructions to Students

1. You and a fellow classmate must plan the PT session and correctly perform 16 or more of the 23 performance steps to achieve a "GO." Although you are leading the PT session with another classmate, your SGL will grade you separately. A "GO" is a graduation requirement. You have 50 minutes, plus or minus 10 minutes, to complete this performance evaluation test. You may retest one time and must complete the evaluation in its entirety.

2. You must:

   a. Form an extended rectangular formation.
   b. Lead the PT group in warm-up exercises.
   c. Lead a PT session that includes at least one push-up/sit-up improvement exercise or an aerobic event.
   d. Conduct a cool-down and reassemble the group into a normal interval formation.

3. The following ratings apply toward graduation and honors. Your academic score derives from dividing the number of correct performance steps by the total number of performance steps. A score of:

   a. 0-69 rates UNSATISFACTORY.
   b. 70-89 rates SATISFACTORY.
   c. 90-100 rates SUPERIOR.
   d. Retest is SATISFACTORY with a maximum score of 70 percent.

4. You may correct any erroneous commands without penalty by using the command of "As you were," before the command of execution, making the correction, and then continuing. You may **NOT** use notes or cue cards during the evaluation.

Environmental Considerations

You must comply with all appropriate environmental considerations IAW your local SOP and FM 21-20 w/C1, Chapter 12.

Safety Considerations

You must comply with all appropriate safety considerations IAW local SOP and FM 21-20 w/C1, Chapter 13.

Evaluation Criteria

The students must correctly perform 16 out of the 23 performance steps in order to achieve a "GO." A "GO" is a graduation requirement IAW Course Management Plan, Chap 1, p 1-3.

Retest

There is only one retest authorized. The student must retake the entire performance evaluation during the retest. A "GO" is a graduation requirement.

Army Physical Fitness Performance Test Sheet (T224)

STUDENT RANK & NAME (Last, First, MI):			STUDENT NO:	
SGL RANK & NAME:	SQUAD:		CLASS NO:	
Performance Step	Initial Test Date:		Retest Date:	
EXTENDED RECTANGULAR FORMATION:	GO	NO GO	GO	NO GO
Squad, ATTENTION/FALL IN				
Extend to the left, MARCH				
Arms downward, MOVE				
Left, FACE				
Extend to the left, MARCH				
Arms downward, MOVE				
Right, FACE				
From front to rear, COUNT OFF				
Even numbers to the left, UNCOVER				
CONDUCTS WARM-UP:	GO	NO GO	GO	NO GO
Identify each stretching exercise				
Leads group in execution of stretches				
Holds stretch for 10-15 seconds/rotations 5-10 seconds				
Conduct warm-up for 5-7 minutes/focuses on muscles targeted.				
LEADS EXERCISE SESSION:	GO	NO GO	GO	NO GO
Prepared / organized / confident / knowledgeable				
Provides sufficient training intensity				
Avoids extreme formality that emphasizes form over substance				
Avoids long rest periods that interfere with progress				
CONDUCTS COOL-DOWN:	GO	NO GO	GO	NO GO
Identifies each cool-down stretch				
Leads group in execution of each stretch				
Executes stretch for proper length of time (12 sec or more)				
Cool-down performed adequately (5-7 minutes - on muscles used)				
ENDS SESSION:	GO	NO GO	GO	NO GO
Squad, ATTENTION/FALL IN				
Assemble to the right, MARCH				
RATING: 0-69 = Unsatisfactory | 70-89 = Satisfactory | 90-100 Superior Retest is satisfactory with a minimum score of 70 percent.	Score		Score	

Superior -0=100% -1=96% -2=91%	Satisfactory -3=87% -4=83% -5=78% -6=74% -7=70%	Unsatisfactory -8=65%

Strength(s):	Weakness(es):

Remarks:

INITIAL TEST	SGL Signature	Student Signature
RE-TEST	SGL Signature	Student Signature

This page intentionally left blank

Appendix C Practical Exercises and Solutions

This Appendix Contains

This appendix contains the items listed in this table:

Item/Title	Pages
PE-1, Conduct Physical Fitness Training Session	C-1 through C-3

This page intentionally left blank

PRACTICAL EXERCISE SHEET PE 1

Title	Conduct a Physical Fitness Training Session
Lesson Number/Title	T224 version 1 / Physical Fitness
Introduction	The emphasis of this practical exercise is whether or not the students have the capability to form an extended rectangular formation, lead a PT group in warm-up exercises, lead a PT session, conduct cool-down exercises, and reassemble the formation. Emphasis is not on perfect performance.
Motivator	This practical exercise will provide students the hands on experience needed to pass the physical fitness training session performance examination and to effectively lead PT back at their units.
Learning Step/Activity	**NOTE:** The instructor should inform the students of the following Learning Step/Activity requirements. (ELO I.1) At the completion of this lesson, you [the student] will:

ACTION:	Conduct a Physical Fitness Session
CONDITIONS:	As a squad leader, on a physical fitness training field and given an extract from FM 21-20 w/C1.
STANDARDS:	Conducted a physical fitness session IAW FM 21-20 w/C1.

Safety Requirements	Base safety considerations on local SOP and FM 21-20 w/C1, Chapter 13.
Risk Assessment Level	Low
Environmental Considerations	Make students aware of any local policies pertaining to environmental hazards that could affect how they conduct physical training.
Evaluation	This practical exercise measures the level of competence a student has leading a physical fitness training session. The areas graded apply to every physical training event on a “GO/NO GO” basis. At the end of each physical fitness training session, conduct a brief AAR with the student on his/her performance. Ensure the students know that you will grade their PE using the evaluation sheet on C-3. The PE will not affect your academic rating for the course.
Instructional Lead-In	None
Resource Requirements	**Instructor Materials:** Physical training area large enough to accommodate a 1:6-8 instructor to student ratio for entire class size.

Special Instructions

The emphasis of this practical exercise is not on a perfect performance; it is to ensure that the soldier is capable of conducting a physical fitness training session. Use the Army Physical Fitness Performance Sheet, App C, p C-3 to record the results of this practical exercise.

Procedures

Tell the students they have 50 minutes, plus or minus 10 minutes, to complete this practical exercise and during this time they must:

- Form an extended rectangular formation.
- Lead the PT group in warm-up exercises.
- Lead a PT session that includes at least a push-up/sit-up improvement exercise and an aerobic event.
- Conduct a cool-down, and reassemble the group into a normal interval formation.

NOTE: Explain to the students that this practical exercise will prepare them for the actual evaluation. The SGL will use the same evaluation form so the students become familiar with the evaluation criteria and standards.

Feedback Requirements

Conduct an AAR at the end of each PT session.

Army Physical Fitness Performance Test Sheet (T224)

STUDENT RANK & NAME (Last, First, MI):			STUDENT NO:	
SGL RANK & NAME:	SQUAD:		CLASS NO:	
Performance Step	Initial Test Date:		Retest Date:	
EXTENDED RECTANGULAR FORMATION:	GO	NO GO	GO	NO GO
Squad, ATTENTION/FALL IN				
Extend to the left, MARCH				
Arms downward, MOVE				
Left, FACE				
Extend to the left, MARCH				
Arms downward, MOVE				
Right, FACE				
From front to rear, COUNT OFF				
Even numbers to the left, UNCOVER				
CONDUCTS WARM-UP:	GO	NO GO	GO	NO GO
Identify each stretching exercise				
Leads group in execution of stretches				
Holds stretch for 10-15 seconds/rotations 5-10 seconds				
Conduct warm-up for 5-7 minutes/focuses on muscles targeted.				
LEADS EXERCISE SESSION:	GO	NO GO	GO	NO GO
Prepared / organized / confident / knowledgeable				
Provides sufficient training intensity				
Avoids extreme formality that emphasizes form over substance				
Avoids long rest periods that interfere with progress				
CONDUCTS COOL-DOWN:	GO	NO GO	GO	NO GO
Identifies each cool-down stretch				
Leads group in execution of each stretch				
Executes stretch for proper length of time (12 sec or more)				
Cool-down performed adequately (5-7 minutes - on muscles used)				
ENDS SESSION	GO	NO GO	GO	NO GO
Squad, ATTENTION/FALL IN				
Assemble to the right, MARCH				
RATING: 0-69 = Unsatisfactory | 70-89 = Satisfactory | 90-100 Superior Retest is satisfactory with a minimum score of 70 percent.	Score		Score	

Superior -0=100% -1=96% -2=91%	Satisfactory -3=87% -4=83% -5=78% -6=74% -7=70%	Unsatisfactory -8=65%

Strength(s):	Weakness(es):

Remarks:

INITIAL TEST	SGL Signature	Student Signature
RE-TEST	SGL Signature	Student Signature

This Appendix Contains

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2
SH-2, Extracted Material from AR 350-1	SH-2-1
SH-3, Extracted Material from FM 21-20 w/C1	SH-3-1
SH-4, Extracted Material from FM 3-21.5	SH-4-1

Student Handout 1

Advance Sheet

Lesson Hours

This lesson consists of three hours of small group instruction, two hours of demonstration, five hours of practical exercise, and four hours of testing.

Overview

This lesson will provide the techniques and procedures you need to know to conduct the Army's physical fitness program. The primary focus of this lesson is to enhance your knowledge of physical fitness and show you how to conduct a variety of fitness training exercises. This lesson offers you an opportunity to actually perform the different exercises. The performance evaluation provides you a hands-on performance oriented training opportunity. You will demonstrate, in a unit environment, your skills and knowledge as a trainer and receive immediate feedback on your performance.

Learning Objective

Terminal Learning Objective (TLO).

Action:	Conduct your team's/squad's/section's physical fitness training.
Conditions:	As a team/squad/section leader, in a classroom or field environment, given extracts from AR 350-1, FM 21-20 w/C1, and FM 3-21.5.
Standards:	Conducted your team's/squad's/section's physical fitness training IAW AR 350-1, FM 21-20 w/C1, and FM 3-21.5.

ELO A Identify the Army's Physical Fitness Training Program objective.
ELO B Recognize the components of fitness.
ELO C Identify the principles of exercise.
ELO D Determine how flexibility aids physical fitness.
ELO E Identify the FITT factors.
ELO F Demonstrate the extended rectangular formation.
ELO G Demonstrate push-up/sit-up improvement exercises.
ELO H Identify steps for using an ability group run.
ELO I Conduct a physical fitness session.
ELO J Conduct the physical fitness training performance examination.

Assignments

Before class--

- Read SH-1.
- Read SH-2, pp 11 thru 13.
- Read SH-3, pp 1-1 thru 4-17.
- Skim SH-3, pp 5-0 thru 9-18, and 12-0 thru 13-2.
- Study, SH-4, p 2-7, para 2-4c.
- Read, SH-4, p 2-8, para 2-4d.

During class--

- Participate in classroom discussion and practical exercise.

After class--

- Review notes and lesson materials.
- Participate in performance evaluations.

Additional Subject Area Resources

None

Bring to Class

- Student Handouts 2, 3, and 4.
- Pencil or pen and writing paper.

Student Handout 2

Extracted Material from AR 350-1

This Student Handout Contains

This student handout contains 3 pages of extracted material from the following publication:

AR 350-1, Army Training and Education, 9 April 2003

Chapter 1 pages 11 thru 13

Disclaimer: The training developer downloaded the extracted material from the U.S. Army Publishing Directorate Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

RECOVERABLE PUBLICATION

YOU RECEIVED THIS DOCUMENT IN A DAMAGE-FREE CONDITION. DAMAGE IN ANY WAY, TO INCLUDE HIGHLIGHTING, PENCIL MARKS, OR MISSING PAGES WILL SUBJECT YOU TO PECUNIARY LIABILITY (STATEMENT OF CHARGES, CASH COLLECTION, ETC.) TO RECOVER PRINTING COST.

equipment training plans are developed early to permit coordination for personnel and resources. NETP establishes, coordinates, and documents the milestones and resources for executing the NET strategy. In compliance with the acquisition charter, planning for NET covers the spectrum of the life-cycle management model. It addresses all training applicable to the system and its software, to include the use of training devices throughout fielding. All NETPs are maintained on the Army Modernization Training Automation System (AMTAS), the official NET database. The guidelines for completing NETPs are contained in DA Pam 350–40.

(2) Management of NETP is a joint effort among MATDEV, CBTDEV, TNGDEV, gaining MACOMs, and PERSCOM. MATDEV also provides detailed information in NETP pertaining to training courses, locations, NET team (NETT) members, facilities, MOS data, and contractor support. Whenever feasible and cost effective, MATDEV or provider, in coordination with CBTDEV and TNGDEV, will use distance-learning techniques and contractor personnel to conduct NET in order to minimize impacts on Army manpower and funding requirements.

c. In compliance with total package fielding, MATDEV plans, funds, develops, and acquires a system TSP necessary to support and execute NET and other AMT requirements as prescribed in NETP, STRAP, and other training documents. Key areas of NET management consist of the evaluation of requirements documents, preparation of the qualitative and quantitative personnel requirements information (QQPRI), contract requirements packages, NET support packages, and identification of the resource requirements to support training development and fielding.

Section V
Army Training Programs

1–20. Training research and simulation programs

a. Historically, the Army has relied on field training exercises to provide the combat training needed for success in wartime. There continues to be a need for live fire gunnery and training exercises, routine deployment exercises, and crew drills. The use of simulators and simulations enhances these training exercises. The goal of the Army's training research and development programs is to improve combat readiness across the full range of Army missions. To ensure affordable training in the future, the Army must capitalize on technology to move toward a seamless, synthetic environment consisting of live, virtual, and constructive simulation. This environment must:

(1) Provide environmentally sensitive, accessible, cost-effective training that provides the necessary fidelity.

(2) Replicate actual operational conditions so soldiers can operate in the synthetic environment as they could expect to operate under wartime conditions.

(3) Ensure leaders have needed technical and tactical skills and knowledge.

(4) Support the Army as it executes operations at the tactical, operational, and strategic levels.

(5) Support training for contingency missions.

b. Continuing research into unit training strategies provides an empirical basis for developing unit training strategies for the Army. Validated training methods determine optimal mixes of TADSS, live fire, and field maneuver exercises.

c. Escalating OPTEMPO costs and the increased range and lethality of modern weapons systems, coupled with environmental damage, create a demand for simulation-based training to augment field and range training. Simulation-based training is the primary training vehicle for brigades through echelons above corps.

d. The synthetic theater of war provides a training environment that networks actual combat systems, manned simulators, and other simulations together on a common, virtual battlefield. The simulated environment replicates geographical, climatic, and threat conditions to meet user training requirements.

e. The Army must identify and incorporate training requirements early in the materiel acquisition process. These actions streamline the process for acquiring stand alone training systems and those that are embedded within the combat system design. The emphasis on value engineering, top-down training strategies, and Manpower and Personnel Integration (MANPRINT) requirements also reinforces the need to describe weapons and training systems early in the acquisition process.

1–21. Army Physical Fitness Training Program

a. The objective of the Army Physical Fitness Training Program is to enhance combat readiness by developing and sustaining a high level of physical fitness in soldiers as measured by:

(1) Cardiorespiratory endurance.

(2) Muscular strength and endurance.

(3) Flexibility.

(4) Body composition standards as prescribed by AR 600–9.

(5) Motor efficiency (coordination, agility, balance, posture, speed, power, and kinesthetic awareness).

(6) Anaerobic conditioning.

(7) Competitive spirit, the will to win, and unit cohesion.

(8) Self-discipline.

(9) A healthy lifestyle that includes good nutrition, excludes smoking, and avoids misuse of alcohol and drugs.

(10) The ability to cope with all types of stress.

b. The physical fitness policy applies Army-wide. It includes all soldiers, functional branches, units, and operating agencies. Physical fitness provides a foundation for combat readiness and must be an integral part of every soldier's life. Unit readiness begins with the physical fitness of soldiers and the NCOs and officers who lead them.

(1) Commanders and supervisors will establish physical fitness programs consistent with this regulation, FM 21–20, and unit missions. Exercise periods will be conducted with sufficient intensity, frequency, and duration to maintain adequate cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition.

(2) Soldiers must meet the physical fitness standards set forth in FM 21–20 and this regulation. Soldiers who are unable to meet these standards or the mission-related physical fitness standards required of their duty assignment may be subject to administrative action.

c. Personnel in the active Army, ARNG, and USAR will take part in either collective or individual physical fitness training programs year-round. Active Army units, individuals, and RC soldiers on active duty will conduct regularly scheduled (at least three to five times per week), vigorous physical fitness training during the unit's normal duty day as determined by the commander.

(1) Commanders of ARNG and USAR units incorporate mission and battle-focused physical fitness training into appropriate inactive duty training periods.

(2) Personnel will be excused from physical fitness training only during periods of temporary or permanent medical limitations established in accordance with AR 40–501.

(3) Personnel who cannot take part in physical fitness training because of a profile condition will be placed in rehabilitative programs and, within profile guidelines given by health care personnel, be supervised by the commander.

(4) Soldiers age 40 and over will be evaluated for coronary heart disease risk factors as part of their periodic physical examination. The medical procedures for the cardiovascular screening program (CVSP) are outlined in AR 40–501. It is the soldier's responsibility to ensure that the CVSP is conducted as close to the 40th birthday as possible and as promptly as medical facilities permit.

(5) All soldiers centrally selected for command positions and Command Sergeants Major (CSM) designees, regardless of age, must have a CVSP, meet body composition standards set forth in AR 600–9, and pass the Army Physical Fitness Test (APFT) or an alternate before assuming command or assignment to a CSM position. A CVSP clearance granted during the soldier's last periodic physical examination is sufficient to meet the CVSP requirement.

d. Physical fitness standards are developed by TRADOC and approved by HQDA, DCS, G–3. The APFT provides a measure of cardiorespiratory and upper and lower body muscular endurance. It is a performance test that indicates a soldier's ability to perform physically and handle his or her own body weight. Standards are adjusted for age and physiological differences between men and women. The APFT consists of push-ups, sit-ups, and a 2-mile run, done in that order on the same day. (See repetition and time guidelines in FM 21–20.) For soldiers on a permanent profile, a record test must include an aerobic event. The only approved aerobic events are the 2-mile run, 800-yard swim, 6.2-mile bike ride (stationary or track), or the 2.5-mile walk. Testing is prescribed for all soldiers as follows:

(1) The APFT provides an assessment of the physical fitness training program. Physical conditioning or training periods solely devoted toward meeting APFT requirements are discouraged.

(2) Commanders may administer the APFT as often as they wish; however, they must specify beforehand when the results are for record. The Active Army, Active Guard/Reserve (AGR), and USAR Troop Program Unit (TPU) soldiers will take the APFT at least twice each calendar year. A minimum of 4 months will separate record tests if only two record tests are given. The intent is for the Active Army, the AGR, and USAR TPU soldiers to take a record APFT every 6 months. Mission requirements often prevent the even spacing of record tests. Therefore, commanders are encouraged to test soldiers for record as close to the record test window as possible.

(3) Soldiers in the ARNG TPUs will take the APFT at least once each calendar year. A minimum of 8 months will separate record tests if only one test is given. Soldiers that require makeup testing or re-testing for an APFT failure are exempt from the 8-months rule. Soldiers requiring makeup testing will be scheduled in accordance with the unit Standard Operating Procedures (SOP). Soldiers requiring retesting for an APFT failure will be scheduled as prescribed in para 1–21*d*(5) of this regulation

(4) Personnel with permanent medical profiles that preclude participation in the pushup or situp event will take the remaining events if a physician or physician's assistant approves. The 2-mile run event, or an approved alternate test event as outlined in FM 21–20, must be taken if the test is for record. The alternate test is for soldiers with permanent physical profiles that prevent them from running 2 miles. Soldiers with temporary profiles of long duration (more than 3 months) may also take an alternate test if approved by the commander and health care personnel. Soldiers must be given 3 months to prepare for the alternate test from either the date of the profile or the date recommended by health care personnel.

(5) Soldiers who fail a record APFT for the first time or fail to take a record APFT within the required period will be flagged in accordance with AR 600–8–2. In the event of a record test failure, commanders may allow soldiers to retake the test as soon as the soldier and the commander feel the soldier is ready. Soldiers without a medical profile will be retested no later than 90 days following the initial APFT failure. Reserve component soldiers not on active duty and without a medical profile will be tested no later than 180 days following the initial APFT failure.

(6) Personnel who initially fail the CVSP and are subsequently cleared will have no more than 179 days of conditioning before retaking a record APFT.

(7) All soldiers must attain a score of at least 60 points on each test event or receive a "GO" on the alternate aerobic events. If a soldier does not attain a minimum of 60 points in each event or a "GO" on an alternate aerobic event, the soldier is an event failure. When a soldier fails one or more events, the soldier is a test failure. Exceptions are listed below:

(a) Soldiers in basic training must attain 50 points on each event or a score as determined by HQDA, DCS, G–3, in coordination with TRADOC. (This exception does not apply to advanced individual training (AIT), one station unit training (OSUT), or leader development schools.)

(b) Soldiers awaiting IET may be tested, but no formal record of their score will be maintained.

(8) Soldiers in IET will be tested near the end of the course to qualify for completion of basic training, AIT, and OSUT.

(9) Soldiers in joint, North Atlantic Treaty Organization (NATO), Office of the Secretary of Defense, and other staff assignments will take the APFT. The senior Army soldier in the organization will ensure the APFT is conducted and scores are included in records and performance reports.

(10) Individual Mobilization Augmentee (IMA) and Individual Ready Reserve (IRR) soldiers who are on tours of AT, active duty training, or active duty special work will take the APFT when they are placed on tours of duty for 12 or more consecutive calendar days. No APFT will be administered during those years in which an IMA and IRR soldier does not serve an active duty tour. Those who fail the test will be retested in accordance with the provisions of para 1–21*d*(5). Reserve Component soldiers assigned or attached to active Army units and organizations for 30 consecutive days or more will follow the physical fitness program for that unit or organization.

(11) The TRADOC recommends physical fitness standards for entry into Ranger and Airborne training and into other schools having separate physical fitness standards. The U.S. Army Special Operations Command (USASOC), in conjunction with TRADOC, sets the fitness standards for entry into Special Forces training. The HQDA, ODCS, G–3, reviews and approves these standards.

e. Field Manual 21–20 provides guidance for preventing injuries during physical training.

(1) Trainers will be alert to symptoms indicating that a soldier's endurance limits have been reached or exceeded, or a serious medical condition exists.

(2) If a trainer detects any symptoms, exercises will be stopped, and the soldier immediately referred for medical evaluation.

(3) Training intensity should be increased slowly so that the body can adapt to more strenuous training.

(4) Environmental considerations, particularly weather and altitude, are important in planning physical training programs.

(5) If a soldier fails to meet the physical fitness standards in FM 21–20, the unit commander will remove the soldier from parachute, diving, or flight crew status. This action will be taken to ensure the safety of that soldier and other unit members.

f. Policy governing military physical fitness standards during institutional training is contained in chapter 3. Guidance concerning physical fitness training in units is provided in chapter 4.

1–22. The combat training center program

The CTC program consists of the National Training Center (NTC), Fort Irwin, CA; the Joint Readiness Training Center (JRTC), Fort Polk, LA; the Combat Maneuver Training Center (CMTC), Hohenfels, Germany; and the Battle Command Training Program at Fort Leavenworth, KS. The CTC program objectives are to: increase unit readiness; develop battlefield leaders; embed doctrine, provide feedback on unit tactical effectiveness to participants; and provide data to improve DTLOMS input to the combat and training development processes. Army Regulation 350–50 establishes Army policies for the management of the CTC program.

1–23. The Army Distance Learning Program

a. The Army Distance Learning Program (TADLP) will enhance the readiness posture of the Army through the delivery of standardized training to soldiers and civilians and units and organizations at the right place and time using technology. Distance-learning applications may be applied to individual, collective, and self-development training; AMT; the Army Correspondence Course Program (ACCP); the Army Civilian Training, Education, and Development System (ACTEDS), civilian academic education, and training in units. The distance learning program is a key tool in facilitating Army Continuing Education System (ACES) programs.

b. Distance learning provides the Army with the capability to present standardized individual, collective, and AMT at sites other than in a formal school environment. This includes, but is not limited to, implementing training by way of simulators; simulations; correspondence courses; video teletraining; and interactive multimedia instruction (IMI) completed at home, in a learning center at an installation, or in a unit deployed at an operational site. The requirement for these distance-learning products will be established in materiel requirements documents and detailed in the training development proponent's STRAP and short- and long-range CATS or follow-on course design. All training and

Student Handout 3

Extracted Material from FM 21-20 w/C1

This Student Handout Contains

This student handout contains 167 pages of extracted material from the following publication:

FM 21-20 w/C1, Physical Fitness Training, September 1992

Chapters 1 thru 9	pages 1-1 thru 9-18
Chapters 12 and 13	pages 12-0 thru 13-2

Disclaimer: The training developer downloaded the extracted material from the U.S. Army Publishing Directorate Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

RECOVERABLE PUBLICATION

YOU RECEIVED THIS DOCUMENT IN A DAMAGE-FREE CONDITION. DAMAGE IN ANY WAY, TO INCLUDE HIGHLIGHTING, PENCIL MARKS, OR MISSING PAGES WILL SUBJECT YOU TO PECUNIARY LIABILITY (STATEMENT OF CHARGES, CASH COLLECTION, ETC.) TO RECOVER PRINTING COST.

CHANGE 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 October 1998

PHYSICAL FITNESS TRAINING

1. Change FM 21-20, 30 September 1992, as follows:

REMOVE OLD PAGES	INSERT NEW PAGES
14-3 to 14-8	14-3 to 14-8.2
14-21 to 14-22	14-21 to 14-22

2. A star (*) marks new or changed material.

3. File this transmittal sheet in front of this publication.

DISTRIBUTION RESTRICTION: proved for public release; distribution is unlimited.

(See Figure 14-1.) The unit will complete the height and weight data.

Scorers record the raw score for each event and initial the results. If a soldier fails an event or finds it difficult to perform, the scorer should write down the reasons and other pertinent information in the comment block. After the entire APFT has been completed, the event scorer will convert raw scores to point scores using the scoring standards on the back of the scorecards. (See Figure 14-1.)

See page 14-8.1 for instructions on completing DA Form 705.

ARMY PHYSICAL FITNESS TEST SCORECARD

Army Physical Fitness Test Scorecard

NAME (LAST, FIRST, MIDDLE)

SSN | GENDER

UNIT

TEST FIVE			TEST SIX			TEST SEVEN			TEST EIGHT		
DATE	GRADE	AGE	DATE	GRADE	AGE	DATE	GRADE	AGE	DATE	GRADE	AGE
HEIGHT (IN INCHES)			HEIGHT (IN INCHES)			HEIGHT (IN INCHES)			HEIGHT (IN INCHES)		
	WEIGHT: _____ lbs GO / NO-GO	BODY FAT: _____ % GO / NO-GO		WEIGHT: _____ lbs GO / NO-GO	BODY FAT: _____ % GO / NO-GO		WEIGHT: _____ lbs GO / NO-GO	BODY FAT: _____ % GO / NO-GO		WEIGHT: _____ lbs GO / NO-GO	BODY FAT: _____ % GO / NO-GO
PU RAW SCORE	INITIALS	POINTS	PU RAW SCORE	INITIALS	POINTS	PU RAW SCORE	INITIALS	POINTS	PU RAW SCORE	INITIALS	POINTS
SU RAW SCORE	INITIALS	POINTS	SU RAW SCORE	INITIALS	POINTS	SU RAW SCORE	INITIALS	POINTS	SU RAW SCORE	INITIALS	POINTS
2MR RAW SCORE	INITIALS	POINTS	2MR RAW SCORE	INITIALS	POINTS	2MR RAW SCORE	INITIALS	POINTS	2MR RAW SCORE	INITIALS	POINTS
ALTERNATE AEROBIC EVENT		TOTAL POINTS	ALTERNATE AEROBIC EVENT		TOTAL POINTS	ALTERNATE AEROBIC EVENT		TOTAL POINTS	ALTERNATE AEROBIC EVENT		TOTAL POINTS
EVENT _____			EVENT _____			EVENT _____			EVENT _____		
TIME _____			TIME _____			TIME _____			TIME _____		
GO NO-GO			GO NO-GO			GO NO-GO			GO NO-GO		
NCOIC/OIC Signature			NCOIC/OIC Signature			NCOIC/OIC Signature			NCOIC/OIC Signature		
COMMENTS			COMMENTS			COMMENTS			COMMENTS		

SPECIAL INSTRUCTION: USE INK

LEGEND: PU - PUSH UPS; SU - SIT UPS; 2MR - 2 MILE RUN; APFT - ARMY PHYSICAL FITNESS TEST

Data Required by the Privacy Act of 1974

Title DA Form 705
Authority 10 USC 301 2(g)
Principal purpose record of individual scores on physical fitness events.

Mandatory or voluntary disclosure and effect on individual not providing information: mandatory - individuals not providing information cannot be rated/scored.

DA FORM 705, JUN 98

SAMPLE

***Figure 14-1**

PUSH-UP STANDARDS

AGE GROUP	17-21		22-26		27-31		32-36		37-41		AGE GROUP	42-46		47-51		52-56		57-61		62+		AGE GROUP
Repetitions	M	F	M	F	M	F	M	F	M	F	Repetitions	M	F	M	F	M	F	M	F	M	F	Repetitions
77					100						77											77
76					99						76											76
75			100		98		100				75											75
74			99		97		99				74											74
73			98		96		98		100		73											73
72			97		95		97		99		72											72
71	100		95		94		96		98		71											71
70	99		94		93		95		97		70											70
69	97		93		92		94		96		69											69
68	96		92		91		93		95		68											68
67	94		91		89		92		94		67											67
66	93		90		88		91		93		66	100										66
65	92		89		87		90		92		65	99										65
64	90		87		86		89		91		64	98										64
63	89		86		85		88		90		63	97										63
62	88		85		84		87		89		62	96										62
61	86		84		83		86		88		61	94										61
60	85		83		82		85		87		60	93										60
59	83		82		81		84		86		59	92		100								59
58	82		81		80		83		85		58	91		99								58
57	81		79		79		82		84		57	90		98								57
56	79		78		78		81		83		56	89		96		100						56
55	78		77		77		79		82		55	88		95		99						55
54	77		76		76		78		81		54	87		94		98						54
53	75		75		75		77		79		53	86		93		97		100				53
52	74		74		74		76		78		52	84		92		96		99				52
51	72		73		73		75		77		51	83		91		94		98				51
50	71		71		72	100	74		76		50	82		89		93		97		100		50
49	70		70		71	99	73		75		49	81		88		92		95		99		49
48	68		69		69	98	72		74		48	80		87		91		94		98		48
47	67		68		68	96	71		73		47	79		86		90		93		96		47
46	66		67	100	67	95	70		72		46	78		85		89		92		95		46
45	64		66	99	66	94	69	100	71		45	77		84		88		91		94		45
44	63		65	97	65	93	68	99	70		44	76		82		87		90		93		44
43	61		63	96	64	92	67	97	69		43	74		81		86		89		92		43
42	60	100	62	94	63	90	66	96	68		42	73		80		85		87		91		42
41	59	98	61	93	62	89	65	95	67		41	72		79		83		86		89		41
40	57	97	60	92	61	88	64	93	66	100	40	71		78		82		85		88		40
39	56	95	59	90	60	87	63	92	65	99	39	70		76		81		84		87		39
38	54	93	58	89	59	85	62	91	64	97	38	69		75		80		83		86		38
37	53	91	57	88	58	84	61	89	63	96	37	68	100	74		79		82		85		37
36	52	90	55	86	57	83	60	88	62	94	36	67	99	73		78		81		84		36
35	50	88	54	85	56	82	59	87	61	93	35	66	97	72		77		79		82		35
34	49	86	53	83	55	81	58	85	60	91	34	64	95	71	100	76		78		81		34
33	48	84	52	82	54	79	57	84	59	90	33	63	94	69	98	74		77		80		33
32	46	83	51	81	53	78	56	83	58	88	32	62	92	68	97	73		76		79		32
31	45	81	50	79	52	77	55	81	57	87	31	61	90	67	95	72	100	75		78		31
30	43	79	49	78	50	76	54	80	56	85	30	60	89	66	93	71	98	74		76		30
29	42	77	47	77	49	75	53	79	55	84	29	59	87	65	92	70	96	73		75		29
28	41	76	46	75	48	73	52	77	54	82	28	58	86	64	90	69	95	71	100	74		28
27	39	74	45	74	47	72	51	76	53	81	27	57	84	62	88	68	93	70	98	73		27
26	38	72	44	72	46	71	50	75	52	79	26	56	82	61	87	67	91	69	96	72		26
25	37	70	43	71	45	70	49	73	51	78	25	54	81	60	85	66	89	68	94	71	100	25
24	35	69	42	70	44	68	48	72	50	76	24	53	79	59	83	64	87	67	92	69	98	24
23	34	67	41	68	43	67	47	71	49	75	23	52	78	58	82	63	85	66	90	68	96	23
22	32	65	39	67	42	66	46	69	48	73	22	51	76	56	80	62	84	65	88	67	93	22
21	31	63	38	66	41	65	45	68	47	72	21	50	74	55	78	61	82	63	86	66	91	21
20	30	62	37	64	40	64	44	67	46	70	20	49	73	54	77	60	80	62	84	65	89	20
19	28	60	36	63	39	62	43	65	45	69	19	48	71	53	75	59	78	61	82	64	87	19
18	27	58	35	61	38	61	42	64	44	67	18	47	70	52	73	58	76	60	80	62	84	18
17	26	57	34	60	37	60	41	63	43	66	17	46	68	51	72	57	75	59	78	61	82	17
16	24	55	33	59	36	59	39	61	42	64	16	44	66	49	70	56	73	58	76	60	80	16
15	23	53	31	57	35	58	38	60	41	63	15	43	65	48	68	54	71	57	74	59	78	15
14	21	51	30	56	34	56	37	59	39	61	14	42	63	47	67	53	69	55	72	58	76	14
13	20	50	29	54	33	55	36	58	38	60	13	41	62	46	65	52	67	54	70	56	73	13
12	19	48	28	52	32	54	35	56	37	59	12	40	60	45	63	51	65	53	68	55	71	12
11	17	46	27	50	31	52	34	54	36	57	11	39	58	44	62	50	64	52	66	54	69	11
10	16	44	26	49	29	50	33	52	35	56	10	38	57	42	60	49	62	51	64	53	67	10
9	14	43	25	49	28	49	32	50	34	54	9	37	55	41	58	48	60	50	62	52	64	9
8	13	41	23	48	27	49	31	49	33	53	8	36	54	40	57	47	58	49	60	51	62	8
7	12	39	22	46	26	48	30	49	32	51	7	34	52	39	55	46	56	47	58	49	60	7
6	10	37	21	45	25	47	29	48	31	50	6	33	50	38	53	44	55	46	56	48	58	6
5	9	36	20	43	24	45	28	47	30	48	5	32	49	36	52	43	53	45	54	47	56	5
4	8	34	19	42	23	44	27	45	29	47												
3	6	32	18	41	22	43	26	44	28	45												
2	5	30	17	39	21	42	25	43	27	44												
1	3	29	15	38	20	41	24	41	26	42												
Repetitions	M	F	M	F	M	F	M	F	M	F	Repetitions	M	F	M	F	M	F	M	F	M	F	Repetitions
AGE GROUP	17-21		22-26		27-31		32-36		37-41		AGE GROUP	42-46		47-51		52-56		57-61		62+		AGE GROUP

Scoring standards are used to convert raw scores to point scores after test events are completed. Male point scores are indicated by the M at the top and bottom of the shaded column. Female point scores are indicated by the F at the top and bottom of the unshaded column. To convert raw scores to point scores, find the number of repetitions performed in the left-hand column. Next, move right along that row and locate the intersection of the soldier's appropriate age column. Record that number in the Push-Up points block on the front of the scorecard.

***Figure 14-1 (continued)**

SIT-UP STANDARDS

AGE GROUP	17-21	22-26	27-31	32-36	37-41	AGE GROUP	42-46	47-51	52-56	57-61	62+	AGE GROUP
Repetitions	M/F	M/F	M/F	M/F	M/F	Repetitions	M/F	M/F	M/F	M/F	M/F	Repetitions
82			100			82						82
81			99			81						81
80		100	98			80						80
79		99	97			79						79
78	100	97	96			78						78
77	98	96	95			77						77
76	97	95	94	100	100	76						76
75	95	93	92	99	99	75						75
74	94	92	91	98	98	74						74
73	92	91	90	96	97	73						73
72	90	89	89	95	96	72	100					72
71	89	88	88	94	95	71	99					71
70	87	87	87	93	94	70	98					70
69	86	85	86	92	93	69	97					69
68	84	84	85	91	92	68	96					68
67	82	83	84	89	91	67	95					67
66	81	81	83	88	89	66	94	100	100			66
65	79	80	82	87	88	65	93	99	99			65
64	78	79	81	86	87	64	92	98	98	100		64
63	76	77	79	85	86	63	91	97	97	99	100	63
62	74	76	78	84	85	62	90	96	96	98	99	62
61	73	75	77	82	84	61	89	94	95	97	98	61
60	71	73	76	81	83	60	88	93	94	96	97	60
59	70	72	75	80	82	59	87	92	93	95	96	59
58	68	71	74	79	81	58	86	91	92	94	95	58
57	66	69	73	78	80	57	85	90	91	92	94	57
56	65	68	72	76	79	56	84	89	89	91	92	56
55	63	67	71	75	78	55	83	88	88	90	91	55
54	62	65	70	74	77	54	82	87	87	89	90	54
53	60	64	69	73	75	53	81	86	86	88	89	53
52	58	63	68	72	75	52	80	84	85	87	88	52
51	57	61	66	71	74	51	79	83	84	86	87	51
50	55	60	65	69	73	50	78	82	83	85	86	50
49	54	59	64	68	72	49	77	81	82	84	85	49
48	52	57	63	67	71	48	76	80	81	83	84	48
47	50	56	62	66	69	47	75	79	80	82	83	47
46	49	55	61	65	68	46	74	78	79	81	82	46
45	47	53	60	64	67	45	73	77	78	79	81	45
44	46	52	59	62	66	44	72	76	77	78	79	44
43	44	50	58	61	65	43	71	74	76	77	78	43
42	42	49	57	60	64	42	70	73	75	76	77	42
41	41	48	56	59	63	41	69	72	74	75	76	41
40	39	47	55	58	62	40	68	71	73	74	75	40
39	38	45	54	56	61	39	67	70	72	73	74	39
38	36	44	52	55	60	38	66	69	71	72	73	38
37	34	43	51	54	59	37	65	68	69	71	72	37
36	33	41	50	53	58	36	64	67	68	70	71	36
35	31	40	49	52	57	35	63	66	67	69	70	35
34	30	39	48	50	56	34	62	64	66	68	69	34
33	28	37	47	49	55	33	61	63	65	66	68	33
32	26	36	46	48	54	32	60	62	64	65	66	32
31	25	35	45	47	53	31	59	61	63	64	65	31
30	23	33	44	46	52	30	58	60	62	63	64	30
29	22	32	43	45	50	29	57	59	61	62	63	29
28	20	31	42	44	49	28	56	58	60	61	62	28
27	18	29	41	42	48	27	55	57	59	60	61	27
26	17	28	39	41	47	26	54	56	58	59	60	26
25	15	27	38	40	46	25	53	54	57	58	59	25
24	14	25	37	39	45	24	52	53	56	57	58	24
23	12	24	36	38	44	23	51	52	55	56	57	23
22	10	23	35	36	43	22	50	51	54	55	56	22
21	9	21	34	35	42	21	49	50	53	54	55	21
Repetitions	M/F	M/F	M/F	M/F	M/F	Repetitions	M/F	M/F	M/F	M/F	M/F	Repetitions
AGE GROUP	17-21	22-26	27-31	32-36	37-41	AGE GROUP	42-46	47-51	52-56	57-61	62+	AGE GROUP

Scoring standards are used to convert raw scores to point scores after test events are completed. To convert raw scores to point scores, find the number of repetitions performed in the left-hand column. Next, move right along that row and locate the intersection of the soldier's appropriate age column. Record that number in the Sit-Up points block on the front of the scorecard.

***Figure 14-1 (continued)**

2-MILE RUN STANDARDS

AGE GROUP	17-21		22-26		27-31		32-36		37-41		AGE GROUP	42-46		47-51		52-56		57-61		62+		AGE GROUP
Time	M	F	M	F	M	F	M	F	M	F	Time	M	F	M	F	M	F	M	F	M	F	Time
12:54											12:54											12:54
13:00	100		100								13:00											13:00
13:06	99		99								13:06											13:06
13:12	97		98								13:12											13:12
13:18	96		97		100		100				13:18											13:18
13:24	94		96		99		99				13:24											13:24
13:30	93		94		98		98				13:30											13:30
13:36	92		93		97		97		100		13:36											13:36
13:42	90		92		96		96		99		13:42											13:42
13:48	89		91		95		95		98		13:48											13:48
13:54	88		90		94		95		97		13:54											13:54
14:00	86		89		92		94		97		14:00											14:00
14:06	85		88		91		93		96		14:06	100										14:06
14:12	83		87		90		92		95		14:12	99										14:12
14:18	82		86		89		91		94		14:18	98										14:18
14:24	81		84		88		90		93		14:24	97		100								14:24
14:30	79		83		87		89		92		14:30	97		99								14:30
14:36	78		82		86		88		91		14:36	96		98								14:36
14:42	77		81		85		87		91		14:42	95		98		100						14:42
14:48	75		80		84		86		90		14:48	94		97		99						14:48
14:54	74		79		83		85		89		14:54	93		96		98						14:54
15:00	72		78		82		85		88		15:00	92		95		98						15:00
15:06	71		77		81		84		87		15:06	91		95		97						15:06
15:12	70		76		79		83		86		15:12	90		94		96						15:12
15:18	68		74		78		82		86		15:18	90		93		95		100				15:18
15:24	67		73		77		81		85		15:24	89		92		95		99				15:24
15:30	66		72		76		80		84		15:30	88		91		94		98				15:30
15:36	64	100	71	100	75		79		83		15:36	87		91		93		97				15:36
15:42	63	99	70	99	74		78		82		15:42	86		90		92		97		100		15:42
15:48	61	98	69	98	73	100	77		81		15:48	85		89		91		96		99		15:48
15:54	60	96	68	97	72	99	76	100	80		15:54	84		88		91		95		98		15:54
16:00	59	95	67	96	71	98	75	99	80		16:00	83		87		90		94		97		16:00
16:06	57	94	66	95	70	97	75	99	79		16:06	83		87		89		93		96		16:06
16:12	56	93	64	94	69	97	74	98	78		16:12	82		86		88		92		95		16:12
16:18	54	92	63	93	68	96	73	97	77		16:18	81		85		87		91		94		16:18
16:24	53	90	62	92	66	95	72	97	76		16:24	80		84		87		90		93		16:24
16:30	52	89	61	91	65	94	71	96	75		16:30	79		84		86		90		93		16:30
16:36	50	88	60	90	64	93	70	95	74		16:36	78		83		85		89		92		16:36
16:42	49	87	59	89	63	92	69	94	74		16:42	77		82		84		88		91		16:42
16:48	48	85	58	88	62	91	68	94	73		16:48	77		81		84		87		90		16:48
16:54	46	84	57	87	61	91	67	93	72		16:54	76		80		83		86		89		16:54
17:00	45	83	56	86	60	90	66	92	71	100	17:00	75		80		82		85		88		17:00
17:06	43	82	54	85	59	89	65	92	70	99	17:06	74		79		81		84		87		17:06
17:12	42	81	53	84	58	88	65	91	69	99	17:12	73		78		80		83		86		17:12
17:18	41	79	52	83	57	87	64	90	69	98	17:18	72		77		80		83		85		17:18
17:24	39	78	51	82	56	86	63	90	68	97	17:24	71	100	76		79		82		84		17:24
17:30	38	77	50	81	55	86	62	89	67	96	17:30	70	99	76		78		81		83		17:30
17:36	37	76	49	80	54	85	61	88	66	96	17:36	70	99	75	100	77		80		82		17:36
17:42	35	75	48	79	53	84	60	88	65	95	17:42	69	98	74	99	76		79		81		17:42
17:48	34	73	47	78	51	83	59	87	64	94	17:48	68	97	73	99	76		78		80		17:48
17:54	32	72	46	77	50	82	58	86	63	94	17:54	67	97	73	98	75		77		80		17:54
18:00	31	71	44	76	49	81	57	86	63	93	18:00	66	96	72	97	74		77		79		18:00
18:06	30	70	43	75	48	80	56	85	62	92	18:06	65	96	71	97	73		76		78		18:06
18:12	28	68	42	74	47	80	55	84	61	92	18:12	64	95	70	96	73		75		77		18:12
18:18	27	67	41	73	46	79	55	83	60	91	18:18	63	94	69	96	72		74		76		18:18
18:24	26	66	40	72	45	78	54	83	59	90	18:24	63	94	69	95	71		73		75		18:24
18:30	24	65	39	71	44	77	53	82	58	89	18:30	62	93	68	94	70		72		74		18:30
18:36	23	64	38	70	43	76	52	81	57	89	18:36	61	92	67	94	69		71		73		18:36
18:42	21	62	37	69	42	75	51	81	57	88	18:42	60	92	66	93	69		70		72		18:42
18:48	20	61	36	68	41	74	50	80	56	87	18:48	59	91	65	92	68		70		71		18:48
18:54	19	60	34	67	39	74	49	79	55	87	18:54	58	90	65	92	67		69		70		18:54
19:00	17	59	33	66	38	73	48	79	54	86	19:00	57	90	64	91	66	100	68		69		19:00
19:06	16	58	32	65	37	72	47	78	53	85	19:06	57	89	63	91	65	99	67		68		19:06
19:12	14	56	31	64	36	71	46	77	52	85	19:12	56	89	62	90	65	99	66		67		19:12
19:18	13	55	30	63	35	70	45	77	51	84	19:18	55	88	62	89	64	98	65		67		19:18
19:24	12	54	29	62	34	69	45	76	51	83	19:24	54	87	61	89	63	97	64		66		19:24
19:30	10	53	28	61	33	69	44	75	50	82	19:30	53	87	60	88	62	96	63		65		19:30
19:36	9	52	27	60	32	68	43	74	49	82	19:36	52	86	59	87	62	96	63		64		19:36
19:42	8	50	26	59	31	67	42	74	48	81	19:42	51	85	58	87	61	95	62	100	63		19:42
19:48	6	49	24	58	30	66	41	73	47	80	19:48	50	85	58	86	60	94	61	99	62		19:48
19:54	5	48	23	57	29	65	40	72	46	80	19:54	50	84	57	86	59	93	60	98	61		19:54
20:00	3	47	22	56	28	64	39	72	46	79	20:00	49	83	56	85	58	93	59	98	60	100	20:00
20:06	[illegible]	45	21	55	[illegible]	63	38	71	[illegible]	78	20:06	48	[illegible]	55	84	58	[illegible]	58	97	59	[illegible]	20:06

***Figure 14-1 (continued)**

Time	M	F	M	F	M	F	M	F	M	F	Time	M	F	M	F	M	F	M	F	M	F	Time
AGE GROUP	17-21		22-26		27-31		32-36		37-41		AGE GROUP	42-46		47-51		52-56		57-61		62+		AGE GROUP
20:00	3	47		56	28	64		72	46	79		48	83	56		58	93	58				
20:06	2	45	21	55	26	63	38	71	45	78	20:06	48	83	55	84	58	92	58	97	59	99	20:06
20:12	1	44	20	54	25	63	37	70	44	78	20:12	47	82	55	84	57	91	57	96	58	98	20:12
20:18	0	43	19	53	24	62	36	70	43	77	20:18	46	82	54	83	56	90	57	95	57	98	20:18
20:24		42	18	52	23	61	35	69	42	76	20:24	45	81	53	82	55	90	56	95	56	97	20:24
20:30		41	17	51	22	60	35	68	41	75	20:30	44	80	52	82	55	89	55	94	55	96	20:30
20:36		39	16	50	21	59	34	68	40	75	20:36	43	80	51	81	54	88	54	93	54	95	20:36
20:42		38	14	49	20	58	33	67	40	74	20:42	43	79	51	81	53	87	53	92	53	94	20:42
20:48		37	13	48	19	57	32	66	39	73	20:48	42	78	50	80	52	87	52	91	53	94	20:48
20:54		36	12	47	18	57	31	66	38	73	20:54	41	78	49	79	51	86	51	91	52	93	20:54
21:00		35	11	46	17	56	30	65	37	72	21:00	40	77	48	79	51	85	50	90	51	92	21:00
21:06		33	10	45	16	55	29	64	36	71	21:06	39	77	47	78	50	84	50	89	50	91	21:06
21:12		32	9	44	15	54	28	63	35	71	21:12	38	76	47	77	49	84	49	88	49	90	21:12
21:18		31	8	43	14	53	27	63	34	70	21:18	37	75	46	77	48	83	48	87	48	90	21:18
21:24		30	7	42	12	52	26	62	34	69	21:24	37	75	45	76	47	82	47	87	47	89	21:24
21:30		28	6	41	11	51	25	61	33	68	21:30	36	74	44	76	47	81	46	86	46	88	21:30
21:36		27	4	40	10	51	25	61	32	68	21:36	35	73	44	75	46	81	45	85	45	87	21:36
21:42		26	3	39	9	50	24	60	31	67	21:42	34	73	43	74	45	80	44	84	44	86	21:42
21:48		25	2	38	8	49	23	59	30	66	21:48	33	72	42	74	44	79	43	84	43	86	21:48
21:54		24	1	37	7	48	22	59	29	66	21:54	32	71	41	73	44	79	43	83	42	85	21:54
22:00		22	0	36	6	47	21	58	29	65	22:00	31	71	40	72	43	78	42	82	41	84	22:00
22:06		21		35	5	46	20	57	28	64	22:06	30	70	40	72	42	77	41	81	40	83	22:06
22:12		20		34	4	46	19	57	27	64	22:12	30	70	39	71	41	76	40	80	40	82	22:12
22:18		19		33	3	45	18	56	26	63	22:18	29	69	38	71	40	76	39	80	39	82	22:18
22:24		18		32	2	44	17	55	25	62	22:24	28	68	37	70	40	75	38	79	38	81	22:24
22:30		16		31	1	43	16	54	24	61	22:30	27	68	36	69	39	74	37	78	37	80	22:30
22:36		15		30	0	42	15	54	23	61	22:36	26	67	36	69	38	73	37	77	36	79	22:36
22:42		14		29		41	15	53	23	60	22:42	25	66	35	68	37	73	36	76	35	78	22:42
22:48		13		28		40	14	52	22	59	22:48	24	66	34	67	36	72	35	76	34	78	22:48
22:54		12		27		40	13	52	21	59	22:54	23	65	33	67	36	71	34	75	33	77	22:54
23:00		10		26		39	12	51	20	58	23:00	23	64	33	66	35	70	33	74	32	76	23:00
23:06		9		25		38	11	50	19	57	23:06	22	64	32	66	34	70	32	73	31	75	23:06
23:12		8		24		37	10	49	18	56	23:12	21	63	31	65	33	69	31	73	30	74	23:12
23:18		7		23		36	9	49	17	56	23:18	20	63	30	64	33	68	30	72	29	74	23:18
23:24		5		22		35	8	48	17	55	23:24	19	62	29	64	32	67	30	71	28	73	23:24
23:30		4		21		34	7	48	16	54	23:30	18	61	29	63	31	67	29	70	27	72	23:30
23:36		3		20		34	6	47	15	54	23:36	17	61	28	62	30	66	28	69	27	71	23:36
23:42		2		19		33	5	46	14	53	23:42	17	60	27	62	29	65	27	69	26	70	23:42
23:48		1		18		32	5	46	13	52	23:48	16	59	26	61	29	64	26	68	25	70	23:48
23:54		0		17		31	4	45	12	52	23:54	15	59	25	61	28	64	25	67	24	69	23:54
24:00				16		30	3	44	11	51	24:00	14	58	25	60	27	63	24	66	23	68	24:00
24:06				15		29	2	43	11	50	24:06	13	57	24	59	26	62	23	65	22	67	24:06
24:12				14		29	1	43	10	49	24:12	12	57	23	59	25	61	23	65	21	66	24:12
24:18				13		28	0	42	9	49	24:18	11	56	22	58	25	61	22	64	20	66	24:18
24:24				12		27		41	8	48	24:24	10	56	22	57	24	60	21	63	19	65	24:24
24:30				11		26		41	7	47	24:30	10	55	21	57	23	59	20	62	18	64	24:30
24:36				10		25		40	6	47	24:36	9	54	20	56	22	59	19	62	17	63	24:36
24:42				9		24		39	6	46	24:42	8	54	19	56	22	58	18	61	16	62	24:42
24:48				8		23		39	5	45	24:48	7	53	18	55	21	57	17	60	15	62	24:48
24:54				7		23		38	4	45	24:54	6	52	18	54	20	56	17	59	14	61	24:54
25:00				6		22		37	3	44	25:00	5	52	17	54	19	56	16	58	13	60	25:00
25:06				5		21		37	2	43	25:06	4	51	16	53	18	55	15	58	13	59	25:06
25:12				4		20		36	1	42	25:12	3	50	15	52	18	54	14	57	12	58	25:12
25:18				3		19		35	0	42	25:18	3	50	15	52	17	53	13	56	11	58	25:18
25:24				2		18		34		41	25:24	2	49	14	51	16	53	12	55	10	57	25:24
25:30				1		17		34		40	25:30	1	49	13	51	15	52	11	55	9	56	25:30
25:36				0		17		33		40	25:36	0	48	12	50	15	51	10	54	8	55	25:36
25:42						16		32		39	25:42		47	11	49	14	50	10	53	7	54	25:42
25:48						15		32		38	25:48		47	11	49	13	50	9	52	6	54	25:48
25:54						14		31		38	25:54		46	10	48	12	49	8	51	5	53	25:54
26:00						13		30		37	26:00		45	9	47	11	48	7	51	4	52	26:00
26:06						12		30		36	26:06		45	8	47	11	47	6	50	3	51	26:06
26:12						11		29		35	26:12		44	7	46	10	47	5	49	2	50	26:12
26:18						11		28		35	26:18		43	7	46	9	46	4	48	1	50	26:18
26:24						10		28		34	26:24		43	6	45	8	45	3	47	0	49	26:24
26:30						9		27		33	26:30		42	5	44	7	44	3	47	0	48	26:30

Scoring standards are used to convert raw scores to point scores after test events are completed. Male point scores are indicated by the M at the top and bottom of the shaded column. Female point scores are indicated by the F at the top and bottom of the unshaded column. To convert raw scores to point scores, find the number of repetitions performed in the left-hand column. Next, move right along that row and locate the intersection of the soldier's appropriate age column. **In all cases, when a time falls between two point values, the lower point value is used.** Record that number in the 2MR points block on the front of the scorecard.

***Figure 14-1 (continued)**

SUPERVISION

The APFT must be properly supervised to ensure that its objectives are met. Proper supervision ensures uniformity in the following:

- Scoring the test.
- Training of supervisors and scorers.
- Preparing the test and controlling performance factors.

The goal of the APFT is to get an accurate evaluation of the soldiers' fitness levels. Preparations for administering an accurate APFT include the following:

- Selecting and training supervisors and scorers.
- Briefing and orienting administrators and participants.
- Securing a location for the events.

Commanders must strictly control those factors which influence test performance. They must ensure that events, scoring, clothing, and equipment are uniform. Commanders should plan testing which permits each soldier to perform to his maximal level. They should also ensure the following:

- Soldiers are not tested when fatigued or ill.
- Soldiers do not have tiring duties just before taking the APFT.
- Weather and environmental conditions do not inhibit performance.
- Safety is the first consideration.

Duties of Test Personnel

Testers must be totally familiar with the instructions for each event and trained to administer the tests. Correctly supervising testees and laying out the test area are essential duties. The group administering the test must include the following:

- OIC or NCOIC.
- Event supervisor, scorers, and a demonstrator for each event.
- Support personnel (safety, control, and medical as appropriate). There should be no less than one scorer for each 15 soldiers tested. Twelve to 15 scorers are required when a company-sized unit is tested.

OIC OR NCOIC

The OIC or NCOIC does the following:

- Administers the APFT.
- Procures all necessary equipment and supplies.
- Arranges and lays out the test area.
- Trains the event supervisors, scorers, and demonstrators. (Training video tape No. 21-191 should be used for training those who administer the APFT.)
- Ensures the test is properly administered and the events are explained, demonstrated, and scored according to the test standards in this chapter.
- Reports the results after the test.

EVENT SUPERVISORS

Event supervisors do the following:

- Administer the test events.
- Ensure that necessary equipment is on hand.
- Read the test instructions, and have the events demonstrated.
- Supervise the scoring of events, and ensure that they are done correctly.
- Rule on questions and scoring discrepancies for their event.

SCORERS

Scorers do the following:

- Supervise the performance of testees.
- Enforce the test standards in this chapter.
- Count the number of correctly performed repetitions aloud.
- Record the correct, raw score on each soldier's scorecard, and initial the scorecard block.
- Perform other duties assigned by the OIC or NCOIC.

Scorers must be thoroughly trained to maintain uniform scoring standards. They do not participate in the test.

The goal of the APFT is to get an accurate evaluation of the soldier's fitness levels.

ALTERNATE TEST STANDARDS BY EVENT, SEX, AND AGE											
EVENT	SEX	AGE									
		17-21	22-26	27-31	32-36	37-41	42-46	47-51	52-56	57-61	62+
800-YARD SWIM	Men Women	20:00 21:00	20:30 21:30	21:00 22:00	21:30 22:30	22:00 23:00	22:30 23:30	23:00 24:00	24:00 25:00	24:30 25:30	25:00 26:00
6.2-MILE BIKE (Stationary and track)	Men Women	24:00 25:00	24:30 25:30	25:00 26:00	25:30 26:30	26:00 27:00	27:00 28:00	28:00 30:00	30:00 32:00	31:00 33:00	32:00 34:00
2.5-MILE WALK	Men Women	34:00 37:00	34:30 37:30	35:00 38:00	35:30 38:30	36:00 39:00	36:30 39:30	37:00 40:00	37:30 40:30	38:00 41:00	38:30 41:30

***Figure 14-9**

800-YARD-SWIM TEST

This event is used to assess cardio-respiratory (aerobic) fitness. (See Figure 14-10.)

Equipment

Two stopwatches, one clipboard and pen for each scorer, one copy each of the test instructions and standards, and appropriate safety equipment are needed.

Facilities

A swimming pool at least 25 yards long and 3 feet deep, or an approved facility, is needed.

Personnel

One event supervisor and at least one scorer for every soldier to be tested are required. Appropriate safety, control, and medical personnel must also be present.

Instructions

The event supervisor must read the following statement: "THE 800-YARD SWIM IS USED TO ASSESS YOUR LEVEL OF AEROBIC FITNESS. YOU WILL BEGIN IN THE WATER; NO DIVING IS ALLOWED. AT THE START, YOUR BODY MUST BE IN CONTACT WITH THE WALL OF THE POOL. ON THE COMMAND 'GO,' THE CLOCK WILL START. YOU SHOULD THEN BEGIN SWIMMING AT YOUR OWN PACE, USING ANY STROKE OR COMBINATION OF STROKES YOU WISH. YOU MUST SWIM (tell the number) LAPS TO COMPLETE THIS DISTANCE. YOU MUST TOUCH THE WALL OF THE POOL AT EACH END OF THE POOL AS YOU TURN. ANY TYPE OF TURN IS AUTHORIZED. YOU WILL BE SCORED ON YOUR ABILITY TO COMPLETE THE SWIM IN A TIME EQUAL TO, OR LESS THAN, THAT LISTED FOR YOUR AGE AND SEX. WALKING ON THE BOTTOM TO RECUPERATE IS AUTHORIZED. SWIMMING GOGGLES ARE PERMITTED, BUT NO OTHER EQUIPMENT IS AUTHORIZED. WHAT ARE YOUR QUESTIONS ABOUT THIS EVENT?"

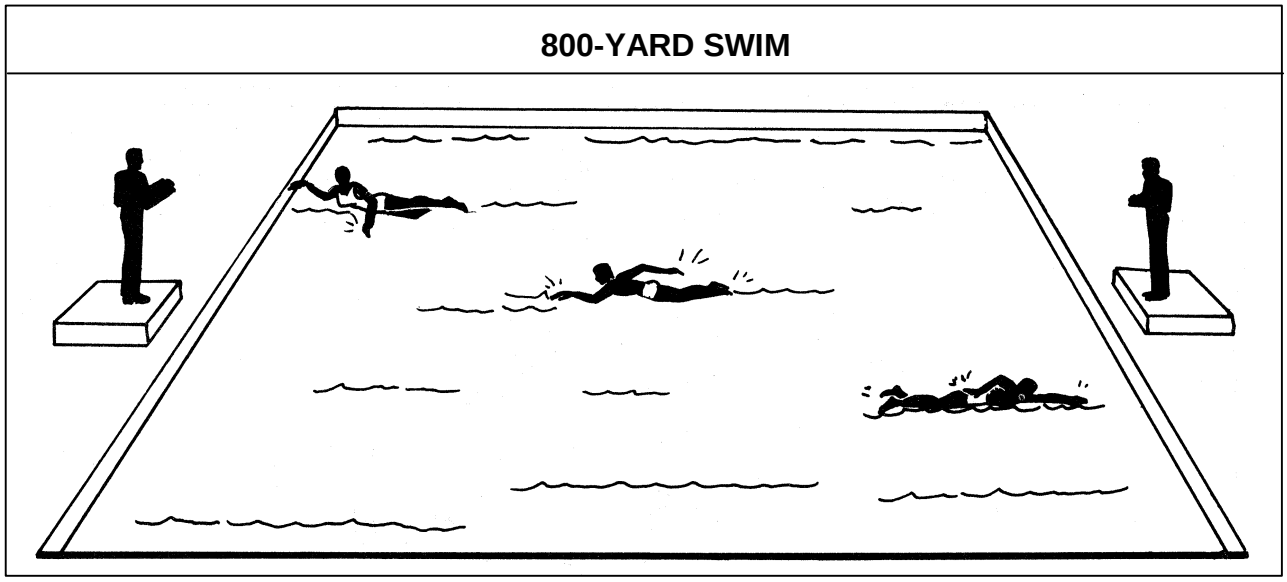


Figure 14-10

Administration

After reading the instructions, the event supervisor answers only related questions. He assigns one soldier to each lane and tells the soldiers to enter the water. He gives them a short warm-up period to acclimate to the water temperature and loosen up. Above all, the event supervisor must be alert to the safety of the testees throughout the test.

Timing Techniques

The event supervisor is the timer. He uses the commands "Get set" and "Go." Two stopwatches are used in case one fails. As the soldiers near the finish, the event supervisor begins calling off the elapsed time in minutes and seconds (for example, "Nineteen-eleven, nineteen-twelve, nineteen-thirteen," and so on). The time is recorded when each soldier touches the end of the pool on the final lap or crosses a line set as the 800-yard mark.

Scorers' Duties

Scorers must observe the swimmers assigned to the. They must be sure that each swimmer touches the bulkhead at every turn. The scorers record each soldier's time in the 2-mile-run block on the scorecard and use the comment block to identify the time as an 800-yard-swim time. If the pool length is measured in meters, the scorers convert the exact distance to yards. To convert meters to yards, multiply the number of meters by 39.37 and divide the product by 36; that is, (meters x 39.37)/36 = yards. For example, 400 meters equals 437.4 yards; that is, (400 x 39.37)/36 = 437.4 yards.

6.2-MILE STATIONARY-BICYCLE ERGOMETER TEST

This event is used to assess the soldier's cardiorespiratory and leg-muscle endurance. (See Figure 14-11.)

Equipment

Two stopwatches, one clipboard and pen for each scorer, a copy of the test instructions and standards, and one stationary bicycle ergometer are needed. The ergometers should measure resistance in kiloponds or newtons. The bicycle should be one that can be used for training and testing. Its seat and

***Instructions for Completing DA Form 705, Army Physical Fitness Scorecard, June 1998.**

NAME Print soldier's last name, first name and middle initial in NAME block.

SSN Print soldier's social security number in SSN block.

GENDER Print **M** for male or **F** for female in GENDER block.

UNIT Print soldier's unit designation in UNIT block.

DATE Print date the APFT is administered in DATE block.

GRADE Print soldier's grade in GRADE block.

AGE Print soldier's age on the date the APFT is administered in AGE block.

HEIGHT Print soldier's height in HEIGHT block. Height will be rounded to the nearest inch. If the height fraction is less than 1/2 inch, round down to the nearest whole number in inches. If the height fraction is greater than 1/2 inch, round up to the next highest whole number in inches.

WEIGHT Print soldier's weight in WEIGHT block. Weight will be recorded to the nearest pound. If the weight fraction is less than 1/2 pound, round down to the nearest pound. If the weight fraction is 1/2 pound or greater, round up to the nearest pound. Circle **GO** if soldier meets screening table weight IAW AR 600-9. Circle **NO-GO** if soldier exceeds screening table weight IAW AR 600-9.

BODY FAT If soldier exceeds screening table weight, print the soldier's body fat in the BODY FAT block. Percent body fat is recorded from DA Form 5500-R, Body Fat Content Worksheet, Dec 85, for male soldiers and DA Form 5501-R, Body Fat Content Worksheet, Dec 85, for female soldiers. Circle **GO** if soldier meets percent body fat for their age and gender IAW AR 600-9. Circle **NO-GO** if soldier exceeds percent body fat for their age and gender IAW AR 600-9. If soldier does not exceed screening table weight or does not appear to have excessive body fat IAW AR 600-9, print N/A (not applicable) in the BODY FAT block.

PU RAW SCORE The event scorer records the number of correctly performed repetitions of the push-up in the PU RAW SCORE block and prints his or her initials in the INITIALS block.

SU RAW SCORE The event scorer records the number of correctly performed repetitions of the sit-up in the SU RAW SCORE block and prints his or her initials in the INITIALS block.

2MR RAW SCORE The event scorer records the two-mile run time in the 2MR RAW SCORE block. The time is recorded in minutes and seconds. The event scorer then determines the point value for the two-mile run using the scoring standards on the reverse side of the scorecard. The point value is recorded in the 2MR POINTS block and the event scorer prints his or her initials in the INITIALS block. In all cases when a point value falls between two point values, the lower point value is used and recorded. The two-mile run event scorer also determines the point value for push-ups and sit-ups using the scoring standards on the reverse side of the scorecard. The point values are recorded in the appropriate push-up and sit-up POINTS block and the event scorer prints his or her initials in the INITIALS block. The two-mile run event scorer totals the points from the three events and records the total APFT score in the TOTAL POINTS block.

ALTERNATE AEROBIC EVENT The event scorer prints the alternate aerobic event administered (800-yard swim, 6.2-mile-stationary bicycle ergometer, 6.2-mile-bicycle test or 2.5-mile walk) in the ALTERNATE AEROBIC EVENT block. The time the soldier completes the alternate aerobic event is recorded in minutes and seconds in the ALTERNATE AEROBIC EVENT block. The standards for the alternate aerobic event tests are listed in FM 21-20, Chapter 14, Figure 14-9. Scoring for all alternate aerobic events is on a **GO** or **NO-GO** basis. No point values are awarded. Circle **GO** if the soldier completes the alternate aerobic event within the required time or less. Circle **NO-GO** if the soldier fails to complete the alternate aerobic event within the required time. The alternate aerobic event scorer also determines the point value for push-ups and or sit-ups using the scoring standards on the reverse side of the scorecard. The point values are recorded in the appropriate push-up and or sit-up POINTS block and the event scorer prints his or her initials in the 2MR INITIALS block. The alternate aerobic event scorer totals the points from the push-up and or sit-up events and records the total APFT score in the TOTAL POINTS block.

NCOIC/OIC Signature The NCOIC/OIC checks all test scores for accuracy and signs their name in the NCOIC/OIC Signature block.

COMMENTS The event supervisor, event scorer, NCOIC, or OIC may record comments appropriate to the APFT in the COMMENTS block. Appropriate comments may include: weather conditions, injury during APFT and or appeals.

(THIS PAGE INTENTIONALLY LEFT BLANK.)

Approved for public release; distribution is unlimited.

FM 21-20
C1

Change

No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *1 October 1998*

PHYSICAL FITNESS TRAINING

1. FM 21-20, 30 September 1992, is changed as follows:

Remove pages	*Insert pages*
14-3 through 14-8	14-3 through 14-8.2
14-21 and 14-22	14-21 and 14-22

2. A star (*) indicates new or changed material.

3. File this transmittal sheet in front of this publication.

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army

Distribution:
Active Army, Army National Guard of the United States, and U.S. Army Reserve: To be distributed in accordance with Initial Distribution Number (IDN) 110165, requirements for FM 21-20.

Field Manual
No. 21-20

*FM 21-20
Headquarters
Department of the Army
Washington, DC, 30 September 1992

TABLE OF CONTENTS

PAGE

PREFACE iii

CHAPTER 1 INTRODUCTION
Leadership Responsibilities 1-1
Components of Fitness 1-3
Principles of Exercise 1-4
FITT Factors 1-4
Warm-up and Cool-down 1-7
Phases of Fitness Conditioning 1-7
Types of Fitness Programs 1-9
Age as a Factor in Physical Fitness 1-13
Evaluation 1-14

CHAPTER 2 CARDIORESPIRATORY FITNESS
Physiology of Aerobic Training 2-0
FITT Factors 2-1
Running 2-6
Road Marches 2-10
Alternate Forms of Aerobic Exercise 2-26

CHAPTER 3 MUSCULAR ENDURANCE AND STRENGTH
Muscular Fitness 3-1
Muscular Contractions 3-1
Principles of Muscular Training 3-2
Workout Techniques 3-6
Major Muscle Groups 3-9
Key Points to Emphasize 3-12
Exercise Programs 3-12
Exercise Chart 3-35

CHAPTER 4 FLEXIBILITY
Stretching Techniques 4-1
FITT Factors 4-2
Warm-up and Cool-down 4-2
Common Stretching Exercises 4-5

CHAPTER 5 BODY COMPOSITION
Evaluation Methods 5-0
Diet and Exercise 5-1

CHAPTER 6 NUTRITION AND FITNESS
Guidelines for Healthy Eating 6-0
Concerns for Optimal Physical Performance 6-3
Nutrition in the Field 6-6

PAGE

CHAPTER 7 CIRCUIT TRAINING AND EXERCISE DRILLS
Circuits 7-1
Calisthenics 7-7
Grass Drills 7-17
Guerrilla Exercises 7-23

CHAPTER 8 OBSTACLE COURSES AND ADDITIONAL DRILLS
Obstacle Courses 8-1
Rifle Drills 8-11
Log Drills 8-13
Aquatic Exercise 8-19

CHAPTER 9 COMPETITIVE FITNESS ACTIVITIES
Intramurals 9-1
Unit Activities 9-5
Orienteering 9-13
Unit Olympics 9-17

CHAPTER 10 DEVELOPING THE UNIT PROGRAM
Steps in Planning 10-1
Education 10-4
Common Errors 10-4
A Sample Program 10-5
Using the Principles of Exercise 10-12
Conclusion 10-13

CHAPTER 11 PHYSICAL TRAINING DURING INITIAL ENTRY TRAINING
Program Development 11-0
Safety Considerations 11-0
Road Marching 11-1

CHAPTER 12 ENVIRONMENTAL CONSIDERATIONS
Temperature Regulation 12-0
Heat Injuries and Symptoms 12-1
Acclimatization to Hot, Humid Environments 12-1
Exercising in Cold Environments 12-2
Acclimatization to High Altitudes 12-4
Air Pollution and Exercise 12-4

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

This publication supersedes FM 21-20, 28 August 1985.

TABLE OF CONTENTS (CONT.)

PAGE

CHAPTER 13 INJURIES

Typical Injuries Associated with
Physical Training 13-1
Other Factors 13-2

CHAPTER 14 ARMY PHYSICAL FITNESS TEST

Methods of Evaluation 14-1
Over-Forty Cardiovascular Screening Program 14-l
Overview l4-2
Test Administration l4-2
Duties of Test Personnel 14-8
Test Site i4-9
Test Procedures l4-10
Test Sequence l4-11
Test Results l4-18
Scores Above Maximum 14-19
Temporary Profiles 14-20
Permanent Profiles 14-20
Alternate Events 14-20

APPENDIX A PHYSIOLOGICAL DIFFERENCES BETWEEN THE SEXES ..... A-O

PAGE

APPENDIX B POSITIVE PROFILE FORM B-0

APPENDIX C PHYSICAL FITNESS LOG ..... C-I

APPENDIX D STATIONARY BICYCLE TEST ..... D-O

APPENDIX E SELECTING THE RIGHT RUNNING SHOE E-1

APPENDIX F CALCULATION OF V02MAX F-1

APPENDIX G PERCEIVED EXERTION G-1

APPENDIX H THE MAJOR SKELETAL MUSCLES OF THE HUMAN BODY ..... H-O

GLOSSARY Glossary-1

REFERENCES ..... References-O

INDEX ..... Index-O

Preface

On 5 July 1950, U.S. troops, who were unprepared for the physical demands of war, were sent to battle. The early days of the Korean war were nothing short of disastrous, as U.S. soldiers were routed by a poorly equipped, but well-trained, North Korean People's Army. As American soldiers withdrew, they left behind wounded comrades and valuable equipment their training had not adequately prepared them to carry heavy loads.

The costly lessons learned by Task Force Smith in Korea are as important today as ever. If we fail to prepare our soldiers for their physically demanding wartime tasks, we are guilty of paying lip service to the principle of "Train as you fight." Our physical training programs must do more for our soldiers than just get them ready for the semiannual Army Physical Fitness Test (APFT').

FM 21 -20 is directed at leaders who plan and conduct physical fitness training. It provides guidelines for developing programs which will improve and maintain physical fitness levels for all Army personnel. These programs will help leaders prepare their soldiers to meet the physical demands of war. This manual can also be used as a source book by all soldiers. FM 21-20 was written to conform to the principles outlined in FM 25-100, Training the Force.

The benefits to be derived from a good physical fitness program are many. It can reduce the number of soldiers on profile and sick call, invigorate training, and enhance productivity and mental alertness. A good physical fitness program also promotes team cohesion and combat survivability. It will improve soldiers' combat readiness.

The proponent of this publication is HQ TRADOC. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Headquarters, US Army Infantry Center, US Army Physical Fitness School (ATZB-PF), Fort Benning, GA31905-5000.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1

Introduction

A soldier's level of physical fitness' has a direct impact on his combat readiness. The many battles in which American troops have fought underscore the important role physical fitness plays on the battlefield. The renewed nationwide interest in fitness has been accompanied by many research studies on the effects of regular participation in sound physical fitness programs. The overwhelming conclusion is that such programs enhance a person's quality of life, improve productivity, and bring about positive physical and mental changes. Not only are physically fit soldiers essential to the Army, they are also more likely to have enjoyable, productive lives.

This chapter provides an overview of fitness. It defines physical fitness, outlines the phases of fitness, and discusses various types of fitness programs and fitness evaluation. Commanders and leaders can use this information to develop intelligent, combat-related, physical fitness programs.

Physical fitness, the emphasis of this manual, is but one component of total fitness. Some of the "others are weight control, diet and nutrition, stress management, dental health, and spiritual and ethical fitness, as well as the avoidance of hypertension, substance abuse, and tobacco use. This manual is primarily concerned with issues relating directly to the development and maintenance of the five components of physical fitness.

Components of physical fitness include weight control, diet, nutrition, stress management, and spiritual and ethical fitness.

The Army's physical fitness training program extends to all branches of the total Army. This includes the USAR and ARNG and encompasses all ages and ranks and both sexes. Its purpose is to physically condition all soldiers throughout their careers beginning with initial entry training (IET). It also includes soldiers with limiting physical profiles who must also participate in physical fitness training.

Commanders and leaders must ensure that all soldiers in their units maintain the highest level of physical fitness in accordance with this manual and with AR 350-15 which prescribes policies, procedures, and responsibilities for the Army physical fitness program.

Leadership Responsibilities

Effective leadership is critical to the success of a good physical training program. Leaders, especially senior leaders, must understand and practice the new Army doctrine of physical fitness. They must be visible and active participants in physical training programs. In short, leaders must lead PT! Their example will emphasize the importance of physical fitness training and will highlight it as a key element of the unit's training mission.

Leaders must emphasize the value of physical training and clearly explain the objectives and benefits of the program. Master Fitness Trainers (MFTs), graduates of a special course taught by the U.S. Army Physical Fitness School, can help commanders do this. However, regardless of the level of technical experience MFTs have, the sole responsibility for good programs rests with leaders at every level.

A poorly designed and executed physical fitness program hurts morale. A good program is well planned and organized, has reasonable yet challenging requirements, and is competitive and progressive. It also has command presence at every level with leaders setting the example for their soldiers.

Leaders should also continually assess their units to determine which specific components of fitness they lack. Once they identify the shortcomings, they should modify their programs to correct the weaknesses.

Leaders should not punish soldiers who fail to perform to standard. Punishment, especially excessive repetitions or additional PT, often does more harm than good. Leaders must

plan special training to help soldiers who need it. The application of sound leadership techniques is especially important in bringing physically deficient soldiers up to standard.

‘COMMAND FUNCTIONS

Commanders must evaluate the effectiveness of physical fitness training and ensure that it is focused on the unit’s missions. They can evaluate its effectiveness by participating in and observing training, relating their fitness programs to the unit’s missions, and analyzing individual and unit APFT performance.

Leaders should regularly measure the physical fitness level of every soldier to evaluate his progress and determine the success of the unit’s program.

Commanders should assure that qualified leaders supervise and conduct fitness training and use their MFTs, for they have received comprehensive training in this area.

Leaders can learn about fitness training in the following ways:

• Attend the four-week MFT course or one-week Exercise Leaders Course.

• Request a fitness workshop from the Army Physical Fitness School.

• Become familiar with the Army's fitness publications. Important examples include this manual, AR 350-15, and DA Pamphlets 350-15, 350-18, and 350-22.

Commanders must provide adequate facilities and funds to support a program which will improve each soldier’s level of physical fitness. They must also be sure that everyone participates, since all individuals, regardless of rank, age, or sex, benefit from regular exercise. In some instances, leaders will need to make special efforts to overcome recurring problems which interfere with regular training.

Leaders must also make special efforts to provide the correct fitness training for soldiers who are physically substandard. “Positive profiling” (DA Form 3349) permits and encourages profiled soldiers to do as much as they can within the limits of their profiles. Those who have been away from the conditioning process because of leave, sickness, injury, or travel may also need special consideration.

Commanders must ensure that the time allotted for physical fitness training is used effectively.

Training times is wasted by the following:

• Unprepared or unorganized leaders.

• Assignment fo a group which us too large for one leader.

• Insufficient training intensity: it will result in no improvement.

• Rates of progression that are too slow or too fast.

• Extreme faomality that usually emphasizes form over substance. An example would be too many units runs at slow paces or "daily dozen" activities that look impressive but do not result in impovement.

• Inadequate facilities which cause long waiting periods between exercises during a workout and/or between workouts.

• Long rest periods which interfere with progress.

To foster a positive attitude, unit leaders and instructors must be knowledgeable, understanding, and fair, but demanding. They must recognize individual differences and motivate soldiers to put forth their best efforts. However, they must also emphasize training to standard. Attaining a high level of physical fitness cannot be done simply by going through the motions. Hard training is essential.

Commanders must ensure that leaders are familiar with approved

Commanders must ensure that the time alloted for physical fitness training is used effectively.

techniques, directives, and publications and that they use them. The objective of every commander should be to incorporate the most effective methods of physical training into a balanced program. This program should result in the improved physical fitness of their soldiers and an enhanced ability to perform mission-related tasks.

MFTs can help commanders formulate sound programs that will attain their physical training goals, but commanders must know and apply the doctrine. However, since the responsibility for physical training is the commander's, programs must be based on his own training objectives. These he must develop from his evaluation of the unit's mission-essential task list (METL). Chapter 10 describes the development of the unit's program.

MASTER FITNESS TRAINERS

A Master Fitness Trainer (MFT) is a soldier who has completed either the four-week active-component, two-week reserve-component, or U.S. Military Academy's MFT course work. Although called "masters," MFTs are simply soldiers who know about all aspects of physical fitness training and how soldiers' bodies function. Most importantly, since MFTs are taught to design individual and unit programs, they should be used by commanders as special staff assistants for this purpose.

MFTs can do the following:

- Assess the physical fitness levels of individuals and units.
- Analyze the unit's mission-related tasks and develop sound fitness training programs to support those tasks.
- Train other trainers to conduct sound, safe physical training.
- Understand the structure and function of the human body, especially as it relates to exercise.

Components of Fitness

Physical fitness is the ability to function effectively in physical work, training, and other activities and still have enough energy left over to handle any emergencies which may arise.

The components of physical fitness are as follows:

- Cardiorespiratory (CR) endurance-the efficiency with which the body delivers oxygen and nutrients needed for muscular activity and transports waste products from the cells.
- Muscular strength - the greatest amount of force a muscle or muscle group can exert in a single effort.
- Muscular endurance - the ability of a muscle or muscle group to perform repeated movements with a sub-maximal force for extended periods of times.
- Flexibility-the ability to move the joints (for example, elbow, knee) or any group of joints through an entire, normal range of motion.
- Body composition-the amount of body fat a soldier has in comparison to his total body mass.

Improving the first three components of fitness listed above will have a positive impact on body composition and will result in less fat. Excessive body fat detracts from the other fitness components, reduces performance, detracts from appearance, and negatively affects one's health.

Factors such as speed, agility, muscle power, eye-hand coordination, and eye-foot coordination are classified as components of "motor" fitness. These factors affect a soldier's survivability on the battlefield. Appropriate training can improve these factors within the limits of each soldier's potential. The Army's fitness program seeks to improve or maintain all the components of physical and motor fitness

through sound, progressive, mission-specific physical training for individuals and units.

Principles of Exercise

Adherence to certain basic exercise principles is important for developing an effective program. The principles of exercise apply to everyone at all levels of physical training, from the Olympic-caliber athlete to the weekend jogger. They also apply to fitness training for military personnel.

These basic principles of exercise must be followed:

- Regularity. To achieve a training effect, a person must exercise of ten. One should strive to exercise each of the first four fitness components at least three times a week. Infrequent exercise can do more harm than good. Regularity is also important in resting, sleeping, and following a good diet.
- Progression. The intensity (how hard) and/or duration (how long) of exercise must gradually increase to improve the level of fitness.
- Balance. To be effective, a program should include activities that address all the fitness components, since overemphasizing any one of them may hurt the others.
- Variety. Providing a variety of activities reduces boredom and increases motivation and progress.
- Specificity. Training must be geared toward specific goals. For example, soldiers become better runners if their training emphasizes running. Although swimming is great exercise, it does not improve a 2-mile-run time as much as a running program does.
- Recovery. A hard day of training for a given component of fitness should be followed by an easier training day or rest day for that component and/or muscle group(s) to help permit recovery. Another way to allow recovery is to alternate the muscle groups exercised every other day, especially when training for strength and/or muscle endurance.
- Overload. The work load of each exercise session must exceed the normal demands placed on the body in order to bring about a training effect.

FITT Factors

Certain factors must be part of any fitness training program for it to be successful. These factors are Frequency, Intensity, Time, and Type. The acronym FITT makes it easier to remember them. (See Figure 1- 1.)

Factors for a successful training program are Frequency, Intensity, Time, and Type; "FITT".

FREQUENCY

Army Regulation 350-15 specifies that vigorous physical fitness training will be conducted 3 to 5 times per week. For optimal results, commanders must strive to conduct 5 days of physical training per week. Ideally, at least three exercise sessions for CR fitness, muscle endurance, muscle strength, and flexibility should be performed each week to improve fitness levels. Thus, for example, to obtain maximum gains in muscular strength, soldiers should have at least three strength-training sessions per week. Three physical activity periods a week, however, with only one session each of cardiorespiratory, strength, and flexibility training will not improve any of these three components.

With some planning, a training program for the average soldier can be developed which provides fairly equal emphasis on all the components of physical fitness. The following training program serves as an example.

In the first week, Monday, Wednesday, and Friday are devoted to CR fitness, and Tuesday and Thursday are devoted to muscle endurance and strength. During the second week, the

FITT Factors Applied to Physical Conditioning Program					
	Cardiorespiratory Endurance	**Muscular Strength**	**Muscular Endurance**	**Muscular Strength and Muscular Endurance**	**Flexibility**
F	**Frequency** 3-5 times/week	3 times/week	3-5 times/week	3 times/week	Warm-up and Cool-down: Stretch before and after each exercise session Developmental Stretching: To improve flexibility, stretch 2-3 times/week
I	**Intensity** 60-90% HRR*	3-7 RM*	12+ RM	8-12 RM	Tension and slight discomfort, NOT PAIN
T	**Time** 20 minutes or more	The time required to do 3-7 repetitions of each exercise	The time required to do 12+ repetitions of each exercise	The time required to do 8-12 repetitions of each exercise	Warm-up and Cool-down Stretches: 10-15 seconds/stretch Developmental Stretches: 30-60 seconds/stretch
T	**Type** Running Swimming Cross-Country Skiing Rowing Bicycling Jumping Rope Walking/Hiking Stair Climbing	Free Weights Resistance Machines Partner-Resisted Exercises Body-Weight Exercises (Pushups/Situps/Pullups/Dips, etc.)			Stretching: Static Passive P.N.F.
* HRR = Heart Rate Reserve		* RM = Repetition Maximum			

Figure 1-1

training days are flip-flopped: muscle endurance and strength are trained on Monday, Wednesday, and Friday, and CR fitness is trained on Tuesday and Thursday. Stretching exercises are done in every training session to enhance flexibility. By training continuously in this manner, equal emphasis can be given to developing muscular endurance and strength and to CR fitness while training five days per week.

If the unit's mission requires it, some muscular and some CR training can be done during each daily training session as long as a "hard day/recovery

day" approach is used. For example, if a unit has a hard run on Monday, Wednesday, and Friday, it may also choose to run on Tuesday and Thursday. However, on Tuesday and Thursday the intensity and/or distance/time should be reduced to allow recovery. Depending on the time available for each session and the way training sessions are conducted, all components of fitness can be developed using a three-day-per-week schedule. However, a five-day-per-week program is much better than three per week. (See Training Program in Chapter 10.)

