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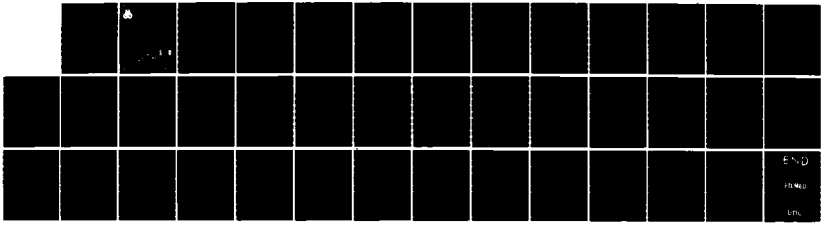

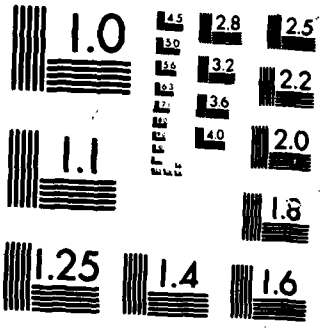

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United States Army Health Care Studies and Clinical Investigation Activity

AD-A164 898

EVALUATION OF THE ARMY PHYSICAL TRAINING
AND
WEIGHT CONTROL PROGRAMS

PART III: THE REVISED SURVEY

Consultation Report #86-002

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January 1986

US ARMY
HEALTH SERVICES COMMAND
FORT SAM HOUSTON, TEXAS 78234

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report presents an improved survey based on our prior experience, and offers a suggested methodology for evaluating physical fitness programs. The revised survey retains sections dealing with exercise frequency, intensity, and duration, organizational support for exercise, exercise injuries, and attitudes toward fitness and exercise. Attitudes toward fitness are a major determinant of long-term adherence to a fitness program. We have successfully tested earlier versions of this survey on students in the AMEDD Officer Advanced Course and Advanced NCOES Course. Based on our analyses of these data, the length of the instrument was reduced from 205 items to 89 items. We feel that the revised instrument will capture comparable information but will be much more acceptable to the respondents. The survey instrument is available from the authors on CPT format 8" floppy disks, MS-DOS format 5¼" floppy disks, and CP/M format 5¼" floppy disks. Data on personal history, strength, stamina, flexibility, and body fat percentage should also be collected as part of a comprehensive fitness evaluation.

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19. The methodology for evaluating physical fitness outlined in this report is intended for field use with large groups of personnel. Thus, considerable effort has been expended to develop and/or identify techniques which can be employed quickly in applied settings. We feel that this methodology could be successfully applied to both longitudinal and to cross sectional studies. Post fitness coordinators and appropriate medical treatment facility personnel can provide valuable assistance in conducting these studies. The authors assume that the techniques described herein will only be applied to individuals medically cleared for participation in exercise programs.

TABLE OF CONTENTS

INTRODUCTION

Physical fitness and weight control programs are of considerable interest within the Army. A major study (Department of Defense Study of the Military Services Physical Fitness, 1981) found that the services could not accurately measure the fitness of members, did not provide appropriate fitness programs to members of all ages and specialties, did not have adequate in-house physical fitness expertise, and did not incorporate current physical fitness knowledge into their programs. This study encouraged the services to promote lifestyle changes while working to correct these problems. Effects of these recommendations can be seen in the revised weight control regulation (Army Weight Control Program, AR 600-9, 1984) and in the updated physical fitness regulation (The Army Physical Fitness Program, AR 350-15, 1982). The year 1982 was declared the Army Year of Physical Fitness by the Chief of Staff (Saunders, 1982). Also during 1982 the Army Physical Fitness Research Institute was organized at the Army War College, the Physical Fitness Center of the Soldier Support Center came into being, and The Surgeon General organized a Task Force on physical fitness which has begun a number of initiatives (Mac Kinnon, 1984). All of these efforts are intended to improve the fitness level of American soldiers, thereby increasing their ability to perform sustained operations on the modern, high-intensity battle field (Pilnacek, 1983).

In the past, the Army's Physical Training Program has been subjected to criticism because it does not adequately focus on the individual effort (Partlow, 1982a). This shortcoming has been addressed in several recent publications: Physical Readiness Training (1980), the Commander's Handbook on Physical Fitness (1982), The Individual's Handbook on Physical Fitness

(1983), and the Family Fitness Handbook (1984). These publications place emphasis on supporting a fitness program geared to the varying needs and abilities of individual soldiers, their families, and their units. This reflects a massive change in organizational thinking. Although our work (King, O'Brien, & Mangelsdorff, 1983a, 1983b) has suggested that individual exercise is a very strong predicitor of fitness, others have found that organized efforts are most effective in promoting fitness (Patton, Vogel, Bedynek, Alexander, & Albright, 1983). Further study of the costs and benefits of each approach is in order (Gottfredson, 1984).

The Army has focused considerable attention on the levels of strength and stamina required to perform in various specialties (Sharp, Wright, Vogel, Patton, Daniel, Knapik, & Kowal, 1980). Five clusters, each requiring a different level of strength and stamina were identified. Thus, we can now determine if a person possesses the strength and stamina to perform in a given job. We need logically integrated approaches in order to bring a given individual up to cluster standards, to maintain soldiers at or above cluster fitness minimums, and to evaluate solider fitness. Modern approaches to assessing physical fitness require collection of data on personal history and demographics, strength, stamina, flexibility, metabolism, and body fat level (Brubacker, 1982; Dishman, Sallis & Orenstein, 1985; Herbert, Montgomery, Holland, & Wetzler, 1983, 1984; Iverson, Fielding, Crow, & Christenson, 1985; La Porte, Montoye, & Caspersen, 1985; Mead & Hartwig, 1981; Powell & Paffeburger, 1985; Stephens, Jacobs & White, 1985; Wetzler, Montgomery, Goliber, & Herbert, 1983).

