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CRITICAL COMBAT PERFORMANCES,  
KNOWLEDGES, AND SKILLS REQUIRED OF THE  
INFANTRY RIFLE SQUAD LEADER

Physical Conditioning

by  
Henry E. Kelly and Arthur J. DeLuca

December 1968

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The George Washington University  
HUMAN RESOURCES RESEARCH OFFICE

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The Human Resources Research Office is a nongovernmental agency of The George Washington University. HumRRO's mission in work performed for the Department of the Army (DA Contract 44-188-ARO-2) is to conduct research in the fields of training, motivation, and leadership.

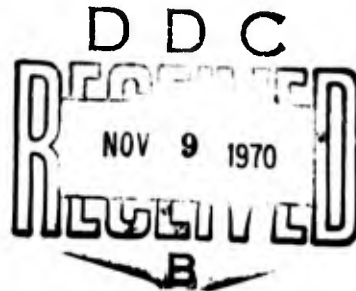
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HumRRO Division No. 4  
(Infantry)

The George Washington University  
HUMAN RESOURCES RESEARCH OFFICE  
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## FOREWORD

In response to a request from the United States Army Infantry School (USAIS), HumRRO Division No. 4 (Infantry) initiated a Technical Advisory Service research project to identify and record the critical combat performances, knowledges, and skills required of the Infantry Rifle Squad Leader and the Infantry Fire Team Leader.

The requirements imposed upon the IRSL and IFTL are essentially the same, except that the former is responsible for the control of the men and fires of both fire teams in a rifle squad, rather than only one. The senior IFTL within each squad must be prepared to assume effective leadership of the squad immediately if the IRSL becomes a casualty, completes a prescribed combat tour, or is absent for any reason. Since it is common practice to provide the same training for candidates for both positions of leadership and to employ the outstanding candidates in the higher position, each paper in this series will set forth the critical requirements imposed upon the IRSL and, therein, those imposed upon the IFTL as well.

Under Work Unit LEAD, Work Sub-Unit I, the critical combat performances, knowledges, and skills of the Infantry Rifle Platoon Leader were published in a series of 41 papers covering a like number of subject areas. Each paper was published with prior review and concurrence by the USAIS Instructional Departments concerned. These papers are being used as the primary source of data in completing a parallel series of papers for the Infantry Rifle Squad Leader and the Infantry Fire Team Leader. This document details the requirements in the area of physical conditioning.

This Technical Advisory Service research is being performed at HumRRO Division No. 4 (Infantry), Fort Benning, Georgia. The present Director of Research is Dr. T. O. Jacobs.

Military support for the study is being provided by the U.S. Army Infantry Human Research Unit, Fort Benning, Georgia. LTC Chester I. Christie, Jr. is the present Unit Chief.

HumRRO research is conducted under Army Contract DA 44-188-ARO-2 and under Army Project 2J024701A712 01, Training, Motivation and Leadership Research.

Meredith P. Crawford  
Director  
Human Resources Research Office

## PHYSICAL CONDITIONING

### General Considerations

#### Introduction

Success in combat operations depends to a large extent directly upon the physical condition of the IRSL and his men. Regardless of superior materiel and training, men who are physically unqualified to capitalize upon training and equipment are destined for failure. Conversely, a unit physically fit and possessing a high degree of endurance may well overcome shortages of weapons or equipment and win despite odds against them.

The rifle squad must be able to successfully execute a mission over any terrain and under all conditions of weather and visibility. Primitive living conditions and the stresses and hardship of combat add to the need for superior physical conditioning. Failure to properly develop his own and his men's physical condition and stamina would constitute a critical leadership failure on the part of the IRSL.

The IRSL and his squad confront unique and demanding physical requirements. They must march long distances carrying heavy loads, dash at full speed for short distances, double time, as required; crawl, dig in under fire, jump, climb, and under certain conditions, swim, ski, or use snowshoes--all or any of these under unfavorable conditions of fatigue, stress and climate. The individual who cannot keep up or who lacks the requisite physical skills not only increases his own chances of becoming a casualty, but may well endanger his unit and its mission. Under difficult and primitive conditions where casualty evacuation constitutes a problem, the number of men becomes of less importance than their quality and endurance.

The physical conditioning of a rifle squad is a continuous problem. Physical conditioning for a specific combat task is best accomplished by practice of the task itself. The performances required in combat should therefore be integrated throughout training.

#### Scope

This paper sets forth performances, knowledges, and skills necessary for the IRSL to physically condition himself and his men to perform the missions of a rifle squad. Included also are the standards of physical achievement which underlie the performances presented in other papers. Those standards which are not Army doctrine are considered to be within reason.

Additional closely related material appears in Offensive Operations; Defensive Operations; Airmobile Operations; Tactical Movement; Squad Formations, Battle Drill and Elementary Fire and Maneuver; Mounted and Dismounted Platoon Combat Formations; Patrolling; Messenger Communication; Hand Grenades; Bayonet Knife and Hand-to-Hand Combat; Cover, Concealment, and Camouflage; Emplacements, Shelters, Obstacles, and Fields of Fire; Self-Aid, First Aid, and Evacuation; and Code of Conduct, Evasion and Escape. The paper Human Maintenance Under Campaign Conditions is directly related.

