Work Capacity Test
Administrator’s Guide

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Questions or comments regarding the contents of this publication should be directed to Chuck Whitlock, project leader, or Brian Sharkey, physiologist; USDA FS, Missoula Technology and Development Center; 5785 Hwy. 10 West; Missoula, MT 59808-9361; Phone: 406–329–3900; Fax: 406–329–3719; E-mail: cwhitlock@fs.fed.us or bsharkey@fs.fed.us

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An electronic copy of the publication is available at: http://www.nwcg.gov/pms/pubs/pubs.htm
Work capacity tests are used to ensure that persons assigned to fire activities are physically capable of performing the duties of wildland firefighting. Before training for the test or the duties of the job, an individual must first complete a health screening questionnaire (or medical history) designated by the hiring agency. The agency may require a medical examination as part of the qualification process. Once individuals have received medical clearance, they may begin training for the work capacity test.

Those who have been regularly active may begin training (appendix E) as soon as they receive medical clearance.

Agencies participating in the wildland firefighter medical standards program are required to ensure that a candidate has received medical clearance before the candidate takes the work capacity test. Clearance requires completing the periodic medical exam (every 5 years for firefighters under 45 years old, or every 3 years for firefighters over 45) or review of the annual medical history and clearance form during the years between exams.

**WARNING:**

Individuals who have not been involved in regular physical activity are at an elevated risk for cardiovascular complications during exertion. They should not begin training for a work capacity test until they have participated in a gradual transition from inactivity to regular physical activity. Previously sedentary individuals should engage in 4 or more weeks of moderate activity (walking 30 to 60 minutes, 3 to 5 days per week) before they begin more vigorous training for a test or the job.
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This document supersedes the previously published
*Work Capacity Tests for Wildland Firefighters: Test Administrator’s Guide*
(9851–2810–MTDC)
Introduction

Studies of wildland firefighting clearly show the link between fitness and work performance. Fit workers can do more work with less fatigue and still have a reserve to meet unforeseen emergencies. They perform better in a hot environment and recover faster from adverse firefighting conditions, such as long shifts and reduced rest. In short, fitness is the most important factor in work capacity. Beginning in 1975, Federal agencies used a 5-minute step test and an alternative 1.5-mile run to screen candidates for wildland firefighting. In 1994, the Missoula Technology and Development Center (MTDC) began reviewing alternative ways of testing work capacity. The center conducted a comprehensive job task analysis and extensive laboratory and field studies of proposed tests. The result is a family of job-related field tests to determine a worker’s capacity to meet National Wildfire Coordinating Group (NWCG) 310–1 standards for wildland firefighters (Wildland Fire Qualification Subsystem Guide 310–1, NWCG, 1993). Tests were developed for workers with arduous, moderate, or light duties (table 1).

Table 1—Tests developed for arduous, moderate, or light duties.

<table>
<thead>
<tr>
<th>Work category</th>
<th>Test</th>
<th>Distance (miles)</th>
<th>Pack (pounds)</th>
<th>Time (minutes)</th>
</tr>
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<td>Arduous</td>
<td>Pack</td>
<td>3</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Moderate</td>
<td>Field</td>
<td>2</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Light</td>
<td>Walk</td>
<td>1</td>
<td>None</td>
<td>16</td>
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Arduous—“Duties involve field work requiring physical performance calling for above-average endurance and superior conditioning. These duties may include an occasional demand for extraordinarily strenuous activities in emergencies under adverse environmental conditions and over extended periods. Requirements include running, walking, climbing, jumping, twisting, bending, and lifting more than 50 pounds; the pace of work typically is set by the emergency condition.”—NWCG 310–1

The pack test is a job-related test of the capacity for arduous work. It consists of a 3-mile hike with a 45-pound pack over level terrain. A time of 45 minutes, the passing score for the test, approximates an aerobic fitness score of 45, the established standard for wildland firefighters. The energy cost of the test is similar to the energy cost demanded on the job. The test is correlated to measures of performance in field tasks such as working with handtools or carrying loads over rough terrain and with measures of aerobic and muscular fitness. The test’s length ensures that successful participants will have the capacity to perform prolonged arduous work under adverse conditions, with a reserve to meet emergencies.

Moderate—“Duties involve field work requiring complete control of all physical faculties and may include considerable walking over irregular ground, standing for long periods, lifting 25 to 50 pounds, climbing, bending, stooping, squatting, twisting, and reaching. Occasional demands may be required for moderately strenuous activities in emergencies over long periods. Individuals usually set their own work pace.”—NWCG 310–1

The field test is a job-related test of work capacity designed for those with moderately strenuous duties. It consists of a 2-mile hike with a 25-pound pack. A time of 30 minutes, the passing score, approximates an aerobic fitness score of 40.

Light—“Duties mainly involve office-type work with occasional field activity characterized by light physical exertion requiring basic good health. Activities may include climbing stairs, standing, operating a vehicle, and long hours of work, as well as some bending, stooping, or light lifting. Individuals almost always can govern the extent and pace of their physical activity.”—NWCG 310–1

The walk test is designed to determine the ability to carry out light duties. It consists of a 1-mile test with no load that approximates an aerobic fitness score of 35. A time of 16 minutes, the passing score for the test, ensures the ability to meet emergencies and evacuate to a safety zone. The instructions for the pack test also apply to the field and walk tests. Test requirements for a given position may change. Consult the latest version of NWCG 310–1 for the current requirements.
Preparing for the Work Capacity Tests

Determining the Employee’s Role

The employee will work with fire program managers to determine appropriate firefighting duties, considering factors such as training, medical condition, current level of activity, and willingness to achieve and maintain the level of fitness required. Targeted duties must be consistent with these considerations, and should be discussed annually before training for the test. The duties determine which of the three tests an employee must pass.

Work capacity tests are generally effective for 1 year after the date the employee passed the test (consult hiring agency for exceptions).

Informing Employees

All persons who require a work capacity test must be informed of the requirements in a timely manner that allows time for health screening, medical clearance, and training. Each current and prospective employee will complete a health screening questionnaire (or medical history). Individuals who require further medical evaluation will be provided necessary information and directions.

NOTE:

When emergency hiring practices require rapid callup of firefighters, health-risk screening and/or medical clearance must be completed before participants take the work capacity test. Under these circumstances, it is extremely important that participants receive warning concerning the risks of exertion after inactivity.

Retesting

Except in emergency hire situations, those who do not pass a test will be provided another opportunity to take the work capacity test. In general, employees will have to wait at least 48 hours before retaking the work capacity test. If an employee sustains an injury (verified by a licensed medical provider) during a test, the test will not count as an attempt. Once an injured employee has been released for full duty, the employee will be given time to prepare for the test (not to exceed 4 weeks). The number of retesting opportunities that will be allowed include:

+ Three opportunities for permanent employees required to pass a test for duties in the fire program.