A variety of injuries can occur in a physical conditioning program. Many of these injuries are a result of overuse of the affected part, and frequently affect the lower extremities. Women are generally more likely to suffer exercise

related injuries than are men (Jones, 1983; Schmidt Brudwig, Gudger, & Obermeyer, 1983). In women, because of a lower level of prior conditioning, greater level of body fat, and limited strength, these problems can be particularly debilitating (Kowal, 1980). The majority of these injuries can be avoided through use of a carefully designed remedial conditioning program (Kowal, 1980), use of proper footwear (De Moya, 1982; Partlow, 1982b), and appropriate warm-up and cool-down exercises (Partlow, 1982b). Other researchers have reported injury rates of from 5.7 to 50.9 percent per year, depending on the nature of the athletic program (Shephard, 1977), while we have found injury rates of 23.4 to 25.8 percent per year (King, et al., 1983a; 1983b). Injury rate assessment is important in evaluating fitness programs.

The purpose of this report is to present a revised survey for use in evaluation of fitness programs. Data on personal history, strength, stamina, flexibility, and body fat percentage should be collected as part of a comprehensive fitness evaluation (see above). We have successfully tested earlier versions of this survey on students in the AMEDD Officer Advanced Course (King, et al., 1983a) and Advanced NCOES Course (King, et al., 1983b). Based on our analyses, the length of the instrument was reduced from 205 items to 89 items. We feel that the revised instrument will capture comparable information but will be much more acceptable to the respondents.

OBJECTIVES

This report will present an improved survey and will offer a suggested methodology for evaluating physical fitness programs. The revised survey retains sections dealing with exercise frequency, intensity, and duration (Shackey, 1977), organizational support for exercise, exercise injuries, and attitudes toward fitness and exercise. Attitudes toward fitness are a major

determinant of long-term adherence to a fitness program (Dishman & Gettman, 1980; Moskovites, 1984). The revised survey instrumemt is contained in ANNEX A. The response sheet for the instrument is contained in ANNEX B. The survey instrument is available from the authors on CPT format 8" floppy disks, MS-DOS format 5¼" floppy disks, and CP/M format 5¼" floppy disks. We welcome interest in this survey.

SUGGESTED METHODOLOGY

Data Collection. The members of the group to be evaluated are briefed on the study and given the survey instrument on the first day of the project. Actual data collection occurs on the second day of the project, when the Army Physical Readiness Test (APRT) is administered, the survey instruments are collected, the body fat measurements (AR 600-9) are made, and flexibility is assessed. One technique for evaluating flexibility is outlined in ANNEX D. Other techniques are described in the Family Fitness Handbook (1984). All of these inputs provide variables which may be associated with long-term compliance with exercise programs (Dishman, 1982; Serfass & Gerberich, 1984) and may improve prediction of aerobic capacity (Slack, Ferguson, & Barta, 1985).

Data Analysis. The response sheet shown in ANNEX B can be used to directly produce a machine readable record. The respondents' code numbers, unit, post, body fat data, APRT data, height/weight data, flexibility measures, and any other desired information would need to be entered in a separate record. The record produced by the response sheet and the keyed record are then merged into a single record using the code number. This number can be entered in one of the free blocks on the response sheet. Automated data analytic procedures using SAS (SAS User's Guide: Statistics, 1985) or a comparable package are suggested. These procedures can provide descriptive statistics, factor analyses, stepwise multiple linear regressions, and discriminant function analyses.

ANNEX C outlines a suggested procedure for combining individual and unit activity data into a single measure. ANNEX E contain a listing of variables we have found to be useful in analysing these data.

CONCLUSION AND RECOMMENDATIONS

The methodology for evaluating physical fitness outlined in this report is intended for field use with large groups of personnel. Thus, considerable effort has been expended to develop and/or identify techniques which can be employed quickly in applied settings. We feel that this methodology could be successfully applied to both longitudinal and to cross sectional studies. Post fitness coordinators and appropriate medical treatment facility personnel can provide valuable assistance in conducting these studies. The authors assume that the techniques described herein will only be applied to individuals medically cleared for participation in exercise programs.

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ANNEX A

Survey Instrument

YOUR LETTERHEAD

YOUR OFFICE SYMBOL

MEMORANDUM FOR PARTICIPANTS

SUBJECT: Participation in Study

Your participation in the Study TITLE OF YOUR STUDY is requested. This study is being conducted under provisions of STATE NAME OF PROGRAM. The purposes of this study are to evaluate the effectiveness of physical training and weight control programs as experienced by soldiers, and to assess impacts on these efforts. We hope to collect measures of your strength, stamina, body weight, and body fat content, and to administer a survey instrument covering lifestyle, nature of fitness programs, injury information, and attitudes towards fitness. Your Army Physical Readiness Test will be the source of strength and aerobic capacity data. Body fat content will be determined by skinfold thickness measurements. Body weight and height data will be derived from your weighin.

Your SSN will be used only to insure that your survey responses, body fat content, body weight, and Physical Readiness Test data are properly matched-up. Your responses will be treated confidentially and, to the extent possible, will be available only to the STAFF OF YOUR ORGANIZATION. No release of individual data is planned.

Your participation in this study will expose you to no hazards beyond those of normal duty.

