### AD NUMBER

**AD482219**

### NEW LIMITATION CHANGE

**TO**

Approved for public release, distribution unlimited

**FROM**

Distribution: Further dissemination only as directed by Army Medical Research and Development Command, Washington, DC, 20 MAY 1966, or higher DoD authority.

### AUTHORITY

usamrdc ltr, 25 Nov 1974

This page is unclassified
Report Number 66-1
Rifle Performance Under Conditions of Stress

Final Report
by
Lt. Col. Carl G. Lauterbach, MSC
Major David P. Vielhaber, MSC
Medical Research Project
U.S. Army Hospital
West Point, New York

20 May 1966

Project Nr. 62156011 3A025601A382 01 057

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.
Rifle Performance Under Conditions of Stress

Final Report

Medical Research Project
U.S. Army Hospital
Wet Point, New York

Rifle Performance Under Conditions of Stress

Authors

Lt. Col. Carl G. Lauterbach, MSC
Major David P. Vielhaber, MSC

20 May 1966

Project Nr. 62156011 3A025601A823 01 057

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.
Title: (U) Studies to Identify Through Research the Characteristics Related to Leadership.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretraining Correlates of Trainfire Marksmanship</td>
<td>5</td>
</tr>
<tr>
<td>Personality-Leadership Correlates of Trainfire Marksmanship</td>
<td>6</td>
</tr>
<tr>
<td>An Effort to Identify Stress-Prone and Stress-Resistant Cadets</td>
<td>7</td>
</tr>
<tr>
<td>Distribution List</td>
<td>8,9,10</td>
</tr>
<tr>
<td>Document Control Data (DD Form 1473)</td>
<td>11</td>
</tr>
</tbody>
</table>
(U) Rifle Performance Under Conditions of Stress (US33) Correlates of Rifle Marksmanship

**Title:** (U) Rifle Performance Under Conditions of Stress (US33) Correlates of Rifle Marksmanship

**Scientific or Tech. Area:** Psychology (Ind. & Grp. Behavior)

**Start Date:** 03-63

**Resources Est.:** Current FY 04/65

**Performing Organization:**
- **Name:** Med. Res. Project
- **Address:** US Army Hospital, USMA
- **City:** West Point, N.Y. 10996

**Investigator Principal:** Lt. Col. Carl G. Lauterbach, MSC
**Associate:** Maj. David P. Vielhaber, MSC

**Tel. Area Code:** 914-2101

**Keywords:** Trainfire; Parent Attitudes; Confidence, Weapon Experience.

**Tech. Objectives:** (U) As a part of a broader project investigating stress-proneness on the rifle range, entering USMA cadets were studied to determine whether or not prior weapon experience, intelligence, their parents' or their own attitude towards weapons predicted their subsequent "Trainfire" rifle score.

**Approach:** (U) A weapons questionnaire was administered shortly after arrival at West Point. Distribution of responses were made and were correlated with practice and record-firing Trainfire scores.

**Progress:** (U) The results indicated that a cadet's expressed confidence in his firing ability was found to be limited, yet the best, single predictor of his range-firing scores. Although items concerning prior firing experience and cadet and parent attitudes towards weapons were also correlated with the criteria, they did not add substantially to the predictive ability of the confidence item. The correlations of experience with rifle scores were lower than in previous studies and intelligence was not found to be an effective predictor in this cadet population. This research culminated in Tech. Report Nr.17 entitled "Pretraining Correlates of Rifle Marksmanship" dated January 1965. Since the end of FY 1965 the entire rifle project has been completed and a final report is forthcoming.