+ One opportunity for temporary employees required to pass a test (a second chance may be provided at the discretion of fire management).

Permanent and temporary employees who do not perform fire assignments as a recurring part of their position, but who are authorized to perform fire assignments, may be retested as many times as management deems appropriate. Consult agency-specific guidelines for retesting policies.

Health Assessment

A health screening questionnaire (or a medical history) is used for self-screening of current and prospective employees involved in the fire program. The questionnaire and medical history contain confidential information and must be handled accordingly. The forms will be reviewed according to your agency’s policies and filed in your confidential medical folder in your agency’s human resources office. Follow agency policy for handling these forms.

Medical Examination—When a medical examination is called for, the agency will provide instructions to the examining physician. The agency will pay for the examination specified in the instructions. When the physician cannot clear an individual for testing and field work, the individual has the right to seek an outside medical opinion that might clarify a medical condition. The individual may also seek a waiver or an accommodation. The agency’s human resource office will determine the process that must be followed in such cases.

Individuals are responsible for their physical condition and their health. No amount of health screening or medical examination can ensure an individual’s safety during a work capacity test or during fire duties. Individuals who are uncertain about the condition of their health, have been inactive, or are seriously under or overweight, should consult their personal physician before beginning training, taking a work capacity test, or engaging in wildland firefighting duties.
Test Administration

For safe and accurate test administration, the test administrator must become familiar with these instructions that apply to the pack, field, and walk tests. Test results are valid for 1 year from the time a test is passed (consult agency policy for exceptions).

Safety

✚ A job hazard analysis and an emergency medical evacuation plan (appendix F) must be prepared for the course. These must be updated annually.

✚ Test administrators must be familiar with the job hazard analysis and the medical emergency plan.

✚ A trained and qualified emergency medical technician (or someone with equivalent qualifications) must be onsite during the test.

✚ Avoid conducting the test on roads and intersections where traffic is a concern. When testing on roads, use traffic-control devices and have persons wearing high-visibility vests control traffic as needed.

✚ Require candidates to read and sign the health screening questionnaire (or medical history) and an informed consent form (if applicable).

✚ Check to see that candidates are wearing footwear suitable for athletic activity or hiking—footwear with ankle support is recommended for the pack and field tests.

✚ Encourage participants to stretch and warm up adequately before the test.

✚ Do not test anyone who is tired or has been injured.

✚ Do not conduct tests during conditions that could compromise health or safety.

✚ Monitor participants to identify those having difficulties. Terminate their test, if necessary.

✚ At the midpoint, consider terminating candidates who are substantially behind the required pace (22.5 minutes for the pack test, 15 minutes for the field test, 8 minutes for the walk test) and those who are having difficulty maintaining the pace. Participants cannot jog or run to make up time.

✚ Encourage fluid intake and replacement. Provide fluids along the route when conditions contribute to heat stress.

✚ Encourage cooling down with an easy walk after the test. Monitor the recovery of participants, especially those who appear distressed.

✚ Recommend several weeks of training before participants retake the test.
Test Personnel

The number of individuals needed to administer the test will depend on the course layout, testing conditions, and the number of candidates being tested. In some cases, one person will fill multiple roles (administrator, timer, first aid specialist, course monitor). All persons involved in the test must understand the instructions and safety considerations, as well as their individual roles and responsibilities. A briefing for everyone involved is recommended before the test. The following personnel may be needed for safe and effective testing.

Test Administrator—The person in charge of administration at the test site must understand test procedures, the job hazard analysis, and the local emergency medical and evacuation plan.

First Aid Specialist—A qualified emergency medical technician (or someone with equivalent qualifications) will be onsite to observe candidates during and after the test, and to provide emergency medical assistance, if it is needed.

Course Monitor—The test administrator will determine the number of persons needed to monitor participants during the test.

Lap Counter—Someone who records the laps completed by each candidate (if needed).

Timer—Someone who keeps the time during the test.

Two persons may be able to administer the test for small groups of candidates. For larger groups, or when the course is difficult to monitor, three or more persons will be needed.

The Course

The course must be essentially level, have a firm, relatively smooth walking surface, and allow access for emergency vehicles. The course length (3 miles) must be accurate, so use a measuring wheel (figure 1) or a calibrated bicycle computer to measure doublecheck distances. Vehicle odometers are not accurate enough.

Loop or out-and-back courses are preferable. Try to avoid one-way courses. A moderate grade (2 to 3 percent) is acceptable if the course starts and finishes at the same place. Have lap counters available for courses that will require more than one lap. Use course monitors when needed.

Participants must be informed of the course layout (use a map or sketch of the course). Use distance markers (at 1 or 1.5 miles) to help candidates pace themselves. Use hazard and traffic markers as needed.

Equipment

• Packs—use a comfortable, well-fitted pack or a commercially available weight vest (figures 2, 3) with a gross weight of 45 pounds (25 pounds for field test). Load packs with gear, sandbags, water, or other materials to achieve the required weight. The test administrator must ensure the correct weight of the pack.

• Safety vests—as needed.

• Route markers—as needed.

• Distance markers—use mile and midpoint markers to help participants maintain the proper pace.

• Stop watches—have two watches to provide backup timing.

• Vehicles—bicycle, all-terrain vehicle, or other vehicle to monitor participants on the course.

• Radios—use radios and cell phones for monitoring and safety.

• Scale—an accurate, hanging-style spring scale is recommended for weighing packs.
Testing Tips

- Weigh packs before the test and check pack weights after the test.
- Use color-coded numbers on packs (red for pack test, yellow for field test, and green for walk test).
- Group or stagger starts. Some participants will benefit from the support provided by a group start, but discourage competition.

Environmental Conditions

Administer the test during moderate environmental conditions. Do not test new recruits when the temperature is high or when the temperature and humidity combine to create high heat-stress conditions. If necessary, test early in the day to avoid combinations of high temperature and high humidity. Avoid high winds that may affect performance.

Hydration—Encourage participants to drink fluids before the test and provide fluid replacement at the midpoint of the course. Participants may carry a water bottle.

Heat stress—Unacclimated or unfit workers will suffer at lower levels of heat or work. The graph in figure 4 is based on shaded air temperature, moderate radiant heat, light breeze, standard firefighter clothing, and moderate work rate.

Forms

- A health screening questionnaire (appendix B, or an agency-mandated medical history form) and an informed consent form (appendix C).
- A data collection form (appendix D).

Figure 4—Heat stress increases as temperature and humidity rise.
**Altitude**—Use this chart (table 2) to adjust for tests administered above 4,000 feet:

Table 2—Altitude corrections for work capacity tests. Add the correction to the required test time.