Numerous other approaches can be taken when tailoring a fitness program to meet a unit's mission as long as the principles of exercise are not violated. Such programs, when coupled with good nutrition, will help keep soldiers fit to win.

!NTENSITY

Training at the right intensity is the biggest problem in unit programs. The intensity should vary with the type of exercise being done. Exercise for CR development must be strenuous enough to elevate the heart rate to between 60 and 90 percent of the heart rate reserve (HRR). (The calculation of percent HRR is explained in Chapter 2.) Those with low fitness levels should start exercising at a lower training heart rate (THR) of about 60 percent of HRR.

For muscular strength and endurance, intensity refers to the percentage of the maximum resistance that is used for a given exercise. When determining intensity in a strength-training program, it is easier to refer to a "repetition maximum" or "RM." For example, a 1O-RM is the maximum weight that can be correctly lifted 10 times. An 8-12 RM is the weight that can be lifted 8 to 12 times correctly. Doing an exercise "correctly" means moving the weight steadily and with proper form without getting help from other muscle groups by jerking, bending, or twisting the body. For the average person who wants to improve both muscular strength and endurance, an 8-12 RM is best.

The person who wants to concentrate on muscular strength should use weights which let him do three to seven repetitions before his muscles fatigue. Thus, for strength development, the weight used should be a 3-7 RM. On the other hand, the person who wants to concentrate on muscular endurance should use a 12+ RM. When using a 12+ RM as the training intensity, the more repetitions performed per set, over time, the greater will be the improvement in muscular endurance. Conversely, the greater the number of repetitions performed, the smaller will be the gains in strength. For example, a person who regularly trains with a weight which lets him do 100 repetitions per exercise (a 1OO-RM) greatly increases his muscular endurance but minimally improves his muscular strength. (See Chapter 3 for information on resistance training.)

All exercise sessions should include stretching during the warm-up and cool-down. One should stretch so there is slight discomfort, but no pain, when the movement is taken beyond the normal range of motion. (See Chapter 4 for information on stretching.)

All exercises sessions should include stretching during the warm-up and cool-down.

TIME

Like intensity, the time spent exercising depends on the type of exercise being done. At least 20 to 30 continuous minutes of intense exercise must be used in order to improve cardiorespiratory endurance.

For muscular endurance and strength, exercise time equates to the number of repetitions done. For the average soldier, 8 to 12 repetitions with enough resistance to cause muscle failure improves both muscular endurance and strength. As soldiers progress, they

will make better strength gains by doing two or three sets of each resistance exercise.

Flexibility exercises or stretches should be held for varying times depending on the objective of the session. For warming-up, such as before a run, each stretch should be held for 10 to 15 seconds. To improve flexibility, it is best to do stretching during the cool-down, with each stretch held for 30 to 60 seconds. If flexibility improvement is a major goal, at least one session per week should be devoted to developing it.

TYPE

Type refers to the kind of exercise performed. When choosing the type, the commander should consider the principle of specificity. For example, to improve his soldiers' levels of CR fitness (the major fitness component in the 2-mile run), he should have them do CR types of exercises. These are discussed in Chapter 2.

Ways to train for muscular strength and endurance are addressed in Chapter 3, while Chapter 4 discusses flexibility. These chapters will help commanders design programs which are tailor-made to their soldiers' needs. The basic rule is that to improve performance, one must practice the particular exercise, activity, or skill he wants to improve. For example, to be good at push-ups, one must do push-ups. No other exercise will improve push-up performance as effectively.

Warm-up and Cool-Down

One must prepare the body before taking part in organized PT, unit sports competition, or vigorous physical activity. A warm-up may help prevent injuries and maximize performance. The warm-up increases the body's internal temperature and the heart rate. The chance of getting injured decreases when the heart, muscles, ligaments, and tendons are properly prepared for exertion. A warm-up should include some running-in-place or slow jogging, stretching, and calisthenics. It should last five to seven minutes and should occur just before the CR or muscular endurance and strength part of the workout. After a proper warm-up, soldiers are ready for a more intense conditioning activity.

Soldiers should cool down properly after each exercise period, regardless of the type of workout. The cool-down serves to gradually slow the heart rate and helps prevent pooling of the blood in the legs and feet. During exercise, the muscles squeeze the blood through the veins. This helps return the blood to the heart. After exercise, however, the muscles relax and no longer do this, and the blood can accumulate in the legs and feet. This can cause a person to faint. A good cool-down will help avoid this possibility.

Soldiers should walk and stretch until their heart rates return to less than 100 beats per minute (BPM) and heavy sweating stops. This usually happens five to seven minutes after the conditioning session.

Phases of Fitness Conditioning

The physical fitness training program is divided into three phases: preparatory, conditioning, and maintenance. The starting phases for different units or individuals vary depending on their age, fitness levels, and previous physical activity.

Young, healthy persons may be able to start with the conditioning phase, while those who have been exercising regularly may already be in the maintenance phase. Factors such as extended field training, leave time, and illness can cause soldiers to drop from a maintenance to a conditioning phase.

Persons who have not been active, especially if they are age 40 or older, should start with the preparatory phase. Many soldiers who fall into this category may be recovering from illness or injury, or they may be just out of high school. Most units will have soldiers in all three phases of training at the same time.

PREPARATORY PHASE

The preparatory phase helps both the cardiorespiratory and muscular systems get used to exercise, preparing the body to handle the conditioning phase. The work load in the beginning must be moderate. Progression from a lower to a higher level of fitness should be achieved by gradual, planned increases in frequency, intensity, and time.

Initially, poorly conditioned soldiers should run, or walk if need be, three times a week at a comfortable pace that elevates their heart rate to about 60 percent HRR for 10 to 15 minutes. Recovery days should be evenly distributed throughout the week, and training should progress slowly. Soldiers should continue at this or an appropriate level until they have no undue fatigue or muscle soreness the day following the exercise. They should then lengthen their exercise session to 16 to 20 minutes and/or elevate their heart rate to about 70 percent HRR by increasing their pace. To be sure their pace is faster, they should run a known distance and try to cover it in less time. Those who feel breathless or whose heart rate rises beyond their training heart rate (THR) while running should resume walking until the heart rate returns to the correct training level. When they can handle an intensity of 70 percent HRR for 20 to 25 minutes, they should be ready for the next phase. Chapter 2 shows how to determine the THR, that is, the right training level during aerobic training.

The preparatory phase for improving muscular endurance and strength through weight training should start easily and progress gradually. Beginning weight trainers should select about 8 to 12 exercises that work all the body's major muscle groups. They should use only very light weights the first week (that is, the first two to three workouts). This is very important, as they must first learn the proper form for each exercise. Light weights will also help minimize muscle soreness and decrease the likelihood of injury to the muscles, joints, and ligaments. During the second week, they should use progressively heavier weights on each resistance exercise. By the end of the second week (four to six workouts), they should know how much weight will let them do 8 to 12 repetitions to muscle failure for each exercise. At this point the conditioning phase begins.

CONDITIONING PHASE

To reach the desired level of fitness, soldiers must increase the amount of exercise and/or the workout intensity as their strength and/or endurance increases.

To improve cardiorespiratory endurance, for example, they must increase the length of time they run. They should start with the preparatory phase and gradually increase the running time by one or two minutes each week until they can run continuously for 20 to 30 minutes. At this point, they can increase the intensity until they reach the desired level of fitness. They should train at least three times a week and take no more than two days between workouts.

For weight trainers, the conditioning phase normally begins during the third week. They should do one set of 8 to 12 repetitions for each of the selected resistance exercises. When they can do more than 12 repetitions of any exercise, they should increase the

Soldiers and units should be encouraged to progress beyond minimum requirements.

weight used on that exercise by about five percent so they can again do only 8 to 12 repetitions. This process continues throughout the conditioning phase. As long as they continue to progress and get stronger while doing only one set of each exercise, it is not necessary for them to do more than one set per exercise. When they stop making progress with one set, they should add another set on those exercises in which progress has slowed. As training progresses, they may want to increase the sets to three to help promote further increases in strength and/or muscle mass.

For maximum benefit, soldiers should do strength training three times a week with 48 hours of rest between workouts for any given muscle group. It helps to periodically do a different type of exercise for a given muscle or muscle group. This adds variety and ensures better strength development.

The conditioning phase ends when a soldier is physically mission-capable and all personal, strength-related goals and unit-fitness goals have been met.

MAINTENANCE PHASE

The maintenance phase sustains the high level of fitness achieved in the conditioning phase. The emphasis here is no longer on progression. A well-designed, 45- to 60-minute workout (including warm-up and cool-down) at the right intensity three times a week is enough to maintain almost any appropriate level of physical fitness. These workouts give soldiers time to stabalize their flexibility, CR endurance, and muscular endurance and strength. However, more frequent training may be needed to reach and maintain peak fitness levels.

Soldiers and units should always be encouraged to progress beyond minimum requirements. Maintaining an optimal level of fitness should become part of every soldier's life-style and should be continued throughout his life.

An effective program uses a variety of activities to develop muscular endurance and strength, CR endurance, and flexibility, and to achieve good body composition. It should also promote the development of coordination as well as basic physical skills. (See Chapter 10 for guidance in constructing a unit program.)

Types of Fitness Programs

The Army has too many types of units with different missions to have one single fitness program for everyone. Therefore, only broad categories of programs and general considerations are covered here. They are classified as unit, individual, and special programs.

UNIT PROGRAMS

Unit programs must support unit missions. A single unit may require several types of programs. Some units, such as infantry companies, have generally the same types of soldiers and MOSS. On the other hand, certain combat--service-support units have many different types of soldiers, each with unique needs. Commanders can develop programs for their own unit by following the principles in this chapter. MFTs know how to help commanders develop programs for their units/soldiers.

Commanders of units composed of both men and women must also understand the physiological differences between the sexes. These are summarized in Appendix A. Although women are able to participate in the same fitness programs as men, they must work harder to perform at the same absolute level of work or exercise. The same holds true for poorly-conditioned soldiers running with well-conditioned soldiers.

To overcome this problem in the case of running, for example, the unit

should use ability group runs rather than unit runs. Soldiers in a given ability group will run at a set pace, with groups based on each soldier's most recent 2-mile-run time. Three to six groups per company-sized unit are usually enough. Within each group, each soldier's heart rate while running should be at his own THR. When the run is not intense enough to bring one or more of the soldiers to THR, it is time for those soldiers to move up to the next ability group.

Ability group running does two things more effectively than unit runs: 1) it lets soldiers improve to their highest attainable fitness level; and, 2) it more quickly brings subpar performers up to minimum standards.

It also allows soldiers to train to excel on the APFT which, in turn, helps promotion opportunities. Holding a fit soldier back by making him run at a slow, unit-run pace (normally less than his minimum pace for the 2-mile run on the APFT) hurts his morale and violates the principle of training to challenge.

Initial Entry Training (IET)

The training program in basic training (BT) brings soldiers up to the level of physical fitness they need to do their jobs as soldiers. However, the program requires good cadre leadership to ensure that it is appropriate, demanding, and challenging.

Trainees report to active duty at various levels of physical fitness and ability. During basic training they pass through the preparatory into the conditioning phase. During "fill" periods and the first week of training, the focus is on learning and developing the basics of physical fitness.

Training emphasizes progressive conditioning of the whole body. To minimize the risk of injury, exercises must be done properly, and the intensity must progress at an appropriate rate. Special training should be considered for soldiers who fail to maintain the unit's or group's rate of progression. Commanders should evaluate each basic trainee who falls below standard and give him individualized, special assistance to improve his deficiencies.

Additional training should not be used as punishment for a soldier's inability to perform well.

More PT is not necessarily better. Chapter 11 describes how to develop physical training programs in IET units.

Advanced Individual Training (AIT)

Although AIT focuses on technical and MOS-oriented subjects, physical fitness must be emphasized throughout. Most soldiers arriving from basic training are already well into the conditioning phase. Therefore, AIT unit training should focus on preparing soldiers to meet the physical requirements of their initial duty assignments. (See TRADOC Reg. 350-6, Chapter 4.)

Walking, running, and climbing during unit training contribute to physical fitness, but they are not enough. Physical training in AIT requires continued, regular, vigorous exercise which stresses the whole body and addresses all the components of fitness.

By the end of AIT, soldiers must meet APFT standards. With good programs and special training, all healthy AIT graduates should easily be able to demonstrate that they, possess the required level of physical fitness.

By the end of AIT, soldiers must meet APFT standards.

TOE and TDA Units–Active Component

There are many types of units in the Army, and their missions often require different levels of fitness. TOE and TDA units must emphasize attaining and maintaining the fitness level required for the mission.

The unit's standards may exceed the Army's minimums. By regulation (AR 350- 15), the unit's standards can be established by the unit's commander, based on mission requirements.

TOE and TDA Units--Reserve Components

The considerations for the active component also apply to reserve components (RCS). However, since members of RC units cannot participate together in collective physical training on a regular basis, RC unit programs must focus on the individual's fitness responsibilities and efforts. Commanders, however, must still ensure that the unit's fitness level and individual PT programs are maintained. MFTs can give valuable assistance to RC commanders and soldiers.

INDIVIDUAL PROGRAMS

There must be a positive approach to all special fitness training.

Many soldiers are assigned to duty positions that offer little opportunity to participate in collective unit PT programs. Examples are HQDA, MACOM staffs, hospitals, service school staff and faculty, recruiting, and ROTC. In such organizations, commanders must develop leadership environments that encourage and motivate soldiers to accept individual responsibility for their own physical fitness. Fitness requirements are the same for these personnel as for others. Section chiefs and individual soldiers need to use the fundamental principles and techniques outlined in this manual to help them attain and maintain a high level of physical fitness. MFTs can help develop individual fitness programs.

SPECIAL PROGRAMS

The day-to-day unit PT program conducted for most soldiers may not be appropriate for all unit members. Some of them may not be able to exercise at the intensity or duration best suited to their needs.

At least three groups of soldiers may need special PT programs. They are as follows:

- Those who fail the APFT and do not have medical profiles.
- Those who are overweight/overfat according to AR 600-9
- Those who have either permanent or temporary medical profiles.

Leaders must also give special consideration to soldiers who are age 40 or older and to recent arrivals who cannot meet the standards of their new unit.

Special programs must be tailored to each soldier's needs, and trained, knowledgeable leaders should develop and conduct them. This training should be conducted with the unit, If this is impossible, it should at least occur at the same time.

There must be a positive approach to all special fitness training. Soldiers who lack enough upper body strength to do a given number of push-ups or enough stamina to pass the 2-mile run should not be ridiculed. Instead, their shortcomings should be assessed and the information used to develop individualized programs to help them remedy their specific shortcomings. A company-sized unit may have as many as 20 soldiers who need special attention. Only smart planning will produce good programs for all of them.

Commanders must counsel soldiers, explaining that special programs are being developed in their best interests. They must make it clear that standards

will be enforced. Next, they should coordinate closely with medical personnel to develop programs that fit the capabilities of soldiers with medical limitations. Each soldier should then begin an individualized program based on his needs.

MFTs know how to assess CR endurance, muscular strength and endurance, flexibility, and body composition. They can also develop thorough, tailor-made programs for all of a unit's special population.

APFT Failures

Although it is not the heart of the Army's physical fitness program, the APFT is the primary instrument for evaluating the fitness level of each soldier. It is structured to assess the muscular endurance of specific muscle groups and the functional capacity of the CR system.

Soldiers with reasonable levels of overall physical fitness should easily pass the APFT. Those whose fitness levels are substandard will fail. Soldiers who fail the APFT must receive special attention. Leaders should analyze their weaknesses and design programs to overcome them. For example, if the soldier is overweight, nutrition and dietary counseling may be needed along with a special exercise program. DA Pam 350-22 outlines several ways to improve a soldier's performance on each of the APFT events.

When trying to improve APFT performances, leaders must ensure that soldiers are not overloaded to the point where the fitness training becomes counterproductive. They should use ability groups for their running program and, in addition to a total-body strength-training program, should include exercises designed for push-up and sit-up improvement. When dealing with special populations, two very important principles are overload and recovery. The quality, not just the quantity, of the workout should be emphasized. Two-a-day sessions, unless designed extremely well, can be counter-productive. More PT is not always better.

Overweight Soldiers

Designers of weight loss and physical training programs for overweight soldiers should remember this: even though exercise is the key to sensible weight loss, reducing the number of calories consumed is equally important. A combination of both actions is best.

The type of exercise the soldier does affects the amount and nature of the weight loss. Both running and walking burn about 100 calories per mile. One pound of fat contains 3,500 calories. Thus, burning one pound of fat through exercise alone requires a great deal of running or walking. On the other hand, weight lost through dieting alone includes the loss of useful muscle tissue. Those who participate in an exercise program that emphasizes the development of strength and muscular endurance, however, can actually increase their muscle mass while losing body fat. These facts help explain why exercise and good dietary practices must be combined.

Unit MFTs can help a soldier determine the specific caloric requirement he needs to safely and successfully lose excess fat. They can devise a sound, individualized plan to arrive at that reduced caloric intake. Likewise, unit MFTs can also develop training programs which will lead to fat loss without the loss of useful muscle tissue.

Generally, overweight soldiers should strive to reduce their fat weight by two pounds per week. When a soldier loses weight, either by diet or exercise or both, a large initial weight loss is not unusual. This may be due to water loss associated with the using up of the body's carbohydrate stores. Although these losses may be encouraging to the

soldier, little of this initial weight loss is due to the loss of fat.

Soldiers should be weighed under similar circumstances and at the same time each day. This helps avoid false measurements due to normal fluctuations in their body weight during the day. As a soldier develops muscular endurance and strength, lean muscle mass generally increases. Because muscle weighs more per unit of volume than fat. caution is advised in assessing his progress. Just because a soldier is not losing weight rapidly does not necessarily mean he is not losing fat. In fact, a good fitness program often results in gaining muscle mass while simultaneously losing fat weight. If there is reasonable doubt, his percentage of body fat should be determined.

Soldiers with Profiles

This manual stresses what soldiers can do while on medical profile rather than what they cannot do.

DOD Directive 1308.1 requires that, "Those personnel identified with medically limiting defects shall be placed in a physical fitness program consistent with their limitations as advised by medical authorities."

AR 350-15 states, "For individuals with limiting profiles, commanders will develop physical fitness programs in cooperation with health care personnel."

The Office of the Surgeon General has developed DA Form 3349 to ease the exchange of information between health care personnel and the units. On this form, health care personnel list, along with limitations, those activities that the profiled soldier can do to maintain his fitness level. With this information, the unit should direct profiled soldiers to participate in the activities they can do. (An example of DA Form 3349 is in Appendix B.)

All profiled soldiers should take part in as much of the regular fitness program as they can. Appropriate activities should be substituted to replace those regular activities in which they cannot participate.

All profiled soldiers should do as much of the regular fitness program as they can, along with substitute activities.

Chapter 2 describes some aerobic activities the soldier can do to maintain cardiorespiratory fitness when he cannot run. Chapter 3 shows how to strengthen each body part. Applying this information should allow some strength training to continue even when body parts are injured. The same principle applies to flexibility (Chapter 4).

Medical treatment and rehabilitation should be aimed at restoring the soldier to a suitable level of physical fitness. Such treatment should use appropriate, progressive physical activities with medical or unit supervision.

MFTs can help profiled soldiers by explaining alternative exercises and how to do them safely under the limitations of their profile. MFTs are not, however, trained to diagnose injuries or prescribe rehabilitative exercise programs. This is the domain of qualified medical personnel.

The activity levels of soldiers usually decrease while they are recovering from sickness or injury. As a result, they should pay special attention to their diets to avoid gaining body fat. This guidance becomes more important as soldiers grow older. With medical supervision, proper diet, and the right PT programs, soldiers should be able to overcome their physical profiles and quickly return to their normal routines and fitness levels.

Age as a Factor in Physical Fitness

Soldiers who are age 40 and older represent the Army's senior leadership. On the battlefield, they must lead other soldiers under conditions of severe stress. To meet this challenge

and set a good example, these leaders must maintain and demonstrate a high level of physical fitness. Since their normal duties may be stressful but nonphysical, they must take part regularly in a physical fitness program. The need to be physically fit does not decrease with increased age.

People undergo many changes as they grow older. For example, the amount of blood the heart can pump per beat and per minute decreases during maximal exercise, as does the maximum heart rate. This lowers a person's physical ability, and performance suffers. Also, the percent of body weight composed of fat generally increases, while total muscle mass decreases. The result is that muscular strength and endurance, CR endurance, and body composition suffer. A decrease in flexibility also occurs.

Men tend to maintain their peak levels of muscular strength and endurance and CR fitness until age 30. After 30 there is a gradual decline throughout their lives. Women tend to reach their peak in physical capability shortly after puberty and then undergo a progressive decline.

Although a decline in performance normally occurs with aging, those who stay physically active do not have the same rate of decline as those who do not. Decreases in muscular strength and endurance, CR endurance, and flexibility occur to a lesser extent in those who regularly train these fitness components.

Soldiers who are fit at age 40 and continue to exercise show a lesser decrease in many of the physiological functions related to fitness than do those who seldom exercise. A trained 60-year-old, for example, may have the same level of CR fitness as a sedentary 20-year-old. In short, regular exercise can help add life to your years and years to your life.

The assessment phase of a program is especially important for those age 40 and over. However, it is not necessary or desirable to develop special fitness programs for these soldiers. Those who have been exercising regularly may continue to exercise at the same level as they did before reaching age 40. A program based on the principles of exercise and the training concepts in this manual will result in a safe, long-term conditioning program for all soldiers. Only those age 40 and over who have not been exercising regularly may need to start their exercise program at a lower level and progress more slowly than younger soldiers. Years of inactivity and possible abuse of the body cannot be corrected in a few weeks or months.

As of 1 January 1989, soldiers reaching age 40 are no longer required to get clearance from a cardiovascular screening program before taking the APFT. Only a medical profile will exempt them from taking the biannual record APFT. They must, however, have periodic physical examinations in accordance with AR 40-501 and NGR 40-501. These include screening for cardiovascular risk factors.

Evaluation

To evaluate their physical fitness and the effectiveness of their physical fitness training programs, all military personnel are tested biannually using the APFT in accordance with AR 350-15. (Refer to Chapter 14.) However, commanders may evaluate their physical fitness programs more frequently than biannually.

SCORING CATEGORIES

There are two APFT categories of testing for all military personnel Initial Entry Training (IET) and the Army Standard.

Safety is a major consideration when planning and evaluating physical training programs

IET Standard

The APFT standard for basic training is a minimum of 50 points per event and no less than 150 points overall by the end of basic training. Graduation requirements for AIT and One Station Unit Training (OSUT) require 60 points per event.

Army Standard

All other Army personnel (active and reserve) who are non-IET soldiers must attain the minimum Army standard of at least 60 points per event. To get credit for a record APFT, a medically profiled soldier must, as a minimum, complete the 2-mile run or one of the alternate aerobic events.

SAFETY

Safety is a major consideration when planning and evaluating physical training programs. Commanders must ensure that the programs do not place their soldiers at undue risk of injury or accident. They should address the following items:

- Environmental conditions (heat/cold/traction).
- Soldiers' levels of conditioning (low/high/age/sex).
- Facilities (availability/instruction/repair).
- Traffic (routes/procedures/formations).
- Emergency procedures (medical/communication/transport).

The objective of physical training in the Army is to enhance soldiers' abilities to meet the physical demands of war. Any physical training which results in numerous injuries or accidents is detrimental to this goal. As in most training, common sense must prevail. Good, sound physical training should challenge soldiers but should not place them at undue risk nor lead to situations where accidents or injuries are likely to occur.

CHAPTER 2

Cardiorespiratory Fitness

Cardiorespiratory (CR) fitness, sometimes called CR endurance, aerobic fitness, or aerobic capacity, is one of the five basic components of physical fitness. CR fitness is a condition in which the body's cardiovascular (circulatory) and respiratory systems function together, especially during exercise or work, to ensure that adequate oxygen is supplied to the working muscles to produce energy. CR fitness is needed for prolonged, rhythmic use of the body's large muscle groups. A high level of CR fitness permits continuous physical activity without a decline in performance and allows for rapid recovery following fatiguing physical activity.

Activities such as running, road marching, bicycling, swimming, cross-country skiing, rowing, stair climbing, and jumping rope place an extra demand on the cardiovascular and respiratory systems. During exercise, these systems attempt to supply oxygen to the working muscles. Most of this oxygen is used to produce energy for muscular contraction. Any activity that continuously uses large muscle groups for 20 minutes or longer taxes these systems. Because of this, a wide variety of training methods is used to improve cardiorespiratory endurance.

Physiology of Aerobic Training

Aerobic exercise uses oxygen to produce most of the body's energy needs. It also brings into play a fairly complex set of physiological events.

To provide enough energy-producing oxygen to the muscles, the following events occur:

- Greater movement of air through the lungs.
- Increased movement of oxygen from the lungs into the blood stream.
- Increased delivery of oxygen-laden blood to the working muscles by the heart's accelerated pumping action.
- Regulation of the blood vessel's size to distribute blood away from inactive tissue to working muscle.
- Greater movemen t of oxygen from the blood into the muscle tissue.
- Accelerated return of veinous blood to the heart.

CR fitness is needed for prolonged, rhythmic use of the body's large muscle groups.

Correctly performed aerobic exercise, over time, causes positive changes in the body's CR system. These changes allow the heart and vascular systems to deliver more oxygen-rich blood to the working muscles during exercise. Also, those muscles regularly used during aerobic exercise undergo positive changes. By using more oxygen, these changes let the muscles make and use more energy during exercise and, as a result, the muscles can work longer and harder.

During maximum aerobic exercise, the trained person has an increased maximum oxygen consumption ($\dot{V}O_2max$). He is better able to process oxygen and fuel and can therefore provide more energy to the working muscles.

$\dot{V}O_2max$, also called aerobic capacity, is the most widely accepted single indicator of one's CR fitness level.

Aerobic exercise is the best type of activity for attaining and maintaining a low percentage of body fat.

The best way to determine aerobic capacity is to measure it in the laboratory. It is much easier, however, to estimate maximum oxygen uptake by using other methods.

It is possible to determine a soldier's CR fitness level and get an accurate estimate of his aerobic capacity by using his APFT 2-mile-run time. (Appendix F explains how to do this.) Other tests - the bicycle, walk, and step tests - may also be used to estimate one's aerobic capacity and evaluate one's CR fitness level.

In the presence of oxygen, muscle cells produce energy by breaking down carbohydrates and fats. In fact, fats are only used as an energy source when oxygen is present. Hence, aerobic exercise is the best type of activity for attaining and maintaining a low percentage of body fat.

A person's maximum aerobic capacity can be modified through physical training. To reach very high levels of aerobic fitness, one must train hard. The best way to improve CR fitness is to participate regularly in a demanding aerobic exercise program.

Many factors can negateively affect one's ability to perform well aerobically. These include the following:

- Age.
- Anemia.
- Carbon monoxide from tobacco smoke or pollution.
- High altitude (reduced oxygen pressure).
- Illness (heart disease).
- Obesity.
- Sedentary life-style.

Any condition that reduces the body's ability to bring in, transport, or use oxygen reduces a person's ability to perform aerobically. Inactivity causes much of the decrease in physical fitness that occurs with increasing age. Some of this decrease in aerobic fitness can be slowed by taking part in a regular exercise program.

Certain medical conditions also impair the transport of oxygen. They include diseases of the lungs, which interfere with breathing, and disabling heart conditions. Another is severe blocking of the arteries which inhibits blood flow to the heart and skeletal muscles.

Smoking can lead to any or all of the above problems and can, in the long and short term, adversely affect one's ability to do aerobic exercise.

FITT Factors

As mentioned in Chapter 1, a person must integrate several factors into any successful fitness training program to improve his fitness level. These factors are summarized by the following words which form the acronym FITT. Frequency, Intensity, Time, and Type. They are described below as they pertain to cardiorespiratory fitness. A warm-up and cool-down should also be part of each workout. Information on warming up and cooling down is given in Chapters 1 and 4.

FREQUENCY

Frequency refers to how often one exercises. It is related to the intensity and duration of the exercise session. Conditioning the CR system can best be accomplished by three adequately intense workouts per week. Soldiers should do these on alternate days. By building up gradually, soldiers can get even greater benefits from working out five times a week. However, leaders should recognize the need for recovery between hard exercise periods and should adjust the training intensity accordingly. They must also be aware of the danger of overtraining and recognize that the risk of injury increases as the intensity and duration of training increases.

INTENSITY

Intensity is related to how hard one exercises. It represents the degree of effort with which one trains and is probably the single most important factor for improving performance. Unfortunately, it is the factor many units ignore.

Changes in CR fitness are directly related to how hard an aerobic exercise is performed. The more energy expended per unit of time, the greater the intensity of the exercise. Significant changes in CR fitness are brought about by sustaining training heart rates in the range of 60 to 90 percent of the heart rate reserve (HRR). Intensities of less than 60 percent HRR are generally inadequate to produce a training effect, and those that exceed 90 percent HRR can be dangerous.

Soldiers should gauge the intensity of their workouts for CR fitness by determining and exercising at their training heart rate (THR). Using the THR method lets them find and prescribe the correct level of intensity during CR exercise. By determining one's maximum heart rate, resting heart rate, and relative conditioning level, an appropriate THR or intensity can be prescribed.

One's ability to monitor the heart rate is the key to success in CR training. (Note: Ability-group running is better than unit running because unit running does not accommodate the individual soldier's THR. For example, some soldiers in a formation may be training at 50 percent HRR and others at 95 percent HRR. As a result, the unit run will be too intense for some and not intense enough for others.)

The heart rate during work or exercise is an excellent indicator of how much effort a person is exerting. Keeping track of the heart rate lets one gauge the intensity of the CR exercise being done. With this information, one can be sure that the intensity is enough to improve his CR fitness level.

Intensity is probably the single most important factor for improving performance.

Following are two methods for determining training heart rate (THR). The first method, percent maximum heart rate (% MHR), is simpler to use, while the second method, percent heart rate reserve (% HRR), is more accurate. Percent HRR is the recommended technique for determining THR.

Percent MHR **Method**

With this method, the THR is figured using the estimated maximal heart rate. A soldier determines his estimated maximum heart rate by subtracting his age from 220. Thus, a 20-year-old would have an estimated maximum heart rate (MHR) of 200 beats per minute (220 -20 = 200).

By determining one's maximum heart rate, resting rate, and conditioning level, an appropriate THR can be prescribed.

To figure a THR that is 80 percent of the estimated MHR for a 20-year-old soldier in good physical condition, multiply 0.80 times the MHR of 200 beats per minute (BPM). This example is shown below.

FORMULA

% x MHR = THR

CALCULATION

0.80 x 200 BPM = 160 BPM

When using the MHR method, one must compensate for its built-in weakness. A person using this method may exercise at an intensity which is not high enough to cause a training effect. To compensate for this, a person who is in poor shape should exercise at 70 percent of his MHR; if he is in relatively good shape, at 80 percent MHR; and, if he is in excellent shape, at 90 percent MHR.

Percent HRR Method

A more accurate way to calculate THR is the percent HRR method. The range from 60 to 90 percent HRR is the THR range in which people should exercise to improve their CR fitness levels. If a soldier knows his general level of CR fitness, he can determine which percentage of HRR is a good starting point for him. For example, if he is in excellent physical condition, he could start at 85 percent of his HRR; if he is in reasonably good shape, at 70 percent HRR; and, if he is in poor shape, at 60 percent HRR.

Most CR workouts should be conducted with the heart rate between 70 to 75 percent HRR to attain, or maintain, an adequate level of fitness. Soldiers who have reached a high level of fitness may derive more benefit from working at a higher percentage of HRR, particularly if they cannot find more than 20 minutes for CR exercise. Exercising at any lower percentage of HRR does not give the heart, muscles, and lungs an adequate training stimulus.

Before anyone begins aerobic training, he should know his THR (the heart rate at which he needs to exercise to get a training effect).

The example below shows how to figure the THR by using the resting heart rate (RHR) and age to estimate heart rate reserve (HRR). A 20-year-old male soldier in reasonably good physical shape is the example.

STEP 1: Determine the MHR by subtracting the soldier's age from 220.

FORMULA
220 - age = MHR
(GIVEN)

CALCULATION
220 - 20 = 200 BPM

STEP 2: Determine the RHR in beats per minute (BPM) by counting the resting pulse for 30 seconds, and multiply the count by two. A shorter period can be used, but a 30-second count is more accurate. This count should be taken while the soldier is completely relaxed and rested. How to determine heart rate is described below. Next, determine the heart rate reserve (HRR) by subtracting the RHR from the estimated MHR. If the soldier's RHR is 69 BPM, the HRR is calculated as shown here.

FORMULA
MHR - RHR = HRR

CALCULATION
200 BPM - 69 BPM = 131 BPM

STEP 3: Calculate the THR based on 70 percent of HRR (a percentage based on a good level of CR fitness).

FORMULA
(% x HRR) + RHR = THR

CALCULATION
(0.70x131 BPM)+69 BPM=160.7 BPM

As shown, the percentage (70 percent in this example) is converted to the decimal form (0.70) before it is multiplied by the HRR. The result is then added to the resting heart rate (RHR) to get the THR. Thus, the product obtained by multiplying 0.70 and 131 is 91.7. When 91.7 is added to the RHR of 69, a THR of 160.7 results. When the calculations produce a fraction of a heart beat, as in the example, the value is rounded off to the nearest whole number. In this case, 160.7 BPM is rounded off to give a THR of 161 BPM. In summary, a reasonably fit 20-year-old soldier with a resting heart rate of 69 BPM has a training heart rate goal of 161 BPM. To determine the RHR, or to see if one is within the THR during and right after exercise, place the tip of the third finger lightly over one of the carotid arteries in the neck. These arteries are located to the left and right of the Adam's apple. (See Figure 2-1A.) Another convenient spot from which to monitor the pulse is on the radial artery on the wrist just above the base of the thumb. (See Figure 2-lB.) Yet another way is to place the hand over the heart and count the number of heart beats. (See Figure 2-1 C.)

During aerobic exercise, the body will usually have reached a "Steady State" after five minutes of exercise, and the heart rate will have leveled off. At this time, and immediately after exercising, the soldier should monitor his heart rate.

He should count his pulse for 10 seconds, then multiply this by six to get his heart rate for one minute. This will let him determine if his training intensity is high enough to improve his CR fitness level.

For example, use the THR of 161 BPM figured above. During the 10-second period, the soldier should get a count of 27 beats (161/6= 26.83 or 27) if he is exercising at the right intensity. If his pulse rate is below the THR, he must exercise harder to increase his pulse to the THR. If his pulse is above the THR, he should normally exercise at a lower intensity to reduce the pulse rate to the prescribed THR. He should count as accurately as possible, since one missed beat during the 10-second count, multiplied by six, gives an error of six BPM.

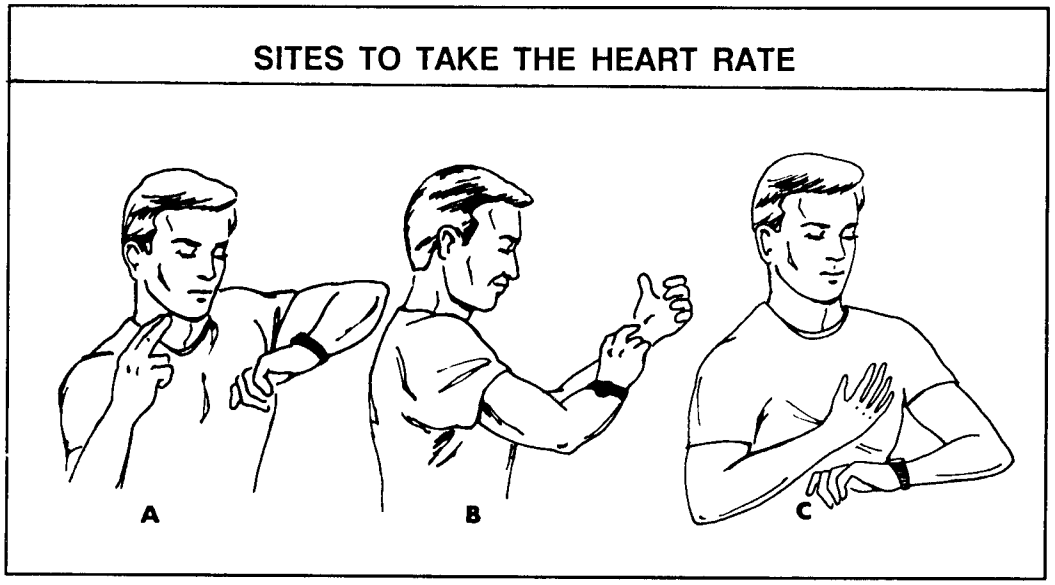


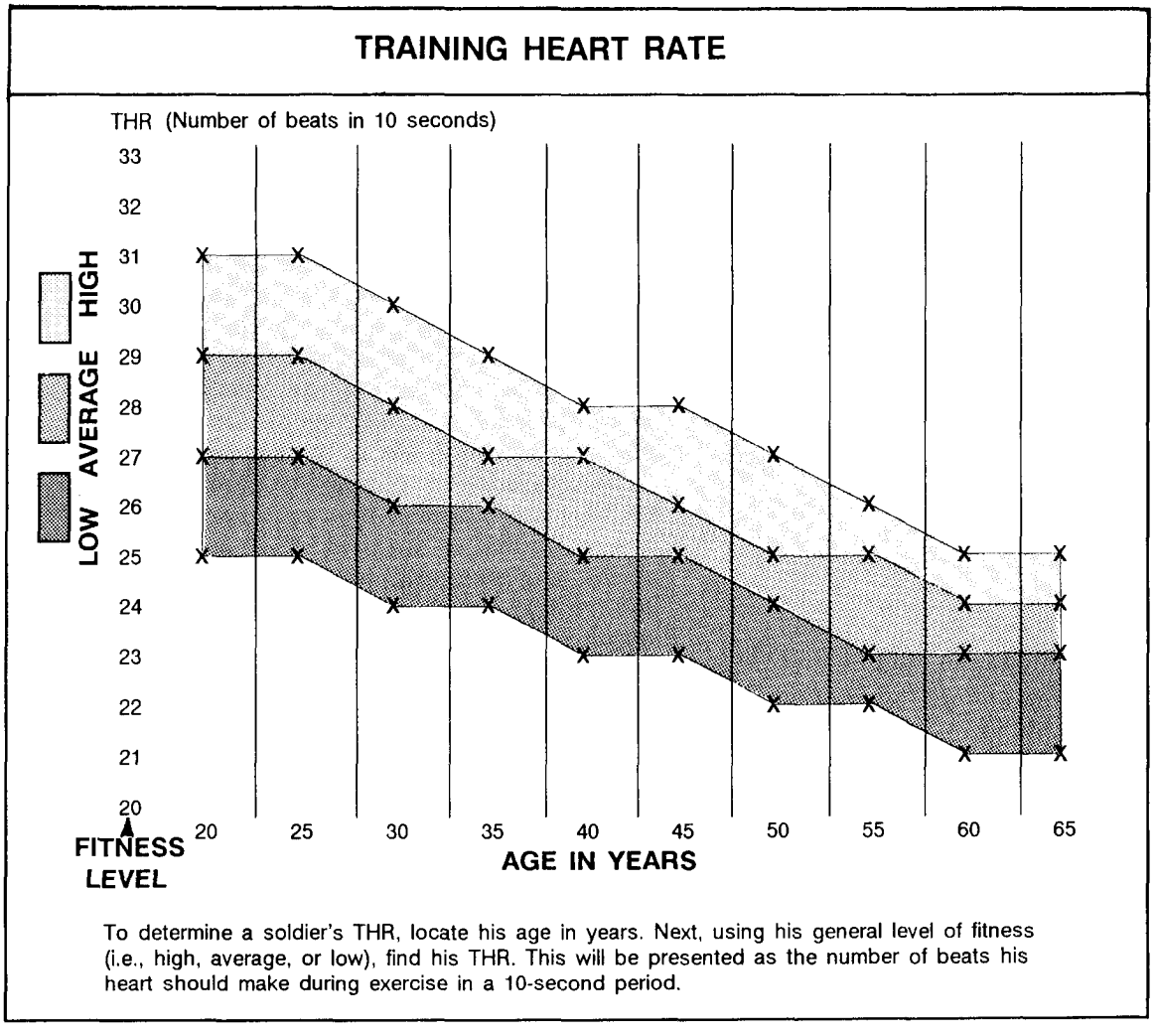
Figure 2-1

A soldier who maintains his THR throughout a 20-30-minute exercise period is doing well and can expect improvement in his CR *fitness level.*

A soldier who maintains his THR throughout a 20- to 30-minute exercise period is doing well and can expect improvement in his CR fitness level. He should check his exercise and post-exercise pulse rate at least once each workout. If he takes only one pulse check, he should do it five minutes into the workout.

Figure 2-2 is a chart that makes it easy to determine what a soldier's THR should be during a 10-second count. Using this figure, a soldier can easily find his own THR just by knowing his age and general fitness level. For example, a 40-year-old soldier with a low fitness level should, during aerobic exercise. have a THR of 23 beats in 10 seconds. He can determine this from the table by locating his age and then tracking upward until he reaches the percent HRR for his fitness level. Again, those with a low fitness level should work at about 60 percent HRR and those with a good fitness level at **70** percent HRR. Those with a high level of fitness may benefit most by training at 80 to 90 percent HRR.

Another way to gauge exercise intensity is "perceived exertion." This method relies on how difficult the exercise seems to be and is described in Appendix G.



To determine a soldier's THR, locate his age in years. Next, using his general level of fitness (i.e., high, average, or low), find his THR. This will be presented as the number of beats his heart should make during exercise in a 10-second period.

Figure 2-2

TIME

Time, or duration, refers to how long one exercises. It is inversely related to intensity. The more intense the activity, the shorter the time needed to produce or maintain a training effect; the less intense the activity, the longer the required duration. To improve CR fitness, the soldier must train for at least 20 to 30 minutes at his THR.

TYPE

Only aerobic exercises that require breathing in large volumes of air improve CR fitness. Worthwhile aerobic activities must involve the use of large muscle groups and must be rhythmic. They must also be of sufficient duration and intensity (60 to 90 percent HRR). Examples of primary and secondary exercises for improving CR fitness are as follows:

PRIMARY
- Running.
- Rowing.
- Jogging.
- Skiing (cross-country).
- Walking (vigorous).
- Exercising to music.
- Road marching.
- Rope skipping.
- Bicycling (stationary).
- Swimming.
- Bicycling (road/street).
- Stair climbing.

SECONDARY (Done with partners or opponents of equal or greater ability.)
- Racquetball (singles).
- Basketball (full court).
- Handball (singles).
- Tennis (singles).

The primary exercises are more effective than the secondary exercises in producing positive changes in CR fitness. The secondary activities may briefly elevate the heart rate but may not keep it elevated to the THR throughout the entire workout.

Every activity has its advantages and disadvantages. Trainers must weigh these and design programs that fit the unit's needs.

Every activity has its advantages and disadvantages. Trainers must design programs that fit the unit's needs.

Running

Running enables the body to improve the transport of blood and oxygen to the working muscles and brings about positive changes in the muscles' ability to produce energy. Running fits well into any physical training program 'because a training effect can be attained with only three 20-minute workouts per week.

Some soldiers may need instruction to improve their running ability. The following style of running is desired. The head is erect with the body in a straight line or slightly bent forward at the waist. The elbows are bent so the forearms are relaxed and held loosely at waist level. The arms swing naturally from front to rear in straight lines. (Cross-body arm movements waste energy. The faster the run, the faster the arm action.) The toes point straight ahead, and the feet strike on the heel and push off at the big toe.

Besides learning running techniques, soldiers need information on ways to prevent running injuries. The most common injuries associated with PT in the Army result from running and occur to the feet, ankles, knees, and legs. Proper warm-up and cool-down, along with stretching exercises and wearing appropriate clothing and well-fitting running shoes, help prevent injuries. Important information on safety factors and common running injuries is presented in Chapter 13 and Appendix E.

Important information on safety factors and common running injuries is presented in Chapter 13 and Appendix E.

Failure to allow recovery between hard bouts of running cannot only lead to overtraining, but can also be a major

cause of injuries. A well-conditioned soldier can run five to six times a week. However, to do this safely, he should do two things: 1) gradually buildup to running that frequently; and, 2) vary the intensity and/or duration of the running sessions to allow recovery between them.

ABILITY GROUP RUNNING

Traditionally, soldiers have run in unit formations at a pace prescribed by the PT leader. Commanders have used unit runs to improve unit cohesion and fitness levels. Unfortunately, too many soldiers are not challenged enough by the intensity or duration of the unit run, and they do not receive a training benefit. For example, take a company that runs at a nine-minute-per-mile pace for two miles. Only soldiers who cannot run two miles in a time faster than 18 minutes will receive a significant training effect. Therefore, in terms of conditioning, most soldiers who can pass the 2-mile-run test are wasting their time and losing the chance to train hard to excel. Ability group running (AGR) is the best way to provide enough intensity so each soldier can improve his own level of CR fitness.

AGR lets soldiers train in groups of near-equal ability. Each group runs at a pace intense enough to produce a training effect for that group and each soldier in it. Leaders should program these runs for specific lengths of time, not miles to be run. This procedure lets more-fit groups run a greater distance than the less-fit groups in the same time period thus enabling every soldier to improve.

The best way to assign soldiers to ability groups is to make a list, in order, of the unit's most recent APFT 2-mile-run times. The number of groups depends on the unit size, number of leaders available to conduct the runs, and range of 2-mile-run times. A company-sized unit broken down into four to six ability groups, each with a leader, is best for aerobic training, For activities like circuits, strength training, and competitive events, smaller groups are easier to work with than one large group.

The best way to assign soldiers to ability groups is to, make a list, in order, of the unit's most *recent APFT* ***2-mile-run times.***

Because people progress at different rates, soldiers should move to faster groups when they are ready. To help them train at their THR and enhance their confidence, those who have a hard time keeping up with a group should be placed in a slower group. As the unit's fitness level progresses, so should the intensity at which each group exercises. Good leadership will prevent a constant shifting of soldiers between groups due to lack of effort.

AGR is best conducted at the right intensity at least three times a week. As explained, the CR system should not be exercised "hard" on consecutive days. If AGR is used on hard CR-training days, unit runs at lower intensities are good for recovery days. Using this rotation, soldiers can gain the desired benefits of both unit and ability-group runs. The problem comes when units have a limited number of days for PT and there is not enough time for both. In this case, unit runs should seldom, if ever, be used and should be recognized for what they are -- runs to build unit cohesion.

Leaders can use additional methods to achieve both goals. The unit can begin in formation and divide into ability groups at a predetermined release point. The run can also begin with soldiers divided into ability groups which join at a link-up point. Alternately, ability groups can be started over the same route in a stagger, with the slowest group first. Link-ups occur as each faster group overtakes slower groups.

With imagination and planning, AGR will result in more effective training workouts for each soldier. The argument that ability-group running detracts from unit cohesion is invalid. Good leadership and training in all

areas promote unit cohesion and team spirit; training that emphasizes form over substance does not.

INTERVAL TRAINING

Interval training also works the cardiorespiratory system. It is an advanced form of exercise training which helps a person significantly improve his fitness level in a relatively short time and increase his running speed.

In interval training, a soldier exercises by running at a pace that is slightly faster than his race pace for short periods of time. This may be faster than the pace he wants to maintain during the next APFT 2-mile run. He does this repeatedly with periods of recovery placed between periods of fast running. In this way, the energy systems used are allowed to recover, and the exerciser can do more fast-paced running in a given workout than if he ran continuously without resting. This type of intermittent training can also be used with activities such as cycling, swimming, bicycling, rowing, and road marching.

The following example illustrates how the proper work-interval times and recovery times can be calculated for interval training so that it can be used to improve a soldier's 2-mile-run performance.

The work-interval time (the speed at which a soldier should run each 440-yard lap) depends on his actual race pace for one mile. If a soldier's actual 1-mile-race time is not known, it can be estimated from his last APFT by taking one half of his 2-mile-run time. Using a 2-mile-run time of 1600 minutes as an example, the pace for an interval training workout is calculated as follows:

Step 1. Determine (or estimate) the actual 1-mile-race pace. The soldier's 2-mile-run time is 16:00 minutes, and his estimated pace for 1 mile is one half of this or 8:00 minutes.

Step 2. Using the time from Step 1, determine the time it took to run 440 yards by dividing the 1-mile-race pace by four. (8:00 minutes/4 = 2:00 minutes per 440 yards.)

Step 3. Subtract one to four seconds from the 440-yard time in Step 2 to find the time each 440-yard lap should be run during an interval training session. (2:00 minutes - 1 to 4 seconds = 1:59 to 1:56.)

Thus, each 440-yard lap should be run in 1 munute, 56 seconds to 1 minute, 59 seconds during interval training based on the soldier's 16:00, 2-mile run time. Recovery periods, twice the length of the work-interval periods. These recovery periods, therefore, will be 3 minutes, 52 seconds long (1:56 + 1:56 = 3:52).

Using the work-interval time for each 440-yard lap from Step 3, the soldier can run six to eight repetitions of 440 yards at a pace of 1 minute, 56 seconds (1:56) for each 440-yard run. This can be done on a 440-yard track (about 400 meters) as follows:

1. Run six to eight 440-yard repetitions with each interval run at a 1:56 pace.
2. Follow each 440-yard run done in 1 minute, 56 secons by an easy jog of 440 yards for recovery. Each 440-yard jog should take twice as much time as the work interval (that is, 3:52). For each second of work, there are two seconds of recovery. Thus, the work-to-rest ratio is 1:2.

440-YARD TIMES FOR INTERVAL TRAINING

1-Mile Time	440- Yard Time
4:45 - 5:00*	1:05 - 1:09*
5:01 - 5:59	1:14 - 1:25
6:00 - 6:59	1:25 - 1:40
7:00 - 7:59	1:41 - 1:55
8:00 - 8:59	1:55 - 2:10
9:00 - 9:59	2:10 - 2.25
10:00 - 10:59	2:25 +

* The slower 1-mile run times correspond to the slower 440-yard times, as do the faster 1-mile times with the faster 440-yard times.

Table 2-1

To help determine the correct time intervals for a wide range of fitness levels, refer to Table 2-1. It shows common 1 -mile times and the corresponding 440-yard times.

Monitoring the heart-rate response during interval training is not as important as making sure that the work intervals are run at the proper speed. Because of the intense nature of interval training, during the work interval the heart rate will generally climb to 85 or 90 percent of HRR. During the recovery interval, the heart rate usually falls to around 120 to 140 beats per minute. Because the heart rate is not the major concern during interval training, monitoring THR and using it as a training guide is not necessary.

As the soldier becomes more conditioned, his recovery is quicker. As a result, he should either shorten the recovery interval (jogging time) or run the work interval a few seconds faster.

After a soldier has reached a good CR fitness level using the THR method, he should be ready for interval training. As with any other new training method, interval training should be introduced into his training program gradually and progressively. At first, he should do it once a week. If he responds well, he may do it twice a week at the most, with at least one recovery day in between. He may also do recovery workouts of easy jogging on off days. It is recommended that interval training be done two times a week only during the last several weeks before an APFT. Also, he should rest the few days before the test by doing no, or very easy, running.

As with any workout, soldiers should start intervaI workouts with a warm-up and end them with a cool-down.

FARTLEK TRAINING

In Fartlek training, the soldier varies the intensity (speed) of the running throughout the workout.

In Fartlek training, another type of CR training sometimes called speed play, the soldier varies the intensity (speed) of the running during the workout. Instead of running at a constant speed, he starts with veryslow jogging. When ready, he runs hard for a few minutes until he feels the need to slow down. At this time he recovers by jogging at an easy pace. This process of alternating fast and recovery running (both of varying distances) gives the same results as interval training. However, neither the running *nor* recovery interval is timed, and the running is not done on a track. For these reasons, many runners prefer Fartlek training to interval training.

LAST-MAN-UP RUNNING

This type of running, which includes both sprinting and paced running, improves CR endurance and conditions the legs. It consists of 40- to 50-yard sprints at near-maximum effort. This type of running is best done by squads and sections. Each squad leader places the squad in an evenly-spaced, single-file line on a track or a smooth, flat course. During a continuous 2- to 3-mile run of moderate intensity, the squad leader, running in the last position, sprints to the front of the line and becomes the leader. When he reaches the front, he resumes the moderate pace of the whole squad. After he reaches the front, the next soldier, who is now at the rear, immediately sprints to the front. The rest of the soldiers continue to run at a moderate pace. This pattern of sprinting by the last person continues until each soldier has resumed his original position in line. This pattern of sprinting and running is repeated several times during the run. The distance run and number of sprints performed should increase as the soldiers' conditioning improves.

CROSS-COUNTRY RUNNING

Cross-country running conditions the leg muscles and develops CR endurance. It consists of running a certain distance on a course laid out across fields, over hills, through woods, or on any other irregular terrain. It can be used as both a physical conditioning activity and a competitive event. The object is to cover the distance in the shortest time.

The unit is divided into ability groups using 2-mile-run times. Each group starts its run at the same time. This lets the better-conditioned groups run farther and helps ensure that they receive an adequate training stimulus.

The speed and distance can be increased gradually as the soldiers' conditioning improves. At first, the distance should be one mile or less, depending on the terrain and fitness level. It should then be gradually increased to four miles. Cross-country runs have several advantages: they provide variety in physical fitness training, and they can accommodate large numbers of soldiers. Interest can be stimulated by competitive runs after soldiers attain a reasonable level of fitness. These runs may also be combined with other activities such as compass work (orienteering).

Cross-country runs can accommodate large numbers of soldiers.

Road Marches

The road or foot march is one of the best ways to improve and maintain fitness. Road marches are classified as either administrative or tactical, and they can be conducted in garrison or in the field. Soldiers must be able to move quickly, carry a load (rucksack) of equipment, and be physically able to perform their missions after extended marching.

BENEFITS OF ROAD MARCHES

Road marches are an excellent aerobic activity. They also help develop endurance in the muscles of the lower body when soldiers carry a heavy load. Road marches offer several benefits when used as part of a fitness program. They are easy to organize, and large numbers of soldiers can participate. In addition, when done in an intelligent, systematic, and progressive manner, they produce relatively few injuries. Many soldier-related skills can be integrated into road marches. They can also help troops acclimatize to new environments. They help train leaders to develop skills in planning, preparation, and supervision and let leaders make first-hand observations of the soldiers' physical stamina. Because road marches are excellent fitness-training activities, commanders should make them a regular part of their unit's PT program.

Road marches help troops acclimatize to new environments,

TYPES OF MARCHES

The four types of road marches - day, limited visibility, forced, and shuttle - are described below. For more information on marches, see FM 21-18.

Day Marches

Day marches, which fit easily into the daily training plan, are most conducive to developing physical fitness. They are characterized by dispersed formations and ease of control and reconnaissance.

Limited Visibility Marches

Limited visibility marches require more detailed planning and supervision and are harder to control than day marches. Because they move more slowly and are in tighter formations, soldiers may not exercise hard enough to obtain a conditioning effect. Limited visibility marches do have some advantages, however. They protect soldiers from the heat of the day, challenge the ability of NCOS and officers to control their soldiers, and provide secrecy and surprise in tactical situations.

Forced Marches

Forced marches require more than the normal effort in speed and exertion. Although they are excellent conditioners, they may leave soldiers too fatigued to do other required training tasks.

Soldiers should receive advance notcie before going on a march, to help morale and give them time to prepare.

Shuttle Marches

Shuttle marches alternate riding and marching, usually because there are not enough vehicles to carry the entire unit. These marches may be modified and used as fitness activities. A shuttle march can be planned to move troops of various fitness levels from one point to another, with all soldiers arriving at about the same time. Soldiers who have high fitness levels can generally march for longer stretches than those who are less fit.

PLANNING A ROAD MARCH

Any plan to conduct a road march to improve physical fitness should consider the following:

- Load to be carried.
- Discipline and supervision.
- Distance to be marched.
- Route reconnaissance.
- Time allotted for movement.
- Water stops.
- Present level of fitness.
- Rest stops.
- Intensity of the march.
- Provisions for injuries.
- Terrain an weather conditions.
- Safety precautions.

Soldiers should usually receive advance notice before going on a march. This helps morale and gives them time to prepare. The leader should choose an experienced soldier as a pacesetter to lead the march. The pacesetter should carry the same load as the other soldiers and should be of medium height to ensure normal strides. The normal stride for a foot march, according to FM 21-18, is 30 inches. This stride, and a cadence of 106 steps per minute, results in a speed of 4.8 kilometers per hour (kph). When a 10-minute rest is taken each hour, a net speed of 4 kph results.

The pacesetter should keep in mind that ground slope and footing affect stride length. For example, the length decreases when soldiers march up hills or down steep slopes. Normal stride and cadence are maintained easily on moderate, gently rolling terrain unless the footing is muddy, slippery, or rough.

Personal hygiene is important in preventing unnecessary injuries. Before the march, soldiers should cut their toenails short and square them

off, wash and dry their feet, and lightly apply foot powder. They should wear clean, dry socks that fit well and have no holes. Each soldier should take one or more extra pair of socks depending on the length of the march. Soldiers who have had problems with blisters should apply a thin coating of petroleum jelly over susceptible areas. Leaders should check soldiers' boots before the march to make sure that they fit well, are broken in and in good repair, with heels that are even and not worn down.

During halts soldiers should lie down and elevate their feet. If time permits, they should massage their feet, apply powder, and change socks. Stretching for a few minutes before resuming the march may relieve cramps and soreness and help prepare the muscles to continue exercising. To help prevent lower back strain, soldiers should help each other reposition the rucksacks and other loads following rest stops. Soldiers can relieve swollen feet by slightly loosening the laces across their arches.

After marches, soldiers should again care for their feet, wash and dry their socks, and dry their boots.

PROGRAMS TO IMPROVE LOAD-CARRYING ABILITY

The four generalized programs described below can be used to improve the soldiers' load-carrying ability. Each program is based on a different number of days per week available for a PT program.

If only two days are available for PT, both should include exercises for improving CR fitness and muscular endurance and strength. Roughly equal emphasis should be given to each of these fitness components.

If there are only three days available for PT, they should be evenly dispersed throughout the week. Two of the days should stress the development of muscular endurance and strength for the whole body. Although all of the major muscle groups of the body should be trained, emphasis should be placed

on the leg (hamstrings and quadriceps), hip (gluteal and hip flexors), low back (spinal erector), and abdominal (rectus abdominis) muscles. These two days should also include brief (2-mile) CR workouts of light to moderate intensity (65 to 75 percent HRR). On the one CR fitness day left, soldiers should take a long distance run (4 to 6 miles) at a moderate pace (70 percent HRR), an interval workout, or an aerobic circuit. They should also do some strength work of light volume and intensity. If four days are available, a road march should be added to the three-day program at least twice monthly. The speed, load, distance, and type of terrain should be varied.

If there are five days, leaders should devote two of them to muscular strength and endurance and two of them to CR fitness. One CR fitness day will use long distance runs; the other can stress more intense workouts including interval work, Fartlek running, or last-man-up running. At least two times per month, the remaining day should include a road march.

Leaders must train and march with their units as much as possible.

Soldiers can usually begin road-march training by carrying a total load equal to 20 percent of their body weight. This includes all clothing and equipment. However, the gender make-up and/or physical condition of a unit may require using a different starting load. Beginning distances should be between five and six miles, and the pace should be at 20 minutes per mile over flat terrain with a hard surface. Gradual increases should be made in speed, load, and distance until soldiers can do the anticipated, worst-case, mission-related scenarios without excessive difficulty or exhaustion. Units should take maintenance marches at least twice a month. Distances should vary from six to eight miles, with loads of 30 to 40 percent of body weight. The pace should be 15 to 20 minutes per mile.

Units should do maintenance marches at least twice a month.

A recent Army study showed that road-march training two times a month and four times a month produced similar improvements in road-marching performance. Thus, twice-monthly road marches appear to produce a favorable improvement in soldiers' abilities to road march if they are supported by a sound PT program (five days per week)

Commanders must establish realistic goals for road marching based on assigned missions. They should also allow newly assigned soldiers and those coming off extended profiles to gradually build up to the unit's fitness level before making them carry maximum loads. This can be done with ability groups.

Road marching should be integrated into all other training. Perhaps the best single way to improve Ioad-earring capacity is to have a regular training program which systematically increases the load and distance. It must also let the soldier regularly practice carrying heavy loads over long distances.

As much as possible, leaders at all levels must train and march with their units. This participation enhances leaders' fitness levels and improves team spirit and confidence, both vital elements in accomplishing difficult and demanding road marches.

Alternate Forms of Aerobic Exercise

Some soldiers cannot run. In such cases, they may use other activities as supplements *or* alternatives. Swimming, bicycling, and cross-country skiing are all excellent endurance exercises and are good substitutes for running. Their drawback is that they require special equipment and facilities that are not always available. As with all exercise, soldiers should start slowly and progress gradually. Those who use non-running activities to

such training may not improve running ability. To prepare a soldier for the APFT 2-mile run, there is no substitute for running.

SWIMMING

Swimming is a good alternative to running. Some advantages of swimming include the following:

- o Involvement of all the major muscle groups.
- o Body position that enhances the blood's return to the heart.
- o Partial support of body weight by the water, which minimizes lower body stress in overweight soldiers.

Swimming may be used to improve one's CR fitness level and to maintain and improve CR fitness during recovery from an injury. It is used to supplement running and develop upper body endurance and limited strength. The swimmer should start slowly with a restful stroke. After five minutes, he should stop to check his pulse, compare it with his THR and, if needed, adjust the intensity.

Compared with all the other modes of aerobic exercise presented in this manual (e.g., running, walking, cycling, cross-country skiing, rope jumping, etc.) in swimming alone, one's THR should be lower than while doing the other forms of aerobic exercise. This is because, in swimming, the heart does not beat as fast as when doing the other types of exercise at the same work rate. Thus, in order to effectively train the CR system during swimming, a soldier should set his THR about 10 bpm lower than while running. For example, a soldier whose THR while running is 150 bpm should have a THR of about 140 bpm while swimming. By modifying their THRs in this manner while swimming, soldiers will help to ensure that they are working at the proper intensity.

Non-swimmers can run in waist-to chest-deep water, tread water, and do pool-side kicking for an excellent aerobic workout. They can also do calisthenics in the water. Together these activities combine walking and running with moderate resistance work for the upper body.

For injured soldiers, swimming and aerobic water-training are excellent for improving CR fitness without placing undue stress on injured weight-bearing parts of the body.

CYCLING

Cycling is an excellent exercise for developing CR fitness. Soldiers can bicycle outdoors or on a stationary cycling machine indoors. Road cycling should be intense enough to allow the soldier to reach and maintain THR at least 30 minutes.

Soldiers can alter the cycling intensity by changing gears, adding hill work, and increasing velocity. Distance can also be increased to enhance CR fitness, but the distance covered is not as important as the amount of time spent training at THR. The intensity of a workout can be increased by increasing the resistance against the wheel or increasing the pedaling cadence (number of RPM), For interval training, the soldier can vary the speed and resistance and use periods of active recovery at low speed and/or low resistance.

Cycling should be intense enough to let the soldier reach and maintain THR at least 30 *minutes.*

For swimming, a soldier should set his THR at about 10 beats per minute lower then when running.

WALKING

Walking is another way to develop cardiorespiratory fitness. It is enjoyable, requires no equipment, and causes few injuries. However, unless walking is done for a long time at the correct intensity, it will not produce any significant CR conditioning.

Sedentary soldiers with a low degree of fitness should begin slowly with 12 minutes of walking at a comfortable pace. The heart rate should be monitored to determine the intensity. The soldier should walk at least four times a week and add two minutes each week

to every workout until the duration reaches 45 to 60 minutes per workout. He can increase the intensity by adding hills or stairs.

As the walker's fitness increases, he should walk 45 to 60 minutes at a faster pace. A simple way to increase walking speed is to carry the arms the same way as in running. With this technique the soldier has a shorter arm swing and takes steps at a faster rate. Swinging the arms faster to increase the pace is a modified form of race walking (power walking) which allows for more upper-body work. This method may also be used during speed marches. After about three months, even the most unfit soldiers should reach a level of conditioning that lets them move into a running program.

CROSS-COUNTRY SKIING

Cross-country or Nordic skiing is another excellent alternative to the usual CR activities. It requires vigorous movement of the arms and legs which develops muscular and CR endurance and coordination. Some of the highest levels of aerobic fitness ever measured have been found in cross-country skiers.

Cross-country skiing requires vigorous movement of the arms and legs, developing muscular and CR endurance.

Although some regions lack snow, one form or another of cross-country skiing can be done almost anywhere--on country roads, golf courses, open fields, and in parks and forests.

Cross-country skiing is easy to learn. The action is similar to that used in brisk walking, and the intensity may be varied as in running. The work load is determined by the difficulty of terrain, the pace, and the frequency and duration of rest periods. Equipment is reasonably priced, with skis, boots, and poles often obtainable from the outdoor recreation services.

ROPE SKIPPING

Rope skipping is also a good exercise for developing CR fitness. It requires little equipment, is easily learned, may be done almost anywhere, and is not affected by weather. Some runners use it as a substitute for running during bad weather.

A beginner should select a jump rope that, when doubled and stood on, reaches to the armpits. Weighted handles or ropes may be used by better-conditioned soldiers to improve upper body strength. Rope skippers should begin with five minutes of jumping rope and then monitor their heart rate. They should attain and maintain their THR to ensure a training effect, and the time spent jumping should be increased as the fitness level improves.

Rope jumping, however, may be stressful to the lower extremities and therefore should be limited to no more than three times a week. Soldiers should skip rope on a cushioned surface such as a mat or carpet and should wear cushioned shoes.

HANDBALL AND RACQUET SPORTS

Handball and the racquet sports (tennis, squash, and racquetball) involve bursts of intense activity for short periods. They do not provide the same degree of aerobic training as exercises of longer duration done at lower intensities. However, these sports are good supplements and can provide excellent aerobic benefits depending on the skill of the players. If played vigorously each day, they may be an adequate substitute for low-level aerobic training. Because running increases endurance, it helps

improve performance in racket sports, but the reverse is not necessarily true.

EXERCISE TO MUSIC

Aerobic exercise done to music is another excellent alternative to running. It is a motivating, challenging activity that combines exercise and rhythmic movements. There is no prerequisite skill, and it can be totally individualized to every fitness level by varying the frequency, intensity, and duration. One can move to various tempos while jogging or doing jumping jacks, hops, jumps, or many other calisthenics.

Workouts can be done in a small space by diverse groups of varying fitness levels. Heart rates should be taken during the conditioning phase to be sure the workout is sufficiently intense. If strengthening exercises are included, the workout addresses every component of fitness. Holding relatively light dumbbells during the workout is one way to increase the intensity for the upper body and improve muscular endurance. Warm-up and cool-down stretches should be included in the aerobic workout.

CHAPTER 3

Muscular Endurance and Strength

On today's battlefield, in addition to cardiorespiratory fitness, soldiers need a high level of muscular endurance and strength. In a single day they may carry injured comrades, move equipment, lift heavy tank or artillery rounds, push stalled vehicles, or do many other strength-related tasks. For example, based on computer-generated scenarios of an invasion of Western Europe, artillerymen may have to load from 300 to 500, 155mm-howitzer rounds (95-lb rounds) while moving from 6 to 10 times each day over 8 to 12 days. Infantrymen may need to carry loads exceeding 100 pounds over great distances, while supporting units will deploy and displace many times. Indeed, survival on the battlefield may, in large part, depend on the muscular endurance and strength of the individual soldier.

Muscular Fitness

Muscular fitness has two components: muscular strength and muscular endurance.

Muscular strength is the greatest amount of force a muscle or muscle group can exert in a single effort.

Muscular endurance is the ability of a muscle or muscle group to do repeated contractions against a less-than-maximum resistance for a given time.

Although muscular endurance and strength are separate fitness components, they are closely related. Progressively working against resistance will produce gains in both of these components.

Muscular Contractions

Isometric, isotonic, and isokinetic muscular endurance and strength are best produced by regularly doing each specific kind of contraction. They are described here.

Isometric contraction produces contraction but no movement, as when pushing against a wall. Force is produced with no change in the angle of the joint.

Isotonic contraction causes a joint to move through a range of motion against a constant resistance. Common examples are push-ups, sit-ups, and the lifting of weights.

Isokinetic contraction causes the angle at the joint to change at a constant rate, for example, at 180 degrees per second. To achieve a constant speed of movement, the load or resistance must change at different joint angles to counter the varying forces produced by the muscle(s) at different angles. This requires the use of isokinetic machines. There are other resistance-training machines which, while not precisely controlling the speed of movement, affect it by varying the resistance throughout the range of motion. Some of these devices are classified as pseudo-isokinetic and some as variable-resistance machines.

Isotonic and isokinetic contractions have two specific phases - the concentric or “positive” phase and the eccentric or “negative” phase. In the concentric phase (shortening) the muscle contracts, while in the eccentric phase (elongation) the muscle returns to its normal length. For example, on the upward phase of the biceps curl, the biceps are shortening. This is a concentric (positive) contraction. During the lowering phase of the curl the biceps are lengthening. This is an eccentric (negative) contraction.

A muscle can control more weight in the eccentric phase of contraction than it can lift concentrically. As a result, the muscle may be able to handle more of an overload eccentrically. This greater overload, in return, may produce greater strength gains.

The nature of the eccentric contraction, however, makes the muscle and connective tissue more susceptible to damage, so there is more muscle soreness following eccentric work.

When a muscle is overloaded, whether by isometric, isotonic, or isokinetic contractions, it adapts by becoming stronger. Each type of contraction has advantages and disadvantages, and each will result in strength gains if done properly.

The above descriptions are more important to those who assess strength than to average people trying to develop strength and endurance. Actually, a properly designed weight training program with free weights or resistance machines will result in improvements in all three of these categories.

Principles of Muscular Training

To have a good exercise program, the seven principles of exercise, described in Chapter 1, must be applied to all muscular endurance and strength training. These principles are overload, progression, specificity, regularity, recovery, balance, and variety.

OVERLOAD

The overload principle is the basis for all exercise training programs. For a muscle to increase in strength, the workload to which it is subjected during exercise must be increased beyond what it normally experiences. In other words, the muscle must be overloaded. Muscles adapt to increased workloads by becoming larger and stronger and by developing greater endurance.

To understand the principle of overload, it is important to know the following strength-training terms:

- Full range of motion. To obtain optimal gains, the overload must be applied thoughout the full range of motion. Exercise a joint and its associated muscles through its complete range starting from the prestretched position (stretched past the relaxed position) and ending in a fully contratcted position. This is crucial to strength development.
- Repetition. When an exercise has progressed through one complete range of motion and back to the beginning, one repetition has been completed.
- One-repetition maximum (1-RM). This is a repetition performed against the greatest possible resistance (the maximum weight a person can lift one time). A 10-RM is the maximum weight one can lift correctly 10 times. Similarly, an 8-12 RM is that weight which allows a person to do from 8 to 12 correct repetitions. The intensity for muscular endurance and strength training is often expressed as a percentage of. the 1-RM.
- Set. This is a series of repetitions done without rest.
- Muscle Failure. This is the inability of a person to do another correct repetition in a set.

The minimum resistance needed to obtain strength gains is 50 percent of the 1 -RM. However, to achieve enough overload, programs are designed to require sets with 70 to 80 percent of one's 1 -RM. (For example, if a soldier's 1 -RM is 200 pounds, multiply 200 pounds by 70 percent [200 X 0.70 = 140 pounds] to get 70 percent of the 1 -RM.)

When a muscle is overloaded by isometric, isotonic, or isokinetic contractions, it adapts by becoming stronger.

A better and easier method is the repetition maximum (RM) method. The exerciser finds and uses that weight which lets him do the correct number of repetitions. For example, to develop both muscle endurance and strength, a soldier should choose a weight for each exercise which lets him do 8 to 12 repetitions to muscle failure. (See Figure 3-1.) The weight should be heavy enough so that, after doing from 8 to 12 repetitions, he momentarily cannot correctly do another repetition. This weight is the 8-12 RM for that exercise.

FITT Factors Applied to Conditioning Programs for Muscular Endurance and/or Strength

Muscular Strength	Muscular Endurance	Muscular Strength and Muscular Endurance
3 times/week	3-5 times/week	3 times/week
3-7 RM*	12+ RM	8-12 RM
The time required to do 3-7 repetitions of each resistance exercise	The time required to do 12+ repetitions of each resistance exercise	The time required to do 8-12 repetitions of each resistance exercise
Free Weights Resistance Machines Partner-Resisted Exercises Body-Weight Exercises (Push-ups/Sit-ups/Pull-ups/Dips, etc.)		

* RM = Repetition Maximum

Figure 3-1

MUSCULAR ENDURANCE/ STRENGTH DEVELOPMENT

To develop muscle strength, the weight selected should be heavier and the RM will also be different. For example, the soldier should find that weight for each exercise which lets him do 3 to 7 repetitions correctly. This weight is the 3-7 RM for that exercise. Although the greatest improvements seem to come from resistances of about 6-RM, an effective range is a 3-7 RM. The weight should be heavy enough so that an eighth repetition would be impossible because of muscle fatigue.

The weight should also not be too heavy. If one cannot do at least three repetitions of an exercise, the resistance is too great and should be reduced. Soldiers who are just beginning a resistance-training program should not start with heavy weights. They should first build an adequate foundation by training with an 8-12 RM or a 12+ RM.

To develop muscular endurance, the soldier should choose a resistance that lets him do more than 12 repetitions of a given exercise. This is his 12+ repetition maximum (12+ RM). With continued training, the greater the number of repetitions per set, the greater will be the improvement in muscle endurance and the smaller the gains in strength. For example, when a soldier trains with a 25-RM weight, gains in muscular endurance will be greater than when using a 15-RM weight, but the gain in strength will not be as great. To optimize a soldier's performance, his RM should be determined from an analysis of the critical tasks of his mission. However, most soldiers will benefit most from a resistance-training program with an 8-12 RM.

Whichever RM range is selected, the soldier must always strive to overload his muscles. The key to overloading a muscle is to make that muscle exercise harder than it normally does.

An overload may be achieved by any of the following methods:

- Increasing the resistance.
- Increasing the number of repetitions per set.
- Increasing the number of sets.
- Reducing the rest time between sets.
- Increasing the speed of movement in the concentric phase. (Good form is more important than the speed of movement.)
- Using any combination of the above.

PROGRESSION

When an overload is applied to a muscle, it adapts by becoming stronger and/or by improving its endurance. Usually significant increases in strength can be made in three to four weeks of proper training depending on the individual. If the workload is not progressively increased to keep pace with newly won strength, there will be no further gains. When a soldier can correctly do the upper limit of repetitions for the set without reaching muscle failure, it is usually time to increase the resistance. For most soldiers, this upper limit should be 12 repetitions.

For example, if his plan is to do 12 repetitions in the bench press, the soldier starts with a weight that causes muscle failure at between 8 and 12 repetitions (8- 12 RM). He should continue with that weight until he can do 12 repetitions correctly. He then should increase the weight by about 5 percent but no more than 10 percent. In a multi-set routine, if his goal is to do three sets of eight repetitions of an exercise, he starts with a weight that causes muscle failure before he completes the eighth repetition in one or more of the sets. He continues to work with that weight until he can complete all eight repetitions in each set, then increases the resistance by no more than 10 percent.

SPECIFICITY

A resistance-training program should provide resistance to the specific muscle groups that need to be strengthened. These groups can be identified by doing a simple assessment. The soldier slowly does work-related movements he wants to improve and, at the same time, he feels the muscles on each side of the joints where motion occurs. Those muscles that are contracting or becoming tense during the movement are the muscle groups involved. If the soldier's performance of a task is not adequate or if he wishes to improve, strength training for the identified muscle(s) will be beneficial. To improve his muscular endurance and strength. in a given task, the soldier must do resistance movements that are as similar as possible to those of doing the task. In this way, he ensures maximum carryover value to his soldiering tasks.

REGULARITY

Exercise must be done regularly to produce a training effect. Sporadic exercise may do more harm than good. Soldiers can maintain a moderate level of strength by doing proper strength workouts only once a week, but three workouts per week are best for optimal gains. The principle of regularity also applies to the exercises for individual muscle groups. A soldier can work out three times a week, but when different muscle groups are exercised at each workout, the principle of regularity is violated and gains in strength are minimal.

Exercise must be done regularly to produce a training effect.

RECOVERY

There should be at least a 48-hour recovery period between workouts for the same muscle group.

Consecutive days of hard resistance training for the same muscle group can be detrimental. The muscles must be allowed sufficient recovery time to adapt. Strength training can be done every day only if the exercised muscle groups are rotated, so that the same muscle or muscle group is not exercised on consecutive days. There should be at least a 48-hour recovery period between workouts for the same muscle groups. For example, the legs can be trained with weights on Monday, Wednesday, and Friday and the upper body muscles on Tuesday, Thursday, and Saturday.

Recovery is also important within a workout. The recovery time between different exercises and sets depends, in part, on the intensity of the workout. Normally, the recovery time between sets should be 30 to 180 seconds.

BALANCE

***It is important to** include exercises that work all the major muscle groups in both the upper and lower body.*

When developing a strength training program, it is important to include exercises that work all the major muscle groups in both the upper and lower body. One should not work just the upper body, thinking that running will strengthen the legs.

Most muscles are organized into opposing pairs. Activating one muscle results in a pulling motion, while activating the opposing muscle results in the opposite, or pushing, movement. When planning a training session, it is best to follow a pushing exercise with a pulling exercise which results in movement at the same joint(s). For example, follow an overhead press with a lat pull-down exercise. This technique helps ensure good strength balance between opposing muscle groups which may, in turn, reduce the risk of injury. Sequence the program to exercise the larger muscle groups first, then the smaller muscIes. For example, the lat pull-down stresses both the larger latissimus dorsi muscle of the back and the smaller biceps muscles of the arm. If curls are done first, the smaller muscle group will be exhausted and too weak to handle the resistance needed for the lat pull-down. As a result, the soldier cannot do as many repetitions with as much weight as he normally could in the lat pull-down. The latissimus dorsi muscles will not be overloaded and, as a result, they may not benefit very much from the workout.

The best sequence to follow for a total-body strength workout is to first exercise the muscles of the hips and legs, followed by the muscles of the upper back and chest, then the arms, abdominal, low back, and neck. As long as all muscle groups are exercised at the proper intensity, improvement will occur.

VARIETY

A major challenge for all fitness training programs is maintaining enthusiasm and interest. A poorly designed strength- training program can be very boring. Using different equipment, changing the exercises, and altering the volume and intensity are good ways to add variety, and they may also produce better results. The soldier should periodically substitute different exercises for a given muscle group(s). For example, he can do squats with a barbell instead of leg presses on a weight machine. Also, for variety or due to necessity (for example, when in the field), he can switch to partner-resisted exercises or another form of resistance training. However, frequent wholesale changes should be avoided as soldiers may become frustrated if they do not have enough time to adapt or to see improvements in strength.

Workout Techniques

Workouts for improving muscular endurance or strength must follow the principles just described. There are also other factors to consider, namely, safety, exercise selection, and phases of conditioning.

SAFETY FACTORS

Major causes of injury when strength training are improper lifting techniques combined with lifting weights that are too heavy. Each soldier must understand how to do each lift correctly before he starts his strength training program.

The soldier should always do weight training with a partner, or spotter, who can observe his performance as he exercises. To ensure safety and the best results, both should know how to use the equipment and the proper spotting technique for each exercise.

A natural tendency in strength training is to see how much weight one can lift. Lifting too much weight forces a compromise in form and may lead to injury. All weights should be selected so that proper form can be maintained for the appropriate number of repetitions.

Correct breathing is another safety factor in strength training. Breathing should be constant during exercise. The soldier should never hold his breath, as this can cause dizziness and even loss of consciousness. As a general rule, one should exhale during the positive (concentric) phase of contraction as the weight or weight stack moves away from the floor, and inhale during the negative (eccentric) phase as the weight returns toward the floor.

EXERCISE SELECTION

When beginning a resistance-training program, the soldier should choose about 8 to 16 exercises that work all of the body's major muscle groups. Usually eight well-chosen exercises will serve as a good starting point. They should include those for the muscles of the leg, low back, shoulders, and so forth. The soldier should choose exercises that work several muscle groups and try to avoid those that isolate single muscle groups. This will help him train a greater number of muscles in a given time. For example, doing lat pull-downs on the "lat machine" works the latissimus dorsi of the back and the biceps muscles of the upper arm. On the other hand, an exercise like concentration curls for the biceps muscles of the upper arm, although an effective exercise, only works the arm flexor muscles. Also, the concentration curl requires twice as much time as lat pull-downs because only one arm is worked at a time.

Perhaps a simpler way to select an exercise is to determine the number of joints in the body where movement occurs during a repetition. For most people, especially beginners, most of the exercises in the program should be "multi-joint" exercises. The exercise should provide movement at more than one joint. For example, the pull-down exercise produces motion at both the shoulder and elbow joints. The concentration curl, however, only involves the elbow joint.

PHASES OF CONDITIONING

There are three phases of conditioning: preparatory, conditioning, and maintenance. These are also described in Chapter 1.

Preparatory Phase

The three phases of conditioning are preparatory, conditioning, and maintenance.

The soldier should use very light weights during the first week (the preparatory phase) which includes the first two to three workouts. This is very important, because the beginner must concentrate at first on learning

the proper form for each exercise. Using light weights also helps minimize muscle soreness and decreases the likelihood of injury to the muscles, joints, and ligaments. During the second week, he should use progressively heavier weights. By the end of the second week (4 to 6 workouts), he should know how much weight on each exercise will allow him to do 8 to 12 repetitions to muscle failure. If he can do only seven repetitions of an exercise, the weight must be reduced; if he can do more than 12, the weight should be increased.

Conditioning Phase

The third week is normally the start of the conditioning phase for the beginning weight trainer. During this phase, the soldier should increase the amount of weight used and/or the intensity of the workout as his muscular strength and/or endurance increases. He should do one set of 8 to 12 repetitions for each of the heavy-resistance exercises. When he can do more than 12 repetitions of any exercise, he should increase the weight until he can again do only 8 to 12 repetitions. This usually involves an increase in weight of about five percent. This process continues indefinitely. As long as he continues to progress and get stronger, he does not need to do more than one set per exercise. If he stops making progress with one set of 8 to 12 repetitions per exercise, he may benefit from adding another set of 8 to 12 repetitions on those exercises in which progress has slowed. As time goes on and he progresses, he may increase the number to three sets of an exercise to get even further gains in strength and/or muscle mass. Three sets per exercise is the maximum most soldiers will ever need to do.

Maintenance Phase

Once the soldier reaches a high level of fitness, the maintenance phase is used to maintain that level. The emphasis in this phase is no longer on progression but on retention. Although training three times a week for muscle endurance and strength gives the best results, one can maintain them by training the major muscle groups properly one or two times a week. More frequent training, however, is required to reach and maintain peak fitness levels. Maintaining the optimal level of fitness should become part of each soldier's life-style and training routine. The maintenance phase should be continued throughout his career and, ideally, throughout his life.

As with aerobic training, the soldier should do strength training three times a week and should allow at least 48 hours of rest from resistance training between workouts for any given muscle group.

TIMED SETS

Timed sets refers to a method of physical training in which as many repetitions as possible of a given exercise are performed in a specified period of time. After an appropriate period of rest, a second, third, and so on, set of that exercise is done in an equal or lesser time period. The exercise period, recovery period, and the number of sets done should be selected to make sure that an overload of the involved muscle groups occurs.

The use of timed sets, unlike exercises performed in cadence or for a specific number of repetitions, helps to ensure that each soldier does as many repetitions of an exercise as possible within a period of time. It does not hold back the more capable

performer by restricting the number of repetitions he may do. Instead, soldiers at all levels of fitness can individually do the number of repetitions they are capable of and thereby be sure they obtain an adequate training stimulus.

In this FM, timed sets will be applied to improving soldier's sit-up and push-up performance. (See Figures 3-2 and 3-3.) Many different but equally valid approaches can be taken when using timed sets to improve push-up and sit-up performance. Below, several of these will be given.

It should first be stated that improving sit-up and push-up performance, although important for the APFT, should not be the main goal of an Army physical training program. It must be to develop an optimal level of physical fitness which will help soldiers carry out their mission during combat. Thus, when a soldier performs a workout geared to develop muscle endurance and strength, the goal should be to develop sufficient strength and/or muscle endurance in all the muscle groups he will be called upon to use as he performs his mission. To meet this goal, and to be assured that all emergencies can be met, a training regimen which exercises all the body's major muscle groups must be developed and followed. Thus, as a general rule, a muscle endurance or strength training workout should not be designed to work exclusively, or give priority to, those muscle groups worked by the sit-up or push-up event.

For this reason, the best procedure to follow when doing a resistance exercise is as follows. First, perform a workout to strengthen all of the body's major muscles. Then, do timed sets to improve push-up and sit-up performance. Following this sequence ensures that all major muscles are worked. At the same time, it reduces the amount of time and work that must be devoted to push-ups and sit-ups. This is because the muscles worked by those two exercises will already be pre-exhausted.

The manner in which timed sets for push-ups and sit-ups are conducted should occasionally be varied. This ensures continued gains and minimizes boredom. This having been said, here is a very time-efficient way of conducting push-up/sit-up improvement. Alternate timed sets of push-ups and timed sets of sit-ups with little or no time between sets allowed for recovery. In this way, the muscle groups used by the push-up can recover while the muscles used in the sit-up are exercised, and vice versa. The following is an example of this type of approach:

TIMED SETS

SET NO.	ACTIVITY	TIME PERIOD	REST INTERVAL
1	Push-ups	45 seconds	0
2	Sit-ups	45 seconds	0
3	Push-ups	30 seconds	0
4	Sit-ups	30 seconds	0
5	Push-ups	30 seconds	0
6	Sit-ups	30 seconds	0

Figure 3-2

If all soldiers exercise at the same time, the above activity can be finished in about 3.5 minutes. As the soldiers' levels of fitness improve, the difficulty of the activity can be increased. This is done by lengthening the time period of any or all timed sets, by decreasing any rest period between timed sets, by increasing the number of timed sets performed, or by any combination of these.

To add variety and increase the overall effectiveness of the activity, different types of push-ups (regular, feet-elevated, wide-hand, close-hand, and so forth) and sit-ups (regular, abdominal twists, abdominal curls, and so forth) can be done. When performing this type of workout, pay attention to how the soldiers are responding, and make adjustments accordingly. For example, the times listed in the chart above may prove to be too long or too short for some soldiers. In the same way, because of the nature of the sit-up, it may become apparent that some soldiers can benefit by taking slightly more time for timed sets of sit-ups than for push-ups.