**Mission Objective:** N/A

**Participation:** N/A

**Est. Funds (in thousands):** 0

**Requesting Agency:** N/A

**SPECIAL EQUIPMENT:**

**Communications Security:** N/A

**OSS Code:** AR

**Budget Code:** 1

**Osborne Forms:** (Items 1 to 26 identical to NASA Form 122) REPLACES OD FORMS 413 & 612C WHICH ARE OBSOLETE.
RESEARCH AND TECHNOLOGY RESUME

I. CURRENT NUMBER/CODE
62156011 3A025601A823 01 057

3. GOVT ACCESSION
3. AGENCY ACCESSION
RFPORT CONTROL

10. TITLE
(U) Rifle Performance Under Conditions of Stress (US33)

11. SCIENTIFIC OR TECH. AREA
013400 Psychology (Ind. & Grp.Behavior)

14. SCIENTIFIC OR TECH. AREA
13. START DATE
03-63

14. CRIT. COMPL. DATE
N/A

15. FUNDING AGENCY

18. RESOURCES EST. #

19. GOV'T LAB/INSTALLATION CT

20. PERFORMING ORGANIZATION
NAME
U.S. Army Medical
R & D Command
Washington, D.C. 20315

Col. S.L. Marvin, MC
Chief, Behavioral Sciences Research Br.
Area Code 202 - Oxford 6-6670

21. TECHNOLOGY UTILIZATION
N/A

22. KEYWORDS
Trainfire; 16 P-F Inventory; Confidence; Anxiety; Weapon Experience

Tech. Objectives: (U)This second of a series of three reports on Trainfire rifle performance of new USMA cadets explored: whether or not personality-leadership attributes are related to cadet firing effectiveness; whether or not experienced and novice firers differ in these attributes; and finally, whether or not the personality attributes, experience, and confidence in firing interact in influencing rifle proficiency.

Approach: (U)683 new cadets were administered a Weapons Questionnaire, the 16 P-F, and Heineman's Anxiety Scale. Certain actuarial variables were also used as predictors of rifle scores. Rifle experience was used as a moderating variable, with separate analyses for 116 experienced and 243 novice firers.

Progress: (U) The results indicated experienced cadets differed significantly in several personality-leadership attributes and confidence from novices, but did not differ in non-personality variables. The rifle scores of experienced firers were unrelated to personality attributes, but the scores of novice firers were related to such attributes. Thus, personality traits may influence rifle performance of the inexperienced firer, but not the experienced firer. Since experience, personality attributes and confidence to do the task were interrelated with rifle performance, it may be that study of the interactions of such variables would assist comprehension of the performance of cadets or trainees in other situations.

27. MISSION OBJECTIVE
N/A

28. SPECIAL EQUIPMENT

29. EST. FUNDS (In thousands)

30. GOVT SECURITY UTILIZATION

31. COMMUNICATIONS SECURITY

32. GOV'T SECURITY UTILIZATION

33. MISSION OBJECTIVE
N/A

34. SPECIAL EQUIPMENT

35. EST. FUNDS (In thousands)

36. GOV'T SECURITY UTILIZATION

37. COMMODITY CODE

38. MISSION OBJECTIVE
N/A

39. SPECIAL EQUIPMENT

40. EST. FUNDS (In thousands)

41. GOV'T SECURITY UTILIZATION

42. COMMODITY CODE

43. MISSION OBJECTIVE
N/A

44. SPECIAL EQUIPMENT

45. EST. FUNDS (In thousands)

46. GOV'T SECURITY UTILIZATION

47. COMMODITY CODE

48. MISSION OBJECTIVE
N/A

49. SPECIAL EQUIPMENT

50. EST. FUNDS (In thousands)

51. GOV'T SECURITY UTILIZATION

52. COMMODITY CODE

53. MISSION OBJECTIVE
N/A

54. SPECIAL EQUIPMENT

55. EST. FUNDS (In thousands)

56. GOV'T SECURITY UTILIZATION

57. COMMODITY CODE

58. MISSION OBJECTIVE
N/A
**Title:** (U) Rifle Performance Under Conditions of Stress (US33)  
**Scientific or Tech. Area:** 01400 Psychology (Ind. & Grp. Behavior)  
**Start Date:** 03-63  
**End Date:** N/A  
**Funding Agency:** 013400 Psychology (Ind. & Grp. Behavior)  
**Type of RESUME:** Security  
**Rating:** N/A  
**Release Limitation:** NL  
**Level of RESUME:** A. Work Unit  
**Classification:** Confidential/Covered  
**Signature:**  

### Tech. Objectives:  
(U) Since studies of military leadership have demonstrated that effective leaders are more resistant to stress than are less effective leaders, an effort was made to identify new USMA cadets who are stress-prone and stress-resistant by introducing experimental stress conditions on the Trainfire range. This report summarizes the final report in the series of three reports on Trainfire Rifle Performance.  