<table>
<thead>
<tr>
<th>Altitude (feet)</th>
<th>Pack test (seconds)</th>
<th>Field test (seconds)</th>
<th>Walk test (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000 to 5,000</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>5,000 to 6,000</td>
<td>45</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>6,000 to 7,000</td>
<td>60</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>7,000 to 8,000</td>
<td>75</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>8,000 to 9,000</td>
<td>90</td>
<td>60</td>
<td>30</td>
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</tbody>
</table>

For the pack test at 6,000 to 7,000 feet, add 60 seconds to the test standard (45 minutes) for an altitude-adjusted standard of 46 minutes.

The altitude adjustment assumes that the participant has had an opportunity to acclimate to the altitude of the test site. If a participant doesn’t meet the required standard even with the adjustment, encourage training at the altitude of the test site before retaking the test.

**Providing Instructions for Candidates**

Distribute work capacity testing information and the health screening questionnaire (or medical history) well before the test date. Have candidates initial a form indicating that they have read and completed the health screening questionnaire. Some agencies may ask candidates to sign an informed consent form (appendix C).

**Clothing**—Recommend to the participants that they choose footwear that provides ankle support, such as hiking boots or ankle-high sport shoes. Wearing T-shirts and shorts is acceptable.

**Safety**—Brief participants on the test, the course, and safety considerations. Tell them they are free to stop at any time for any reason, and that they should seek help if they experience physical problems.

**Warmup**—Encourage candidates to stretch (calves, lower back, hamstrings) and to warm up adequately before the test.

**Pace**—Show participants how they should hike the course at a fast pace, without jogging. The heel of one foot must make contact before the opposite toe leaves the ground. Jogging or running will result in disqualification. Discourage competition.

**Accommodations**—Inform participants that a walking staff may be used.

**Hydration**—Encourage participants to drink 1 to 2 cups of water before the test. Participants may carry a water bottle, but the extra weight is not counted as part of the pack weight.

**Script**—Read the instruction script (appendix A) to ensure that participants are informed about the test, the course, safety, and other site-specific information.

**Essentials of Good Testing**

✚ An accurately measured flat course with a good surface.

✚ Packs of the proper weight. Verify pack weight with a calibrated scale. Participants are responsible for ensuring their packs are properly adjusted before the test begins.

✚ Accurate timing that is verified by backup timing. Give split times along the course (at 1 mile and/or the midpoint, 1.5 miles for the pack test).

✚ Participants should be rested and well informed about the course and the need to maintain a pace that will allow them to complete the test successfully.

✚ Favorable environmental conditions. Avoid adverse conditions.

✚ A completed health screening questionnaire (or medical history) and medical exam (if indicated) and a signed informed consent form (if applicable). When completed, these forms are considered confidential records that must be safeguarded from unauthorized access or release. Follow agency policy for handling these forms.
Appendix A—Test Script

To be read to participants before they take the pack, field, or walk tests:

Welcome. You are about to take a job-related work capacity test to determine your fitness for duty. The test you are taking has been determined by the requirements of the job. You will be taking the [ ] test, intended for [ ] duties.

(Read the following description for the appropriate test.)

The pack test is intended for those involved in arduous duties, defined as requiring an aerobic fitness score of 45, lifting more than 50 pounds, and an occasional demand for extraordinarily strenuous activities. The 3-mile test with a 45-pound pack in 45 minutes is strenuous, but no more so than the duties of wildland firefighting.

The field test is intended for those with moderately strenuous duties, defined as requiring an aerobic fitness score of 40, lifting 25 to 50 pounds, and an occasional demand for moderately strenuous activity. The 2-mile test with a 25-pound pack in 30 minutes is fairly strenuous, but no more so than field duties.

The walk test is intended for those whose duties involve light work with occasional field activity, defined as requiring an aerobic fitness score of 35. The 1-mile walk in 16 minutes is moderately strenuous, but no more so than the duties assigned.

If you have doubts about your health, you should talk to your physician. If you are not in good physical condition, you should undertake a training program before you take the test.

You are free to wear clothing that suits the activity and environmental conditions. Your footwear should provide good support for your feet and ankles. Ankle-high hiking boots or athletic shoes are recommended for the pack and field tests.

If you are not in good physical condition, you should undertake a training program before you take the test.

You should have completed the health screening questionnaire (or medical history) before taking the test. Some agencies may require that you sign an informed consent form. It is your responsibility to discuss any health concerns with your physician before taking the test. The test and the work of wildland firefighting require individuals who are healthy and physically fit.

The course is [ ]. (Describe local course and any safety issues, such as traffic and heat. Encourage candidates who are not acclimatized to the heat to delay testing until conditions are more favorable, or until they have become acclimated by exercising for at least 1 week in the heat.)

You should stretch and warm up before the test, and cool down after the test. (If heat stress conditions exist, explain that water will be available at the [ ] point on the course.)

When you finish the course, remove your pack and keep moving until you cool down. Pack weight will be checked after the test. Your test score is the time required to complete the course. At this elevation, [ ] feet, you will receive an altitude correction of [ ] (minutes:seconds), so you must complete the course within [ ] (minutes:seconds) to receive a passing score.

Before we begin, do you have any questions about the test, the course, or related matters? (Answer questions.)

Complete your warmup. The test will begin in 5 minutes.
Appendix B—Health Screening

Complete sections A and B of the following health screening questionnaire (HSQ). Mark all true statements and provide the information requested.

To accurately assess your health risk:

✚ In section A, list the prescription medications you currently take.

✚ In section B, in order to determine if you are more than 20 pounds overweight, consult the body mass index (BMI) chart following the HSQ. If your height and weight yield a BMI score above 25, you are more than 20 pounds overweight.

If you check one or more boxes in section A, or two or more in section B, agency policy may require you to have a medical examination before you participate in training or take the work capacity test.
# HEALTH SCREENING QUESTIONNAIRE (HSQ)

*Assess your health needs by marking all true statements.*

## SECTION A—HISTORY

### YOU HAVE HAD:
- [ ] A heart attack
- [ ] Heart surgery
- [ ] Coronary angioplasty (PTCA)
- [ ] Pacemaker/implantable cardiac defibrillator/rhythm disturbance
- [ ] Heart valve disease
- [ ] Heart failure
- [ ] Heart transplantation
- [ ] Congenital heart disease
- [ ] Personal experience or a doctor’s advice of any other physical reason that would prohibit you from carrying out the duties of a wildland firefighter

### SYMPTOMS:
- [ ] You experience chest discomfort with exertion
- [ ] You experience unreasonable breathlessness
- [ ] You experience dizziness, fainting, blackouts
- [ ] You have musculoskeletal problems, spine, knees, etc.
- [ ] You experience breathlessness

### OTHER HEALTH ISSUES:
- [ ] You are pregnant
- [ ] You take prescription or over-the-counter medication(s), list: ________________________________
- [ ] You experience dizziness, fainting, blackouts
- [ ] You have musculoskeletal problems, spine, knees, etc.
- [ ] You take heart medications

## SECTION B—CARDIOVASCULAR RISK FACTORS

- [ ] You are a man 45 years of age or older
- [ ] You are a woman over 55 years old, or you have had a hysterectomy, or you take hormone replacement therapy
- [ ] Your blood pressure is greater than 140/90, or you are physically inactive (i.e., you get less than 30 minutes of physical activity at least 3 days per week)
- [ ] You are more than 20 pounds overweight
- [ ] You are physically inactive (i.e., you get less than 30 minutes of physical activity at least 3 days per week)
- [ ] Your blood cholesterol level is greater than 240 g/dl, or you don’t know your cholesterol level, or you take cholesterol medication
- [ ] You have a close blood relative who had a heart attack before age 55 (father or brother), or age 65 (mother or sister)
- [ ] You are a diabetic or take medicine to control your blood sugar

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**PRIVACY STATEMENT**—The information obtained in the completion of this form is used to help determine whether an individual being considered for wildland firefighting can carry out those duties in a manner that will not place the candidate unduly at risk due to inadequate physical fitness and health. Its collection and use are consistent with the provisions of 5 USC 552a (Privacy Act of 1974).

