

SUBJECT: Readiness Standards for the Commissioned Corps of the U.S. Public Health Service (PHS) and implementation plan for Physical Fitness (PF)/Body Mass Index (BMI)/Body Fat (BF) Programs.

1. **Purpose**

This Manual Circular supplements Subchapter CC26.1, INSTRUCTION 8, “PHS Readiness Standards,” by providing PHS officers with the standards for meeting the basic level of readiness for promotion year (PY) 2004. This Manual Circular also sets forth the policies and procedures governing the PHS Commissioned Corps PF/BMI/BF and Medical Waiver Programs.

2. **Authorities**

- a. Section 203 of the PHS Act (42 U.S.C. 204).
- b. Section 215 of the PHS Act (42 U.S.C. 216.)
- c. Executive Order 11140, dated January 30, 1964.
- d. Reorganization Plan No. 3 of 1966, dated June 25, 1966.
- e. Subchapter CC26.1, INSTRUCTION 8, “PHS Readiness Standards.”
- f. The Secretary of Health and Human Services (HHS or Department) has delegated the authorities that are necessary to administer the PHS Commissioned Corps to the Assistant Secretary for Health (ASH) (See 53 FR 3457 dated February 5, 1988).

3. **Background**

The Department has a mandate to protect the health of Americans and provide essential human services especially for those who are least able to help themselves. In carrying out this mission, the PHS Commissioned Corps is uniquely poised to provide swift and effective responses to urgent health needs. On July 3, 2003, the Secretary publicly recognized the Corps’ unique status and directed that all active-duty officers meet readiness standards by 2005. In furtherance of this goal, the Corps promulgated Subchapter CC26.1, INSTRUCTION 8, which requires that all officers meet the basic level of readiness by May 1, 2005, and provides the general standards to be applied for determining compliance with the basic level.

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This Manual Circular supplements Subchapter CC26.1, INSTRUCTION 8, by providing officers with the specific standards for meeting the basic level of readiness for PY2004 and for purposes of programmatic completeness, the current standards for meeting the intermediate and advanced levels. In addition, this Manual Circular sets forth the policies and procedures governing the PHS Commissioned Corps PF/BMI/BF and Medical Waiver Programs. These programs also supplement Subchapter CC26.1, INSTRUCTION 8, by providing officers with further guidance on meeting the readiness standards and on obtaining temporary and permanent waivers due to medical conditions and/or immunization status.

Note: The promotion year, like PY2004, is the year in which an officer is eligible to be examined by his/her category promotion board for temporary and/or permanent grade promotion.

4. **Readiness Standards and the Promotion Process for PY 2004**

Officers who are eligible to be examined for temporary grade promotion during PY2004 may waive their right to be examined for promotion pursuant to Section F.5 of Subchapter CC23.4, INSTRUCTION 2, "Temporary Grade Promotions." For all other officers to be examined for promotion during PY2004, Subchapter 26.1, INSTRUCTION 8, establishes a new promotion precept called "Readiness."

5. **Eligibility for Scoring to Recognize Readiness for PY2004**

To be eligible for scoring for readiness on January 31, 2004, an officer must:

- a. Be qualified under the Commissioned Corps Readiness Force (CCRF) Deployable Standard that was in effect until September 30, 2003; or
- b. Meet the basic level of readiness as defined in Exhibit 1 of this Manual Circular, below.

6. **PHS Commissioned Corps PF/BMI/BF Program**

- a. Policy.
  - (1) The Secretary has determined that all PHS Commissioned Corps (Corps) officers meet readiness standards by 2005 so that when necessary, the Corps can provide swift and effective responses to urgent health needs.
  - (2) The policy of the PHS Commissioned Corps (Corps) is that physical fitness is essential to fulfilling the Secretary's mandate and is an important part of the general health and well-being of officers. Officers must possess the aerobic capacity, muscular strength and endurance, and body flexibility to perform in accordance with the Department's policy. These qualities together with a desirable level of body fat composition form the basis of the Corps' PF/BMI/BF Program.
- b. Purpose. The purpose of the PF/BMI/BF Program is to assure that the physical capabilities of officers are consistent with their assignments and response responsibilities.