#### Materiel

Individual combat load.

Individual existence load as determined by environmental and operational conditions.

Additional hand-carried equipment and/or supplies as required by the tactical situation, e.g., flamethrowers and demolitions equipment.

Clothing designed for extreme climates, e.g., Artic.

Equipment involved in loading and moving troops, including snowshoes, skis, aircraft, small boats, landing craft, and improvised rafts.

#### Battlefield Cues

Weather of area of operations.

Terrain of area of operations.

Enemy tactical situations.

Orders from leaders.

Personal estimates of situation.

Changes in tactical situation forecasting need for physical fitness.

Receipt of replacements or hospital returnees.

Existing conditions of hygiene and sanitation.

Rest and recuperation practices.

Performances, Knowledges, and Skills

1. THE IRSL WILL IDENTIFY THE KEY ASPECTS OF COMBAT AND LIFE UNDER CAMPAIGN CONDITIONS AS THEY RELATE TO THE REQUIREMENTS GENERATED FOR THE PHYSICAL CONDITIONING OF HIMSELF AND HIS MEN.

- He must : know that success in battle demands that every infantryman be capable of sustained, effective combat in any type of terrain, regardless of weather or visibility conditions, and that the demands upon small-unit leaders are greater than those upon their men. 1
- : know that combat performances, such as marching with equipment over unfavorable terrain, constructing fighting positions, and assaulting a hostile defense, combined with the stress of combat, require the utmost in individual physical stamina. 2
- : know that fatigue caused by the combination of physical exertion, hardship, and combat stress results in numerous combat casualties. 3
- : know that the primitive conditions and the physical and mental stress of campaign life require maximum training and continued emphasis to develop the stamina and conditioning necessary to develop a guarantee of success. 4
- : know that infantrymen trained and conditioned to justified confidence in their individual and unit abilities through challenging, realistic training resist the physical exhaustion of combat longest. 5
- : know that his squad may be required to operate continuously for periods of several days with little, if any, chance for rest or food, and that such activity, especially if under adverse weather and climatic conditions, demands the utmost in physical conditioning and fortitude. 6
- : know that cross-country movement over difficult terrain while encumbered with heavy loads, at times in limited visibility and inclement weather, will likely be required to achieve favorable combat conditions such as surprise. 7

- : know that while well-executed calisthenics and athletic games improve muscle tone and coordination, they lack the direct transfer value to combat of practice of such specific combat skills as marching, climbing, throwing grenades, crawling, digging and swimming which must therefore be included both in individual and unit training. 8
- : know that movement under direct fire involves use of physically exhausting procedures such as peak speed dashes of three to four seconds, interspersed with hastily hitting the ground; low relief crawling, often for 100 to 150 meters; digging in from the prone position with tools of minimum efficiency; and the employment of individual weapons--all these while encumbered with combat loads. 9
- : know that combat operations will require special physical skills such as stream crossing using expedient means, handling small boats, fording deep, swift streams carrying equipment, and, in certain areas, skiing, snowshoeing, and rappelling. 10
- : know that the practice of special physical skills in training is essential if the skills are to be required by the combat operation, especially those that require prolonged exertion, e.g., he will insure, when applicable, that his men move over long distances in snow covered terrain, both on foot and with the use of snowshoes and skis, when the mission will later require such movement under combat conditions. 11
- He will : know that troops cannot be expected to operate at full efficiency under extremes of temperature until they have been progressively trained to the desired performance level under the conditions in question. 12
- : know that the performance required, even after troops are fully hardened, must be adjusted realistically to the difficulties involved in movement over steep terrain, through jungle, mud, sand and water, and/or in extremes of temperature. 13
- : realize that men must become acclimatized to extremes of heat and cold, as well as to high altitudes, before effective combat operation in these extremes is feasible; and that especially at high altitudes, where the exertion demanded of the heart is increased, the initial physical activity should be light, gradually increasing after acclimatization. 14



- : know that heat acclimatization depends upon an adequate intake of both salt and water, and that acclimatization occurs rapidly during the first three days of heat exposure, then more gradually during the balance of the two to three weeks required to complete the process. 15
- : know that cold acclimatization is a matter of the body adapting to how much heat it can conserve; hence acclimatization allows men to prolong the time they can function without cold injury, rather than to continue exposure indefinitely. 16
- : know that an index of acclimatization to cold is a decrease in shivering, and that completion of the process takes from one to three weeks. 17
2. THE IRSL WILL INDOCTRINATE HIS MEN TO REALIZE THE DANGERS OF COMBAT AND CONVINCe THEM THAT THE HIGHEST ACHIEVABLE DEGREE OF SKILL, STAMINA, AND PHYSICAL CONDITIONING IS ESSENTIAL TO THEIR PERSONAL SURVIVAL AS WELL AS VITAL TO THE SUCCESS OF THE COMBAT MISSION.
- He must : convince his men that the degree of physical conditioning and stamina attained through rigorous, demanding training cannot be too great since personal survival, the safety of comrades, and the squad's success often depend upon individual endurance. 18
- : ensure that every man realizes that numerous combat casualties occur unnecessarily because men become too exhausted to employ the measures they have been trained to use, such as proper utilization of ground and cover, low relief crawling, and brief three- to four-second rushes. 19
- : convince his men that a physically fit man has a better chance of surviving wounds or disease than one less fit. 20
- : ensure that his men realize the importance to an infantryman of and the consequential need for sound feet and legs, and that they must emphasize development of their legs and feet during training. 21
- : convince his men that the combat loads carried and the physical effort required in training must exceed that likely to be required in combat, if proper conditioning is to be attained. 22