**PAPERWORK REDUCTION ACT STATEMENT**—Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control for this information collection is 0596-0164. Public Report Burden hour is estimated to average 2.5 minutes per response including the time for reviewing instruction (if any) hearing a description of the project. Send comments regarding burden estimate of any other aspect of this survey, including suggestions for reducing burden to: Information Collection Officer, USDA Forest Service; 1621 North Kent St., Room 800 RPE; Arlington, VA 22209, and to the Office of Management and Budget, Office of Regulatory Affairs, Desk Officer for Forest Service, Washington, DC 20503.
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<th>BODY MASS INDEX</th>
<th>UNDERWEIGHT (under 19)</th>
<th>DESIRABLE (19 to 25)</th>
<th>INCREASED HEALTH RISK (26 to 29)</th>
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<td>80</td>
<td>81</td>
</tr>
</tbody>
</table>

**WEIGHT**

- Underweight (under 19)
- Desirable (19 to 25)
- Increased health risk (26 to 29)
- Obese (30 to 40)
- Extremely obese (over 40)
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WORK CAPACITY TEST RECORD

This document will document the administration of the WCT to all employees and job applicants. This documentation must be retained until the next WCT is administered. Units may also be requested to provide data from these records to assist in the evaluation of the WCT process.

The information on the Work Capacity Test Record is considered confidential and must be filed in the employee's medical file. The identity of the individual must be protected.

Disclosure of this information is authorized by Title 5 U.S. Code Section 3501, which provides for a determination of an individual's fitness-for-duty

The information on this form may be disclosed without your consent as permitted by the Privacy Act (5 USC 552a(b)) to meet employment and medical requirements.

To be completed by employee:

Name (Last, First): __________________________ Where employed: __________

Height:__________________ Weight: __________

Date test taken: __________ Test administered by: __________________________

JCS position for which test is required (highest needed): __________________________

Performance level needed (circle one): Arduous Moderate Light

Type of test taken (circle one): Pack Test Field Test Walk Test

Work Capacity Test Descriptions:

<table>
<thead>
<tr>
<th>Pack Test</th>
<th>Field Test</th>
<th>Walk Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pack weight</td>
<td>45 lbs</td>
<td>25 lbs</td>
</tr>
<tr>
<td>Distance</td>
<td>3 miles</td>
<td>2 miles</td>
</tr>
<tr>
<td>Time</td>
<td>45 minutes</td>
<td>30 minutes</td>
</tr>
</tbody>
</table>

To be completed by test administrator:

Test result time: __________________________

Employee passed test (circle one): yes / no

I certify that the work capacity test was administered according to Bureau guidelines

[Signature of Test Administrator] [Title] [Date]

Release Date: January 2003

Appendix J-1
The purpose is to identify individuals who may be at risk in taking the Work Capacity Test (WCT) and recommend an exercise program and a medical examination prior to taking the WCT.

Employees are required to answer the following questions. The questions were designed, in consultation with occupational health physicians, to identify individuals who may be at risk when taking a WCT. The information on this Health Screen is considered confidential and must be filed in the employee medical file.

Solicitation of this information is authorized by Title 5 CFR Part 339 - Medical Qualification Determinations, which provides for a determination of an individual's fitness-for-duty.

The information on this form may be disclosed without your consent as permitted by the Privacy Act (5 USC 552a(b)) to meet employment and medical requirements.

Circle the appropriate Yes or No response to the following questions.

Yes   No
1) During the past 12 months have you at any time (during physical activity or while resting) experienced pain, discomfort or pressure in your chest?

Y     N
2) During the past 12 months have you experienced difficulty breathing or shortness of breath?

Y     N
3) Are you currently under a doctor's care for a heart or lung related condition?

Y     N
4) Have you ever been diagnosed with and are you currently being treated for, high blood pressure?

Y     N
5) Do you have a blood pressure with systolic (top#) greater than 140 or diastolic (bottom#) greater than 90?

Y     N
6) Do you have a resting pulse greater than 100 beats per minute?

Y     N
7) Do you have a bone or joint condition that could be made worse by a change in your physical activity?

Y     N
8) Do you know of any other medical or physical reason you should not take the Work Capacity Test?

Y     N
9) Do you have asthma, diabetes, epilepsy or elevated cholesterol?

A "Yes" answer will mean that a medical examination is required of the employee taking the WCT (Form NF-74, Certificate of Medical Examination, and 1400-108, Physical Requirements for Firefighter and Smokejumper Positions). A doctor will then make a determination as to whether or not the employee should participate in a WCT. If the situation is being monitored under the supervision of a doctor, the employee must provide a doctor's statement to the Test Administrator, indicating that the employee can safely undergo the WCT.

I understand that if I need to be evaluated, it will be based on the fitness requirements of the position(s) for which I am qualified.

Participant ___________________ Administrator ___________________ Date ___________________
# FEDERAL INTERAGENCY

**ANNUAL MEDICAL HISTORY and CLEARANCE FORM**

*Wildland Firefighters (Arduous Duty)*

***CAUTION***

**This document contains confidential medical information and is subject to the provisions of the Privacy Act (5 USC 552a)**

This medical history form is to be completed once a year unless the firefighter receives a baseline or periodic examination. This form must be completed prior to participating in the arduous duty work capacity test ("Back Pack Test").

**Fire Management Officer (FMO):** Fill in the date on the top right corner when this form is given to the firefighter. In the computer generated label or typewriter, enter the Personnel Officer's name, street address, city, state, zip code, telephone number, and email address. On a computer generated label or typewriter, enter your name, street address, city, state, zip code, telephone number, and email address. And if you have an appointment for the firefighter through the Central Medical Consultant's website.

**Firefighter:** Complete all of pages 1 and 2 of this form, attend the medical screening appointment, and submit the “Clearance Sheet” (page 3 to your FMO). If the FMO does not receive the “Arduous Duty Wildland Firefighter Clearance Form” you will not be allowed to take the Back Pack Test. All "C/Q" answers in the medical history sections must be explained and may require further information from your personal physician.