The NAME OF YOUR ORGANIZATION will make a report to the NAME OF APPROPRIATE HEADQUARTERS OR AGENCY, US Army, on the results of this study. This report will contain no individual data; only group information will be presented. Inquiries about obtaining this report may be sent to:

Commander
NAME OF YOUR ORGANIZATION
ATTN: YOUR OFFICE SYMBOL
YOUR ADDRESS
YOUR POST, STATE, ZIP CODE

Completion of this survey will constitute your agreement to complete all aspects of the study.

2 Encls
1. Privacy Act Statement
2. Survey Instrument

YOUR COMMANDER
RANK, CORPS
Commanding

PRIVACY ACT STATEMENT

1. Authority.

a. Section 301, Title 5, United States Code.

b. Section 3101, Title 44, United States Code.

c. Section 1071-1087, Title 10, United States Code.

d. Executive Order 9397.

2. Principal purpose. The purpose for requesting personal information is to provide:

a. Various types of data needed to satisfy the scientific objectives of the study.

b. Minimum information so that steps can be taken to contact you later should it be in your best interests.

c. Minimum information to permit location of other data noted in the letter which is attached.

3. Routine uses.

a. This information may be used to:

(1) Implement health control programs.

(2) Provide full documentation of investigative studies.

(3) Conduct further investigations.

(4) Teach

(5) Compile statistical data.

b. Even though permitted by law, when possible, this personal data will not be released without your consent.

4. Mandatory or voluntary disclosure and effect on persons not providing information:

a. Disclosure of requested information is volutary. If the information is not furnished, or is not available from other sources, voluntary participation in this study may be prevented.

b. I understand that a copy will be retained by the investigator and by the US Government.

c. I have received a copy of the Privacy Act Statement which I may keep.

_____

Typed or Printed Name of Subject or Legally Authorized Representative

INSTRUCTIONS

Please look through the booklet to make sure that there are no missing pages. There should be a total of 11 numbered pages in this booklet.

As you complete this questionnaire, choose the responses which most closely apply to you. If none of the answers apply exactly, choose the best answer. Please answer based on your personal and military experience, not as you think other individuals might respond. Please answer each question unless you are directed to skip a question.

Each numbered item in the questionnaire (example 1., 10., 45., etc.) is to be answered in the space on the blue answer sheet with the same number. For each numbered item, fill in the bubble which contains the number corresponding to your chosen answer (example (1), (2), (3), (4), (0), etc.). Choose only one answer per question. In this booklet, all item numbers are followed by a period, while response numbers, which correspond to the bubbles next to each item number are in brackets ( ).

- -

For example, for items of the form:

99. I like physical training.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree.

On the answer sheet, bubble in the number (e.g. (2), agree but not strongly agree) which most nearly indicates your personal feeling about the item.

- -

Please answer all questions using a number 2 pencil. Please erase all stray marks on your answer sheet.

If you wish to make additional comments, please make them on the bottom of the page, and not the answer sheet.

Using the Number 2 pencil, please write your SSN and name lightly in the upper left hand corner of the answer sheet above the date block.

Please answer the following questions in the space provided.

Your Name_____.

Your SSN:_____.

Your last unit was_____. (Example: 3rd Bn., 79th Infantry, 1st Cav. Div.)

Your last unit was located at_____. (Example: Fort Hood.)

Please indicate, using numbers, today's date in the blocks labeled DAY, MO, YR.

In the block labeled MIL RANK, please indicate your pay grade, SSG = (E6), CPT = (03), etc.

Indicate your MOS in the appropriate block.

Leave the CIV GRADE and SERIES blocks blank.

In block A, indicate your age in years.

In block B, indicate your sex, (01) = female, (02) = male.

In questions 1-6 we are interested in learning the extent of your physical training during the past year. In the following six questions indicate how hard, how long, and how often you trained on the average with your unit and/or individually. If you were involved in both organized unit and individual programs, please answer each accordingly.

1. What was the INTENSITY of your organized unit exercise?

   (5) Sustained heavy breathing and perspiration - as in running, swimming laps.

   (4) Intermittent heavy breathing and perspiration - as in tennis, basketball.

   (3) Moderately heavy - as in cycling, down-hill skiing.

   (2) Moderate - as in volleyball, softball.

   (1) Light - as in fishing, slow walking.

   (0) None preformed.

2. What was the DURATION of an average organized unit exercise period?

   (4) Over 30 minutes.

   (3) 20-30 minutes.

   (2) 10-20 minutes.

   (1) Under 10 minutes.

   (0) None performed.

3. How OFTEN were organized unit exercise periods held?

(5) Daily or almost daily.

(4) 3-5 times a week.

(3) 1-2 times a week.

(2) A few times a month.

(1) Less than once a month.

(0) None held.

4. What was the INTENSITY of your personal exercise?

(5) Sustained heavy breathing and perspiration - as in running, swimming laps.

(4) Intermittent heavy breathing and perspiration - as in tennis, basketball.

(3) Moderately heavy - as in cycling, down-hill skiing.

(2) Moderate - as in volleyball, softball.

(1) Light - as in fishing, slow walking.

(0) None performed.

5. What was the DURATION of an average personal exercise period?

(4) Over 30 minutes.

(3) 20-30 minutes.

(2) 10-20 minutes.

(1) Under 10 minutes.

(0) None performed.

6. How OFTEN did you exercise on your own?

(5) Daily or almost daily.

(4) 3-5 times a week.

(3) 1-2 times a week.

(2) A few times a month.

(1) Less than once a month.

(0) None performed.