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- c. **Applicability.** Except for officers listed in Section A.2. of Subchapter CC26.1, INSTRUCTION 8, all Regular and Reserve Corps officers serving on extended active duty are required to abide by the policies and procedures governing the PF/BMI/BF Programs.
- d. **Definitions.** For purposes of the PF/BMI/BF Program, the following terms are defined as follows:
- (1) Aerobic Capacity (Aerobic Fitness or Cardio-Respiratory Endurance). The body's capability to receive and use oxygen, carbohydrates, and fats to produce energy.
  - (2) Body Fat. The percentage of total body weight that is composed largely of stored fat and a small amount of "essential" fat that makes up cell membranes, nerve sheaths, and structural fat padding vital structures.
  - (3) Body Mass Index (BMI). A mathematical expression that describes the proportions between weight and height. The BMI is calculated as weight (in kilograms) divided by the square of height (in meters); the equation for use with English units is  $BMI=704.5 \times wt/ht^2$  where wt is in lbs and ht in inches.
  - (4) Maximal Oxygen Uptake. The maximum amount of oxygen that can be delivered to and utilized in the tissues; this is also referred to as aerobic capacity.
  - (5) Muscular Endurance. The ability of a skeletal muscle or group of muscles to perform repeated contractions for an extended period of time. It is measured as the number of submaximal contractions performed or submaximal sustained contraction time.
  - (6) Muscular Strength. The maximal force that can be exerted in a single voluntary contraction of a skeletal muscle or skeletal muscle group.
  - (7) Overweight. Overweight means that an officer's body weight exceeds the maximum limit indicated in the BMI screening table in Exhibit 3.
  - (8) Physical Fitness. The capacity to perform physical exercise, consisting of the components of aerobic capacity, muscular strength, and muscular endurance in conjunction with body fat content within an optimal range.
  - (9) Submaximal. Submaximal tests are used to estimate maximal capacity from responses to less than maximal exercise. Most submaximal tests rely on the measurement of heart rate at some fixed, submaximal workload.
  - (10) Training Effect. The physiological response to exercise (physical training) when conducted with sufficient regularity, intensity, and duration. The response may include improved efficiency of the cardio-respiratory system and/or increased muscular strength/endurance.
- e. **Program Administration.** The PF/BMI/BF Program will be managed by the Surgeon General (SG) following policies established by the Assistant Secretary for Health. In doing so, the SG will:

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- (1) Monitor the PF/BMI/BF Program and coordinate health promotion activities as necessary;
  - (2) Stress the benefits of appropriate physical activity and nutrition in maintaining and/or enhancing health, physical fitness, safety, and injury prevention;
  - (3) Establish a database for officers participating in the PF/BMI/BF Program;
  - (4) Establish and maintain a Corps physical fitness program that includes a cardiovascular screening process to identify officers with a potential high risk for cardiovascular disease and the testing of all personnel for fitness based upon age-appropriate standards;
  - (5) Establish and utilize a standardized set of procedures to assess and monitor an officer's body mass index and estimated percentage of body fat;
  - (6) Encourage additional training for officers who do not meet the prescribed standards for the Corps' Annual Physical Fitness Test (APFT) and BMI and/or fall above the designated level of body fat content; and
  - (7) Reinforce the Corps policy on drug and alcohol abuse (See Subchapter CC23.8, INSTRUCTION 8, "Policy on Alcohol and Other Drug Abuse").
- f. Pre-Participation Cardiovascular Screening and the APFT.
- (1) Pre-participation cardiovascular screening is a mechanism to identify persons with known cardiovascular disease and/or risk factors for disease development who should receive a medical evaluation/recommendation before starting an exercise program or undergoing exercise testing. The mechanism used by the Corps is a self-administered questionnaire that is attached to this Manual Circular (See Exhibit 4 "Pre-Participation Cardiovascular Screening Questionnaire," below). The purpose of the questionnaire is to identify high-risk officers so they can seek the medical advice prior to beginning an exercise program or taking a physical fitness test. Further information regarding pre-participation cardiovascular screening and the APFT can be found at the CCRF Web site at <http://ccrf.hhs.gov>.
  - (2) Notwithstanding 6.f.(1), above, if an officer has any concerns about whether it is medically advisable to begin an exercise program or to undergo physical fitness testing, the officer should consult with his/her health care provider before doing so.
- g. Physical Fitness and the APFT.
- (1) Officers who are beginning or currently in exercise programs should strive to work up to a schedule that will allow them: to exercise on a regular basis; for a minimum of 30 minutes at a time; and to an intensity that provides a training effect. Further information regarding the APFT can be found at the CCRF Web site at <http://ccrf.hhs.gov>.
  - (2) Officers with injuries and temporary medical waivers will participate in exercise programs only after consultation with medical authorities.