When using timed sets for push-up and sit-up improvement, soldiers can also perform all sets of one exercise before doing the other. For example, several timed sets of push-ups can be done followed by several sets of sit-ups, or vice versa. With this approach, rest intervals must be placed between timed sets. The following example can be done after the regular strength workout and is reasonable starting routine for most soldiers.

During a timed set of push-ups, a soldier may reach temporary muscle failure at any time before the set is over. If this happens, he should immediately drop to his knees and continue doing modified push-ups on his knees.

Finally, as in any endeavor, soldiers must set goals for themselves. This applies when doing each timed set and when planning for their next and future APFTs.

Major Muscle Groups

In designing a workout it is important to know the major muscle groups, where they are located, and their primary action. (See Figure 3-4.)

To ensure a good, balanced workout, one must do at least one set of exercises for each of the major muscle groups.

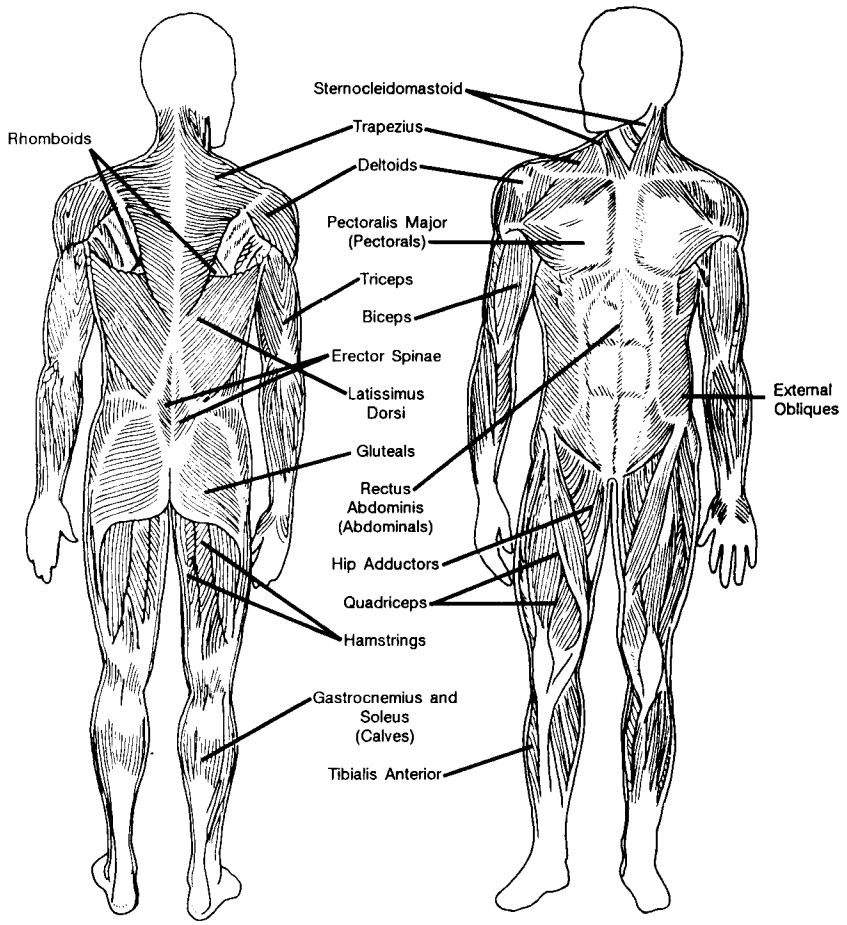
TIMED SETS

SET NO.	ACTIVITY	TIME PERIOD	REST INTERVAL
1	Regular Push-ups	30 seconds	30 seconds
2	Wide-hand Push-ups	30 seconds	30 seconds
3	Close-hand Push-ups	30 seconds	30 seconds
4	Regular Push-ups	20 seconds	30 seconds
5	Regular Push-ups done on knees	30 seconds	30 seconds
6	Regular Sit-ups	60 seconds	30 seconds
7	Abdominal Twists	40 seconds	30 seconds
8	Curl-ups	30 seconds	30 seconds
9	Abdominal Crunches	30 seconds	End

Figure 3-3

MAJOR MUSCLE GROUPS

The Major Skeletal Muscles of the Human Body



The iliopsoas muscle (a hip flexor) cannot be seen as it lies beneath other muscles. It attaches to the lumbar, the pelvis, the vertebrae and the femur.

Figure 3-4

BEGINNING EXERCISE PROGRAM

NAME OF EXERCISE	MAJOR MUSCLE GROUP(S) WORKED*
1. Leg press or squat	---Quadriceps, Gluteals
2. Leg curl	---Hamstrings
3. Heel raise	---Gastrocnemius
4. Bench press	---Pectorals, Triceps, Deltoids
5. Lat pull-down or pull-up	---Latissimus Dorsi, Biceps
6. Overhead press	---Deltoids, Triceps
7. Sit-up	---Rectus Abdominus, Iliopsoas, oblique muscles
8. Bent-leg dead-lift	---Erector Spinae, Quadriceps, Gluteals

Figure 3-5

The beginning weight-training program shown at Figure 3-5 will work most of the important, major muscle groups. It is a good program for beginners and for those whose time is limited. The exercises should be done in the order presented.

The weight-training program shown at Figure 3-6 is a more comprehensive program that works the major muscle groups even more thoroughly. It has some duplication with respect to the muscles that are worked. For example, the quadriceps are worked by the leg press/squat and leg extensions, and the biceps are worked by the seated row, lat pull-down, and biceps curl. Thus, for the beginner, this program may overwork some muscle groups. However, for the more advanced lifter, it will make the muscles work in different ways and from different angles thereby providing a better over-all development of muscle strength. This program also includes exercises to strengthen the neck muscles.

When doing one set of each exercise to muscle failure, the average soldier should be able to complete this routine and do a warm-up and cool-down within the regular PT time.

MORE ADVANCED EXERCISE PROGRAM

NAME OF EXERCISE	MAJOR MUSCLE GROUP(S) WORKED
1. Leg press or squat	---Quadriceps, Gluteals
2. Leg raises	---Iliopsoas (hip flexors)
3. Leg extension	---Quadriceps
4. Leg curl	---Hamstrings
5. Heel raise	---Gastrocnemius, Soleus
6. Bench press	---Pectorals, Triceps, Deltoids
7. Seated row	---Rhomboids, Latissimus dorsi, Biceps
8. Overhead press	---Deltoids, Triceps
9. Lat pull-down or pull-up	---Latissimus dorsi, Biceps
10. Shoulder shrug	---Upper trapezius
11. Triceps extension	---Triceps
12. Biceps curl	---Biceps
13. Sit-up	---Rectus abdominus, iliopsoas
14. Bent-leg dead lift	---Erector spinae, Quadriceps, Gluteals
15. Neck flexion	---Sternocleidomastoid
16. Neck extension	---Upper trapezius

Figure 3-6

Key Points to Emphasize

Some key points to emphasize when doing resistance training tire as follows

- Train with a partner if possible, This helps to increase motivation, the intensity of the workout, and safety,
- Always breathe when lifting. Exhale during the concentric (positive] phase of contraction, and inhale during the eccentric (negative) phase,
- Accelerate the weight through the concentric phase of contraction, and return the weight to the starting position in a controlled manner during the eccentric phase,
- Exercise the large muscle groups first, then the smaller ones.
- Perform all exercises through their full range of motion. Begin from a fully extended, relaxed position (prestretched), and end the concentric phase in a fully contracted position,
- Always use strict form. Do not twist, lurch, lunge, or arch the body, This can cause serious injury. These motions also detract from the effectiveness of the exercise because they take much of the stress off the targeted muscle groups and place it on other muscles.
- Rest from 30 to 180 seconds between different exercises and sets of a given exercise.
- Allow at least 48 hours of recovery between workouts, but not more than 96 hours, to let the body recover and help prevent over training and injury.
- Progress slowly, Never increase the resistance used by more than 10 percent at a time.
- Alternate pulling and pushing exercises. For example, follow triceps extensions with biceps curls.
- Ensure that every training program is balanced. Train the whole body, not just specific areas. Concentrating on weak areas is all right, but the rest of the body must also be trained.

Exercise Programs

When developing strength programs for units, there are limits to the type of training that can be done. The availability of facilities is always a major concern. Although many installations have excellent strength-training facilities, it is unreasonable to expect that all units can use them on a regular basis. However, the development of strength does not require expensive equipment. All that is required is for the soldier, three times a week, to progressively overload his muscles.

TRAINING WITHOUT SPECIAL EQUIPMENT

Muscles do not care what is supplying the resistance. Any regular resistance exercise that makes the muscle work harder than it is used to causes it to adapt and become stronger. Whether the training uses expensive machines, sandbags, or partners, the result is largely the same.

Sandbags are convenient for training large numbers of soldiers, as they are available in all military units. The weight of the bags can be varied depending on the amount of fill. Sandbag exercises are very effective in strength-training circuits. Logs, ammo boxes, dummy rounds, or other equipment that is unique to a unit can also be used to provide resistance for strength training. Using a soldier's own body weight as the resistive force is another excellent alternative method of strength training. Pull-ups, push-ups, dips, sit-ups, and single-leg squats are examples of exercises which use a person's body weight. They can improve an untrained soldier's level of strength.

Partner-resisted exercises (PREs) are another good way to develop muscular strength without equipment, especially when training large numbers of soldiers at one time. As with all training, safety is a critical factor. Soldiers should warm up, cool down, and follow the principles of exercise previously outlined.

PARTNER-RESISTED EXERCISE

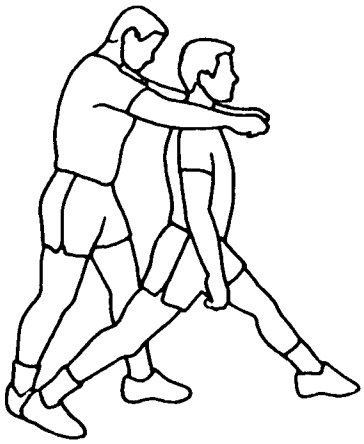
In partner-resisted exercises (PREs) a person exercises against a partner's opposing resistance. The longer the partners work together, the more effective they should become in providing the proper resistance for each exercise. They must communicate with each other to ensure that neither too much nor too little resistance is applied. The resister must apply enough resistance to bring the exerciser to muscle failure in 8 to 12 repetitions. More resistance usual] y can and should be applied during the eccentric (negative) phase of contraction (in other words, the second half of each repetition as the exerciser returns to the starting position). The speed of movement for PREs should always be slow and controlled. As a general rule, the negative part of each exercise should take at least as long to complete as the positive part. Proper exercise form and regularity in performance are key ingredients when using PREs for improving strength.

Following are descriptions and illustrations of several PREs. They should be done in the order given to ensure that the exercising soldier is working his muscle groups from the largest to the smallest. More than one exercise per muscle group may be used. The PT leader can select exercises which meet the unit's specific goals while considering individual limitations:

A 36-to 48-inch stick or bar one inch in diameter may be used for some of the exercises. This gives the resister a better grip and/or leverage and also provides a feel similar to that of free weights and exercise machines.

SPLIT-SQUAT

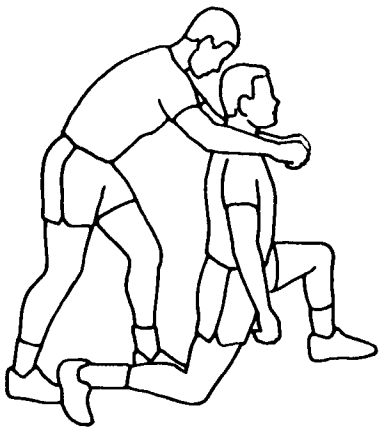
This exercise is for beginning trainees' quadriceps and gluteal muscles.



Exerciser

Position: Stand erect with both feet pointed straight ahead, the left foot placed in a forward position and the right foot placed about 2.5 feet behind the left foot.

Action: Keeping the back straight and the head up, bend both legs at the same time, and lower yourself slowly until the right knee barely touches the floor. Return to the starting position. This is one repetition. After 8 to 12 repetitions to muscle failure, repeat the action with the opposite leg forward.



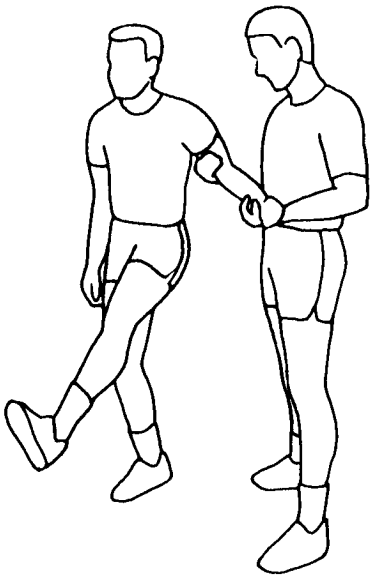
Resister

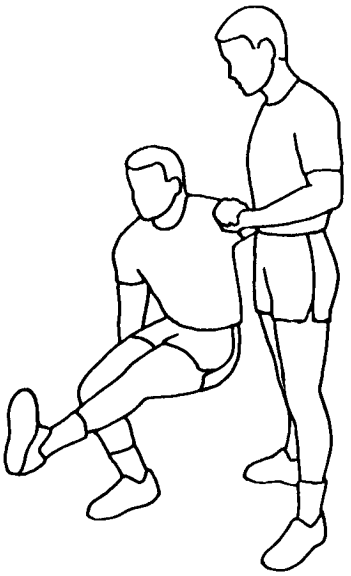
Position: Stand directly behind the exerciser with the fleshy portion of your forearms resting squarely on the exerciser's shoulders. You may clasp your hands to gain extra leverage as long as you do not squeeze the exerciser's neck. Be sure to place the same foot forward as the exerciser.

Action: As the exerciser lowers himself, apply a steady, forceful pressure downward against his shoulders. A slightly lesser pressure should be applied as the exerciser returns to the starting position.

SINGLE-LEG SQUAT

This exercise is for advanced trainees' quadriceps and gluteal muscles.





Exerciser

Position: Face your partner and grasp his wrists. Extend your right leg in front; keep it straight but do not let it contact your partner.

Action: Lower yourself in a controlled manner. Next, return to the upright position. After 8-12 repetitions to muscle failure, repeat this exercise with the other leg.

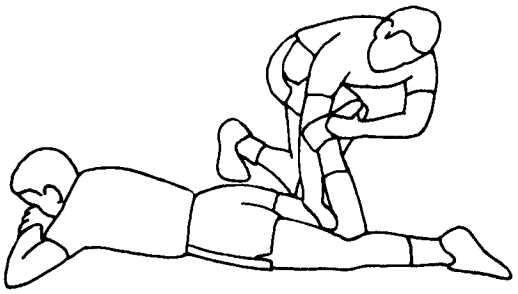
Resister

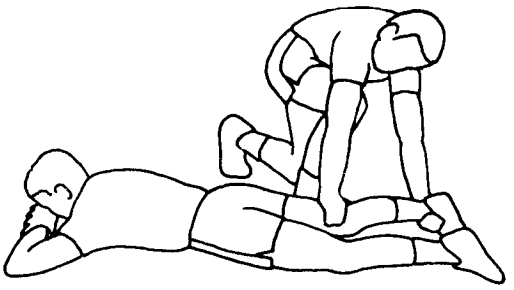
Position: Face the exerciser with your arms extended obliquely forward.

Action: Provide stability to the exerciser along with resistance or assistance as needed. When the exerciser can do more than 12 repetitions, apply an appropriate resistance that results in muscle failure in 8-12 repetitions.

LEG EXTENSION

This exercise is for the quadriceps muscles.





Exerciser

Position: Lie face down with one leg straight and the other flexed at the knee. Move your heel as close to your buttocks as possible.

Action: Extend your knee against the partner's resistance. Next, resist as your partner returns you to the starting position. Do 8 to 12 repetitions to muscle failure. Repeat this exercise with the other leg.

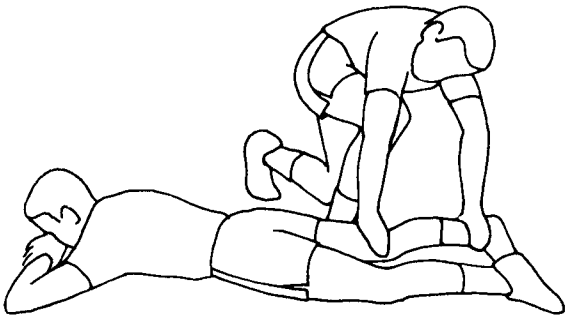
Resister

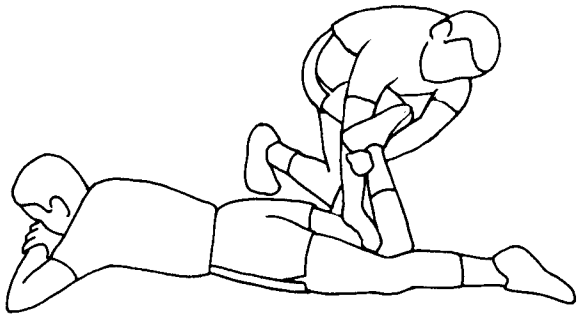
Position: Support the leg being exercised by placing your foot under the exerciser's thigh just above his knee.

Action: Resist while exerciser extends his leg. Next, apply upward pressure to return the exerciser to the starting position.

LEG CURL

This exercise is for the hamstring muscles.





Exerciser

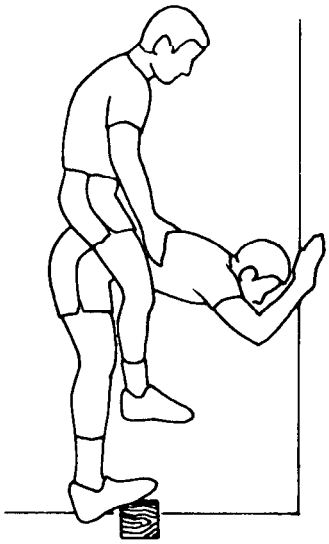
Position: Lie face down with your legs extended.
Action: Flex one leg against your partner's resistance until your heel is as close to your buttocks as possible. Next, resist your partner's efforts as he returns you to the starting position. Do 8 to 12 repetitions to muscle failure, Repeat this exercise with the other leg.

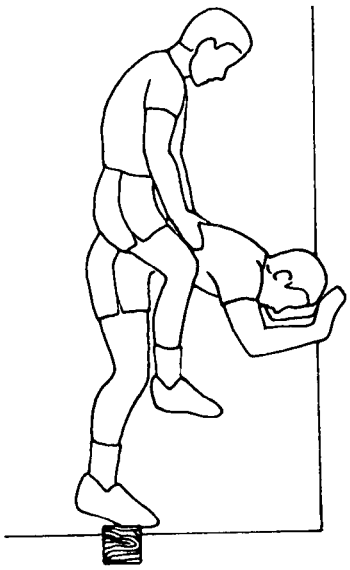
Resister

Position: Support the exerciser's leg as in the Leg Extension exercise.
Action: Resist the exerciser's movement with your hand(s) placed on his heel. Next, apply downward pressure to return the exerciser to the starting position.

HEEL RAISE (BENT OVER)

This exercise is for the gastrocnemius and soleus muscles.





Exerciser

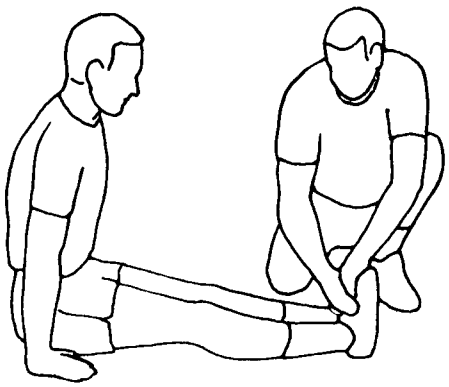
Position: Form a 90-degree angle between your upper body and legs by bending over at the hips. Use an additional partner or a fixed object for support.
Action: Keep your legs straight and rise up on the balls of your feet. Do 8 to 12 repetitions to muscle failure. If possible, perform the exercise by placing the balls of your feet firmly on a 4" x 4" board or the edge of a curb. Be sure to lower and raise your heels as far as possible.

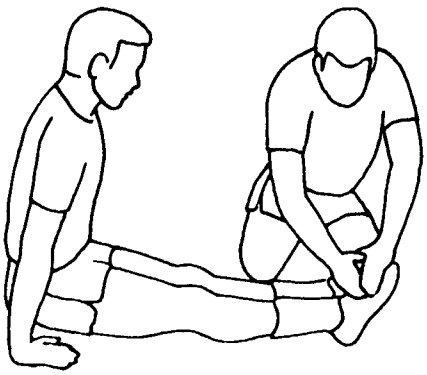
Resister

Position: Sit on the upper part of the exerciser's buttocks; DO NOT SIT ON THE EXERCISER'S LOW BACK. (Properly positioning your body places less pressure on the exerciser's back and helps him better work his gastrocnemius and soleus muscles.)
Action: Provide resistance to the exerciser with your body weight.

TOE RAISE

This exercise is for the tibialis anterior muscle.





Exerciser

Position: Sit on the floor with your legs together, knees straight, and feet fully extended.
Action: Against the resister's efforts, move your toes toward the knees; then have the resister pull your toes back to the starting position while you resist. Do 8 to 12 repetitions to muscle failure.

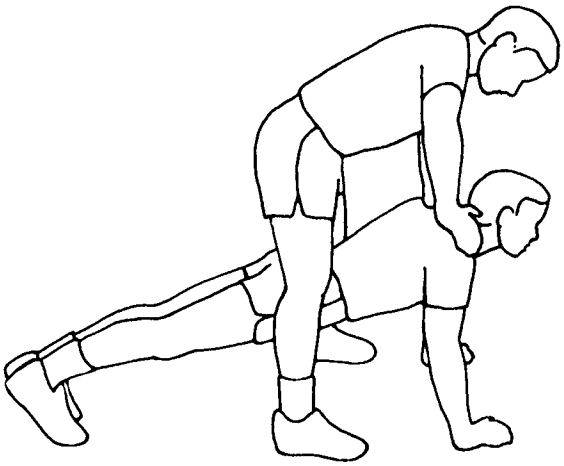
Resister

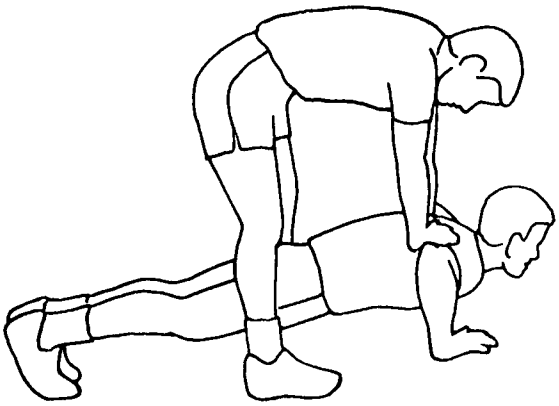
Position: Place your hand(s) on the exerciser's shoelaces near the toes. Press your palms against the exerciser's insteps to resist his foot and ankle movements.

Action: Resist the exerciser's effort to pull his toes toward his knees. Next, pull the exerciser's toes back to the starting position against his resistance.

PUSH-UP

This exercise is for the pectoral and triceps muscles.





Exerciser

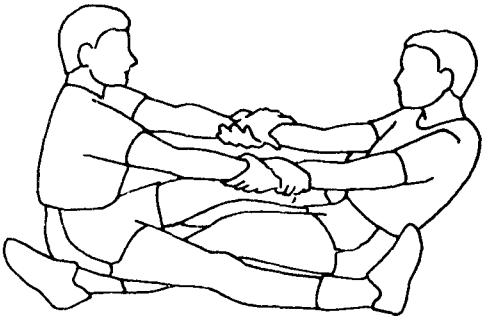
Position: Assume a front-leaning-rest position.
Action: Perform a push-up against your partner's resistance. Do 8 to 12 repetitions to muscle failure.

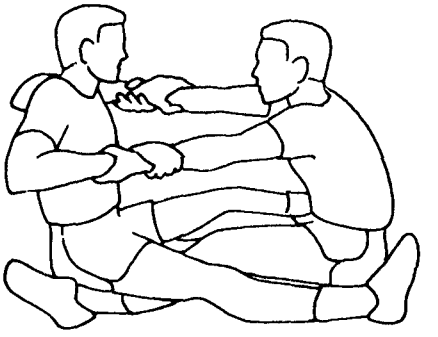
Resister

Position: Straddle the exerciser's hips. Place your hands on top of his shoulders. Be careful to place your left hand on the upper left part and your right hand on the upper right part of his shoulder.
Action: Apply pressure against the exerciser's push-up movements. As stated earlier, slightly more resistance should be applied during the eccentric phase of contraction (in this case, as the exerciser moves closer to the floor)

SEATED ROW

This exercise is for the biceps, latissimus dorsi, and rhomboid muscles.





Exerciser

Position: Sit facing the resister with your back straight. Overlap your legs with the resister's, being sure to place your legs on top. Establish a good grip by interlocking your hands with the resister's or by firmly grasping his wrists. The exerciser's palms should be facing downward.

Action: Pull the resister toward you with a rowing motion while keeping your elbows elevated to shoulder height. Be sure to keep your back straight, and move only the arms.Next, slowly return to the starting position as the resister pulls your arms forward. Do 8 to 12 repetitions to muscle failure.

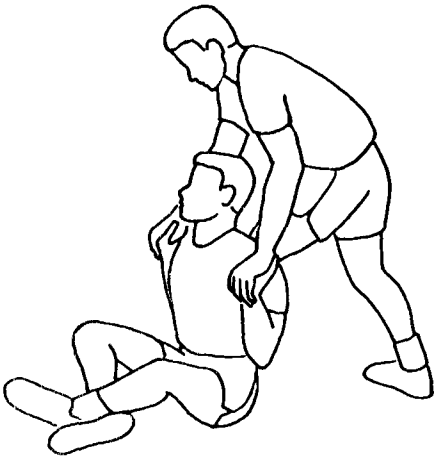
Resister

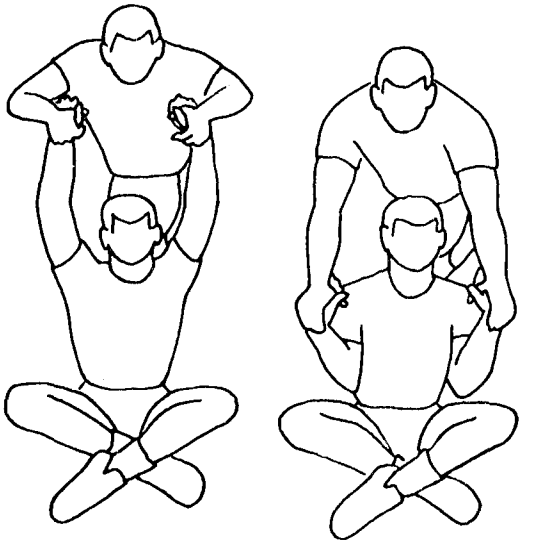
Position: Face the exerciser and sit with your back straight. Place your legs under the exerciser's legs; establish a good grip by interlocking hands with the resister or by firmly grasping his wrists.

Action: As the exerciser pulls, resist his pulling motion. Next, slowly pull the exerciser back to the starting position by pulling with the muscles of the lower back.

OVERHEAD PRESS

This exercise is for the deltoid and triceps muscles.





Exerciser

Position: Sit with your legs crossed and your back straight. Raise your hands to shoulder height with your palms flat and facing upward.

Action: Move your arms slowly upward to full extension against your partner's resistance. Next, slowly return to the starting position as the resister applys downward pressure. Do 8 to 12 repetitions to muscle failure.

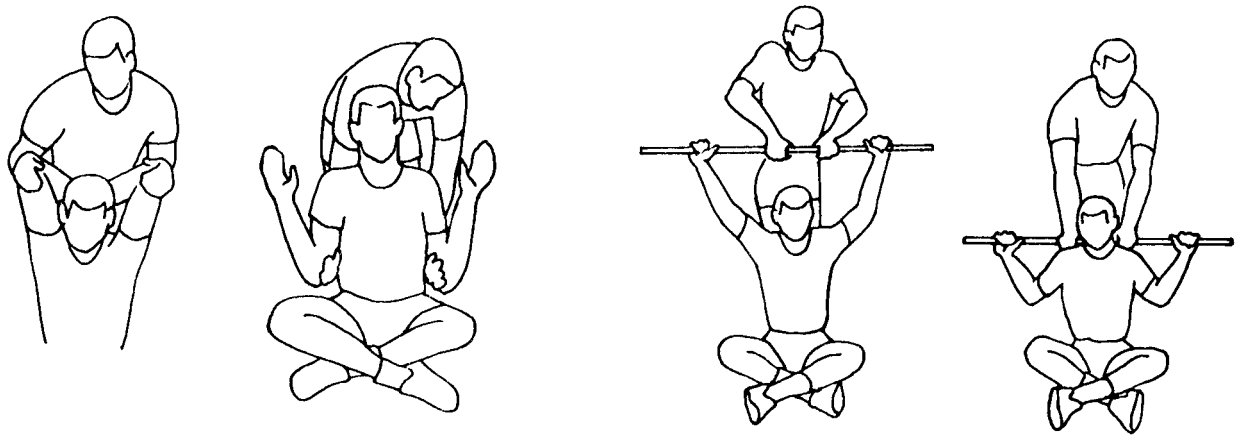
Resister

Position: Stand behind the exerciser; interlock your thumbs with the exerciser's, and place your hands with the palms down on his hands. Support the exerciser's back with the side of your lower leg.

Action: Resist the exerciser's upward movement; then push his arms back to the starting position. A bar or stick may be used for a better grip and improved leverage.

PULL-DOWN

This exercise is for the latissimus dorsi muscles.



Exerciser

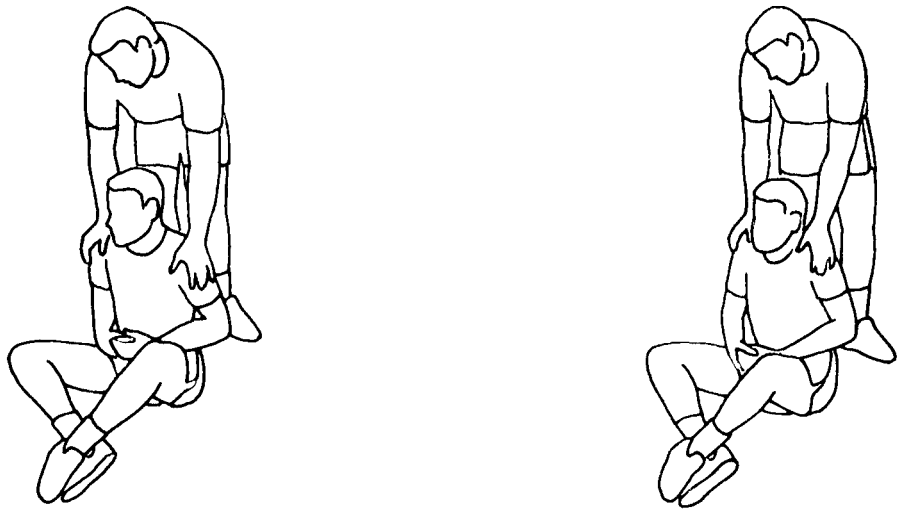
Position: Sit with your legs crossed and back straight. Raise and cross your arms behind your head with your elbows bent.
Action: Pull out and down with your elbows against the partner's resistance until your elbows touch your ribcage. Next, resist as your partner pulls your elbows back to the starting position. Do 8 to 12 repetitions to muscle failure.

Resister

Position: Stand behind the exerciser, and support his back with the side of your lower leg. Place your palms underneath the exerciser's elbows.
Action: Resist the exerciser's downward movements; then pull his elbows back to the up or starting position. VARIATION: A bar or stick may be used for a better grip and leverage and to exercise the biceps and forearm muscles.

SHRUG

This exercise is for the upper trapezius muscle.



Exerciser

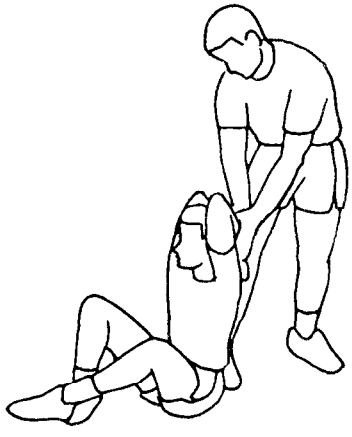
Position: Sit with your legs crossed, back straight, and hands resting in your lap.
Action: Shrug your shoulders as high as possible against your partner's resistance, then resist your partner's pushing motion as you return to the starting position. Do 8 to 12 repetitions to muscle failure.

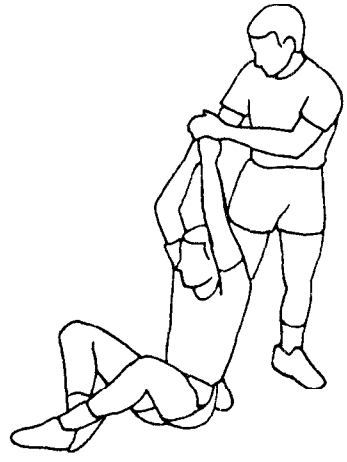
Resister

Positon: Stand behind the exerciser, and support his back with the side of your lower leg. Place your hands on each of the exerciser's shoulders.
Action: Apply pressure downward with your hands to resist the upward, shrugging movements of the exerciser and, during the second phase of the exercise, push downward as the exerciser resists your pushing movements.

TRICEPS EXTENSION

This exercise is for the triceps muscles.





Exerciser

Position: Sit with your legs crossed and back straight. Clasp your hands and place them behind your head while bending your elbows.

Action: Extend your arms upward against the partner's resistance. Next, return to the starting position while resisting your partner's force. Always keep your elbows stationary and pointing straight ahead. Do 8 to 12 repetitions to muscle failure.

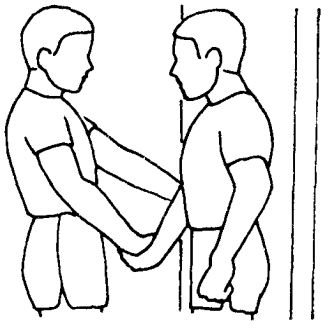
Resister

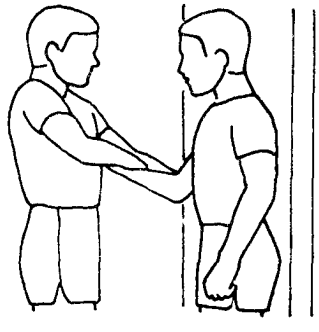
Position: Stand behind the exerciser and support his back with the side of your lower leg. Place your hands, palms down, over the exerciser's hands.

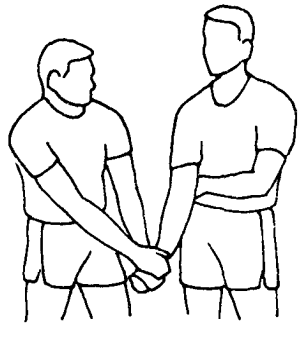
Action: Apply pressure to resist the upward movement of the exerciser, and then push his hands back to the starting position. A bar or a stick may be used for a better grip and/or improved leverage. This exercise may also be done in the prone position with the resister applying a force against the exerciser's movements.

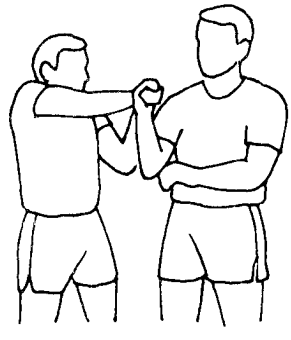
BICEPS CURL

This exercise is for the biceps muscles.









Exerciser

Position: Stand straight with your back supported. Hold the arm to be exercised close to your side.

Action: Bend the elbow, bringing your hand up to your shoulder against your partner's resistance. Return to the starting position by resisting the pushing efforts of your partner. Do 8 to 12 repetitions to muscle failure; repeat with the other arm.

Resister

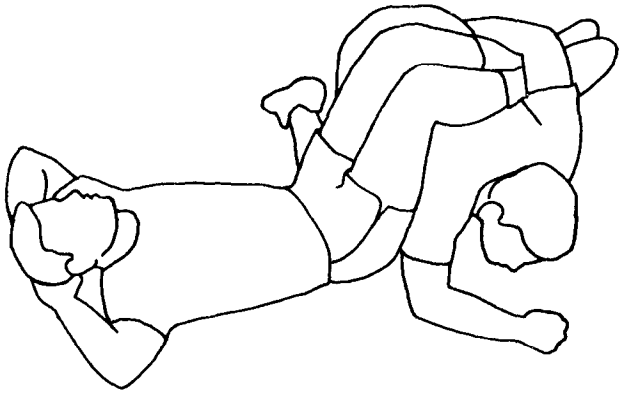
Position: Face the exerciser with your feet staggered. Use one of your hands to grasp the exerciser's wrist; place the other hand behind his elbow to stabilize it during the exercise movement.

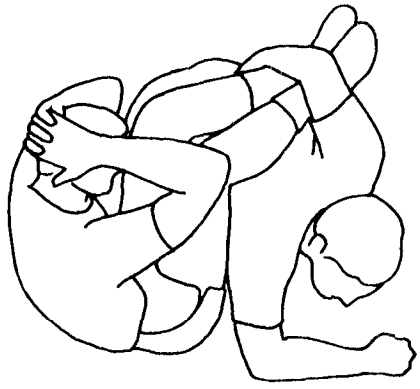
Action: Resist the exerciser's upward movement and provide a downward, pushing force during the lowering movement. A bar may also be used for a better grip and leverage.

VARIATION: A variation may be used if the resister is unable to provide enough resistance to the exerciser with the first exercise. Using this variation, the exerciser places the back of his hand on the non-exercising arm behind the elbow of his exercising arm for support; the resister places both hands on the hand, wrist, or lower part of the exerciser's forearm to apply resistance to the exerciser's movements. The action is the same as before.

ABDOMINAL CURL

This exercise is for the rectus abdominus, iliopsoas, and external and internal oblique muscles.





Exerciser

Position: Lie on your back with both legs bent at the knee to about a 90-degree angle. Place your bent legs over the resister's back. Interlace your fingers behind your neck.

Action: Do regular sit-ups, bringing both elbows to your knees. Do 20 to 50 repetitions to muscle failure.

NOTE: A variation to this exercise is the ROCKY SIT-UP where the exerciser moves the left elbow up to the right knee and then reverses the action, right elbow to left knee.

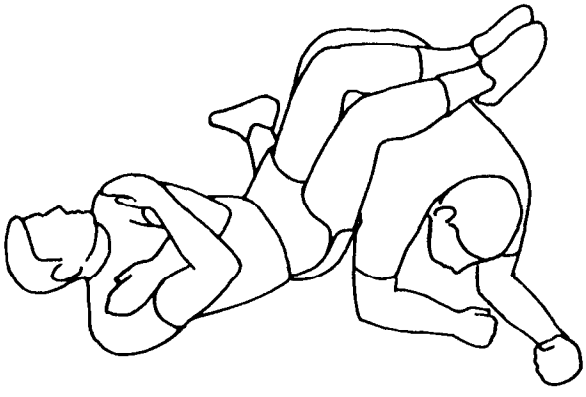
Resister

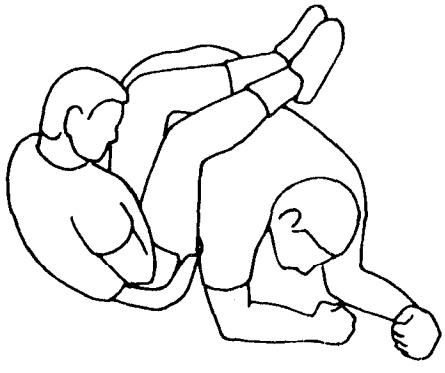
Position: Kneel with your inside elbow resting on the ground. With your outside arm, reach back and hold the exerciser's ankles.

Action: Provide a firm foundation upon which the exerciser can place his legs, and keep them tightly anchored during the exercise.

ABDOMINAL CRUNCH

This exercise is for the rectus abdominis and external and internal oblique muscles.





Exerciser

Position: Lie down with your arms crossed over your chest, the backs of your lower legs resting over your partner's back, and your upper leg placed at right angles to the floor.

Action: Curl your neck off the ground, and curl your upper body up toward your knees. (Progressively lift your shoulders, upper back, and finally, lower back off the ground.) Hold this position briefly while forcefully tensing your abdominal muscles. Return slowly to the starting position and repeat. Do 20 to 50 repetitions to muscle failure.

Resister

Position: Kneel with both forearms on the ground.

Action: Allow the exerciser to place the back of his lower legs on your back. DO NOT HOLD HIS LEGS DOWN. (This eliminates the iliopsoas muscle from the exercise and instead isolates the rectus abdominis and external and internal oblique muscles.)

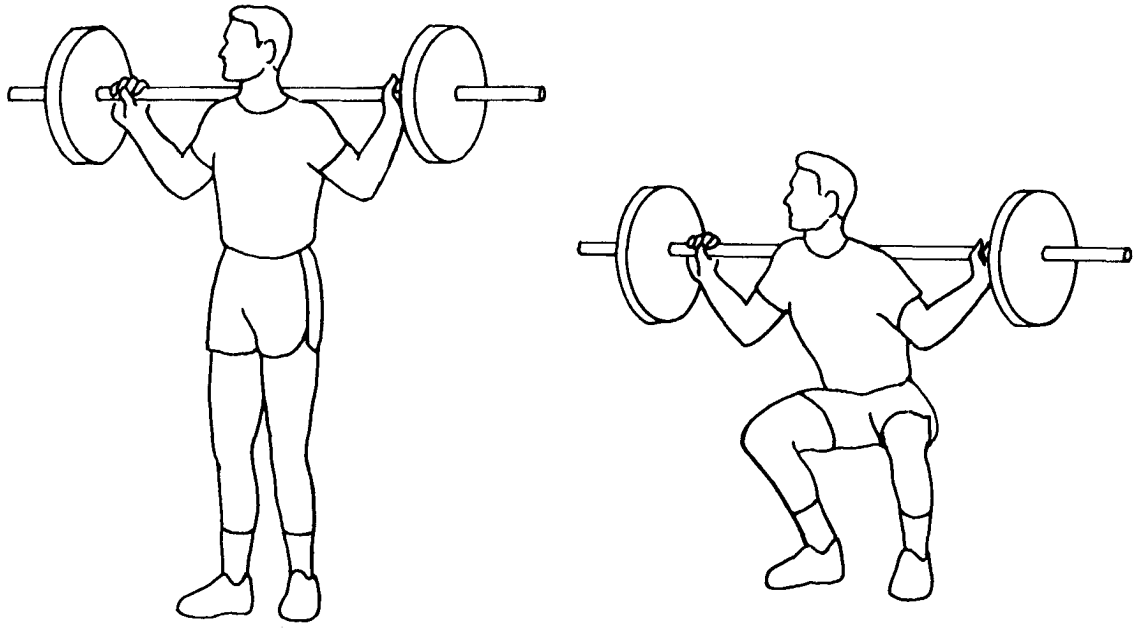
TRAINING WITH EQUIPMENT

Units in garrison usually have access to weight rooms with basic equipment for resistance-training exercises. The exercises described here require free weights and supporting equipment. Although not shown below for the sake of simplicity, all exercises done with free weights require a partner, or spotter, to ensure proper form and the safety of the lifter.

Free-Weight Exercises

SQUAT

This exercise is for the quadriceps and gluteal muscles.

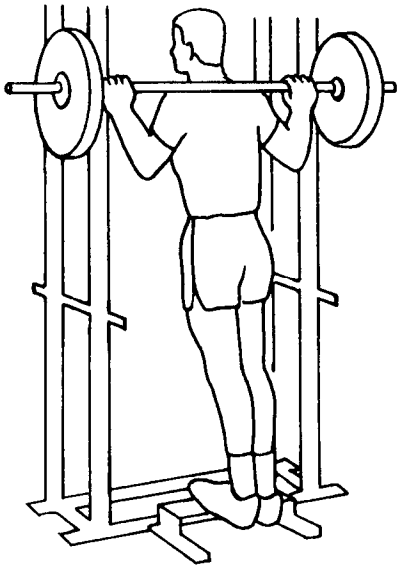


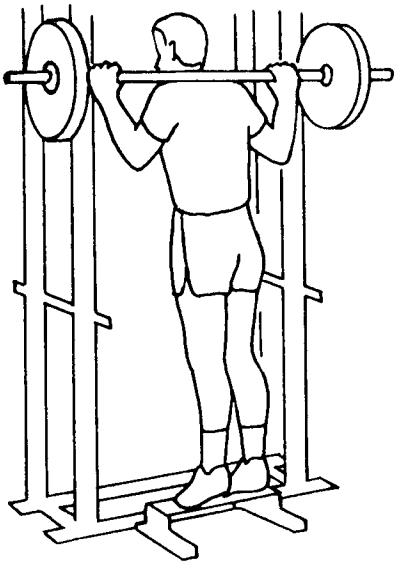
Position: Stand with the feet about shoulder width apart. Hold the weight on your shoulders.

Action: Bend the knees until the tops of your thighs are parallel to the ground. Keep your head and shoulders upright and back straight. In the lowest position, the top of your thighs should not go lower than parallel to the ground. Do 8 to 12 repetitions to muscle failure. A 2" x 4" block may be placed under the heels to increase stability.

HEEL RAISE

This exercise is for the gastrocnemius and soleus muscles.



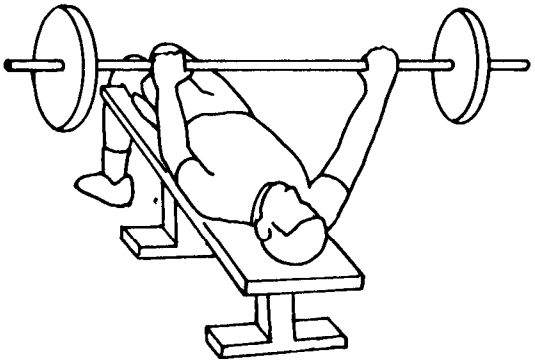


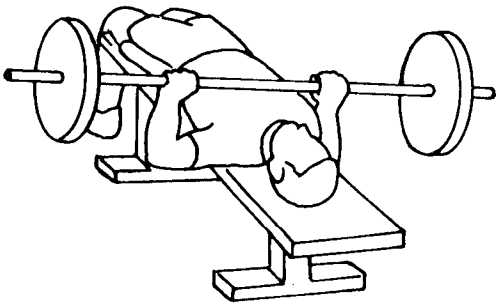
Position: Place a bar on your shoulders behind your neck. Stand with the toes and the balls of the feet on a platform or a 4" x 4" board.

Action: Rise upward on the toes and balls of the feet to full extension, then slowly lower the heels as far as possible. Do not bend the knees or jerk the hips. Do 8 to 12 repetitions to muscle failure.

BENCH PRESS

This exercise is for the pectoralis major, triceps, and deltoid muscles.



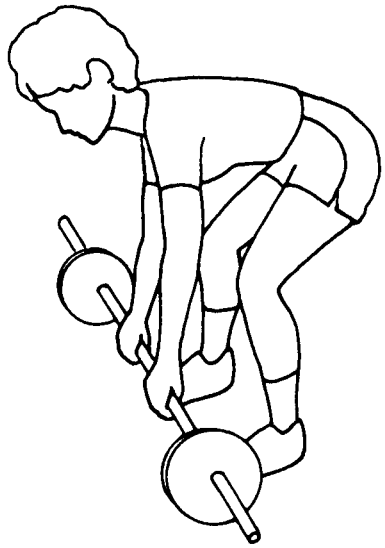


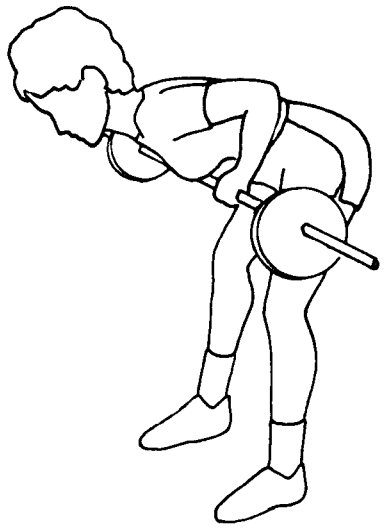
Position: Hold a weight with an overhand grip (palms facing away) slightly wider than shoulder width. Hold the bar directly above your chest at arm's length.

Action: Lower the bar to your chest, keeping the feet flat on the floor. Push the bar up to arm's length. The elbows should be kept wide and away from the body. Keep the buttocks in contact with the bench at all times. Do 8 to 12 repetitions to muscle failure.

BENT-OVER ROW

This exercise is for the latissimus dorsi and biceps muscles.



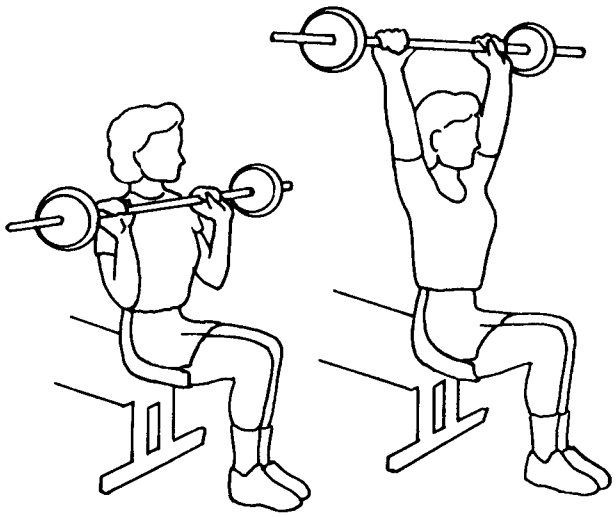


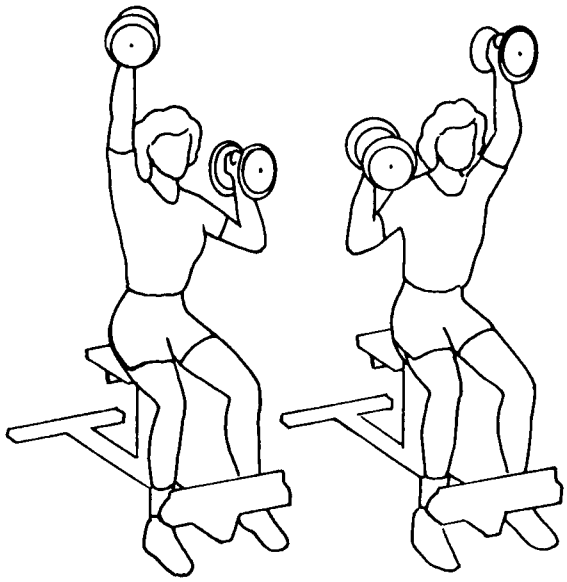
Position:. Lean forward at the hips with the back flat; let your arms hang straight down from the shoulders. Keep your knees slightly flexed.

Action: Use an overhand grip with the hands 12 to 24 inches apart. Bend the elbows, bringing the bar up in a straight motion up to the lower portion of the chest. Slowly lower the weight back to the starting position. Do 8 to 12 repetitions to muscle failure.

OVERHEAD PRESS

This exercise is for the deltoids and triceps muscles.



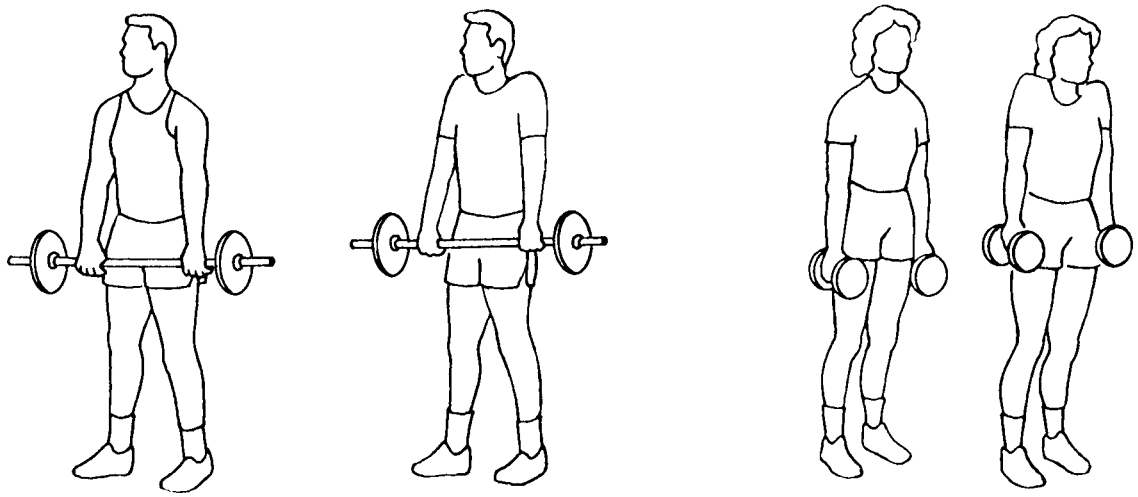


Position: With a barbell, use the overhand grip with the hands spaced slightly greater than shoulder width apart.

Action: Push the bar overhead, moving it upward in a straight line until the elbows are straight. Lower the bar until it touches the chest. Do not bounce the bar off the chest. Dumbbells may also be used. Do 8 to 12 repetitions to muscle failure.

SHRUG

This exercise is for the trapezius muscles.

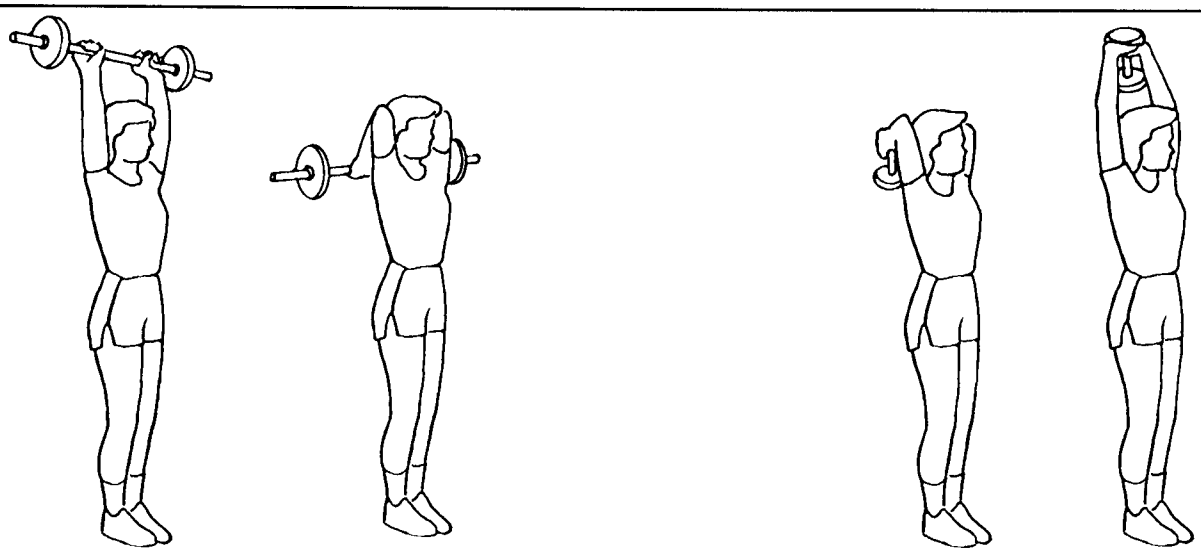


Position: Using a barbell, start with the bar at thigh-rest position. Use an overhand or reverse grip.

Action: Elevate the bar by contracting the trapezius and raising the shoulders upward toward the ears. In the top position, roll your shoulders backward. Then, slowly lower the shoulders until the bar returns to the starting, thigh-rest position. Keep the arms straight throughout the entire repetition. Dumbbells may also be used. Do 8 to 12 repetitions to muscle failure.

TRICEPS EXTENSION

This exercise is for the triceps muscles.

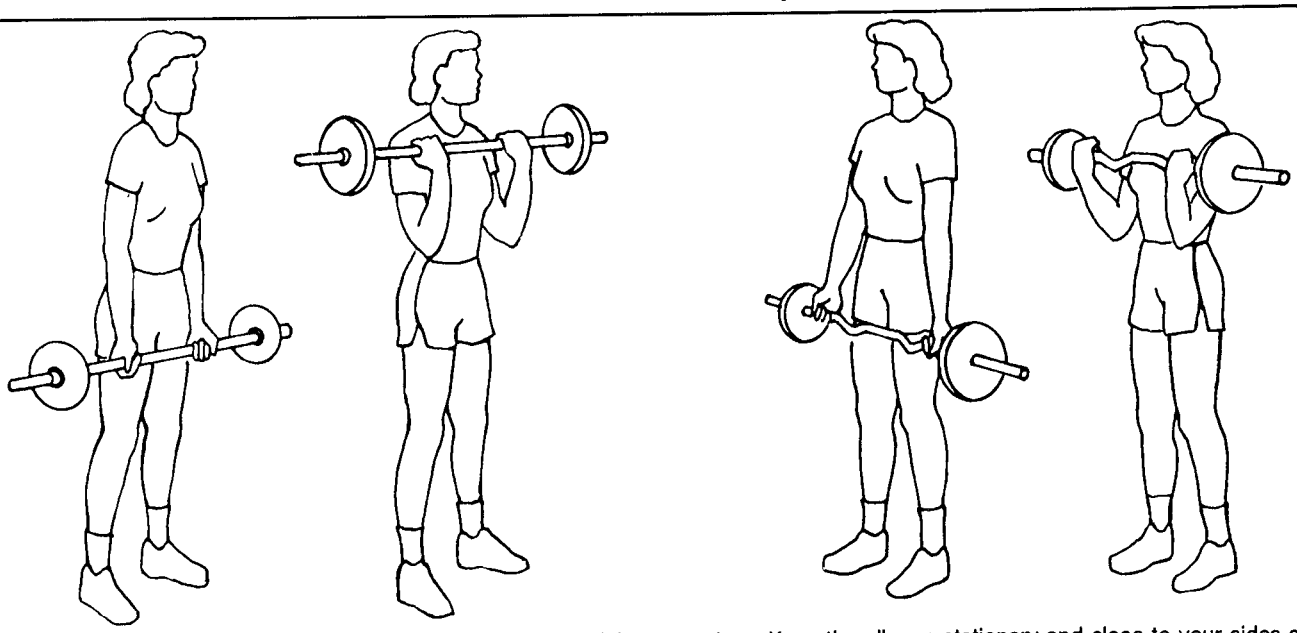


Position: Using a barbell, hold the bar directly overhead with an overhand grip. Keep the elbows high, close to the head, and stationary.

Action: Lower the bar slowly without bouncing it when it reaches the lower neck area. Extend the bar back to the overhead position while keeping the heels flat and the knees and elbows stationary. A dumbbell may also be used. Do 8 to 12 repetitions to muscle failure.

BICEPS CURL

This exercise is for the biceps muscles.

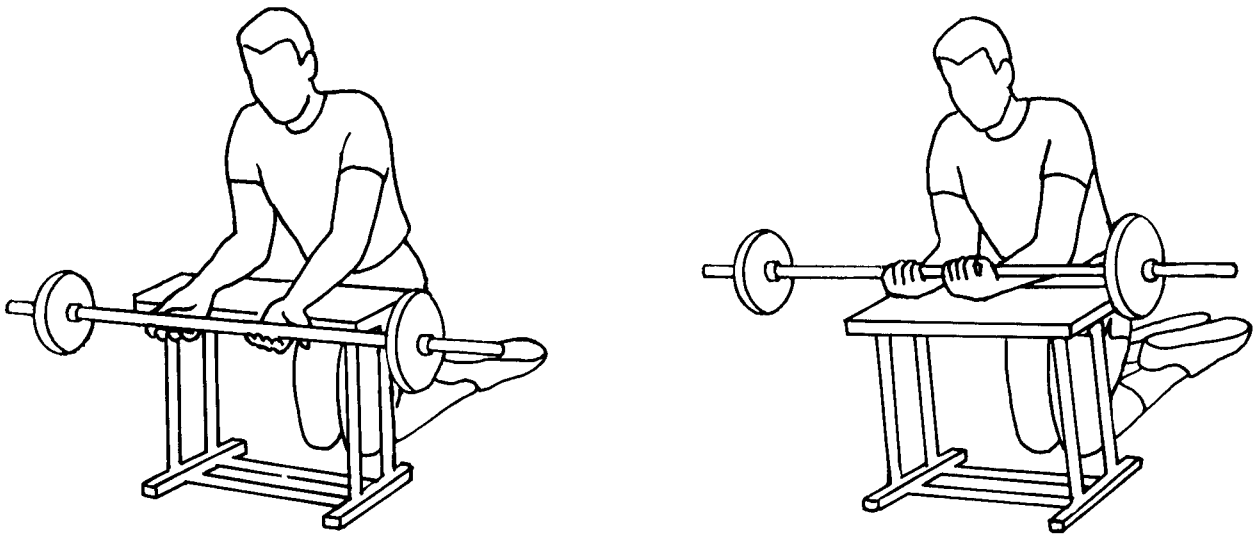


Position: Start with an underhand grip. Hold the bar at thigh-rest position.

Action: Keep the elbows stationary and close to your sides as you curl the bar to your chest. Do not use your legs or bend your back for assistance. A cambered (bent) bar or dumbbells may also be used. Do 8 to 12 repetitions to muscle failure.

WRIST CURL

This exercise is for the development of the forearm muscles.

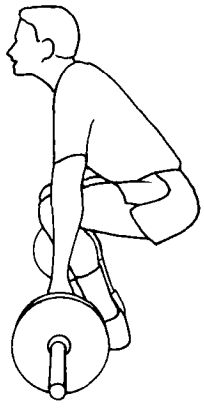


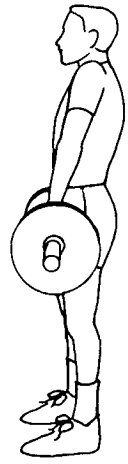
Position: Holding your hand with the palms facing upward, grasp a barbell using only the fingers.

Action: Curl the fingers, then the wrist up as far as possible and then down, keeping the elbows stationary. For the best results, do not grip the barbell; keep it placed on the last few digits of the fingers. Do 8 to 12 repetitions to muscle failure.

BENT-LEG DEAD-LIFTS

This exercise is for the quadriceps, the erector spinae, the gluteals, and the trapezius muscles.





Position: Bend and grasp the bar with the hands shoulder width apart. The legs should be bent, the back flat but inclined forward at a 45 degree angle, the arms straight, and the head up.

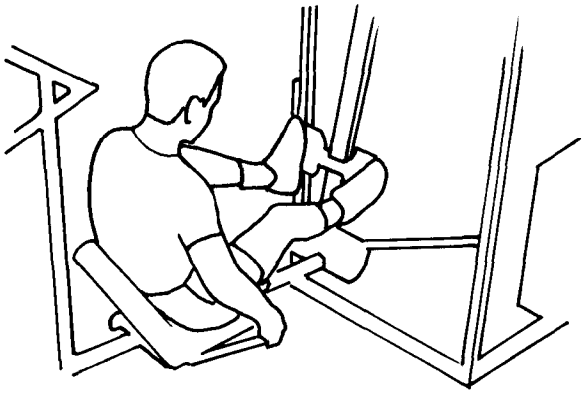
Action: Keeping the head erect, gradually straighten the legs and the back together at the same time. Make sure that the back remains flat and the arms remain straight. When the entire body is straight, shrug the shoulders upward as high as possible. In a controlled manner, return to the starting position by first lowering the shoulders. Then, bend at the knees and at the waist simultaneously until the beginning position is attained. Keep the back flat, head up, and the arms straight at all times. Do 8 to 12 repetitions to muscle failure.

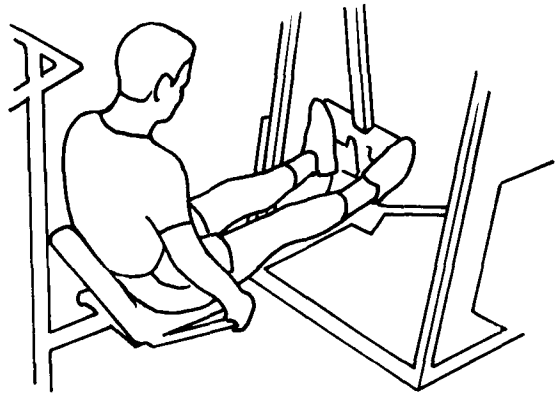
Exercises Performed with an Exercise Machine

If exercise machines are available, the exercises described below are also good for strength training. All movements, particularly during the eccentric (negative) phase of contraction, should be done in a delibcrate, controlled manner.

LEG PRESS

This exercise is for the gluteal and quadriceps muscles.



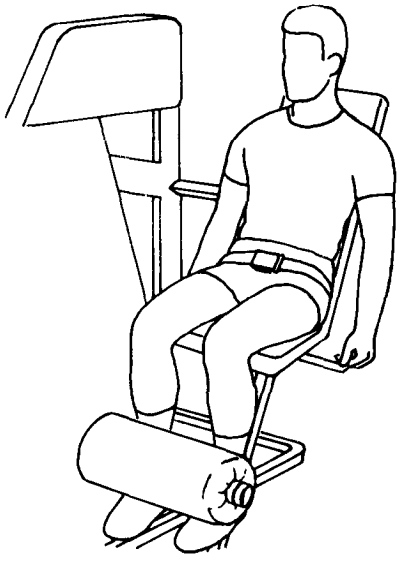


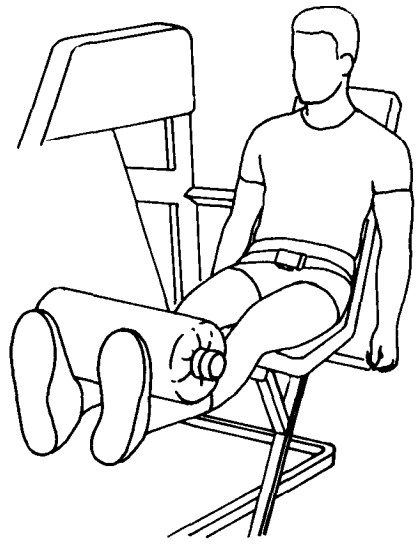
Position: Sit at the leg-press station with the legs bent no more than 90 degrees. Ensure that the balls of both feet are very securely placed on the pedals.

Action: Push the weight with the legs until your knees are straight but not locked. In a controlled manner, return to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

LEG EXTENSION

This exercise is for the quadriceps muscles.



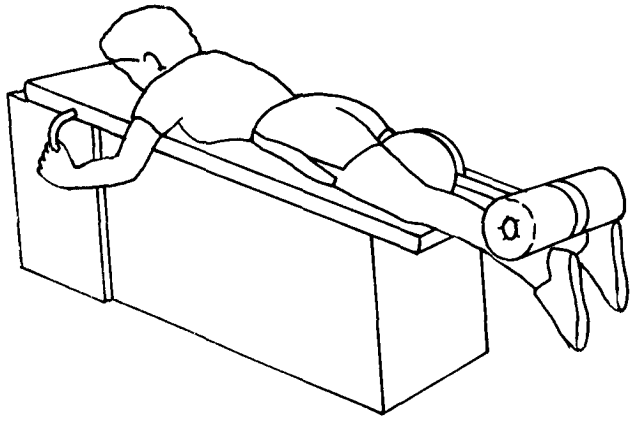


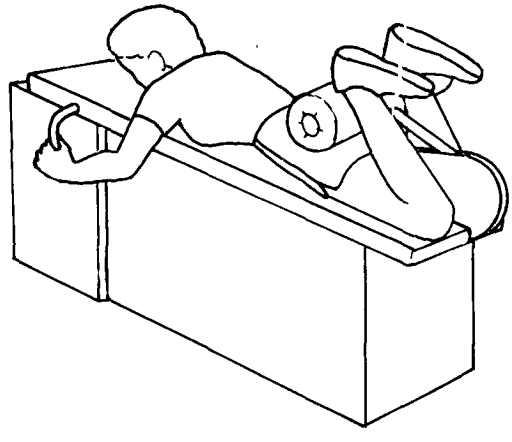
Position: Sit on a bench with your lower legs behind the padded lever. Hold on to the bench or provided handles with your hands to keep the upper body in the correct position.

Action: Straighten the legs as much as possible. In a controlled manner, return to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

LEG CURL

This exercise is for the hamstring muscles.



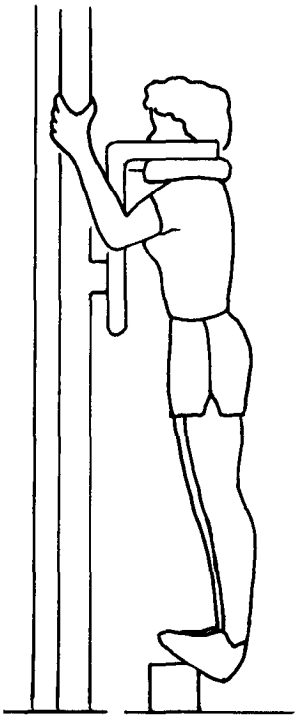


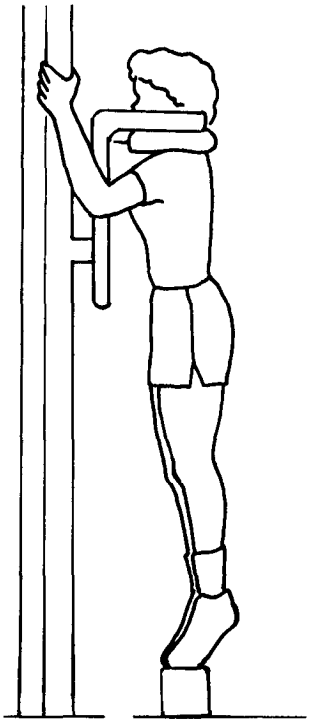
Position: Lie on your stomach with the legs straight and the ankles under the padded lever. Maintain correct upper body position by loosely grasping the sides of the bench or provided handles.

Action: Bend your legs at the knee until the lower legs pass well beyond the perpendicular position and the heels are as close to your buttocks as possible. Return to the starting position. Do 8 to 12 repetitions to muscle failure.

HEEL RAISE

This exercise is for the gastrocnemius and soleus muscles.



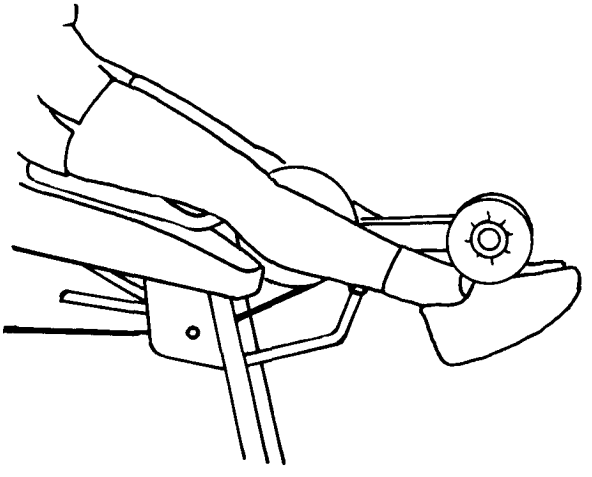


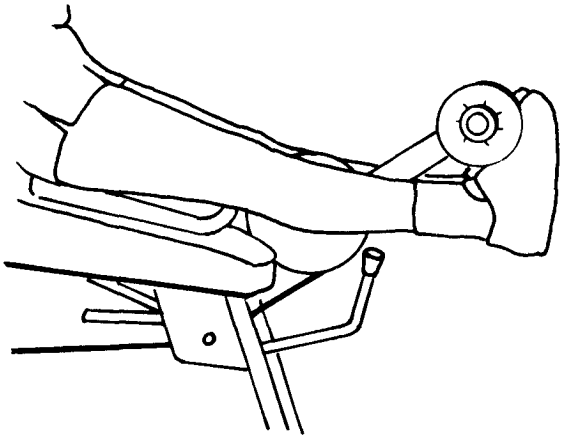
Position: Stand with a weight on your shoulders and the balls of your feet placed firmly on a 4-inch raised surface.

Action: Raise your heels off the floor as far as possible while maintaining your balance. Then, lower them as far as possible. This is one repetition. Do 8 to 12 repetitions to muscle failure.

TOE RAISE

This exercise is for the tibialis anterior muscle.



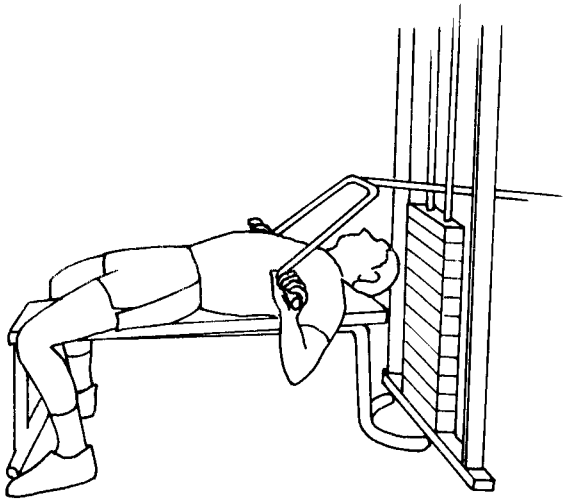


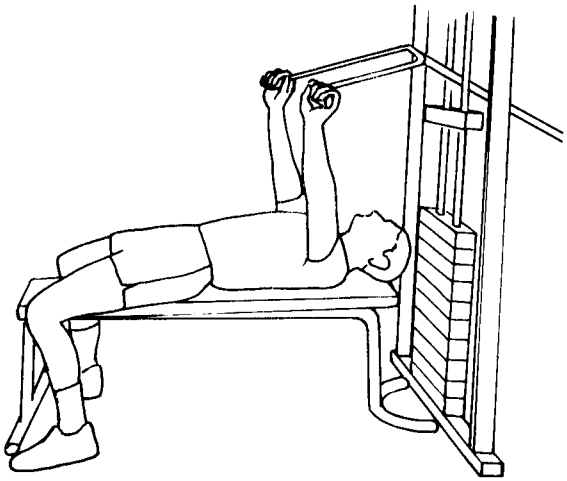
Position: Sit on the leg curl machine with your legs together, knees straight, and toes pointed. Place the top of your feet under the roller pad.

Action: Move your toes toward the knees as far as possible. Then lower the weight to the starting position in a controlled manner. Do 8 to 12 repetitions to muscle failure.

BENCH PRESS

This exercise is for the pectoralis major, triceps, and deltoid muscles.



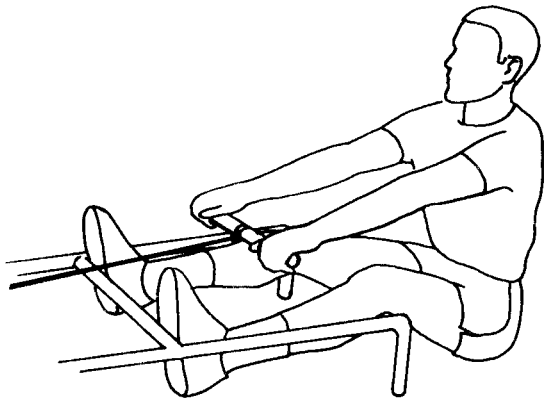


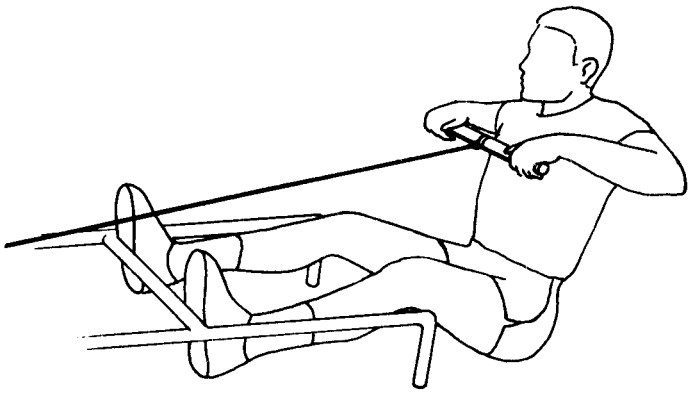
Position: Lie on your back with your hands placed about shoulder width apart on the bar. Generally, the bar or handles should be located at the lower half of the chest.

Action: Push the bar up until your arms are straight. Then, lower the bar to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

SEATED ROW

This exercise is for the latissimus dorsi and biceps muscles.



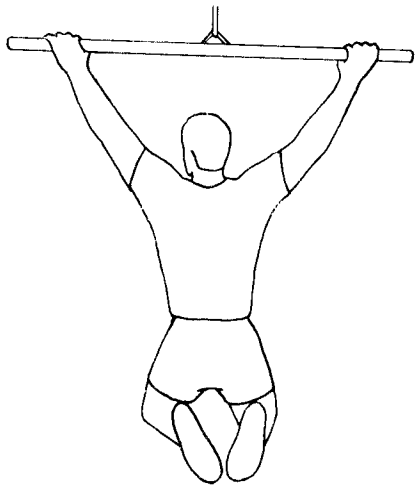


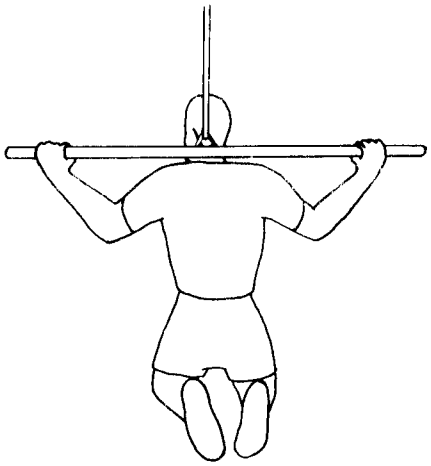
Position: Sit and assume the straight arm position shown above. Use the overhand grip with your hands spaced 6 to 8 inches apart.

Action: Pull the bar to the lower part of your chest, while keeping your elbows elevated to shoulder height, then slowly extend the arms and lower the weight to the beginning position. Be sure to keep the back straight, and move only the arms. Do 8 to 12 repetitions to muscle failure.

LAT PULL-DOWN

This exercise is for the latissimus dorsi and biceps muscles. (Pull-ups or chin-ups may be substituted for this exercise.)



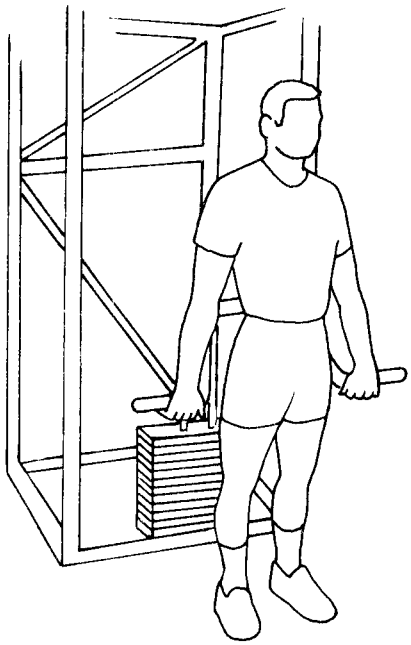


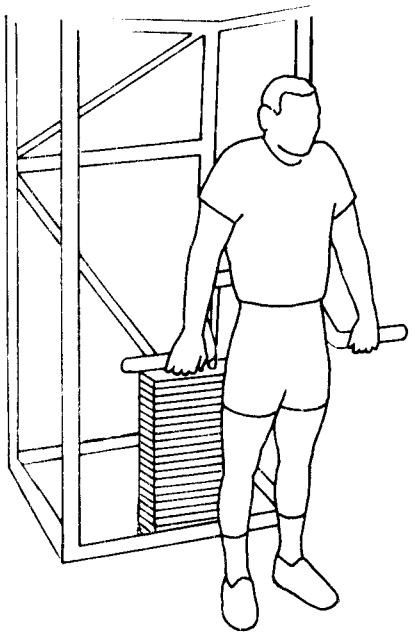
Position: Sit or kneel and grasp the bar with your palms facing away from the body.

Action: Pull the bar down until it touches the back of your neck; return the bar in a controlled manner to that starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

SHRUG

This exercise is for the trapezius muscles of the upper back.



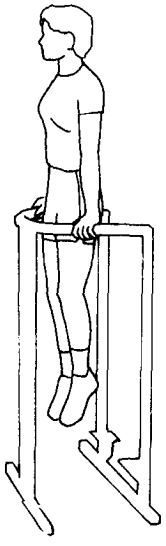


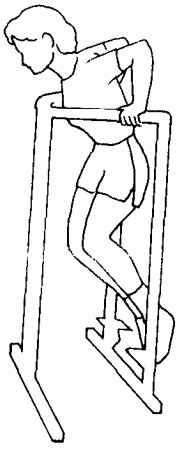
Position: Stand with the feet shoulder width apart. Hold a weight in your hands with the arms locked in a straight position.

Action: Pull the shoulders up toward your ears as far as possible and then backward. Always keep your arms completely straight. Next, lower your shoulders to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

PARALLEL BAR DIP

This exercise is for the pectoralis major and triceps muscles.

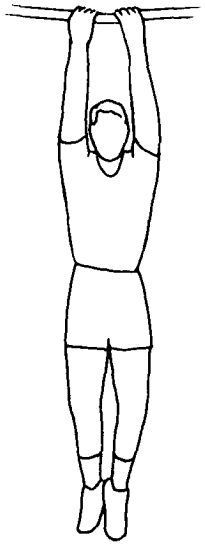


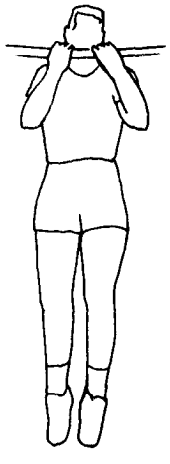


Position: Keep your feet off the floor and support the body's weight on straight arms.
Action: Bend the arms and lower your body until the upper arms are at least parallel to the floor. If necessary, bend your legs at the knees to keep the feet from touching the floor. Straighten your arms to return to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure. A weight belt may be worn if additional resistance is needed.

CHIN-UP

This exercise is for the latissimus dorsi and biceps muscles. (Lat pull-downs or pull-ups may be substituted for this exercise.)



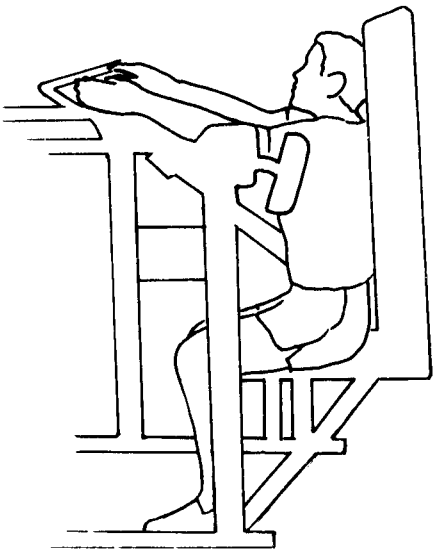


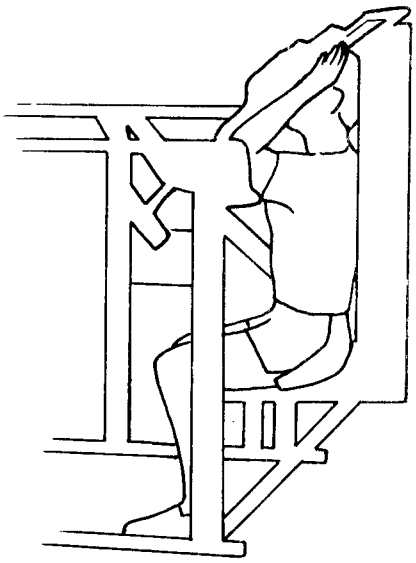
Position: From a standing position, grasp the bar with your palms facing the body.

Action: Bending both arms, pull your body up until your chin clears the bar. Return to the starting position in a controlled manner. If necessary, bend your knees to keep the feet from touching the floor. Do 8 to 12 repetitions to muscle failure. A weight belt may be worn if additional resistance is needed.

TRICEPS EXTENSION

This exercise is for the triceps muscles.



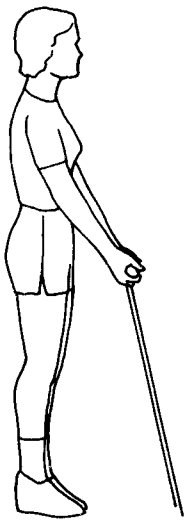


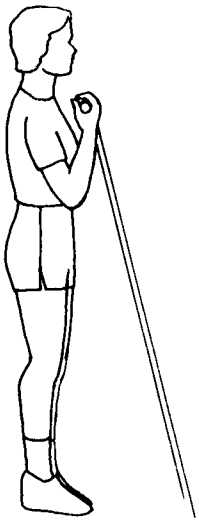
Position: Make seat adjustments to sit with the elbows in line with the axes of the cams and the elbows slightly higher than the shoulders. Place the sides of the hands on the pads with the hands open.

Action: Straighten the arms against the resistance. After doing this, bend the elbows, and return to the starting position in a controlled manner. Do 8 to 12 repetitions to muscle failure.

BICEPS CURL

This exercise is for the biceps muscles.