7. Please rate the indoor exercise areas available at your last post.

   Outstanding (1) (2) (3) (4) (5) (6) (7) Inadequate

8. Please rate the outdoor exercise facilities available at your last post.

   Outstanding (1) (2) (3) (4) (5) (6) (7) Inadequate

9. Did your last unit break down according to levels of fitness or ability for physical training activities or exercise?

   Always (1) (2) (3) (4) (5) (6) (7) Never

10. Mandatory exercise sessions at my last unit were held outside of normal duty hours.

    Always (1) (2) (3) (4) (5) (6) (7) Never

11. There was an adequate water point available at the place where my last unit conducted its exercise sessions (e.g., a water fountain).

    Always (1) (2) (3) (4) (5) (6) (7) Never

12. Please evaluate your own level of exercise during the past year relative to other soldiers of your age, sex, and MOS.

    Very active (1) (2) (3) (4) (5) (6) (7) Very inactive

13. I was allowed time for exercise during normal duty hours at my last unit.

    Always (1) (2) (3) (4) (5) (6) (7) Never

14. I was expected to exercise on my own off-duty time at my last unit.

    Always (1) (2) (3) (4) (5) (6) (7) Never

15. Combat boots were worn during organized unit exercise periods at my last unit.

    Always (1) (2) (3) (4) (5) (6) (7) Never

16. For my individual exercise periods, I wore running or other athletic shoes.

    Always (1) (2) (3) (4) (5) (6) (7) Never

17. At my last unit, there were adequate, conveniently located, shower facilities available to me after PT.

    Always (1) (2) (3) (4) (5) (6) (7) Never

18. At my last unit, there were lockers available to secure my valuables during exercise periods.

    Always (1) (2) (3) (4) (5) (6) (7) Never

19. I warmed up before exercise by stretching and light activity.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

20. I cooled down after exercise by stretching and light activity.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

21. Have you ever smoked?

(1) YES (2) NO (Please skip to question 23.)

22. If I tried to quit smoking, the main reason was: (Mark one).

(1) Never tried to quit, still smoke.

(2) For health reasons.

(3) Because of the expense.

(4) Because of a desire to change my lifestyle.

(5) Because of family influence.

(6) Because of peer influence.

(7) Because of command influence.

23. Do you drink alcohol?

(1) YES (2) NO

For Questions 24-34, please indicate your principal source of information about these following topics. Select one source from the following list and bubble in as your answer to questions 24-34.

(1) = Army Medical Department (AMEDD).
(2) = Non-AMEDD Army sources.
(3) = DOD.
(4) = Civilian Clubs/Organizations.
(5) = Civilian Publications.
(6) = Radio/Television.
(7) = Friends/neighbors/peers.

24. _____Smoking.

25. _____Alcohol Consumption.

26. _____Athletic Clothing and Footwear.

27. _____Conduct of unit physical training and exercise programs.

28. _____Injury prevention and treatment in Physical Training.

29. _____Remedial Physical Training.

30. _____Nutrition.

31. _____Weight Loss/Weight Control.

32. _____Conduct of individual physical training and exercise programs.

33. _____Benefits of fitness.

34. _____Work capacity and fitness.

35. If I have or have had a temporary physical, profile, I was given a recommended physical training program through the MEDDAC/MEDCEN (hospital).

Always (1) (2) (3) (4) (5) (6) (7) Never (8) Not Applicable

36. If I have or have had a permanent physical profile, I was given a recommended physical training profile through the MEDDAC/MEDCEN (hospital).

Always (1) (2) (3) (4) (5) (6) (7) Never (8) Not Applicable

37. Were you injured during the past year as a result of your physical training? (Any activity-disrupting injury should be counted.)

(1) YES (2) NO

If you answered YES to the above question, please continue. If you answered NO to the above question, proceed to Question 45.

38. If you were injured during the past year as a result of your PT activity, how many times were you injured? _____

EXAMPLE (1) = 1 time, (6) = 6 or more times, etc.

Of the injuries reported in 38., how many: (0) = 0, (1) = 1, (6) = 6 or more:

39. _____ Were successfully self-treated?

40. _____ Resulted in your seeking medical attention?

41. _____ Caused you to receive a temporary profile?

42. _____ Caused you to receive a permanent profile?

If you did not receive a profile for the PT injuries reported above, how many:

EXAMPLE (1) = 1 injury, (6) = 6 or more injuries, etc.

43. _____ Caused you to change your daily activity or PT level for 1-10 days?

44. _____ Caused you to change your daily activity or PT level for 11 or more days?

45. In my opinion, Army Medical facilities and health care providers are competent to deal with physical training or athletic injuries.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

46. In my opinion, Army health care providers are responsive to the needs and desires of the individual soldier when treating athletic or physical training injuries.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree.

47. Do you consult FM 21-20, Physical Readiness Training, for information on physical training?

Always (1) (2) (3) (4) (5) (6) (7) Never

48. Do you consult DA PAM 350-15, Commander's Handbook on Physical Fitness, for information on physical training?

Always (1) (2) (3) (4) (5) (6) (7) Never

49. Do you consult DA Pam 350-18, the Individual's Handbook on Physical Fitness for information on physical training?

Always (1) (2) (3) (4) (5) (6) (7) Never

50. The standards of the Army Physical Readiness Test for females are:

Too harsh (1) (2) (3) (4) (5) (6) (7) Too low

51. The standards of the Army Physical Readiness Test for males are:

Too harsh (1) (2) (3) (4) (5) (6) (7) Too low

52. Do you normally pass the Army Physical Readiness Test?

Always (1) (2) (3) (4) (5) (6) (7) Never

53. To pass my Army Physical Readiness Test, I must expend:

Great effort (1) (2) (3) (4) (5) (6) (7) Little effort

54. Do you attempt to obtain the maximum score on the Army Physical Readiness Test?

Always (1) (2) (3) (4) (5) (6) (7) Never

55. Fitness activities are an important part of my life.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree.

56. I structure my day to allow time for physical fitness activities.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