He will : indoctrinate his men, particularly the leaders, to the necessity for gradual acclimatization to temperature extremes and to the proper methods of promoting acclimatization. 23

: indoctrinate his men to understand the necessity for judicious use of water and salt in maintaining bodily strength during heavy physical exertion, particularly in extreme heat and high humidity. 24

3. THE IRSL AND HIS MEN WILL ACHIEVE, THROUGH TRAINING, THE INDIVIDUAL PHYSICAL CONDITION AND STAMINA REQUIRED OF A MEMBER OF A RIFLE SQUAD BY THE CONTEMPLATED COMBAT MISSION.

He must : ensure that each member of the squad is capable, with full combat load, of long, challenging marches, and is able at the conclusion thereof to engage in efficient offensive or defensive combat. As a minimum this entails the ability to march: 25

- a. Nine miles in two hours, at double time as required, maintaining proper distance and interval (not necessarily cadence) on roads over level or rolling terrain under favorable conditions during good visibility.
- b. Twenty miles in eight hours over level or rolling terrain under favorable conditions in good visibility.
- c. Sixteen miles in 9 1/2 hours over level or rolling terrain under favorable conditions during limited visibility.
- d. Twelve miles in eight hours cross-country over a mixture of open terrain and terrain characterized by secondary growth during good visibility.
- e. Eight miles in 12 hours over a mixture of open terrain and terrain characterized by secondary growth during limited visibility.

: ensure that each member of the squad is conditioned to execute the following specific performances during training and prior to combat: 26

- a. Run one mile in 10 minutes over fairly level ground.
- b. Rush approximately 15 to 20 meters in three to four seconds, rapidly assume the prone position, roll or low crawl several meters, go into a firing position, and deliver accurate fire; repeat entire performance at least five additional times without marked loss of accuracy in fire.

- c. High crawl, untimed, 100 to 150 meters, then low crawl 50 to 100 meters in three to six minutes, and then assault aggressively.
- d. Jump with full combat load across obstacles 1 1/2 meters wide or one meter high, and jump down two meters.
- e. Dig a one-man foxhole in average soil in 1 1/2 hours.
- f. Accomplish two pull-ups with full combat load.
- g. Climb with full combat load over an obstacle nine meters high using ropes or nets.
- h. Throw the M26A2 grenade into a one-man foxhole, from 25 meters, one out of each two throws.
- i. In an ambush site, remain without movement for 15 minutes, and with only the movement required to maintain circulation in the extremities for two hours.
- j. Remain in a squatting or kneeling position for 10 minutes while maintaining vigilance, and fire 10 rounds in each position at the end of the 10-minute period.
- k. Swim 100 meters with any stroke, untimed, in swim trunks.
- l. Demonstrate proper entry into the water fully clothed with harness and simulated weapon; surface, orient self, and swim with simulated weapon 15 meters.
- m. Carry one half his body weight, untimed, for one mile without rest.
- n. Carry a casualty 130 meters without rest.

He will : progressively increase physical conditioning training requirements to achieve, prior to combat, the overtraining essential to offset the reduction that combat stress may produce in the unit's capability for combat. As examples:

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- a. Increase the 40-pound combat load maximum by 10-pound increments to a training load of 70 to 80 pounds.
- b. Incorporate into continuous 24- to 48-hour tactical exercises several suitable physical conditioning tasks, such as stream crossing; climbing, or tactical movement.

- : require each member of the squad to practice digging a prone skirmisher's trench while in the prone position and maintaining minimum exposure. 28
- : require all men to practice improving a prone skirmisher's trench into a foxhole while maintaining minimum exposure. 29
- : ensure that each man practices crossing swiftly flowing streams using expedient means (make advance provision for down-stream ropes, boats and lifesaving gear). 30
- : require each man to practice cutting through a wire obstacle and subsequently crawling through a narrow gap with minimum noise within a short time allowance. 31
- : ensure that each man practices climbing 30-foot trees and poles, both with and without improvised climbing equipment, and within a short time allowance. 32
- : conduct practice in throwing dummy and training grenades, using all standard positions as well as the underhand toss under overhead obstacles. 33
- : where contemplated combat operations indicate the possibility of need, require all men to practice to a confident degree of ability: 34
  - a. Climbing up and down a 30-foot cargo net and a 30-foot solid embankment or wall.
  - b. Using machete, knife, and axe in clearing operations.