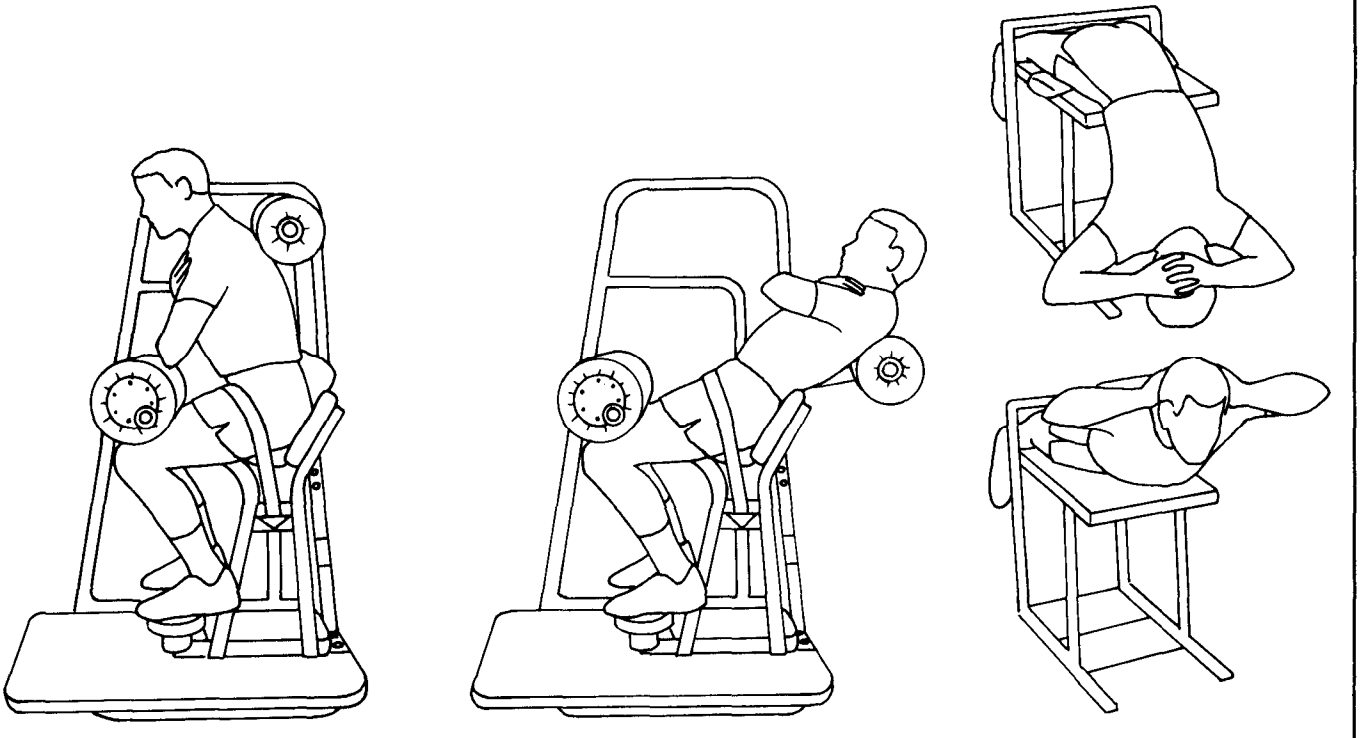
Position: Stand with the bar in front of your body, arms straight and elbows at the sides. Your hands should be spaced about shoulder width apart and the palms should face away from the body.

Action: Without moving your elbows, bend the arms, bringing the bar to shoulder level. In a controlled manner, lower the weight to the starting position. This is one repetition. Do 8 to 12 repetitions to muscle failure.

The following exercises can be performed to condition the muscles of the mid-section (erector spinae, rectus abdominus and external and internal obliques). As the soldier becomes more conditioned on these exercises, resistance can be added.

BACK EXTENSION

This exercise is for the erector spinae muscle group.

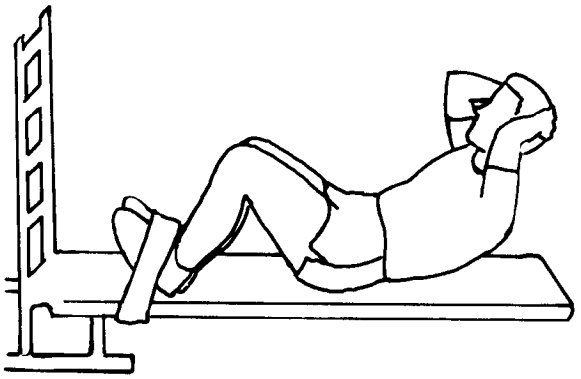


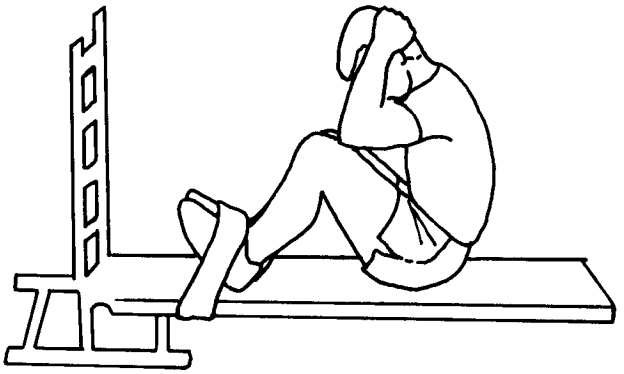
Position: Sit in the machine with your back underneath the highest roller pad. Stabilize your lower body by moving your thighs under the lower roller pads. Place the feet firmly on the platform and fasten the seat belt. Interlace your fingers across your waist, or fold your arms across your chest.
Action: Move the torso backward smoothly until the upper body forms a straight line with the lower body. Do not arch the back excessively by moving past this point. Return to the starting position in a controlled manner. Do 8 to 12 repetitions to muscle failure.

Alternative: If a low-back machine is not available, the following exercise may be performed.
Position: While face-down, anchor your feet securely and position the supporting pad under the upper part of the front thighs. Position your upper body as close to vertical as possible. The hands may be placed behind the head with fingers interlocked; or, the arms may be folded across the chest, provided they do not restrict the downward range of motion.
Action: Straighten the back and raise the upper body until it forms a straight line with the legs. Do not allow your upper body to come any higher than parallel to the floor. Lower your upper body to the starting position in a controlled manner. Do 8 to 12 repetitions to muscle failure.

SIT-UP

This exercise is for the rectus abdominis and iliopsoas (hip flexor) muscles.



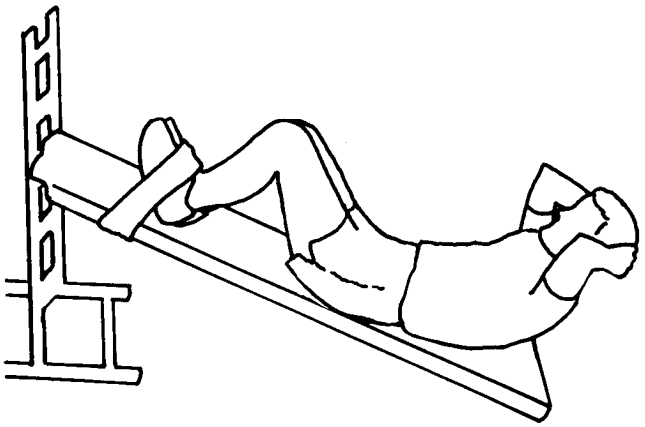


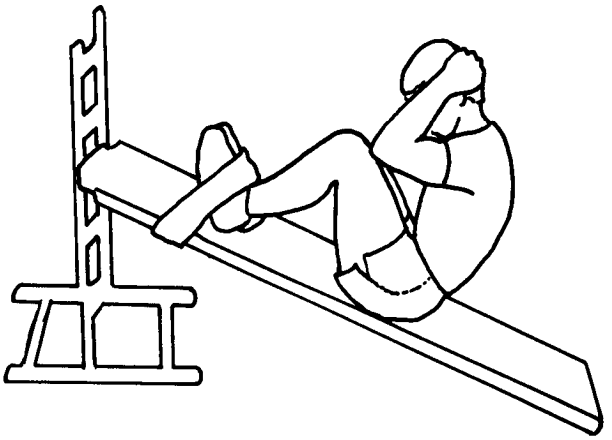
Position: Lie on your back with your knees bent at approximately a 90 degree angle and feet anchored. Place your hands behind your head.

Action: Sit up until your trunk is in a vertical position relative to the floor while keeping the knees bent. Lower yourself in a controlled manner to the starting position. The number of repetitions you should do depends on the maximum number of sit-ups you perform in two minutes. Do three sets of 50 percent of your maximum number. For example, if you can do 60 sit-ups in two minutes, do three sets of 30 or more repetitions per set.

INCLINE SIT-UP

This exercise is for the rectus abdominis and iliopsoas muscles.



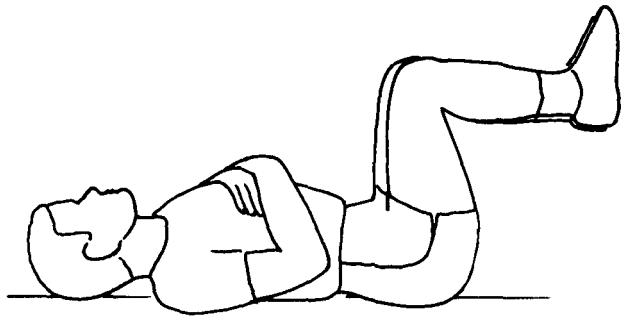


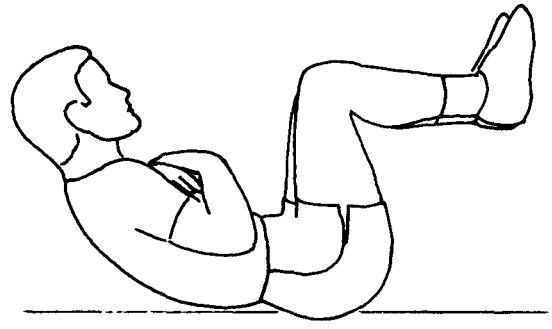
Position: Lie on an incline board with your knees bent at approximately a 90 degree angle and your feet anchored. The steeper the incline of the board, the more difficult the sit-up will be. Interlace the fingers behind your head.

Action: Curl your torso up as far as comfortably possible. Return to the starting position. This is one repetition. Do 20 to 50 repetitions to muscle failure.

ABDOMINAL CRUNCH

This exercise is for the rectus abdominis muscle.





Position: Lie on your back with both legs bent at the knees and the upper legs at right angles to the floor. Your arms should be crossed at chest level with the palms of the hands on their opposite shoulders. Your ankles may be crossed but, in all cases, the feet should not touch the floor.

Action: Roll up your upper body by first lifting your head and tucking the chin. Next, curl your spine by rolling the upper back and then the lower back off the floor. Pause briefly in the up position while tensing the abdominal muscles. Return in a slow, controlled manner to the starting position by "unrolling" the upper body. Do 20 to 50 repetitions to muscle failure.

Exercise Chart

The chart labeled Figure 3-5 will help the soldier select appropriate exercises for use in developing a good muscular endurance and strength workout. For example, if the soldier wants to develop his upper leg muscles, he has several options. He may choose from the following: 1) PREs, concentrating on the split- or single-leg squat; 2) exercises with equipment, doing free weight squats; or, 3) exercises with a machine, doing leg presses, leg curls, and leg extensions.

EXERCISE CHART FOR MUSCULAR STRENGTH AND ENDURANCE

	EXERCISES	LOWER LEGS	UPPER LEGS	WAIST	CHEST	UPPER ARMS	LOWER ARMS	SHOULDERS	BACK
Partner-Resisted Exercises	Split-Squat		x						
	Single-Leg Squat		x						
	Leg Extension		x						
	Leg Curl		x						
	Heel Raise	x							
	Toe Raise	x							
	Push-Up				x	x			
	Seated Row					x			x
	Overhead Press					x		x	
	Pull-Down					x			x
	Shrug							x	
	Triceps Extension					x			
	Biceps Curl					x			
	Abdominal Twist			x					
	Abdominal Curl			x					
	Abdominal Crunch			x					
Exercises with Equipment (Barbell/Dumbbell)	Squat		x						
	Heel Raise	x							
	Bench Press				x	x			
	Bent-Over Row					x			x
	Overhead Press					x		x	
	Shrug							x	
	Triceps Extension					x			
	Biceps Curl					x			
	Wrist Curl						x		
	Bent-Leg Dead Lift		x					x	x
Exercises with an Exercise Machine	Leg Press		x						
	Leg Extension		x						
	Leg Curl		x						
	Heel Raise	x							
	Toe Raise	x							
	Bench Press				x	x			
	Seated Row					x			x
	Lat Pull-Down					x			x
	Shrug							x	
	Parallel Bar Dip				x	x			
	Chin-up					x			x
	Triceps Extension					x			
	Biceps Curl					x			
	Back Extension								x
	Sit-Up			x					
	Incline Sit-Up			x					
	Abdominal Twist			x					
	Abdominal Crunch			x					

Figure 3-5

CHAPTER 4

Flexibility

Flexibility is a component of physical fitness. Developing and maintaining it are important parts of a fitness program. Good flexibility can help a soldier accomplish such physical tasks as lifting, loading, climbing, parachuting, running, and rappelling with greater efficiency and less risk of injury.

Flexibility refers to the range of movement of a joint.

Flexibility is the range of movement of a joint or series of joints and their associated muscles. It involves the ability to move a part of the body through the full range of motion allowed by normal, disease-free joints.

No one test can measure total-body flexibility. However, field tests can be used to assess flexibility in the hamstring and low-back areas. These areas are commonly susceptible to injury due, in part, to loss of flexibility. A simple toe-touch test can be used. Soldiers shouId stand with their legs straight and feet together and bend forward slowly at the waist. A soldier who cannot touch his toes without bouncing or bobbing needs work to improve his flexibility in the muscle groups stretched by this test. The unit's Master Fitness Trainer can help him design a stretching program to improve his flexibility.

Stretching during the warm-up and cool-down helps soldiers maintain overall flexibility. Stretching should not be painful, but it should cause some discomfort because the muscles are being stretched beyond their normal length. Because people differ somewhat anatomically, comparing one person's flexibility with another's should not be done. People with poor flexibility who try to stretch as far as others may injure themselves.

Stretching Techniques

The four categories of stretching techniques are static,passive, proprioceptive neuromuscular facilitation (PNF), and ballistic.

Using good stretching techniques can improve flexibility. There are four commonly recognized categories of stretching techniques: static, passive, proprioceptive neuromuscular facilitation (PNF), and ballistic. These are described here and shown later in this chapter.

STATIC STRETCHING

Static stretching involves the gradual lengthening of muscles and tendons as a body part moves around a joint. It is a safe and effective method for improving flexibility. The soldier assumes each stretching position slowly until he feels tension or tightness. This lengthens the muscles without causing a reflex contraction in the stretched muscles. He should hold each stretch for ten seconds or longer. This lets the lengthened muscles adjust to the stretch without causing injury.

The longer a stretch is held, the easier it is for the muscle to adapt to that length. Static stretching should not be painful. The soldier should feel slight discomfort, but no pain. When pain results from stretching, it is a signal that he is stretching a muscle or tendon too much and may be causing damage.

PASSIVE STRETCHING

Passive stretching involves the soldier's use of a partner or equipment, such as a towel, pole, or rubber tubing, to help him stretch. This produces a safe stretch through a range of motion he could not achieve without help. He should talk with his partner to ensure that each muscle is stretched safely through the entire range of motion.

PNF STRETCHING

PNF stretching uses the neuromuscular patterns of each muscle group to help improve flexibility. The soldier performs a series of intense contractions and relaxations using a partner or equipment to help him stretch. The PNF technique allows for greater muscle relaxation following each contraction and increases the soldier's ability to stretch through a greater range of motion.

BALLISTIC STRETCHING

Ballistic, or dynamic, stretching involves movements such as bouncing or bobbing to attain a greater range of motion and stretch. Although this method may improve flexibility, it often forces a muscle to stretch too far and may result in an injury. Individuals and units should not use ballistic stretching.

FITT Factors

Commanders should include stretching exercises in all physical fitness programs.

The following FITT factors apply when developing a flexibility program.

Frequency: Do flexibility exercises daily. Do them during the warm-up to help prepare the muscles for vigorous activity and to help reduce injury. Do them during the cool-down to help maintain flexibility.

Intensity: Stretch a muscle beyond its normal length to the point of tension or slight discomfort, not pain.

Time: Hold stretches for 10 to 15 seconds for warming up and cooling down and for 30 seconds or longer to improve flexibility.

Type: Use static stretches, assumed slowly and gradually, as well as passive stretching and/or PNF stretching.

Warm-Up and Cool-Down

The warm-up and cool-down are very important parts of a physical training session, and stretching exercises should be a major part of both.

THE WARM-UP

Before beginning any vigorous physical activity, one should prepare the body for exercise. The warm-up increases the flow of blood to the muscles and tendons, thus helping reduce the risk of injury. It also increases the joint's range of motion and positively affects the speed of muscular contraction.

A recommended sequence of warm-up activities follows. Soldiers should do these for five to seven minutes before vigorous exercise.

- Slow joggin-in-place or walking for one to two minutes. This causes a gradual increase in the heart rate, blood pressure, circulation, and increases the temperature of the active muscles.
- Slow joint rotation exercises (for example, arm circles, knee/ankle rotations) to gradually increase the joint's range of motion. Work each major joint for 5 to 10 seconds.
- Slow, static stretching of the muscles to be used during the upcoming activity. This will "loosen up" muscles and tendons so they can achieve greater ranges of motion with less risk of injury. Hold each stretch position for 10 to 15 seconds, and do not bounce or bob.
- Calisthenic exerciese, as described in Chapter 7, to increase the intensity level before the activity or conditioning period.
- Slowly mimic the activities to be performed. For example, lift a lighter weight to warm-up before lifting a heavier one. This helps prepare the neuromuscular pathways.

The warm-up warms the muscIes, increasing the flow of blood and reducing the risk of injury.

THE COOL-DOWN

The following information explains the importance of cooling down and how to do it correctly.

- Do not stop suddenly after vigorous exercise, as this can be very dangerous. Gradually bring the body back to its resting state by slowly decreasing the intensity of the activity. After running, for example, one should walk for one to two minutes. Stopping exercise suddenly can cause blood to pool in the muscles, thereby reducing blood flow to the heart and brain. This may cause fainting or abnormal rhythms in the heart which could lead to serious complications.
- Repeat the stretches done in the warm-up to help ease muscle tension and any immediate feeling of muscle soreness. Be careful not to overstretch. The muscles are warm from activity and can possibly be overstretched to the point of injury.
- Hold stretches 30 seconds or more during the cool-down to improve flexiblity. Use partner-assisted or PNF techniques, if possible.

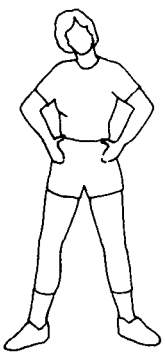
The soldier should not limit flexibility training to just the warm-up and cool-down periods. He should sometimes use an entire PT session on a "recovery" or "easy"training day to work on flexibility improvement. He may also work on it at home. Stretching is one form of exercise that takes very little time relative to the benefits gained.

Rotation Exercises

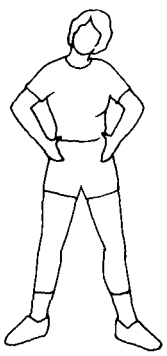
Rotation exercises are used to gently stretch the tendons, ligments, and muscles associated with a joint and to stimulate lubrication of the joint with synovial fluid. This may provide better movement and less friction in the joint.

The following exercises should be performed slowly.

NECK

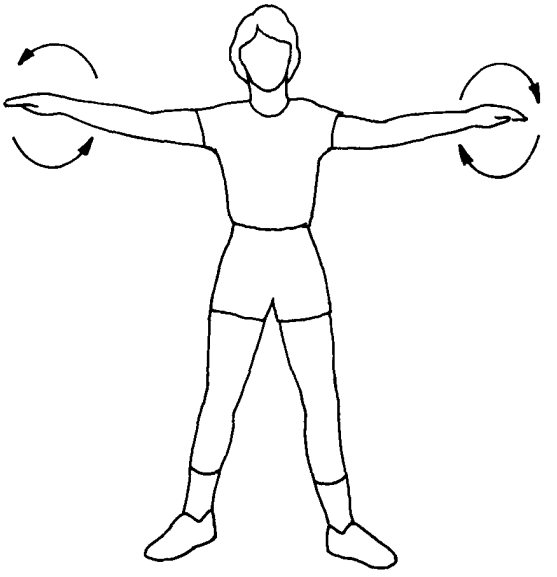


Position: Stand with the back straight and feet shoulder width apart. Place the hands on the hips.



Action: Roll the head slowly to the left, making a complete circle with the path of the head. Do this three times in each direction.

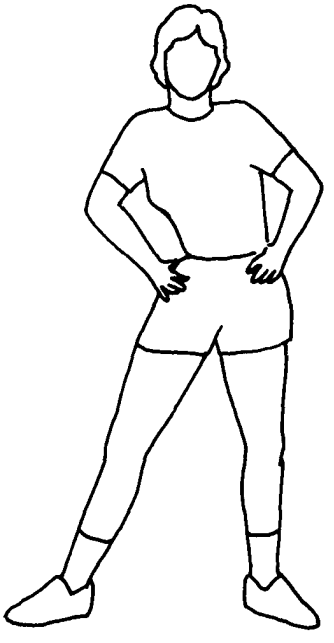
ARMS AND SHOULDERS



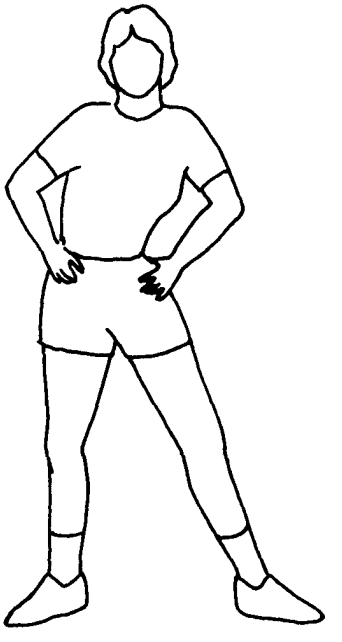
Position: Stand with the back straight and feet shoulder width apart. Extend the arms outward to shoulder height.

Action: Rotate the shoulders forward, and make a large circular motion with the arms. Repeat the action in the opposite direction. Do this three times in each direction.

HIPS

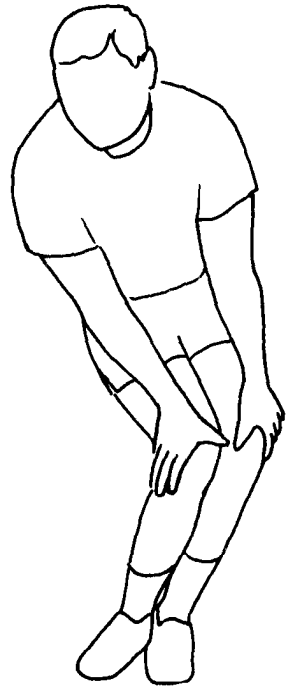


Position: Stand in the same manner as for the neck rotation.

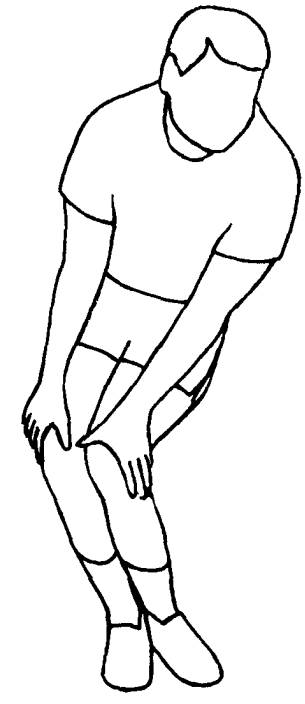


Action: Rotate the hips clockwise while keeping the back straight. Repeat the action in a counterclockwise direction. Do this three times in each direction.

KNEES AND ANKLES



Position: Stand with the feet together, and bend at the waist with the knees slightly bent.



Actio -- Place the hands above the knees, and rotate the legs in a clockwise direction. Repeat the action in a counterclockwise direction. Do this three times in each direction.

Common Stretching Exercises

The following exercises improve flexibility when performed slowly, regularly, and with gradual progression. Static, passive and PNF stretches are shown.

CAUTION Some of these exercises may be difficult or too strenuous for unfit or medically limited soldiers. Common sense should be used ;n selecting stretching exercises.

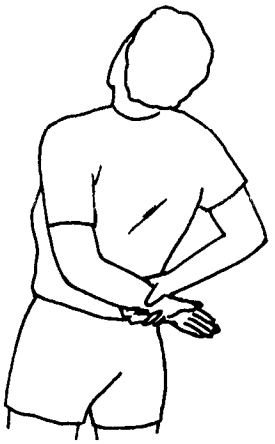
STATIC STRETCHES

Assume all stretching positions slowly until you feel tension or slight discomfort. Hold each position for at least 10 to 15 seconds during the warm-up and cool-down. Developmental stretching to improve flexibility requires holding each stretch for 30 seconds or longer.

Choose the appropriate stretch for the muscle groups which you will be working.

NECK AND SHOULDER STRETCH

This stretches the sternocleidomastoid, pectoralis major, and deltoid muscles.

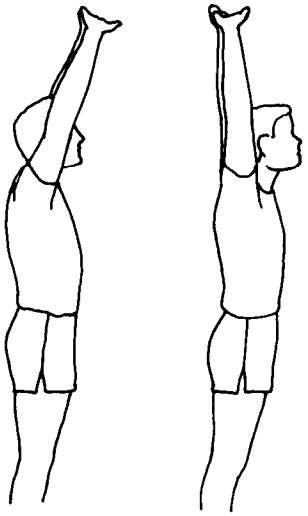


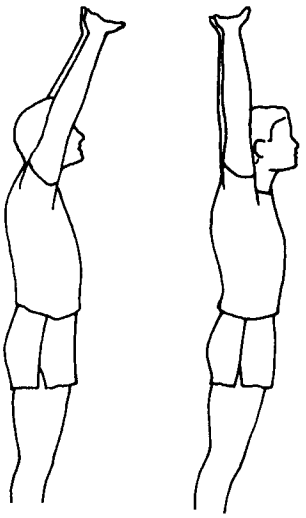
Position: Stand with the feet shoulder width apart and the arms behind the body.

Action: Grasp the left wrist with the right hand. Pull the left arm down and to the right. Tilt the head to the right. Hold this position for 10 to 15 seconds. Repeat the action with the right wrist, pulling the right arm down and to the left. Tilt the head to the left.

ABDOMINAL STRETCH

This stretches the abdominals, obliques, latissimus dorsi, and biceps.



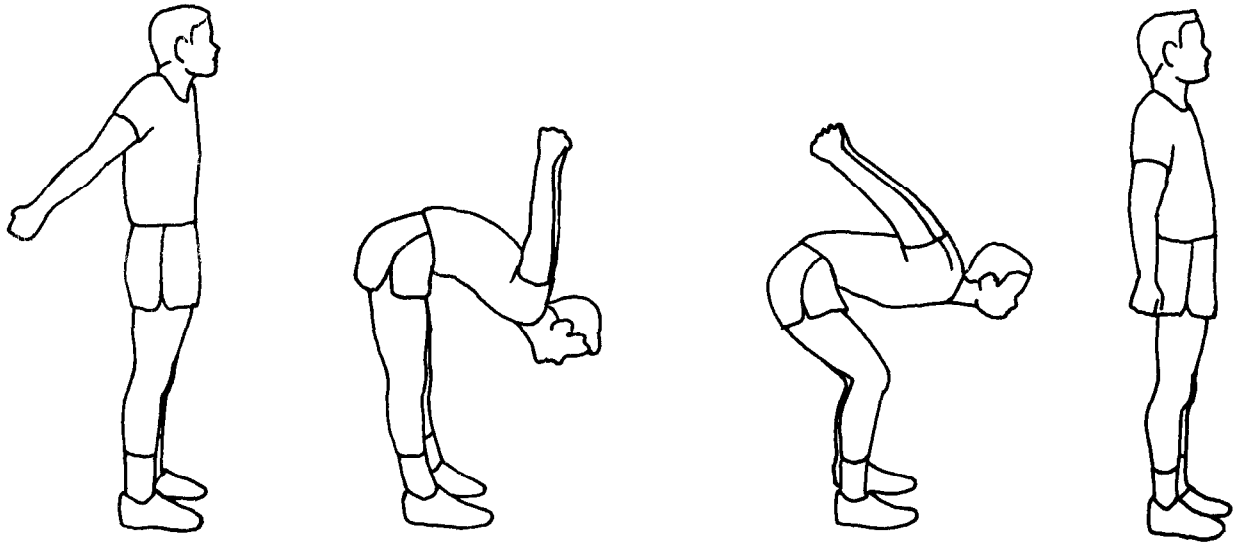


Position: Stand and extend the arms upward and over the head. Interlace the fingers with the palms turned upward.

Action: Stretch the arms up and slightly back. Hold this position for 10 to 15 seconds.
Variation: This stretches the rectus abdominis muscles. Stretch to one side, then the other. Return to the starting position.

CHEST STRETCH

This stretches the pectoralis major, deltoids, and biceps muscle groups.

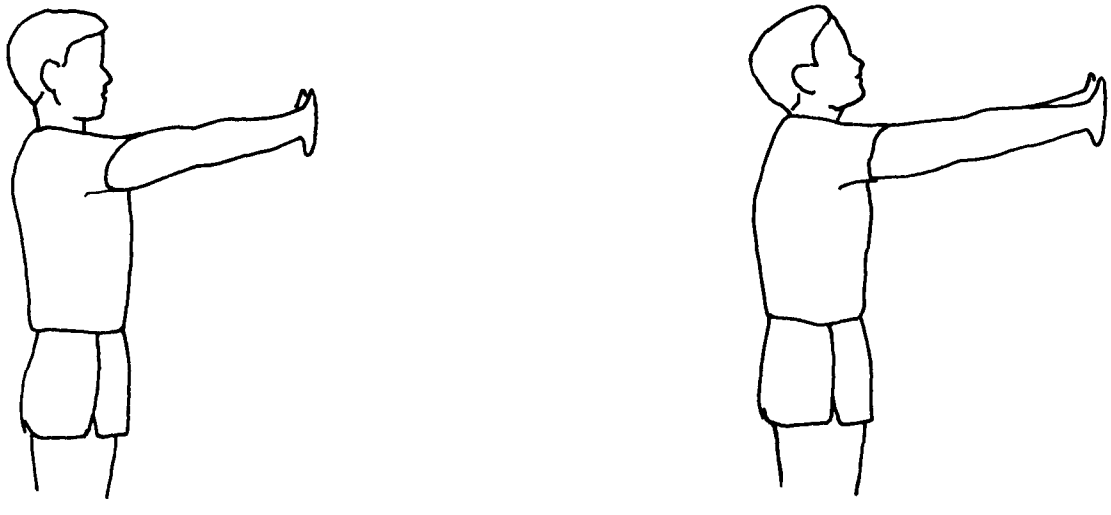


Position: Stand and interlace the fingers behind the back.

Action: Lift the arms behind the back so that they move outward and away from the body. Lean forward from the waist. Hold this position for 10 to 15 seconds. Bend the knees before moving to the upright position. Return to the starting position.

UPPER-BACK STRETCH

This stretches the lower trapezius and posterior deltoid muscles of the upper back.

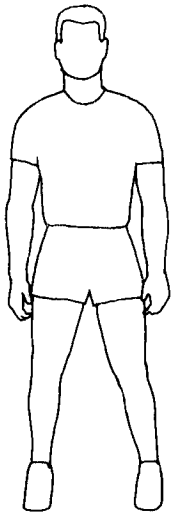


Position: Stand with the arms extended to the front at shoulder height with the fingers interlaced and palms facing outward.

Action: Extend the arms and shoulders forward. Hold this position for 10 to 15 seconds. Return to the starting position.

OVERHEAD ARM PULL

This stretches the external and internal obliques, latissimus dorsi, and triceps.

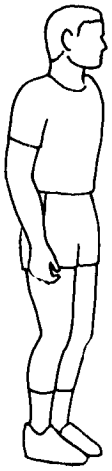


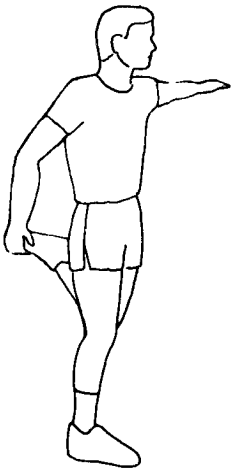
Position: Stand with the feet shoulder width apart. Raise the right arm, bending the right elbow and touching the right hand to the back of the neck.

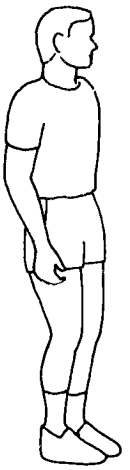
Action: Grab the right elbow with the left hand, and pull to the left. Hold this position for 10 to 15 seconds. Return to the starting position. Do the same stretch, and pull the left elbow with the right hand for 10 to 15 seconds.

THIGH STRETCH

This stretches the quadriceps and anterior tibialis.





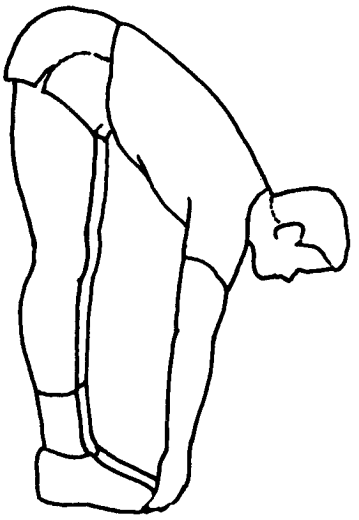


Position: Stand. (For variation, lie on the stomach.)

Action: Bend the left leg up toward the buttocks. Grasp the toes of the left foot with the right hand, and pull the heel to the left buttock. Extend the left arm to the side for balance. Hold this position for 10 to 15 seconds. Return to the starting position. Bend the right leg, grasp the toes of the right foot with the left hand, and pull the heel to the right buttock. Extend the right arm for balance. Hold this position for 10 to 15 seconds. Return to the starting position.

HAMSTRING STRETCH (STANDING)

This stretches the hamstrings, erector spinae, and gluteal muscles.

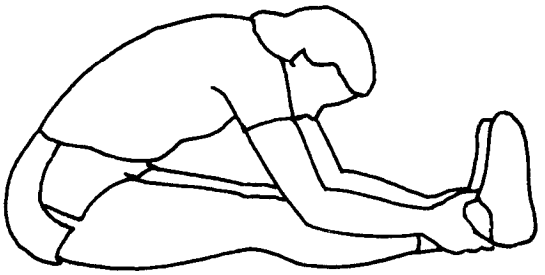


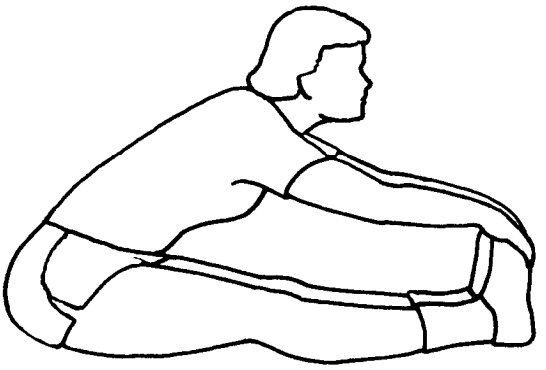
Position: Stand with the knees slightly bent.

Action: Bend forward keeping the head up, and reach toward the toes. Straighten the legs, and hold this position for 10 to 15 seconds.

HAMSTRING STRETCH (SEATED)

In addition to the muscles mentioned in the standing hamstring stretch, this stretches the calf (gastrocnemius and soleus) muscles.



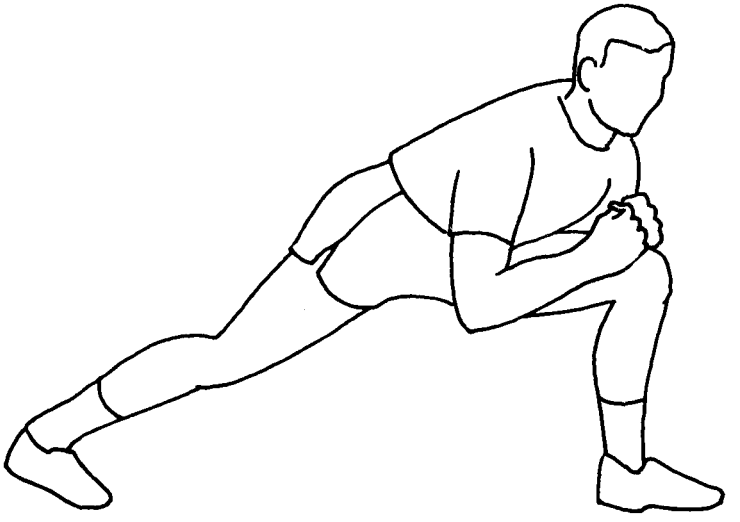


Position: Sit on the ground with both legs straight and extended forward with the feet upright about six inches apart. Put the hands on the ankles or toes.

Action: Bend from the hips, keeping the back and head in a comfortable, straight line. Hold this position for 10 to 15 seconds. (Variation for greater stretch: Stretch and pull back on the toes.)

GROIN STRETCH (STANDING)

This stretches the hip adductor muscles.



Position: Lunge slowly to the left while keeping the right leg straight, the right foot facing straight ahead and entirely on the floor.

Action: Lean over the left leg while stretching the right groin muscles. Hold this position for 10 to 15 seconds. Repeat with the opposite leg.

GROIN STRETCH (SEATED)

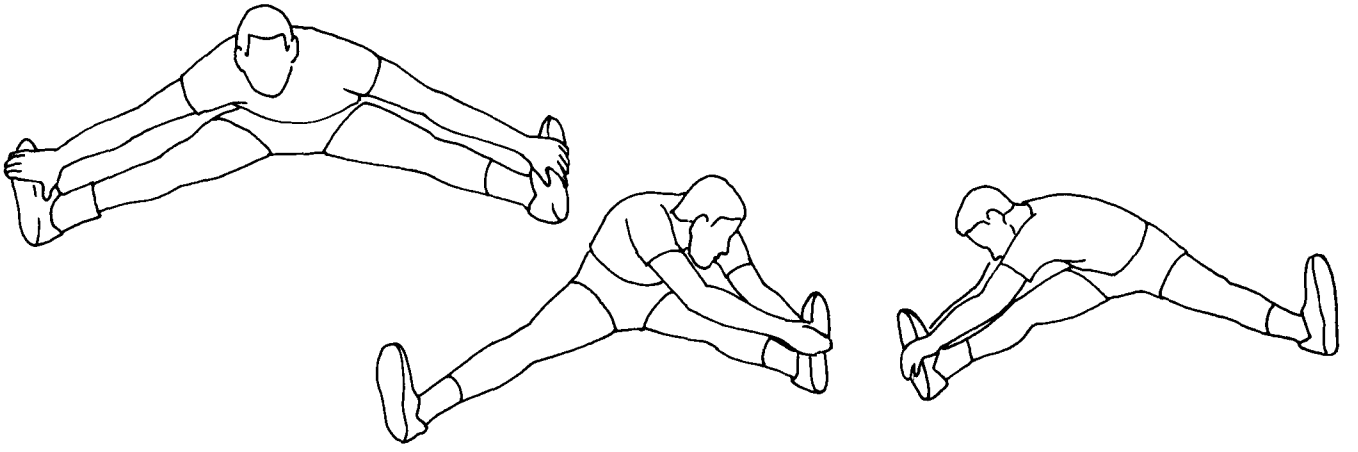
This stretches the hip adductor and erector spinae muscles.

Position: Sit on the ground with the soles together. Place the hands on or near the feet.

Action: Bend forward from the hips, keeping the head up. Hold this position for 10 to 15 seconds.

GROIN STRETCH (SEATED STRADDLE)

This stretches the hip adductor (on the inside of the upper leg), gluteals, erector spinae, and hamstring muscles.

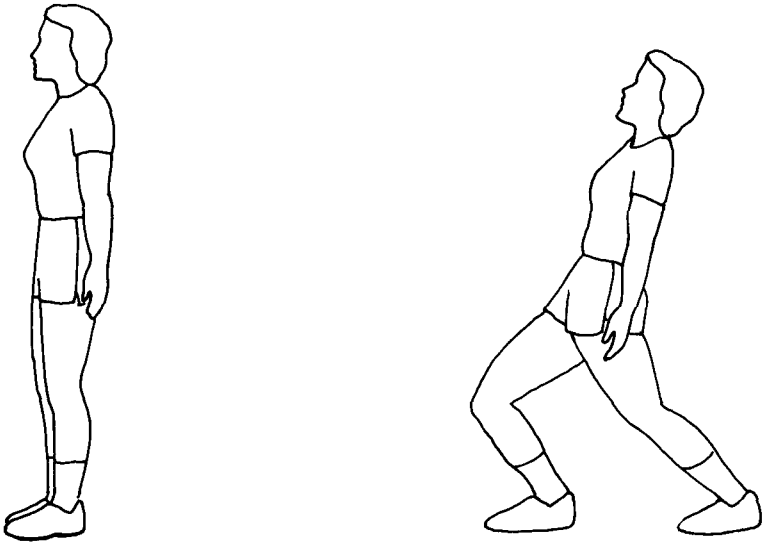


Position: Sit on the ground with the legs straight and spread as far apart as possible.

Action: Bend forward at the hips, keep the head up, and reach toward the feet. Hold this position for 10 to 15 seconds. Variation: Stretch to one side while trying to touch the toes. Next, stretch to the other side.

CALF STRETCH

This stretches the calf (gastrocnemius and soleus) muscles.

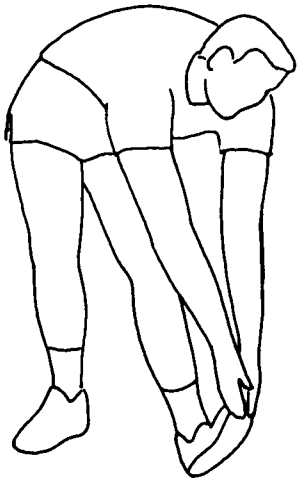


Position: Stand straight with the feet together, arms extended downward, elbows locked, palms facing backward, fingers extended and joined, and head and eyes facing front.

Action: Move the right foot to the rear about two feet, and place the ball of the foot on the ground. Slowly press the right heel to the ground. Slowly bend the left knee while pushing the hips forward and arching the back slightly. Hold this position for 10 to 15 seconds. Return to the starting position. Repeat with the left foot. Return to the starting position.

CALF STRETCH (VARIATION: TOE PULL)

This stretches the calf (gastrocnemius) and to a lesser extent the hamstrings, gluteus maximus, and erector spinae muscles.

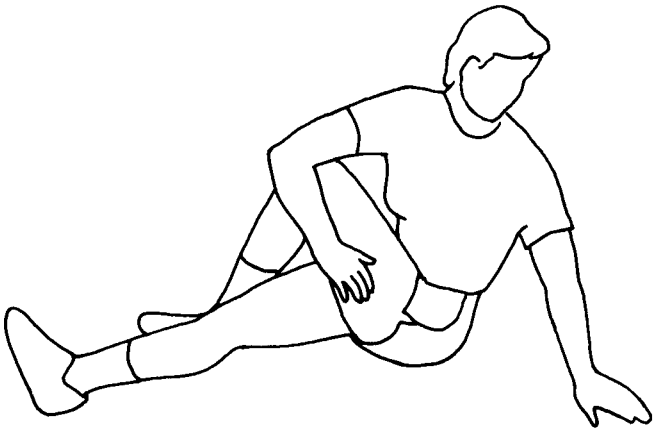


Position: Stand with the feet shoulder width apart and the left foot slightly forward.

Action: Bend forward at the waist. Slightly bend the right knee, and fully extend the left leg. Reach down and pull the toes of the left foot toward the left shin. Hold this position for 10 to 15 seconds. Return to the starting position. In a similar manner, pull the toes of the right foot toward the right shin, and hold for 10 to 15 seconds.

HIP AND BACK STRETCH (SEATED)

This stretches the hip abductors, erector spinae, latissimus dorsi, and oblique muscle groups.

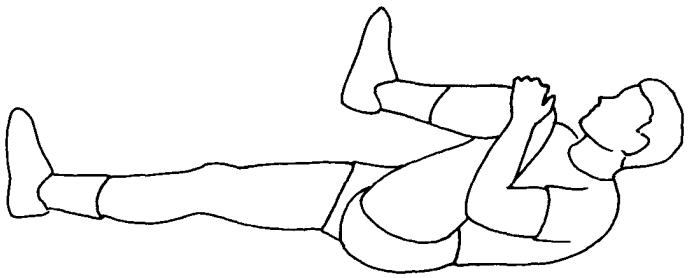


Position: Sit on the ground with the right leg forward and straight. Cross the left leg over the right while sitting erect. Keep the heels of both feet in contact with the ground.

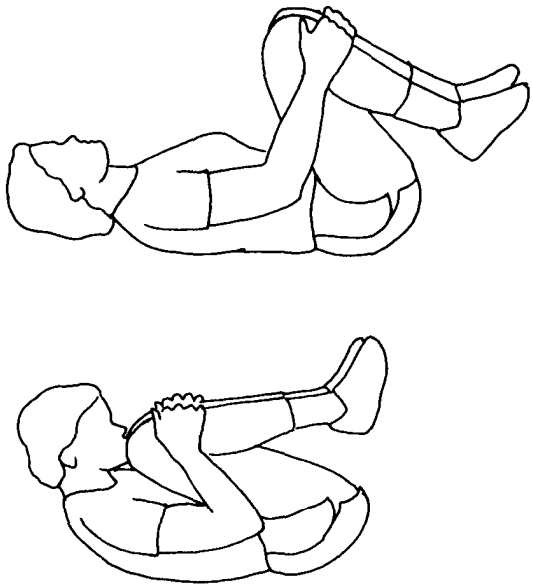
Action: Slowly rotate the upper body to the left and look over the left shoulder. Reach across the left leg with the right arm, and push the left leg to your right. Use the left hand for support by placing it on the ground. Hold this position for 10 to 15 seconds. Repeat this stretch for the other side by crossing and turning in the opposite direction.

HIP AND BACK STRETCH (LYING DOWN)

This stretches the gluteal and erector spinae muscles.



Action 1



Action 2

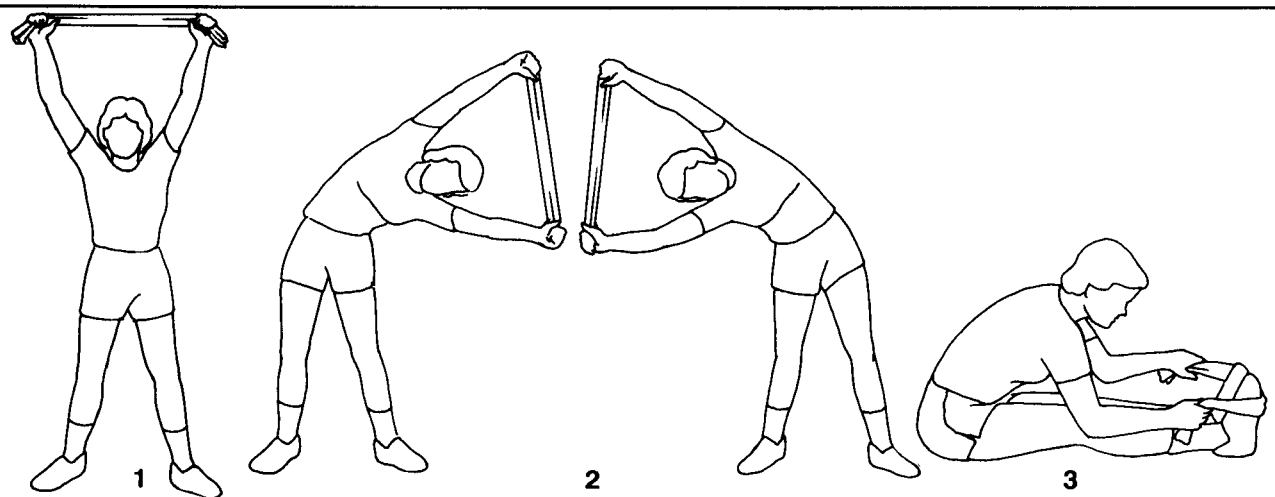
Position: Lie on the back with the arms straight beside the body. Keep the legs straight and the knees and feet together.
Action 1: Bring the left leg straight back toward the head, leaving the right leg in the starting position. Bring the head and arms up. Grab the bent left leg below the knee, and pull it gradually to the chest. Hold this position for 10 to 15 seconds. Gradually return to the starting position. Repeat these motions with the opposite leg.

Action 2: Pull both knees to the chest. Pull the head up to the knees. Hold for 10 to 15 seconds. Return to the starting position.

PASSIVE STRETCHES

Passive stretching is done with the help of a partner or equipment. The examples in this chapter show passive stretching done with a towel or with a partner. When stretching alone, using a towel may help the exerciser achieve a greater range of motion.

TOWEL STRETCHES



1

This stretches the abdominal and pectoral muscles.
Position: Stand erect with the hands overhead and grasping a towel.
Action: Pull tightly on the towel while reaching up and slightly arching the back. Hold for 10 to 15 seconds.

2

This stretches the abdominals, obliques, and latissimus dorsi.
Position: Stand erect with the hands overhead and grasping a towel.
Action: Slowly bend sideways to the left as far as possible. Hold for 10 to 15 seconds. Repeat for the opposite side. While doing this stretch, pulling on the towel with the bottom arm will enhance the stretch.

3

This stretches the hamstring, calf, and low back muscles.
Position: Sit with the legs straight and together. Grasping each end of a short towel, place the middle of the towel over the balls of the feet.
Action: Pulling on the towel, come forward as far as possible keeping the legs straight and the toes pulled back.

PARTNER-ASSISTED CHEST STRETCH

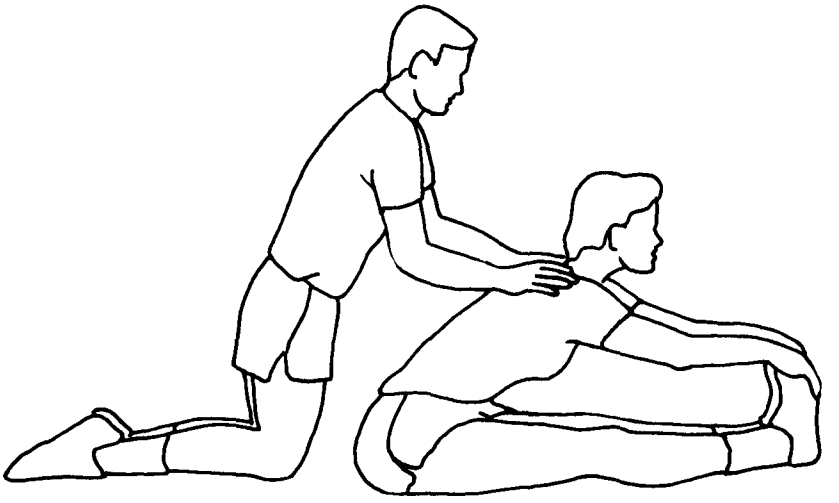
This exercise stretches the pectoralis major, deltoids, and biceps muscles.

Position: Sit erect with the arms straight, elevated to shoulder height, and the palms facing forward. The partner stands behind the exerciser grasping the arms between the wrists and the elbows.

Action: The partner gradually pulls both of the exerciser's arms toward the rear until the stretch causes the exerciser mild discomfort. Hold this position for 10 to 15 seconds.

PARTNER-ASSISTED HAMSTRING STRETCH

This exercise stretches the hamstrings and erector spinae muscle groups.

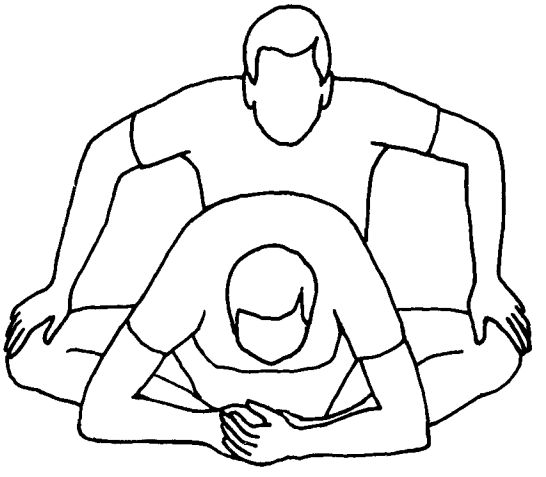


Position: Sit erect on the ground with the legs together. The partner kneels behind the exerciser. If the partner stands, he may apply too much pressure.

Action: The partner places light pressure on the exerciser's upper back until the exerciser's forward motion results in mild discomfort. This position is held for 10 to 15 seconds.

PARTNER-ASSISTED GROIN STRETCH

This exercise stretches the hip adductor and erector spinae muscle groups.



Position: Sit on the ground with knees bent and soles together. The partner kneels behind the exerciser. If the partner stands, he may apply too much pressure.

Action: The partner places light pressure on the exerciser's knees with his hands and leans gently on the exerciser's back with his chest until the stretch causes the exerciser mild discomfort. This position is held for 10 to 15 seconds.

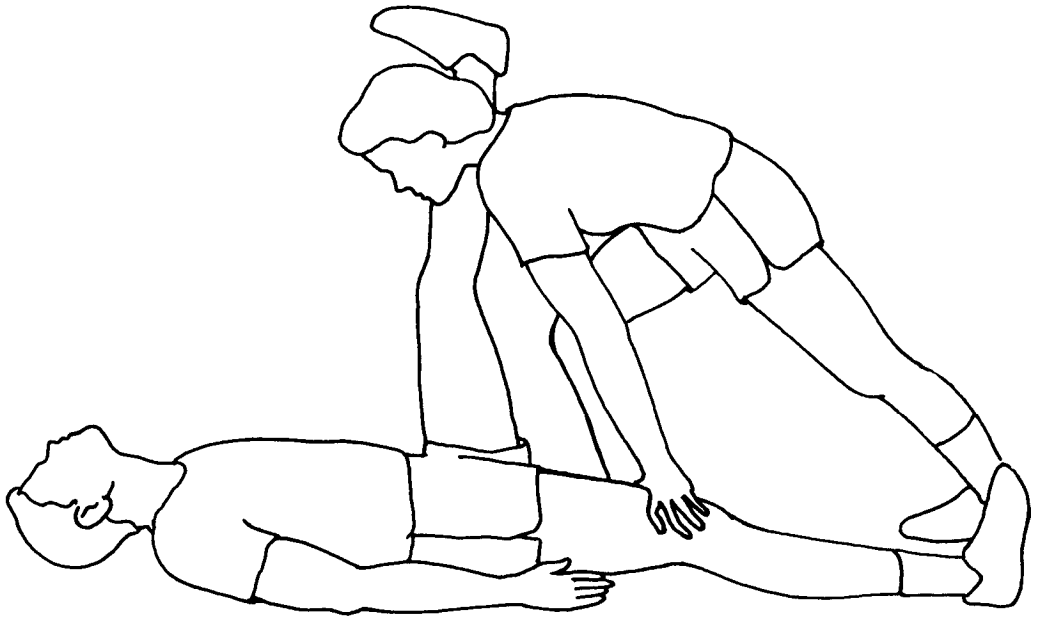
Soldiers can do PNF (Proprioceptive Neuromuscular Facilitation) stretches for most major muscle groups. PNF stretches use a series of contractions, done against a partner's resistance, and relaxations.

Obtaining a safe stretch beyond the muscle's normal length requires a partner's assistance. The following four steps provide general guidance as to how PNF stretches are done. Both the exerciser and partner should follow these instructions:

1. Assume the stretch position slowly with the partner's help.
2. Isometrically contract the muscles to be stretched. Hold the contraction for 5 to 10 seconds against the partner's unyielding resistance.
3. Relax. Next, contract the antagonistic muscles for 5 to 10 seconds while the partner helps the exerciser obtain a greater stretch.
4. Repeat this sequence three times, and try to stretch a little further each time. (Caution: The exerciser should not hold his breath. He should breathe out during each contraction.)

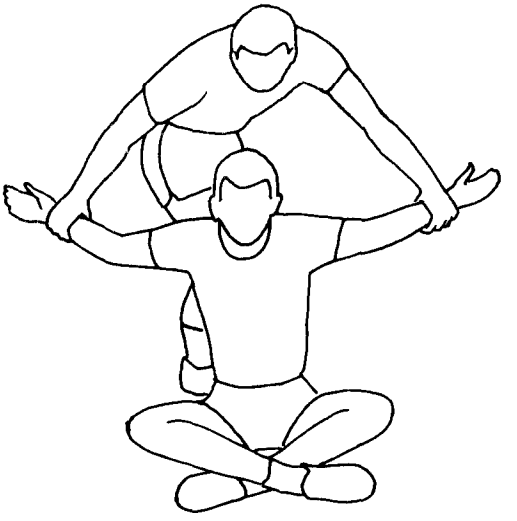
Several examples of PNF stretches are provided below in a stepwise fashion. The numbers given above for each step correspond to the general description listed below.

PNF HAMSTRING AND GLUTEAL STRETCH



1. The exerciser lies on his back and places the lower part of his left leg on the partner's right shoulder. The exerciser slowly stretches the hamstring and gluteal muscles by gradually bringing the straightened leg toward his head until he feels tension in the stretched muscles. The partner then applies light pressure on the exerciser's lower leg to help maintain or further the stretch.
2. The exerciser isometrically contracts his hamstring and gluteal muscles for 5 to 10 seconds by trying to move his leg downward and away from his head. The partner steadily resists the exerciser's efforts and does not allow any movement to occur.
3. The exerciser relaxes the hamstring and gluteal muscles. He then tries to stretch them farther by using the partner's help and by contracting the antagonistic, hip flexor muscles (the iliopsoas and quadriceps) and the tibialis anterior muscle for 5 to 10 seconds.
4. Perform these movements three times for each leg. Try to stretch a little further each time.

PNF CHEST STRETCH



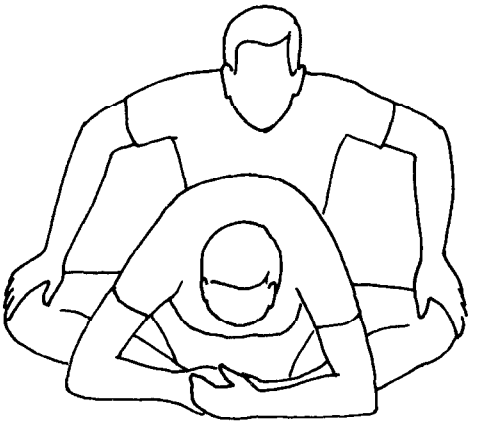
1. The exerciser and partner assume the positions used in the partner-assisted chest stretch. The exerciser slowly stretches until he feels tension in the stretched muscles. The partner then applies light pressure on the forearm to help maintain or further the stretch.

2. The exerciser contracts the pectorals for 5 to 10 seconds, trying to pull his arms and hands together against the partner's unyielding resistance.

3. The exerciser relaxes his pectorals and attempts to stretch further with the partner's help while contracting the antagonistic muscles of the upper back. He does this for 5 to 10 seconds.

4. Repeat this sequence three times, trying to stretch a little further each time.

PNF GROIN STRETCH



1. The exerciser assumes the position used for the partner-assisted groin stretch. The partner kneels behind him. The exerciser slowly lowers his legs and leans forward until tension is felt in the muscles of the groin (his abductors) and lower back (erector spinae muscles). Next, the partner applies light pressure on the exerciser's thighs and back to help maintain or further increase the stretch.

2. The exerciser then attempts to push upward for 5 to 10 seconds by contracting the groin and lower back muscles while the partner resists and allows no movement to occur.

3. The exerciser relaxes the groin and lower back muscles and tries to stretch further with the partner's help and by contracting the antagonistic muscles (hip abductor and abdominal muscles) for 5 to 10 seconds.

4. Perform these movements three times. Try to stretch a little further each time.

CHAPTER 5

Body Composition

Body composition, which refers to the body's relative amounts of fat and lean body mass (organs, bones, muscles), is one of the five components of physical fitness. Good body composition is best gained through proper diet and exercise. Examples of poor body composition are underdeveloped musculature or excessive body fat. Being overweight (that is, overly fat) is the more common problem.

Poor body composition causes problems for the Army. Soldiers with inadequate muscle development cannot perform as well as soldiers with good body composition. As a soldier gets fat, his ability to perform physically declines, and his risk of developing disease increases. Soldiers with high percentages of body fat often have lower APFT scores than those with lower percentages. Poor body composition, especially obesity, has a negative effect on appearance, self--esteem, and negatively influences attitude and morale.

The Army's weight control program is described in AR 600-9. It addresses body composition standards, programs for the overly fat, and related administrative actions.

The amount of fat on the body, when expressed as a percentage of total body weight, is referred to as the percent body fat. The Army's maximum allowable percentages of body fat, by age and sex, are listed in Figure 5-1.

Evaluation Methods

The Army determines body fat percentage using the girth method. (This is described in AR 600-9, pages 12 to 21.)

Body composition is influenced by age, diet, fitness level, and genetic factors (gender and body type). The Army's screening charts for height and weight (shown in AR 600-9) make allowances for these differences. A soldier whose weight exceeds the standard weight shown on the charts may not necessarily be overfat. For example, some well-muscled athletes have body weights that far exceed the values for weight listed on the charts for their age, gender, and height. Yet, only a small percentage of their total body mass may be fat. In such cases, the lean body mass accounts for a large share of their total body composition, while only a small percentage of the total body mass is composed of fat.

Body composition is influenced by age, fitness level, and genetic factors.

Soldiers who do not meet the weight standards for their height and/or soldiers whose appearance suggests that they have excessive fat are to be evaluated using the circumference (girth measurement) method described in AR 600-9.

BODY FAT STANDARDS

AGES:	17-20	21-27	28-39	40+
MALES 20%	20%	22%	24%	26%
FEMALES	30%	32%	34%	36%

Figure 5-1

A more accurate way to determine body composition is by hydrostatic or underwater weighing. However, this method is very time-consuming and expensive and usually done only at hospitals and universities.

Soldiers who do not meet Army body fat standards are placed on formal, supervised weight (fat) loss programs as stipulated in AR 600-9. Such programs include sensible diet and exercise regimens.

Diet and Exercise

A combination of exercise and diet is the best way to lose excessive body fat. Losing one to two pounds a week is a realistic goal which is best accomplished by reducing caloric intake and increasing energy expenditure. In other words, one should eat less and exercise more. Dieting alone can cause the body to believe it is being starved. In response, it tries to conserve its fat reserves by slowing down its metabolic rate and, as a result, it loses fat at a slower rate.

A combination of exercise and diet is the best way to lose unwanted body fat.

Soldiers must consume a minimum number of calories from all the major food groups, with the calories distributed over all the daily meals including snacks. This ensures an adequate consumption of necessary vitamins and minerals. A male soldier who is not under medical supervision when dieting requires a caloric intake of at least 1 ,500; women require at least 1,200 calories. Soldiers should avoid diets that fail to meet these criteria.

Trying to lose weight with fad diets and devices or by skipping meals does not work for long-term fat loss, since weight lost through these practices is mostly water and lean muscle tissue, not fat. Losing fat safely takes time and patience. There is no quick and easy way to improve body composition.

The soldier who diets and does not exercise loses not only fat but muscle tissue as well. This can negatively affect his physical readiness. Not only does exercise burn calories, it helps the body maintain its useful muscle mass, and it may also help keep the body's metabolic rate high during dieting.

Fat can only be burned during exercise if oxygen is used. Aerobic exercise, which uses lots of oxygen, is the best type of activity for burning fat. Aerobic exercises include jogging, walking, swimming, bicycling, cross-country skiing, rowing, stair climbing, exercise to music, and jumping rope. Anaerobic activities, such as sprinting or lifting heavy weights, burn little, if any, fat.

Aerobic exercise is best for burning fat. examples include jogging, walking, swimming, bicycling, cross-country skiing, and rowing.

Exercise alone is not the best way to lose body fat, especially in large amounts. For an average-sized person, running or walking one mile burns about 100 calories. Because there are 3,500 calories in one pound of fat, he needs to run or walk 35 miles if pure fat were being burned. In reality, fat is seldom the only source of energy used during aerobic exercise. Instead, a mixture of both fats and carbohydrates is used. As a result, most people would need to run or walk over 50 miles to burn one pound of fat.

A combination of proper diet and aerobic exercise is the proven way to lose excessive body fat. Local dietitians and nutritionists can help soldiers who want to lose weight by suggesting safe and sensible diet programs. In addition, the unit's MFT can design tailored exercise programs which will help soldiers increase their caloric expenditure and maintain their lean body mass.

CHAPTER 6

Nutrition and Fitness

In addition to exercise, proper nutrition plays a major role in attaining and maintaining total fitness. Good dietary habits (see Figure 6-1) greatly enhance the ability of soldiers to perform at their maximum potential. A good diet alone, however, will not make up for poor health and exercise habits. This chapter gives basic nutritional guidance for enhancing physical performance. Soldiers must know and follow the basic nutrition principles if they hope to maintain weight control as well as achieve maximum physical fitness, good health, and mental alertness.

Guidelines for Healthy Eating

Eating a variety of foods and maintaining an energy balance are basic guidelines for a healthy diet. Good nutrition is not complicated for those who understand these dietary guidelines.

To be properly nourished, soldiers should regularly eat a wide variety of foods fro-m the major food groups, selecting a variety of foods from within each group. (See Figure 6-2.) A well-balanced diet provides all the nutrients needed to keep one healthy.

Most healthy adults do not need vitamin or mineral supplements if they eat a proper variety of foods. There are no known advantages in consuming excessive amounts of any nutrient, and there may be risks in doing so.

For soldiers to get enough fuel from the food they eat and to obtain the variety of foods needed for nutrient balance, they should eat three meals a day. Even snacking between meals can contribute to good nutrition if the right foods are eaten.

Another dietary guideline is to consume enough calories to meet one's energy needs. Weight is maintained as long as the body is in energy balance,

DIETARY GUIDELINES

- **Eat a Variety of Foods**
- **Maintain a Healthy Body Weight**
- **Choose a Diet Low in Fat, Saturated Fat, and Cholesterol**
- **Choose a Diet with Plenty of Vegetables, Fruits, and Grain Products**
- **Use Sugars Only in Moderation**
- **Use Salt and Sodium Only in Moderation**
- **If you Drink Alcoholic Beverages, Do So in Moderation**

Figure 6-1

DAILY FOOD GUIDE		
Eat a variety of foods from each food group. Most people should have the minimum number of servings; others need more due to their body size and activity level.		
FOOD GROUP	**SUGGESTED NUMBER OF SERVINGS**	**SUGGESTED SIZE OF SERVINGS**
Vegetables (Include dark green, leafy, or deep yellow ones)	3 to 5	1 cup of raw, leafy greens or 1/2 cup of cooked vegetables
Fruits (Include citrus fruits or juices, melons, or berries)	2 to 4	1 medium fruit or 1/2 cup of diced or small fruit or 3/4 cup of juice
Breads, Cereals, Rice, and Pasta (Include whole grain varieties)	6 to 11	1 slice of bread, 1/2 bun or roll, 1/2 cup of cooked cereal, rice or pasta, 1 oz. of ready-to- eat cereal
Milk, Yogurt, and Cheese (Include skim or lowfat varieties)	2 to 3	1 cup of milk or yogurt, 1-1/2 oz. of hard cheese
Meats, Poultry, Fish, Dry Beans or Peas, Eggs, Nuts (Use lean meats and remove skin from poultry)	2 to 3	2 or 3 oz. of cooked meat, fish, or poultry (TOTAL 6 oz/day) 2 eggs, or 1 cup of cooked beans or peas

Figure 6-2

that is, when the number of calories used equals the number of calories consumed.

The most accurate way to control caloric intake is to control the size of food portions and thus the total amount of food ingested. One can use standard household measuring utensils and a small kitchen scale to measure portions of foods and beverages. Keeping a daily record of all foods eaten and physical activity done is also helpful.

Figure 6-3 shows the number of calories burned during exercise periods of different types, intensities, and durations. For example, while participating in archery, a person will burn 0.034 calories per pound per minute. Thus, a 150-pound person would burn 5.1 calories per minute (150 lbs. x 0.034 calories/minute/lb. = 5.1 calories/minute) or about 305 calories/hour, as shown in Figure 6-4. Similarly, a person running at 6 miles per hour (MPH) will burn 0.079 cal./min./lb. and a typical, 150-pound male will burn 11.85 calories/minute (150 lbs. x 0.079 cal./lb./min. = 11.85) or about 710 calories in one hour, as shown in Figure 6-3.

To estimate the number of calories you use in normal daily activity, multiply your body weight by 13 if you are sedentary, 14 if somewhat active, and 15 if moderately active. The result is a rough estimate of the number of calories you need to maintain your present body weight. You will need still more calories if you are more than moderately active. By comparing caloric intake with caloric expenditure, the state of energy balance (positive, balanced, or negative) can be determined.

CALORIC EXPENDITURE CHART

ACTIVITY	CAL/MIN/LB	CAL/HR/150 LB
Archery	.034	305
Badminton:		
Moderate	.039	350
Vigorous	.065	585
Basketball:		
Moderate	.047	420
Vigorous	.066	595
Baseball:		
Infield-outfield	.031	280
Pitching	.039	350
Bicycling:		
Slow (5 MPH)	.025	225
Moderate (10 MPH)	.05	450
Fast (13 MPH)	.072	650
Bowling	.028	255
Calisthenics:		
General	.045	405
Canoeing:		
2.5 MPH	.023	210
4.0 MPH	.047	420
Dancing:		
Slow	.029	260
Moderate	.045	405
Fast	.064	575
Fencing:		
Moderate	.033	300
Vigorous	.057	515
Fishing	.016	145
Football (tag)	.04	360
Gardening	.024	220
Gardening-Weeding	.039	260
Golf	.029	260
Gymnastics:		
Light	.022	200
Heavy	.056	505
Handball	.063	570
Hiking	.042	375
Hill Climbing	.06	540
Hoeing, Raking, Planting	.031	280
Horseback Riding:		
Walk	.019	175
Trot	.046	415
Gallop	.067	600
Jogging:		
4.5 MPH (13:330 mi.)	.063	565

ACTIVITY	CAL/MIN/LB	CAL/HR/150 LB *
Judo, Karate	.087	785
Motor Boating	.016	145
Mountain Climbing	.086	775
Rowing		
(Rec 2.5 MPH)	.036	325
Vigorous	.118	1000
Running:		
6 MPH (10 min/mi)	.079	710
10 MPH (6 min/mi)	.1	900
12 MPH (5 min/mi)	.13	1170
Sailing	.02	180
Skating:		
Moderate (Rec)	.036	325
Vigorous	.064	575
Skiing (Snow):		
Downhill	.059	530
Level (5 MPH)	.078	700
Soccer	.06	570
Squash	.07	630
Stationary Run:		
70-80 cts/min	.078	705
Strength Training (10 rep circuit)		
60% 1RM	.022	198
80% 1RM	.048	432
Swimming (crawl):		
20 yds/min	.032	290
45 yds/min	.058	520
50 yds/min	.071	640
Table Tennis:		
Moderate	.026	235
Vigorous	.06	540
Tennis:		
Moderate	.046	415
Vigorous	.04	540
Volleyball:		
Moderate	.036	325
Vigorous	.065	585
Walking:		
2.0 MPH	.022	200
3.0 MPH	.03	270
4.0 MPH	.039	350
5.0 MPH	.064	575
Water Skiing	.053	480
Wrestling	.091	820

* A 150-pound person will expend the number of calories indicated in one hour for any given activity.

Figure 6-3

Avoiding an excessive intake of fats is an important fundamental of nutrition.

Avoiding an excessive intake of fats is another fundamental dietary guideline. A high intake of fats, especially saturated fats and cholesterol, has been associated with high levels of blood cholesterol.

The blood cholesterol level in most Americans is too high. Blood cholesterol levels can be lowered by reducing both body fat and the amount of fat in the diet. Lowering elevated blood cholesterol levels reduces the risk of developing coronary artery disease (CAD) and of having a heart attack. CAD, a slow, progressive disease, results from the clogging of blood vessels in the heart. Good dietary habits help reduce the likelihood of developing CAD.

It is recommended that all persons over the age of two should reduce their fat intake to 30 percent or less of their total caloric intake. The current national average is 38 percent. In addition, we should reduce our intake of saturated fat to less than 10 percent of the total calories consumed. We should increase our intake of polyunsaturated fat, but to no more than 10 percent of our total calories. Finally, we should reduce our daily cholesterol intake to 300 milligrams or less. Figure 6-4 suggests actions commanders can take to support sound dietary guidelines. Most of these actions concern dining-facility management.

Carbohydrates are the primary fuel source for muscles during short-term, high-intensity activities.

Concerns for Optimal Physical Performance

Carbohydrates, in the form of glycogen (a complex sugar), are the primary fuel source for muscles during short-term, high-intensity activities. Repetitive, vigorous activity can use up most of the carbohydrate stores in the exercised muscles.

The body uses fat to help provide energy for extended activities such as a one-hour run. Initially, the chief fuel burned is carbohydrates, ‘but as the duration increases, the contribution from fat gradually increases.

The intensity of the exercise also influences whether fats or carbohydrates are used to provide energy. Very intense activities use more carbohydrates. Examples include weight training and the APFT sit-up and push-up events.

Eating foods rich in carbohydrates helps maintain adequate muscle-glycogen reserves while sparing amino acids (critical building-blocks needed for building proteins). At least 50 percent of the calories in the diet should come from carbohydrates. Individual caloric requirements vary, depending on body size, sex, age, and training mission. Foods rich in complex carbohydrates (for example, pasta, rice, whole wheat bread, potatoes) are the best sources of energy for active soldiers.

COMMANDER'S CHECKLIST FOR NUTRITION

PRINCIPLES OF NUTRITION	SUPPORTING ACTIONS
1. **Eat a variety of foods.** No single food item provides all essential nutrients.	**In the dining facility:** • Ensure menus provide foods from the basic 4 food groups: fruits and vegetables, meats, dairy products, and breads and cereals. • Establish serving lines in the following order, if possible: (1) salads, (2) fruits, (3) entrees, (4) hot vegetables, (5) breads, (6) beverages, (7) desserts.
2. **Maintain a desirable body weight.** Excess body fat detracts from fitness. Weight loss is achieved by increasing physical activity and decreasing total food intake, especially fats, refined sugars, and alcohol.	**In the dining facility, provide:** • Low-calorie menu, including short-order items at each meal. Use the Master Menu (SB 10-260) menu patterns. • Reduced-portion sizes. • No-calorie beverages. • Low-calorie salad dressings. • Posted list of caloric values of menu items, before or on the serving line.
3. **Avoid excess dietary fat.** Too much fat (especially cholesterol and saturated fat) can lead to heart disease and weight problems. Fats contain twice as many calories as equal amounts of carbohydrates or protein.	**In the dining facility, provide:** • Non-fried eggs as an alternative. • Margarine as a butter alternative. • Two percent milk as the primary milk in bulk dispensers. • Skim milk in 1/2-pint cartons. • Sauces, gravies, and margarine separately from the entree or vegetable. • Avoid animal fats, palm oil, and hydrogenated vegetable oil.
4. **Avoid too much sugar.** Sweets are empty calories and may lead to dental cavities and weight problems.	**In the dining facility, provide:** • Fruit as a dessert alternative. • Unsweetened juices. • No-calorie, unsweetened beverages. • Non-nutritive, sugar substitute as a granulated sugar alternative. • Unsweetened cereal.
5. **Eat foods with adequate starch and fiber.** Eating complex carbohydrates adds to the diet and reduces symptoms of constipation.	**In the dining facility, provide:** • Whole-grain breads, cereals and legumes. • Fresh fruit. • Salad bars at lunch and dinner.
6. **Avoid too much sodium.** Eating highly-salted foods may lead to excessive sodium intake. This may be a problem for those "at risk" for high blood pressure.	• Reduce salt in recipes by 25 percent.
7. **If you drink alcoholic beverages, do so in moderation.** Alcoholic beverages are high in calories and and low in nutrients. One or two standard-size drinks daily appears to cause no harm in normal, healthy, nonpregnant adults.	• Avoid alcohol; it is detrimental to good health and weight management.
8. **Know the nutrition principles.** Educating soldiers maximizes efforts to improve nutritional fitness.	• Display educational materials on nutrition; (posters, table tents, bulletin boards, and handouts). • Provide food-service personnel with training programs on nutrition standards. • Provide unit-training programs on nutrition for soldiers. (Use installation dietitian).

Reference: AR 30-1, Appendix J.

Figure 6-4

Because foods eaten one to three days before an activity provide part of the fuel for that activity, it is important to eat foods every day that are rich in complex carbohydrates. It is also important to avoid simple sugars, such as candy, up to 60 minutes before exercising, because they can lead to low blood sugar levels during exercise.

Soldiers often fail to drink enough water, especially when training in the heat. Water is an essential nutrient that is critical to optimal physical performance. It plays an important role in maintaining normal body temperature. The evaporation of sweat helps cool the body during exercise. As a result, water lost through sweating must be replaced or poor performance, and possibly injury, can result. Sweat consists primarily of water with small quantities of minerals like sodium. Cool, plain water is the best drink to use to replace the fluid lost as sweat. Soldiers should drink water before, during, and after exercise to prevent dehydration and help enhance performance. Figure 6-5 shows recommendations for fluid intake when exercising.

Sports drinks, which are usually simple carbohydrates (sugars) and electrolytes dissolved in water, are helpful under certain circumstances. There is evidence that solutions containing up to 10 percent carbohydrate will enter the blood fast enough to deliver additional glucose to the active muscles. This can improve endurance.

During prolonged periods of exercise (1.5+ hours) at intensities over **50** percent of heart rate reserve, one can benefit from periodically drinking sports drinks with a concentration of 5 to 10 percent carbohydrate. Soldiers on extended road marches can also benefit from drinking these types of glucose-containing beverages. During intense training, these beverages can provide a source of carbohydrate for working muscles. On the other hand, drinks that exceed levels of 10 percent carbohydrate, as do regular soda pops and most fruit juices, can lead to abdominal cramps, nausea, and diarrhea. Therefore, these drinks should be used with caution during intense endurance training and other similar activities.

Many people believe that body builders need large quantities of

RECOMMENDATIONS FOR FLUID INTAKE

- Drink cool (40 degrees F) water. This is the best drink to sustain performance. Fluid also comes from juice, milk, soup, and other beverages.
- Do not drink coffee, tea, and soft drinks even though they provide fluids. The caffeine in them acts as a diuretic which can increase urine production and fluid loss. Avoid alcohol for the same reason.
- Drink large quantities (20 oz.) of water one or two hours before exercise to promote hyperhydration. This allows time for adequate hydration and urination.
- Drink three to six ounces of fluid every 15 to 30 minutes during exercise.
- Replace fluid sweat losses by monitoring pre-and post-exercise body weights. Drink two cups of fluid for every pound of weight lost.

Figure 6-5

protein to promote better muscle growth. The primary functions of protein are to build and repair body tissue and to form enzymes. Protein is believed to contribute little, if any, to the total energy requirement of heavy-resistance exercises. The recommended dietary allowance of protein for adults is 0.8 grams per kilogram of body weight. Most people meet this level when about 15 percent of their daily caloric intake comes from protein. During periods of intense aerobic training, one's need for protein might be somewhat higher (for example, 1.0 to 1.5 grams per kilogram of body weight per day). Weight lifters, who have a high proportion of lean body mass, can easily meet their protein requirement with a well-balanced diet which has 15 to 20 percent of its calories provided by protein. Recent research suggests that weight trainers may need no more protein per kilogram of body weight than average, nonathletic people. Most Americans routinely consume these levels of protein, or more. The body converts protein consumed in excess of caloric needs to fat and stores it in the body.

Nutrition in the Field

Soldiers in the field must eat enough food to provide them with the energy they need. They must also drink plenty of water or other non-alcoholic beverages. The "meal, ready to eat" (MRE) supplies the needed amount of carbohydrates, protein, fat, vitamins, and minerals. It is a nutritionally adequate ration when all of its components are eaten and adequate amounts of water are consumed. Because the foods are enriched and fortified with vitamins and minerals, each component is a major source of nutrients. Soldiers must eat all the components in order to get the daily military recommended dietary allowances (MRDA) and have an adequate diet in the field. Soldiers who are in weight control programs or who are trying to lose weight can eat part of each MRE item, as recommended by dietitians.

CHAPTER 7

Circuit Training and Exercise Drills

This chapter gives commanders and trainers guidance in designing and using exercise circuits. It describes calisthenic exercises for developing strength, endurance, coordination, and flexibility. It also describes grass drills and guerilla exercises which are closely related to soldiering skills and should be regularly included in the unit's physical fitness program.

Circuit training is a term associated with specific training routines. Commanders with a good understanding of the principles of circuit training may apply them to a wide variety of training situations and environments.

Circuits

A circuit is a group of stations or areas where specific tasks or exercises are performed.

A circuit is a group of stations or areas where specific tasks or exercises are performed. The task or exercise selected for each station and the arrangement of the stations is determined by the objective of the circuit.

Circuits are designed to provide exercise to groups of soldiers at intensities which suit each person's fitness level. Circuits can promote fitness in a broad range of physical and motor fitness areas. These include CR endurance, muscular endurance, strength, flexibility, and speed. Circuits can also be designed to concentrate on sports skills, soldiers' common tasks, or any combination of these. In addition, circuits can be organized to exercise all the fitness components in a short period of time. A little imagination can make circuit training an excellent addition to a unit's total physical fitness program. At the same time, it can provide both fun and a challenge to soldiers' physical and mental abilities. Almost any area can be used, and any number of soldiers can exercise for various lengths of time.

TYPES OF CIRCUITS

The two basic types of circuits are the free circuit and the fixed circuit. Each has distinct advantages.

Free Circuit

In a free circuit, there is no set time for staying at each station, and no signal is given to move from one station to the next. Soldiers work at their own pace, doing a fixed number of repetitions at each station. Progress is measured by the time needed to complete a circuit. Because soldiers may do incomplete or fewer repetitions than called for to reduce this time, the quality and number of the repetitions done should be monitored. Aside from this, the free circuit requires little supervision.

Fixed Circuit

In a fixed circuit, a specific length of time is set for each station. The time is monitored with a stopwatch, and soldiers rotate through the stations on command.

There are three basic ways to increase the intensity or difficulty of a fixed circuit:

- Keep the time for completion the same, but increase the number of repetitions.
- Increase the time per station along with the number of repetitions.
- Increase the number of times soldiers go through the circuit.

VARIABLES IN CIRCUIT TRAINING

Several variables in circuit training must be considered. These include the time, number of stations, number of

time, number of stations, number of soldiers, number of times the circuit is completed, and sequence of stations. These are discussed below.

Time

One of the first things to consider is how long it should take to complete the circuit. When a fixed circuit is run, the time at each station should always be the same to avoid confusion and help maintain control. Consider also the time it takes to move from one station to the next. Further, allow from five to seven minutes both before and after running a circuit for warming up and cooling down, respectively.

Number of Stations

The objective of the circuit and time and equipment available strongly influence the number of stations. A circuit geared for a limited objective (for example, developing lower-body strength) needs as few as six to eight stations. On the other hand, circuits to develop both strength and CR fitness may have as many as 20 stations.

Number of Soldiers

If there are 10 stations and 40 soldiers to be trained, the soldiers should be divided into 10 groups of four each. Each station must then be equipped to handle four soldiers. For example, in this instance a rope jumping station must have at least four jump ropes. It is vital in a free circuit that no soldier stand around waiting for equipment. Having enough equipment reduces bottlenecks, slowdowns, and poor results.

Number of Times a Circuit is Completed

To achieve the desired training effect, soldiers may have to repeat the same circuit several times. For example, a circuit may have ten stations. Soldiers may run through the circuit three times, exercising for 30 seconds at each station, and taking 15 seconds to move between stations. The exercise time at each station may be reduced to 20 seconds the second and third time through. The whole workout takes less than 45 minutes including warm-up and cool-down. As soldiers become better conditioned, exercise periods may be increased to 30 seconds or longer for all three rotations. Another option is to have four rotations of the circuit.

Sequence of Stations

Stations should be arranged in a sequence that allows soldiers some recovery time after exercising at strenuous stations. Difficult exercises can be alternated with less difficult ones. After the warm-up, soldiers can start a circuit at any station and still achieve the objective by completing the full circuit.

DESIGNING A CIRCUIT

The designer of a circuit must consider many factors. The six steps below cover the most important aspects of circuit development.

Determine Objectives

The designer must consider the specific parts of the body and the components of fitness on which soldiers need to concentrate. For example, increasing muscular strength may be the primary objective, while muscular endurance work may be secondary. On the other hand, improving cardiorespiratory endurance may be the top priority. The designer must first identify the training objective in order to choose the appropriate exercises.

The designer must consider the specific parts of the body and the components of fitness on which soldiers need to concentrate.

Select the Activities

The circuit designer should list all the exercises or activities that can help meet the objectives. Then he should look at each item on the list and ask the following questions:

- Will equipment be needed? Is it available?
- Will supervision be needed? Is it available?
- Are there safety factors to consider?

Answering these questions helps the designer decide which exercises to use. He can choose from the exercises, calisthenics, conditioning drills, grass drills, and guerrilla drills described in this chapter. However, he should not limit the circuit to only these activities. Imagination and field expediency are important elements in developing circuits that hold the interest of soldiers. (See Figures 7-1 through 7-3.)

Arrange the Stations

A circuit usually has 8 to 12 stations, but it may have as many as 20. After deciding how many stations to include, the designer must decide how to arrange them. For example, in a circuit for strength training, the same muscle group should not be exercised at consecutive stations.

One approach is to alternate "pushing" exercises with "pulling" exercises which involve movement at the same joint(s). For example, in a strength training circuit, exercisers may follow the pushing motion of a bench press with the pulling motion of the seated row. This could be followed by the pushing motion of the overhead press which could be followed by the pulling motion of the lat pull-down. Another approach might be to alternate between upper and lower body exercises.

The choice of exercises for circuit training depends on the objectives of the circuit.

By not exercising the same muscle group twice in a row, each muscle has a chance to recover before it is used in another exercise. If some exercises are harder than others, soldiers can alternate hard exercises with easier ones. The choice of exercises depends on the objectives of the circuit.

Select the Training Sites

Circuits may be conducted outdoors or indoors. If the designer wants to include running or jogging a certain distance between stations, he may do this in several ways. In the gymnasium, soldiers may run five laps or for 20 to 40 seconds between stations. Outdoors, they may run laps or run between spread-out stations if space is available. However, spreading the stations too far apart may cause problems with control and supervision.

Prepare a Sketch

The designer should draw a simple sketch that shows the location of each station in the training area. The sketch should include the activity and length of time at each station, the number of stations, and all other useful information.

Lay Out the Stations

The final step is to lay out the stations which should be numbered and clearly marked by signs or cards. In some cases, instructions for the stations are written on the signs. The necessary equipment is placed at each station.