57. Being physically fit improves how I feel about myself.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

58. Being physically fit improves my health.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

59. Being physically fit improves my ability to perform my duties.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

60. Everything else being equal, a physically fit soldier is more effective than an unfit soldier.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

61. Everything else being equal, an overweight soldier is less effective than a soldier who is not overweight.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

62. Being overweight would impair my ability to perform my duties.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

53. I feel that engaging in a regular program of vigorous exercise is necessary for me to maintain an adequate level of physical fitness.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

64. Exercise is an important element in a weight control program.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

65. Being overweight damages my health.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

66. Have you attempted to lose weight since coming on active duty?

(1) YES (2) NO (Please skip to question 68.)

67. I succeed in my weight control efforts and I have kept the weight off.

Always (1) (2) (3) (4) (5) (6) (7) Never

68. Have you ever been placed in an Army weight control Program?

(1) YES (2) NO

69. I am concerned about my nutrition.

Very concerned (1) (2) (3) (4) (5) (6) (7) Unconcerned.

70. The Army is concerned about my nutrition.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree.

71. I usually eat the following:

(1) 1 Meal.

(2) 1 Meal + snack(s).

(3) 2 Meals.

(4) 2 Meals + snack(s).

(5) 3 Meals.

(6) 3 Meals + snack(s).

(7) More than 3 meals + snack(s).

72. When I attempt to control my weight, I:

(1) I do not try to control my weight. (Please skip to question 77.)

(2) Increase exercise without adjusting food consumption.

(3) Increase exercise and adjust food consumption.

(4) Exercise at my normal level and change food consumption.

73. If you adjust your food consumption to control your weight, which of the following is your primary method?

(1) Skip breakfast.

(2) Skip lunch.

(3) Skip dinner.

(4) Eliminate one or two types of food, such as desserts, soft drinks, candy, breads, or starches.

(5) Reduce portion sizes while eating your usual variety of foods.

(6) Utilize a specific diet.

74. Of the diets listed below, which was must effective in helping you to lose weight?

(1) No diet used.

(2) Counting calories.

(3) Low carbonydrate, counting carbohydrates.

(4) Powdered or liquid diets.

(5) Specific calory level allowed.

(6) Exchange system (e.g., Weight watchers).

(7) High protein diets.

(8) Other diet system.

75. If you attempted to lose weight in the last year, how much weight did you actually lose?

(1) Did not attempt to lose weight.

(2) Less than 10 pounds.

(3) 11-20 pounds.

(4) 21-30 pounds.

(5) 31-40 pounds.

(6) 41-50 pounds.

(7) 50 or more pounds.

76. I attempted to lose this weight because of:

(1) Not applicable.

(2) Appearance.

(3) Army standards.

(4) Health.

(5) Request of spouse or family member.

(6) Other.

77. I have to be constantly aware of my weight in order to stay within my own weight standards.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

78. I have to be constantly aware of my weight in order to say within the Army weight standards.

Strongly agree (1) (2) (3) (4) (5) (6) (7) Strongly disagree

79. Do you feel that the weight control program at your last unit was effective?

Highly effective (1) (2) (3) (4) (5) (6) (7) Ineffective

THANK YOU

END

Please turn in your booklet and your blue answer sheet.