**Local Health Care Professional:** Review the requirements for an arduous duty wildland firefighter (page 2), review the Firefighter's self-displayed responses (page 3 and 4), and complete the “Medical Screening” (page 5) and the “Arduous Duty Wildland Firefighter Clearance Form” (page 6). Provide the completed “Arduous Duty Wildland Firefighter Clearance Form” to the firefighter (page 7), unless directed otherwise. Return pages 2, 3, 5, and 6 of this form by overnight commerce or Federal Express to the address provided by the Central Medical Consultant. All significant abnormal findings are to be discussed with the firefighter.

<table>
<thead>
<tr>
<th>Personnel Office</th>
<th>Fire Management Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name</td>
</tr>
<tr>
<td>Street Address</td>
<td>Street Address</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>City, State, Zip</td>
</tr>
<tr>
<td>Telephone Number</td>
<td>Telephone Number</td>
</tr>
<tr>
<td>Email</td>
<td>Email</td>
</tr>
</tbody>
</table>

**Central Medical Consultant**

Comprehensive Health Services, Inc.
9229 Beers Mill Road, Suite 100
Vienna, Virginia 22181
800-7-36-4095

---

**PHYSICAL INQUIRIES**

The information required on this form is to determine whether or not an individual is able to perform the activities of a wildland firefighter and, if not, to determine why. The person to whom the information will be given is the participant or participant's representative. The information will be used in the evaluation of participant's status and is intended solely for that purpose. It is kept confidential and under secure control in the Federal Privacy Act (1980).
## Essential Functions and Work Conditions of an Arduous Duty Wildland Firefighter

<table>
<thead>
<tr>
<th>Time/Work Volume</th>
<th>Physical Requirements</th>
<th>Environment</th>
<th>Physical Exposures</th>
</tr>
</thead>
<tbody>
<tr>
<td>• long hours (minimum of 12-hour shifts)</td>
<td>• use shovel, Pulaski, and other hand tools to construct firelines</td>
<td>• very steep terrain</td>
<td>• bright sunshine/UV</td>
</tr>
<tr>
<td>• irregular hours</td>
<td>• lift and carry more than 50 lbs</td>
<td>• rocky, loose, or muddy ground surfaces</td>
<td>• burning materials</td>
</tr>
<tr>
<td>• shift work</td>
<td>• hitting or loading boxes and equipment</td>
<td>• thick vegetation</td>
<td>• extreme heat</td>
</tr>
<tr>
<td>• time zone changes</td>
<td>• drive or ride for many hours</td>
<td>• down/standing trees</td>
<td>• airborne particulates</td>
</tr>
<tr>
<td>• multiple and consecutive assignments</td>
<td>• fly in helicopters and fixed-wing airplanes</td>
<td>• wet leaves/trees</td>
<td>• flames, gases</td>
</tr>
<tr>
<td>• pace of work typically set by emergency situations</td>
<td>• work independently, and on small and large teams</td>
<td>• varied climates (cold/dry/wet/dry/humid/snow/rain)</td>
<td>• falling rocks and trees</td>
</tr>
<tr>
<td>• ability to meet &quot;arduous&quot; level performance testing (the &quot;Pack Test&quot;), which includes carrying a 45 pound pack 4 miles in 45 minutes, approximating an oxygen consumption (VO2 max) of 15 ml/kg-attitude</td>
<td>• use PPE (includes hard hat, boots, eyewear, and other equipment)</td>
<td>• varied light conditions, including dim light or darkness</td>
<td>• allergens</td>
</tr>
<tr>
<td>• arduous exertion</td>
<td>• extensive walking/climbing</td>
<td>• high altitudes</td>
<td>• insect/sticks</td>
</tr>
<tr>
<td>• kneeling</td>
<td>• stooping</td>
<td>• heights</td>
<td>• poisonous plants</td>
</tr>
<tr>
<td>• pulling boxes</td>
<td>• running</td>
<td>• holes and drop offs</td>
<td>• trees and other large equipment</td>
</tr>
<tr>
<td>• jumping</td>
<td>• pulling hoses</td>
<td>• very rough roads</td>
<td>• close quarters, large numbers of other workers</td>
</tr>
<tr>
<td>• twisting</td>
<td>• running</td>
<td>• open bodies of water</td>
<td>• limited/disrupted sleep</td>
</tr>
<tr>
<td>• bending</td>
<td>• pulling hoses</td>
<td>• isolated/remote sites</td>
<td>• hunger/irregular meals</td>
</tr>
<tr>
<td>• rapid pull-out to safety zones</td>
<td>• running</td>
<td>• no ready access to medical help</td>
<td>• dehydration</td>
</tr>
</tbody>
</table>

*And more*

• 14-day assignments
**Federal Interagency Annual Medical History and Clearance Form**

**Wildland Firefighters (Arousal Duty)**

(Date Only)

**Firefighter's Name:**

**Name of Employing Agency:**

**Position/Job Title:**

**Home Address:**

**City, State, Zip:**

**SSN:**

**Date of Birth:**

**Gender:**

**Date of Last Physical Exam:**

**Work Phone:**

**Home Phone:**

Incomplete forms or missing information may result in a delay clearing you for firefighter duties and prevent you from taking the Physical Fitness Test. Submitting information that is misleading or untruthful may result in termination or failure to be cleared as a firefighter. This history form and review do not substitute for routine health care or periodic health examination conducted by your physician. It is completed for occupational purposes only. I certify that all of the information I have provided on this form is complete and accurate to the best of my knowledge. I understand that all information within this form is the Firefighter's Medical Standards Program Manager or their representatives for the purpose of medical clearance as an arousal duty wildland firefighter.

**Firefighter's Signature:**

**Current Date:**

---

### MEDICAL HISTORY

### Smoking History

- [ ] Current Smoker
- [ ] Former Smoker

### Alcohol/Drug Use

- [ ] None

### Hypertension

- [ ] None

### Diabetes

- [ ] None

### Obesity

- [ ] None

### Cardiac Problems

- [ ] None

### Family History

- [ ] None

### Declarative Disease

- [ ] None

### Medications

- [ ] None

---

### Describe Your Physical Activity or Exercise Program

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Intensity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Lifestyle</td>
<td>Low</td>
<td>3 times/week</td>
</tr>
<tr>
<td>Moderate Exercise</td>
<td>Moderate</td>
<td>2 times/week</td>
</tr>
<tr>
<td>Unstructured Exercise</td>
<td>Low</td>
<td>1 time/week</td>
</tr>
</tbody>
</table>

**Date of Test:**

---

Page 1 of 6
## Medical History (Continued)

Do you have, or have you ever had:

1. Surgery, or advised to have surgery?  

2. Treatment by doctors, healers, or other practitioners for any problem other than minor illness or injury?

3. Treatment for a mental or emotional condition?

4. Allergies? (If "Yes," describe in box on right)

5. Any type of eye disease?

6. Contact lenses? Hard or Soft lens type?

7. Any type of ear disease?

8. Problems with dizziness or balance?

9. Any type of skin disease (other than acne)?

10. Varicose veins, blood clots, or swollen and painful veins?

11. Anemia?

12. High blood pressure?

13. A stroke?

14. Poor circulation in hands or feet?

15. Heart disease, heart murmur, chest pain (angina), palpitations (irregular heart), or heart attack?

16. Problem with passing gas, flatulence, or having constipation?

17. Any type of lung disease?

18. Asthma, laryngitis, or emphysema?

19. A need to use inhalers?

20. Tuberculosis or a positive TB skin test?

21. Diabetes?

22. A need for insulin shots?

23. Unexplained weight loss or gain?

24. Joint pain or arthritis?

25. Loss of use of an arm, leg, finger, or toe?

26. Back pain, back trouble, or injury?

27. Tremors, shakiness, or vertigo?

28. Numbness or tingling in hands or feet?

29. Frequent headaches or migraines?

30. Any type of stomach or intestinal disease?

31. Hemorrhoids?

32. Malignant?

33. Any type of cancer disease?

34. Blood in the stool or vomiting blood?

35. Any type of kidney or bladder disease?

36. Kidney stones?

37. Difficulty or pain with urination?

---

Every item checked "Yes" must be explained in the spaces below, specifying the number of the item. Copies of pertinent medical records also may be necessary.
# Medical Screening

<table>
<thead>
<tr>
<th>Screening Item</th>
<th>Result</th>
<th>Qualifying Standard</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>Height (Inches)</strong></td>
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<tr>
<td><strong>Weight (Pounds)</strong></td>
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<tr>
<td><strong>Blood Pressure (mm Hg)</strong></td>
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<tr>
<td><strong>Pulse (beats per minute)</strong></td>
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</table>

**5. Hearing (without hearing aids)**
- Whispered word at 1 foot from car (opposite ear should be covered)
  - Right Whisper
  - Left Whisper
- Spoken word at 1 foot from car (opposite ear should be covered)
  - Right Spoken
  - Left Spoken

**Threshold shift not greater than 40 dB in the speech/telephony band**

**6. Vision**
- Uncorrected for:
  - Right -20
  - Left -20
- Corrected for:
  - Right -20
  - Left -20

**Can read:**
- Red
- Green
- Yellow

**Findings**

- **A. No Significant Findings**: The firefighter meets the qualifying medical standards listed above. The firefighter is capable of performing the functional requirements of any public duty without firefighter assistance [page 2]. Order the firefighter to fully participate in functional testing, including a minimum of carrying a 45-pound pack a distance of 3 miles in a period of 35 minutes over level ground (the "Pack Test").

- **B. Significant Finding (Uncorrected Far Vision ONLY)**: The firefighter does not meet the uncorrected far vision standard listed above. An acceptable accommodation is to require the firefighter to participate in functional testing during for 35 minutes with assistant fire fighter assistance. Order the firefighter to fully participate in functional testing, including a minimum of carrying a 45-pound pack a distance of 3 miles in a period of 45 minutes over level ground (the "Pack Test").

- **C. Significant Medical Findings**: The firefighter does not meet one or more of the qualifying medical standards listed above or is not considered capable of performing the functional requirements of any public duty without firefighter assistance [page 2]. Order the firefighter to fully participate in functional testing, including a minimum of carrying a 45-pound pack a distance of 3 miles in a period of 45 minutes over level ground (the "Pack Test").

- **D. Final Determination Cannot be Made Based on Available Medical Information**.

**Signature**

**Local Health Care Professional**

**Date**

**License/identification, Number**

**License/Configuration State**

**Telephone Number**

**Firefighter Name**

Page 8 of 8
ARDOUS DUTY WILDLAND FIREFIGHTER CLEARANCE FORM

Local Health Care Professional: Complete the information required below, then detach and provide this page to the firefighter at the end of the medical screening.

Firefighter: You must return this page to the Fire Management Office prior to taking the Pack Test.

Firefighter Name.

Agency, Unit, and Location.

☐ Employee CLEARED for Arduous Duty Wildland Firefighting and the Pack Test (Findings A or B were marked on page 5)

☐ Second set of corrective lenses (glasses) to meet uncorrected vision standard is required. (Finding B was marked from page 5)

☐ Employee NOT CLEARED for Arduous Duty Wildland Firefighting and the Pack Test. Further evaluation is necessary. Findings discussed with firefighter. (Findings C or D were marked on page 5)

Print Only Name - Local Health Care Professional

Signature: Local Health Care Professional

Date

Print Only Address

License/Certification Number

License/Certification State

Phone Only City, State, Zip

Telephone Number

Page 2 of 5
Appendix C—Informed Consent

The agency having jurisdiction may require that candidates sign an informed consent form. Here is a sample form suitable for photocopying.

INFORMED CONSENT FOR WORK CAPACITY TESTS

+ I have read the information on this form and understand the purpose, instructions, and risks of the job-related work capacity test.

+ I have read and understand, and have truthfully answered the health screening questionnaire.

+ I have no personal or medical knowledge of any physical reason that would prohibit me from safely carrying out the assigned duties of the position.

+ I believe I have the physical ability to complete the test and carry out the assigned duties of a wildland firefighter.

Test to be taken: ☐ Pack  ☐ Field  ☐ Walk

Date______________________

Print name_______________________________________

Signature________________________________________

Witness_________________________________________

Location______________________________

✚ I have read the information on this form and understand the purpose, instructions, and risks of the job-related work capacity test.

 Malk test—Intended for those involved in arduous duties (defined in NWCG 310–1 as requiring an aerobic fitness level of 45, lifting more than 50 pounds, and occasional demand for extraordinarily strenuous activities). The 3-mile test with a 45-pound pack in 45 minutes is strenuous, but no more so than the duties of wildland firefighting.

 Field test—Intended for those with moderately strenuous duties (requires a maximum VO₂ of 40, lifting 25 to 50 pounds, and occasional demand for moderately strenuous activity). The 2-mile test with a 25-pound pack in 30 minutes is fairly strenuous, but no more so than field duties.

 Walk test—Intended for those whose duties involve light work with occasional field activity (required maximum VO₂ of 35). The 1-mile walk in 16 minutes is moderately strenuous, but no more so than the duties assigned.

Risks—There is a slight risk of injury (blister, sprained ankle, sore leg), especially for those who have not practiced and trained for the test.

For active individuals, the risk of a serious cardiovascular event is small. However, for inactive (sedentary) individuals, the risk is 56 times greater.

Be certain to warm up and stretch before taking the test and to cool down afterward. The risk of more serious consequences (such as respiratory or heart problems) is diminished if you complete the health screening questionnaire truthfully.