Sample Conditioning Circuits

Figures 7-1, 7-2, and 7-3 show different types of conditioning circuits. Soldiers should work at each station 45 seconds and have 15 seconds to rotate to the next station.

SAMPLE CIRCUIT FOR STRENGTH DEVELOPMENT

STATION #1
Leg Press
8-12 reps

STATION #2
Leg Raise
8-12 reps

STATION #3
Leg Extension
8-12 reps

STATION #4
Leg Curl
8-12 reps

STATION #5
Heel Raise
8-12 reps

STATION #6
Bench Press
8-12 reps

STATION #7
Seated Row
8-12 reps

STATION #8
Military Press
8-12 reps

STATION #9
Lat Pull-Down
8-12 reps

STATION #10
Shrug
8-12 reps

STATION #11
Triceps Extension
8-12 reps

STATION #12
Biceps Curl
8-12 reps

STATION #13
Incline Sit-Up
8-12 reps

Do 1-2 complete rotations.
Lift weight with slow,
controlled movements.

Try to achieve muscle
failure within 8-12 reps.

Figure 7-1

SAMPLE CIRCUIT FOR CARDIORESPIRATORY ENDURANCE

STATION #1
Stationary Run
30 seconds

STATION #2
Push-Up
30 seconds

STATION #3
Side-Straddle Hop
30 seconds

STATION #4
Sit-Up
30 seconds

STATION #5
Ski Jumps
30 seconds

STATION #6
Flutter Kicks
30 seconds

STATION #7
Bend and Reach
(done slowly)
30 seconds

STATION #8
Wide-Hand Push-Ups
30 seconds

STATION #9
Bicycle
30 seconds

STATION #10
Knee Bender
30 seconds

STATION #11
Steam Engine
30 seconds

STATION #12
Twisting Sit-up
30 seconds

STATION #13
Mule Kicks
30 seconds

STATION #14
All-Fours Run
30 seconds

Do 2-3 complete rotations.

Stations may be 25-30 meters apart to allow more running.

Figure 7-2

SAMPLE CIRCUIT FOR PUSH-UP AND SIT-UP IMPROVEMENT

STATION #1
Elevated Push-Up
30 seconds

STATION #2
Twisting Sit-Up
30 seconds

STATION #3
Parallel Dips
30 seconds

STATION #4
Sit-Up
30 seconds

STATION #5
Wide-Hand Push-Up
30 seconds

STATION #6
Flutter Kick
30 seconds

STATION #7
Close-Hand Push-Up
30 seconds

STATION #8
Bicycle
30 seconds

Do 1-2 complete rotations.

Time may decrease to 20 sec on the second rotation.

Move immediately from station to station. If too fatigued, push-ups may be done on the knees.

Figure 7-3

Calisthenics

Calisthenics can be used to help develop coordination. CR and muscular encurance, flexibility, and strength.

Calisthenics can be used to exercise most of the major muscle groups of the body. They can help develop coordination, CR and muscular endurance, flexibility, and strength. Poorly-coordinated soldiers, however, will derive the greatest benefit from many of these exercises

Although calisthenics have some value when included in a CR circuit or when exercising to music, for the average soldier, calisthenics such as the bend and reach, squat bender, lunger, knee bender, and side-straddle hop can best be used in the warm-up and cool-down periods. Exercises such as the push-up, sit-up, parallel bar dip, and chin-up/pull-up, on the other hand, can effectively be used in the conditioning period to develop muscular endurance or muscular strength.

Please note that exercises such as the bend and reach, lunger, and leg spreader, which were once deleted from FM 21-20 because of their potential risk to the exerciser, have been modified and reintroduced in this edition. All modifications should be strictly adhered to.

Few exercises are inherently unsafe. Nonetheless, some people, because of predisposing conditions or injuries, may find certain exercises less safe than others. Leaders must consider each of their soldier's physical limitations and use good judgment before letting a soldier perform these exercises. However, for the average soldier who is of sound body, following the directions written below will produce satisfactory results with a minimum risk of injury.

Finally, some of the calisthenics listed below may be done in cadence. These calisthenics are noted, and directions are provided below with respect to the actions and cadence. When doing exercises at a moderate cadence, use 80 counts per minute. With a slow cadence, use 50 counts per minute unless otherwise directed.

SAFETY FACTORS

While injury is always possible in any vigorous physical activity, few calisthenic exercises are really unsafe or dangerous. The keys to avoiding injury while gaining training benefits are using correct form and intensity. Also, soldiers with low fitness levels, such as trainees, shouId not do the advanced exercises highly fit soldiers can do. For example, with the lower back properly supported, flutter kicks are an excellent way to condition the hip flexor muscles. However, without support, the possibility of straining the lower back increases. It is not sensible to have recruits do multiple sets of flutter kicks because they probably are not conditioned for them. On the other hand, a conditioned Ranger company may use multiple sets of flutter' kicks with good results.

The key to doing calisthenic exercises safely is to use common sense. Also, ballistic (that is, quick-moving) exercises that combine rotation and bending of the spine increase the risk of back injury and should be avoided. This is especially true if someone has had a previous injury to the back. If this type of action is performed, slow stretching exercises, not conditioning drills done to cadence, should be used.

Some soldiers complain of shoulder problems resulting from rope climbing, horizontal ladder, wheelbarrow, and crab-walk exercises. These exercises are beneficial when the soldier is fit and he does them in a regular, progressive manner. However, a certain level of muscular strength is needed to do them safely. Therefore, soldiers should progressively train to build up to these exercises. Using such exercises for unconditioned soldiers increases the risk of injury and accident.

Progression and Recovery

Other important principles for avoiding injury are progression and recovery. Programs that try to do too much too soon invite problems. The day after a "hard" training day, if soldiers are working the same muscle groups and/or fitness components, they should work them at a reduced intensity to minimize stress and permit recovery.

The best technique is to train alternate muscle groups and/or fitness components on different days. For example, if the Monday-Wednesday-Friday (M-W-F) training objective is CR fitness, soldiers can do ability group running at THR with some light calisthenics and stretching. If the Tuesday-Thursday (T-Th) objective is muscular endurance and strength, soldiers can benefit from doing partner-resisted exercises followed by a slow run. To ensure balance and regularity in the program, the next week should have muscle endurance and strength development on M-W-F and training for CR endurance on T-Th. Such a program has variety, develops all the fitness components, and follows the seven principles of exercise while, at the same time, it minimizes injuries caused by overuse.

Leaders should plan PT sessions to get a positive training effect, not to conduct "gut checks." They should know how to correctly do all the exercises in their program and teach their soldiers to train using good form to help avoid injuries.

Key Points for Safety

Doing safe exercises correctly improves a soldier's fitness with a minimum risk of injury.

The following are key points for ensuring safety during stretching and calisthenic exercises:

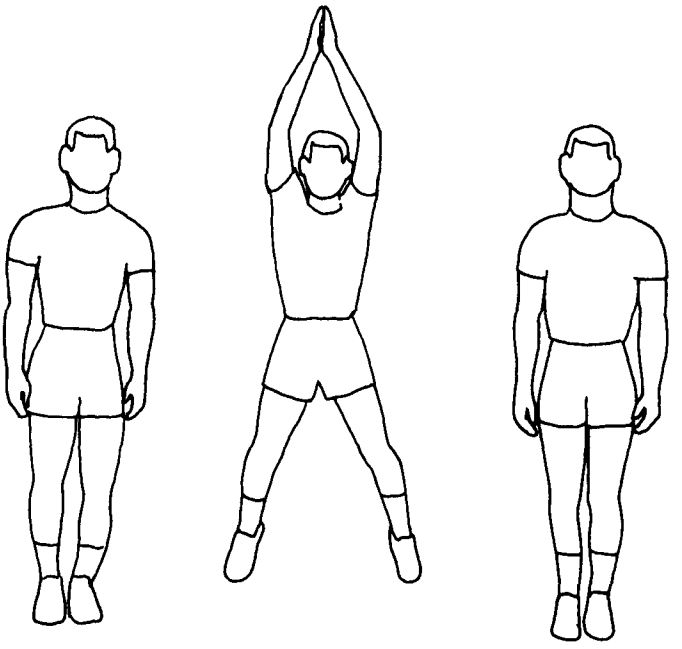
- Stretch slowly and without pain and unnatural stress to a joint. Use static (slow and sustained) stretching for warming up, cooling down, ballistic (bouncy or jerky) stretching movements.
- Do not allow the angle formed by the upper and lower legs to become less than 90 degrees when the legs are bearing weight.
- A combination of spinal rotation and bending should generally be avoided. However, if done, use only slow, controlled movements with little or no extra weight.

Leaders must be aware of the variety of methods they may use to attain their physical training goals. The unit's Master Fitness Trainer is schooled to provide safe, effective training methods and answer questions about training techniques.

CALISTHENIC EXERCISES

The following are some common calisthenic exercises.

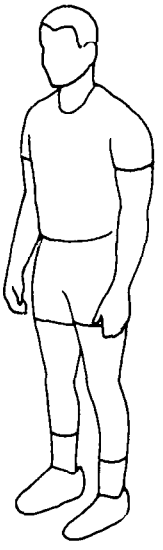
SIDE-STRADDLE HOP

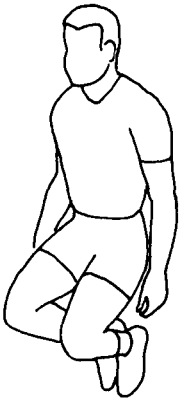


Position: Assume the position of attention.
Action: (1) Jump slightly into the air while moving the legs more than shoulder-width apart, swinging the arms overhead, and clapping the palms together. (2) Jump slightly into the air while swinging the arms sideward and downward and returning to the position of attention. (3) Repeat action 1. (4) Repeat action 2. Use a moderate cadence.

Variation: (1) Jump slightly into the air while moving the left leg forward and the right leg backward, swinging the arms overhead, and clapping the palms together. (2) Jump slightly into the air while swinging the arms sideward and downward and returning to the position of attention. (3) Repeat the jumping and arm movements of action 1 while moving the right leg forward and the left leg backward. (4) Repeat action 2. Use a moderate cadence.

MULE KICK

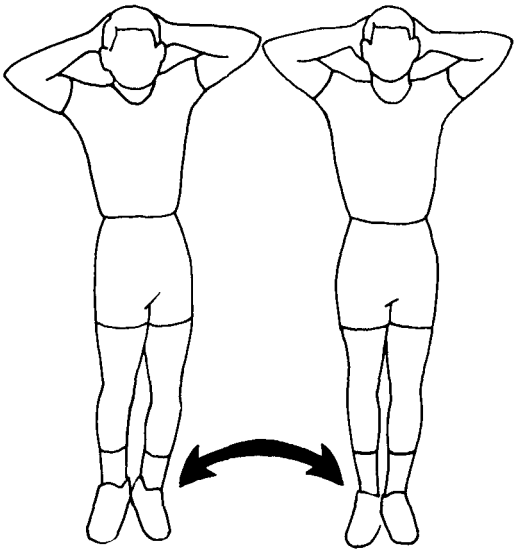




Position: Stand with the feet shoulder-width apart.

Action: Jump up repeatedly while kicking the heels to the buttocks. To do the Mule Kick to cadence, do one repetition per count. Use a moderate cadence.

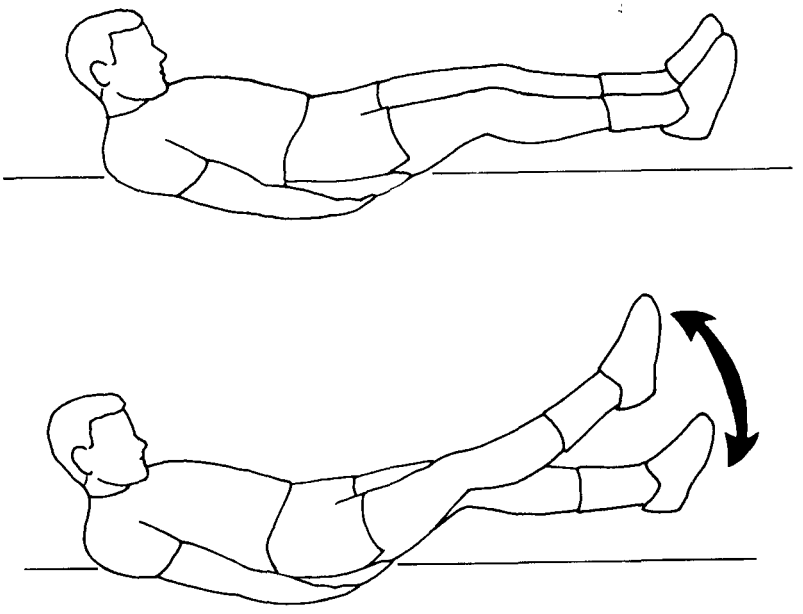
SKI JUMP



Position: Stand with the feet together, the hands placed behind the head with the fingers interlaced.

Action: (1) Keeping the feet together, jump sideways to the left. (2) Keeping the feet together, jump sideways to the right. (3) Repeat action 1. (4) Repeat action 2. Use a moderate cadence.

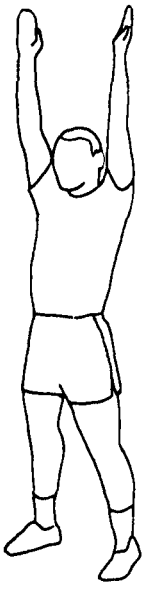
FLUTTER KICK

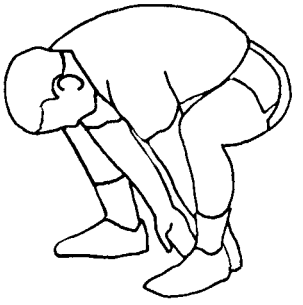


Position: Lie on your back with the hands beneath the buttocks, the head raised, and the knees slightly bent.

Action: Alternately raise and lower the legs, keeping the knees slightly bent and the feet elevated 6 to 18 inches above the floor. To do the flutter kick to cadence, do one repetition per count. Use a moderate cadence.

BEND AND REACH

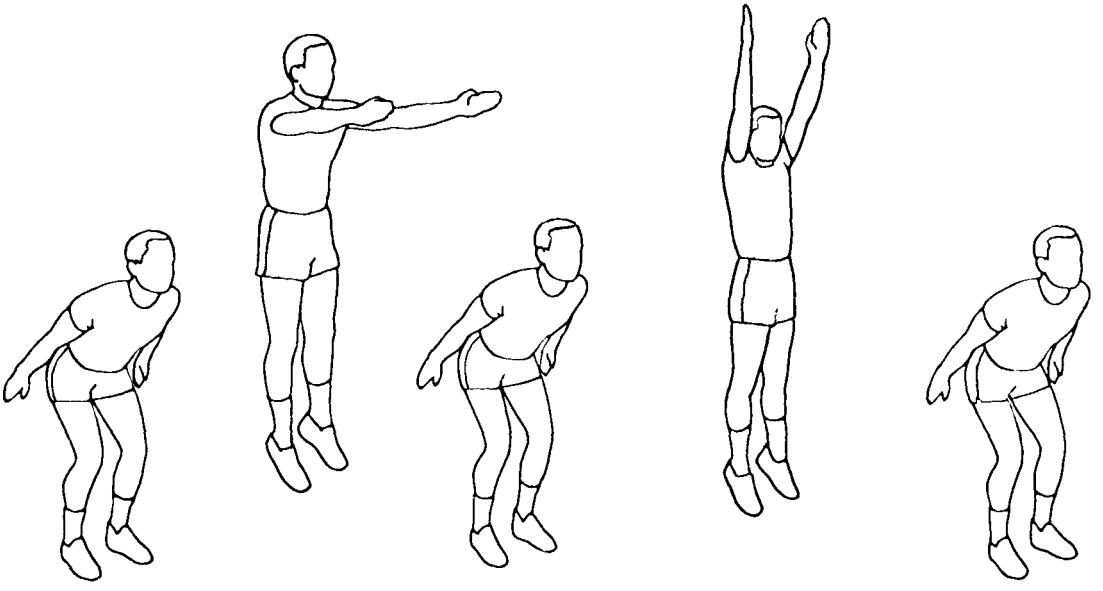




Position: Stand in a wide, side-straddle position with the palms facing each other and the arms overhead and straight.

Action: (1) Bend at the knees and waist. **Slowly** bring the arms down, and reach between the legs as far as possible. **Make sure the angle formed by the upper and lower leg is never less than 90 degrees.** (2) Recover slowly to the start position. (3) Repeat action 1. (4) Repeat action 2. Use a slow cadence.

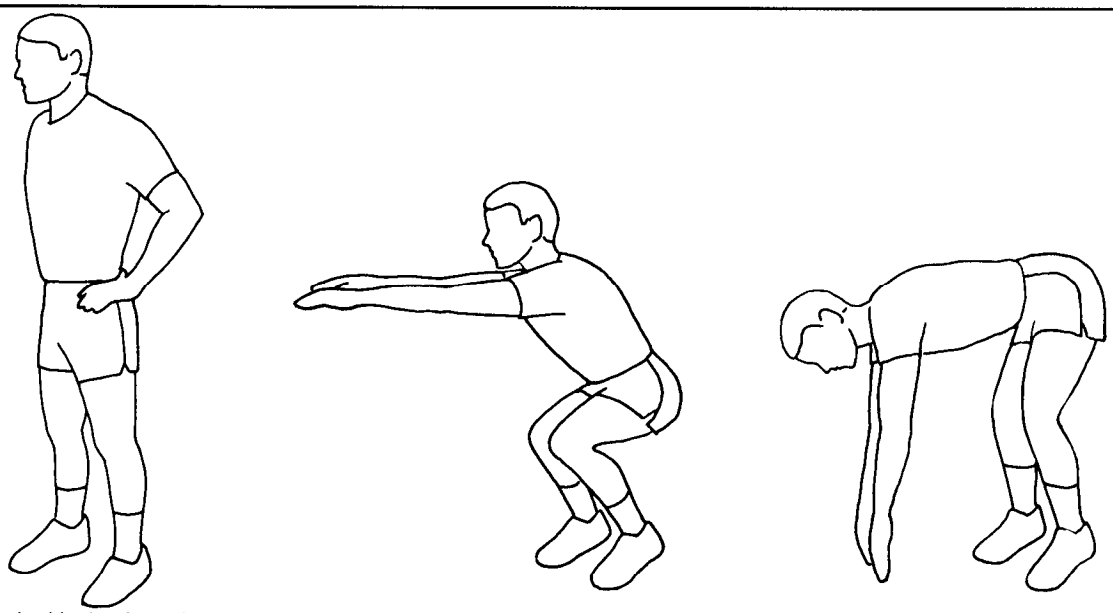
HIGH JUMPER



Position: Place the feet about shoulder-width apart with the knees flexed. Bend forward at the waist, aligning the arms with the trunk and hips. Keep the arms straight at all times during the exercise. Keep the palms facing each other with the head and eyes initially to the front.

Action: (1) Take a slight jump into the air while swinging the arms forward and up to shoulder level. (2) Take a slight jump while swinging the arms backward, returning to the start position. (3) Jump strongly upward while swinging the arms forward and up to the overhead position; at the same time, briefly look skyward. While descending, return the head and eyes to the front, and flex the knees. (4) Repeat action 2. Use a moderate cadence.

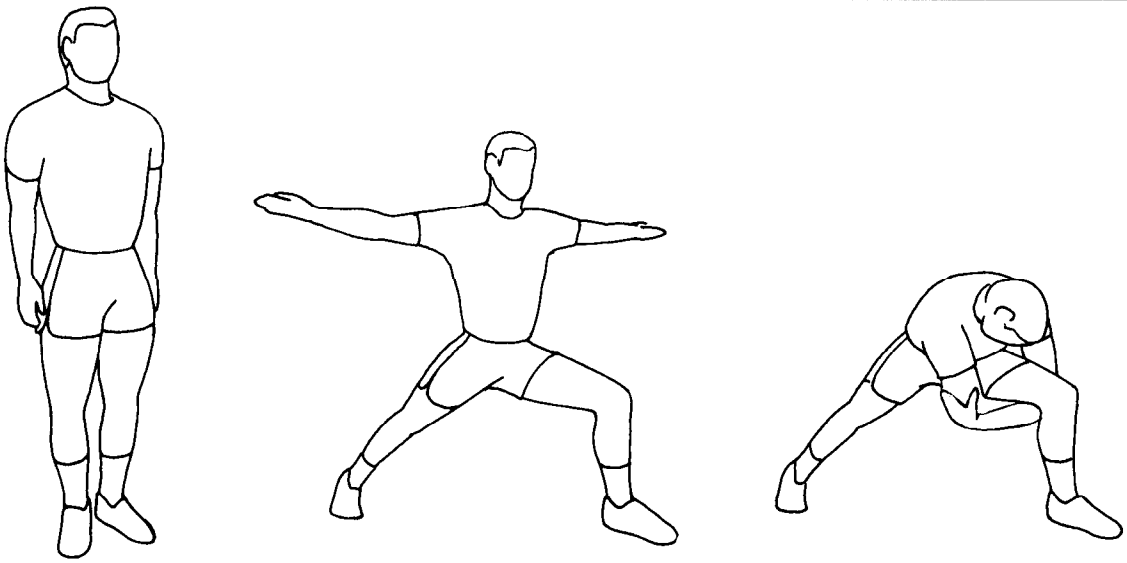
SQUAT BENDER



Position: Stand with the feet shoulder-width apart, hands on hips, thumbs in the small of the back, and the elbows back.

Action: (1) Bending the knees, lower yourself to a half-squat position while maintaining balance on the balls of the feet. With the trunk inclined slightly forward, thrust the arms forward to shoulder level with the elbows locked and the palms down. (2) Recover to the start position. (3) Keeping the knees slightly bent, bend forward at the waist, touching the ground in front of the toes. (4) Recover to the start position. Use a moderate cadence.

LUNGER

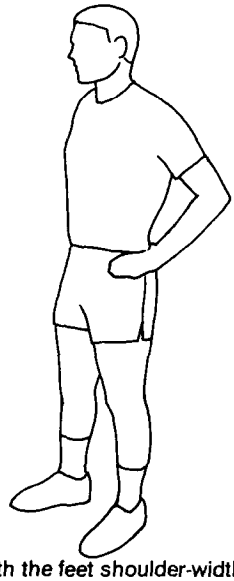


Position: Start from the position of attention.

Action: (1) Lunge diagonally forward to the left by stepping in that direction with the left foot, placing the left knee over the left foot. At the same time, place the arms sideward at shoulder level, the palms up, and the head and shoulders squarely to the front.

(2) Bend **slowly** forward and downward over the left thigh, and wrap the arms around the thigh, hands grasping the opposite arms above the elbows. (3) Recover **slowly** to the second position by releasing the arms, straightening the trunk, and extending the arms sideward, palms up. (4) Resume the position of attention by dropping the arms and returning the left foot to the side of the right. Repeat the exercise to the right side. Use a moderate cadence.

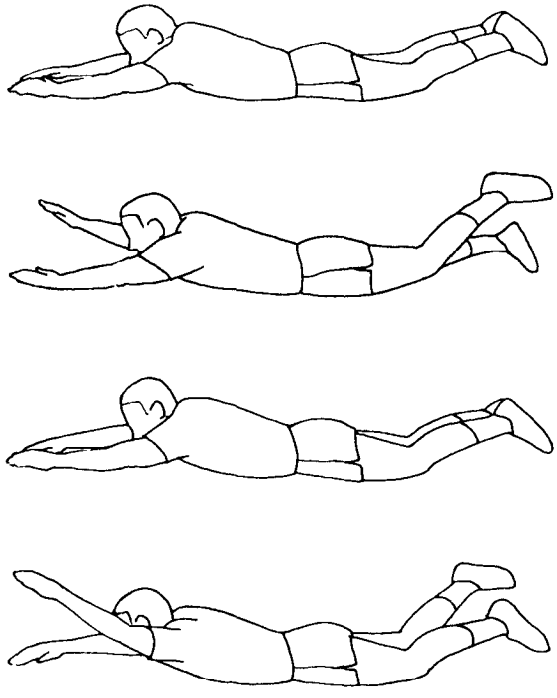
KNEE BENDER



Position: Stand with the feet shoulder-width apart, hands on the hips, the thumbs in the small of the back, and the elbows back.

Action: Bend at the knees, lean slightly forward at the waist with the head up, and slide the hands along the outside of the legs until the extended fingers reach the top of the boots or the middle of the lower leg. (2) Recover to the start position. (3) Repeat action 1. (4) Repeat action 2. Use a moderate cadence.

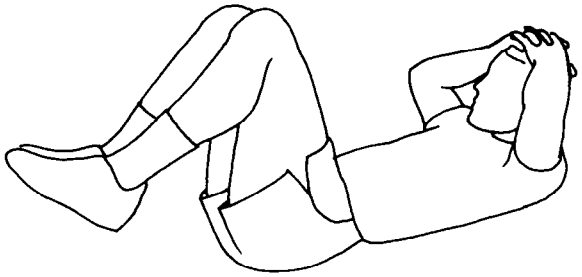
THE SWIMMER

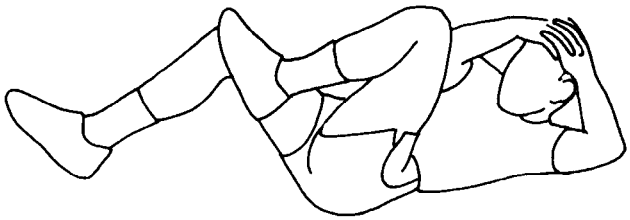


Position: Lie prone with the feet together and with the arms together and extended forward in front of the body. Keep the arms and legs straight at all times during this exercise.

Action: (1) Move the right arm and left leg up. (2) Return to the start position. (3) Move the left arm and right leg up. (4) Return to the start position. Continue in an alternating manner. Use a moderate cadence.

SUPINE BICYCLE

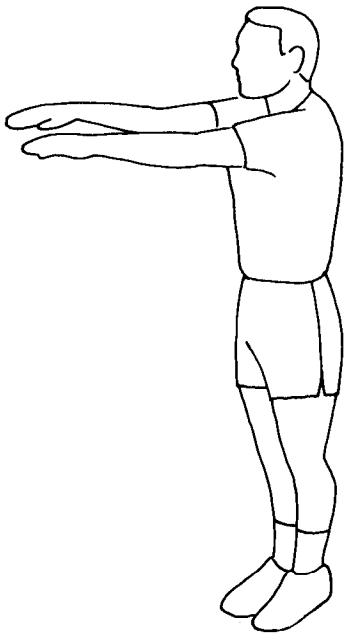


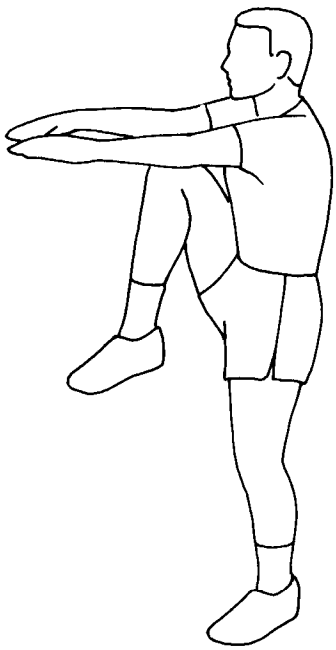


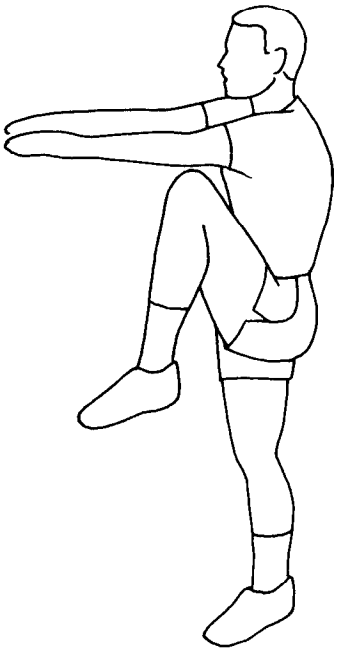
Position: Assume a supine position with the hips and knees flexed. Place the palms directly on top of the head with the fingers interlaced.

Action: (1) Bring the left knee upward while curling the trunk upward, and touch the right elbow to the left knee. (2) Repeat action 1 with the other leg and elbow. (3) Repeat action 1. (4) Repeat action 2. Use a slow cadence.

THE ENGINE



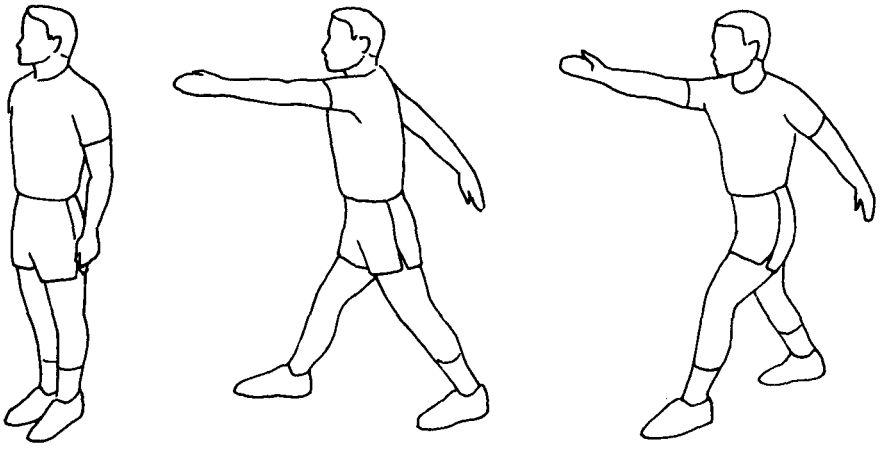




Position: Stand with the arms straight and in front of the body. The arms should be parallel to the ground with the palms facing downward.

Action: (1) Bring the left knee upward to the left elbow. (2) Return to the start position. (3) Touch the right knee to the right elbow. (4) Recover to the start position. Be sure to keep the arms parallel to the ground throughout the entire exercise. Use a moderate cadence.

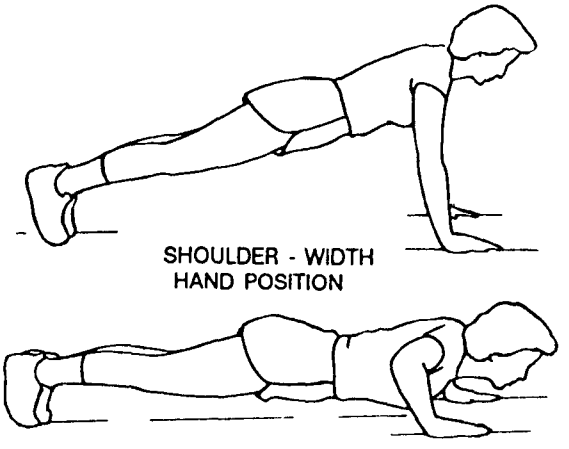
CROSS-COUNTRY SKIER

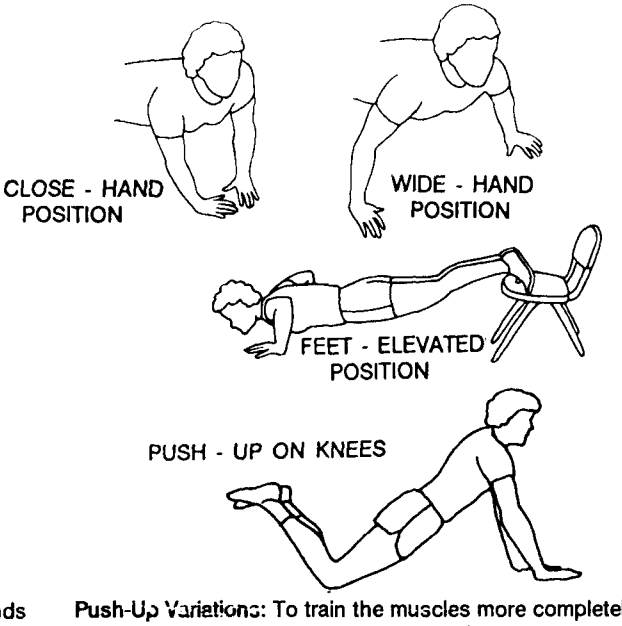


Position: Assume a position of attention.
Action: Jump slightly into the air, and move the left foot forward and the right foot backward, landing with both knees slightly bent. At the same time, move the right arm upward and forward to shoulder height and the left arm back as far as possible, always keeping the arms straight and the palms facing each other.

(2) Jump slightly into the air, and move the right foot forward and the left foot backward. At the same time, move the left arm upward and forward to shoulder height and the right arm back as far as possible. (3) Repeat action 1. (4) Repeat action 2. Use a moderate cadence.

PUSH-UP

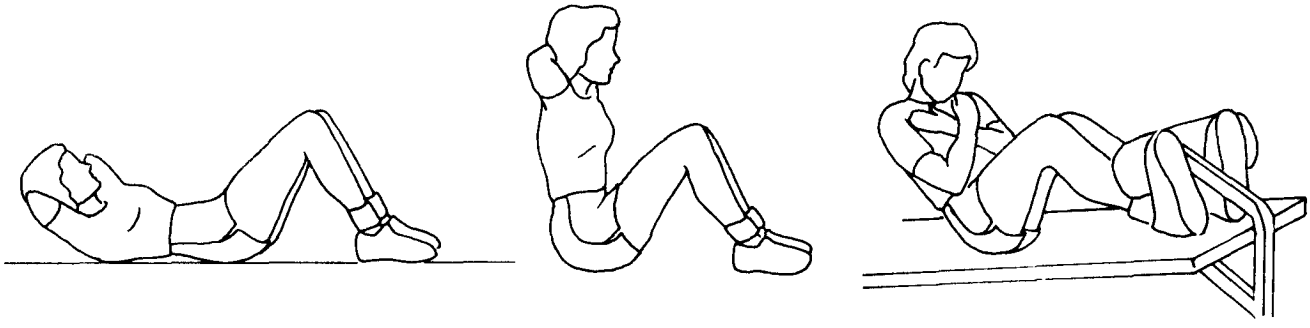




Position: Assume the front-leaning rest position with the hands placed comfortably apart, the feet together or up to 12 inches apart, and the body forming a generally straight line from the shoulders to the ankles.
Action: Keeping the body straight throughout the exercise, lower the body until the upper arms are at least parallel to the ground. Then, push yourself up to the initial position by completely straightening the arms.

Push-Up Variations: To train the muscles more completely, place the hands at varying widths. They may be wider apart or closer together than shoulder width. Elevating the feet to different heights makes push-ups more difficult. The higher the feet, the more difficult the exercise. Push-ups are also more difficult when the hands and feet are placed on boxes or chairs. This helps the soldier exercise through a fuller range of motion. To do extra repetitions when fatigued, drop to the knees while keeping the knees, hips, and shoulders in a straight line.

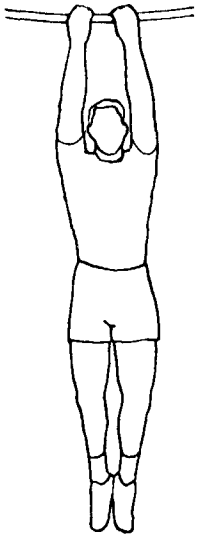
SIT-UP

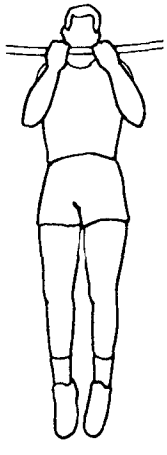


Position: Lie on the back with the feet together or up to 12 inches apart, the knees bent so that an angle of 90 degrees is formed by the upper and lower legs, and the fingers interlocked behind the head.
Action: Raise your upper body forward to the vertical position so that the base of the neck is above the base of the spine, then lower yourself in a controlled manner until the bottom of the shoulder blades touch the ground.

Sit-Up Variations: Variations include keeping the feet elevated and crossing the hands on the chest.

CHIN-UP (PULL-UP)

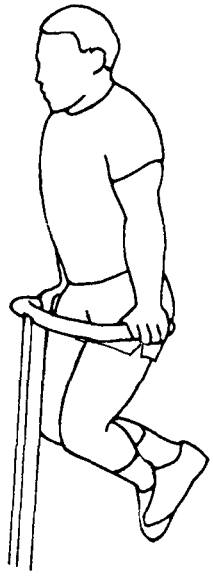




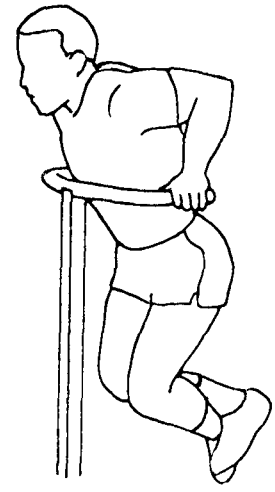
Position: Hang from a horizontal bar with the arms fully extended.
Action: Bend your elbows and pull yourself upward until your chin is above the bar; do not swing or kick your legs. Return to the starting position in a controlled manner.

Variations: Use overhand (pull-up), underhand (chin-up), or alternating grips, with the hands close together, far apart, or at shoulder-width. If unable to complete a chin-up using proper form, elevate yourself to the up position with help and hang there, or slowly lower yourself to the starting position. Repeat this several times, gradually adding more repetitions from workout to workout.

PARALLEL BAR DIP



Position: Keep the feet off the floor and support the body's weight on straight arms.



Action: Bend the arms and lower the body in a controlled manner until the upper arms are at least parallel to the floor. If necessary, bend the legs at the knees to keep the feet from touching the floor. Straighten the arms to return to the starting position.

CONDITIONING DRILLS

Conditioning drills are intended to supplement muscular strength and endurance training sessions.

Some large units prefer to use sets of calisthenic exercises as part of their PT sessions. Figure 7-4 shows three calisthenic conditioning drills for both the poorly conditioned and physically fit soldiers. The drills are designed to be done progressively and are intended to supplement muscular strength and endurance training sessions.

Leaders can mix the exercises to provide greater intensity, based on the fitness level of the soldiers being trained. However, they should choose and sequence them to alternate the muscle groups being worked. Soldiers should do each exercise progressively from 15 to 40 or more repetitions (20 to 60 seconds for timed sets) based on their level of conditioning. They may also do each exercise in cadence unless timed sets are specified. For timed sets, soldiers do as many repetitions of an exercise as possible in the allowed time. Using timed sets, both the well-conditioned and less-fit soldiers can work themselves to their limits.

The following conditioning drills (Figure 7-4) are arranged according to the phase of training.

Grass Drills

Grass drills are exercise movements that feature rapid changes in body position. These are vigorous drills which, when properly done, exercise all the major muscle groups. Soldiers should respond to commands as fast as possible and do all movements at top speed. They continue to do multiple repetitions of each exercise until the next command is given. No cadence is counted.

TRAINING-PHASE CONDITIONING DRILLS

#1 PREPARATORY TRAINING

High Jumper
Push-Up (TS* 20-45** seconds)
Sit-Up (TS 20-45** seconds)
Side-Straddle Hop
Side Bender
Knee Bender
Stationary Run

#2 CONDITIONING TRAINING

Push-UP (varied hand positions)
(TS 30-60 seconds)
Supine Bicycle
High Jumper
Sit-Up (all types)
(TS 30-60 seconds)
The Engine or Cross-Country Skiier
All-Fours Run (stationary)

#3 MAINTENANCE TRAINING

Ski Jump
Sit-Ups (all types) (TS 30-60 seconds)
Push-Up (varied hand positions) (TS 30-60 seconds)
Mule Kick
Flutter Kick
The Engine
The Swimmer

*TS = timed set

** Because of a lower level of fitness, 45 seconds will usually be the upper limit.

Figure 7-4

Performing grass drills can improve CR endurance, help develop muscular endurance and strength, and speed up reaction time. Since these drills are extremely strenuous, they should last for short periods (30 to 45 seconds per exercise). The two drills described here each have four exercises. Leaders can develop additional drills locally.

The soldiers should do a warm-up before performing the drills and do a cool-down afterward. The instructor does all the activities so that he can gauge the intensity of the session. The commands for grass drills are given in rapid succession without the usual preparatory commands. To prevent confusion, commands are given sharply to distinguish them from comments or words of encouragement.

As soon as the soldiers are familiar with the drill, they do all the exercises as vigorously and rapidly as possible, and they do each exercise until the

Grass drills are exercise movements that feature rapid changes in body position.

Soldiers should do a warm-up before performing grass drills and do a cool-down afterward.

next command is given. Anything less than a top-speed performance decreases the effectiveness of the drills.

Once the drills start, soldiers do not have to resume the position of attention. The instructor uses the command "Up" to halt the drill for instructions or rest. At this command, soldiers assume a relaxed, standing position.

Grass drills can be done in a short time. For example, they may be used when only a few minutes are available for exercise or when combined with another activity. Sometimes, if time is limited, they are a good substitute for running.

Most movements are done in place. The extended-rectangular formation is best for a platoon- or company-sized unit. The circle formation is more suitable for squad- or section-sized groups.

When soldiers are starting an exercise program, a 10- to 15-minute workout may be appropriate. Progression is made by a gradual increase in the time devoted to the drills. As the fitness of the soldiers improves, the times should be gradually lengthened to 20 minutes. The second drill is harder than the first. Therefore, as soldiers progress in the first drill, the instructor should introduce the second. If he sees that the drill needs to be longer, he can repeat the exercises or combine the two drills.

STARTING POSITIONS

Progression with grass drills is made by a gradual increase in the time devoted to the drills.

After the warm-up, bring the soldiers to a position of ATTENTION. The drills begin with the command *GO.* Other basic commands are FRONT, BACK, and STOP. (See Figure 7-5 for the positions and actions associated with these commands.)

- ATTENTION: The position of attention is described in FM 22-5, Drill and Ceremonies.
- GO This involves running in place at top speed on the balls of the feet. The soldier raises his knees high, pumps his arms, and bends forward slightly at the waist.
- FRONT The soldier lies prone with elbows bent and palms directly under the shoulders as in the down position of the push up. The legs are straight and together with the head toward the instructor.

  BACK: The soldier lies flat on his back with his arms extended along his sides and his palms facing down ward. His legs are straight and together; his feet face the instructor.
- STOP The soldier assumes the stance of a football lineman with feet spread and staggered. His left arm is across his left thigh; his right arm is straight. His knuckles are on the ground; his head is up, and his back is roughly parallel to the ground.

To assume the FRONT or BACK position from the standing GO or STOP positions, the soldier changes positions vigorously and rapidly. (See Figure 7-5.)

To change from the FRONT to the BACK position (Figure 7-5), the soldier does the following:

- Takes several short steps to the right or left.

  Lifts his arm on the side toward which his feet move.
- Thrusts his legs vigorously to the front.

To change from the BACK to the FRONT position, the soldier sits up quickly. He places both hands on the ground to the right or left of his legs. He takes several short steps to the rear on the side opposite his hands. When his feet are opposite his hands, he thrusts his legs vigorously to the rear and lowers his body to the ground. (See Figure 7-5.)

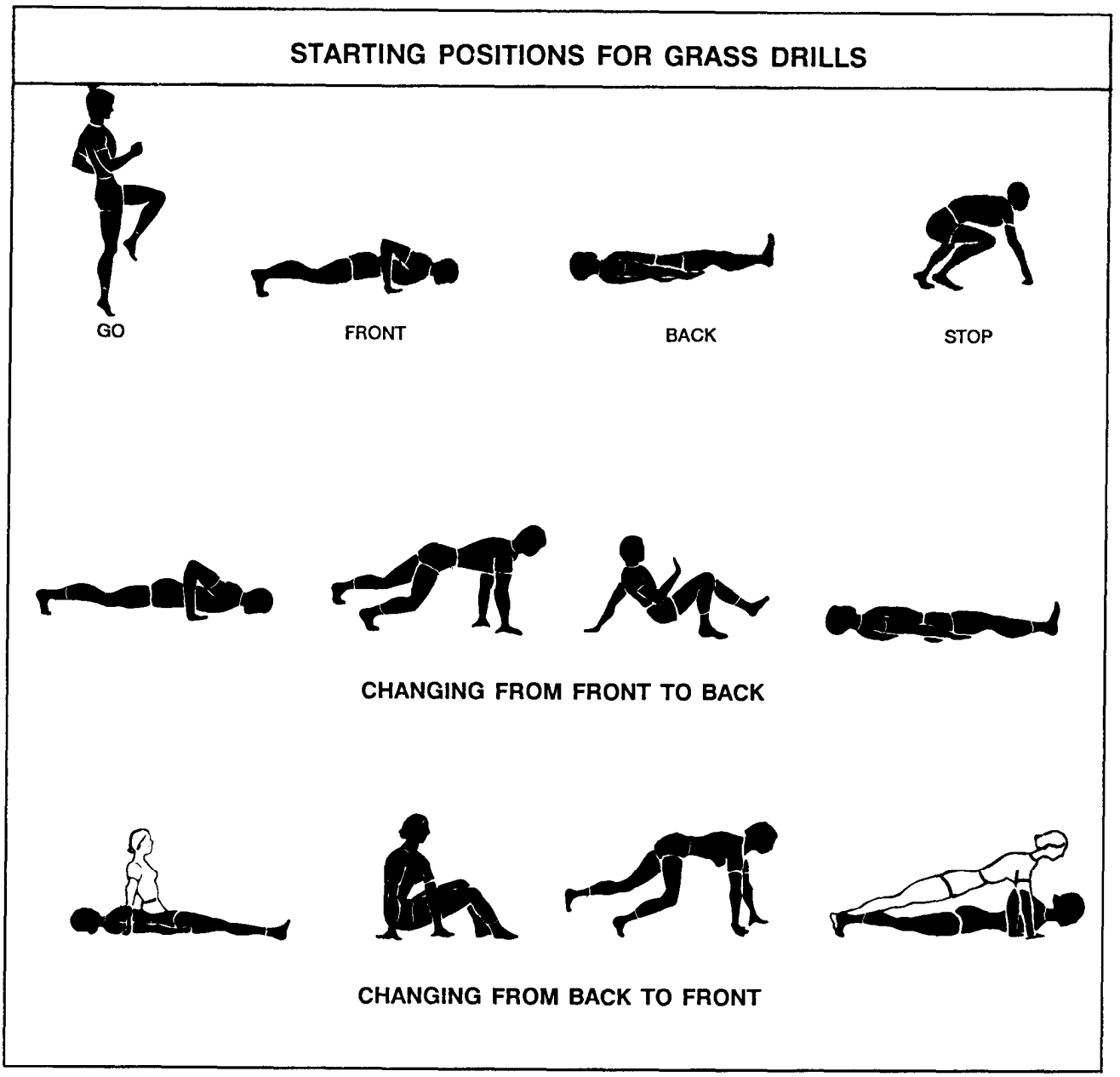

STARTING POSITIONS FOR GRASS DRILLS
GO
FRONT
BACK
STOP
CHANGING FROM FRONT TO BACK
CHANGING FROM BACK TO FRONT

Figure 7-5

GRASS DRILL ONE

Exercises for grass drill one are described below and shown in Figure 7-6.

Bouncing Ball

From the FRONT position, push up and support the body on the hands (shoulder-width apart) and feet. Keep the back and legs generally in line and the knees straight. Bounce up and down in a series of short, simultaneous, upward springs from the hands, hips, and feet.

Supine Bicycle

From the BACK position, flex the hips and knees. Place the palms directly on top of the head, and interlace the fingers. Bring the knee of one leg upward toward the chest. At the same time, curl the trunk and head upward while touching the opposite elbow to the elevated knee. Repeat with the other leg and elbow. Continue these movements as opposite legs and arms take turns.

Knee Bender

From the position of ATTENTION, do half-knee bends with the feet in line and the hands at the sides. Make sure the knees do not bend to an angle less than 90 degrees.

Roll Left and Right

From the FRONT position, continue to roll in the direction commanded until another command is given. Then, return to the FRONT position.

GRASS DRILL TWO

Exercises for grass drill two are described below and shown in Figure 7-6.

The Swimmer

From the FRONT position, extend the arms forward. Move the right arm and left leg up and down; then, move the left arm and right leg up and down. Continue in an alternating manner.

Bounce and Clap Hands

The procedure is almost the same as for the bouncing ball in grass drill one. However, while in the air, clap the hands. This action requires a more vigorous bounce or spring. The push-up may be substituted for this exercise.

Leg Spreader

From the BACK position, raise the legs until the heels are no higher than six inches off the ground. Spread the legs apart as far as possible, then put them back together. Keep the head off the ground. Throughout, place the hands under the upper part of the buttocks, and slightly bend the knees to ease pressure on the lower back. Open and close the legs as fast as possible. The curl-up may be substituted for this exercise.

Forward Roll

From the STOP position, place both hands on the ground, tuck the head, and roll forward. Keep the head tucked while rolling.

Stationary Run

From the position of ATTENTION, start running in place at the GO command by lifting the left foot first. Follow the instructor as he counts two repetitions of cadence. For example, “One, two, three, four; one, two, three, four.” The instructor then gives informal commands such as the following: “Follow me,” “Run on the toes and balls of your feet,” “Speed it up,” “Increase to a sprint, raise your knees high, lean

forward at your waist, and pump your arms vigorously," and "Slow it down."

To halt the exercise, the instructor counts two repetitions of cadence as the left foot strikes the ground: "One, two, three, four, one, two, three, HALT."

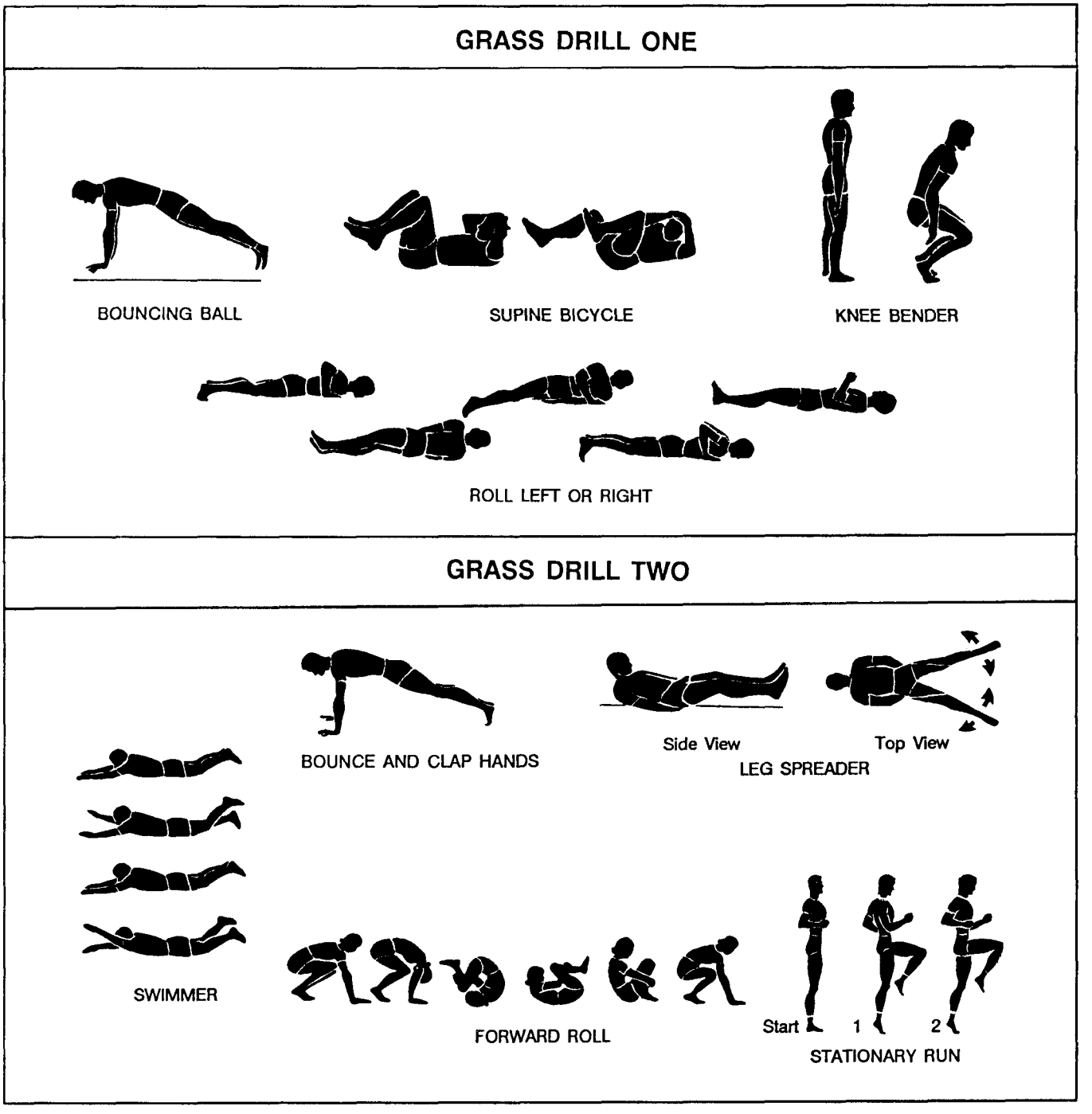


Figure 7-6

Guerilla Exercises

Guerrilla exercises, which can be used to improve agility, CR endurance, muscular endurance, and to some degree muscular strength, combine individual and partner exercises. These drills require soldiers to change their positions quickly and do various basic skills while moving forward. Figures 7-7 and 7-8 show these exercises.

Soldiers progress with guerilla exercises by shortening the quick-time marching periods between exercises and by doing all the exercises a second time.

The instructor decides the duration for each exercise by observing its effect on the soldiers. Depending on how vigorously it is done, each exercise should be continued for 20 to 40 seconds.

The group moves in circle formation while doing the exercises. If the platoon exceeds 30 soldiers, concentric circles may be used. A warm-up activity should precede these exercises, and a cool-down should follow them. After the circle is formed, the instructor steps into the center and issues commands.

EXERCISE AND PROGRESSION

Soldiers progress by shortening the quick-time marching periods between exercises and by doing all exercises a second time. This produces an *overload* that improves fitness.

Many soldiers have not had a chance to do the simple skills involved in guerrilla exercises. However, they can do these exercises easily and quickly in almost any situation.

The preparatory command is always the name of the exercise, and the command of execution is always "March." The command "Quick time, march" ends each exercise.

For the double guerrilla exercises (in circle formation) involving two soldiers, the commands for pairing are as follows:

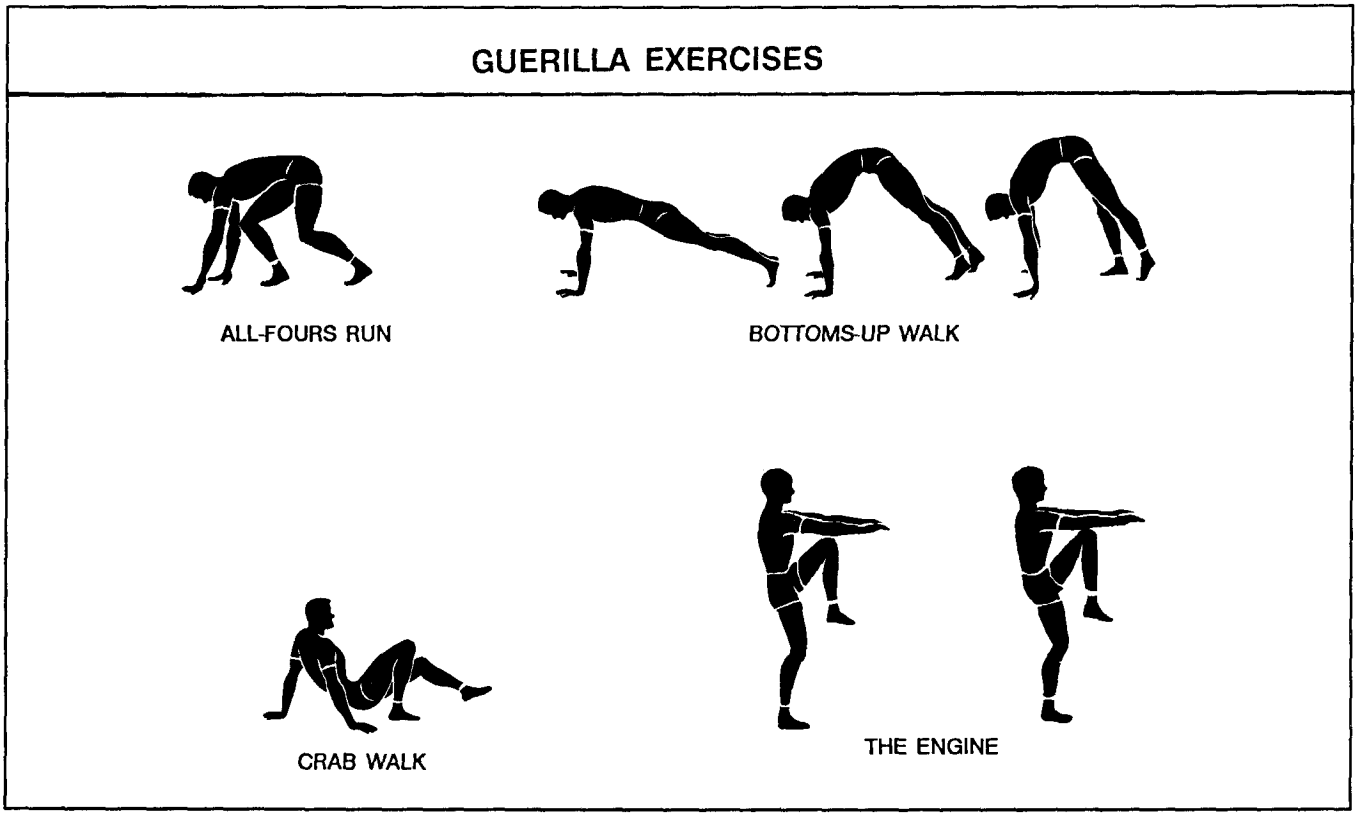


Figure 7-7

- "Platoon halt."
- "From (soldier is designated), by twos, count off." (For example: 1-2, 1-2, 1-2.)
- "Even numbers, move up behind odd numbers." (Pairs are adjusted according to height and weight.)
- "You are now paired up for double guerrillas." The command "Change" is given to change the soldiers' positions.

After the exercises are completed, the instructor halts the soldiers and positions the base soldier or platoon guide by commanding, "Base man (or platoon guide), post." He then commands "Fall out and fall in on the base man (or platoon guide)."

EXERCISE DESCRIPTIONS

Brief explanations of guerrilla exercises follow.

All-Fours Run

Face downward, supporting the body on the hands and feet. Advance forward as fast as possible by moving the arms and legs forward in a coordinated way.

Bottoms-Up Walk

Take the front-leaning rest position, and move the feet toward the hands in short steps while keeping the knees locked. When the feet are as close to the hands as possible, walk forward on the hands to the front-leaning-rest position.

Crab Walk

Assume a sitting position with the hips off the ground and hands and feet supporting the body's weight. Walk forward, feet first.

The Engine

Stand with the arms straight and in front of the body. The arms should be parallel to the ground with the palms facing downward. While walking forward, bring the left knee upward to the left elbow. Return to the start position. Continuing to walk forward, touch the right knee to the right elbow. Recover to the start position. Be sure to keep the arms parallel to the ground throughout the entire exercise.

Double Time

Do a double-time run while maintaining the circle formation.

Broad Jump

Jump forward on both feet in a series of broad jumps. Swing the arms vigorously to help with the jumps.

Straddle Run

Run forward, leaping to the right with the left foot and to the left with the right foot.

Hobble Hopping

Hold one foot behind the back with the opposite hand and hop forward. On the command "Change," grasp the opposite foot with the opposite hand and hop forward.

Two-Man Carry

For two-man carries, soldiers are designated as number one (odd-numbered) and number two (even-numbered). A number-one and number-two soldier work as partners.

Fireman's Carry

Two soldiers do the carry. On command, number-two soldier bends at the waist, with feet apart in a balanced stance. Number-one soldier moves toward his partner. He places himself by his partner's left shoulder and bends himself over his partner's shoulders and back. When in position, number-two soldier, with his left hand, reaches between his partner's legs and grasps his left wrist. On command, they move forward until the command for changeover. They then change positions. The fireman's carry can also be done from the other side.

Single-Shoulder Carry

Two soldiers do the carry. On command, number-two soldier bends at the waist with feet apart in a balanced stance. At the same time, number-one soldier moves toward his partner. He places his abdominal area onto his partner's right or left shoulder and leans over. Number-two soldier puts his arms around the back of his partner's knees and stands up. On command, they move forward until the command for changeover. They then change positions.

Cross Carry

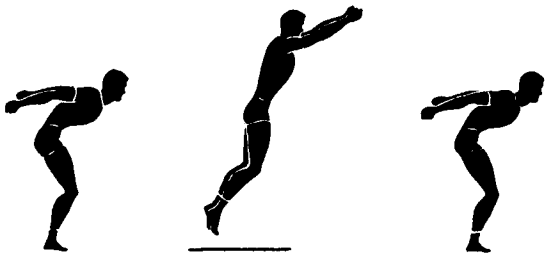
On command, number-two soldier bends over at the waist. He twists slightly to the left with feet spread apart in a balanced position. At the same time, number-one soldier moves toward his partner's left side and leans over his partner's back. Number two soldier, with his left arm, reaches around his partner's legs. At the same time, he reaches around his partner's back with his right arm, being careful not to grab his partner's neck or head. He then stands up straight, holding his partner on his back. On command, they move forward until the command for changeover. They then change positions.

Saddle-Back (Piggyback) Carry

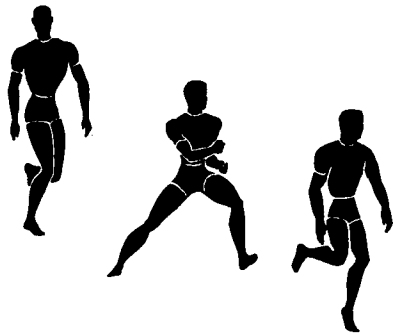
On command, number-two soldier bends at the waist and knees with his hand on his knees and his head up. To assume the piggyback position, number-one soldier moves behind his partner, places his hands on his partner's shoulders, and climbs carefully onto his partner's hips. As number-one soldier climbs on, number-two soldier grasps his partner's legs to help support him. Number-one soldier places his arms over his partner's shoulders and crosses his hands over his partner's upper chest. They move forward until the command for changeover is given. They then change positions.

ADDITIONAL GUERILLA EXERCISES

DOUBLE TIME

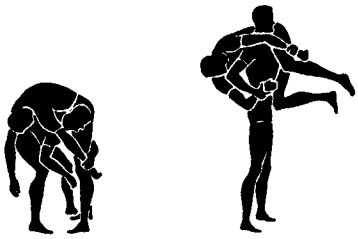


BROAD JUMP



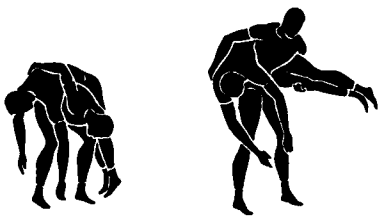
STRADDLE RUN

HOBBLE HOPPING



FIREMAN'S CARRY

SINGLE-SHOULDER CARRY



CROSS CARRY

SADDLE-BACK CARRY

Figure 7-8

CHAPTER 8

Obstacle Courses and Additional Drills

This chapter describes obstacle courses as well as rifle drills, log drills, and aquatic exercises. These are not designed to develop specific components of physical fitness. Commanders should use them to add variety to their PT programs and to help soldiers develop motor fitness including speed, agility, coordination, and related skills and abilities. Many of these activities also give soldiers the chance to plan strategy, make split-second decisions, learn teamwork, and demonstrate leadership.

Obstacle Courses

There are two types of obstacle courses- conditioning and confidence.

Physical performance and success in combat may depend on a soldier's ability to perform skills like those required on the obstacle course. For this reason, and because they help develop and test basic motor skills, obstacle courses are valuable for physical training.

There are two types of obstacle courses--conditioning and confidence. The conditioning course has low obstacles that must be negotiated quickly. Running the course can be a test of the soldier's basic motor skills and physical condition. After soldiers *receive* instruction and practice the skills, they run the course against time.

A confidence course has higher, more difficult obstacles than a conditioning course. It gives soldiers confidence in their mental and physical abilities and cultivates their spirit of daring. Soldiers are encouraged, but not forced, to go through it. Unlike conditioning courses, confidence courses are not run against time.

NONSTANDARD COURSES AND OBSTACLES

Commanders may build obstacles and courses that are nonstandard (that is, not covered in this manual) in order to create training situations based on their unit's METL. When planning and building such facilities, designers should, at a minimum, consider the following guidance:

- Secure approval from the local installation's commander.
- Prepare a safety and health-risk assessment to support construction of each obstacle.
- Coordinate approval for each obstacle with the local or supporting safety office. Keep a copy of the approval in the permanent records.
- Monitor and analyze all injuries.
- Inspect all existing safety precautions on-site to verify their effectiveness.
- Review each obstacle to determine the need for renewing its approval.

SAFETY PRECAUTIONS

Instructors must always be alert to safety. They must take every precaution to minimize injuries as soldiers go through obstacle courses. Soldiers must do warm-up exercises before they begin. This prepares them for the physically demanding tasks ahead and helps minimize the chance of injury. A cool-down after the obstacle course is also necessary, as it helps the body recover from strenuous exercise.

Commanders should use ingenuity in building courses, making good use of streams, hills, trees, rocks, and other natural obstacles. They must inspect courses for badly built obstacles, protruding nails, rotten logs, unsafe landing pits, and other safety hazards.

There are steps which designers can take to reduce injuries. For example, at the approach to each obstacle, they should post an instruction board or sign with text and pictures showing how to negotiate it. Landing pits for jumps or vaults, and areas under or around obstacles where soldiers may fall from a height, should be filled with loose sand or sawdust, All

landing areas should be raked and refilled before each use. Puddles of water under obstacles can cause a false sense of security. These could result in improper landing techniques and serious injuries. Leaders should postpone training on obstacle courses when wet weather makes them slippery.

Units should prepare their soldiers to negotiate obstacle courses by doing conditioning exercises beforehand. Soldiers should attain an adequate level of conditioning before they run the confidence course, Soldiers who have not practiced the basic skills or run the conditioning course should not be allowed to use the confidence course.

Instructors must explain and demonstrate the correct ways to negotiate all obstacles before allowing soldiers to run them. Assistant instructors should supervise the negotiation of higher, more dangerous obstacles. The emphasis is on avoiding injury. Soldiers should practice each obstacle until they are able to negotiate it. Before they run the course against time, they should make several slow runs while the instructor watches and makes needed corrections. Soldiers should never be allowed to run the course against time until they have practiced on all the obstacles.

CONDITIONING OBSTACLE COURSES

If possible, an obstacle course should be shaped like a horseshoe or figure eight so that the finish is close to the start. Also, signs should be placed to show the route.

A course usually ranges from 300 to 450 yards and has 15 to 25 obstacles that are 20 to 30 yards apart. The obstacles are arranged so that those which exercise the same groups of muscles are separated from one another.

The obstacles must be solidly built. Peeled logs that are six to eight inches wide are ideal for most of them. Sharp points and corners should be eliminated, and landing pits for jumps or vaults must be filled with sand or sawdust. Courses should be built and marked so that soldiers cannot sidestep obstacles or detour around them. Sometimes, however, courses can provide alternate obstacles that vary in difficulty.

Each course should be wide enough for six to eight soldiers to use at the same time, thus encouraging competition. The lanes for the first few obstacles should be wider and the obstacles easier than those that follow. In this way, congestion is avoided and soldiers can spread out on the course. To minimize the possibility of falls and injuries due to fatigue, the last two or three obstacles should not be too difficult or involve high climbing.

Trainers must always be aware that falls from the high obstacles could cause serious injury. Soldiers must be in proper physical condition, closely supervised, and adequately instructed.

The best way for the timer to time the runners is to stand at the finish and call out the minutes and seconds as each soldier finishes. If several watches are available, each wave of soldiers is timed separately. If only one watch is available, the waves are started at regular intervals such as every 30 seconds. If a soldier fails to negotiate an obstacle, a previously determined penalty is imposed.

When the course is run against time, stopwatches, pens, and a unit roster are needed. Soldiers may run the course with or without individual equipment.

Obstacles for Jumping

These obstacles are ditches to clear with one leap, trenches to jump into, heights to jump from, or hurdles. (See Figure 8-l.)

Instructors must explain and demonstrate the correct ways to negotiate all obstacles before allowing soldiers to run them.

Obstacles for Dodging

These obstacles are usually mazes of posts set in the ground at irregular intervals. (See Figure 8-2.) The spaces between the posts are narrow so that soldiers must pick their way carefully through and around them. Lane guides are built to guide soldiers in dodging and changing direction.

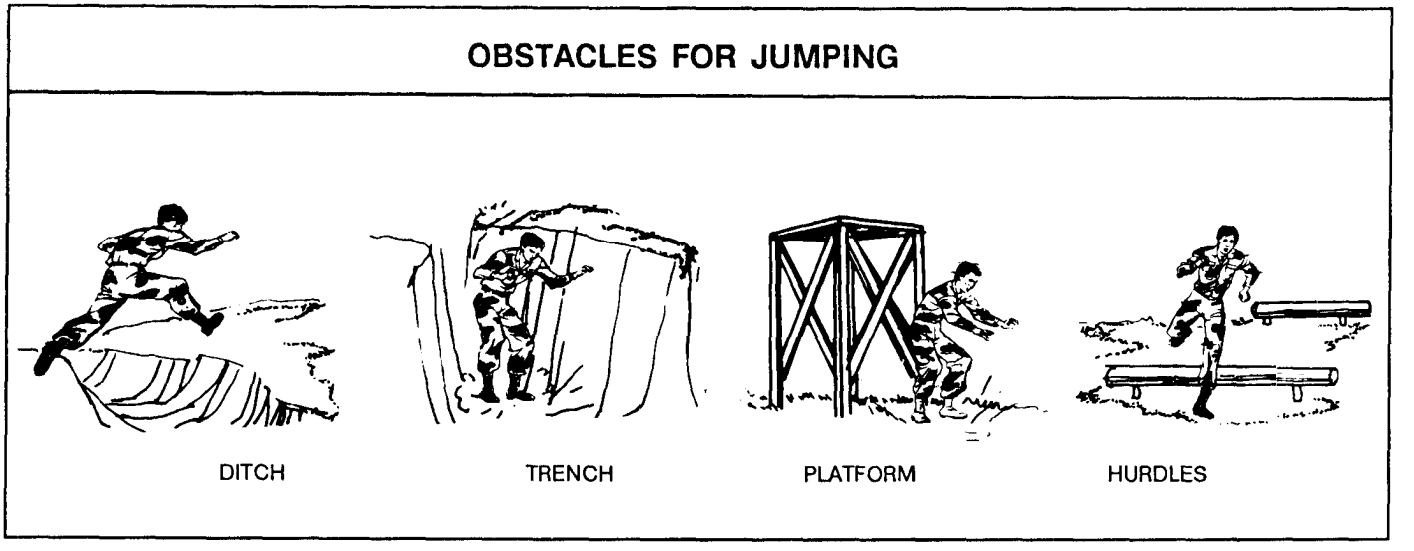


Figure 8-1

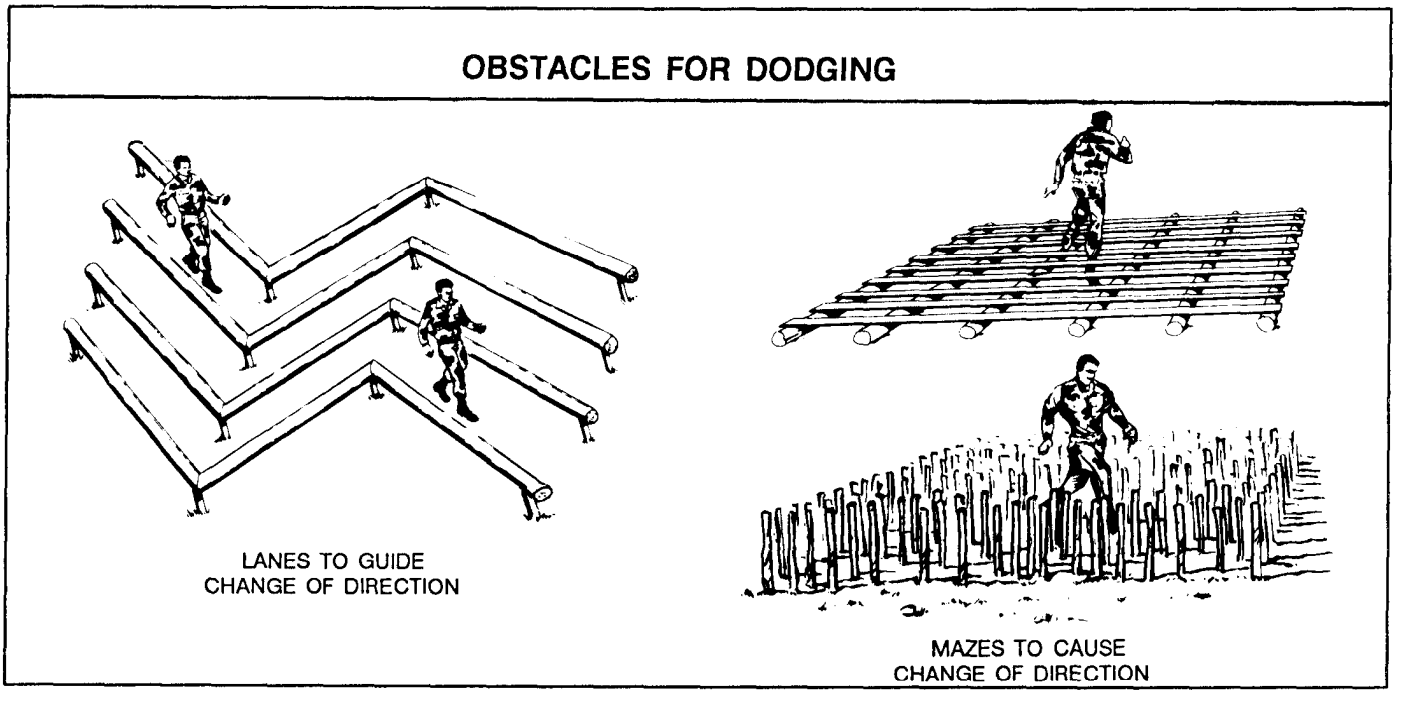


Figure 8-2

Obstacles for Vertical Climbing and Surmounting

These obstacles are shown at Figure 8-3 and include the following:

- Climbing ropes that are 1 1/2 inches wide and either straight or knotted.
- Cargo nets.
- Walls 7 or 8 feet high.
- Vertical poles 15 feet high and 6 to 8 inches wide.

Obstacles for Horizontal Traversing

Horizontal obstacles may be ropes, pipes, or beams. (See Figure 8-4.)

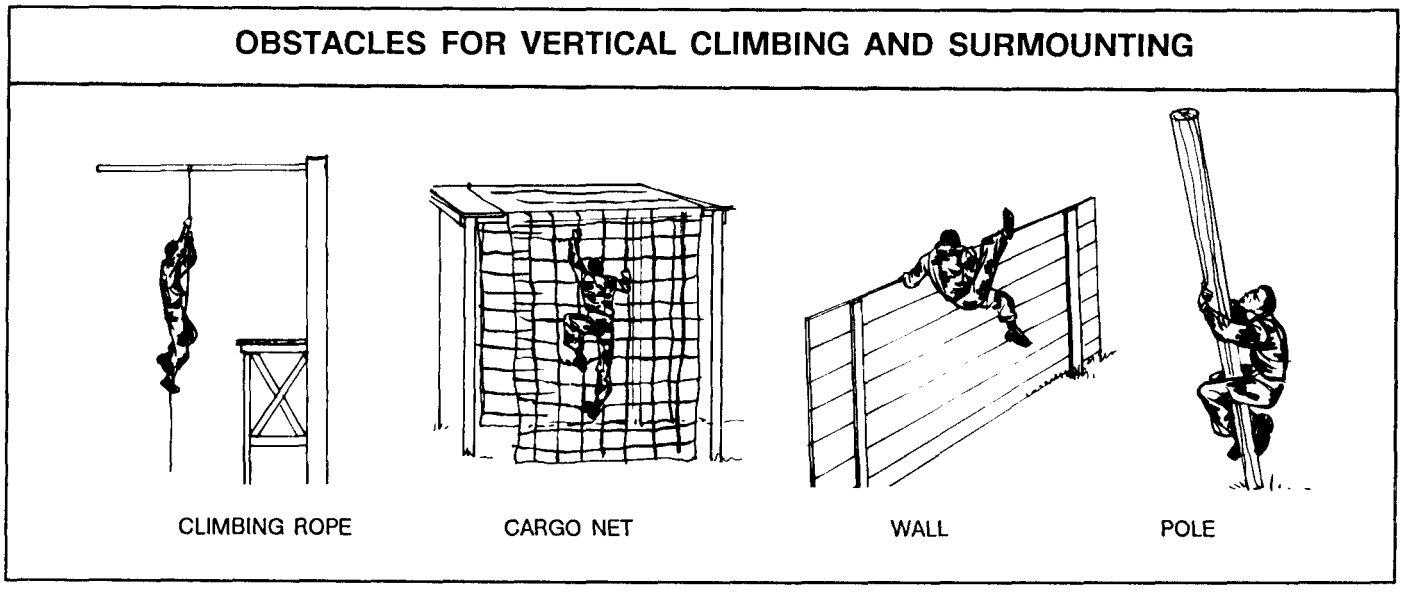


Figure 8-3

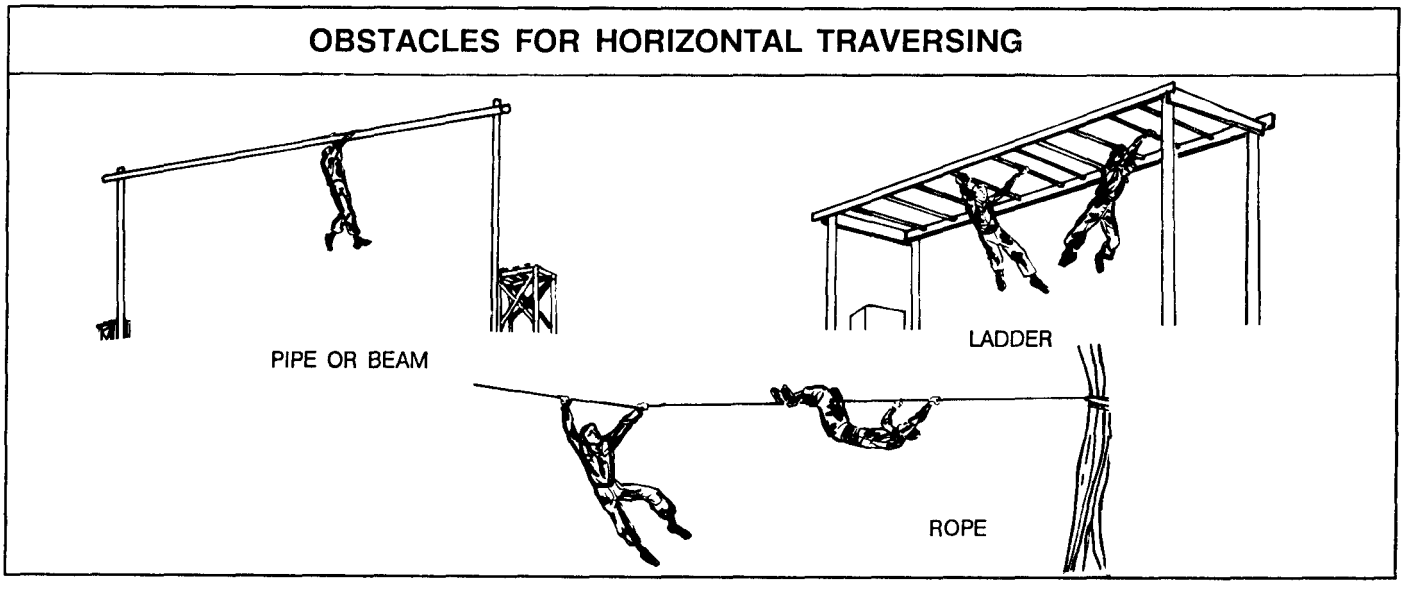


Figure 8-4

Obstacles for Crawling

These obstacles may be built of large pipe sections, low rails, or wire. (See Figure 8-5.)

Obstacles for Vaulting

These obstacles should be 3 to 3 1/2 feet high. Examples are fences and low walls. (See Figure 8-6.)

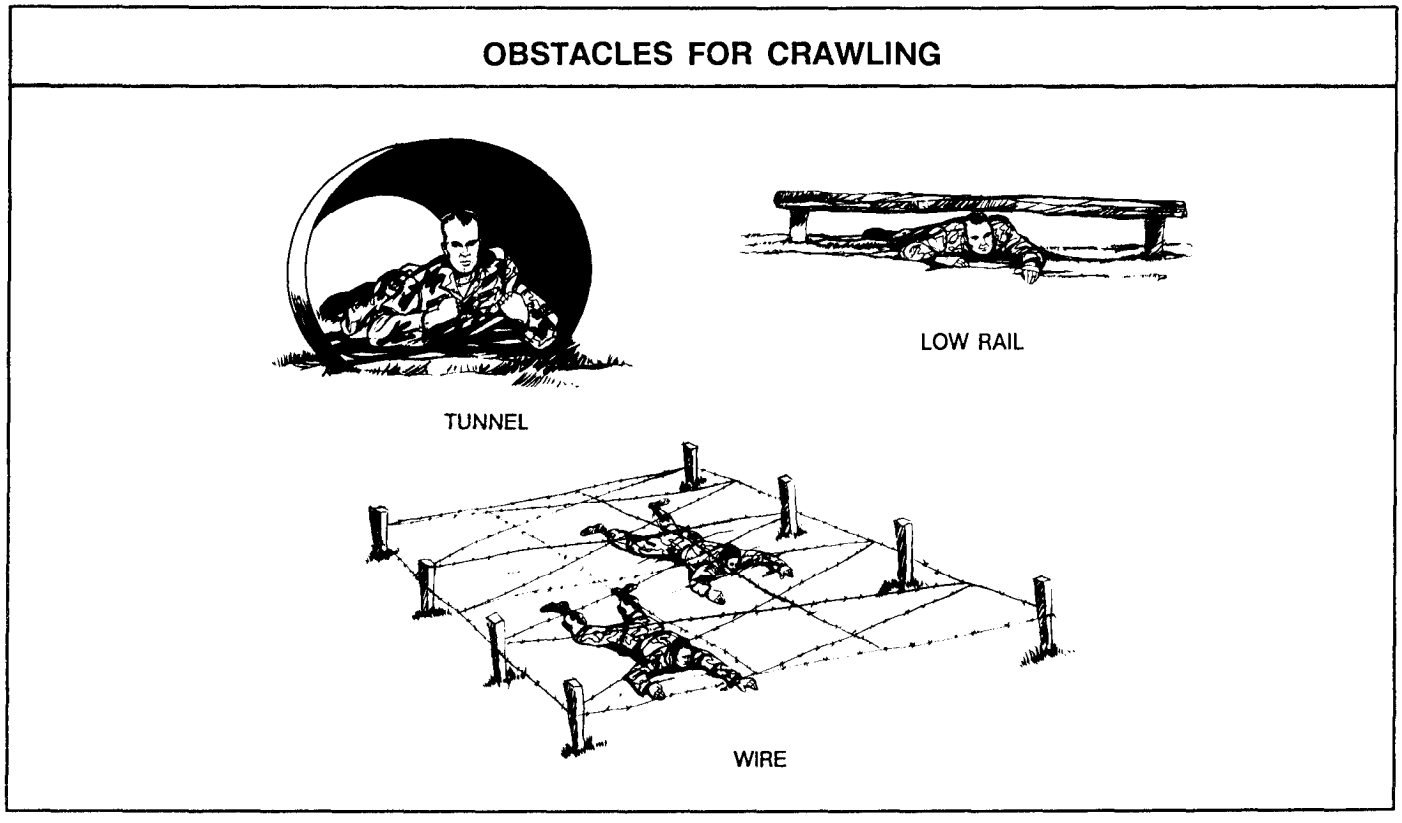


Figure 8-5

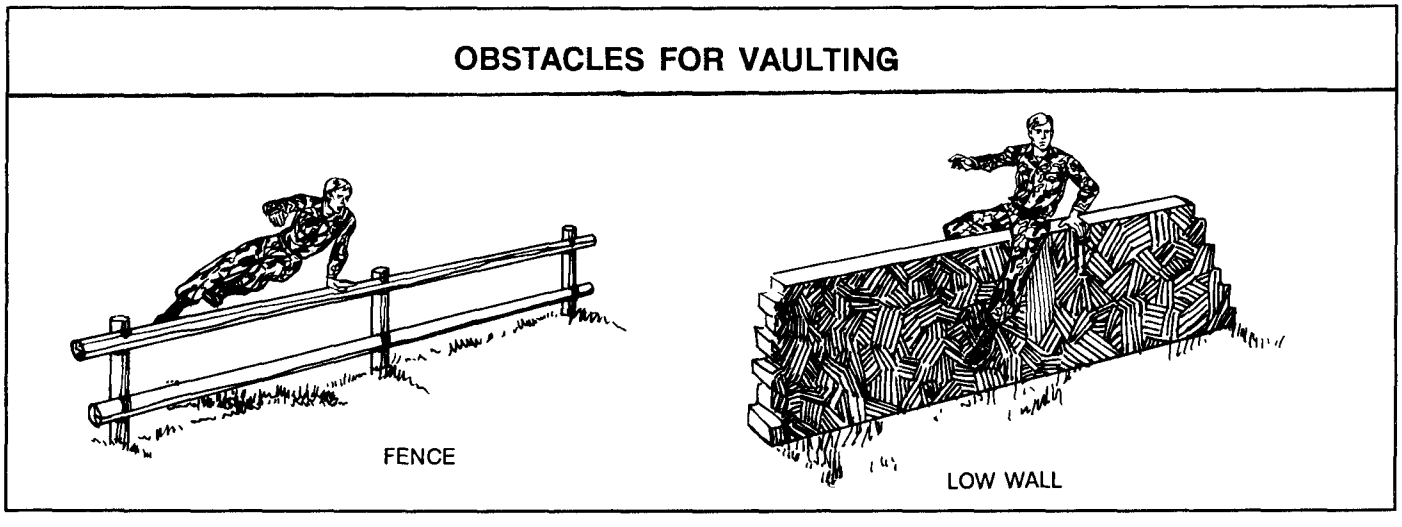


Figure 8-6

Obstacles for Balancing

Beams, logs, and planks may be used. These may span water obstacles and dry ditches, or they may be raised off the ground to simulate natural depressions. (See Figure 8-7.)