ANNEX B

Sample Response Sheet

UNIVERSAL MARKSENSE ANSWER SHEET

USE #2 (OR SOFTER) PENCIL

DAY	MO	YR	RANK	MOS	GRADE	SERIES	A	B	C	D	E	F	G	H	CASE #
0–9	0–9	0–9					0–9	0–9	0–9	0–9	0–9	0–9	0–9	0–9	0–9

DO NOT USE

Item	Responses	Item	Responses	Item	Responses	Item	Responses
1	1 2 3 4 5 6 7 8 9 0	49	1 2 3 4 5 6 7 8 9 0	97	1 2 3 4 5 6 7 8 9 0	145	1 2 3 4 5 6 7 8 9 0
2	1 2 3 4 5 6 7 8 9 0	50	1 2 3 4 5 6 7 8 9 0	98	1 2 3 4 5 6 7 8 9 0	146	1 2 3 4 5 6 7 8 9 0
3	1 2 3 4 5 6 7 8 9 0	51	1 2 3 4 5 6 7 8 9 0	99	1 2 3 4 5 6 7 8 9 0	147	1 2 3 4 5 6 7 8 9 0
4	1 2 3 4 5 6 7 8 9 0	52	1 2 3 4 5 6 7 8 9 0	100	1 2 3 4 5 6 7 8 9 0	148	1 2 3 4 5 6 7 8 9 0
5	1 2 3 4 5 6 7 8 9 0	53	1 2 3 4 5 6 7 8 9 0	101	1 2 3 4 5 6 7 8 9 0	149	1 2 3 4 5 6 7 8 9 0
6	1 2 3 4 5 6 7 8 9 0	54	1 2 3 4 5 6 7 8 9 0	102	1 2 3 4 5 6 7 8 9 0	150	1 2 3 4 5 6 7 8 9 0
7	1 2 3 4 5 6 7 8 9 0	55	1 2 3 4 5 6 7 8 9 0	103	1 2 3 4 5 6 7 8 9 0	151	1 2 3 4 5 6 7 8 9 0
8	1 2 3 4 5 6 7 8 9 0	56	1 2 3 4 5 6 7 8 9 0	104	1 2 3 4 5 6 7 8 9 0	152	1 2 3 4 5 6 7 8 9 0
9	1 2 3 4 5 6 7 8 9 0	57	1 2 3 4 5 6 7 8 9 0	105	1 2 3 4 5 6 7 8 9 0	153	1 2 3 4 5 6 7 8 9 0
10	1 2 3 4 5 6 7 8 9 0	58	1 2 3 4 5 6 7 8 9 0	106	1 2 3 4 5 6 7 8 9 0	154	1 2 3 4 5 6 7 8 9 0
11	1 2 3 4 5 6 7 8 9 0	59	1 2 3 4 5 6 7 8 9 0	107	1 2 3 4 5 6 7 8 9 0	155	1 2 3 4 5 6 7 8 9 0
12	1 2 3 4 5 6 7 8 9 0	60	1 2 3 4 5 6 7 8 9 0	108	1 2 3 4 5 6 7 8 9 0	156	1 2 3 4 5 6 7 8 9 0
13	1 2 3 4 5 6 7 8 9 0	61	1 2 3 4 5 6 7 8 9 0	109	1 2 3 4 5 6 7 8 9 0	157	1 2 3 4 5 6 7 8 9 0
14	1 2 3 4 5 6 7 8 9 0	62	1 2 3 4 5 6 7 8 9 0	110	1 2 3 4 5 6 7 8 9 0	158	1 2 3 4 5 6 7 8 9 0
15	1 2 3 4 5 6 7 8 9 0	63	1 2 3 4 5 6 7 8 9 0	111	1 2 3 4 5 6 7 8 9 0	159	1 2 3 4 5 6 7 8 9 0
16	1 2 3 4 5 6 7 8 9 0	64	1 2 3 4 5 6 7 8 9 0	112	1 2 3 4 5 6 7 8 9 0	160	1 2 3 4 5 6 7 8 9 0
17	1 2 3 4 5 6 7 8 9 0	65	1 2 3 4 5 6 7 8 9 0	113	1 2 3 4 5 6 7 8 9 0	161	1 2 3 4 5 6 7 8 9 0
18	1 2 3 4 5 6 7 8 9 0	66	1 2 3 4 5 6 7 8 9 0	114	1 2 3 4 5 6 7 8 9 0	162	1 2 3 4 5 6 7 8 9 0
19	1 2 3 4 5 6 7 8 9 0	67	1 2 3 4 5 6 7 8 9 0	115	1 2 3 4 5 6 7 8 9 0	163	1 2 3 4 5 6 7 8 9 0
20	1 2 3 4 5 6 7 8 9 0	68	1 2 3 4 5 6 7 8 9 0	116	1 2 3 4 5 6 7 8 9 0	164	1 2 3 4 5 6 7 8 9 0
21	1 2 3 4 5 6 7 8 9 0	69	1 2 3 4 5 6 7 8 9 0	117	1 2 3 4 5 6 7 8 9 0	165	1 2 3 4 5 6 7 8 9 0
22	1 2 3 4 5 6 7 8 9 0	70	1 2 3 4 5 6 7 8 9 0	118	1 2 3 4 5 6 7 8 9 0	166	1 2 3 4 5 6 7 8 9 0
23	1 2 3 4 5 6 7 8 9 0	71	1 2 3 4 5 6 7 8 9 0	119	1 2 3 4 5 6 7 8 9 0	167	1 2 3 4 5 6 7 8 9 0
24	1 2 3 4 5 6 7 8 9 0	72	1 2 3 4 5 6 7 8 9 0	120	1 2 3 4 5 6 7 8 9 0	168	1 2 3 4 5 6 7 8 9 0
25	1 2 3 4 5 6 7 8 9 0	73	1 2 3 4 5 6 7 8 9 0	121	1 2 3 4 5 6 7 8 9 0	169	1 2 3 4 5 6 7 8 9 0
26	1 2 3 4 5 6 7 8 9 0	74	1 2 3 4 5 6 7 8 9 0	122	1 2 3 4 5 6 7 8 9 0	170	1 2 3 4 5 6 7 8 9 0
27	1 2 3 4 5 6 7 8 9 0	75	1 2 3 4 5 6 7 8 9 0	123	1 2 3 4 5 6 7 8 9 0	171	1 2 3 4 5 6 7 8 9 0
28	1 2 3 4 5 6 7 8 9 0	76	1 2 3 4 5 6 7 8 9 0	124	1 2 3 4 5 6 7 8 9 0	172	1 2 3 4 5 6 7 8 9 0
29	1 2 3 4 5 6 7 8 9 0	77	1 2 3 4 5 6 7 8 9 0	125	1 2 3 4 5 6 7 8 9 0	173	1 2 3 4 5 6 7 8 9 0
30	1 2 3 4 5 6 7 8 9 0	78	1 2 3 4 5 6 7 8 9 0	126	1 2 3 4 5 6 7 8 9 0	174	1 2 3 4 5 6 7 8 9 0
31	1 2 3 4 5 6 7 8 9 0	79	1 2 3 4 5 6 7 8 9 0	127	1 2 3 4 5 6 7 8 9 0	175	1 2 3 4 5 6 7 8 9 0
32	1 2 3 4 5 6 7 8 9 0	80	1 2 3 4 5 6 7 8 9 0	128	1 2 3 4 5 6 7 8 9 0	176	1 2 3 4 5 6 7 8 9 0
33	1 2 3 4 5 6 7 8 9 0	81	1 2 3 4 5 6 7 8 9 0	129	1 2 3 4 5 6 7 8 9 0	177	1 2 3 4 5 6 7 8 9 0
34	1 2 3 4 5 6 7 8 9 0	82	1 2 3 4 5 6 7 8 9 0	130	1 2 3 4 5 6 7 8 9 0	178	1 2 3 4 5 6 7 8 9 0
35	1 2 3 4 5 6 7 8 9 0	83	1 2 3 4 5 6 7 8 9 0	131	1 2 3 4 5 6 7 8 9 0	179	1 2 3 4 5 6 7 8 9 0
36	1 2 3 4 5 6 7 8 9 0	84	1 2 3 4 5 6 7 8 9 0	132	1 2 3 4 5 6 7 8 9 0	180	1 2 3 4 5 6 7 8 9 0
37	1 2 3 4 5 6 7 8 9 0	85	1 2 3 4 5 6 7 8 9 0	133	1 2 3 4 5 6 7 8 9 0	181	1 2 3 4 5 6 7 8 9 0
38	1 2 3 4 5 6 7 8 9 0	86	1 2 3 4 5 6 7 8 9 0	134	1 2 3 4 5 6 7 8 9 0	182	1 2 3 4 5 6 7 8 9 0
39	1 2 3 4 5 6 7 8 9 0	87	1 2 3 4 5 6 7 8 9 0	135	1 2 3 4 5 6 7 8 9 0	183	1 2 3 4 5 6 7 8 9 0
40	1 2 3 4 5 6 7 8 9 0	88	1 2 3 4 5 6 7 8 9 0	136	1 2 3 4 5 6 7 8 9 0	184	1 2 3 4 5 6 7 8 9 0
41	1 2 3 4 5 6 7 8 9 0	89	1 2 3 4 5 6 7 8 9 0	137	1 2 3 4 5 6 7 8 9 0	185	1 2 3 4 5 6 7 8 9 0
42	1 2 3 4 5 6 7 8 9 0	90	1 2 3 4 5 6 7 8 9 0	138	1 2 3 4 5 6 7 8 9 0	186	1 2 3 4 5 6 7 8 9 0
43	1 2 3 4 5 6 7 8 9 0	91	1 2 3 4 5 6 7 8 9 0	139	1 2 3 4 5 6 7 8 9 0	187	1 2 3 4 5 6 7 8 9 0
44	1 2 3 4 5 6 7 8 9 0	92	1 2 3 4 5 6 7 8 9 0	140	1 2 3 4 5 6 7 8 9 0	188	1 2 3 4 5 6 7 8 9 0
45	1 2 3 4 5 6 7 8 9 0	93	1 2 3 4 5 6 7 8 9 0	141	1 2 3 4 5 6 7 8 9 0	189	1 2 3 4 5 6 7 8 9 0
46	1 2 3 4 5 6 7 8 9 0	94	1 2 3 4 5 6 7 8 9 0	142	1 2 3 4 5 6 7 8 9 0	190	1 2 3 4 5 6 7 8 9 0
47	1 2 3 4 5 6 7 8 9 0	95	1 2 3 4 5 6 7 8 9 0	143	1 2 3 4 5 6 7 8 9 0	191	1 2 3 4 5 6 7 8 9 0
48	1 2 3 4 5 6 7 8 9 0	96	1 2 3 4 5 6 7 8 9 0	144	1 2 3 4 5 6 7 8 9 0	192	1 2 3 4 5 6 7 8 9 0