### Approach:  
(U) 480 cadets served as control subjects, undergoing only the ordinary four day rifle training without receiving any of the experimental stresses. Random groups of 66, 65, and 153 cadets were assigned to "Reaction to Authority," "Test Anxiety," and "Group Pressure" stress conditions. The pre-stress and post-stress rifle scores of groups assigned to these conditions were compared with those of the control group.  

### Progress:  
(U) Analysis of rifle scores revealed no difference in performance between the experimental and control groups, so there was no evidence that the stresses were effective.  

### Communications Security  
- **Security Class:** Confidential  
- **Security Code:** OA 6821  
- **Agency Accession:** CSCRD 103  
- **Prior Number/Code:** None  
- **Current Number/Code:** 62196011 3A025601A823 01 057  

### Keywords:  
Trainfire; stress-prone; stress-resistant; anxiety  

---  

**Authors:**  
- Lt. Col. Carl G. Lauterbach, MSC  
- Maj. David P. Vielhaber, MSC  
- Col. S.L. Marvin, MC  

**Address:**  
U.S. Army Hospital, USMA  
West Point, N.Y. 10996  

**Telephone:**  
WBC-711, Ext. 3101  

---  

**Key Activities:**  
- **Institution/Agency:** Med Res Project  
- **Principal Research Area:** Psychological Behavior Research  
- **Investigator:** Lt Col Carl G. Lauterbach, MSC  
- **Co-Investigator:** Maj. David P. Vielhaber, MSC  

---  

**Special Equipment:**  
- **Type:** DA  
- **Code:** 20  
- **Budget Code:** 1  
- **Est. Funds (in thousands):** N/A  
- **Mission Objective:** N/A  
- **Participation:** N/A  

---  

**DD Form 1498**  
(Replaces DD Forms 212 & 412 which are obsolete)
**REPORT TITLE**

(U) Rifle Performance Under Conditions of Stress (US33)

**AUTHOR(S)**

Lauterbach, Carl G., Lt. Colonel, MSC
Vielhaber, David P., Major, MSC

**REPORT DATE**

1 May 1966

**ABSTRACT**

Trainfire; Parent Attitudes; Confidence; Weapon Experience, 16 Personality-Factors Test; Anxiety, Stress-Prone; Stress-Resistant.
6. the principal author

Give report, If capital letters. Titles once "Restricted" all military, show rank

2a. the report. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.

3. REPORT TITLE: Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.

4. DESCRIPTIVE NOTES: If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.

5. AUTHOR(S): Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.

6. REPORT DATE: Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.

7a. TOTAL NUMBER OF PAGES: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. NUMBER OF REFERENCES: Enter the total number of references cited in the report.

8a. CONTRACT OR GRANT NUMBER: If appropriate, enter the applicable number of the contract or grant under which the report was written.

8b, 8c, & 8d. PROJECT NUMBER: Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.

9a. ORIGINATOR'S REPORT NUMBER(S): Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.

9b. OTHER REPORT NUMBER(S): If the report has been assigned any other report numbers (either by the originator or by the sponsor), also enter this number(s).

10. AVAILABILITY/LIMITATION NOTICES: Enter any limitations on further dissemination of the report, other than those imposed by security classification, using standard statements such as:

(1) "Qualified requesters may obtain copies of this report from DDC."

(2) "Foreign announcement and dissemination of this report by DDC is not authorized."

(3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through DDC.

(4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through DDC.

(5) "All distribution of this report is controlled. Qualified DDC users shall request through DDC."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. SUPPLEMENTARY NOTES: Use for additional explanatory notes.

12. SPONSORING MILITARY ACTIVITY: Enter the name of the departmental project office or laboratory sponsoring (paying for) the research and development. Include address.

13. ABSTRACT: Enter an abstract giving a brief and factual summary of the document. If more than 50 words, it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract of classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as (U), (S), (C), or (U).

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. KEY WORDS: Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context. The assignment of links, rules, and weights is optional.