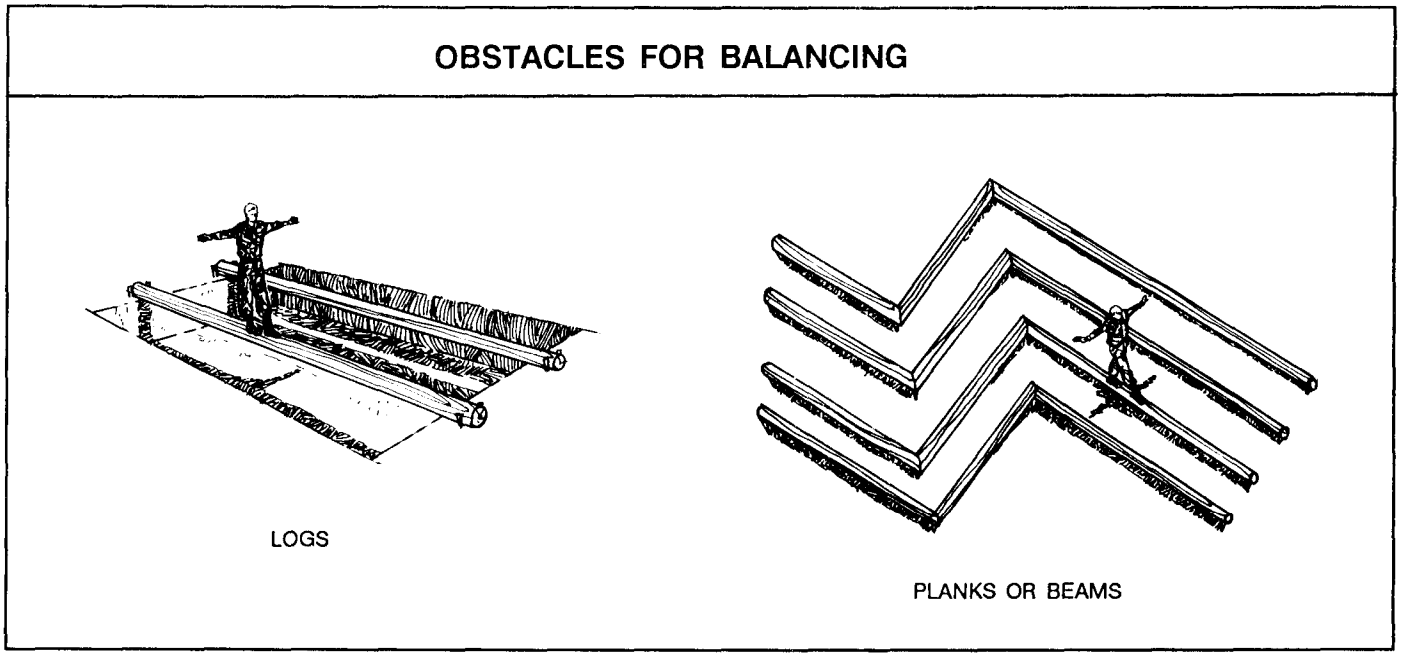


Figure 8-7

CONFIDENCE OBSTACLE COURSES

Confidence obstacle courses must be built in accordance with Folio No. 1, "Training Facilities," Corps of Engineers Drawing Number 28-13-95. You can obtain this publication from the Directorate of Facilities Engineering at most Army installations.

Confidence courses can develop confidence and strength by using obstacles that train and test balance and muscular strength. Soldiers do not negotiate these obstacles at high speed or against time. The obstacles vary from fairly easy to difficult, and some are high. For these, safety nets are provided. Soldiers progress through the course without individual equipment. Only one soldier at a time negotiates an obstacle unless it is designed for use by more than one.

Confidence courses should accommodate four platoons, one at each group of six obstacles. Each platoon begins at a different starting point. In the example below, colors are used to group the obstacles. Any similar method may be used to spread a group over the course. Soldiers are separated into groups of 8 to 12 at each obstacle. At the starting signal, they proceed through the course.

Soldiers may skip any obstacle they are unwilling to try. Instructors should encourage fearful soldiers to try the easier obstacles first. Gradually, as their confidence improves, they can

take their places in the normal rotation. Soldiers proceed from one obstacle to the next until time is called. They then assemble and move to the next group of obstacles.

Rules for the Course

Supervisors should encourage, but not force, soldiers to try every obstacle. Soldiers who have not run the course before should receive a brief orientation at each obstacle, including an explanation and demonstration of the best way to negotiate it. Instructors should help those who have problems. Trainers and soldiers should not try to make obstacles more difficult by shaking ropes, rolling logs, and so forth. Close supervision and common sense must be constantly used to enhance safety and prevent injuries.

Soldiers need not conform to any one method of negotiating obstacles, but there is a uniformity in the general approach. Recommended ways to negotiate obstacles are described below.

Red Group

This group contains the first six obstacles. These are described below and numbered 1 through 6 in Figure 8-8.

Belly Buster. Soldiers vault, jump, or climb over the log. They must be warned that it is not stationary. Therefore, they should not roll or rock the log while others are negotiating it.

Reverse Climb. Soldiers climb the reverse incline and go down the other side to the ground.

Weaver. Soldiers move from one end of the obstacle to the other by weaving their bodies under one bar and over the next.

Hip-Hip. Soldiers step over each bar; they either alternate legs or use the same lead leg each time.

Balancing Logs. Soldiers step up on a log and walk or run along it while keeping their balance.

Island Hopper. Soldiers jump from one log to another until the obstacle is negotiated.

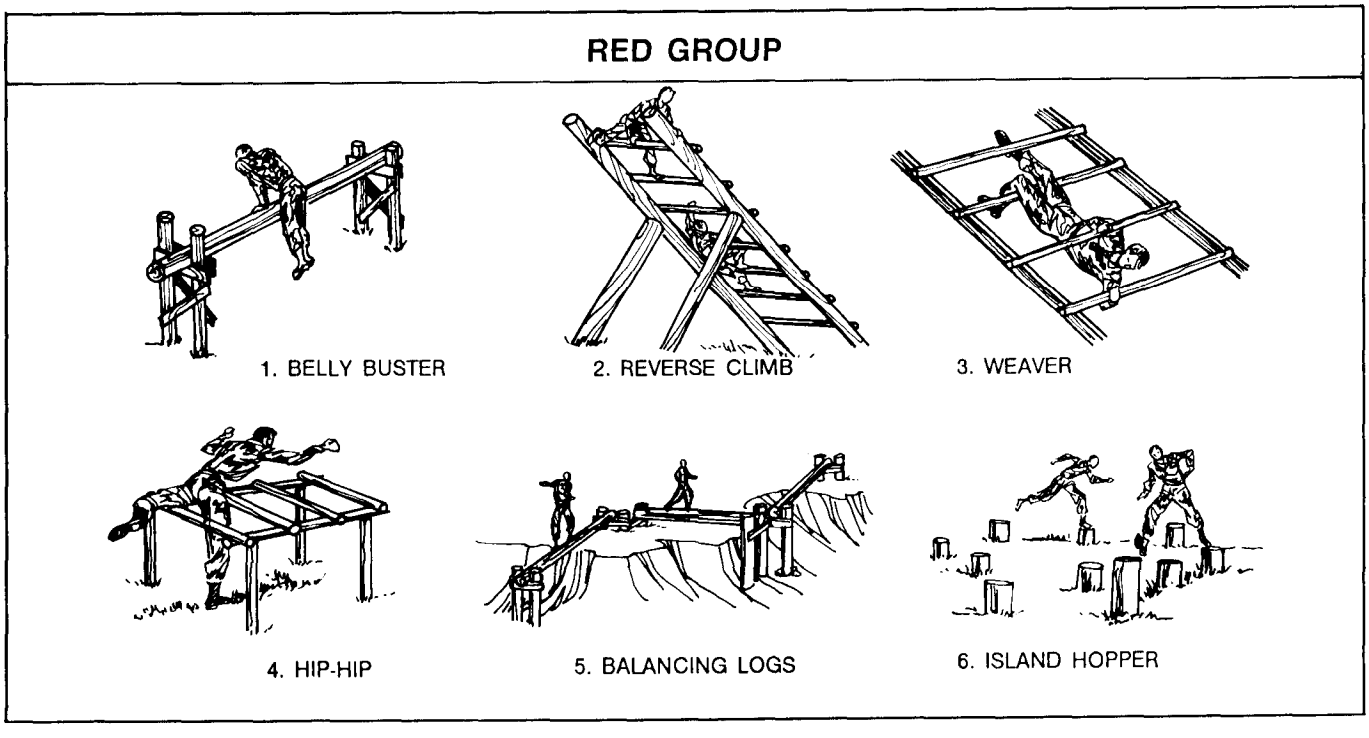


Figure 8-8

White Group

This group contains the second six obstacles. These are described below and numbered 7 through 12 in Figure 8-9.

Tough Nut. Soldiers step over each X in the lane.

Inverted Rope Descent. Soldiers climb the tower, grasp the rope firmly, and swing their legs upward. They hold the rope with their legs to distribute the weight between their legs and arms. Braking the slide with their feet and legs, they proceed down the rope. Soldiers must be warned that they may get rope burns on their hands. This obstacle can be dangerous when the rope is slippery. Soldiers leave the rope at a clearly marked point of release. Only one soldier at a time is allowed on the rope. Soldiers should not shake or bounce the ropes. This obstacle requires two instructors--one on the platform and the other at the base.

Low Belly-Over. Soldiers mount the low log and jump onto the high log. They grasp over the top of the log with both arms, keeping the belly area in contact with it. They swing their legs over the log and lower themselves to the ground.

Belly Crawl. Soldiers move forward under the wire on their bellies to the end of the obstacle. To reduce the tendency to push the crawling surface, it is filled with sand or sawdust to the far end of the obstacle. The direction of negotiating the crawl is reversed from time to time.

Easy Balancer. Soldiers walk up one inclined log and down the one on the other side to the ground.

Tarzan. Soldiers mount the lowest log, walk the length of it, then each higher log until they reach the horizontal ladder. They grasp two rungs of the ladder and swing themselves into the air. They negotiate the length of the ladder by releasing one hand at a time and swinging forward, grasping a more distant rung each time.

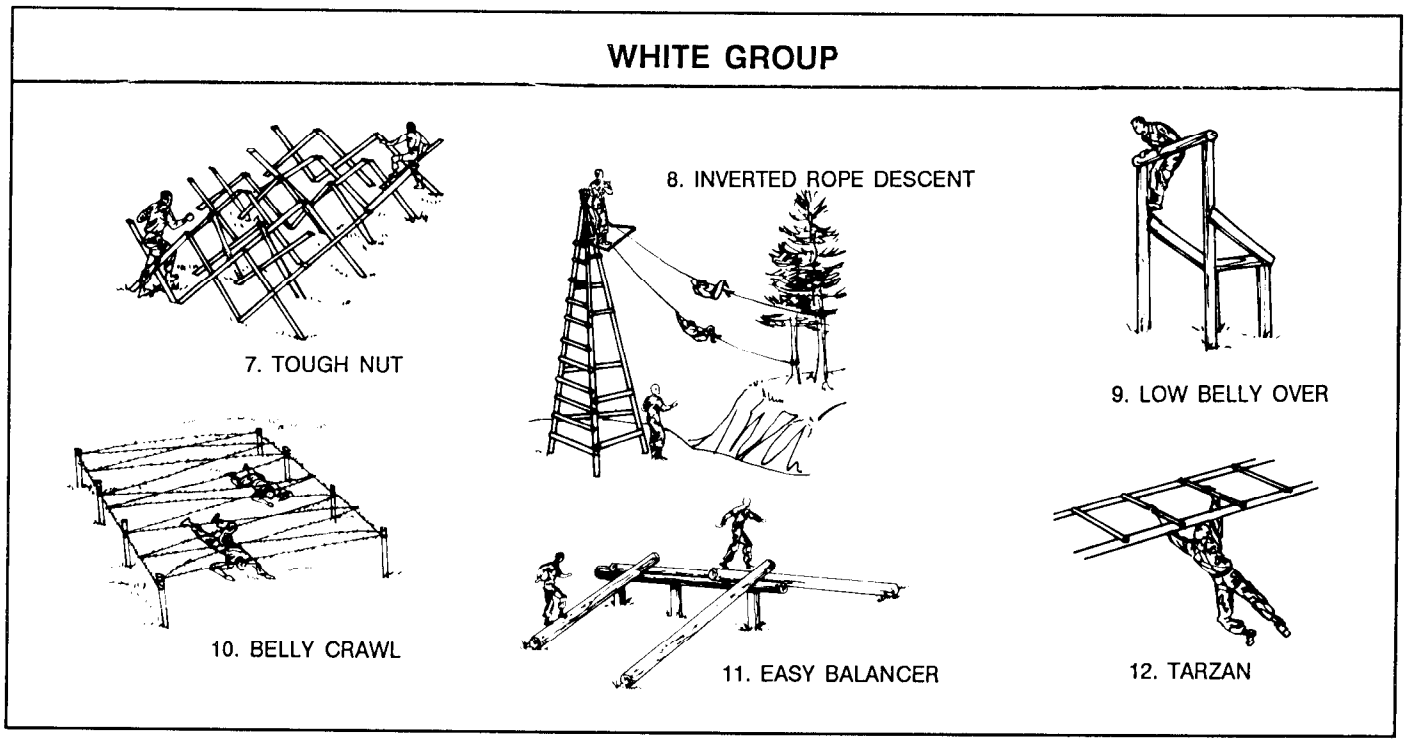


Figure 8-9

Blue Group

This group contains the third six obstacles. These are described below and numbered 13 through 18 in Figure 8-10.

High Step-over. Soldiers step over each log while alternating their lead foot or using the same one.

Swinger. Soldiers climb over the swing log to the ground on the opposite side.

Low Wire. Soldiers move under the wire on their backs while raising the wire with their hands to clear their bodies. To reduce the tendency to push the crawling surface, it is filled with sand or sawdust to the far end of the obstacle. The direction of negotiating the obstacle is alternated.

Swing, Stop, and Jump. Soldiers gain momentum with a short run, grasp the rope, and swing their bodies forward to the top of the wall. They release the rope while standing on the wall and jump to the ground.

Six Vaults. Soldiers vault over the logs using one or both hands.

Wall Hanger. Soldiers walk up the wall using the rope. From the top of the wall, they grasp the bar and go hand-over-hand to the rope on the opposite end. They use the rope to descend,

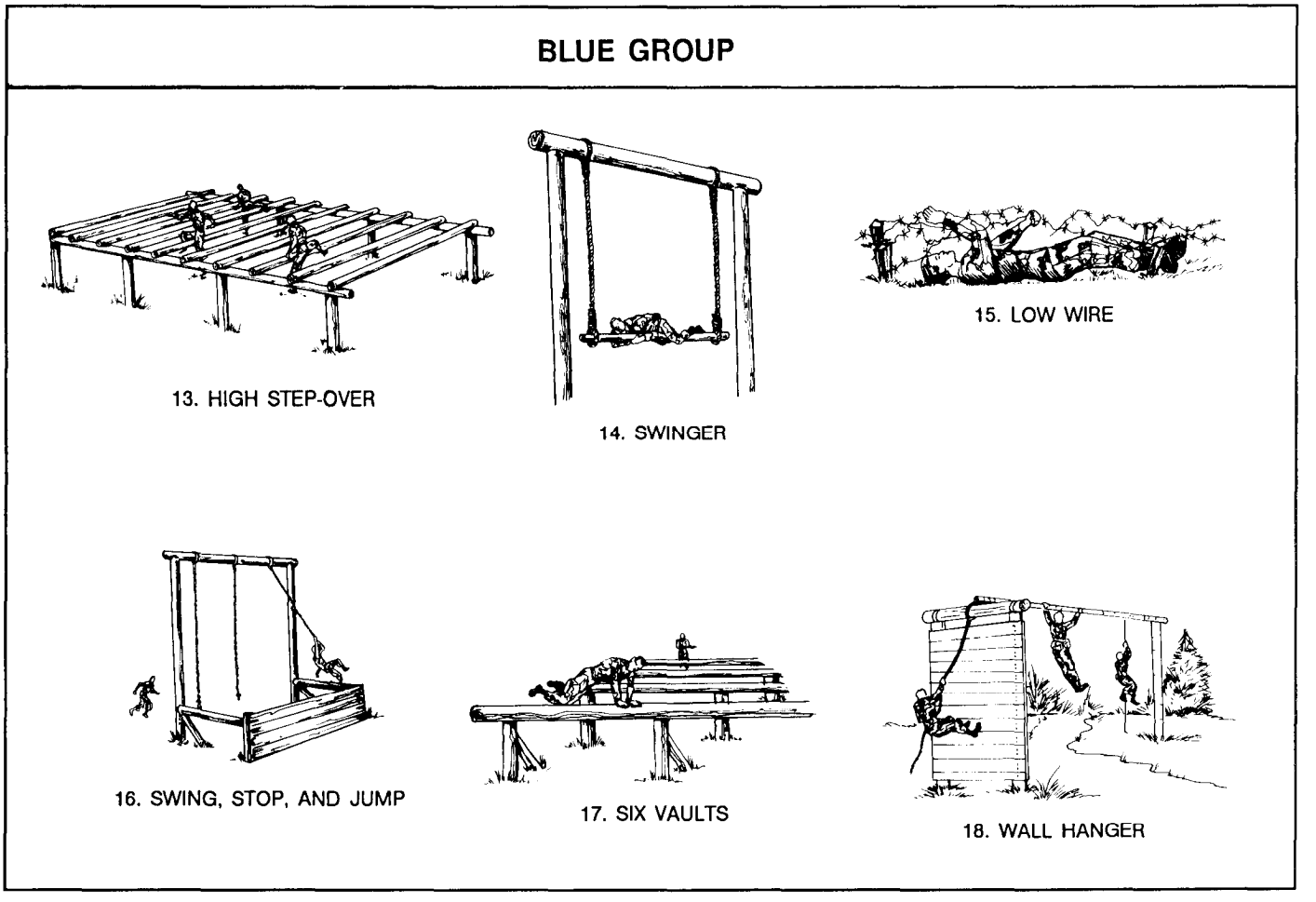


Figure 8-10

Black Group

This group contains the last six obstacles. These are described below and numbered 19 through 24 in Figure 8-11.

Inclining Wall. Soldiers approach the underside of the wall, jump up and grasp the top, and pull themselves up and over. They slide or jump down the incline to the ground.

Skyscraper. Soldiers jump or climb to the first floor and either climb the corner posts or help one another to the higher floors. They descend to the ground individually or help one another down. The top level or roof is off limits, and the obstacle should not be overloaded. A floor must not become so crowded that soldiers are bumped off. Soldiers should not jump to the ground from above the first level.

Jump and Land. Soldiers climb the ladder to the platform and jump to the ground.

Confidence Climb. Soldiers climb the inclined ladder to the vertical ladder. they go to the top of the vertical ladder, then down the other side to the ground.

Belly Robber. Soldiers step on the lower log and take a prone position on the horizontal logs. They crawl over the logs to the opposite end of the obstacle. Rope gaskets must be tied to the ends of each log to keep the hands from being pinched and the logs from falling.

The Tough One. Soldiers climb the rope or pole on the lowest end of the obstacle. They go over or between the logs at the top of the rope. They move across the log walkway, climb the ladder to the high end, then climb down the cargo net to the ground.

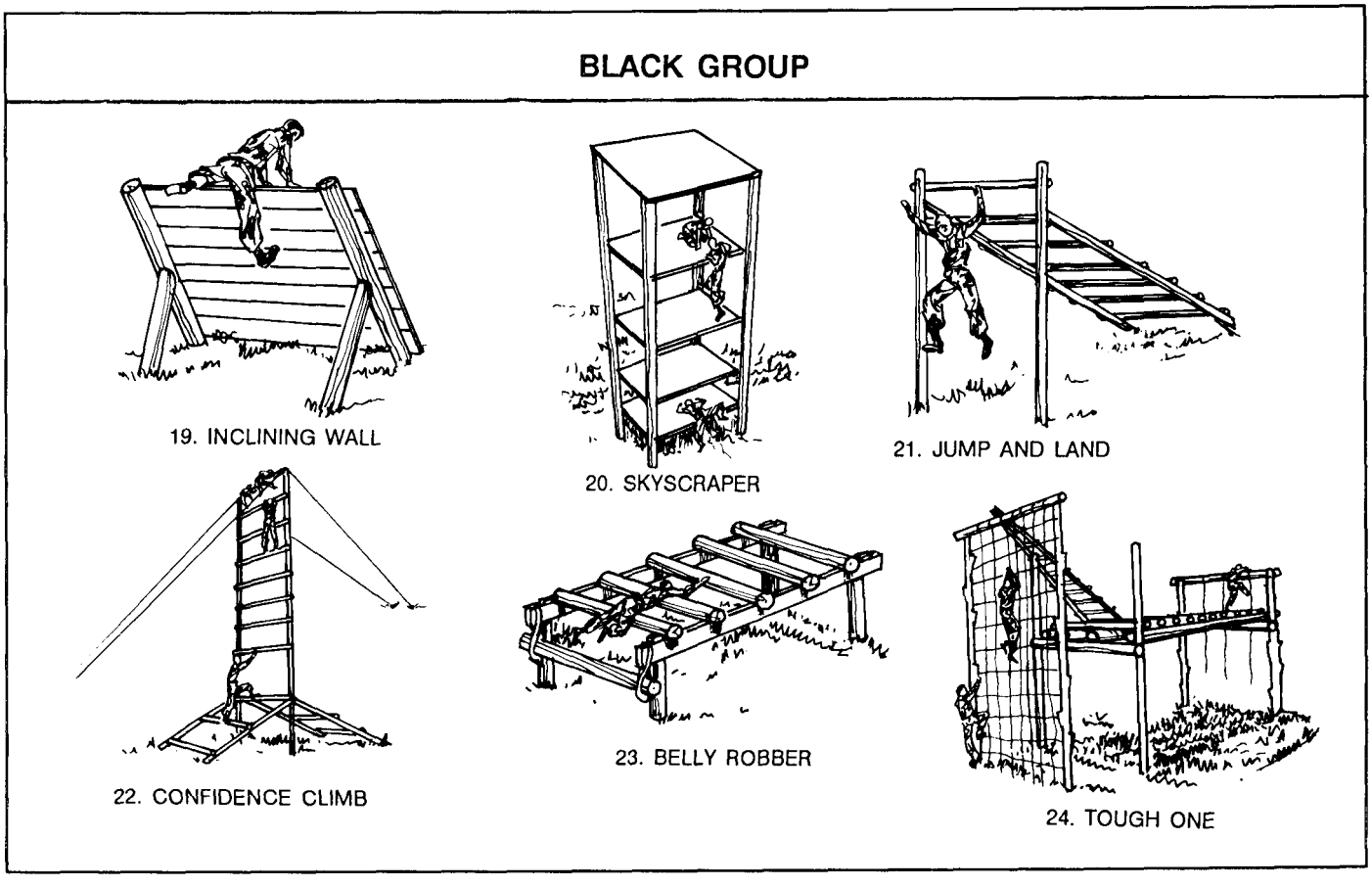


Figure 8-11

Rifle Drills

Rifle drills are suitable activities for fitness training while bivouacking or during extended time in the field. In most situations, the time consumed in drawing weapons makes this activity cumbersome for garrison use. However, it is a good conditioning activity, and the use of individual weapons in training fosters a warrior's spirit.

There are four rifle-drill exercises that develop the upper body. They are numbered in a set pattern. The main muscle groups strengthened by rifle drills are those of the arms, shoulders, and back.

Rifle drill is a fast-moving method of exercising that soldiers can do in as little as 15 minutes. With imagination, the number of steps and/or rifle exercises can be expanded beyond those described here.

EXERCISE PROGRESSION

The rifle-drill exercise normally begins with six repetitions and increases by one repetition for each three periods of exercise. This rate continues until soldiers can do 12 repetitions. However, the number of repetitions can be adjusted as the soldiers improve.

In exercises that start from the rifle-downward position, on the command "Move," soldiers execute port arms and assume the starting position. At the end of the exercise, the command to return soldiers to attention is "Position of attention, move."

In exercises that end in other than the rifle-downward position, soldiers assume that position before executing port arms and order arms.

These movements are done without command and need not be precise. Effective rifle exercises are strenuous enough to tire the arms. When the arms are tired, moving them with precision is difficult.

RIFLE DRILL EXERCISES

The following exercises are for use in rifle drills.

Up and Forward

This is a four-count exercise done at a fast cadence. (See Figure 8-12.)

Fore-Up, Squat

This is a four-count exercise done at a moderate cadence. (See Figure 8-13.)

Fore-Up, Behind Back

This is a four-count exercise done at a moderate cadence. (See Figure 8-14.)

Fore-Up, Back Bend

This is a four-count exercise done at moderate cadence. (See Figure 8- 15.)

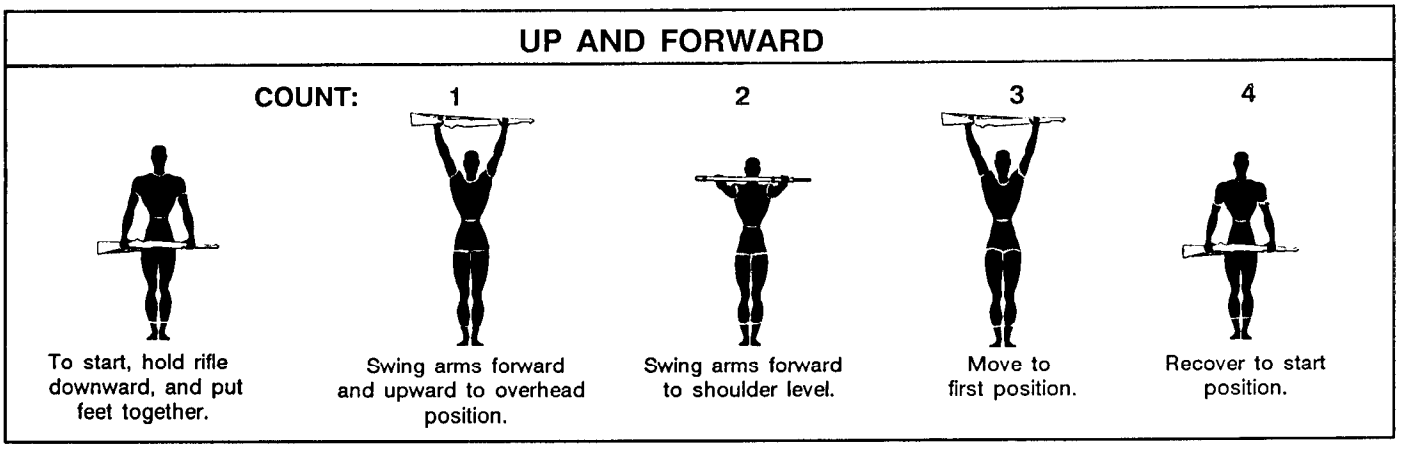


Figure 8-12

FORE-UP, SQUAT

COUNT: 1	2	3	4
To start, hold rifle downward, and put feet about shoulder width apart.	Swing arms forward and upward to overhead position.	Swing arms down to shoulder level, and assume half-knee-bend position.	Move to first position.	Recover to start position.

Figure 8-13

FORE UP, BEHIND BACK

COUNT: 1	2	3	4
To start, hold rifle downward, and put feet together.	Swing arms forward and upward to overhead position. Exhale.	Lower rifle to back of shoulders. Inhale.	Move to first position. Exhale.	Recover to start position. Inhale.

Figure 8-14

FORE-UP, BACK BEND

COUNT: 1	2	3	4
To start, hold rifle downward, and put feet together.	Swing arms forward and upward to overhead position.	Bend backward taking care not to bend too far. Keep face up and knees straight.	Move to first position.	Recover to start position.

Figure 8-15

Log drills are excellent for developing strength and muscular endurance, because they require the muscles to contract under heavy loads.

Log Drills

Log drills are team-conditioning exercises. They are excellent for developing strength and muscular endurance because they require the muscles to contract under heavy loads. They also develop teamwork and add variety to the PT program.

Log drills consist of six different exercises numbered in a set pattern. The drills are intense, and teams should complete them in 15 minutes. The teams have six to eight soldiers per team. A principal instructor is required to teach, demonstrate, and lead the drill. He must be familiar with leadership techniques for conditioning exercises and techniques peculiar to log drills.

AREA AND EQUIPMENT

Any level area is good for doing log drills. All exercises are done from a standing position. If the group is larger than a platoon, an instructor's stand may be needed.

The logs should be from six to eight inches thick, and they may vary from 14 to 18 feet long for six and eight soldiers, respectively. The logs should be stripped, smoothed, and dried. The 14-foot logs weigh about 300 pounds, the 18-foot logs about 400 pounds. Rings should be painted on the logs to show each soldier's position. When not in use, the logs are stored on a rack above the ground.

FORMATION

All soldiers assigned to a log team should be about the same height at the shoulders. The best way to divide a platoon is to have them form a single file or column with short soldiers in front and tall soldiers at the rear. They take their positions in the column according to shoulder height, not head height. When they are in position, they are divided into teams of six or eight. The command is "Count off by sixes (or eights), count off." Each team, in turn, goes to the log rack, shoulders a log, and carries it to the exercise area.

The teams form columns in front of the instructor. Holding the logs in chest position, they face the instructor and ground the log. Ten yards should separate log teams within the columns. If more than one column is used, 10 yards should separate columns.

STARTING DOSAGE AND PROGRESSION

The starting session is six repetitions of each exercise. The progression rate is an increase of one repetition for each three periods of exercise. Soldiers continue this rate until they do 12 repetitions with no rest between exercises. This level is maintained until another drill is used.

START POSITIONS

The soldiers fall in facing their log, with toes about four inches away. Figure 8-16 shows the basic starting positions and commands.

Right-Hand Start Position, Move

On the command "Move," move the left foot 12 inches to the left, and lower the body into a flatfooted squat. Keep the back straight, head up, and arms between the legs. Encircle the far side of the log with the left hand. Place the right hand under the log. (See 1, Figure 8-16.)

Left-Hand Start Position, Move

This command is done the same way as the preceding command. However, the left hand is under the log, and the right hand encircles its far side. (See 2, Figure 8-16.)

Right-Shoulder Position, Move

This command is given from the right-hand-start position. On the command "Move," pull the log upward in one continuous motion to the right shoulder. At the same time, move the left foot to the rear and stand up, facing left. Balance the log on the right shoulder with both hands. (See 3, Figure 8-16.) This movement cannot be done from the left-hand-start position because of the position of the hands.

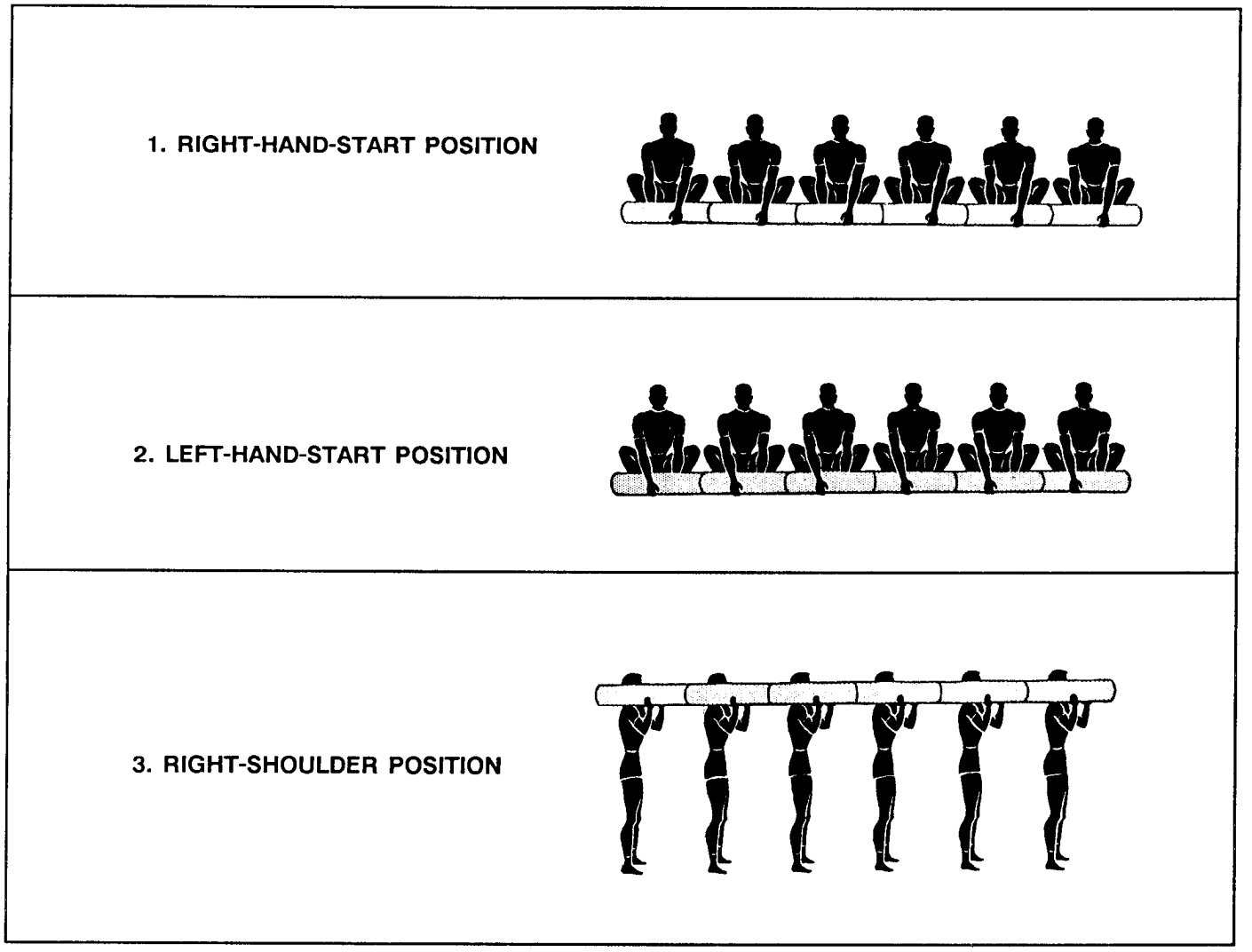


Figure 8-16

Left-Shoulder Position, Move

This command is given from the left-hand-start position. On the command "Move, " pull the log upward to the left shoulder in one continuous motion. At the same time, move the right foot to the rear, and stand up facing right. Balance the log on the left shoulder with both hands. (See 4, Figure 8-17.) This movement cannot be done from the right-hand-start position.

Waist Position, Move

From the right-hand-start position, pull the log waist high. Keep the arms straight and fingers laced under the log. The body is inclined slightly to the rear, and the chest is lifted and arched. (See 5, Figure 8-17.)

Chest Position, Move

This command is given after taking the waist position. On the command "Move," shift the log to a position high on the chest, bring the left arm under the log, and hold the log in the bend of the arms. (See 6, figure 8-17.) Keep the upper arms parallel to the ground.

To move the log from the right to the left shoulder, the command is "Left-shoulder position, move." Push the log overhead, and lower it to the opposite shoulder.

To return the log to the ground from any of the above positions, the command is "Start position, move." At the command "Move," slowly lower the log to the ground. Position the hands and fingers so they are not under the log.

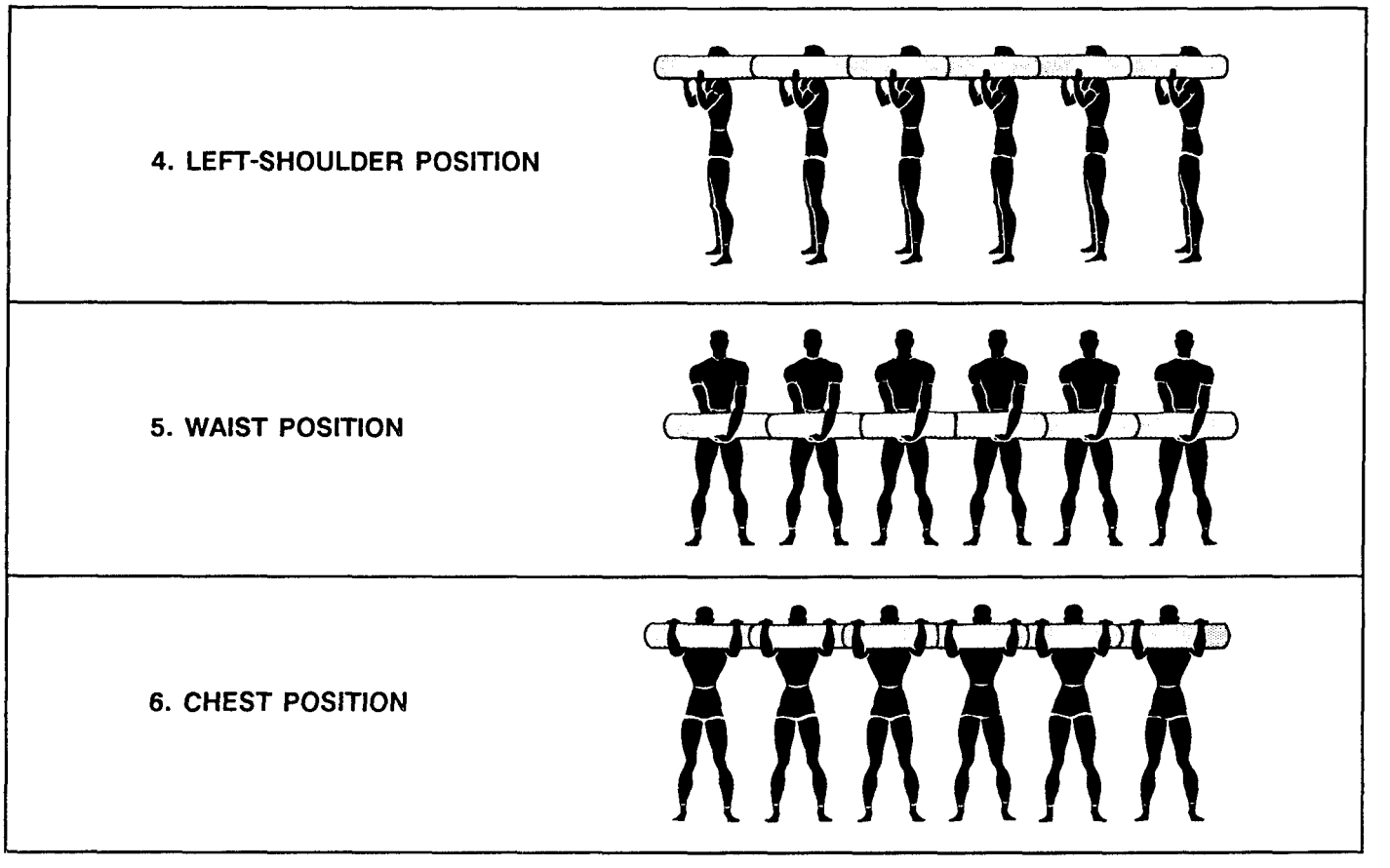


Figure 8-17

LOG-DRILL EXERCISES

The following are log-drill exercises.

Exercise 1. Two-Arm Push-Up

Start Position: Right- or left-shoulder position, with feet about shoulder-width apart. (See 1, Figure 8-18.)

Cadence: Moderate.

Movement: A four-count exercise; at the count of --

"One''-Push the log overhead until the elbows lock.

"Two''-Lower the log to the opposite shoulder.

"Three''-Repeat the action of count one.

"Four''-Recover to the start position.

Exercise 2. Forward Bender

Start Position: Chest position, with feet about shoulder-width apart. (See 2, Figure 8-18.)

Cadence: Moderate.

Movement A four-count exercise; at the count of --

"One''-Bend forward at the waist while keeping the back straight and the knees slightly bent.

"Two''-Recover to the start position.

'Three''-Repeat the action of count one.

"Four''-Recover to the start position.

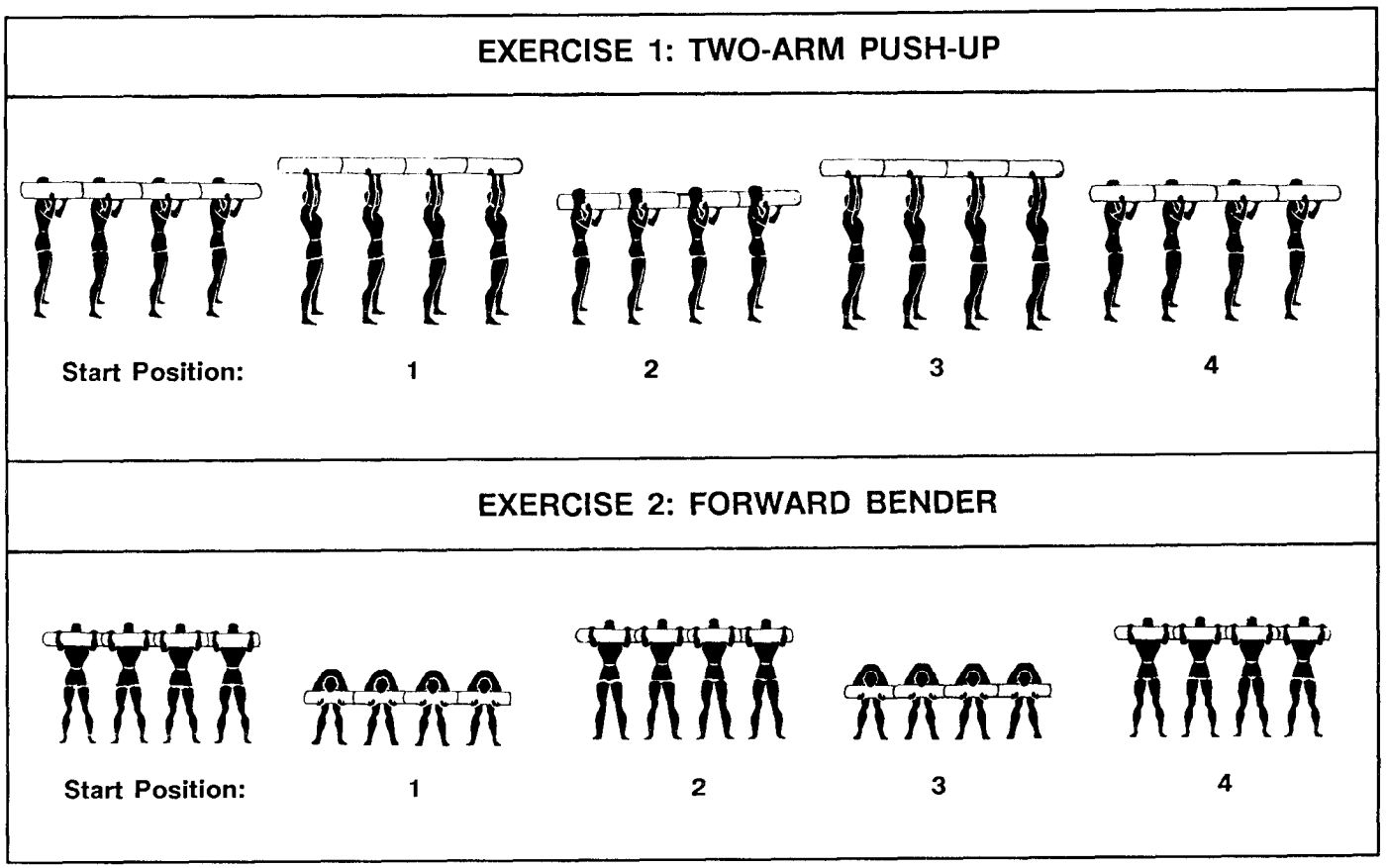


Figure 8-18

Exercise 3. Straddle Jump

Start Position Right- or left-shoulder position, with feet together, and fingers locked on top of the log. Pull the log down with both hands to keep it from bouncing on the shoulder. (See 3, Figure 8-19.)

Cadence: Moderate.

Movement A four-count exercise; at the count of--

"One''-Jump to a side straddle.

"Two''-Recover to the start position.

'Three''-Repeat the action of count one.

"Four''-Recover to the start position.

Exercise 4. Side Bender

Start Position: Right-shoulder position with the feet about shoulder-width apart. (See 4, Figure 8- 19.)

Cadence Moderate.

Movement: A four-count exercise; at the count of--

"One''-Bend sideward to the left as far as possible, bending the left knee.

"Two''-Recover to the start position.

"Three''-Repeat the action of count one.

"Four''-Recover to the start position.

NOTE: After doing the required number of repetitions, change shoulders and do an equal number to the right side.

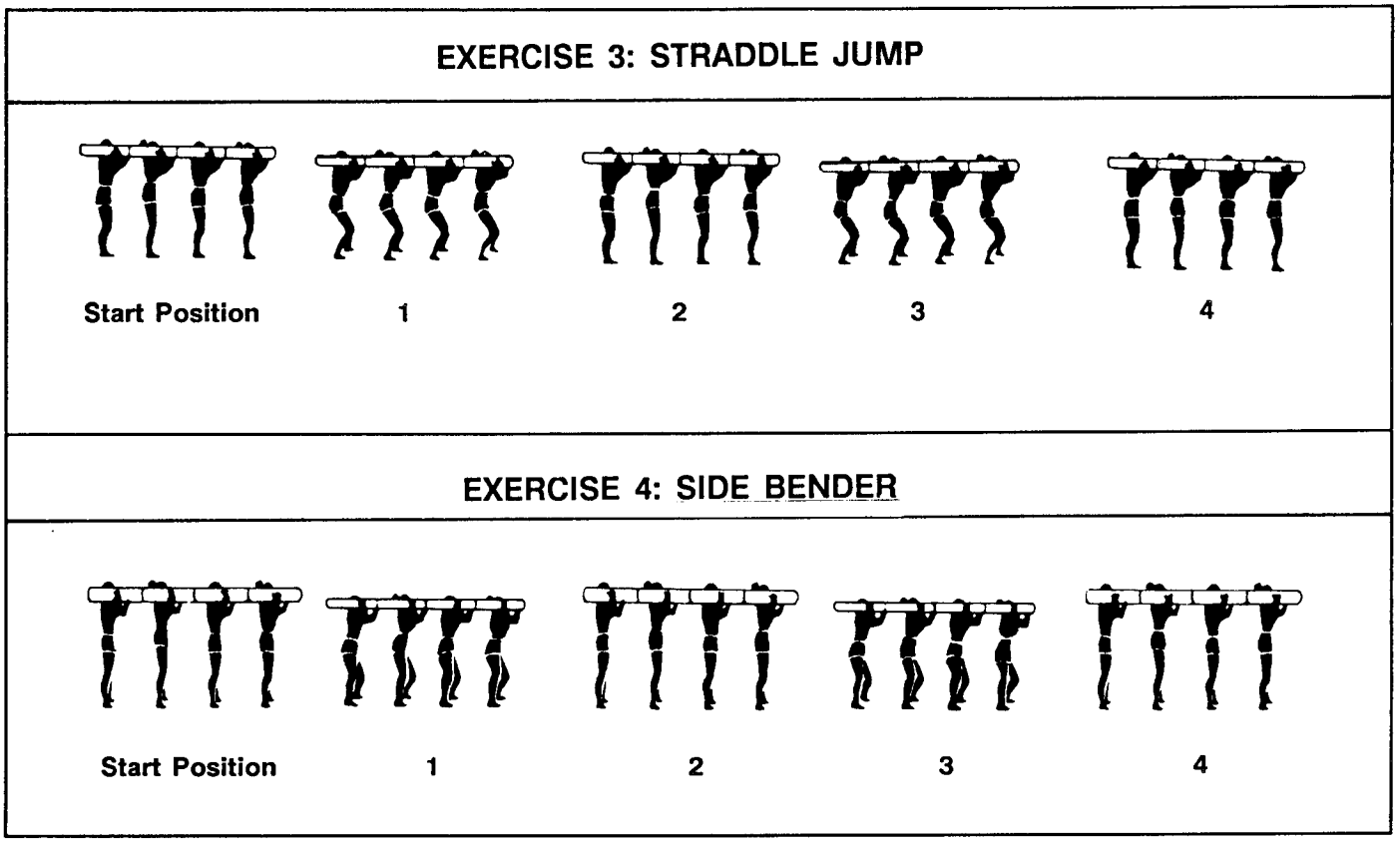


Figure 8-19

Exercise 5. Half-Knee Bend

Start Position: Right- or left-shoulder position, with feet about shoulder-width apart, and fingers locked on top of the log. (See 5, Figure 8-20.)

Cadence: Slow.

Movement: A four-count exercise; at the count of --

"One''-Flex the knees to a half-knee bend.

"Two''-Recover to the start position.

"Three''-Repeat the action of count one.

"Four''-Recover to the start position.

(NOTE: Pull forward and downward on the log throughout the exercise.)

Exercise 6. Overhead Toss (NOTE: Introduce this exercise only after soldiers have gained experience and strength by doing the other exercises for several sessions.)

Start Position: Right-shoulder position with the feet about shoulder-width part. The knees are at a quarter bend. (See 6, Figure 8-20.)

Cadence: Moderate.

Movement: A four-count exercise; at the count of --

"One''-Straighten the knees and toss the log about 12 inches overhead. Catch the log with both hands, and lower it toward the opposite shoulder. As the log is caught, lower the body into a quarter bend.

"Two''-Again, toss the log into the air and, when caught, return it to the original shoulder.

"Three''-Repeat the action of count one.

"Four''-Recover to the start position.

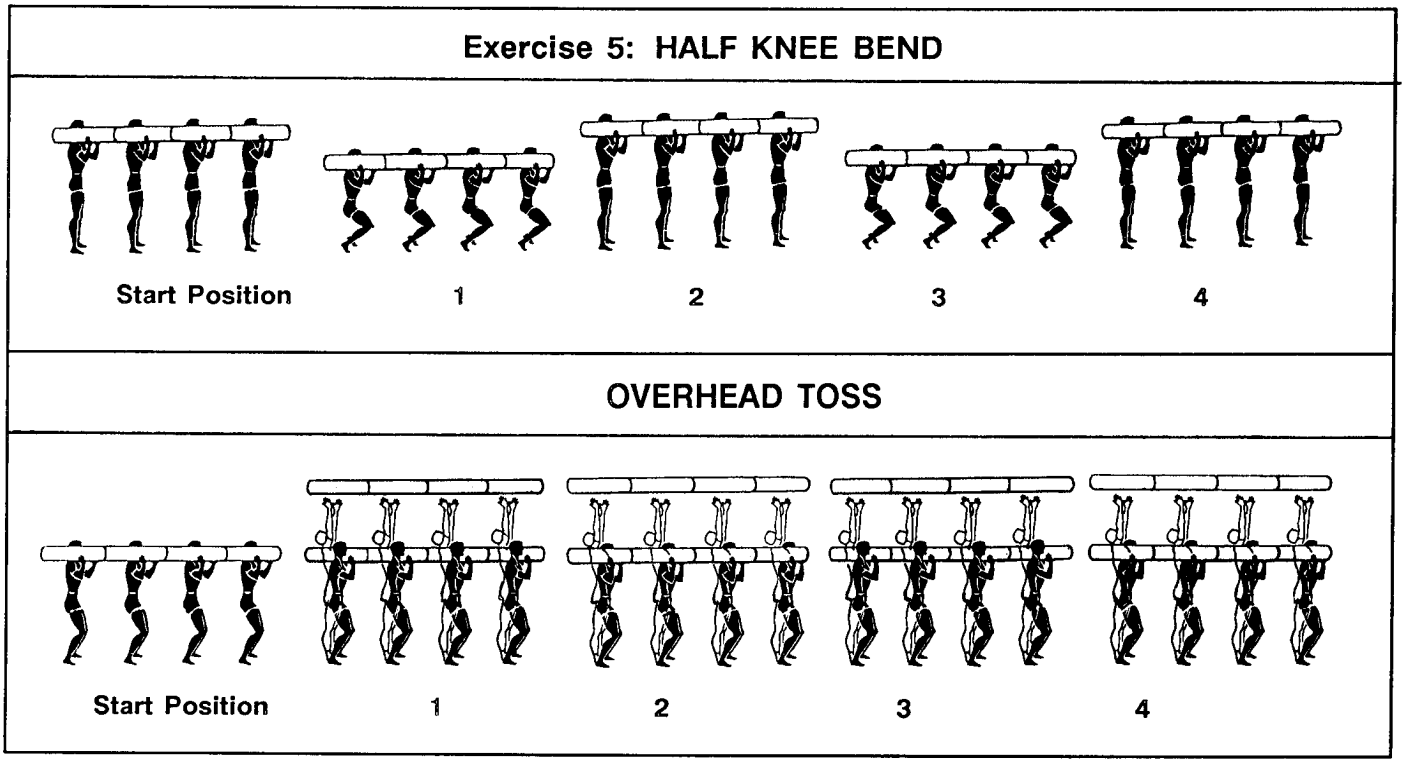


Figure 8-20

Aquatic Exercise

Aquatics is a mode of physical training which helps one attain and maintain physical fitness through exercises in the water. It is sometimes called slimnastics. Aquatic training can improve muscular endurance, CR endurance, flexibility, coordination, and muscular strength.

Because of its very low impact to the body, an aquatic exercise program is ideal for soldiers who are overweight and those who are limited due to painful joints, weak muscles, or profiles. The body's buoyancy helps minimize injuries to the joints of the lower legs and feet. It exercises the whole body without jarring the bones and muscles. Leaders can tailor the variety and intensity of the exercises to the needs of all the soldiers in the unit.

Aquatic training is a good supplement to a unit's PT program. Not only is it fun, it exposes soldiers to water and can make them more comfortable around it. Most Army installations have swimming pools for conducting aquatic, physical training sessions.

SAFETY CONSIDERATIONS

One qualified lifeguard is needed for every 40 soldiers at all aquatic training sessions. Nonswimmers must remain in the shallow end of the pool. They should never exercise in the deep end with or without flotation devices.

EQUIPMENT

Soldiers normally wear swim suits for aquatics, but they can wear boots and fatigues to increase the intensity of the activities. The following equipment is optional for training:

- Goggles.
- Kickboard.
- Pull buoy.
- Ear/nose plugs.
- Fins.
- Hand paddles.

SAMPLE TRAINING PROGRAM

'Warm-Up

As in any PT session, a warm-up is required. It can be done in the water or on the deck. Allow five to seven minutes for the warm-up.

Conditioning Phase

Soldiers should exercise vigorously to get a training effect. Energetic music may be used to keep up the tempo of the workout. The following are some exercises that can be used in an aquatic workout. (See Figure 8-21.)

Side Leg-Raises. Stand in chest to shoulder-deep water with either side of the body at arm's length to the wall of the pool, and grasp the edge with the nearest hand. Raise the outside leg sideward and upward from the hip. Next, pull the leg down to the starting position. Repeat these actions. Then, turn the other side of the body to the wall, and perform the exercise with the other leg. DURATION: 30 seconds (15 seconds per leg).

Leg-Over. Stand in chest-to shoulder-deep water, back facing the wall of the pool. Reach backward with the arms extended, and grasp the pool's edge. Next, raise one leg in front of the body away from the wall, and move it sideward toward the other leg as far as it can go. Then, return the leg to the front-extended position, and lower it to the starting position. Repeat these actions with the other leg, and continue to alternate legs. DURATION: 30 seconds (15 seconds per leg).

Rear Leg Lift. Stand in chest-to shoulder-deep water with hands on the pool's edge, chest to the wall. Raise one leg back and up from the hip, extend it, and point the foot. Then, pull the leg back to the starting position. Alternate these actions back and forth with each leg. DURATION: 20 seconds (10 seconds each leg).

AN AQUATIC EXERCISE WORKOUT CENTER

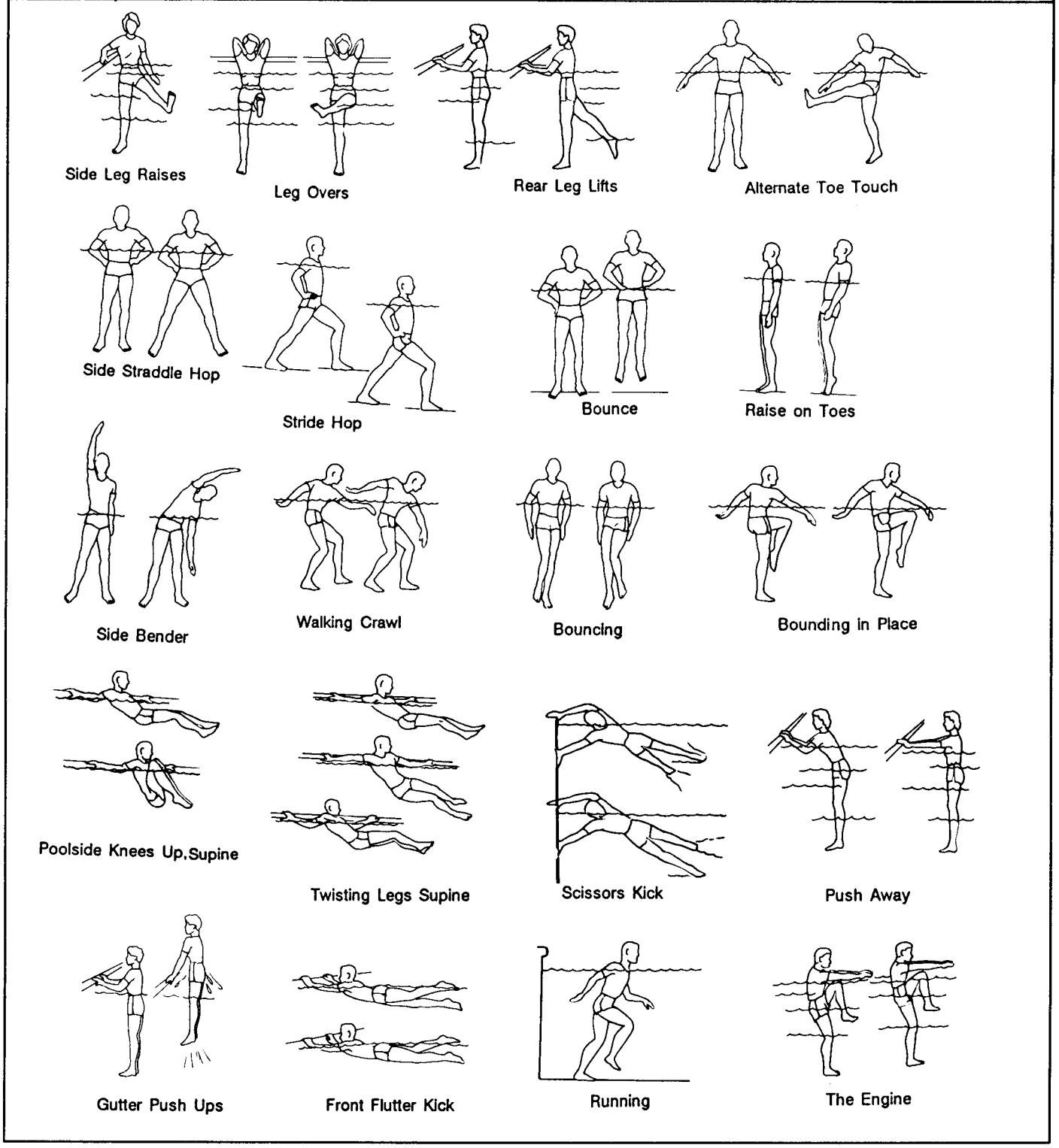


Figure 8-21

Alternate Toe Touch. Stand in waist-deep water. Raise the left leg as in kicking while touching the elevated toe with the right hand. At the same time, rotate the head toward the left shoulder, and push the left arm backward through the water. Alternate these actions back and forth with each leg and opposite hand. DURATION 2 minutes.

Side Straddle Hop. Stand in waist-deep water with hands on hips and feet together. Jump sideward and land with feet about two feet apart. Then, return to the starting position, and repeat the jumping action. DURATION 2 minutes.

Stride Hop. Stand in waist-deep water with hands on hips and feet together. Jump, moving the left leg forward and right leg backward. Then, jump again moving the right leg forward and left leg backward. Repeat these actions. DURATION 2 minutes.

The Bounce. Stand in waist-deep water with hands on hips and feet together. Jump high with feet together. Upon landing, use a bouncing motion, and repeat the action. DURATION: 1 minute.

Rise on Toes. Stand in chest-to shoulder-deep water with arms at sides and feet together. Rise up using the toes. Then, lower the body to the starting position. Repeat the action. DURATION: 1 minute.

Side Bender. Stand in waist-deep water with the left arm at the side and the right arm extended straight overhead. Stretch slowly, bending to the left. Recover to the starting position, and repeat the action. Next, reverse to the right arm at the side and the left arm extended straight overhead. Repeat the stretching action to the right side. DURATION: 1 minute.

Walking Crawl. Walk in waist- to chest-deep water. Simulate the overhand crawl stroke by reaching out with the left hand cupped and pressing the water downward to the thigh. Repeat the action with the right hand. Alternate left and right arm action. DURATION: 2 minutes.

Bouncing. Stand in chest-deep water, arms at sides. Bounce on the left foot while pushing down vigorously with both hands. Repeat the action with the right foot. Alternate bouncing on the left and right foot. DURATION: 2 minutes.

Bounding in Place with Alternate Arm Stretch, Forward. Bound in place in waist-deep water using high knee action. Stretch the right arm far forward when the left knee is high and the left arm is stretched backward. When the position of the arm is reversed, simulate the action of the crawl stroke by pulling down and through the water with the hand. DURATION 1 minute.

Poolside Knees Up, Supine. Stand in chest-to shoulder-deep water, back against the wall of the pool. Extend the arms backward, and grasp the pool's edge. With feet together, extend the legs in front of the torso, and assume a supine position. Then with the legs together, raise the knees to the chin. Return to the starting position, and repeat the action. DURATION: 2 minutes (maximum effort).

Twisting Legs, Supine. Stand in chest-to shoulder-deep water, back against the wall of the pool. Extend the arms backward, and grasp the pool's edge. With feet together, extend the legs in front of the torso, and assume a supine position. Then, twist the legs slowly to the left, return to the starting position, and twist the legs slowly to the right. Repeat this twisting action. DURATION: 1 minute (2 sets, 30 seconds each).

Scissor Kick. Float in chest- to shoulder- deep water on either side of the body with the top arm extended, hand holding the pool's edge. Brace the bottom hand against the pool's wall with feet below the water's surface. Next, assume a crouching position by gringing the heels toward the hips by

bending the knees. Then, straighten and spread the legs with the top leg extending backward. When the legs are extended and spread, squeeze them back together (scissoring). Pull with the top hand, and push with the bottom hand. The propulsive force of the kick will tend to cause the body to rise to the water's surface. DURATION 1 minute (2 sets, 30 seconds each, maximum effort).

Push Away. Stand in chest-to shoulder-deep water facing the pool's wall and at arm's length from it. Grasp the pool's edge, and bend the arms so that the body is leaning toward the wall of the pool. Vigorously push the chest back from the wall by straightening the arms. Then, with equal vigor, pull the upper body back to the wall. Repeat these actions. DURATION: 2 minutes (maximum effort).

Gutter Push-Ups. Stand in chest-to shoulder- deep water facing the pool's wall. Place the hands on the edge or gutter of the pool. Then, raise the body up and out of the water while extending the arms. repeat this action. DURATION: 2 minutes (4 sets, 30 seconds each with 5-second rests between sets).

Front Flutter Kick. Stand in chest-to shoulder-deep water facing the pool's wall. Grasp the pool's edge or gutter and assume a prone position with legs extended just below the water's surface. Then, kick flutter style, toes pointed, ankles flexible, knee joint loose but straight. The Iegs should simulate a whip's action. DURATION 1 minute (2 sets, 30 seconds each).

Running. Move in a running gait in chest-to shoulder-deep water with arms and hands under the water's surface. This activity can be stationary, or the exerciser may run from poolside to poolside. Runners must concentrate on high knee action and good arm movement. DURATION 10 to 20 minutes.

The Engine. Stand in chest-to shoulder-deep water, arms straight and in front of the body and parallel to the water with the palms facing downward. While walking forward, raise the left knee to the left elbow, then return to the starting position. Continuing to walk forward, touch the right knee to the right elbow, and return to the starting position. Be sure to keep the arms parallel to the water throughout the exercise. DURATION 1 to 2 minutes (2 sets).

Cool-Down

This is required to gradually bring the body back to its pre-exercise state. It should last from five to seven minutes.

CHAPTER 9

Competitive Fitness Activities

Physical fitness is one of the foundations of combat readiness, and maintaining it must be an integral part of every soldier's life. This chapter discusses competitive fitness activities and athletic events that commanders can use to add variety to a unit's physical fitness program. There is also a section on developing a unit intramural program. Athletic and competitive fitness activities are sports events which should only be used to supplement the unit's PT program. They should never replace physical training and conditioning sessions but, rather, should exist to give soldiers a chance for healthy competition. Only through consistent, systematic physical conditioning can the fitness components be developed and maintained.

Crucial to the success of any program is the presence and enthusiasm of the leaders who direct and participate in it. The creativity of the physical training planners also plays a large role. Competitive fitness and athletic activities must be challenging. They must be presented in the spirit of fair play and good competition.

It is generally accepted that competitive sports have a tremendous positive influence on the physical and emotional development of the participants. Sports competition can enhance a soldier's combat readiness by promoting the development of coordination, agility, balance, and speed. Competitive fitness activities also help develop assets that are vital to combat effectiveness. These include team spirit, the will to win, confidence, toughness, aggressiveness, and teamwork.

Competitive fitness activities help in the development of assets that are vital to combat effectiveness.

Intramural

The Army's sports mission is to give all soldiers a chance to participate in sports activities. A unit-level intramural program can help achieve this important goal. DA Pam 28-6 describes how to organize various unit-level intramural programs.

Factors that affect the content of the sports program differ at every Army installation and unit. Initiative and ingenuity in planning are the most vital assets. They are encouraged in the conduct of every program.

OBJECTIVES

A well-organized and executed intramural program yields the following:

- Team spirit, the will to win, confidence, aggressiveness, and teamwork. All are vital to combat effectiveness.
- A change from the routine PT program.
- The chance for all soldiers to take part in organized athletics.

ORGANIZATION

The command level best suited to organize and administer a broad intramural program varies according to a unit's situation. If the objective of maximum participation is to be achieved, organization should start at company level and then provide competition up through higher unit levels. Each command level should have its own program and support the next higher program level.

To successfully organize and conduct an intramural program, developers should consider the following factors and elements.

Authority

The unit commander should publish and endorse a directive giving authorization and guidance for a sports program. A detailed SOP should also be published.

Personnel

Leaders at all levels of the intramural program should plan, organize, and supervise it. Appointments at all

echelons should be made for at least one year to provide continuity. The commander must appoint a qualified person to be the director, regardless of the local situation, type, and size of the unit. The director must be a good organizer and administrator and must have time to do the job correctly. He should also have a sense of impartiality and some athletic experience.

Commanders should form an intramural sports council in units of battalion size or larger and should appoint members or require designated unit representatives. The council should meet at least once a month or as often as the situation requires. The council serves as an advisory body to the unit commander and intramural director. It gives guidance about the organization and conduct of the program.

Facilities and Equipment

Adequate facilities and equipment must be available. When facilities are limited, leaders must plan activities to ensure their maximum use. In all cases, activities must be planned to ensure the safety of participants and spectators.

Funds and Budget

Adequate funds are essential to successfully organize and operate a sports program. Therefore, beforehand, organizers must determine how much money is available to support it. To justify requests for funds they must prepare a budget in which they justify each sports activity separately. The budget must include special equipment, supplies, awards, pay for officials, and other items and services. Units can reduce many of their costs by being resourceful.

AWARD SYSTEM

Commanders can stimulate units and soldiers to participate in competitive athletics by using an award system. One type is a point-award system where teams get points based on their win/loss records and/or final league standings. This reflects the unit's standings in the overall intramural sports program. The recognition will help make units and individuals participate throughout the year. Trophies can then be given for overall performance and individual activities.

PROGRAM PLANNING

A successful program depends on sound plans and close coordination between the units involved. The intramural director should meet with subordinate commanders or a sports representative to determine what program of activities is compatible with the mission and training activities of each unit. Unless they resolve this issue, they may not get command support which, in turn, could result in forfeitures or lack of participation. The less-popular activities may not be supported because of a lack of interest.

Commanders can stimulate soldiers to participate in competitive athletics by using an award system.

Evaluations

Before the program is developed, leaders must study the training and availability situation at each unit level. They should include the following items in a survey to help them determine the scope of the program and to develop plans:

- ***General.*** Evaluate the commander's attitude, philosophy, and policy about the sports program. Under stand the types of units to be served, their location, the climate, and military responsibilities.
- ***Troops.*** Determine the following: 1) number and types of personnel; 2) training status and general duty assignment; 3) special needs, interests, and attitudes.
- ***Time available.*** Coordinate the time available for the sports program with the military mission. Determine both the on-duty and off-duty time soldiers have for taking part in sports activities.
- ***Equipment.*** Consider the equipment that will be needed for each sport.
- ***Facilities.*** Determine the number, type, and location of recreational facilities both within the unit and in those controlled by units at higher levels.
- ***Funds.*** Determine how much each unit can spend on the intramural program.
- ***Personnel.*** Assess how many people are needed to run the program. The list should include a director and as sistants, sports council, officials, and team captains, as well as volun teers for such tasks as setting up a playing field.
- ***Coordination.*** Coordinate with the units' operations sections to avoid conflict with military training sched ules.
- ***Activities.*** The intramural director should plan a tentative program of activities based on the season, local situation, and needs and interests of the units. Both team and individual sports should be included. Some team sports are popular at all levels and need little promotional effort for success. Among these are volleyball, touch football, basketball, and softball. Some individual competitive sports have direct military value. They include boxing, wrestling, track and field, cross country, triathlon, biathlon, and swimming. While very popular, these sports are harder to organize than team sports. See Figures 9-1 and 9-2 for a list of sports activities.

SPORTS ACTIVITIES			
Team Sports			
Baseball Flag Football Softball	Basketball Water Polo Speedball	Field Hockey Pushball Tug-of-War	Football Soccer Volleyball
Field-Type-Meets			
Athletic Carnivals Physical Fitness Meet Track and Field Urban Orienteering	Cross Country Relay Carnival Water Carnival	Military Field Meets Swimming and Diving Unit Olympics	

Figure 9-1

SPORTS ACTIVITIES			
Individual Sports			
Archery Boxing Handball Marathon Track & Field Triathlon	Badminton Canoeing Judo Squash Rowing Skating	Tennis Table Tennis Horseshoes Skating Sky Diving Weightlifting	Bowling Gymnastics Modern Biathlon Mountain Climbing Skeet Shooting Swimming and Diving

Figure 9-2

ESSENTIAL ELEMENTS	
Intramural Handbook	
• Commander's foreward.	• Master calendar of activities.
• Personnel directory.	• Organization of leagues and units of competition.
• Title page.	• Command- points award system.
• Purpose.	• Facilities and their hours of operation.
• References.	• Equipment regulations.
• Objectives.	• Rules and regulations of each sport.
• Duties of the personnel.	• Reporting time for competition.
• Eligibility rules.	• Postponement of contests.
• Intramural sports council.	• Protest procedures.
• Protest and sportsmanship board.	• Awards.
• Budgets and funding.	• Records and results.
• Officials association.	• Bulletin boards and publicity.

Table 9-1

Functions

Once the evaluations have been made, the following functions should be performed:

- ***Make a handbook.*** An intramural handbook should be published at each level of command from installation to company to serve as a standing operating procedure (SOP). This handbook should include the essential elements listed in Table 9-1 above.
- ***Plan the calendar.*** Local situations and normal obstacles may conflict with the intramural program. How ever, a way can be found to provide a scheduled program for every season of the year.
- ***Choose the type of competition.*** Intramural directors should be able to choose the type of competition best suited for the sport and local circumstances. They should also know how to draw up tournaments. Unless the competition must take place in a short time, elimination tournaments should not be used. The round-robin tournament has the greatest advantage because individuals and teams are never eliminated. This type of competition is adaptable to both team and individual play. It is appropriate for small numbers of entries and league play in any sport.
- ***Make a printed schedule.*** Using scheduling forms makes this job easier. The form should include game number, time, date, court or field, and home or visiting team. Space for scores and officials is also helpful. Championship games or matches should be scheduled to take place at the best facility.

Unit Activities

The following games and activities may be included in the unit's PT program, They are large-scale activities which can combine many components of physical and motor fitness. In addition, they require quick thinking and the use of strategy. When played vigorously, they are excellent activities for adding variety to the program.

NINE-BALL SOCCER

The object of this game is for each of a team's five goalies to have one ball.

Players

There are 25 to 50 players on each team, five of whom are goalies. The other players are divided into four equal groups. The goalies play between the goal line and 5-yard line of

a standard football field. The other four groups start the game between the designated 10-yard segments of the field. (See Figure 9-3.) The goalies and all other players must stay in their assigned areas throughout the game. The only exceptions are midfielder who stand between the 35- and 45-yard lines. These players may occupy both their assigned areas and the 10-yard free space at the center of the field.

The Game

The game starts with all players inside their own areas and midfielder on their own 40-yard line. The nine balls are placed as follows. Four are on each 45-yard line with at least five yards between balls. One is centered on the 50-yard line. The signal to start play is one long whistle blast. Players must pass the balls through the opposing team's defenses into the goal area using only their feet or heads. The first team whose goalies have five balls wins a point. The game then stops, and the balls are placed for the start of a new set. The first team to score five points wins.

There are no time-outs except in case of injury, which is signaled by two sharp whistle blasts. The teams change positions on the field after each set. Team members move to different zones after the set.

Rules

A ball is played along the ground or over any group or groups of players. The ball may travel any distance if it is played legally.

Goalies may use their hands in playing the ball and may give a ball to other goalies on their team. For a set to officially end, each goalie must have a ball.

If players engage in unnecessary roughness or dangerous play, the referee removes them from the game for the rest of the set and one additional set. He also removes players for the rest of the set if they step on or over a boundary or sideline or use their hands outside the goal area.

If a goalie steps on or over a boundary or sideline, the referee takes the ball being played plus another ball from the goalie's team and gives these balls to the nearest opposing player. If

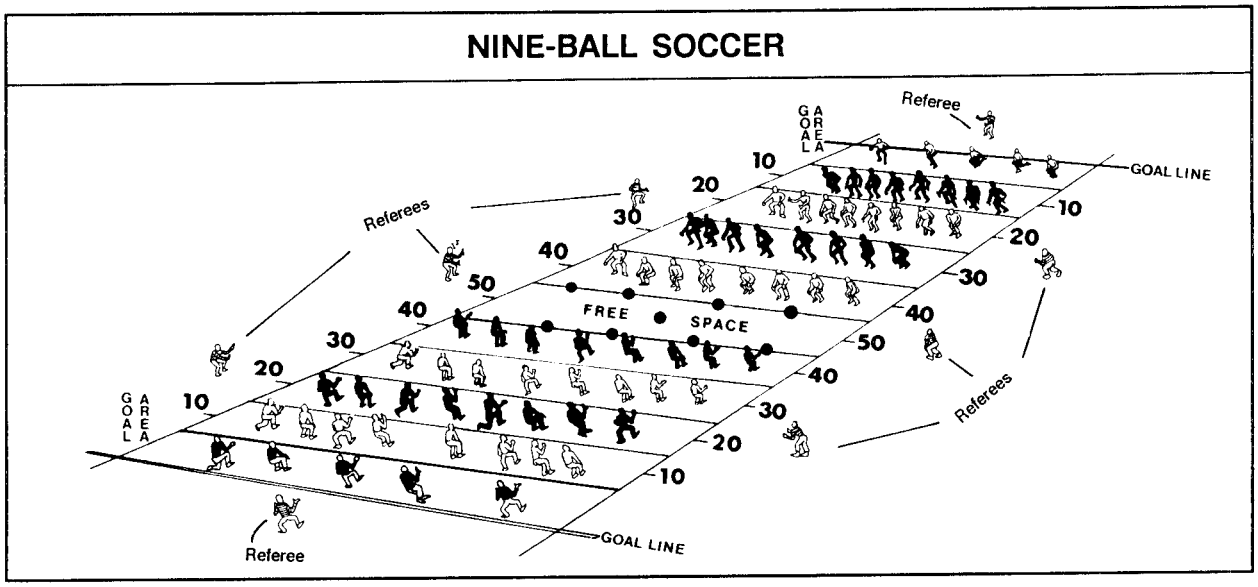


Figure 9-3

the team has no other ball in the goal area, the referee limits the penalty to the ball that is being played.

If a ball goes out of bounds, the referee retrieves it. The team that caused it to go out of bounds or over the goal line loses possession. The referee puts the ball back into play by rolling it to the nearest opposing player.

PUSHBALL

This game requires a large pushball that is five to six feet in diameter. It also requires a level playing surface that is 240 to 300 feet long and 120 to 150 feet wide. The length of the field is divided equally by a center line. Two more lines are marked 15 feet from and parallel to the end lines and extending across the entire field. (See Figure 9-4.)

Players

There are 10 to 50 soldiers on each of two teams.

The Game

The object of the game is to send the ball over the opponent's goal line by pushing, rolling, passing, carrying, or using any method other than kicking the ball.

The game begins when the ball is placed on the centerline with the opposing captains three feet away from it. The other players line up 45 feet from the ball on their half of the field. At the referee's starting whistle, the captains immediately play the ball, and their teams come to their aid.

At quarter time, the ball stays dead for two minutes where it was when the quarter ended. At halftime, the teams exchange goals, and play resumes as if the game were beginning.

A team scores a goal when it sends the ball across the opposing team's end line. A goal counts five points. The team that scores a goal may then try for an extra point. For the extra point, the ball is placed on the opposing team's 5-yard line, and the teams line

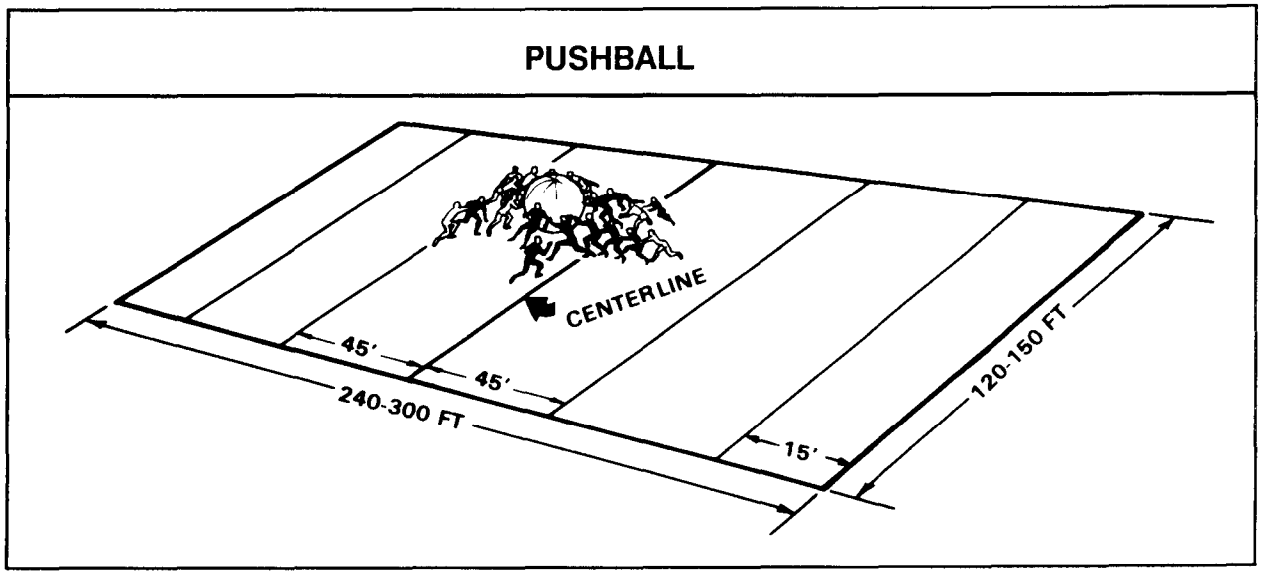


Figure 9-4

up across the field separated by the width of the ball. Only one player may place his hands on the ball. The player who just scored is directly in front of the ball. At the referee's signal, the ball is put into play for one minute. If any part of the ball is driven across the goal line in this period, the offense scores one point. The defense may not score during the extra point attempt.

The game continues until four 10-minute quarters have been played. Rest periods are allowed for two minutes between quarters and five minutes at halftime.

Rules

Players may use any means of interfering with the opponents' progress except striking and clipping. Clipping is throwing one's body across the back of an opponent's legs as he is running or standing. Force may legally be applied to all opponents whether they are playing the ball or not. A player who strikes or clips an opponent is removed from the game, and his team is penalized half the distance to its goal.

When any part of the ball goes out of bounds, it is dead. The teams line up at right angles to the sidelines. They should be six feet apart at the point where the ball went out. The referee tosses the ball between the teams.

When, for any reason, the ball is tied up in one spot for more than 10 seconds, the referee declares it dead. He returns the ball into play the same way he does after it goes out of bounds.

STRATEGY PUSHBALL

Strategy pushball is similar to pushball except that it is played on two adjacent fields, and opposing teams supply soldiers to the games on both fields. Team commanders assess the situation on the fields and distribute their soldiers accordingly. The commander decides the number of soldiers used, within limits imposed by the rules. This number may be adjusted throughout the game. Play on both fields occurs at the same time, but each game progresses independently. At the end of play, a team's points from both fields are added together to determine the overall winner.

This game requires two pushballs that are five to six feet in diameter. Pull-over vests or jerseys of two different colors are used by each team for a total of four different colors. Starters and reserves should be easily distinguishable. Starters and substitutes should wear vests of one color, while the team commander and reserves wear vests of the second color.

Players may wear any type of athletic shoes except those with metal cleats. Combat boots may be worn, but extra caution must be used to prevent injuries caused by kicking or stepping on other players. Soldiers wearing illegal equipment may not play until the problem has been corrected.

The playing area is two lined-off fields. These are 240 to 300 feet long by 120 to 150 feet wide. They are separated lengthwise by a 20-foot-wide divider strip. The length of each field is divided equally by a centerline that is parallel to the goal lines. Lines are also marked 45 feet from each side of the centerline and parallel to it. The lines extend across both fields. Dimensions may be determined locally based on available space and the number of players. The space between the fields is the team area. Each team occupies the third of the team space that immediately adjoins its initial playing field.

Time periods should be adjusted to suit weather conditions and soldiers' fitness levels.

Players

There are 25 to 40 soldiers on each team. A typical, 25-member team has the following:

- One team commander. He is responsible for overall game strategy and for determining the number and positions of players on the field.
- Sixteen starting members. Eight are on each field at all times; one is appointed field captain.
- Four reserve members. These are players the team commander designates as reinforcements.
- Three substitutes. These are replacements for starters or reserves.
- One runner. He is designated to convey messages from the team commander to field captains.

The proportion of soldiers in each category stays constant regardless of the total number on a team. Before the event, game organizers must coordinate with participating units and agree on the number on each team.

Runners serve at least one period; they may not play during that period. They are allowed on the field only during breaks in play after a dead ball or goal.

Reserves are used at any point in the game on either field and are committed as individuals or groups. They may enter or leave the playing field at any time whether the ball is in play or not. Team commanders may enter the game as reserves if they see the need for such action.

Reserves, substitutes, and starting members may be redesignated into any of the other components on a one-for-one basis only during dead balls, injury time-outs, or quarter- and half-time breaks. A reserve may become a starter by switching vests with an original starter, who then becomes a reserve.

When possible, senior NCOS and officers from higher headquarters or other units should be used as officials. Players must not question an official's

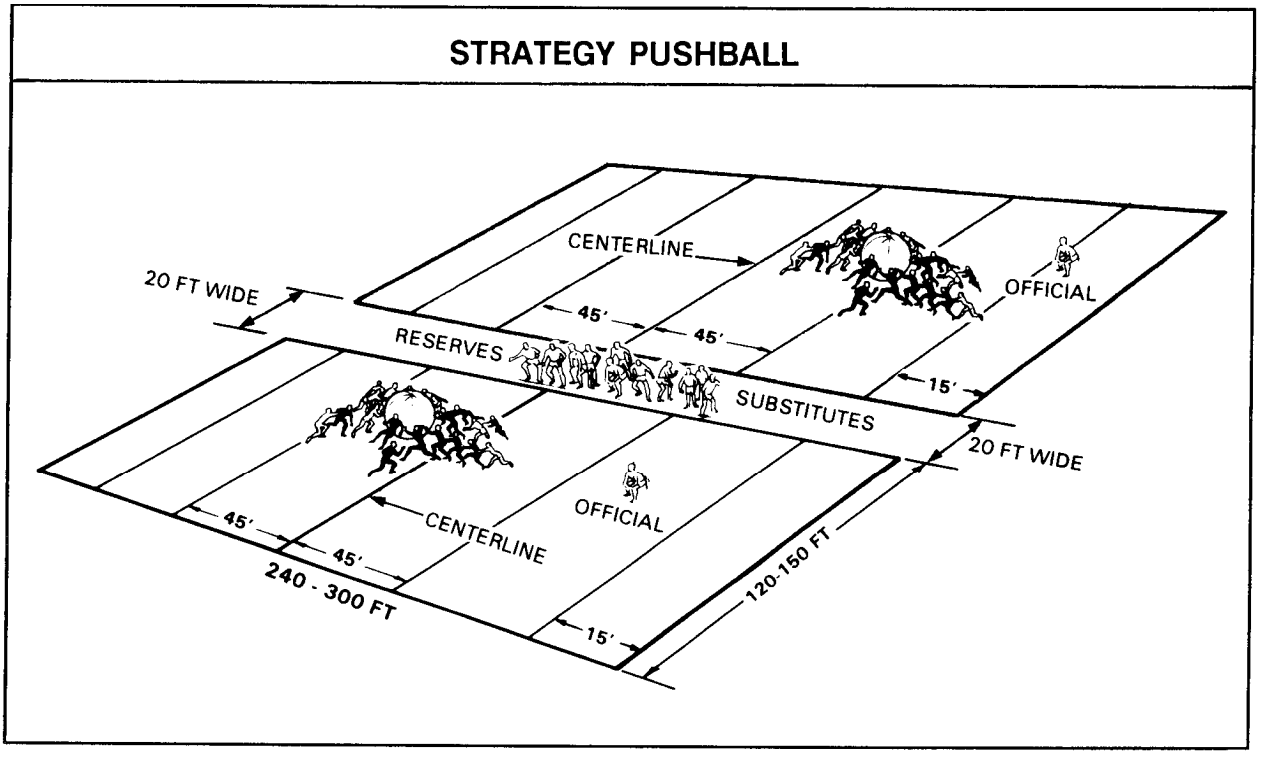


Figure 9-5

authority during play. Otherwise, the game can quickly get out of control.

