SOLDIER CAPABILITY — ARMY COMBAT EFFECTIVENESS (SCACE)

VOLUME II
SELECTED BIBLIOGRAPHY

COMPILED BY
JURI TOOMEPUU

FEBRUARY 1981

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TABLE OF CONTENTS

Page

Title Page ................................................................. 1
Disclaimer ........................................................................ ii
Table of Contents ........................................................ iii
Abstract ........................................................................... iv
Introduction ........................................................................ 1
  Objective ....................................................................... 1
  The Problem ................................................................... 1
  Methodology .................................................................. 1
Commentary ....................................................................... 2
  Availability of Data ...................................................... 2
  Literature Review Findings ........................................... 2
Selected Bibliography ...................................................... 3
ABSTRACT

The Soldier Capability-Army Combat Effectiveness (SCACE) Study was undertaken to quantify the relationships between the capabilities of soldiers and the combat effectiveness of weapons, units, and forces; and to integrate quantitative soldier capability factors into weapons effectiveness measures, combat models, and Army planning, programming and decision making process. The initial step in the study process was an extensive literature search. Numerous previous studies and other data sources are available that provide wartime, peacetime and theoretical data on the relationships between human characteristics and capabilities, and the performance and combat effectiveness of soldiers, military units, and forces. This bibliography lists selected references relevant to the SCACE Study.
INTRODUCTION

Objective.

The Soldier Capability - Army Combat Effectiveness (SCACE) Study was undertaken by the U. S. Army Soldier Support Center to quantify the relationships between the characteristics and qualifications of soldiers and the combat effectiveness of weapons, units, and forces; and to improve the Army analysis, planning, programming, and decisionmaking processes by integrating soldier capability factors into effectiveness measures and combat and cost-effectiveness models.

The Problem.

The weapon, unit, and force effectiveness data used in Army war games and analyses, and in the planning, programming, and decision-making processes are based on the dubious assumption that our weapons will be operated and maintained in battle as envisioned by hardware designers or achieved in peacetime tests.

This problem is of particular concern currently. All available measures indicate that the sharp decline in the quantity of our active duty manpower (from 2.6 million in the early 1960's to 2 million in 1980), has been accompanied, since the inception of the All-Volunteer Force, also by a precipitous decline in its quality.

To the extent that the manpower quality and combat readiness assumptions currently used in our weapons effectiveness measures and combat models are invalid, the estimates of the effectiveness of our weapons, units, and forces in future battles are invalid, our tactics, doctrine, organizations, and plans for deployment and battle ill-conceived, and our material and manpower programs inadequate.

Methodology.

The methodology for the SCACE Study consists of:

- Literature review of historical combat, training test, field experiment, theoretical, and psycho- and sociometric data.
- Identification and selection of soldier capability or performance measures that can be used to predict combat effectiveness of weapon systems, units, and forces.
- Development and publication of theoretical Soldier Capability Factors (SCAFs) for weapon systems, units, and forces.
- Identification of data gaps that must be filled with additional research and capability and performance measurement to validate, expand, and refine SCAFs.
This volume of the study, the Selected Bibliography, resulted from the extensive literature search conducted as the first step in the study process.

COMMENTARY

Availability of Data.

We found that a large body of literature exists on the relationships between human characteristics and the performance of people in general, and between the characteristics, qualifications, and capabilities of soldiers and their peacetime and combat effectiveness in particular. Reports of numerous studies conducted or sponsored by the military services, as well as many other data sources are available. The socio- and psychometric data collected during World War II have been extensively analyzed and compiled into well-edited publications that remain relevant to the problems faced by today's military services. Large amounts of data on human variables are also available from other wars, including the recent Israeli-Arab wars.

Particularly relevant to the soldier capability problems facing the All-Volunteer Army are the many evaluation studies conducted of Project 100,000, the massive social experiment that resulted in the acceptance of over 300,000 low aptitude personnel into military service between 1960 and 1971.

Literature Review Findings.

The data from the reviewed literature overwhelmingly support the premise that prompted the SCACE Study, and which is, of course, quite clear to most military men even without the benefit of scientific studies; i.e., soldier capabilities are a major determinant of the combat effectiveness of weapons and units.

The data also convincingly support the findings that the variables that determine soldier capabilities are identifiable, measurable, and useful for prediction of both noncombat and combat effectiveness of soldiers.

Further, soldier capabilities are related to, and can be used to improve the cost-effectiveness of the Army.

The most important and useful determinants of soldier capabilities are, not surprisingly, the same that are generally recognized to be related to the performance, achievements, and social behavior of the civilians in our society; such as mental aptitude, educational attainment, literacy, social adjustment, and physical health and strength.
SELECTED BIBLIOGRAPHY


24. Battelle Memorial Institute Columbus Laboratories (Integration Con-
tractor). MBT-70 Producibility/Cost Reduction Study, Combat
Effectiveness Report II, Special Combat Effectiveness Evalua-
tions, November 1969.


Scottish Rifles at the Battle of Neuve Chapelle, 1915.

27. Bayroff, A. G., Seeley, L. C., and Anderson, A. A. Relationship
of AFQT to Rated Training Performance. Technical Research Note

Memorandum 68-8. AD A079227. Alexandria, VA: US Army Person-

29. Beebe, G. W., and Appel, J. W. Variation in Psychological Toler-
ance to Ground Combat in World War II. AD 210106. Washington:
National Academy of Sciences, April 1958.

30. Beebe, G. W., and DeBakey, M. E. Battle Casualties-Incidence Mor-
tality, and Logistic Considerations. Springfield, IL: Charles C.
Thomas, 1952.

Delinquency. Research Report 1185. AD A012764. Arlington, VA:
US Army Research Institute for the Behavioral and Social
Sciences, June 1975.

32. Bell, D. B., and Houston, T. J. The Vietnam Era Deserter: Char-
acteristics of Unconvicted Army Deserters Participating in the
Presidential Clemency Program. Arlington, VA: US Army
Research Institute for the Behavioral and Social Sciences, 1976.

33. Berelson, B., and Steiner, G. A., eds. Human Behavior: An Inven-

34. Berkhouse, Rudolph G. Research on Combat Selection and Special
Forces Manpower Problems-Status Report. Research Study 63-Z.


102. Curran, P. M., and Wherry, R. J. "Measure of Susceptibility to Psychological Stress." Aerospace Medicine, October 1975, p. 36.


226. Evaluation of Environments: Behavioral Observations in an Undersea Habitat. Austin, TX: Social Psychology Laboratory, Department of Psychology, University of Texas, August 1971.


416. "How to Save the All-Volunteer Force." The Public Interest, Fall 1980, pp. 74-89.


585. ______. *An Assembly of Project Stalk Data*. BRL Memorandum 745, 3 volumes. Aberdeen Proving Ground, MD: January 1954.


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**Key Words:** Military manpower, military personnel, manpower quality, military performance, military effectiveness, manpower accessions, recruitment, human performance, human factors, vocational aptitude testing, mental aptitude, manpower management, war games, defense analysis, military history, engagement simulation.

**Abstract:**

The Soldier Capability-Army Combat Effectiveness (SCACE) Study was undertaken to quantify the relationships between the capabilities of soldiers and the combat effectiveness of weapons, units, and forces; and to integrate quantitative soldier capability factors into weapons effectiveness measures, combat models, and Army planning, programming, and decisionmaking process. The initial step in the study process was an extensive literature search. Numerous journals and books were examined, and a large number of documents were reviewed.
previous studies and other data sources are available that provide wartime,
peacetime, and theoretical data on the relationships between human characteris-
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