WARNING:

If you have not been involved in regular physical activity, you are at an elevated risk for cardiovascular complications during exertion. You should not begin training for a work capacity test until you have made a gradual transition from inactivity to regular physical activity. If you have been sedentary, you should engage in 4 or more weeks of moderate activity (walking 30 to 60 minutes, 3 to 5 days per week) before you begin more vigorous training for a test or the job.
## WORK CAPACITY TEST DATA SHEET

<table>
<thead>
<tr>
<th>Initials*</th>
<th>Participant’s name</th>
<th>Test</th>
<th>Time (min:sec)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P=Pack F=Field W=Walk</td>
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<td></td>
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</tbody>
</table>

*Candidate’s initials indicate completion of the health screening questionnaire.

**REMARKS:** Document test site conditions such as temperature, relative humidity, windspeed, elevation, and so forth.
Appendix E—Training for the Work Capacity Test

After completing the health screening questionnaire (or medical history) and medical examination (if indicated), you are ready to begin training for the work capacity test.

**WARNING:**

If you have not been involved in regular physical activity, you are at an elevated risk for cardiovascular complications during exertion. You should not begin training for a work capacity test until you have made a gradual transition from inactivity to regular physical activity. If you have been sedentary, you should engage in 4 or more weeks of moderate activity (walking 30 to 60 minutes, 3 to 5 days per week) before you begin more vigorous training for a test or the job.

You are responsible for your physical condition and your health. No amount of health screening or medical examination can ensure your safety during a work capacity test or during fire duties. If you are uncertain about the condition of your health, have been inactive, or are seriously under or overweight, you should consult your personal physician before beginning training, taking a work capacity test, or engaging in wildland firefighting.

Begin training at least 6 to 8 weeks before you report for duty. Train by hiking or power walking, using the footwear you will use in the test. Increase the distance until you can hike 3 miles without a pack. When you can cover 3 miles in less than 45 minutes, wear a pack with about 25 pounds on your training hikes. Increase the pack’s weight until you can hike 3 miles in 45 minutes with a 45-pound pack. Also:

✚ Hike hills (with a pack) to build leg strength and endurance.
✚ Jog the flat course (without a pack) to build aerobic fitness.
✚ Hike or jog longer distances for stamina.
✚ Cross-train (mountain biking, weight lifting).

Finally, do job-specific tasks and training to prepare for the coming season. Wear work boots on extended hikes. Work with handtools to prepare your trunk and upper body muscles for prolonged work. This job-specific work hardening ensures that the hands, feet, muscles, tendons, and ligaments you use on the job are tough and ready to go. For more information, refer to *Fitness and Work Capacity: Second Edition*, (Sharkey 1997 NFES 1596).
Appendix F—Sample Job Hazard Analysis for Work

Capacity Tests

FIRE FIGHTER WORK CAPACITY TESTING

1. WORK PROJECT/ACTIVITY
   Work Capacity Tests (WCT)

2. LOCATION
   National Forest

3. UNIT
   Ranger District

4. NAME OF ANALYST
   AFM60

5. JOB TITLE
   01-23-2003

6. DATE PREPARED

9. ASSESSMENT ACTIONS
   Engineering Controls
   Substitution
   Administrative Controls

   PPE

   1. Follow test guidelines and procedures as found in the WCT Test Administrator's Guide 2003 edition and the January 2003 Implementation Guide. A certified WCT Administrator shall conduct each WCT.

   2. Provide prospective test participants information about the specific test required and how to prepare for it at least 4 weeks ahead of time.

   3. Prospective test participants shall complete the Health Screening Questionnaire to evaluate their suitability for training and taking the WCT. A physical exam is required based on the March 26, 2001 exam and conditioning will not occur until after a review by a medical authority. Medical evaluation before entering training is a required pretest medical review of the HSQ. Participants shall only take that test necessary for their redistributed position.

   4. Notify test participants about the test just prior to testing. Answer any questions concerning the requirements and expectations of the test in the test administration guide following the test. Test participants will be given 10 minutes to complete the test. Ensure they begin to experience moderate discomfort if illness during the test.

   5. Provide pretesting test participants with training for the WCT (8 hours per week) for the training where policy permits.

   6. Schedule tests when environmental conditions are most favorable.

   7. Test administrators shall monitor test participants for signs of stress and fatigue during and after execution of the test.

   8. Terminate testing for participants struggling to carry the pack or maintain an acceptable pace that would ensure a safe and successful completion of the test.

   9. A certified WCT is to be on site with appropriate equipment during testing.

   10. Ensure that all tests are planned in advance and ensure test administrators know how to act during. Use guidelines on last page of JHA.