Chain-of-command personnel should act as team commanders and field captains whenever possible.

The Game

The object is to propel the ball over the opponent's goal line by pushing, rolling, passing, carrying, or using any means other than kicking.

The game is officiated by two referees on each field, a chief umpire, and a scorekeeper. Referees concentrate on player actions so that they can quickly detect fouls and assess penalties. The chief umpire and scorekeeper occupy any area where they can best officiate the games. The chief umpire monitors the use of substitutes and reserves and ensures smooth progress of the games on both fields. The number of officials may be increased if teams have more than 25 players. Referees use their whistles to stop and start play except at the start and end of each quarter. The scorekeeper, who times the game with a stopwatch, starts and ends each quarter and stops play for injuries with some noisemaker other than a whistle. He may use such devices as a starter's pistol, klaxon, or air horn.

The game begins after the ball is placed on each field's center mark. Opposing field captains are three feet from the ball (six feet from the centerline). The rest of the starters are lined up 45 feet from the ball on their half of the field. (See Figure 9-5.) At the scorekeeper's signal, field captains immediately play the ball, and their teams come to their aid.

Starters may be exchanged between the fields if the minimum number of starters or substitutes per field is maintained.

Substitutes may enter the game only during breaks in play after a dead ball, goal, or time-out for injury. A substitute may not start to play until the player being replaced leaves the field.

When any part of the ball goes out of bounds, it is dead. The teams line up at right angles to the sidelines; they are 10 feet apart at the point where the ball went out of bounds. The referee places the ball between the teams at a point 15 feet inside the sideline. Play resumes when the referee blows the whistle.

When the ball gets tied up in one spot for more than 10 seconds for any reason, the referee declares it dead. He restarts play as with an out-of-bounds dead ball, except that he puts the ball on the spot where it was stopped.

Time does not stop for dead balls or goals. Play continues on one field while dead balls are restarted on the other.

At each quarter break, the ball stays on the spot where it was when the quarter ended. The next quarter, signaled by the scorekeeper, starts as it does after a ball goes out of bounds. At halftime the teams exchange goals, and play resumes as if the game were beginning.

A goal is scored when any part of the ball breaks the plane of the goal line between the sidelines. A goal counts one point. At the end of the fourth quarter, the points of each team from both fields are added together to determine the winner.

If there is a tie, a three-minute overtime is played. It is played the same as in regulation play, but only one field is used, with starting squads from both teams opposing each other. For control purposes, no more than 15 players per team are allowed on the field at once. The team with more points at the end of the overtime wins the game. If the game is still tied when time expires, the winner is the team that has gained more territory.

The game continues until four 10-minute quarters have been played. There is a 10-minute halftime between

the second and third quarters. The clock stops at quarter breaks and halftime. Time-out is allowed only for serious injury. Play is then stopped on both fields.

Rules

Players may use any means of interfering with their opponents' progress, but they are penalized for striking or clipping opponents or throwing them to the ground. These penalties are enforced by the referees. Force maybe legally applied to any opponent whether or not they are playing the ball. Blocking is allowed if blockers stay on their feet and limit contact to the space between waist and shoulders. Blockers may not swing, throw, or flip their elbows or forearms. Tackling opposing soldiers who are playing the ball is allowed. The chief umpire or any referee may call infractions and impose penalties for unsportsmanlike conduct or personal fouls on either field. Penalties may also be called for infractions committed on the field or sidelines during playing time, quarter- and halftime breaks, and time-outs. Personal fouls are called for the following:

- Illegal blocking (below an opponent's waist).
- Clipping (throwing the body across the back of the opponent's legs as he is running or standing).
- Throwing an opponent to the ground (that is, lifting and dropping or slamming a player to the ground in stead of tackling cleanly).
- Spearing, tackling, or piling on an opponent who is already on the ground.
- Striking or punching with closed fist(s).
- Grasping an opponent's neck or head.
- Kicking.
- Butting heads.

Unsportsmanlike conduct is called for abusive or insulting language that the referee judges to be excessive and blatant. It is also called against a player on the sidelines who interferes with the ball or with his opponents on the field. A player who violates these rules should be removed from the game and made to run one lap around both playing fields. A penalized player leaves the team shorthanded until he completes the penalty lap and the next break in play occurs on the field from which he was removed. The penalized player or a substitute then enters the game. Referees and the chief umpire may, at their discretion, eject any player who is a chronic violator or who is judged to be dangerous to other players, Once ejected, the player must leave both the field of play and team area. Substitutes for ejected players may enter during the next break in play that follows a goal scored by either team. They enter on the field from which the players were ejected.

BROOM-BALL HOCKEY

This game is played on ice or a frozen field using hockey rules. Players wear boots with normal soles and carry broom-shaped sticks with which they hit the ball into the goals.

The object of this game is for teams to score goals through the opponent's defenses. Using only brooms, players pass the ball through the opposing team to reach its goal. The first team to score five points wins. Broom ball provides a good cardiorespiratory workout.

Players

There are 15 to 20 players on each team. One is a goalie and the others are divided into three equal groups. The goalie plays in the goal area of a standard soccer or hockey field or along the goal line if the two opposing goals are the same size. One soccer ball, or some other type of inflated

ball, is used. The players need no padding.

The three groups begin the game in center field. All players must stay in their designated space throughout the game. A diagram of the field is shown at Figure 9-6.

The Game

The face-off marks the start of the game, the second half, and the restart of play after goals. Each half lasts 15 minutes. For the face-off, each player is on his own half of the field. All players, except the two centers, are outside the center circle. The referee places the ball in the center of the circle between the two centers. The signal to begin play is one long blast on the whistle. The ball must travel forward and cross the center circle before being played by another player. There are no time-outs except for injury. The time-out signal is two sharp whistle blasts.

Rules

All players, including goalies, must stay inside their legal boundaries at all times. Only goalies may use their hands to play the ball, but they must always keep control of their sticks. Other players must stay in their respective zones of play (Attack, Defense, Centerfield). The ball is played along the ground or over one or more groups of players. It may travel any distance as long as it is legally played.

The referee calls infractions and imposes penalties. Basic penalties are those called for the following:

- Unnecessary roughness or dangerous play. (The player is removed from the game; he stays in the penalty box for two minutes.)
- Ball out-of-bounds. (The team that caused it to go out loses possession, and the opposing team puts the ball back into play by hitting it to the nearest player.)
- Use of hands by a player other than a goalie. (The player must stay in the penalty box one minute.)
- Improper crossing of boundaries. (When a member of the team in possession of the ball crosses the bound ary line of his zone of play, possession will be awarded to the other team.)

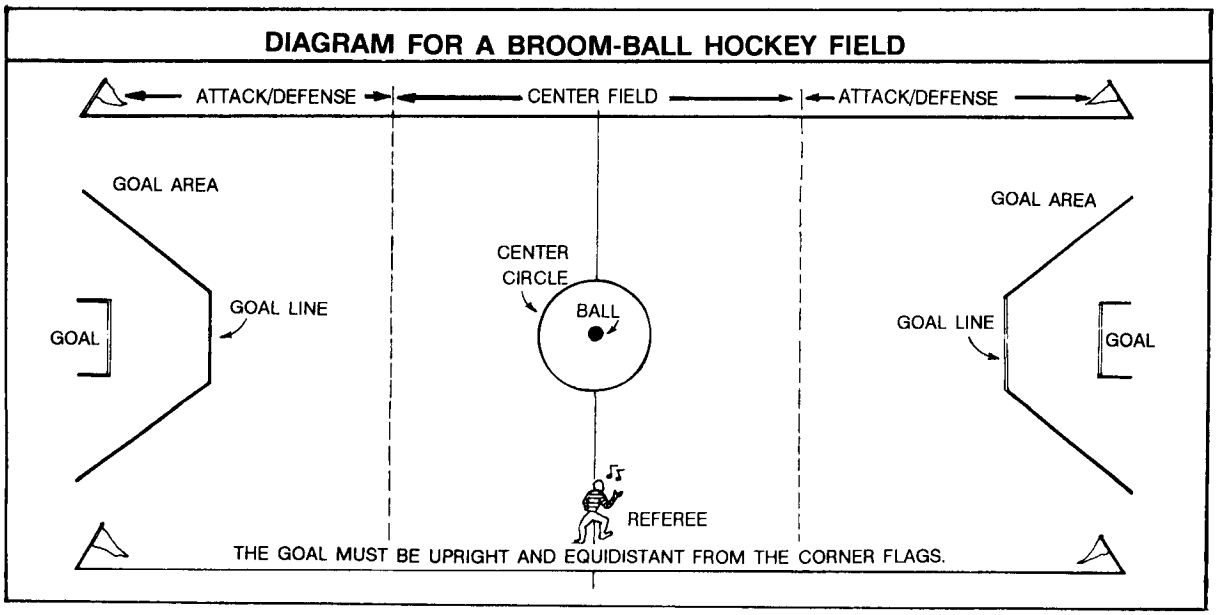


Figure 9-6

Orienteering

Orienteering combines map reading, compass use, and terrain study with strategy, competition, and exercise.

Orienteering is a competitive form of land navigation. It combines map reading, compass use, and terrain study with strategy, competition, and exercise. This makes it an excellent activity for any training schedule.

An orienteering course is set up by placing control points or marker signs over a variety of terrain. The orienteer or navigator uses a detailed topographical map and a compass to negotiate the course. The map should be 1:25,000 scale or larger. A liquid-filled orienteering compass works best. The base of the compass is transparent plastic, and it gives accurate readings on the run. The standard military, lensatic compass will work even though it is not specifically designed for the sport.

The best terrain for an orienteering course is woodland that offers varied terrain. Several different courses can be setup in an area 2,000 to 4,000 yards square. Courses can be short and simple for training beginners or longer and more difficult to challenge the advanced competitors.

The various types of orienteering are described below.

CROSS-COUNTRY ORIENTEERING

This popular type of orienteering is used in all international and championship events. Participants navigate to a set number of check or control points in a designated order. Speed is important since the winner is the one who reaches all the control points in the right order and returns to the finish area in the least time.

SCORE ORIENTEERING

Quick thinking and strategy are major factors in score orienteering. A competitor selects the check-points to find based on point value and location. Point values throughout the course are high or low depending on how hard the markers are to reach. Whoever collects the most points within a designated time is the winner. Points are deducted for returning late to the finish area.

LINE ORIENTEERING

Line orienteering is excellent for training new orienteers. The route is premarked on the map, but checkpoints are not shown. The navagator tries to walk or run the exact map route. While negotiating the course, he looks for checkpoints or control-marker signs. The winner is determined by the time taken to run the course and the accuracy of marking the control points when they are found.

ROUTE ORIENTEERING

This variation is also excellent for beginners. The navigator follows a route that is clearly marked with signs or streamers. While negotiating the course, he records on the map the route being taken. Speed and accuracy of marking the route determine the winner.

NIGHT ORIENTEERING

Competitors in this event carry flashlights and navigate with map and compass. The night course for cross-country orienteering is usually shorter than the day course. Control points are marked with reflective material or dim lights. Open, rolling terrain, which is poor for day courses, is much more challenging at night.

URBAN ORIENTEERING

Urban orienteering is very similar to traditional types, but a compass, topographical map, and navigation skills are not needed. A course can be set up on any installation by using a map of the main post or cantonment area. Soldiers run within this area looking

for coded location markers, which are numbered and marked on the map before the start. This eliminates the need for a compass. Soldiers only need a combination map-scorecard, a watch, and a pencil. (Figure 9-7 shows a sample scorecard.)

Urban orienteering adds variety and competition to a unit's PT program and is well suited for an intramural program. It also provides a good cardiovascular workout.

Participants and Rules

Urban orienteering is conducted during daylight hours to ensure safety and make the identification of checkpoint markers easy. Soldiers form two-man teams based on their APFT 2-mile-run times. Team members should have similar running ability. A handicap is given to slower teams. (See Figure 9-8.) At the assembly area, each team gets identical maps that show the

URBAN ORIENTEERING

LOCATION MARKER	POINT VALUE	LOCATION MARKER CODE	LOCATION MARKER	POINT VALUE	LOCATION MARKER CODE
1	10		26	10	
2	10		27	15	
3	15		28	5	
4	10		29	15	
5	15		30	15	
6	10		31	15	
7	25		32	25	
8	15		33	15	
9	25		34	15	
10	15		35	25	
11	15		36	15	
12	25		37	15	
13	15		38	25	
14	15		39	15	
15	25		40	25	
16	15		41	25	
17	25		42	15	
18	10		43	10	
19	10		44	15	
20	15		45	10	
21	10		46	25	
22	5		47	10	
23	15		48	15	
24	10		49	15	
25	10		50	10	

Figure 9-7

location of markers on the course. Location markers are color-coded on the map based on their point value. The markers farthest from the assembly area have the highest point values. The maps are labeled with a location number corresponding to the location marker on the course. A time limit is given, and teams finishing late are penalized. Five points are deducted for each minute a team is late. While on the course, team members must stay together and not separate to get two markers at once. A team that separates is disqualified. Any number of soldiers may participate, the limiting factors being space and the number of points on the course.

Playing the Game

Once the soldiers have been assigned a partner, the orienteering marshal briefs them on the rules and objectives of the game. He gives them their time limitations and a reminder about the overtime penalty. He also gives each team a combination map/scorecard with a two-digit number on it to identify their team. When a team reaches a location marker, it records on the scorecard the letters that correspond to its two-digit number.

Point values of each location marker are also annotated on the scorecard. When the orienteering marshal signals the start of the event, all competitors

HANDICAPS FOR URBAN ORIENTEERING

2-MILE RUN TIME	POINTS	2-MILE RUN TIME	POINTS
12:00 or faster	0	14:31-15:00	60
12:01-12:30	10	15:01-15:30	70
12:31-13:00	20	15:31-16:00	80
13:01-13:30	30	16:01-16:30	90
13:31-14:00	40	16:31-17:00	100
14:01-14:30	50	17:01+	100

Figure 9-8

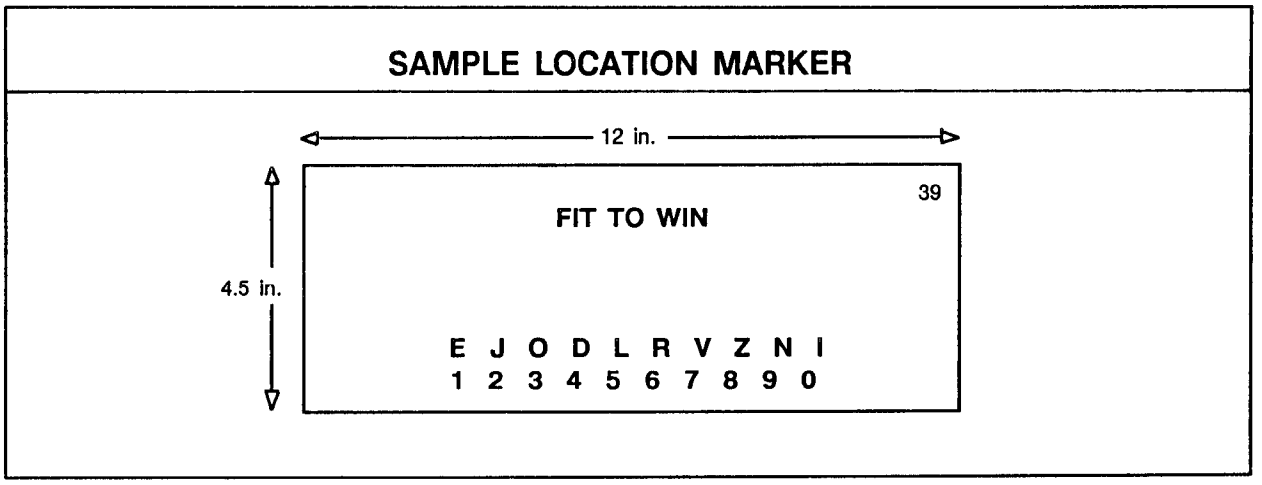


Figure 9-9

leave the assembly area at the same time. One to two hours is the optimal time for conducting the activity. A sample location marker is shown at Figure 9-9.

For this example, team number 54 found the marker. The letters corresponding to 54 are LD, so they place "LD" on line 39 of their scorecard. This line number corresponds to the location's marker number. When the location marker code is deciphered, the team moves on to the next marker of its choice. Each team goes to as many markers as possible within the allotted time. After all teams have found as many location markers as possible and have turned in their map/scorecards, the points are computed by the orienteering marshal to determine the teams' standings. He has the key to all the points and can determine each team's accuracy. Handicap points are then added. Each soldier gets points if his 2-mile-run time is slower than 12 minutes. (See Figure 9-8.) The teams' standings are displayed shortly after the activity ends.

Safety Briefing

The orienteering marshal gives a safety briefing before the event starts. He reminds soldiers to be cautious while running across streets and to emphasize that team members should always stay together.

Set Up and Materials

The course must be well thought out and set up in advance. Setting up requires some man-hours, but the course can be used many times. The major tasks are making and installing location markers and preparing map/scorecard combinations. Once the location marker numbers are marked and color coded on the maps, they are covered with combat acetate to keep them useful for a long time. Combat acetate (also called plastic sheet) can be purchased in the self-service supply center store under stock number 9330-00-618-7214.

The course organizer must decide how many location markers to make and where to put them. He should use creativity to add excitement to the course. Suggestions for locations to put point markers are as follows: at intersections, along roads in the tree line, on building corners, and along creek beds and trails. They should not be too hard to find. To help teams negotiate the course, all maps must be precisely marked to correspond with the placement of the course-location markers.

Unit Olympics

Unit olympics incorporate athletic events that represent all five fitness components.

The unit olympics is a multifaceted event that can be tailored to any unit to provide athletic participation for all soldiers. The objective is to incorporate into a team-level competition athletic. events that represent all five fitness components. The competition can be within a unit or between competing units. When conducted with enthusiasm, it promotes team spirit and provides a good workout. It is a good diversion from the regular PT session.

A unit olympics, if well promoted from the top and well staged by the project NCO or officer, can be a good precursor to an SDT or the EIB test.

TYPES OF EVENTS

The olympics should include events that challenge the soldiers' muscular strength and endurance, aerobic endurance, flexibility, agility, speed, and related sports skills.

Events can be held for both individuals and teams, and they should be designed so that both male and female soldiers can take part. Each soldier should be required to do a minimum number of events. Teams should wear a distinctively marked item such as a T-shirt or arm band. This adds character to the event and sets teams apart from each other. A warm-up should precede and a cool-down should follow the events.

The following are examples of athletic events that could be included in a unit olympics:

Push-Up Derby

This is a timed event using four-member teams. The objective is for the team to do as many correct push-ups as possible within a four-minute time limit. Only one team member does push-ups at a time. The four team members may rotate as often as desired,

Sandbag Relay

This event uses four-man teams for a running relay around a quarter-mile track carrying sandbags. One player from each team lines up at the starting line with a full sandbag *in* each hand. He hands the sandbags off to a teammate when he finishes his part of the race. This continues until the last team player crosses the finish line. Placings are determined by the teams' order of finish.

Team Flexibility

In this event, if teams are numerically equal, all members of each team should participate. If not, as many team members should participate as possible. Each team's anchor person places his foot against a wall or a curb. He stretches his other foot as far away as possible as in doing a split. The next team member puts one foot against the anchor man's extended foot and does a split-stretch. This goes on until all team members are stretched. They cover as much distance as possible keeping in contact with each other. The team that stretches farthest from the start point without a break in their chain is the winner.

Medicine-Ball Throw

This event uses four-member teams. The teams begin by throwing the ball from the same starting line. When it lands, the ball is marked for each team thrower, and the next team player throws from this spot. This is repeated until all the team's players have thrown. The team whose combined throws cover the most distance is the winner.

Job-Related Events

The organizer should use his imagination when planning activities. He may incorporate soldier skills required of an MOS. For instance, he could

devise a timed land-navigation event geared toward soldiers with an MOS of 11 C. The team would carry an 81 -mm mortar (tube, tripod, and baseplate) to three different locations, each a mile apart, and set it up in a firing configuration. This type of event is excellent for fine-tuning job skills and is also physically challenging.

OPENING CEREMONY

The commander, ranking person, or ceremony host gives an inspirational speech before the opening ceremonies, welcoming competitors and wishing them good luck. The olympics is officially opened with a torch lighting. This is followed by a short symbolic parade of all the teams. The teams are then put back into formation, and team captains lead motivating chants. The master of ceremonies (MC) announces the sequence of events and rules for each event. The games then begin.

JUDGING AND SCORING

The MC should have one assistant per team who will judge that one team during each event. Assistants give input on events that need a numerical count. The MC monitors the point accumulation of each team. Points are awarded for each event as follows:

- First = 4 points.
- Second = 3 points.
- Third = 2 points.
- Fourth = 1 point.

When two teams tie an event, the points are added together and split equally between them. After the competition ends, the totaled point scores for each team are figured. The first- through fourth-place teams are then recognized.

CHAPTER 12

Environmental Considerations

In today's Army, soldiers may deploy anywhere in the world. They may go into the tropical heat of Central America, the deserts of the Middle East, the frozen tundra of Alaska, or the rolling hills of Western Europe. Each environment presents unique problems concerning soldiers' physical performance. Furthermore, physical exertion in extreme environments can be life-threatening. While recognizing such problems is important, preventing them is even more important. This requires an understanding of the environmental factors which affect physical performance and how the body responds to those factors.

Temperature Regulation

The body constantly produces heat, especially during exercise. To maintain a constant normal temperature, it must pass this heat on to the environment. Life-threatening circumstances can develop if the body becomes too hot or too cold. Body temperature must be maintained within fairly narrow limits, usually between 74 and 110 degrees Fahrenheit. However, hypothermia and heat injuries can occur within much narrower limits. Therefore, extreme temperatures can have a devastating effect on the body's ability to control its temperature.

Overheating is a serious threat to health and physical performance. During exercise, the body can produce heat at a rate 10 to 20 times greater than during rest. To survive, it must get rid of the excess heat.

The four ways in which the body can gain or lose heat are the following:

- Conduction-the transfre of heat from a warm object to a cool one that is touching it. (Warming boots by putting them on is an example.)
- Convection-the transfer of heat by circulation or movement of air. (Using a fan on a hot day is an example.)
- Radiation-the transfer of heat by electromagnetic waves. (Sitting under a heat lamp is an example.)
- Evaporation- the transfer of heat by changing a liquid into a gas. (Evaporating sweat cooling the skin is an example.)

Heat moves from warm to cool areas. During exercise, when the body is extremely warm, heat can be lost by a combination of the four methods. Sweating, however, is the body's most important means for heat loss, especially during exercise. Any condition that slows or blocks the transfer of heat from the body by evaporation causes heat storage which results in an increase in body temperature.

The degree to which evaporative cooling occurs is also directly related to the air's relative humidity (a measure of the amount of water vapor in the air). When the relative humidity is 100 percent, the air is completely saturated at its temperature. No more water can evaporate into the surrounding air. As a result, sweat does not evaporate, no cooling effect takes place, and the body temperature increases. This causes even more sweating. During exercise in the heat, sweat rates of up to two quarts per hour are not uncommon.

If the lost fluids are not replaced, dehydration can occur. This condition, in turn, can result in severe heat injuries.

Thus, in hot, humid conditions when a soldier's sweat cannot evaporate, there is no cooling effect through the process of evaporation. High relative humidities combined with high temperatures can cause serious problems. Weather of this type occurs in the tropics and equatorial regions such as Central America and southern Asia. These are places where soldiers have been or could be deployed.

Heat Injuries and Symptoms

The following are common types of heat injuries and their symptoms.

- Heat cramps-muscles cramps of the abdomen, legs, or arms.
- Heat exhaustion-headache, excessive sweating, dizziness, nausea, clammy skin.
- Heat stroke-hot, dry skin, cessation of sweating, rapid pulse, mental confusion, unconsciousness.

Adapting to differing environmental conditions is called acclimatization.

To prevent heat injuries while exercising, trainers must adjust the intensity to fit the temperature and humidity. They must ensure that soldiers drink enough water before and during the exercise session. Body weight is a good gauge of hydration. If rapid weight loss occurs, dehydration should be suspected. Plain water is the best replacement fluid to use. Highly concentrated liquids such as soft drinks and those with a high sugar content may hurt the soldier's performance because they slow the absorption of water from the stomach.

To prevent heat injuries, the following hydration guidelines should be used:

- Type of drink: cool water (45 to 55 degrees F).
- Before the activity: drink 13 to 20 ounces at least 30 minutes before.
- During the activity: drink 3 to 6 ounces at 15 to 30 minute intervals.
- After the activity: drink to satisfy thirst, then drink a little more.

Acclimatization to Hot, Humid Environments

Adapting to differing environmental conditions is called acclimatization. Soldiers who are newly introduced to a hot, humid climate and are moderately active in it can acclimatize in 8 to 14 days. Soldiers who are sedentary take much longer. Until they are acclimatized, soldiers are much more likely to develop heat injuries.

A soldier's ability to perform effectively in hot, humid conditions depends on both his acclimatization and level of fitness. The degree of heat stress directly depends on the relative workload. When two soldiers do the same task, the heat stress is less for the soldier who is in better physical condition, and his performance is likely to be better. Therefore, it is important to maintain high levels of fitness.

Increased temperatures and humidity cause increased heart rates. Consequently, it takes much less effort to elevate the heart rate into the training zone, but the training effect is the same. These facts underscore the need to use combat-development running

and to monitor heart rates when running, especially in hot, humid conditions.

Some important changes occur as a result of acclimatization to a hot climate. The following physical adaptations help the body cope with a hot environment

- Sweating occurs at a lower body temperature.
- Sweat production is increased.
- Blood volume is increased.
- Heart rate is less at any given work rate.

Exercising in Cold Environments

Contrary to popular belief, there are few real dangers in exercising at temperatures well below freezing. Since the body produces large amounts of heat during exercise, it has little trouble maintaining a normal temperature. There is no danger of freezing the lungs. However, without proper precautions, hypothermia, frostbite, and dehydration can occur.

HYPOTHERMIA

If the body's core temperature drops below normal, its ability to regulate its temperature can become impaired or lost. This condition is called hypothermia. It develops because the body cannot produce heat as fast as it is losing it. This can lead to death. The chance of a soldier becoming hypothermic is a major threat any time he is exposed to the cold.

Some symptoms of hypothermia are shivering, loss of judgment, slurred speech, drowsiness, and muscle weakness.

During exercise in the cold, people usually produce enough heat to maintain normal body temperature. As they get fatigued, however, they slow down and their bodies produce less heat. Also, people often overdress for exercise in the cold. This makes the body sweat. The sweat dampens the clothing next to the skin making it a good conductor of heat. The combination of decreased heat production and increased heat loss can cause a rapid onset of hypothermia.

Some guidelines for dressing for cold weather exercise are shown in Figure 12-1.

Hypothermia develops when the body cannot produce heat as fast as it is losing it.

GUIDELINES FOR DRESSING FOR EXERCISE IN THE COLD

Clothing **for cold weather should protect, insulate, and ventilate.**

- **Protect by covering as large an area of the body as possible.**
- **Insulation will occur by trapping air which has been warmed by the body and holding it near the skin.**
- **Ventilate by allowing a two-way exchange of air through the various layers of clothing.**

Clothing should leave your body slightly cool rather than hot.

Clothing should also be loose enough to allow movement.

Clothing soaked with perspiration should be removed if reasonably possible.

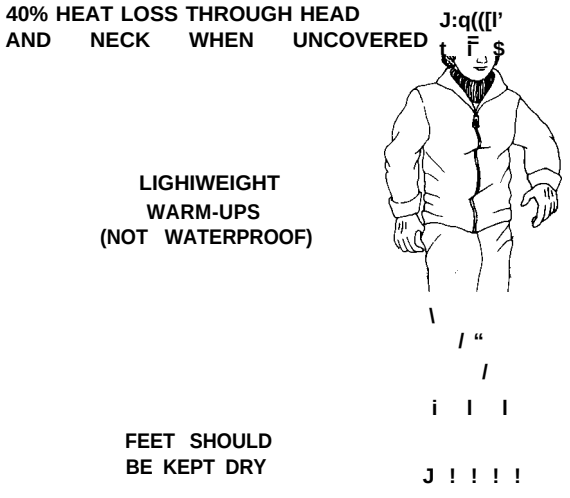


Figure 12-1

FROSTBITE

Frostbite is the freezing of body tissue. It commonly occurs in body parts located away from the core and exposed to the cold such as the nose, ears, feet, hands, and skin. Severe cases of frostbite may require amputation.

Factors which lead to frostbite are cold temperatures combined with windy conditions. The wind has a great cooling effect because it causes rapid convective heat transfer from the body. For a given temperature, the higher the wind speed, the greater the cooling effect. Figure 12-2 shows how the wind can affect cooling by providing information on windchill factors.

A person's movement through the air creates an effect similar to that caused by wind. Riding a bicycle at 15 mph is the same as standing in a 15-mph wind. If, in addition, there is a 5-mph headwind, the overall effect is equivalent to a 20-mph wind. Therefore, an exercising soldier must be very cautious to avoid getting frostbite. Covering exposed parts of the body will substantially reduce the risks.

DEHYDRATION

Dehydration can result from losing body fluids faster than they are replaced. Cold environments are often dry, and water may be limited. As a result, soldiers may in time become dehydrated. While operating in extremely cold climates, trainers should check the body weights of the soldiers regularly and encourage them to drink liquids whenever possible.

WINDCHILL FACTOR

Cooling Power of Wind on Exposed Flesh Expressed as an Equivalent Temperature (under calm conditions)

Estimated wind speed (in mph)	Actual Thermometer Reading (°F)											
	50	40	30	20	10	0	−10	−20	−30	−40	−50	−60
	EQUIVALENT CHILL TEMPERATURE (°F)											
Calm	50	40	30	20	10	0	−10	−20	−30	−40	−50	−60
5	48	37	27	16	6	−5	−15	−26	−36	−47	−57	−68
10	40	28	16	4	−9	−24	−33	−46	−58	−70	−83	−95
15	36	22	9	−5	−18	−32	−45	−58	−72	−85	−99	−112
20	32	18	4	−10	−25	−39	−53	−67	−82	−96	−110	−124
25	30	16	0	−15	−29	−44	−59	−74	−88	−104	−118	−133
30	28	13	−2	−18	−33	−48	−63	−79	−94	−109	−125	−140
35	27	11	−4	−21	−35	−51	−67	−82	−98	−113	−129	−145
40	26	10	−6	−21	−37	−53	−69	−85	−100	−116	−132	−148
(wind speed greater than 40mph have little additional effect)	LITTLE DANGER In 0.5 hr with dry skin Maximum danger of false sense of security				INCREASING DANGER Danger from freezing of exposed flesh within one minute			GREAT DANGER Flesh may freeze within 30 seconds				
	Trenchfoot and immersion foot may occur at any point on this chart.											

INSTRUCTIONS

MEASURE local temperature and wind speed if possible. If not, ESTIMATE. Enter table at closest 5°F interval along the top and with appropriate wind speed along left side. Intersection gives approximate equivalent chill temperature. That is, the temperature that would cause the same rate of cooling under calm conditions. Note that regardless of cooling rate, you do not cool below the actual air temperature unless wet.

Figure 12-2

Acclimatization to High Altitudes

Elevations below 5,000 feet have little noticeable effect on healthy people. However, at higher elevations the atmospheric pressure is reduced, and the body tissues get less oxygen. This means that soldiers cannot work or exercise as well at high altitudes. The limiting effects of high elevation are often most pronounced in older soldiers and persons with low levels of fitness.

Due to acclimatization, the longer a soldier remains at high altitude, the better his performance becomes. Generally, however, he will not perform as well as at sea level and should not be expected to. For normal activities, the time required to acclimatize depends largely on the altitude. In order to insure that soldiers who are newly assigned to altitudes above 5,000 feet are not at a disadvantage, it is recommended that 30 days of acclimatization, including regular physical activity, be permitted before they are administered a record APFT.

Before acclimatization is complete, people at high altitudes may suffer acute mountain sickness. This includes such symptoms as headache, rapid pulse, nausea, loss of appetite, and an inability to sleep. The primary treatment is further acclimatization or returning to a lower altitude.

Once soldiers are acclimatized to altitudes above 5,000 feet, deacclimatization will occur if they spend 14 or more days at lower altitudes. For this reason, soldiers should be permitted twice the length of their absence, not to exceed 30 days, to reacclimatize before being required to take a record APFT. A period of 30 days is adequate for any given reacclimatization.

Air Pollution and Exercise

Pollutants are substances in the environment which lower the environment's quality. Originally, air pollutants were thought to be only by-products of the industrial revolution. However, many pollutants are produced naturally. For example, volcanoes emit sulfur oxides and ash, and lightning produces ozone.

There are two classifications of air pollutants - primary and secondary. Primary pollutants are produced directly by industrial sources. These include carbon monoxide (CO), sulfur oxides (SO), hydrocarbons, and particulate (ash). Secondary pollutants are created by the primary pollutant's interaction with the environment. Examples of these include ozone **(03),** aldehydes, and sulfates. Smog is a combination of primary and secondary pollutants.

Some pollutants have negative effects on the body. For example, carbon monoxide binds to hemoglobin in the red blood cells and reduces the amount of oxygen carried in the blood. Ozone and the oxides irritate the air passageways in the lungs, while other pollutants irritate the eyes.

When exercisers in high-pollution areas breathe through the mouth, the nasal mucosa's ability to remove impurities is bypassed, and many pollutants can be inhaled. This irritates the respiratory tract and makes the person less able to perform aerobically.

Pollutants can irritate the respiratory tract and make the person less able to perform aerobically.

The following are some ways to deal with air pollution while exercising:

- Avoid exposure to pollutants before and during exercise, if possible.
- In areas of high ozone concentration, train early in the day and after dark.
- Avoid exercising near heavily traveled streets and highways during rush hours.
- Consult your supporting preventive-medicine activity for advice in identifying or defining training restrictions during periods of heavy air pollution.

CHAPTER 13

Injuries

Injuries are not an uncommon occurrence during intense physical training. It is, nonetheless, a primary responsibility of all leaders to minimize the risk of injury to soldiers. Safety is always a major concern.

Most injuries can be prevented by designing a well-balanced PT program that does not overstress any body parts, allows enough time for recovery, and includes a warm-up and cool-down. Using strengthening exercises and soft, level surfaces for stretching and running also helps prevent injuries. If, however, injuries do occur, they should be recognized and properly treated in a timely fashion. If a soldier suspects that he is injured, he should stop what he is doing, report the injury, and seek medical help.

Most injuries can be prevented by designing a well-balanced PT program.

Many common injuries are caused by overuse, that is, soldiers often exercise too much and too often and with too rapid an increase in the workload. Most overuse injuries can be treated with rest, ice, compression, and elevation (RICE). Following any required first aid, health-care personnel should evaluate the injured soldier.

Typical Injuries Associated with Physical Training

Common injuries associated with exercise are the following:

- Abrasion (strawberry) - the rubbing off of skin by friction.
- Dislocation - "the displacement of one or more bones of a joint from their natural positions.
- Hot spot - a hot or irritated feeling of the skin which occurs just before a blister forms. These can be prevented by using petroleum jelly over friction-prone areas.
- Blister - a raised spot on the skin filled with liquid. These can generally be avoided by applying lubricants such as petroleum jelly to areas of friction, keeping footwear (socks, shoes, boots) in good repair, and wearing the proper size of boot or shoe.
- Shinsplints - a painful injury to the soft tissues and bone in the shin area. These are generally caused by wearing shoes with inflexible soles or inadequate shock absorption, running on the toes or on hard surfaces, and/or having calf muscles with a limited range of motion.
- Sprain - a stretching or tearing of the ligament(s) at a joint.
- Muscle spasm (muscle cramp) - a sudden, involuntary contraction of one or more muscles.
- Contusion - a bruise with bleeding into the muscle tissue.
- Strain - a stretching or tearing of the muscles.
- Bursitis - an inflammation of the bursa (a sack-like structure where tendons pass over bones). This occurs at a joint and produces pain when the joint is moved or touched. Sometimes swelling occurs.
- Tendinitis - an inflammation of a tendon that produces pain when the attached muscle contracts. Swelling may not occur.
- Stress fractures of the feet.
- Tibial stress fractures - overuse injuries which seem like shinsplints except that the pain is in a specific area.
- Knee injuries - caused by running on uneven surfaces or with worn out shoes, overuse, and improper body alignment. Soldiers who have problems with their knees can benefit from doing leg exercises that strengthen the front (quadriceps) and rear (hamstrings) thigh muscles.
- Low back problems - caused by poor running, sitting, or lifting techniques, and by failing to stretch the back and hip-flexor muscles and to strengthen the abdominal muscles.

The most common running injuries occur in the feet, ankles, knees, and

legs. Although they are hard to eliminate, much can be done to keep them to a minimum. Preventive measures include proper warm-up and cool-down along with stretching exercises. Failure to allow recovery between hard bouts of running can lead to overtraining and can also be a major cause of injuries. A well-conditioned soldier can run five to six times a week. However, to do this safely, he should do two things: gradually build up to running that frequently and vary the intensity of the running sessions to allow recovery between them.

Many running injuries can be prevented by wearing proper footwear. Soldiers should train in running shoes. These are available in a wide range of prices and styles. They should fit properly and have flexible, multi-layered soles with good arch and heel support. Shoes made with leather and nylon uppers are usually the most comfortable. See Appendix E for more information on running shoes.

Since injuries can also be caused by running on hard surfaces, soldiers should, if possible, avoid running on concrete. Soft, even surfaces are best for injury prevention. Whenever possible, soldiers should run on grass paths, dirt paths, or park trails. However, with adequate footwear and recovery periods, running on roads and other hard surfaces should pose no problem.

Common running injuries include the following:

- Black toenails.
- Ingrown toenails.
- Stress fractures of the feet.
- Ankle sprains and fractures.
- Achilles tendinitis (caused by improper stretching and shoes that do not fit.
- Upper leg and groin injuries (which can usually be prevented by using good technique in stretching and doing strengthening exercises).

Tibial stress fractures, knee injuries, low back problems, shinsplints, and blisters, which were mentioned earlier, are also injuries which commonly occur in runners.

Other Factors

Proper clothing can also help prevent injuries. Clothes used for physical activity should be comfortable and fit loosely. A T-shirt or sleeveless undershirt and gym shorts are best in warm weather. In cold weather, clothing may be layered according to personal preference. For example, soldiers can wear a BDU, sweat suit, jogging suit, or even Army-issued long underwear. In very cold weather, soldiers may need gloves or mittens and ear-protecting caps. Rubberized or plastic suits should never be worn during exercise. They cause excessive sweating which can lead to dehydration and a dangerous increase in body temperature.

Many running injuries can be prevented by wearing proper footwear.

Army Regulation 385-55 (paragraph B- 12, C) prohibits the use of headphones or earphones while walking, jogging, skating, or bicycling on the roads and streets of military installations. However, they may be worn on tracks and running trails.

Road safety equipment is required on administative-type walks, marches, or runs which cross highways, roads, or tank trails or which are conducted on traffic ways. If there is reduced visibility, control personnel must use added caution to ensure the safety of their soldiers.

Student Handout 4

Extracted Material from FM 3-21.5

This Student Handout Contains

This student handout contains 2 pages of extracted material from the following publication:

FM 3-21.5, Drill and Ceremonies, 7 Jul 03

Chapter 2	p 2-7 and 2-8

Disclaimer: The training developer downloaded the text in this student handout from the General Dennis J. Reimer Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not conform to the Army Writing Style Program.

RECOVERABLE PUBLICATION

YOU RECEIVED THIS DOCUMENT IN A DAMAGE-FREE CONDITION. DAMAGE IN ANY WAY, TO INCLUDE HIGHLIGHTING, PENCIL MARKS, OR MISSING PAGES WILL SUBJECT YOU TO PECUNIARY LIABILITY (STATEMENT OF CHARGES, CASH COLLECTION, ETC.) TO RECOVER PRINTING COST

front of and one step outside the flanks of the third squad before commanding **AT EASE** beginning the instruction.

(4) To re-form the platoon in a line formation, the commands are: **FALL OUT (pause); FALL IN.** The members of the platoon execute in the reversre manner as prescibed above, taking the same number of steps.

b. When instructing using the line formation at normal interval, it is recommended that the first rank kneels (right knee), second rank executes one *15-Inch Step to the Left* and kneels (left knee), third rank stands fast, and the fourth rank takes one *15-Inch Step to the Left.* The instructor adjusts any additional ranks as necessary to ensure they are uncovered. This formation can quickly be formed by commanding ***Instructional Formation,* MARCH.** To re-form the unit into a line formation, the command is **FALL IN.** The members of the platoon execute in the reverse manner as prescribed above.

c. The instructor may find using the extended rectangular formation more suitable for use.

(1) To form the extended rectangular formation, the instructor commands ***Extend to the left,* MARCH**. All right flank soldiers stand fast and extend their arms at shoulder level, elbows locked, fingers and thumbs extended and joined, palms facing down. All other soldiers turn to the left and double-time forward. After taking a sufficient number of steps, the soldiers stop and face to the front and extend their arms in the same manner as the right flank soldiers, ensuring that there is about 12 inches between all soldiers. Dress is to the right and cover is to the front. The remainder of the body is in the position of attention.

(2) The instructor then commands ***Arms downward,* MOVE**. The soldiers lower their arms sharply to the sides as in the position of attention.

(3) The instructor then commands ***Left,* Face**. All soldiers execute a left face.

(4) The instructor then commands ***Extend to the left,* MARCH**. All soldiers execute as previosly described.

(5) The instructor then commands ***Arms downward,* MOVE**. All soldiers execute as previously described.

(6) The instructor then commands ***Right,* FACE**. All soldiers execute a right face.

(7) The instructor then commands ***From front to rear,* COUNT OFF**. (**COUNT OFF** is the entire command of execution). Each member of the first rank turns their head and eyes to the right and counts off with "**ONE,"** then faces back to the front. The remaining ranks execute in the same manner as the first rank counting off in the same manner as the first rank until the entire formation has counted off. The members of the last (rear) rank do not turn their head and eyes.

(8) The instructor then commands ***Even numbers to the left,* UNCOVER**. All even numbered soldiers jump squarely in the center of the interval, resuming the position of attention. The formation is now prepared for instruction.

(9) To return the formation to the original configuration, the instructor commands ***Assemble to the right,* MARCH**. All soldiers double-time to their original position in formation.

d. The instructor may find the circular formation more suitable for training.

(1) The instructor positions himself in front of the lead soldier in the lead squad and commands ***Circle formation,* FOLLOW ME**. The instructor double-times in a circle large enough for the formation and moves to the center of the circle. The members of the

lead squad follow at an arms length plus 6 inches (approximately 40 inches total). The squad leaders of the following squads begin double-timing at the correct distance from the last soldier in the preceding squad without command. After the entire formation is in a circle, the instructor comes to the position of attention and commands ***Quick time,*** **MARCH**. The soldiers begin marching normally. The instructor then gives directives to individual soldiers and corrects the distance between them until each member is at approximately double arm interval.

(2) The instructor then commands the formation to *Halt* using the appropriate preparatory command.

(3) The instructor then commands ***Left,*** **FACE**. All personnel face toward the instructor. The formation is now ready for instruction.

(4) To return the formation to its original configuration, the instructor commands the formation to attention and commands **FALL OUT**, and then **FALL IN**. On the command **FALL IN**, all soldiers return to their original position in formation.

NOTE: When conditions do not warrant this formation, soldiers may be directed to remain standing and to uncover. To assemble the unit, the command **FALL IN** is given.

2-5. INSTRUCTORS

When acting as instructors or assistant instructors, officers and noncommissioned officers go wherever they are needed. They correct mistakes and ensure steadiness and proper performance in ranks. When an individual shows that he is unable to execute the proper movements or assume the proper position, the instructor may physically assist the soldier.

2-6. CADENCE COUNTING

To enable soldiers to learn or maintain cadence and develop rhythm, the instructor should have them count cadence while marching.

a. To count cadence while marching at quick time, the instructor gives the preparatory command, ***Count Cadence,*** as the left foot strikes the marching surface, and the command of execution, **COUNT,** the next time the left foot strikes the marching surface. The soldier begins to count the next time the left foot strikes the marching surface and counts as each foot strikes the marching surface—**ONE, TWO, THREE, FOUR; ONE, TWO, THREE, FOUR.** To count cadence while double-timing, the procedures are basically the same, except the soldier only counts each time the left foot strikes the marching surface. To maintain cadence when marching, soldiers will be allowed to sing, or a drummer's beat may provide cadence.

b. For stationary movements of two or more counts, the instructor commands ***In Cadence, Right,*** **FACE.** The soldier simultaneously executes the first count of the movement on the command of execution and sounds off, **ONE**; as he executes the second count he sounds off, **TWO**.

NOTE: To halt execution of movements in cadence, the instructor commands ***Without Cadence,*** and resumes normal drill methods. For example, ***Without Cadence,*** **MARCH** when marching at *Count Cadence* or ***Without Cadence, Left,*** **FACE** for stationary movements.

T221 RISK MANAGEMENT DEC 03

U.S. ARMY SERGEANTS MAJOR ACADEMY

Primary Leadership Development Course (PLDC)

The Army Training System

TRAINING SUPPORT PACKAGE

"NO ONE IS MORE PROFESSIONAL THAN I"

This page intentionally left blank

U.S. ARMY SERGEANTS MAJOR ACADEMY (PLDC)

T221 20 AUG 04

Risk Management

CHANGE SHEET 1

1. Synopsis. This change sheet corrects minor administrative errors in the T221, Risk Management Training Support Package.

2. Pen and ink changes: none.

3. Page change(s): Remove old pages and insert revised page(s) as indicated.

Remove Pages	**Insert Pages**
1 thru 7	1 thru 7

4. Additional changes that need explaining: none.

5. File this sheet in front of the TSP for reference purposes.

6. Approval of change sheet.

Name/Signature	Rank	Position	Date
/s/Billy R. Williams	GS-9	Training Specialist	20 Aug 04
/s/Victor A. LeGloahec	SGM	Chief, PLDC	20 Aug 04
/s/Marion Lemon	SGM	Chief, CDDD	20 Aug 04

This page intentionally left blank

TRAINING SUPPORT PACKAGE (TSP)

TSP Number / Title	T221 / RISK MANAGEMENT
Effective Date	01 Dec 2003
Supersedes TSP(s) / Lesson(s)	T221, Risk Management, Oct 03.
TSP Users	600-PLDC, Primary Leadership Development Course 600-PLDC (MOD), Primary Leadership Development Course (Modified)
Proponent	The proponent for this document is the Sergeants Major Academy.
Improvement Comments	Users are invited to send comments and suggested improvements on DA Form 2028, *Recommended Changes to Publications and Blank Forms.* Completed forms, or equivalent response, will be mailed or attached to electronic e-mail and transmitted to: COMDT USASMA ATTN ATSS DCP BLDG 11291 BIGGS FIELD FORT BLISS, TX 79918-8002 Telephone (Comm) (915) 568-8875 Telephone (DSN) 978-8875 E-mail: atss-dcd@bliss.army.mil
Security Clearance / Access	Security Level: Unclassified Requirements: There are no clearance or access requirements for the lesson.
Foreign Disclosure Restrictions	FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

PREFACE

Purpose

This Training Support Package provides the instructor with a standardized lesson plan for presenting instruction for:

Task Number	Task Title
Individual	
154-385-6263	Conduct a Risk Assessment
154-385-6465	Employ Risk Management Process During Mission Planning
850-001-2000	Employ Accident Prevention Measures and Risk Assessment Process

This TSP Contains

TABLE OF CONTENTS

PAGE

Preface 2

Lesson Section I Administrative Data 4

Section II Introduction 7

Terminal Learning Objective - Implement the risk management processing order to minimize the frequency and severity of accidents in the activities you lead. 7

Section III Presentation 10

Enabling Learning Objective A - Identify the basic principles for implementing the risk management process. 10

Enabling Learning Objective B - Identify the five steps of the risk management process. 12

Enabling Learning Objective C - Identify the causes and effects of fratricide. 17

Enabling Learning Objective D - 850-001-2000 / Employ Accident Prevention Measures and Risk Assessment Process 23

Section IV Summary 24

Section V Student Evaluation 25

Appendix A - Viewgraph Masters A - 1

Appendix B - Test(s) and Test Solution(s) (N/A) B - 1

Appendix C - Practical Exercises and Solutions C - 1

Appendix D - Student Handouts D - 1

RISK MANAGEMENT
T221 / Version 1
01 Dec 2003

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
600-PLDC	1	Primary Leadership Development Course
600-PLDC MOD	1	Primary Leadership Development Course (Modified)

Task(s) Taught(*) or Supported

Task Number	Task Title
	INDIVIDUAL
154-385-6263 (*)	Conduct a Risk Assessment
154-385-6465 (*)	Employ Risk Management Process During Mission Planning
850-001-2000 (*)	Employ Accident Prevention Measures and Risk Assessment Process

Reinforced Task(s)

Task Number	Task Title
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods
	1 hr 15 mins / Conference / Discussion 35 mins / Practical Exercise (Performance)
Test	0 hrs
Test Review	0 hrs
Total Hours:	2 hrs

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)

Lesson Number	Lesson Title
None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD5. This product/publication has been reviewed by the product developers in coordination with the USASMA foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

References

Number	Title	Date	Additional Information
FM 3-20.98	RECONNAISSANCE PLATOON	23 Apr 1998	
FM 100-14	RISK MANAGEMENT	14 Dec 2002	

Student Study Assignments

Before class--

- Read the Student Handouts.

During class--

- Participate in classroom discussions.
- Complete PE-1.

After class--

- Turn in recoverable reference materials after the examination for this lesson.

Instructor Requirements

1:8, SSG, PLDC graduate, ITC and SGITC qualified.

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

ID Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
6730-00-577-4813 SCREEN, PROJECTION	1:16		No	0	No
6730-00-P53-8147 Projector, Overhead	1:16		No	0	No
7110-00-132-6651 CHALKBOARD	1:16		No	0	Yes
7520-01-424-4867 EASEL, DISPLAY AND TRAINING	1:16		No	0	Yes
7530-00-619-8880 PAD, WRITING PAPER	1:16		No	0	Yes

* Before Id indicates a TADSS

Materials Required

Instructor Materials:

- VGTs: 1 thru 15.
- Chalk and eraser.

Student Materials:

- Pencils and writing paper.
- Reading material listed on the advance sheet.

Classroom, Training Area, and Range Requirements

CLASSROOM (40X40 PER 16 STUDENTS)

Ammunition Requirements

Id	Name	Exp	Stu Ratio	Instr Ratio	Spt Qty
None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

This TSP requires one small group leader (SGL) who meets the requirements listed in the Course Management Plan. In addition the SGL will--

Before class--

- Read all TSP material.

During class--

- Conduct the class in accordance with this TSP.

After class--

- Collect all recoverable materials after the examination for this lesson.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
/s/ Robert Santa Barbara Santa Barbara, Robert	GS-09	Training Specialist	19 Nov 03
/s/ Frank W. Berta Berta, Frank W.	GS-09	Chief, PLDC	21 Nov 03
/s/ Brian H. Lawson Lawson, Brian H.	SGM	Chief, NCOES	22 Nov 03
/s/ Marion Lemon Lemon, Marion	SGM	Chief, CDDD	21 Nov 03

SECTION II. INTRODUCTION

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Motivator

Soldiering is tough, demanding, and risky. It has a high potential for danger; soldiering is not for the faint of heart. Soldiering attracts men and women with the "can do" and warfighting spirit. That's an American soldier, a warrior, and a member of a team who serves the people of the United States and lives the Army values. We take risks and don't shirk responsibility. We always place the mission first, we never accept defeat, we never quit, and we never leave a fallen comrade. That is why risk management is a process that assists decision makers in reducing or offsetting risk by systematically identifying, assessing, and controlling risk arising from operational factors and making decisions that weigh risks against mission benefits.

Therefore, we must have discipline, be physically and mentally tough, and trained to become proficient soldiers in our warrior task and drills, who always maintain our arms, equipment, and ourselves. We are experts and professionals who stand ready to deploy, engage, and destroy the enemies of the United States of America in close combat. We are guardians of freedom and the American way of life. We are American Soldiers.

Accidents took a heavy toll of US Army resources during operation Desert Shield/Storm, causing over half of the deaths. As a result of Desert Shield/Storm, we had to rethink the role of safety in combat. After safety experts analyzed the accidents, they found that the same accidents soldiers had in peacetime occurred in combat. Because we train as we fight, we must place great emphasis on training safely.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Implement the risk management process in order to minimize the frequency and severity of accidents in the activities you lead.
Conditions:	In a classroom environment and in an STX while serving as a leader.
Standards:	Implemented the risk management process in order to minimize the frequency and severity of accidents: • Identifying the basic principles for implementing the risk management process. • Identifying the five steps of the risk management process. • Identifying the causes and effects of fratricide. • Conducting a risk assessment for training activities you will lead. IAW FM 100-14 and FM 3-20.98

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

None

Evaluation

At the conclusion of this course you will take a written examination. The examination will contain questions from this lesson. You must correctly answer 70 percent or more of the questions on the examination to receive a GO. You will also conduct a risk assessment on two of the training activities you will lead, one during a physical training activity and one during a classroom activity.

NOTE: Inform the students of where their examinations will take place as posted on the training schedule and when they will receive feedback on the tests. Include any retest information. Inform the students that they must turn in all recoverable reference materials after the examination. During this lesson, the students will complete one practical exercise.

Instructional Lead-In

In every combat mission, there is a fight with two enemies. One is the declared enemy, the threat to national security. The other enemy is human error. It watches us, and it waits. It singles out individual soldiers and equipment: an aircraft perhaps, a tank, an artillery crew, or a truck driver. Then it strikes and brings terrible effects. It sneaks up on us in indirect ways, plays on our peace of mind, and often attacks without warning. The process you will learn today will help you defeat both enemies during war or in peace.

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the basic principles for implementing the risk management process.
CONDITIONS:	In a classroom environment and in an STX while serving as a leader.
STANDARDS:	Identified the basic principles for implementing the risk management process, IAW FM 100-14.

1. Learning Step / Activity 1. Principles of Risk Management

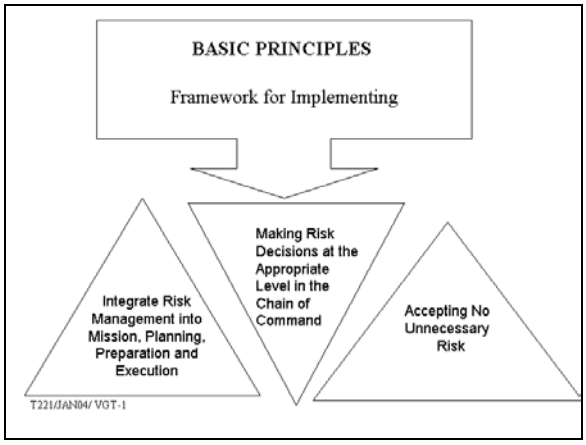
Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 10 mins
Media: VGT-1 thru VGT-3

Basic Principles

The fundamental goal of risk management is to enhance operational capabilities and mission accomplishment, with minimal acceptable loss. The basic principles that provide the framework for implementing the risk management process are--

- Integrating risk management into mission, planning, preparation, and execution.
- Making risk decisions at the appropriate level in the chain of command.
- Accepting no unnecessary risk.

SHOW VGT-1, BASIC PRINCIPLES



Ref: FM 100-14, p 1-3

NOTE: Have students turn to SH-2, p 1-3 (FM 100-14). Read and discuss each of the principles.

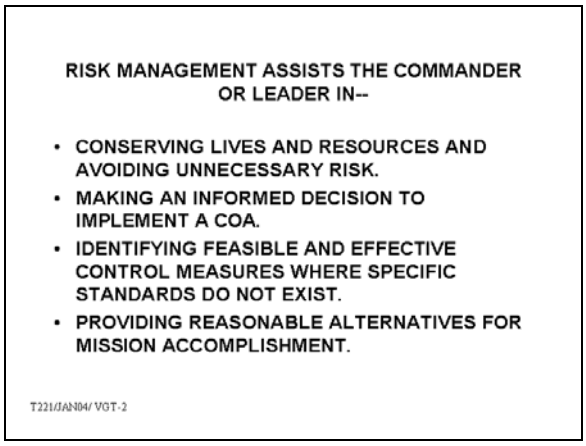
REMOVE VGT-1

Applicability

Risk management applies to all situations and environments across the wide range of Army operations, activities, and processes. The next two visual aids summarize the key aspects of risk management for commanders and leaders.

NOTE: As you show the next two visual aids, ask the students what they think their role is in each of the actions.

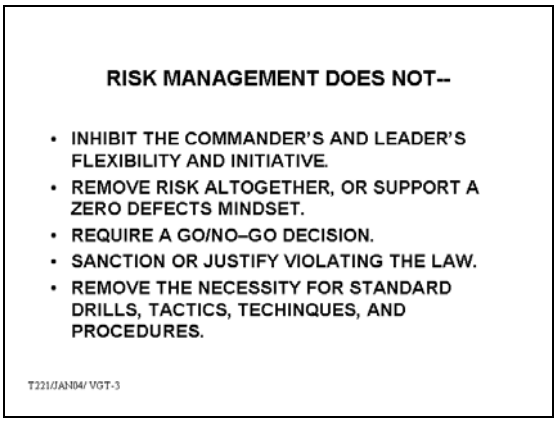
SHOW VGT-2, RISK MANAGEMENT ASSISTS THE COMMANDER OR LEADER IN--



Ref: FM 100-14, Fig 1-2, p 1-4

REMOVE VGT-2

SHOW VGT-3, RISK MANAGEMENT DOES NOT--



Ref: FM 100-14, Fig 1-2, p 1-4

Nor does it justify shortcuts in
REMOVE VGT-3

Constraints

Risk management does not give you the authority to violate the law-of-land-warfare, or deliberately disobey local, state, national, or host nation laws. It does not justify ignoring regulatory restrictions and applicable standards. Risk management does not justify bypassing risk controls required by law, such as safety and fire protection codes. Nor does it justify shortcuts in physical security, transport and disposal of hazardous material and waste, or storage of classified material.

Risk management assists the commander in complying with regulatory and legal requirements by--

- Identifying applicable legal standards that affect the mission.
- Identifying alternate courses of action or alternate standards that meet the intent of the law.
- Ensuring better use of limited resources through establishing priorities to correct known hazardous conditions.

CHECK ON LEARNING:

NOTE: Check on learning by asking the following or similar questions. Briefly summarize the covered material and correct misunderstandings the students may have.

QUESTION: What are the basic principles for implementing the risk management process?

ANSWER:

- Integrate risk management into mission planning, preparation, and execution.
- Make risk decisions at the appropriate level in the chain of command.
- Accept no unnecessary risk.

Ref: FM 100-14, p 1-3

QUESTION: What is the applicability of risk management?

ANSWER: Risk management applies to all situations and environments across the wide range of Army operations, activities, and processes.

Ref: FM 100-14, p 1-4

B. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the five steps of the risk management process.
CONDITIONS:	In a classroom environment and a STX, given FM 100-14.
STANDARDS:	Identified the five steps of the risk management process IAW FM 100-14.

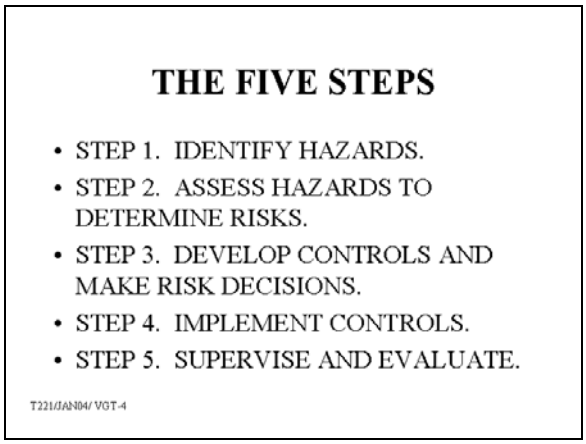
1. Learning Step / Activity 1. Risk Management Process

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 35 mins
Media: VGT-4 thru VGT-10

The Five-Step Risk Management Process

Risk management is the process of identifying and controlling hazards to conserve combat power and resources. We will now discuss the five steps of the risk management process.

SHOW VGT-4, THE FIVE STEPS



Ref: FM 100-14, p 2-0

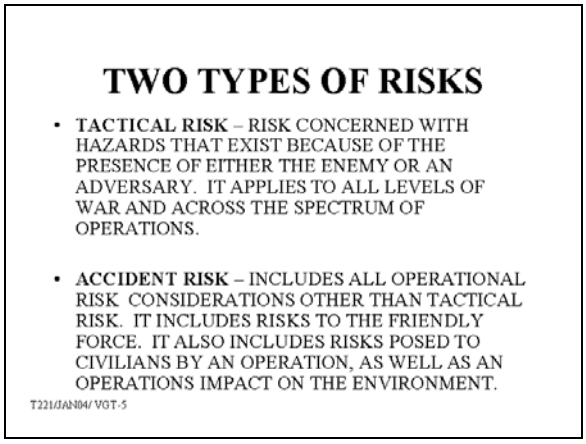
The risk management process integrates the five-step process into the military decision-making process.

NOTE: Have students turn to SH-2, (FM 100-14) p 2-0 and review. Briefly discuss figure 2-1 on SH-2, (FM 100-14) p 2-1 to see the correlation between the risk management process and the military decision-making process.

REMOVE VGT-4

There are two types of risk that exist across the wide range of Army operations, tactical risk and accident risks.

SHOW VGT-5, TWO TYPES OF RISKS



Ref: FM 100-14, p 2-2

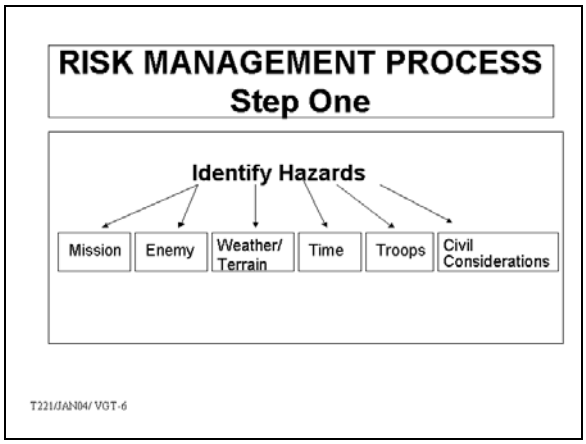
NOTE: Briefly discuss the difference between the two types of risk.

REMOVE VGT-5

Now that we understand the types of risks, let's discuss the five steps, in detail, as they apply to risk assessment.

Step 1 and Step 2 of the risk management process make up the actual risk assessment. It is during these steps that commanders and leaders identify the hazards (Step 1) and then determine the direct impact of each hazard (Step 2). Steps 3 through 5 are the essential follow-through actions to effectively manage risk. Look at Step 1.

SHOW VGT-6, RISK MANAGEMENT PROCESS STEP ONE



Ref: FM 100-14, pp 2-2 thru 2-7

A hazard is an actual or potential condition where the following can occur:

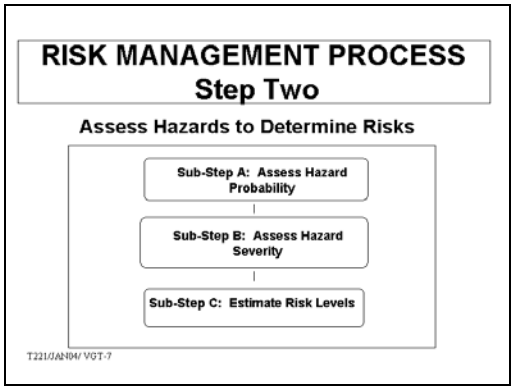
- Injury, illness, or death.
- Damage to or loss of equipment and property.
- Mission degradation.

NOTE: Civil considerations were added after FM 100-14 was published.

Commanders and leaders use METT-TC factors as a framework for identifying hazards when planning, preparing and executing operations. When applying risk management to METT-TC during mission analysis, leaders and staffs should look for hazards that affect both tactical and accident risks. They must identify all hazards that may present significant risks to the mission.

REMOVE VGT-6

SHOW VGT-7, RISK MANAGEMENT PROCESS STEP TWO



Ref: FM 100-14, pp 2-7 thru 2-13

Leaders and staffs assess each hazard in relation to the probability of a hazardous incident, in other words how likely it is that incident will occur.

NOTE: Have students turn to SH-2, (Fm 100-14) pp 2-8 and 2-9 and review the Hazard Probability chart in Figure 2-2.

Substep B addresses the severity of each hazard, which the commander then expresses in terms of--

- Degree of injury or illness.
- Loss or damage to equipment or property.
- Environmental damage.
- Other mission-impairing factors such as lost combat power.

NOTE: Have students turn to SH-2, (FM 100-14) p 2-10 to review and discuss Figure 2-3, Hazard Severity.

In Substep C leaders and staffs must expand on what they understand about probable hazardous incidents into estimates of levels of risk for each identified hazard and an estimate of the overall risk for the operation. They would use the Risk Assessment Matrix to assist them in summarizing this assessment.

NOTE: Have students turn to SH-2, (FM 100-14) p 2-11 to review and discuss the Risk Assessment Matrix.

REMOVE VGT-7

SHOW VGT-8, RISK MANAGEMENT PROCESS STEP THREE

Ref: FM 100-14, pp 2-13 thru 2-16

You accomplish Step 3 in two substeps: develop controls and make risk decisions. After assessing each hazard, leaders develop controls that either eliminate the hazard or reduce the risk (probability and/or severity) of a hazardous incident. They consider the reason for the hazard, not just the hazard itself.

Controls can take many forms, but fall into three basic categories.

QUESTION: What are the three categories?

ANSWER:

- Educational controls--based on the knowledge and skills of the units and individuals.
- Physical controls--barriers, guards, or signs to warn individuals and units that a hazard exists.
- Avoidance--actions taken to prevent contact with an identified hazard.

Ref: FM 100-14, p 2-14

QUESTION: What criteria must the controls meet to be effective?

ANSWER:

- Suitability--it must remove the hazard or reduce the residual risk to an acceptable level.
- Feasibility--the unit must have the capability to implement the control.
- Acceptability--the benefit gained by implementing the control must justify the cost in resources and time.

Ref: FM 100-14, p 2-14

The last thing to consider in this substep is residual risk.

QUESTION: What is residual risk?

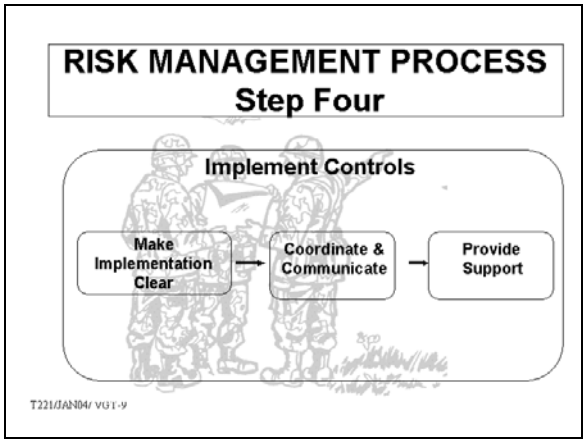
ANSWER: It is the risk remaining after selecting controls for the hazard.

Ref: FM 100-14, p 2-16

You determine the overall residual risk of a mission when you identify more than one hazard. Each of these hazards may have a different level and you determine the overall residual mission risk based on the incident having the greatest residual risk.

REMOVE VGT-8

SHOW VGT-9, RISK MANAGEMENT PROCESS STEP FOUR



Ref: FM 100-14, p 2-17

Leaders and staffs integrate controls into SOPs, written and verbal orders, mission briefings, and staff estimates. The critical check for this step is to ensure that they convert the controls into clear, simple execution orders understood at all levels.

REMOVE VGT-9

Now we will discuss the last step in the risk management process.

SHOW VGT-10, RISK MANAGEMENT PROCESS, STEP FIVE

Ref: FM 100-14, pp 2-17 thru 2-19

Leaders supervise mission rehearsal and execution to ensure enforcement of standards and controls. Techniques may include spot-checks, inspections, situation reports and brief-backs, buddy checks and close supervision. You must continually

assess variable hazards such as fatigue, equipment serviceability, and the environment and modify controls to keep risks at an acceptable level.

After a mission, leaders and individuals evaluate how well they executed the risk-management process.

NOTE: Have the students turn to SH-2, (FM 100-14) pp 2-18 and 2-19 and read the bullets about evaluating the risk management process. Then as a final review, turn to SH-2, (FM 100-14) p 2-20 and discuss Figure 2-7, Continuous Application of Risk Management.

REMOVE VGT-10

BREAK TIME: 00:50 to 01:00

2. Learning Step / Activity 2. Practical Exercise

Method of Instruction:	Practical Exercise (Performance)
Technique of Delivery:	Small Group Instruction (SGI)
Instructor to Student Ratio:	1:8
Time of Instruction:	30 mins
Media:	PE-1

Practical Exercise

The next 30 minutes of this lesson is a non-graded practical exercise where you will complete a risk management worksheet.

NOTE: Pass out the practical exercise and explain the procedures outline on PE-1. Break the class into groups or 3 to 4 students and allow 15 minutes to complete the exercise, then, allow 15 minutes to discuss the answers. Tell the students they must select one person from the group to brief their solution. Have one student from each group read the answers from that group. After all the groups have presented their solutions, pass out SPE-1.

3. Learning Step / Activity 3. Conduct a Risk Assessment

Method of Instruction:	Practical Exercise (Performance)
Technique of Delivery:	Small Group Instruction (SGI)
Instructor to Student Ratio:	1:8
Time of Instruction:	5 mins
Media:	None

Conduct a Risk Assessment

NOTE: Inform the students that they will do a risk assessment on two training exercises that they will conduct later in this course. The risk assessment will be part of the evaluation for those exercises.

C. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the causes and effects of fratricide.
CONDITIONS:	Given a classroom environment.
STANDARDS:	Identified the main causes and the contributing factors of fratricide IAW FM 3-20.98.

1. Learning Step / Activity 1. Identify Causes and Effects of Fratricide.

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio: 1:8
Time of Instruction: 10 mins
Media: VGT-11 thru VGT-15

Fratricide

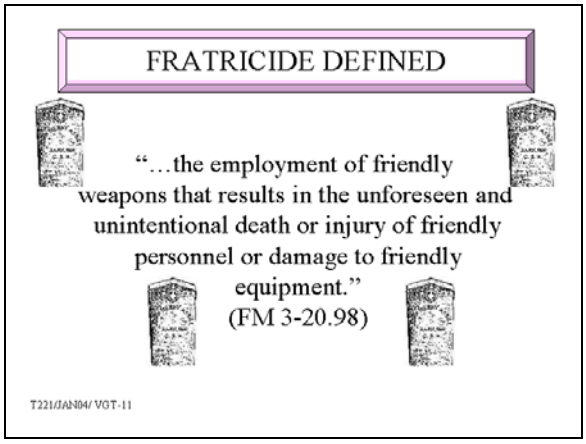
NOTE: Have students follow along in SH-3 (FM 3-20.98).

QUESTION: What is the definition of fratricide?

NOTE: Ask the student body for a response before providing the answer.

ANSWER: See VGT-11.

SHOW VGT-11, FRATRICIDE DEFINED



Ref: FM 3-20.98, p I-1

REMOVE VGT-11

Fratricide prevention is the commander's responsibility. You and all leaders across all operating systems assist in accomplishing this mission. This portion of the lesson focuses on actions leaders can take with current resources to reduce the risk of fratricide. Situational awareness on the part of all leaders is critical not only to

mission success but also to survival. In any tactical situation, it is critical that you know where other friendly elements are operating. With this knowledge, you can anticipate dangerous conditions and take steps to either avoid or mitigate them. Leaders must always be vigilant of changes and developments in the situation that may place their elements in danger. They must also ensure that all section or squad positions constantly report to higher headquarters so that all other friendly elements are aware of where they are and what they are doing. At company and battalion level, they can designate no-fire areas to control friendly, direct, and indirect fire into an area in which friendly personnel are or will be operating. When a leader perceives a potential fratricide situation, he must personally use the higher echelon net to coordinate directly with the friendly element involved.

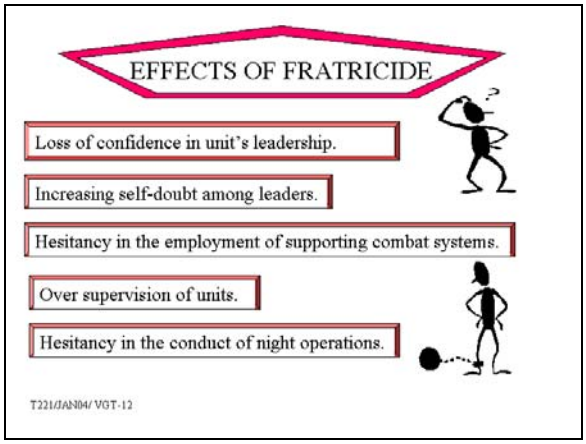
The Role of Training

The underlying principle of fratricide prevention is simple: leaders, who know where their soldiers are and where they want them to fire, can keep those soldiers alive to kill the enemy. At the same time, leaders must avoid at all costs any reluctance to employ, integrate, and synchronize all required operating systems at the critical time and place. They must avoid becoming tentative out of fear of fratricide; rather, they strive to eliminate fratricide risk through tough, realistic, combined arms training in which each soldier and unit achieves the established standard. Training allows units and soldiers to make mistakes, with the goal of reducing or eliminating the risk of errors occurring in combat. A key role of a training program is to teach soldiers which targets to engage and when to engage them. Just as important, soldiers must learn and practice restraint in what and when to engage; for example, every commander must know to confirm the target as hostile before issuing and executing any fire command. Eliminating the risk of fratricide is no less critical as a training standard than are other mission requirements. All leaders must know all aspects of the applicable training standard, including fratricide prevention, and then ensure that their soldiers train to that standard.

Effects of Fratricide

Fratricide causes you unacceptable losses and increases the risk of mission failure; it almost always affects the unit's ability to survive and function. Units experiencing fratricide suffer these consequences:

SHOW VGT-12, EFFECTS OF FRATRICIDE

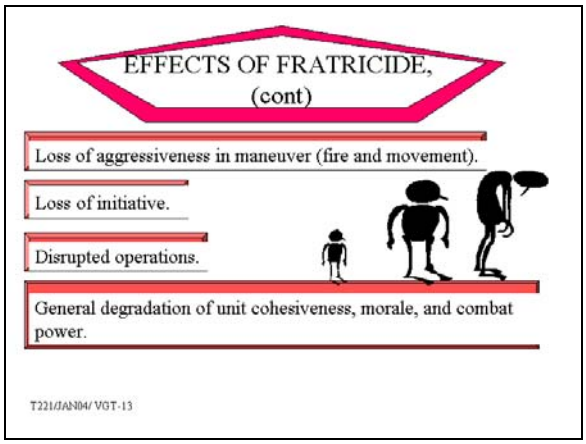


Ref: FM 3-20.98, p I-2

NOTE: Select a student or students to read the bullets.

REMOVE VGT-12

SHOW VGT-13, EFFECTS OF FRATRICIDE (Cont)



Ref: FM 3-20.98, p I-2

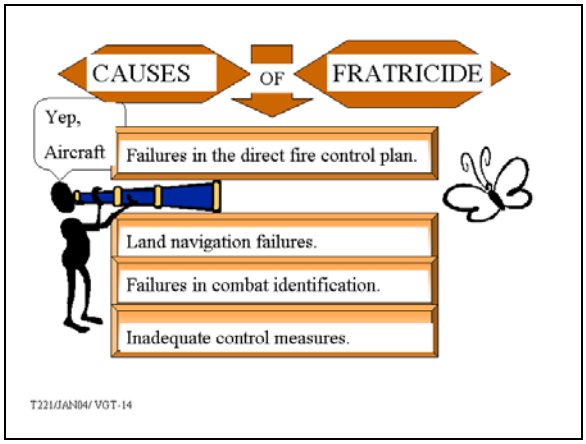
As you can see, the consequences can definitely have a grave impact upon you, your soldiers, and your unit.

REMOVE VGT-13

Now let's discuss some of the causes of fratricide.

You, as a leader, must identify any of the following factors that may affect your unit and then strive to eliminate or correct them.

SHOW VGT-14, CAUSES OF FRATRICIDE



Ref: FM 3-20.98, pp I-3 and I-4

Failures in the Direct Fire Control Plan

These occur when units do not develop effective fire control plans, particularly in the offense. Units may fail to designate target engagement areas or adhere to target priorities, or they may position their weapons incorrectly. Under such conditions, fire discipline often breaks down upon contact.

Land Navigation Failures

Units often stray out of assigned sectors, report wrong locations, and become disoriented. Much less frequently, they employ fire support weapons from the wrong locations. In either type of situation, units that unexpectedly encounter an errant unit may fire their weapons at the friendly force.

Failures in Combat Identification

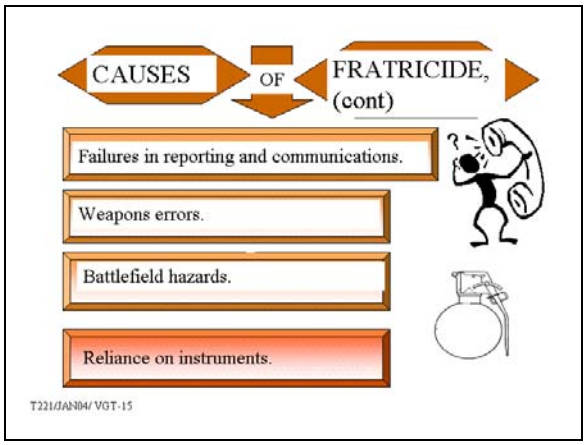
Vehicle commanders and gunners cannot accurately identify thermal or optical signatures near the maximum range of their systems. In limited visibility, units within that range may mistake one another for the enemy.

Inadequate Control Measures

Units may fail to disseminate the minimum necessary maneuver fire control measures and fire support coordination measures; they may also fail to tie control measures to recognizable terrain or events. When this happens, synchronization fails.

REMOVE VGT-14

SHOW VGT-15, CAUSES OF FRATRICIDE (Cont)



Ref: FM 3-20.98, pp I-3 and I-4

Failures in Reporting and Communications

Units at all levels may fail to generate timely, accurate, and complete reports as locations and tactical situations change. This distorts the tactical “picture” available at each level and can lead to erroneous clearance of supporting fires.

Weapons Errors

Lapses in individual discipline can result in fratricide. These incidents include charge errors, accidental discharges, mistakes with explosives and hand grenades, and use of incorrect gun data.

Battlefield Hazards

A variety of explosive devices and materiel may create danger on the battlefield. These include unexploded ordnance, unmarked or unrecorded minefields (including scatterable mines), and booby traps. Your failure to mark, record, remove, or otherwise anticipate these threats **will** lead to casualties.

Reliance On Instruments

A unit that relies too heavily on systems such the FBCB2 and GPS devices will find its capabilities severely degraded if these systems fail. The unit will be unable to maintain situational awareness.

REMOVE VGT-15

Let's review some methods of prevention. The measures we are about to discuss provide a guide to actions for you to take to reduce and/or prevent fratricide risk. These guidelines are not directive in nature, nor intended to restrict initiative. Commanders and leaders must learn to apply them as appropriate based on the specific situation and METT-TC factors. At the heart of fratricide reduction and prevention are five key principles:

- **Identify and assess potential fratricide risks in the estimate of the situation.** Express these risks in the OPORD and/or applicable FRAGOs.
- **Maintain situational awareness.** Focus on such areas as current intelligence; unit locations/dispositions; denial areas (minefields/scatterable mines); contaminated areas, such as ICM and NBC; SITREPs; and METT-TC factors.
- **Ensure positive target identification**. Review vehicle and weapons identification (ID) cards. Become familiar with the characteristics of potential friendly and enemy vehicles, including their silhouettes and thermal signatures. Know at what ranges and under what conditions positive identification of various vehicles and weapons is possible.
- **Maintain effective fire control.** Ensure fire commands are accurate, concise, and clearly stated. Make it mandatory for crewmen to ask for clarification of any

portion of the fire command that they do not completely understand. Stress the importance of the chain of command in the fire control process; ensure crewmen get in the habit of obtaining target confirmation and permission to fire from their leaders before engaging targets they assume are enemy elements.

- **Establish a command climate that emphasizes fratricide prevention.** Enforce fratricide prevention measures, placing special emphasis on the use of doctrinally sound tactics, techniques, and procedures (TTP). Ensure constant supervision in the execution of orders and in the performance of all tasks and missions to standard.

Ref: FM 3-20.98, pp I-6 and I-7

In conclusion, you must be ready to take immediate actions to prevent friendly casualties as well as damage or destruction of friendly equipment.

CHECK ON LEARNING:

NOTE: Conduct a check on learning by asking the following or similar questions. Briefly summarize the covered material and correct any misunderstanding the students may have.

QUESTION: What are the causes of fratricide?

ANSWER: Failures in the direct fire control plan, land and navigation failures, failures in combat identification, inadequate control measures, failures in reporting and communications, weapons errors, and battlefield hazards.

Ref: FM 3-20.98, pp I-3 and I-4

QUESTION: What are the key principles to fratricide reduction and prevention?

ANSWER: Identify and assess potential fratricide risks, maintain situational awareness. Ensure positive target identification, maintain effective fire control, and establish a command climate that emphasizes fratricide prevention.

Ref: FM 3-20.98, pp I-6 and I-7

SECTION IV. SUMMARY

Method of Instruction: Conference / Discussion
Technique of Delivery: Small Group Instruction (SGI)
Instructor to Student Ratio is: 1:8
Time of Instruction: 5 mins
Media: None

Check on Learning

QUESTION: What is risk management?

ANSWER: Risk management is the process of identifying, assessing and controlling risks arising from operational factors and making decisions that balance the risk costs with mission benefits.

Ref: FM 100-14, p 1-1

QUESTION: What are the basic principles for implementing the risk management process?

ANSWER:

- Integrating risk management into mission planning, preparation, and execution.
- Making risk decisions at the appropriate level in the chain of command.
- Accepting no unnecessary risk.

Ref: FM 100-14, p 1-3

Review / Summarize Lesson

If we are comfortably safe in peacetime, must we defer tough, realistic training? Of course not, but we must decide when it is prudent to crawl as opposed to walking or running in our training sessions. Risk management is not risk elimination. The only way to eliminate risk is to stop training. It's important to discover a potential risk, assess its impact on operations, decide where and when the risk is acceptable, and take action to reduce or eliminate the risk. Leaders must know and use the risk assessment/management process.

SECTION V. STUDENT EVALUATION

Testing Requirements

NOTE: Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan.

You will take a written examination. The examination will contain some questions from this lesson. You must answer correctly 70 percent or more of the questions on the examination to receive a GO.

Feedback Requirements

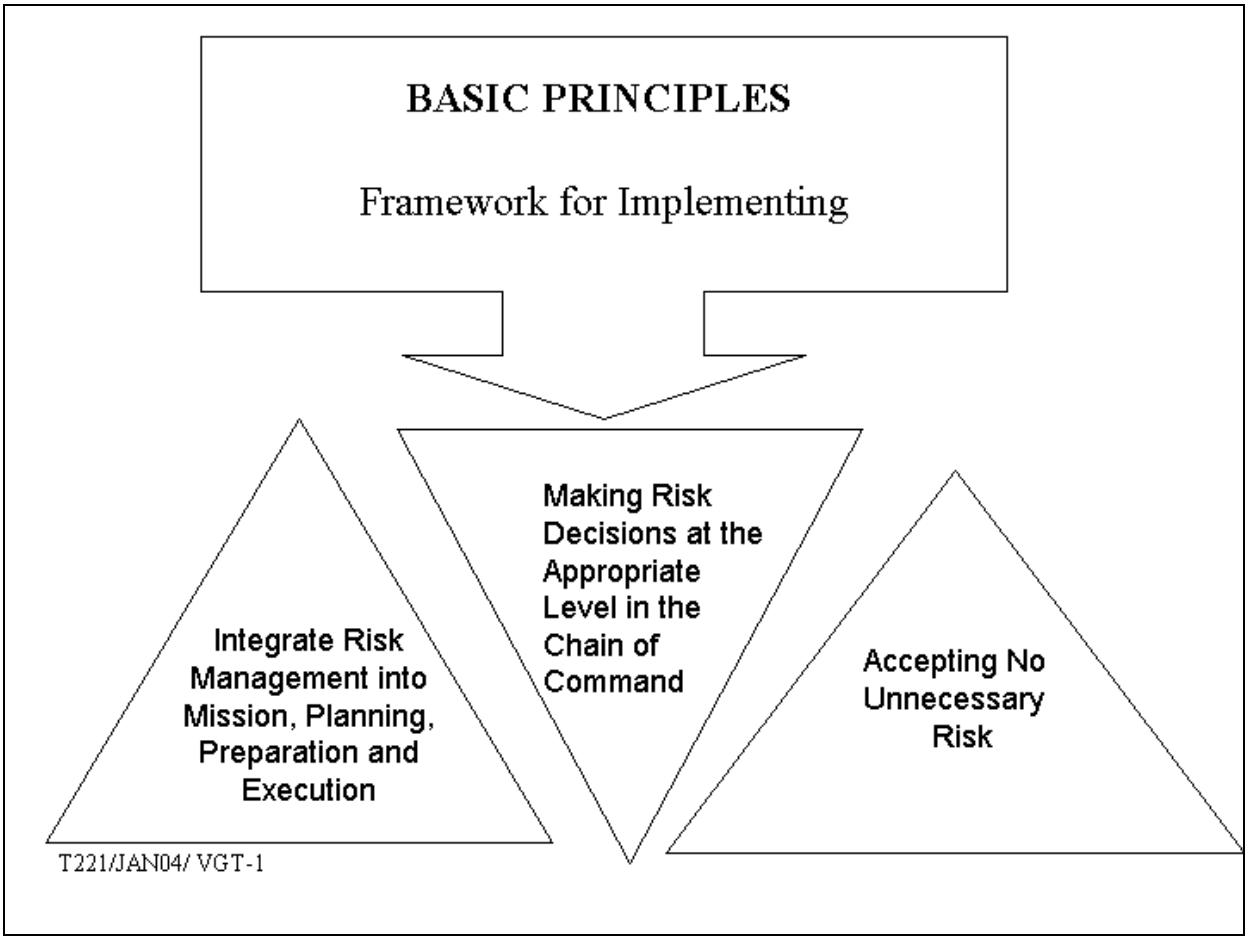
NOTE: Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

NOTE: Inform the students of where the examination will take place as posted on the training schedule and when they will receive feedback on the test. Include any retest information. Inform the students that they must turn in all recoverable reference material after the examination.