ANNEX C

Combining Individual and Unit Activity
Into a Single Measure

To combine Questions (Q) 1 and Q4, proceed as follows:

$$\text{Overall Intensity} = \frac{(Q1 * Q3) + (Q4 * Q6)}{(Q3 + Q6)}.$$

To combine Q 2 and Q5, proceed as follows:

$$\text{Overall duration} = \frac{(Q2 * Q3) + (Q5 * Q6)}{(Q3 + Q6)}$$

To combine Q3 and Q6, locate the column containing the response to Q3. Then locate the row containing the response to Q6. The cell at which this row and this column intersect is the Overall Frequency.

UNIT FREQUENCY (Q3)

Individual Frequency (Q6)

Q3 / Q6	5	4	3	2	1	0
5	5	5	5	5	5	5
4	5	5	5	4	4	4
3	5	5	4	3	3	3
2	5	4	3	2	2	2
1	5	4	3	2	1	1
0	5	4	3	2	1	0

To calculate summed Frequency X Intensity X Duration (SFID), Multiply as follows:

SFID = Overall Frequency X Overall Intensity X Overall Duration

ANNEX D

Flexibility Measurement

FLEXIBILITY ASSESSMENT

OBJECTIVES:

1. Given a testing box or a 36" ruler and tape be able to assess, administer and record an individual's flexibility.

NOTES: Sit and reach first devised in 1941. Modified in 1950 when other changes occurred. Most current and the one we will use was developed by Johnson and Nelson.

NOTES:

A. Test Administration:

1. Limited possibility that the subject could pull a muscle or strain the back.

2. Short warm-up should precede the test

B. Equipment:

1. A yardstick/testing box

2. Tape to keep the measuring device in place on the floor.

3. Testing forms to record data.

C. Procedure:

1. Stretch prior to assessment

2. Refrain subject from fast, jerky movements

3. Subject should be in bare or stocking feet.

4. Yardstick

a/ placed on the floor with tape placed across it at right angles to the 15 inch mark.

b/ yardstick placed between the legs with legs extended at right angles to taped line; 5" - 10" apart.

c/ heels should rest on the floor at the 15 - inch mark on the yardstick

d/ subject should slowly reach forward with both hands as far as possible on the yardstick and hold.

e/ the partner's feet are used to brace the subject's feet so that on the reach the heels will not slip over the 15-inch mark on the yardstick.