   11. Ensure test participants do not exceed a walking pace (10-12 mph).

   12. Ensure test participants are properly hydrated.

   13. WCT participants must be visible 100% of the time while on the course.
<table>
<thead>
<tr>
<th>7. TASKS/PROCEDURES</th>
<th>8. HAZARDS</th>
<th>9. ABATEMENT ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRAINS AND SPRAINS</td>
<td>1. Provide information to test participants describing how to train for tests at least 4 weeks prior to the test.</td>
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<tr>
<td></td>
<td>2. Provide time intervals at posted distances to help test participants adjust walking pace if needed.</td>
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<td></td>
<td>3. Ensure test participants have comfortable footwear and socks that provide adequate support and protection to the feet and ankles.</td>
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<tr>
<td></td>
<td>4. Give test participants time to properly adjust packs for comfort and positioning prior to beginning the test.</td>
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<td></td>
<td>5. Allow adequate time for test participants to warm up and stretch prior to beginning the test.</td>
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<tr>
<td></td>
<td>6. Make sure test participants do not exceed a walking pace.</td>
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<tr>
<td></td>
<td>7. Have test participants cool down properly and stretch after the test.</td>
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</tr>
<tr>
<td>HEAT STRESS</td>
<td>1. Ensure test administrators understand the effects of exercising in heat extremes and can recognize the signs and symptoms of heat stress and know how to assist participants if necessary.</td>
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<tr>
<td></td>
<td>2. Schedule tests during favorable environmental conditions. Use the Heat Stress Chart found on page (29) of Fitness and Work Capacity and in figure 4 of the Work Capacity Test Administrator’s Guide (March 2003).</td>
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<td></td>
<td>3. Inform prospective test participants to dress for ambient conditions. Include this information in the pre-test briefing.</td>
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<td></td>
<td>4. Ensure prospective test participants are aware of the need for acclimatization.</td>
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<td></td>
<td>5. Test administrators shall include heat stress information in the pre-test briefing.</td>
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<td></td>
<td>6. Provide water at key points along the test course as necessary.</td>
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<td></td>
<td>7. Test administrators shall monitor all test participants for signs and symptoms of heat stress and be prepared to provide assistance.</td>
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<tr>
<td>COLD EXTREMES</td>
<td>1. Ensure test administrators can recognize the signs and symptoms of frostbite and hypothermia and understand how to prevent and treat cold injuries.</td>
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<tr>
<td>SLIPPERY COURSE CONDITIONS</td>
<td>2. Inform prospective test participants of the need to dress for ambient conditions. Include this information in the pre-test briefing.</td>
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<td></td>
<td>3. Locate an indoor facility suitable for testing if outside conditions warrant.</td>
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<td></td>
<td>4. Postpone testing if adverse conditions exist.</td>
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<tr>
<td></td>
<td>1. Locate suitable test route with a walking surface free of hazards.</td>
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<td></td>
<td>2. Postpone testing if hazards cannot be eliminated.</td>
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<tr>
<td></td>
<td>3. Test participants shall wear footwear with good support and traction.</td>
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<tr>
<td>U.S. Department of Agriculture Forest Service</td>
<td>1. WORK PROJECT/ACTIVITY</td>
<td>2. LOCATION</td>
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<td>---------------------------------------------</td>
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<tr>
<td>JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)</td>
<td>Work Capacity Tests (WCT)</td>
<td>National Forest</td>
</tr>
<tr>
<td>7. TASKS/PROCEDURES</td>
<td>8. HAZARDS</td>
<td>9. ABATEMENT ACTIONS</td>
</tr>
<tr>
<td>TRAFFIC</td>
<td>1. Select a course route with no motor vehicle conflicts.</td>
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<td>2. Arrange for traffic control to eliminate or abate recognized traffic hazards.</td>
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<td></td>
<td>3. Brief test participants about known traffic hazards and the abatement measures that have been implemented prior to beginning pack test.</td>
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<tr>
<td>PACK RUBBING OR CHAFFING</td>
<td>1. Ensure test participants have practiced with a pack configured to actual test pack and have become conditioned to carry this pack.</td>
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<tr>
<td></td>
<td>2. Recommend upper body clothing to protect from pack rub. Configure test packs with appropriate straps and padding to minimize rubbing and chaffing.</td>
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<td>3. Ensure test participants have an opportunity prior to testing to check pack fit and comfort and make needed adjustments.</td>
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<tr>
<td></td>
<td>4. Permit test participants to use personal packs that meet prescribed test pack configuration and weight requirements.</td>
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</table>
Appendix F—Sample Job Hazard Analysis for Work Capacity Tests

The JHA shall identify the location of the work project or activity; the name of any employees involved in the project; the names of those approving the JHA; the line officer approving the JHA; the line officer approving that employees have read and understand the contents; have received the required training; and are qualified to perform the work project or activity.

Block 1: Identify hazards associated with the work project or activity that have potential to cause injury or illness to personnel or damage to property or material. Include emergency evaluation procedures (EEP).

Block 2: Identify all hazards associated with each project or activity task and process listed in Block 1. For example:
   a. Research past accidents.
   b. Research the Health and Safety Code, FSH 0709.11, or other appropriate literature.
   c. Discuss the project's feasibility with participants.
   d. Observe the project's activity.
   e. A combination of the above.

Block 3: Identify appropriate controls to reduce or eliminate the hazards identified in Block 2. A minimum maintenance schedule in the case of the preferred equipment method:
   a. Engineering Controls (the most desirable method of abatement; for example, ergonomically designed tools, equipment, and furniture).
   b. Substitution. (For example, switching to high test fuel, non-toxic solvents).
   c. Administrative Controls. (For example, limiting exposure by reducing the work schedule, establishing appropriate procedures and practices).
   d. PPE (least desirable method of abatement). (For example, using hearing protection while working with or within loud machinery: chain saws, rock drills, and portable water pumps).
   e. A combination of the above.

Block 4: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA to justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

Emergency Evaluation Instructions (Reference FSH 0709.11)

Work supervisors and crew members are responsible for developing and discussing the EEP and alternatives in the event a person becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

a. Nature of the accident or injury (avoid using victim's name).
b. Type of assistance needed, if any (ground, rail, or water evacuation).
c. Location of accident or injury; best access route into the worksite (head name, number, identifiable ground or landmarks).
d. Radio frequencies.
   a. Contact person.
   b. Incident or number of ground vehicles or air..
   c. Weather conditions (temperature, humidity, visibility).
   d. Topography.
   e. Number of individuals to be transported.
   f. Weight of individuals for air evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evaluation Procedures Acknowledgment

We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA and accept responsibility for accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents.

SIGNATURE DATE SIGNATURE DATE
Appendix G—Commercially Available Weight Vest

Sources for weight vests to use during work capacity training tests include:

Weight vest:
Weightvest.com
1397 North 1700 East
Sugar City, ID 83448
Phone: 888–909–5473
Web site: www.weightvest.com

Pack test training vest:
The Bagmaker
4464 Chinden Blvd., Suite A
Boise, ID 83714
Phone: 208–377–0405 or 800–293–0405
Fax: 208–377–3078
About the Authors

Chuck Whitlock is the safety and health specialist at the Missoula Technology and Development Center. He has worked on the Cleveland, Plumas, Fremont, and Wallowa-Whitman National Forests. Before coming to MTDC in 1998, Chuck was a zone fire management officer on the Wallowa-Whitman National Forest.

Brian Sharkey, an exercise physiologist with MTDC, has done research and development work on fitness tests and programs, heat stress, hydration, nutrition, protective clothing, tools, fatigue, work/rest cycles, and employee health (wellness). His work has been honored with USDA Superior Service and Distinguished Service Awards, and a Forest Service Technology Transfer Award. He is a researcher, author of several books, and past president of the American College of Sports Medicine.

Library Card


Outlines procedures for administering the pack, field, and walk tests. These tests were developed as an alternative to the 5-minute step test that had been used to screen candidates for wildland firefighting. The pack test, for workers with arduous duties, requires carrying a 45-pound pack for 3 miles in 45 minutes. The field test, for workers with moderately strenuous duties, requires carrying a 25-pound pack for 2 miles in 30 minutes. The walk test, for workers with light duties, requires walking 1 mile in 16 minutes. Supersedes Work Capacity Tests for Firefighters: Test Administrator’s Guide (9851–2810–MTDC).

Keywords: fire fighters; fire fighting; firefighting; physical fitness; testing

Additional copies of this document (NFES 1109) may be ordered from:
National Interagency Fire Center (NIFC)
Attn: Great Basin Cache Supply Office
3833 South Development Ave.
Boise, ID 83705–5354
Fax: 208–387–5573

For further technical information, contact Chuck Whitlock or Brian Sharkey at the USDA Forest Service, Missoula Technology and Development Center.

Chuck Whitlock:
Phone: 406–329–3924
Fax: 406–329–3719
E-mail: cwhitlock@fs.fed.us

Brian Sharkey:
Phone: 406–329–3989
Fax: 406–329–3719
E-mail: bsharkey@fs.fed.us

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