Enabling Learning Objective A

Learning Step 1

VGT-1, Basic Principles



VGT-2, Risk Management Assists the Commander or Leader In--

RISK MANAGEMENT ASSISTS THE COMMANDER OR LEADER IN--

- CONSERVING LIVES AND RESOURCES AND AVOIDING UNNECESSARY RISK.
- MAKING AN INFORMED DECISION TO IMPLEMENT A COA.
- IDENTIFYING FEASIBLE AND EFFECTIVE CONTROL MEASURES WHERE SPECIFIC STANDARDS DO NOT EXIST.
- PROVIDING REASONABLE ALTERNATIVES FOR MISSION ACCOMPLISHMENT.

T221/JAN04/ VGT-2

RISK MANAGEMENT DOES NOT--

- INHIBIT THE COMMANDER'S AND LEADER'S FLEXIBILITY AND INITIATIVE.
- REMOVE RISK ALTOGETHER, OR SUPPORT A ZERO DEFECTS MINDSET.
- REQUIRE A GO/NO–GO DECISION.
- SANCTION OR JUSTIFY VIOLATING THE LAW.
- REMOVE THE NECESSITY FOR STANDARD DRILLS, TACTICS, TECHINQUES, AND PROCEDURES.

T221/JAN04/ VGT-3

Enabling Learning Objective B

Learning Step 1

VGT-4, The Five Steps

THE FIVE STEPS

- STEP 1. IDENTIFY HAZARDS.
- STEP 2. ASSESS HAZARDS TO DETERMINE RISKS.
- STEP 3. DEVELOP CONTROLS AND MAKE RISK DECISIONS.
- STEP 4. IMPLEMENT CONTROLS.
- STEP 5. SUPERVISE AND EVALUATE.

T221/JAN04/ VGT-4

TWO TYPES OF RISKS

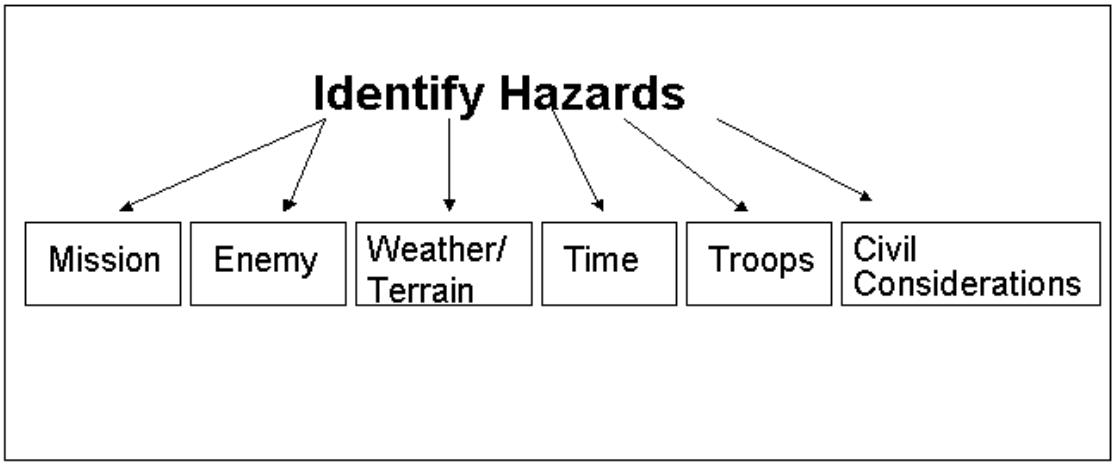
- **TACTICAL RISK** – RISK CONCERNED WITH HAZARDS THAT EXIST BECAUSE OF THE PRESENCE OF EITHER THE ENEMY OR AN ADVERSARY. IT APPLIES TO ALL LEVELS OF WAR AND ACROSS THE SPECTRUM OF OPERATIONS.

- **ACCIDENT RISK** – INCLUDES ALL OPERATIONAL RISK CONSIDERATIONS OTHER THAN TACTICAL RISK. IT INCLUDES RISKS TO THE FRIENDLY FORCE. IT ALSO INCLUDES RISKS POSED TO CIVILIANS BY AN OPERATION, AS WELL AS AN OPERATIONS IMPACT ON THE ENVIRONMENT.

T221/JAN04/ VGT-5

VGT-6, Risk Management Process Step One

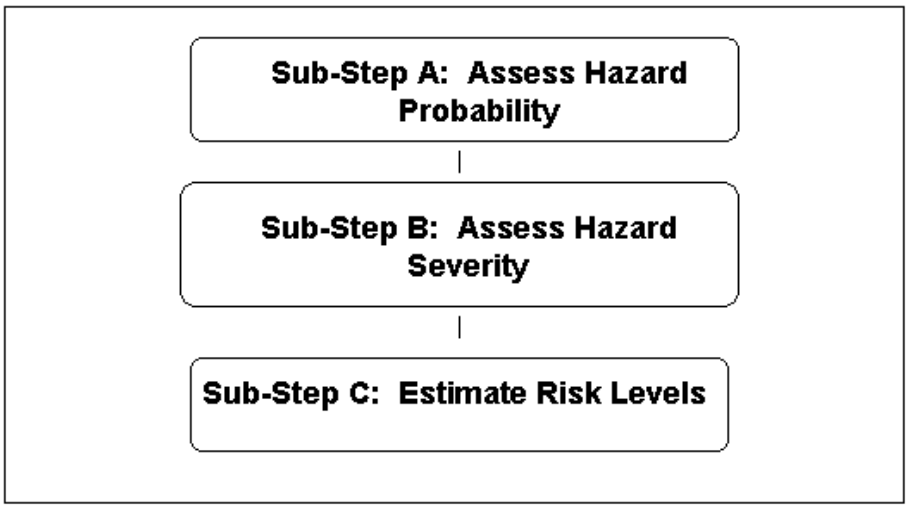
RISK MANAGEMENT PROCESS
Step One



T221/JAN04/ VGT-6

RISK MANAGEMENT PROCESS
Step Two

Assess Hazards to Determine Risks



T221/JAN04/ VGT-7

RISK MANAGEMENT PROCESS
Step Three

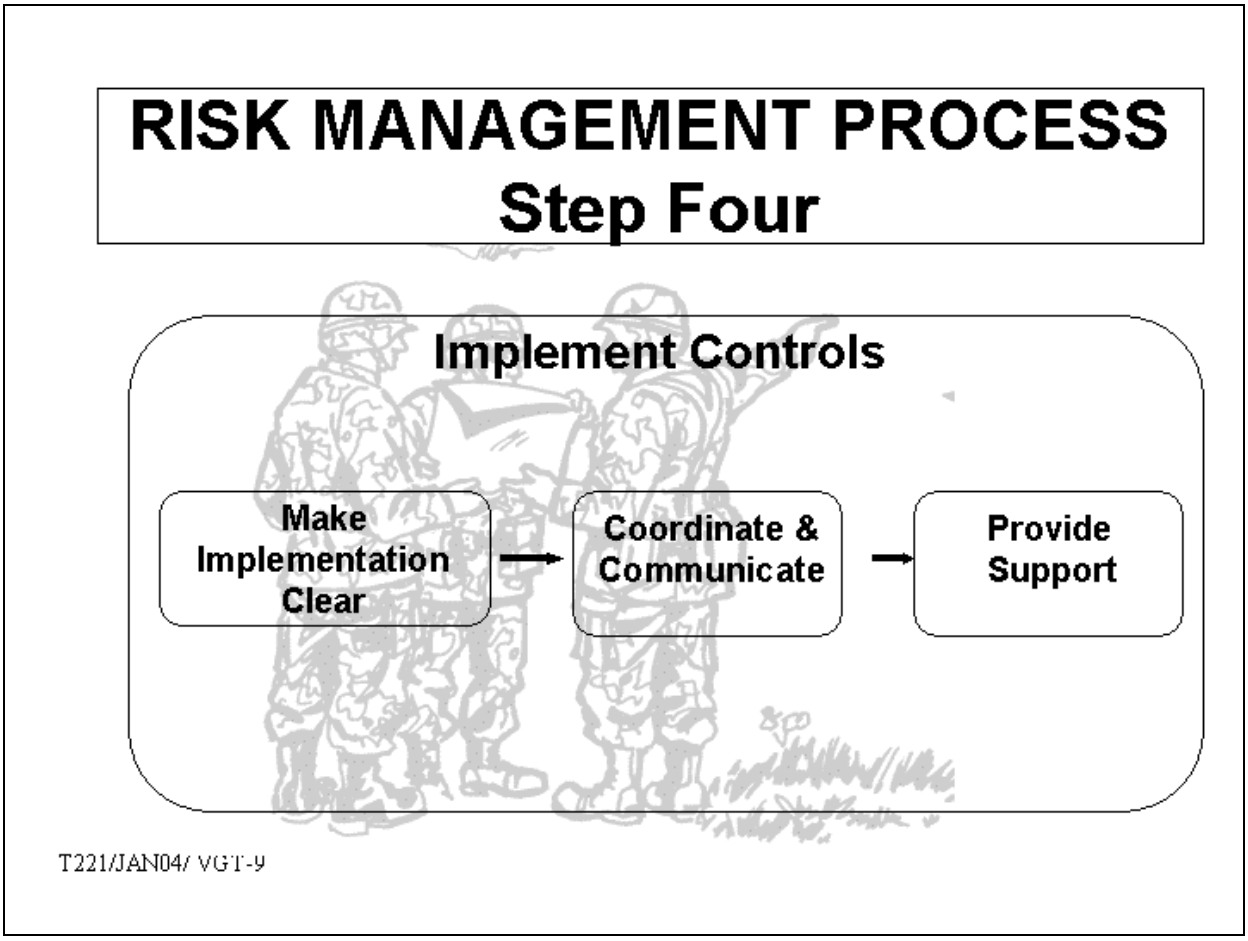
Develop Controls and Make Risk Decisions

Develop Controls

Make Risk Decisions

T221/JAN04/ VGT-8

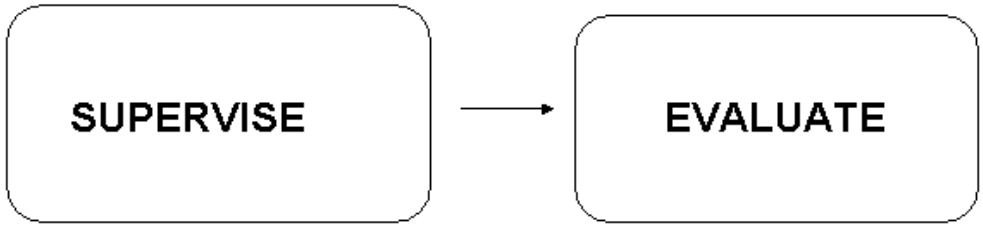
VGT-9, Risk Management Process Step Four



VGT-10, Risk Management Process Step Five

RISK MANAGEMENT PROCESS
Step Five

Supervise and Evaluate



T221/JAN04/ VGT-10

Enabling Learning Objective C

Learning Step 1

VGT-11, Fratricide Defined

FRATRICIDE DEFINED

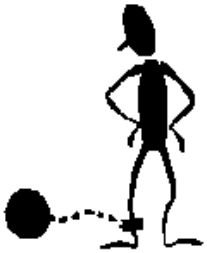
"…the employment of friendly weapons that results in the unforeseen and unintentional death or injury of friendly personnel or damage to friendly equipment."
(FM 3-20.98)

T221/JAN04/ VGT-11

VGT-12, Effects of Fratricide

EFFECTS OF FRATRICIDE

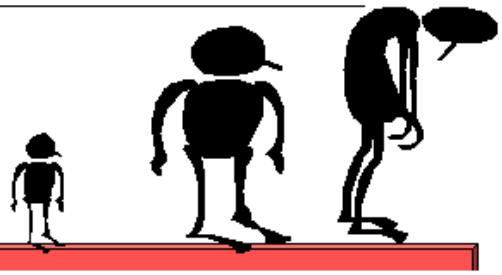
- Loss of confidence in unit's leadership.
- Increasing self-doubt among leaders.
- Hesitancy in the employment of supporting combat systems.
- Over supervision of units.
- Hesitancy in the conduct of night operations.



T221/JAN04/ VGT-12

EFFECTS OF FRATRICIDE, (cont)

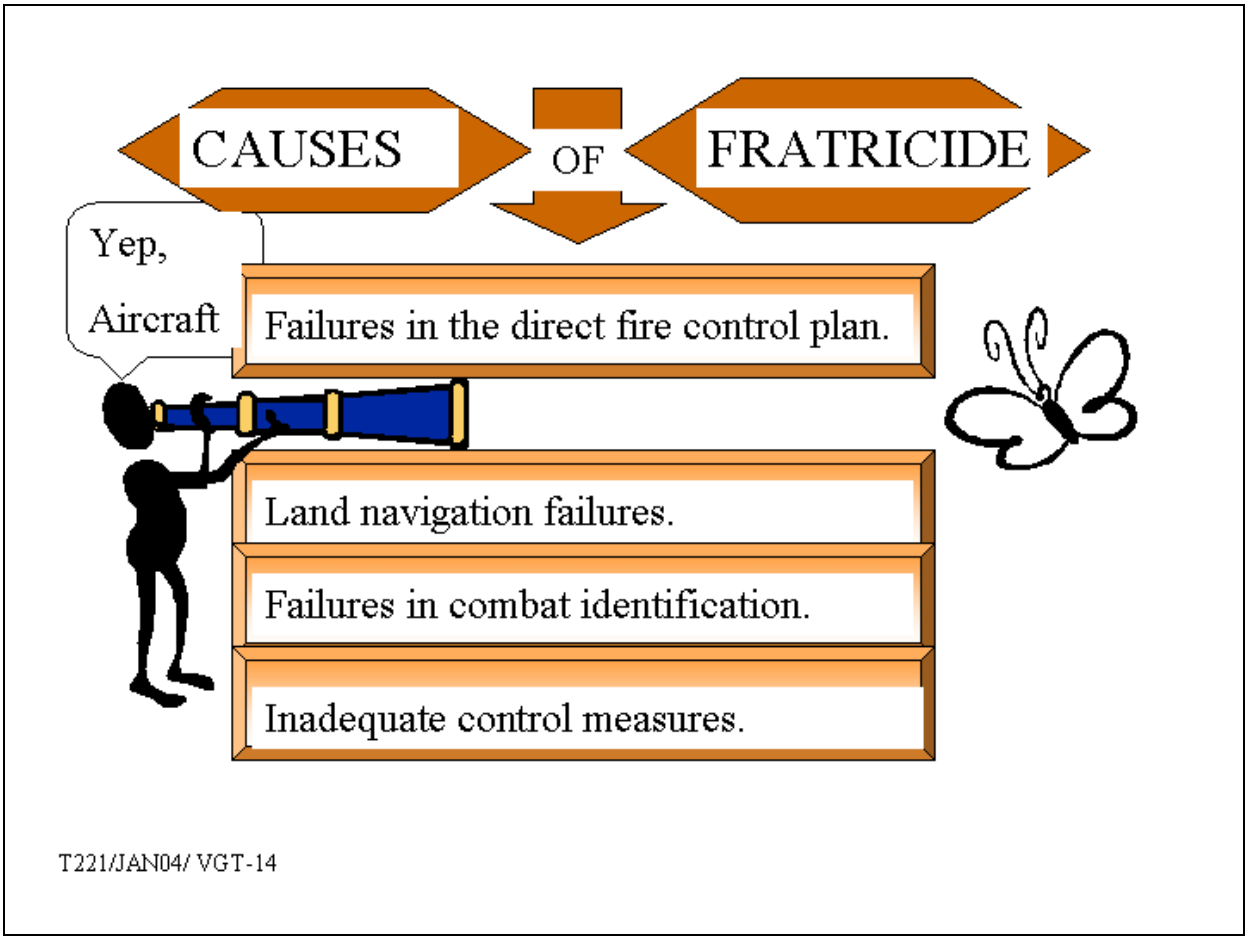
- Loss of aggressiveness in maneuver (fire and movement).
- Loss of initiative.
- Disrupted operations.



- General degradation of unit cohesiveness, morale, and combat power.

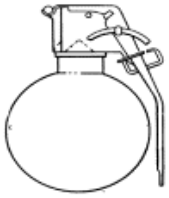
T221/JAN04/ VGT-13

VGT-14, Causes of Fratricide



CAUSES OF FRATRICIDE, (cont)

- Failures in reporting and communications.
- Weapons errors.
- Battlefield hazards.
- Reliance on instruments.



T221/JAN04/ VGT-15

This page intentionally left blank

Appendix B Test(s) and Test Solution(s) (N/A)

This page intentionally left blank

PRACTICAL EXERCISE 1

Title

Risk Management Assessment

Lesson Number/Title

T221 version 1 / Risk Management

Introduction

The next 30 minutes of this lesson contains a practical exercise. As a group, you will do a risk assessment of the given situation. You will have 15 minutes to make the assessment and 15 minutes to discuss your assessment in the classroom.

Motivator

This practical exercise evaluates your knowledge of the material covered in this lesson. Your ability to identify hazards and recommend controls will assist you in increasing the safety levels in your unit and during unit activities.

Terminal Learning Objective

NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.

At the completion of this lesson, you [the student] will:

Action:	Implement the risk management process in order to minimize the frequency and severity of accidents in the activities you lead.
Conditions:	In a classroom environment and in an STX while serving as a leader.
Standards:	Implemented the risk management process in order to minimize the frequency and severity of accidents: • Identifying the basic principles for implementing the risk management process. • Identifying the five steps of the risk management process. • Identifying the causes and effects of fratricide. • Conducting a risk assessment for training activities you will lead. IAW FM 100-14 and FM 3-20.98

Safety Requirements

None

Risk Assessment Level

Low

Environmental Considerations

None

Evaluation	This is a non-graded practical exercise.
Instructional Lead-In	This PE requires you to apply the information you learned in this lesson to develop a risk assessment from the given situation.
Resource Requirements	**Instructor Materials:** None **Student Materials:** You will need all the reference material for this lesson.
Special Instructions	None

Procedures

This practical exercise is thirty minutes total.

- This is a group exercise. Select one student from your group to brief your solution.

- You will have 15 minutes to read the situation and prepare a risk assessment using the Risk Management Worksheet, C-3.

- During the second 15 minutes the selected student from each group will brief the groups risk assessment.

- After the briefings the instructor will pass out the solution and ask for questions and comments.

Situation

The event is a squad compass/orienteering competition. Your squad currently holds first place for this event in the company. You have two newly assigned soldiers in your squad. Due to the past 6 weeks of rain, the once dry stream on the course is now a full running stream (6 feet deep). The weather report forecasts a temperature of 30 degrees for the morning of the competition.

RISK MANAGEMENT WORKSHEET

A. Mission or Task:	**B. Date/Time Group** **Begin:** **End:**	**C. Date Prepared:**
C. Prepared By: (Rank, Last Name, Duty Position)		

E. Task	**F. Identify Hazards**	**G. Assess Hazards**	**H. Develop Control**	**I. Determine Residual Risk**	**J. Implement Control** ("How To")

K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)

This page intentionally left blank

SOLUTION FOR
PRACTICAL EXERCISE 1

RISK MANAGEMENT WORKSHEET

A. Mission or Task: Orienteering Competition	**B. Date/Time Group** **Begin:** 010700NOVXX **End:** 011000NOVXX	**C. Date Prepared:**
C. Prepared By: (Rank, Last Name, Duty Position) SGT Smith, Squad Leader		

E. Task	**F. Identify Hazards**	**G. Assess Hazards**	**H. Develop Control**	**I. Determine Residual Risk**	**J. Implement Control** ("How To")
Navigate from one point on the ground to another point while dismounted	Inexperienced soldiers Seasonal Risk (Cold weather injuries) Water crossing	High (H) Moderate (M) Extremely High (E)	Additional instruction and increased supervision Cold weather clothing and equipment; Soldier/leader awareness training Additional instruction and increased supervision. Place warning signs.	Moderate (M) Low (L) High (H)	Modified training schedule, additional instruction Severe weather alert/action plan Modified training schedule, additional instruction. Unit SOP

K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)

This page intentionally left blank

HANDOUTS FOR LESSON: T221 version 1

This Appendix Contains

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1
SH-2, Extract from FM 100-14	SH-2-1
SH-3, Extract from FM 3-20.98	SH-3-1

This page intentionally left blank

Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of two hours of small group instruction.

Overview In every mission, there is a fight against two enemies. One is the declared enemy (the threat to national security). The other enemy is human error. Human error watches us, and it waits. It singles out individual soldiers. Soldiering is tough, demanding and risky. It has a high potential for danger and accidents. Soldiering attracts men and women with the "can do" and warfighting spirit. This means we take risks and don't shrink from responsibility. In this lesson we show you how risk management can assist in mission accomplishment.

Learning Objective Terminal Learning Objective (TLO) is:

Action:	Implement the risk management process to minimize the frequency and severity of accidents in the activities you lead.
Conditions:	In a classroom environment and in an STX while serving as a leader.
Standard:	Implemented the risk management process to minimize the frequency and severity of accidents in the activities you lead by: • Identifying the basic principles for implementing the risk management process. • Identifying the five steps of risk management process. • Identifying the causes and effects of fratricide. • Conducting a risk assessment for training activities you will lead. IAW FM 100-14 and FM 17-98.

ELO A Identify the basic principles for implementing the risk management process.
ELO B Identify the five steps of the risk management process.
ELO C Identify the causes and effects of fratricide.

Assignment Before class, read Student Handout 1 (SH-1) and Student Handout 2 (SH-2).

Additional Subject Area Resources None

Bring to Class

- SH-1 and SH-2.
- Pencil or pen and writing paper.

This page intentionally left blank

Student Handout 2

Extracted Material from FM 100-14

This student handout contains 33 pages of extracted material from the following publication:

FM 100-14, Risk Management, 23 Apr 1998

Chapter 1	pages 1-1 thru 1-7
Chapter 2	pages 2-0 thru 2-21
Appendix A	pages A-1 thru A-4

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

This page intentionally left blank

Chapter 1

Risk Management Fundamentals

Sizing up opponents to determine victory, assessing dangers and distances is the proper course of action for military leaders.

Sun Tzu, The Art of War, "Terrain"

Risk management is the process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk costs with mission benefits. Leaders and soldiers at all levels use risk management. It applies to all missions and environments across the wide range of Army operations. Risk management is fundamental in developing confident and competent leaders and units. Proficiency in applying risk management is critical to conserving combat power and resources. Commanders must firmly ground current and future leaders in the critical skills of the five-step risk management process.

Risk is characterized by both the probability and severity of a potential loss that may result from hazards due to the presence of an enemy, an adversary, or some other hazardous condition. Perception of risk varies from person to person. What is risky or dangerous to one person may not be to another. Perception influences leaders' decisions. A publicized event such as a training accident or a relatively minor incident may increase the public's perception of risk for that particular event and time—sometimes to the point of making such risks unacceptable. Failure to effectively manage the risk may make an operation too costly—politically, economically, and in terms of combat power (soldiers lives and equipment). This chapter presents the background, principles, applicability, and constraints relating to the risk management process.

BACKGROUND

Throughout the history of armed conflict, government and military leaders have tried to reckon with the effect of casualties on policy, strategy, and mission accomplishment. Government and military leaders consider battle losses from different perspectives. However, both must balance the following against the value of national objectives:

- Effects of casualties.
- Impact on civilians.
- Damage to the environment.
- Loss of equipment.
- Level of public reaction.

War is inherently complex, dynamic, and fluid. It is characterized by uncertainty, ambiguity, and friction. *Uncertainty* results from unknowns or lack of information. *Ambiguity* is the blurring or fog that makes it difficult to distinguish fact from impression about a situation and the enemy. *Friction* results from change, operational hazards, fatigue, and fears brought on by danger. These characteristics cloud the operating environment; they create risks that affect an army's ability to fight and win. In uncertainty, ambiguity, and friction, both danger and opportunity exist. Hence, a leader's ability to adapt and take risks are key traits. Chapter 2 of FM 100-5 provides information on the challenging circumstances of military operations during conflict.

Historically, the Army has had more accidental losses, including fratricide (friendly fire), than losses from enemy action. See Figure 1-1. These accidental losses are the same types experienced in peacetime

Army	World War II 1942–1945	Korea 1950–1953	Vietnam 1965–1972	Desert Shield/ Storm[1] 1990–1991
Accidents	56%	44%	54%	75%
Friendly Fire	1%	1%	1%	5%
Enemy Action	43%	55%	45%	20%

[1]These numbers include the relatively long buildup time and short period of combat action

Figure 1-1. Battle and Nonbattle Casualties

during training exercises. These losses are not caused by the enemy or an adversary. Factors include—

- An ever-changing operational environment.
- Effects of a fast-paced, high-operational tempo (OPTEMPO) and a high-personnel tempo (PERSTEMPO) on unit and human performance. Examples include leader or soldier error or failure to train or perform to standards.
- Equipment failure, support failure, and the effects of the physical environment.

PRINCIPLES

The basic principles that provide a framework for implementing the risk management process are—

- *Integrating risk management into mission planning, preparation, and execution.* Leaders and staffs continuously identify hazards and assess both accident and tactical risks. They then develop and coordinate control measures. They determine the level of residual risk for accident hazards in order to evaluate courses of action (COAs). They integrate control measures into staff estimates, operation plans (OPLANs), operation orders (OPORDs), and missions. Commanders assess the areas in which they might take tactical risks. They approve control measures that will reduce risks. Leaders ensure that all soldiers understand and properly execute risk controls. They continuously assess variable hazards and implement risk controls.
- *Making risk decisions at the appropriate level in the chain of command.* The commander should address risk guidance in his commander's guidance. He bases his risk guidance on established Army and other appropriate policies and on his higher commander's direction. He then gives guidance on how much risk he is willing to accept and delegate. Subordinates seek the higher commander's approval to accept risks that might imperil the next higher commander's intent.
- *Accepting no unnecessary risk.* Commanders compare and balance risks against mission expectations and accept risks only if the benefits outweigh the potential costs or losses. Commanders alone decide whether to accept the level of residual risk to accomplish the mission.

APPLICABILITY

Risk management applies to all situations and environments across the wide range of Army operations, activities, and processes. Risk management is useful in developing, fielding, and employing the total Army force. Figure 1-2 summarizes the key aspects of risk management.

DEVELOPMENT

Development concerns include force design, manpower allocation, training and training developments, and combat and materiel developments (equipment and weapons systems) and battle laboratories.

Risk management assists the commander or leader in—

- Conserving lives and resources and avoiding unnecessary risk.
- Making an informed decision to implement a COA.
- Identifying feasible and effective control measures where specific standards do not exist.
- Providing reasonable alternatives for mission accomplishment.

Risk management does not—

- Inhibit the commander's and leader's flexibility and initiative.
- Remove risk altogether, or support a zero defects mindset.
- Require a GO/NO-GO decision.
- Sanction or justify violating the law.
- Remove the necessity for standard drills, tactics, techniques, and procedures.

Figure 1-2. Key Aspects of Risk Management

Force Design

Concerns include risks introduced in trade-off decisions that involve the design and equipping of—

- Tables of organization and equipment (TOE).
- Modification tables of organization and equipment (MTOE).
- Tables of distribution and allowances (TDA) organizations.

Manpower Allocations

Concerns include shortfalls in manning that put unit readiness and full use of combat system capabilities at risk.

Training and Training Developments

Concerns include hazardous and critical training tasks and feasible risk reduction measures that provide leaders with the flexibility to safely conduct tough, realistic training.

Combat and Materiel Developments and Battle Laboratories

Concerns include providing a means to assist in making informed trade-off decisions such as—

- Balancing equipment form, fit, and function.
- Balancing the durability and cost of equipment and spare parts against their reliability, availability, and maintainability requirements.
- Determining the environmental impact.
- Determining whether to accept systems with less than the full capabilities prescribed in requirement documents and experimental procedures.

ARs 70-1 and 385-16 and MIL-STD-882 provide details on risk management application in the Army materiel acquisition process.

FIELDING

Fielding concerns include personnel assignments, sustainment and logistics, training, and base operations.

Personnel Assignments

Concerns include making informed decisions in assigning replacement personnel. For example, a risk is associated with assigning a multiple launch rocket system crewmember as a replacement for a tube artillery cannon crewmember.

Sustainment and Logistics

Concerns include enhancing one's ability to determine support requirements, the order in which they should be received, and the potential impact of logistics decisions on operations.

Training

Concerns include helping leaders determine the—

- Balance between training realism and unnecessary risks in training.
- Impact of training operations on the environment.
- Level of proficiency and experience of soldiers and leaders.

Base Operations

Concerns include prioritizing the execution of base operations functions to get the most benefit from available resources. Examples include allocating resources for pollution prevention, correcting safety and health hazards, and correcting violations of environmental protection regulations. FM 20-400 provides specific guidance on environmental protection in military operations.

EMPLOYMENT

Employment concerns include force protection and deployment, operations, and redeployment.

Force Protection

Concerns include developing a plan that identifies threats and their associated hazards and balancing resource restraints against the risk.

Deployment, Operations, and Redeployment

Concerns include—

- Analyzing the factors of mission, enemy, terrain, troops, and time available (METT-T) to determine both tactical and accident risks and appropriate risk reduction measures.
- Determining the correct units, equipment composition, and sequence.
- Identifying controls essential to safety and environmental protection.

CONSTRAINTS

Risk management does not convey authority to violate the law-of-land warfare or deliberately disobey local, state, national, or host nation laws. It does not justify ignoring regulatory restrictions and applicable standards. Neither does it justify bypassing risk controls required by law, such as life safety and fire protection codes, physical security, transport and disposal of hazardous material and waste, or storage of classified material. Commanders may not use risk management to alter or bypass legislative intent. However, when restrictions imposed by other agencies adversely affect the mission, planners may negotiate a satisfactory COA if the result conforms to the legislative intent.

Risk management assists the commander in complying with regulatory and legal requirements by—

- Identifying applicable legal standards that affect the mission.
- Identifying alternate COAs or alternate standards that meet the intent of the law.
- Ensuring better use of limited resources through establishing priorities to correct known hazardous conditions that will result in projects with the highest return on investment funded first.

Chapter 2

Risk Management Process

First reckon, then risk

Field Marshal Helmuth von Moltke

This chapter provides the essence of the five-step risk management process. It illustrates the application of each step to military operations through the factors of METT-T.

THE FIVE STEPS: AN OVERVIEW

Risk management is the process of identifying and controlling hazards to conserve combat power and resources. The five steps of risk management are—

- Step 1. Identify hazards.
- Step 2. Assess hazards to determine risks.
- Step 3. Develop controls and make risk decisions.
- Step 4. Implement controls.
- Step 5. Supervise and evaluate.

This five-step process is integrated into the military decision-making process as shown in Figure 2-1.

FM 100-40 provides insight into the context in which the risk management process is applied herein. Areas of particular interest in FM 100-40 include—

- Solving tactical problems (Chapter 1).
- The science and art of tactics (Chapter 1).
- Hasty versus deliberate operations (Chapter 1).
- The plan-prepare-execute cycle (Chapter 1).
- Basic tactical control measures (Chapter 2).
- The factors of METT-T (Chapter 2).

Military Decision-Making Process	Risk Management Steps				
	Step 1 Identify Hazards	**Step 2** Assess Hazards	**Step 3** Develop Controls and Make Risk Decision	**Step 4** Implement Controls	**Step 5** Supervise and Evaluate
Mission Receipt	X				
Mission Analysis	X	X			
COA Development	X	X	X		
COA Analysis	X	X	X		
COA Comparison			X		
COA Approval			X		
Orders Production				X	
Rehearsal[1]	X	X	X	X	X
Execution and Assessment[1]	X	X	X	X	X

[1]All boxes are marked to emphasize the continued use of the risk management process throughout the mission

Figure 2-1. Risk Management Steps Correlated with Military Decision-Making Tasks

Risk decisions should be based upon awareness rather than mechanical habit. Leaders should act on a keen appreciation for the essential factors that make each situation unique instead of from conditioned response. Throughout the entire operational continuum, the commander must consider US Government civilians and contract support personnel in his risk management process. Hazards can exist, regardless of enemy or adversary actions, in areas with no direct enemy contact and in areas outside the enemy's or adversary's

influence. The two types of risk that exist across the wide range of Army operations are *tactical risks* and *accident risks.*

- *Tactical risk* is risk concerned with hazards that exist because of the presence of either the enemy or an adversary. It applies to all levels of war and across the spectrum of operations.
- *Accident risk* includes all operational risk considerations other than tactical risk. It includes risks to the friendly force. It also includes risks posed to civilians by an operation, as well as an operations impact on the environment. It can include activities associated with hazards concerning friendly personnel, civilians, equipment readiness, and environmental conditions.

STEPS 1 AND 2

Steps 1 and 2 together comprise the risk assessment. In Step 1, individuals identify the hazards that may be encountered in executing a mission. In Step 2, they determine the direct impact of each hazard on the operation. The risk assessment provides for enhanced situational awareness. This awareness builds confidence and allows soldiers and units to take timely, efficient, and effective protective measures.

STEPS 3 THROUGH 5

Steps 3 through 5 are the essential follow-through actions to effectively manage risk. In these steps, leaders balance risk against costs—political, economic, environmental, and to combat power—and take appropriate actions to eliminate unnecessary risk. During execution, as well as during planning and preparation, leaders continuously assess the risk to the overall mission and to those involved in the task. Finally, leaders and individuals evaluate the effectiveness of controls and provide lessons learned so that others may benefit from the experience.

THE FIVE STEPS APPLIED

STEP 1. IDENTIFY HAZARDS

A *hazard* is an actual or potential condition where the following can occur due to exposure to the hazard:

- Injury, illness, or death of personnel.
- Damage to or loss of equipment and property.
- Mission degradation.

Hazards are sources of danger or risks due to enemy or adversary presence and other conditions not due to enemy or adversary capabilities. Hazards are found in all operational environments. Combat operations, stability operations, base support operations, and training present unique hazards for units involved in these kinds of missions. Hazards are identified during the first four steps of the military decision-making process: *mission receipt, mission analysis, COA development*, and *COA analysis*.

The ability of unit leaders and staffs to identify hazards is key. One reality of today's missions is that the aspect of a hazard can change rapidly. Things of little risk initially can quickly become major threats due to unforeseen natural or man-made events. Leaders should be aware of this possibility. Complacency to the fact that existing controls may not continue to control hazards in rapidly changing situations should be viewed as a hazard in itself.

The factors of METT-T provide a sound framework for identifying hazards when planning, preparing, and executing operations. When applying risk management to METT-T during mission analysis, leaders and staffs should look for hazards that affect both tactical and accident risks. They must identify all hazards that may present significant risks to the mission.

Mission

Leaders first analyze the assigned mission. They look at the type of mission to be accomplished and consider possible subsequent missions. Certain kinds of operations are inherently more dangerous than others. For example, a deliberate frontal attack, because of the associated movement, is more likely to expose a unit to losses than would a defense from prepared positions. Identifying missions that routinely present great risk is imperative. Leaders also look for hazards associated with complexity of the plan such as—

- A scheme of maneuver that is difficult to understand or too complex for accurate communications down to the lowest level.
- The impact of operating under a fragmentary order (FRAGO).

Enemy

Commanders look for enemy capabilities that pose significant hazards to the operation. For example, "What can the enemy do to

defeat my operation?" Common shortfalls that can create hazards during operations against an enemy include failure to—

- Assess potential advantages to the enemy provided by the battlefield environment.
- Fully assess the enemy's capabilities.
- Understand enemy collection capabilities and friendly vulnerabilities to those capabilities.
- Accurately determine the enemy's probable COAs.
- Plan and coordinate active ground and aerial reconnaissance activities.
- Disseminate intelligence about the enemy to lower levels.
- Identifying terrorist threats and capabilities.

Intelligence plays a critical part in identifying hazards associated with tactical risk. Intelligence-preparation-of-the-battlefield (IPB) is a dynamic staff process that continually integrates new information and intelligence that ultimately becomes input to the commander's risk assessment process. Intelligence assists in identifying hazards during operations by—

- Identifying the opportunities and constraints the battlefield environment offers to threat and friendly forces.
- Thoroughly portraying threat capabilities and vulnerabilities.
- Collecting information on populations, governments, and infrastructures.

FMs 34-130 and 34-60, respectively, provide detailed information on IPB and on counterintelligence operations and multidiscipline counterintelligence analysis.

Terrain and Weather

In addition to those due to the enemy or adversaries, the most obvious hazards to military operations are due to terrain and weather. Terrain and weather affect the type of hazard encountered. When the enemy uses terrain to his advantage, the risk is clearly tactical. The aspects of terrain and weather may create situations where accident risks predominate. When looking at this from a purely mission perspective, familiarity of the unit with the terrain and its associated environment must be paramount. Basic issues include—

- How long the unit has operated in the environment and climate.
- Whether the terrain has been crossed before.

Terrain. The five main military aspects of terrain—*observation and fields of fire, cover and concealment, obstacles, key terrain and decisive terrain, and avenues of approach (OCOKA)*—can be used to identify and assess hazards impacting on friendly forces. Chapter 2 of FM 100-40 has details on OCOKA. The terrain analysis includes both map and on-the-ground reconnaissance to identify how well unit capabilities and mission demands can be accommodated by the terrain.

- *Observation and fields of fire.* Hazards associated with this usually involve when the enemy will be able to engage a friendly unit and when friendly unit weapons capabilities allow it to effectively engage the enemy.
- *Cover and concealment.* Hazards associated with cover and concealment are created by the enemy's ability to place direct or indirect fire on friendly forces.
- *Obstacles.* Hazards associated with obstacles may be accident or tactical. They may be due to natural conditions such as rivers or swamps or man-made such as minefields or built-up areas.
- *Key terrain and decisive terrain.* Hazards are a marked advantage terrain provides to the enemy if he controls such terrain or denies its use to friendly forces.
- *Avenues of approach.* Hazards associated with avenues of approach can affect both tactical and accident risks. Such hazards include conditions where an avenue of approach impedes deployment of friendly combat power or where it supports deployment of enemy combat power.

Weather. Weather works hand-in-hand with terrain to create hazards. To identify weather hazards, leaders and soldiers must assess the impact on operating systems. Mistakes include not considering the—

- Adverse effects of heat and cold hazards on the performance of soldiers.
- Effects of climate and weather on maintenance of vehicles and equipment before beginning an operation.
- Hazardous effects of weather on the five military aspects of terrain.

Troops

Leaders analyze the capabilities of available friendly troops. Associated hazards impact both the soldier and unit. Key considerations are level of training, manning levels, the condition and maintenance of vehicles and equipment, morale, availability of supplies and services, and the physical and emotional health of soldiers. Leaders and soldiers must be vigilant to the fact that hazards in these areas can adversely affect a mission, even when all tactical considerations point to success. Mission failure can be caused by—

- *Hazards to the physical and emotional health of soldiers.* Inadequate sanitation facilities, water purification capabilities, medical attention, and evacuation capabilities are key hazards that can arise from incomplete logistical planning. Care of troops requires long-range projections of all classes of supply, with close monitoring of mission changes that could impact availability or depletion of supplies. When beginning an operation immediately upon arriving in theater, hazards include not implementing measures to help soldiers overcome fatigue or acclimatize them to the geographical area and associated climate.
- *Hazards to task organization or units participating in an operation.* Hazards include how long units have worked together under a particular command relationship. During stability operations, task organizations may change often. Hazards include poor communication, unfamiliarity with higher headquarters SOPs, and insufficient combat power to accomplish the mission.
- *Hazards associated with long-term missions.* Long-term missions include nation building, peacekeeping, or insurgency/counterinsurgency operations. Hazards associated with these missions include the turmoil of personnel turnover, lack of continuity of leadership, inexperience, and lack of knowledge of the situation and the unit's operating procedures. An especially insidious hazard is critical-skills atrophy that results from not performing METL-related missions.

Time Available

The hazard is insufficient time to plan, prepare, and execute operations. Planning time is always at a premium. Leaders routinely apply the one-third/two-thirds rule to ensure their subordinate units are given maximum time to plan. Failure to accomplish a mission on

time can result in shortages of time for subordinate and adjacent units to accomplish their mission.

Civilians

The commander's legal responsibility is to consider hazards to, and safeguarding of, civilians in his area of operations. *Civilians* include nongovernmental organizations (NGOs), private voluntary organizations (PVOs), US Government civilians, foreign national civilians, the media, and dislocated civilians put at risk by military operations. The commander must consider hazards that can occur across the range of operations, such as—

- *In a wartime environment.* The commander must consider the hazard of collateral damage which may result in creating new adversaries.
- *In a peacetime environment.* The commander must consider the political attitudes and previous actions of civilians in identifying hazards to friendly forces and the populace itself.

Adversaries are hostile elements other than the enemy that may be encountered during any operation. They present additional hazards. They may be organized opposition or individuals that challenge authority. They may include such diverse elements as rioters, criminals, rogues, or gangs that might want to harass a peace enforcement mission.

STEP 2. ASSESS HAZARDS

Step 2 completes the risk assessment. Risk is the chance of hazard or bad consequences. This step examines each hazard in terms of probability and severity to determine the risk level of one or more hazardous incidents that can result from exposure to the hazard. This step is conducted during three steps of the military decision-making process—*mission analysis, COA development,* and *COA analysis.* This step is also conducted after controls are developed.

The incident must be credible in that it must have a reasonable expectation of happening. The end result is an estimate of risk from each hazard and an estimate of the overall risk to the mission caused by hazards that cannot be eliminated. Leaders must also assess the risk to civilians posed by the operation. They may need to assess the operations' impact on the environment. This step is conducted in three substeps.

Substep A

Leaders and staffs assess each hazard in relation to the *probability* of a hazardous incident. The probability levels estimated for each hazard may be based on the mission, COAs being developed and analyzed, or frequency of a similar event. Figure 2-2 provides a summary of the five degrees of probability. The letters in parentheses following each degree (A through E) provide a symbol for depicting probability. For example, the letter *A* represents *frequent* probability.

FREQUENT (A) Occurs very often, continuously experienced	
Single item	Occurs very often in service life. Expected to occur several times over duration of a specific mission or operation. Always occurs.
Fleet or inventory of items	Occurs continuously during a specific mission or operation, or over a service life.
Individual soldier	Occurs very often in career. Expected to occur several times during mission or operation. Always occurs.
All soldiers exposed	Occurs continuously during a specific mission or operation.
LIKELY (B) Occurs several times	
Single item	Occurs several times in service life. Expected to occur during a specific mission or operation.
Fleet or inventory of items	Occurs at a high rate, but experienced intermittently (regular intervals, generally often,).
Individual soldier	Occurs several times in career. Expected to occur during a specific mission or operation.
All soldiers exposed	Occurs at a high rate, but experienced intermittently.
OCCASIONAL (C) Occurs sporadically	
Single item	Occurs some time in service life. May occur about as often as not during a specific mission or operation.
Fleet or inventory of items	Occurs several times in service life.
Individual soldier	Occurs some time in career. May occur during a specific mission or operation, but not often.
All soldiers exposed	Occurs sporadically (irregularly, sparsely, or sometimes).

Figure 2-2. Hazard Probability

SELDOM (D) Remotely possible; could occur at some time	
Single item	Occurs in service life, but only remotely possible. Not expected to occur during a specific mission or operation.
Fleet or inventory of items	Occurs as isolated incidents. Possible to occur some time in service life, but rarely. Usually does not occur.
Individual soldier	Occurs as isolated incident during a career. Remotely possible, but not expected to occur during a specific mission or operation.
All soldiers exposed	Occurs rarely within exposed population as isolated incidents.
UNLIKELY (E) Can assume will not occur, but not impossible	
Single item	Occurrence not impossible, but can assume will almost never occur in service life. Can assume will not occur during a specific mission or operation.
Fleet or inventory of items	Occurs very rarely (almost never or improbable). Incidents may occur over service life.
Individual soldier	Occurrence not impossible, but may assume will not occur in career or during a specific mission or operation.
All soldiers exposed	Occurs very rarely, but not impossible.

Figure 2-2. Hazard Probability (continued)

Substep B

Substep B addresses the *severity* of each hazard. It is expressed in terms of—

- Degree of injury or illness.
- Loss of or damage to equipment or property.
- Environmental damage.
- Other mission-impairing factors such as lost combat power.

The degree of severity estimated for each hazard may be based on knowledge of the results of similar past events. Figure 2-3 provides a summary of the four degrees of hazard severity. The Roman numerals in parentheses following each degree (I through IV) provide a convenient symbol for depicting severity. For example, *I* represents the *catastrophic* degree of severity.

CATASTROPHIC (I)	Loss of ability to accomplish the mission or mission failure. Death or permanent total disability (accident risk). Loss of major or mission-critical system or equipment. Major property (facility) damage. Severe environmental damage. Mission-critical security failure. Unacceptable collateral damage.
CRITICAL (II)	Significantly (severely) degraded mission capability or unit readiness. Permanent partial disability, temporary total disability exceeding 3 months time (accident risk). Extensive (major) damage to equipment or systems. Significant damage to property or the environment. Security failure. Significant collateral damage.
MARGINAL (III)	Degraded mission capability or unit readiness. Minor damage to equipment or systems, property, or the environment. Lost day due to injury or illness not exceeding 3 months (accident risk). Minor damage to property or the environment.
NEGLIGIBLE (IV)	Little or no adverse impact on mission capability. First aid or minor medical treatment (accident risk). Slight equipment or system damage, but fully functional and serviceable. Little or no property or environmental damage.

Figure 2-3. Hazard Severity

Substep C

In this substep leaders and staffs expand what they understand about probable hazardous incidents into estimates of levels of risk for each identified hazard and an estimate of the overall risk for the operation. Estimating risk follows from examining the outcomes of Substeps A and B; that is, both the probability and severity of hazardous incidents. This substep is more art than science. Much depends on the use of historical lessons learned, intuitive analysis,

experience, and judgment. Uncertainty can arise in the assessment of both the probability and severity of a hazardous incident. Uncertainty results from unknowns about a situation; from incomplete, inaccurate, undependable, or contradictory information; and from unforeseen circumstances. Therefore, assessment of risk requires good judgment.

Figure 2-4 is a standardized matrix that can be used to assist in this process. Leaders and staffs enter the estimated degree of severity and probability for each hazard in Substeps A and B from the severity row and probability column, respectively. The point where the severity row and probability column intersect defines the level of risk. For example, if the hazard is estimated to have a *critical* severity (II) and a *likely* probability (B), the level of risk is high (H).

Figure 2-5 provides a summary of the levels of risk. It also provides examples of hazardous incidents for each risk level. Several examples illustrate the trade-off between tactical and accident risks.

Risk Assessment Matrix

		Probability				
Severity		**Frequent A**	**Likely B**	**Occasional C**	**Seldom D**	**Unlikely E**
Catastrophic	**I**	**E**	**E**	**H**	**H**	**M**
Critical	**II**	**E**	**H**	**H**	**M**	**L**
Marginal	**III**	**H**	**M**	**M**	**L**	**L**
Negligible	**IV**	**M**	**L**	**L**	**L**	**L**

E – Extremely High Risk
H – High Risk
M – Moderate Risk
L – Low Risk

Figure 2-4. Risk Assessment Matrix

E - Extremely High: Loss of ability to accomplish the mission if hazards occur during mission. A *frequent* or likely probability of catastrophic loss (IA or IB) or *frequent* probability of *critical* loss (IIA) exists.

Example: A commander finds that one of his implied tasks to attack an objective involves crossing a normally shallow riverbed. After looking at the factors of METT-T, he discovers that three days of intense rain have raised the water level to rise above flood stage, with currents far in excess of his ability to safely ford with armored vehicles. After discussing COAs with his staff, he determines the accident risk is extremely high because of the likely probability and catastrophic severity of losing vehicles and killing soldiers. His conclusions are based on his experience with and knowledge of fording armored vehicles under the existing conditions of water depth and current speed.

H - High: Significant degradation of mission capabilities in terms of the required mission standard, inability to accomplish all parts of the mission, or inability to complete the mission to standard if hazards occur during the mission. *Occasional* to *seldom* probability of catastrophic loss (IC or ID) exists. A *likely* to *occasional* probability exists of a critical loss (IIB or IIC) occurring. *Frequent* probability of *marginal* losses (IIIA) exists.

Example: During a preplanned ambush, the leader discovers that the force he intends to ambush has significantly more combat power than his own force can accommodate. He realizes that he could only delay rather than destroy the enemy. He knows his casualty estimates would be very high if the enemy reorganized and counterattacked. He also knows that the size of the enemy force could seriously impact adjacent units conducting a movement to contact. He determines the situation is *high risk* because he estimates (based on his training and experience) there is a likely probability of the enemy reorganizing and counterattacking and the severity of loss to his unit would be critical.

M - Moderate: Expected degraded mission capabilities in terms of the required mission standard will have a reduced mission capability if hazards occur during mission. An *unlikely* probability of catastrophic loss (IE) exists. The probability of a *critical* loss is *seldom* (IID). *Marginal* losses occur with a *likely* or *occasional* probability (IIIB or IIIC). A *frequent* probability of negligible (IVA) losses exists.

Example: A commander in a defensive position receives a warning order to be prepared to counterattack if the enemy attacks again. He chooses to use pre-positioned ammunition caches to support his defense, as opposed to moving his ammunition resupply forward by truck. He determines that the severity of not having an immediate resupply of ammunition available during the counterattack will have a *critical* impact on his combat power. He realizes that if the enemy forces him to abandon his forward positions, the severity of the loss of his

Figure 2-5. Levels of Risk

ammunition caches will critically impact his combat power. He considers that his unit is deployed in excellent defensive positions. He has repelled two attacks that resulted in the destruction of an estimated 50 percent of the enemy's combat power. He receives information that the probability of the enemy attacking is *likely*, but that the probability of the enemy being reinforced and attacking in overwhelming force is remote *(seldom).* The commander concludes that the risk of conducting a counterattack with limited ammunition is greater than the *moderate* risk of the enemy pushing him back.

L - Low: Expected losses have little or no impact on accomplishing the mission. The probability of *critical* loss is *unlikely* (IIE), while that of *marginal* loss is *seldom* (IIID) or *unlikely* (IIIE). The probability of a *negligible* loss is *likely* or *less* (IVB through (IVE).

Example: A mechanized task force (TF) conducting a movement to contact in a desert environment is overtaken by nightfall before reaching its limit of advance (LOA). The terrain along the axis of advance is flat and open. Visibility is about 800 meters under a clear sky illuminated by a full moon. Estimates put the enemy, which has been hastily withdrawing for the past three days, at approximately 30 percent strength. Contact has been light with no defensible terrain along the TF's axis. The TF commander considers all the factors. In addition, the TF is 100 percent operational in using night vision devices. The TF commander estimates that it is *unlikely* that his unit will incur losses of *critical* severity by being surprised by the enemy or lose *critical* combat power due to an accident. He estimates the risk to his force in continuing a nighttime movement is *low.*

Figure 2-5. Levels of Risk (continued)

STEP 3. DEVELOP CONTROLS AND MAKE RISK DECISIONS

> *Risk management is the recognition that decision making occurs under conditions of uncertainty. Decisions must remain consistent with the commander's stated intent and offer a good expectation of success. The risk-taking skill requires competency as a prerequisite.*
>
> FM 100-7, Decisive Force:
> *The Army in Theater Operations,* May 1995

Step 3 is accomplished in two substeps: develop controls and make risk decisions. This is done during the COA development, COA analysis, COA comparison, and COA approval of the military decision-making process.

Substep A - Develop Controls

After assessing each hazard, leaders develop one or more controls that either eliminate the hazard or reduce the risk (probability and / or

severity) of a hazardous incident. When developing controls, they consider the reason for the hazard not just the hazard itself.

Types of Controls. Controls can take many forms, but fall into three basic categories—*educational controls, physical controls,* and *avoidance.*

- *Educational controls.* These controls are based on the knowledge and skills of the units and individuals. Effective control is implemented through individual and collective training that ensures performance to standard.
- *Physical controls.* These controls may take the form of barriers and guards or signs to warn individuals and units that a hazard exists. Additionally, special controller or oversight personnel responsible for locating specific hazards fall into this category.
- *Avoidance.* These controls are applied when leaders take positive action to prevent contact with an identified hazard.

Criteria for Controls. To be effective, each control developed must meet the following criteria:

- *Suitability.* It must remove the hazard or mitigate (reduce) the residual risk to an acceptable level.
- *Feasibility.* The unit must have the capability to implement the control.
- *Acceptability.* The benefit gained by implementing the control must justify the cost in resources and time. The assessment of acceptability is largely subjective. Figure 2-6 gives criteria for determining acceptability of controls for each identified hazard.

Support	Availability of adequate personnel, equipment, supplies, and facilities necessary to implement a suitable controls.
Standards	Guidance and procedures for implementing a control are clear, practical, and specific.
Training	Knowledge and skills are adequate to implement a control.
Leadership	Leaders are competent to implement a control.
Individual	Individual soldiers are sufficiently self-disciplined to implement a control.

Figure 2-6. Criteria for Determining Acceptability of Controls

Examples of Controls Examples of controls include—

- Engineering or designing to eliminate or control hazards.
- Selecting a COA that avoids identified hazards.
- Limiting the number of people and the amount of time they are exposed to hazards, consistent with mission requirements.
- Selecting personnel with appropriate mental, emotional, and physical capabilities.
- Providing protective clothing, equipment, and safety and security devices.
- Providing such services as adequate sanitation facilities and water purification capabilities.
- Providing warning signs and signals.
- Scheduling vehicle and aircraft silhouette drills.
- Planning training, including rehearsals, rock drills, battle drills, and so forth.
- Programming communications links for key civilian organizations.
- Establishing battlefield controls such as areas of operations and boundaries, direct fire control measures, fire support coordination measures, rules of engagement, airspace control measures, bridge classification, traffic control, and so forth.
- Developing terrorist attack warning systems and response plans.

The key is to specify who, what, where, when, and how each control is to be used. For example—

- Planning and scheduling intensive threat and friendly vehicle identification refresher training for all antiarmor and air defense weapons crews before the mission reduces the probability of engaging a friendly vehicle or aircraft (fratricide).
- Programming installation of crashworthy passenger seats in the UH-60 Blackhawk, when mission circumstances do not indicate their removal, can reduce the severity of injuries in crashes.
- Requiring soldiers to wear flak vests and helmets during movement to contact, or when riding in vehicles in areas where enemy fire is likely, can reduce the probability and severity of a wound from small arms fire or fragments.

- Establishing strong continuity documents and planning overlap tours for key leaders facilitate smooth transitions during extended operations.

Residual RiskOnce the responsible leader develops and accepts controls, he determines the residual risk associated with each hazard and the overall residual risk for the mission.

- *Residual risk* is the risk remaining after controls have been selected for the hazard. Residual risk is valid (true) only if the controls for it are implemented. As controls for hazards are identified and selected, the hazards are reassessed as in Step 2 and the level of risk is then revised. This process is repeated until the level of residual risk is acceptable to the commander or leader or cannot be further reduced. See Figures A-3 through A-5.
- *Overall residual risk* of a mission must be determined when more than one hazard is identified. The residual risk for each of these hazards may have a different level, depending on the assessed probability and severity of the hazardous incident. Overall residual mission risk should be determined based on the incident having the greatest residual risk. Determining overall mission risk by averaging the risks of all hazards is not valid. If one hazard has high risk, the overall residual risk of the mission is high, no matter how many moderate or low risk hazards are present.

Substep B - Make Risk Decision

A key element of the risk decision is determining if the risk is justified. The commander must compare and balance the risk against mission expectations. He alone decides if controls are sufficient and acceptable and whether to accept the resulting residual risk. If he determines the risk level is too high, he directs the development of additional controls or alternate controls, or he modifies, changes, or rejects the COA.

Leaders can use the risk assessment matrix in Figure 2-4—in conjunction with their commanders' guidance—to communicate how much risk they are willing to delegate. For example, a commander may place constraints on his subordinates that restrict their freedom of action to accept risk in instances where the risk might imperil his intent, his higher commander's intent, or a critical capability of the unit.

STEP 4. IMPLEMENT CONTROLS

Leaders and staffs ensure that controls are integrated into SOPs, written and verbal orders, mission briefings, and staff estimates. The critical check for this step, with oversight, is to ensure that controls are converted into clear, simple execution orders understood at all levels. Implementing controls includes coordination and communication with—

- Appropriate superior, adjacent, and subordinate units and those executing the mission.
- Logistics Civil Augmentation Program (LOGCAP) organizations and civilian agencies that are part of the force.

The media, NGOs, and PVOs must be included in coordination when their presence impacts or is impacted by the force.

Leaders must explain how supervisors will implement controls. Examples of control implementation include—

- Conducting vehicle and aircraft silhouette drills.
- Conducting rehearsals, rock drills, battle drills, and so forth.
- Conducting intensive threat and friendly vehicle identification refresher training for all antiarmor and air defense weapons crews.
- Conducting orientation for replacement personnel.
- Installing and maintaining communications links for key civilian organizations.
- Operating in convoys of four vehicles minimum.
- Carrying weapons and wearing flak jackets and helmets when outside secure compounds.

STEP 5. SUPERVISE AND EVALUATE

Leaders must supervise the execution of their orders. The more untrained the troops, the more detailed this supervision must be.

Infantry in Battle, 1939

During mission preparation and execution, leaders must ensure that their subordinates understand how to execute risk controls. Leaders continuously assess risks during the conduct of operations,

especially during long-term missions. Leaders maintain situational awareness. They guard against complacency to ensure that risk control standards are not relaxed or violated. To gain insight into areas needing improvement, leaders must continuously evaluate their units' effectiveness in managing mission risks.

Supervise

Leaders supervise mission rehearsal and execution to ensure standards and controls are enforced. Techniques may include spot-checks, inspections, situation reports and brief-backs, buddy checks, and close supervision. During the mission, leaders continuously monitor controls to ensure they remain effective. They modify them as necessary. Leaders and individuals anticipate, identify, and assess new hazards to implement controls. They continually assess variable hazards such as fatigue, equipment serviceability, and the environment. Leaders modify controls to keep risks at an acceptable level.

During sustained operations, leaders continue planning to ensure that controls emplaced at the beginning of the mission apply to changes in the operation's current situation and to hazardous conditions. Leaders must maintain an extraordinary degree of discipline. They must avoid complacency, which can result from boredom and overconfidence. Leaders must ensure that soldiers do not relax their vigilance due to performing repetitive tasks—despite changing roles and missions, unit turbulence and turnover, and declining skills. Leaders maintain a close overwatch on controls put in place to reduce risks over a prolonged period. For example, during stability operations, land mine hazards may not be solved in the near term, but may require continual attention. Other examples of long-term hazards that may be encountered include—

- Climatic extremes.
- NBC and hazardous waste contamination.
- Diseases native to a particular area of operation or indigenous population.
- Terrorist threats.

Evaluate

After a mission, leaders and individuals evaluate how well the risk management process was executed. They—

- Determine how to ensure that successes are continued to the next mission.

- Capture and disseminate lessons learned so that others may benefit from the experience.
- Consider the effectiveness of the risk assessment in identifying and accurately assessing the probability and severity of hazards that resulted in mission degradation.
- Determine whether the level of residual risk of each hazard and of the overall mission were accurately estimated.
- Evaluate the effectiveness of each control in reducing or removing risk, including whether controls were effectively communicated, implemented and enforced.

Leaders and individuals determine why some controls were ineffective and what should be done when the hazard is encountered again. A control may be altered; the way it is implemented or supervised may be changed to make it effective; or a completely different control may be more effective. Leaders must energize the system to fix systemic problems that hinder combat effectiveness.

Figure 2-7 shows that the risk management process continues throughout a mission as well as from mission to mission. It is integral to the military decision-making process. Its application requires good judgment and intuitive analysis borne of confidence, experience, and situational awareness.

TOOLS AND PITFALLS

The appendix provides examples of risk management tools to help leaders assess identified hazards, develop controls, and make risk decisions. The tools should be tailored to suit particular situations and missions. The examples in Figures A-3 through A-5 are tools to manage risk at the tactical level. The example in Figure A-6 is a tool to manage risk at the operational level. Units may develop additional tools suitable for their needs.

Units train to a standard. They operate and train regardless of the degree of real or perceived difficulty. Risk reduction begins with commanders identifying their METLs. Commanders use the risk management process to assess the degree of risk related to each METL their unit must perform. From this assessment, risk reducing standard operating procedures evolve.

Figure A-7 provides an example of risk management considerations integrated into a mission training plan (MTP) task.

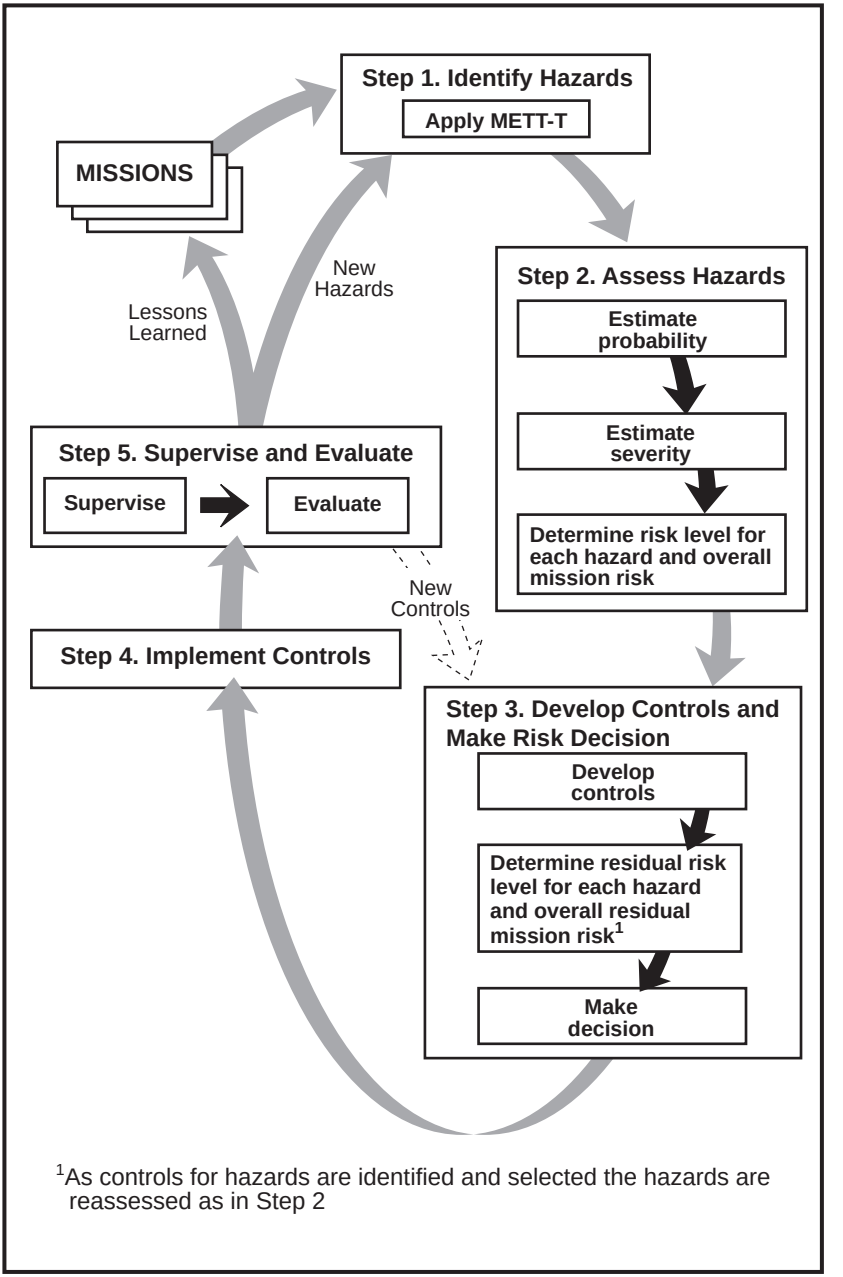


Figure 2-7. Continuous Application of Risk Management

Pitfalls arise when risk management tools are used without adaptation to the factors of METT-T. Using a standardized risk assessment card or checklist may be of some value initially in the mission analysis and COA development or in cases where a routine task is performed in an unchanging environment or static situation. However, such a tool used alone will not likely identify all hazards for every mission in a changing operational environment.

Completing the risk assessment alone, but failing to identify effective controls, usually results in a GO or NO-GO decision based on the initial risk. If the risk assessment does not accurately identify the hazards and determine the level of residual risk, the leader is likely to make his risk decision based upon incomplete or inaccurate information. If the risk assessment places missions in a routine, low-risk category, the commander may not be informed of a risk decision resulting in an accepted risk level that could imperil his or his higher commander's intent or other affected organizations. The risk management process is intended to provide reasonable controls to support mission accomplishment without exposing the force to unnecessary residual risk.

Appendix

Examples of Risk Management Application

The examples in this appendix are designed to help those charged with managing risk.

TRACKING TOOL

The work sheet instructions are in Figure A-1.

Work Sheet Instructions	
Block	
A – D	Self explanatory
E	Identify task relating to the mission or task in Block A
F	**Identify Hazards** – Identify hazards by reviewing METT-T factors for the mission or task. Additional factors include historical lessons learned, experience, judgment, equipment characteristics and warnings, and environmental considerations.
G	**Assess Hazards –** Assessment includes historical lessons learned, intuitive analyses, experience, judgment, equipment characteristics and warnings, and environmental considerations. Determine initial risk for each hazard by applying risk assessment matrix (Figure 2-4). Enter the risk level for each hazard.
H	**Develop Controls –** Develop one or more controls for each hazard that will either eliminate the hazard or reduce the risk (probability and/or severity) of a hazardous incident. Specify who, what, where, why, when, and how for each control. Enter controls.
I	**Determine Residual Risk –** Determine the residual risk for each hazard by applying the risk assessment matrix (Figure 2-4). Enter the residual risk level for each hazard.
J	**Implement Controls –** Decide how each control will be put into effect or communicated to the personnel who will make it happen (written or verbal instruction; tactical, safety, garrison SOPs, rehearsals). Enter controls.
K	**Determine Overall Mission/Task Risk –** Select the highest residual risk level and circle it. This becomes the overall mission or task risk level. The commander decides whether the controls are sufficient to accept the level of residual risk. If the risk is too great to continue the mission or task, the commander directs development of additional controls or modifies, changes, or rejects the COA.
	Supervise and Evaluate – This last step is not on the worksheet. Plan how each control will be monitored for implementation (continuous supervision, spot-checks) and reassess hazards as the situation changes. Determine if the controls worked and if they can be improved. Pass on lessons learned.

Figure A-1. Risk Management Work Sheet Instructions

The work sheet (Figure A-2) provides a starting point to logically track the process of hazards and risks. It can be used to document risk management steps taken during planning, preparation, and execution of training and combat missions and tasks.

A. Mission or Task:	B. Date/Time Group Begin: End:	C. Date Prepared:
D. Prepared By: (Rank, Last Name, Duty Position)		

E. Task	F. Identify Hazards	G. Assess Hazards	H. Develop Controls	I. Determine Residual Risk	J. Implement Controls ("How To")

K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)

SAMPLE

Figure A-2. Sample Risk Management Work Sheet

Examples provided in Figures A-3 through A-6 should help individuals manage risk at the tactical level.

A. Mission or Task:	B. Date/Time Group	C. Date Prepared:
Prepare defensive positions	**Begin:** 010035R May XX **End:** 010600R May XX	29 April XX

D. Prepared By: (Rank, Last Name, Duty Position) LT Jones, Plt Ldr

E. Task	F. Identify Hazards	G. Assess Hazards	H. Develop Controls	I. Determine Residual Risk	J. Implement Controls ("How To")
Construct nonstandard antivehicular wire obstacle	Back injuries and wire cuts during materiel offload	Moderate (M)	Use proper lift and carry methods and wear concertina wire gloves and safety goggles	Low (L)	Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP
	Blunt trauma and cuts in pounding of U-shaped pickets	Moderate (M)	Wear helmet and increase situational awareness	Low (L)	Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP
	Cuts when unrolling concertina	Moderate (M)	Wear concertina wire gloves and maintain situational awareness	Low (L)	Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP
	Cuts when installing concertina	Moderate (M)	Wear concertina wire gloves and maintain situational awareness	Low (L)	Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP
	Cuts when installing barbed wire	Moderate (M)	Wear concertina wire gloves and maintain situational awareness	Low (L)	Unit TACSOP, ARTEP 5-145 DRILL (pg 2-44) ARTEP 5-335-11-MTP

K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)

Figure A-3. Example of Completed Risk Management Work Sheet for Squad/Platoon

A. Mission or Task:	B. Date/Time Group	C. Date Prepared:
Conduct a deliberate attack	**Begin:** 010035R May XX **End:** 010600R May XX	29 April XX

D. Prepared By: (Rank, Last Name, Duty Position) CPT William Wallace, Cdr

E. Task	F. Identify Hazards	G. Assess Hazards	H. Develop Controls	I. Determine Residual Risk	J. Implement Controls ("How To")
Conduct obstacle breaching operations	Obstacles	High (H)	Develop and use obstacle reduction plan	Low (L)	Unit TACSOP, OPORD, training handbook
	Inexperienced soldiers	High (H)	Additional instruction and increased supervision	Moderate (M)	Modified training schedule, additional instruction
	Operating under limited visibility	Moderate (M)	Use NVDs; use IR markers on vehicles	Low (L)	Unit TACSOP, OPORD
	Steep cliffs	High (H)	Rehearse use of climbing ropes	Moderate (M)	FM 90-6, *Mountain Operations* TC 90-6-1, *Mountaineering*
	Insufficient planning time	High (H)	Plan and prepare concurrently	Moderate (M)	OPORD, troop-leading procedures

K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) (MODERATE (M)) HIGH (H) EXTREMELY HIGH (E)

Figure A-4. Example of Completed Risk Management Work Sheet for Company/Team

This page intentionally left blank

Student Handout 3

Extracted Material from FM 3-20.98

This student handout contains nine pages of extracted material from the following publication:

FM 3-20.98, Reconnaissance Platoon, 02 Dec 2002

Appendix I	pages I-1 thru I-9

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

This page intentionally left blank

Appendix I

Fratricide Prevention

Fratricide is defined as the employment of friendly weapons that results in the unforeseen and unintentional death or injury of friendly personnel or damage to friendly equipment. Fratricide prevention is the commander's responsibility. He is assisted by all leaders across all operating systems in accomplishing this mission. This appendix focuses on actions the reconnaissance platoon leader and his subordinate leaders can take with current resources to reduce the risk of fratricide.

CONTENTS

General Considerations I-1
The Reconnaissance Platoon's Fratricide Risk I-1
Role of Training in Fratricide Prevention I-2
Effects of Fratricide I-2
Causes of Fratricide I-3
Failures in the Direct Fire Control Plan I-3
Land Navigation Failures I-3
Failures in Combat Identification I-3
Inadequate Control Measures I-3
Failures and Reporting and Communications I-3
Weapons Errors I-4
Battlefield Hazards I-4
Reliance on Instruments I-4
Fratricide Risk Assessment I-4
Fratricide Prevention Measures I-6
Principles of Fratricide Prevention I-6
Additional Guidelines I-7
Stopping a Friendly Fire Incident I-8
Actions as Victim of Friendly Fire I-8
Actions as Firing Element I-8
Actions as Observer of Friendly Fire I-8
Leader Responsibilities I-9

SECTION I – GENERAL CONSIDERATIONS

I-1. The underlying principle of fratricide prevention is simple: Leaders who know where their soldiers are, and where they want them to fire, can keep those soldiers alive to kill the threat. At the same time, leaders must avoid at all costs any reluctance to employ, integrate, and synchronize all required operating systems at the critical time and place. They must avoid becoming tentative out of fear of fratricide; rather, they strive to eliminate fratricide risk through tough, realistic, combined arms training in which each soldier and unit achieves the established standard.

THE RECONNAISSANCE PLATOON'S FRATRICIDE RISK

I-2. More than any other maneuver element, the reconnaissance platoon is at risk of being the victim of fratricide. The platoon is particularly vulnerable because it often maneuvers in dispersed elements forward and to the flanks of other friendly combat forces. In a battalion, company teams often do not keep up with the plan or with the disposition

of the reconnaissance platoon. For these reasons, situational awareness on the part of all reconnaissance leaders, particularly the platoon leader, is critical not only to mission success but also to survival.

I-3. In any tactical situation, it is critical that all scouts know where other friendly elements are operating. With this knowledge, they must anticipate dangerous conditions and take steps to either avoid or mitigate them. The platoon leader must always be vigilant of changes and developments in the situation that may place his elements in danger. He must also ensure that all section or squad positions are constantly reported to higher headquarters so that all other friendly elements are aware of where the scouts are and what they are doing. At troop level, NFAs can be designated to control friendly direct and indirect fire into areas in which the platoon is or will be operating. When the platoon leader perceives a potential fratricide situation, he must personally use the higher net to coordinate directly with the friendly element involved.

ROLE OF TRAINING IN FRATRICIDE PREVENTION

I-4. Training allows units and soldiers to make mistakes, with the goal of reducing or eliminating the risk of errors occurring in combat. A key role of the reconnaisance platoon training program is to teach vehicle crews what targets to engage and when to engage them. Just as important, crews must learn and practice restraint in what and when to engage; for example, every vehicle commander must know that he must confirm the target as hostile before issuing and executing any fire command.

I-5. Eliminating the risk of fratricide is no less critical as a training standard than are other mission requirements. All leaders must know all aspects of the applicable training standard, including fratricide prevention, and then ensure that their soldiers train to that standard.

SECTION II – EFFECTS OF FRATRICIDE

I-6. Fratricide results in unacceptable losses and increases the risk of mission failure; it almost always affects the unit's ability to survive and function. Units experiencing fratricide suffer these consequences:

- Loss of confidence in the unit's leadership.
- Increasing self-doubt among leaders.
- Hesitancy in the employment of supporting combat systems.
- Oversupervision of units.
- Hesitancy in the conduct of night operations.
- Loss of aggressiveness in maneuver (fire and movement).
- Loss of initiative.
- Disrupted operations.
- General degradation of unit cohesiveness, morale, and combat power.

SECTION III – CAUSES OF FRATRICIDE

I-7. The following discussion covers the primary causes of fratricide. Leaders must identify any of the factors that may affect their units and then strive to eliminate or correct them.

FAILURES IN THE DIRECT FIRE CONTROL PLAN

I-8. These occur when units do not develop effective fire control plans, particularly in the offense. Units may fail to designate target engagement areas or adhere to target priorities, or they may position their weapons incorrectly. Under such conditions, fire discipline often breaks down upon contact.

I-9. The reconnaissance platoon can use a number of techniques and procedures to help prevent such incidents. An example is "staking in" vehicle and individual positions in the defense, using pickets to indicate the left and right limits of each position. An area of particular concern is the additional planning that must go into operations requiring close coordination between mounted elements and infantry squads. For example, because of the danger posed by discarding petals, sabot rounds should be fired over friendly infantry elements only in extreme emergencies.

LAND NAVIGATION FAILURES

I-10. Units often stray out of assigned sectors, report wrong locations, and become disoriented. Much less frequently, they employ fire support weapons from the wrong locations. In either type of situation, units that unexpectedly encounter an errant unit may fire their weapons at the friendly force.

FAILURES IN COMBAT IDENTIFICATION

I-11. Vehicle commanders and gunners cannot accurately identify thermal or optical signatures near the maximum range of their systems. In limited visibility, units within that range may mistake one another for a threat target.

INADEQUATE CONTROL MEASURES

I-12. Units may fail to disseminate the minimum necessary maneuver fire control measures and fire support coordination measures; they may also fail to tie control measures to recognizable terrain or events. As the battle develops, the plan then cannot address obvious branches and sequels as they occur. When this happens, synchronization fails.

FAILURES IN REPORTING AND COMMUNICATIONS

I-13. Units at all levels may fail to generate timely, accurate, and complete reports as locations and tactical situations change. This distorts

the tactical "picture" available at each level and can lead to erroneous clearance of supporting fires.

WEAPONS ERRORS

I-14. Lapses in individual discipline can result in fratricide. These incidents include charge errors, accidental discharges, mistakes with explosives and hand grenades, and use of incorrect gun data.

BATTLEFIELD HAZARDS

I-15. A variety of explosive devices and materiel may create danger on the battlefield: unexploded ordnance; unmarked or unrecorded minefields, including scatterable mines; booby traps. Failure to mark, record, remove, or otherwise anticipate these threats will lead to casualties.

RELIANCE ON INSTRUMENTS

I-16. A unit that relies too heavily on systems such the FBCB2 and GPS devices will find its capabilities severely degraded if these systems fail. The unit will be unable to maintain situational awareness. To prevent potential dangers when system failure occurs, the reconnaissance platoon leader must ensure that his he and his scouts use a balance of technology and traditional basic soldier skills in observation, navigation, and other critical activities.

SECTION IV – FRATRICIDE RISK ASSESSMENT

I-17. Figure I-1 is a worksheet for evaluating fratricide risk in the context of mission requirements. The worksheet lists six mission-accomplishment factors that affect the risk of fratricide, along with related considerations for each factor. Leaders should assess the potential risk in each area (low, medium, or high) and assign a point value to each (one point for low risk, two for medium risk, three for high risk). They then add the point values to calculate the overall fratricide assessment score.

I-18. The resulting score is used only as a guide, however. The leader's final assessment must be based both on observable risk factors, such as those listed on the worksheet, and on his "feel" for the intangible factors affecting the operation. Note that descriptive terms are listed only in the low- and high-risk columns of the worksheet. The assessment of each factor will determine whether the risk matches one of these extremes or lies somewhere between them as a medium risk.

	Potential risk categories (with variable conditions and point values)		
Factors affecting fratricide	**Low risk (1 point)**	**Medium risk (2 points)**	**High risk (3 points)**
UNDERSTANDING OF THE PLAN			
Commander's intent	Clear		Vague
Complexity	Simple		Complex
Threat situation	Known		Unknown
Friendly situation	Clear		Unclear
ROE/ROI	Clear		Unclear
ENVIRONMENTAL FACTORS			
Intervisibility	Favorable		Unfavorable
Obscuration	Clear		Obscured
Battle tempo	Slow		Fast
Positive target ID	100 %		None (0 %)
CONTROL MEASURES			
Command relationships	Organic		Joint/combined
Audio communications	Loud / clear		Jammed
Visual communications	Easily seen		Obscured
Graphics	Standard		Not understood
SOPs	Standard		Not used
Liaison personnel	Proficient		Untrained
Location/navigation	Sure		Unsure
EQUIPMENT (compared to US equipment)			
Friendly	Similar		Different
Threat	Different		Similar
TRAINING			
Individual proficiency	MOS-qualified		Untrained
Unit proficiency	Trained		Untrained
Rehearsals	Realistic		None
Habitual relationships	Yes		No
Endurance	Alert		Fatigued
PLANNING TIME (based on 1/3 - 2/3 rule)			
Higher headquarters	Adequate		Inadequate
Own unit	Adequate		Inadequate
Subordinate elements	Adequate		Inadequate
Overall risk assessment (by total point value)	**Low risk 26 - 46 points**	**Medium risk 42 - 62 points**	**High risk 58 - 78 points**
NOTE: Point values alone may not accurately reflect fratricide risk. The commander must tailor his assessment to the unit's requirements.			

Figure I-1. Fratricide Risk Assessment Worksheet

SECTION V – FRATRICIDE PREVENTION MEASURES

SPECIAL NOTE

In many situations, the primary cause of fratricide is the lack of positive target identification. To prevent fratricide incidents, commanders and leaders at all levels must ensure positive target identification before they issue commands to fire. In addition, all units must accurately report their locations during combat operations, and all TOCs and CPs must carefully track the location of all subordinate elements in relation to all friendly forces.

I-19. The measures outlined in this section, including those listed in the special note above, provide the platoon with a guide to actions it can take to reduce and/or prevent fratricide risk. These guidelines are not directive in nature, nor are they intended to restrict initiative. Commanders and leaders must learn to apply them as appropriate based on the specific situation and METT-TC factors.

PRINCIPLES OF FRATRICIDE PREVENTION

I-20. At the heart of fratricide reduction and prevention are five key principles.

IDENTIFY AND ASSESS POTENTIAL FRATRICIDE RISKS IN THE ESTIMATE OF THE SITUATION

I-21. Express these risks in the OPORD and/or applicable FRAGOs.

MAINTAIN SITUATIONAL AWARENESS

I-22. Focus on such areas as current intelligence; unit locations and/or dispositions; denial areas (minefields/scatterable mines); contaminated areas, such as ICM and NBC; SITREPs; and METT-TC factors. FBCB2 will provide the reconnaissance platoon with a distinct advantage in situational awareness.

ENSURE POSITIVE TARGET IDENTIFICATION

I-23. Review vehicle and weapons identification (ID) cards. Become familiar with the characteristics of potential friendly and threat vehicles, including silhouettes and thermal signatures. Learn the conditions, including distance (range) and weather, under which positive identification of various vehicles and weapons is possible. Enforce the use of challenge and password, especially during dismounted operations. (**NOTE:** Refer to the special note earlier in this discussion.)

MAINTAIN EFFECTIVE FIRE CONTROL

I-24. Ensure fire commands are accurate, concise, and clearly stated. Make it mandatory for crewmen to ask for clarification of any portion of the fire command they do not completely understand. Stress the importance of the chain of command in the fire control process; ensure

crewmen get in the habit of obtaining target confirmation and permission to fire from their leaders before engaging targets they assume are threat elements. Know who will be in and around the area of operations.

ESTABLISH A COMMAND CLIMATE THAT EMPHASIZES FRATRICIDE PREVENTION

I-25. Enforce fratricide prevention measures, placing special emphasis on the use of doctrinally sound TTP. Ensure constant supervision in the execution of orders and in the performance of all tasks and missions to standard.

ADDITIONAL GUIDELINES

I-26. Additional guidelines and considerations fratricide reduction and prevention include the following:

- Recognize the signs of battlefield stress. Maintain unit cohesion by taking quick, effective action to alleviate stress.
- Conduct individual, leader, and collective (unit) training covering fratricide awareness, target identification and recognition, and fire discipline.
- Develop a simple, decisive plan.
- Strive to provide maximum planning time for leaders and subordinates.
- Give complete and concise mission orders. Include all appropriate recognition signals in paragraph 5 of the OPORD.
- To simplify mission orders, use SOPs that are consistent with doctrine. Periodically review and update SOPs as needed.
- Use common language/vocabulary and doctrinally correct standard terminology and control measures, such as the FSCL, zone of engagement, and RFL.
- Ensure thorough coordination is conducted at all levels.
- Plan for and establish effective communications.
- Plan for collocation of CPs whenever it is appropriate to the mission, such as during a passage of lines.
- Designate and employ LOs as appropriate.
- Make sure ROE are clear.
- Conduct rehearsals whenever the situation allows the platoon adequate time to do so.
- Be in the right place at the right time. Use position location/navigation devices (GPS and POSNAV); know your location and the locations of adjacent units (left, right, leading, and follow-on); and synchronize tactical movement. If the platoon or any element becomes lost or misoriented, leaders must know how to contact higher headquarters immediately for instructions and assistance.
- Establish, execute, and enforce strict sleep and rest plans.
- Include a discussion of fratricide incidents in all AARs.

SECTION VI – STOPPING A FRIENDLY FIRE INCIDENT

I-27. The reconnaissance platoon may become involved in a friendly fire incident in one of several ways: as the victim of the fire; as the firing element; or as an observer intervening in an attack of one friendly element on another. This section covers actions that leaders and crewmen must be prepared to take when they encounter such situations.

ACTIONS AS VICTIM OF FRIENDLY FIRE

I-28. The following are recommended actions at crew and leader level in the event the crew falls victim to friendly fires:

- React to contact until you recognize friendly fire.
- Cease-fire.
- Take immediate actions to protect soldiers and vehicles.
- Use a visual recognition signal directing the firing unit to cease fire.
- Report the following on the next higher unit net:
  - Announce that you are receiving friendly fire.
  - Request medical assistance as needed.
  - Give the location and direction of the firing vehicles.
  - Warn the higher unit not to return fire if you identify the firing unit as friendly.

ACTIONS AS FIRING ELEMENT

I-29. The following are recommended actions at crew and leader level when the crew has engaged friendly forces:

- Cease-fire.
- Report the following on the next higher net:
  - Identification of the engaged friendly force (if the unit is unidentified, report number and type of vehicles).
  - The location of the incident.
  - Direction and distance to the engaged force.
  - The type of fire.
  - The target effects.

ACTIONS AS OBSERVER OF FRIENDLY FIRE

I-30. The following are recommended actions at crew and leader level in the event the crew observes a friendly fire incident:

- Seek cover and protect yourself.
- Use a visual recognition signal directing the firing unit to cease-fire.

- Report the following on the next higher net:
  - Identification of the engaged friendly force (if the unit is unidentified, report number and type of vehicles).
  - The location of the incident.
  - Direction and distance to the victim and the firing unit.
  - The type of fire.
  - The target effects.
- Provide assistance as needed (when it is safe to do so).

LEADER RESPONSIBILITIES

I-31. In all situations involving the risk of fratricide and friendly fire, leaders must be prepared to take immediate actions to prevent casualties as well as equipment damage or destruction. Recommended actions in fratricide situations include the following:

- Identify the incident and order the parties involved to cease-fire.
- Conduct an in-stride risk assessment.
- Identify and implement controls to prevent the incident from recurring.

This page intentionally left blank