5. Testing Box:

   a/ Sit in front of the box with legs straight and soles of your feet flat against the box

   b/ Extend your arms in front of you with one hand resting on top of the other.

   c/ Touch the edge of the wooden block with the middle finger of each hand.

   d/ push the block forward as far as you can and hold

   e/ Have a partner hold the subjects knees to prevent them from bending as the subject moves forward.

6. The subject is permitted three trails

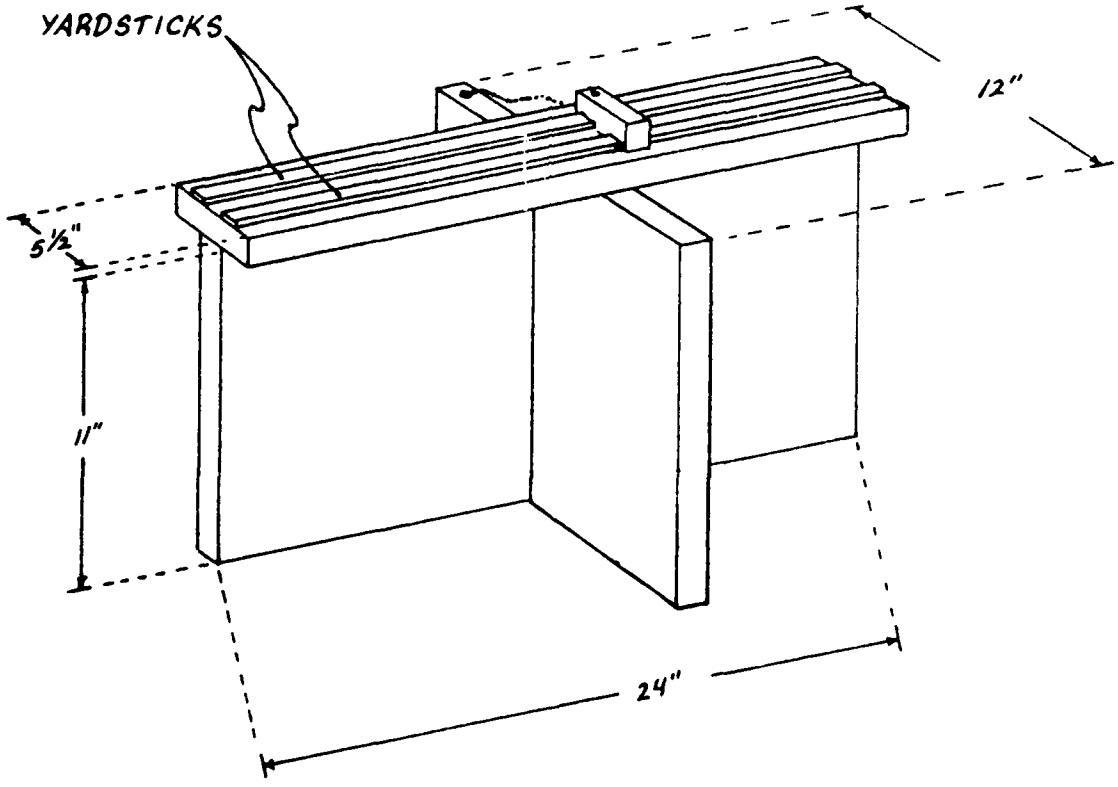
7. Record the farthest distance you reach (i.e., push the block) to the nearest ½ inch.

D. Flexibility Assessment Classification - Yardstick Measurement

Fitness Category	Inches Reached
1. Excellent	22" or more
2. Good	19" - 21"
3. Fair	14" - 18"
4. Poor	12" - 13"
5. Very Poor	11" or less

E. Flexibility Assessment Classification - Testing Box Measurement

Fitness Category	Inches Reached
1. Excellent	17" or more
2. Good	12" - 16"
3. Fair	9" - 11"
4. Poor	6" - 8"
5. Very Poor	5" or less


YARDSTICKS
12"
5½"
11"
24"

ANNEX E

Glossary of Variables

GLOSSARY OF VARIABLES

C	Age
D	Sex
E	Type of Unit - Example: Field - All divisional & corps-level field units Staff - Other - Recruiting Command Long-term civilian training USAR/ARNGUS Not specified
F	MACOM Controlling post:
FACIN	Rating of indoor facilities - Q7
FACOUT	Rating of outdoor facilities - Q8
FACOVER	Rating of overall facilities - mean of Q7 and Q8
IFID	Individual exercise frequency times intensity times duration - Q4 x Q5 x Q6
IMPEX	Exercise Importance - mean of Q55-Q62, Q65, Q65, Q70
MAJOR	Major injury reported in Q40-Q42, or Q44
MAXFAT	Body fat status per AR 600-9 - Acceptable or unacceptable
MINOR	Minor injury reported in Q39 or Q43
MOS	MILITARY OCCUPATIONAL SPECIALTY CATEGORIES:
PFAT	Percent of body fat
PTCODE	Passed or failed APRT per AR 350-15
PTSCOR	APRT Score
Q38	Injured or not injured
SFID	Combined unit and individual exercise frequency times intensity times duration - See ANNEX C.

SMOKE	Any smoking as reported in Q21
SPT	Rating of exercise support by post/unit - mean of Q17 & Q18
UFID	Unit exercise frequency times intensity times duration - Q1 x Q2 x Q3
WTAW	Weight awareness - mean of Q63, Q64, Q75, Q76
WTCD	Height/Weight status per AR 600-9 - Acceptable or unacceptable

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