- (3) Female officers who are pregnant should engage in physical activity to maintain cardiovascular and muscular fitness throughout the pregnancy and postpartum period, in accordance with medical guidance.
- (4) All officers serving on extended active duty on or after October 1, 2004, will be required to take the APFT at least one time every calendar year unless granted a medical waiver that excludes the officer from performing any APFT event. Officers who do not pass the APFT will be recommended for additional training. To pass the APFT, officers must meet or exceed the basic level, "Level 1," standard in one of the events listed in sections 2, 3 and 4 of Exhibit 5, below, i.e., the cardiovascular health, upper body strength, and core muscle strength events.

Note. Levels 2, 3, and 4, are included in this Manual Circular for completeness and merely indicate higher levels of performance to which officers can achieve. They are not used to determine an officer's potential for promotion.

h. Assessment of BMI.

- (1) Officers will be screened at least annually to determine whether their BMI meet the standards established by the Corps (See Exhibit 6, "Body Mass Index Assessment Procedures and BMI Table," below.) Officers who do not meet the BMI standards will be evaluated for body fat composition at least annually.
- (2) An officer's BMI will be determined in accordance with the evaluation procedures in Exhibit 6, below, and recorded on the CCRF Web site at <http://ccrf.hhs.gov>. Officers may determine their own BMI or have one of the following authorized individuals make the determination: another commissioned officer in one of the Uniformed Services; a health care provider at a military treatment facility; an approved Tricare provider, or any other person authorized to do so by Office of Public Health Science (OPHS). In either case, all officers must have their BMI validated by one of the aforementioned authorized individuals and record his/her name, phone number, and address, on the CCRF website.
- (3) Officers who do not meet the BMI standards, but meet the body fat standards listed in Exhibit 6, "Body Mass Index Assessment Procedures and BMI Table," may still meet the readiness standards listed in Exhibits 1, 2, and 3, below.
- (4) Officers who do not meet either their BMI or the body fat standards listed in Exhibit 5 and 6, below, should consult with their health care provider for assistance in achieving compliance. In addition, officers who fall below the minimum weight standards listed in the Exhibit 5, below, should also consult with his/her health care provider.

i. Assessment of Estimated Body Fat Percentage.

- (1) Officers serving on active duty who do not meet the BMI standards will be evaluated for body fat composition at least annually.
- (2) Body fat percentage will be assessed using the circumference-based method (body fat calculation questions, measurement sites, and measurement

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techniques) as set forth in Exhibit 6, below. No other method of body fat assessment will be utilized.

- (3) The determination of an officer's body fat percentage will be made in accordance with the assessment procedures listed in Exhibit 4, below. Officers may not determine their own body fat percentage. The individuals authorized to determine an officer's body fat percentage are as follows: another commissioned officer in one of the Uniformed Services; a health care provider at a military treatment facility; an approved Tricare provider, or any other person authorized to do so by OPHS.
- (4) Once an authorized individual has determined an officer's body fat percentage, officers will record the percentage along with the authorized individual's name, phone number, and address, on the CCRF Web site at <http://ccrf.hhs.gov>. Officers who do not meet the Corps' body fat percentage standards should consult with their health care provider.

## **7. PHS COMMISSIONED CORPS MEDICAL WAIVER PROGRAM**

### **a. Policy.**

- (1) The Secretary has determined that all Corps officers meet readiness standards by 2005 so that when necessary, the Corps can provide swift and effective responses to urgent health needs.
- (2) The policy of the Corps is that readiness, which includes physical fitness and the requirement for selected immunizations, is essential to fulfilling the Secretary's mandate. However, there are times when officers may have either a temporary or permanent medical consideration that limits their ability to reach optimal readiness. Therefore, officers may be medically exempt from having to meet one or more of the basic level of readiness standards when a valid medical reason exists for doing so.

### **b. Purpose.** The purpose of the Medical Waiver Program is to assist the Corps in implementing the Department's policy on readiness by assuring maximal compliance, while reducing unintentional injuries due to the inappropriate application of a physical fitness or immunization requirement.

### **c. Applicability.** Except for officers listed in Section A.2. of Subchapter CC26.1, INSTRUCTION 8, all Regular and Reserve Corps officers serving on extended active duty are required to abide by the policies and procedures governing the Medical Waiver Program.

### **d. Definitions.** For purposes of the Medical Waiver program, the following terms are defined as follows:

- (1) **Medical Reviewing Official (MRO).** A health care provider who is authorized pursuant to 7.f below, to grant medical waivers exempting officers from performing or engaging in one or more of the activities listed in d.(1)(a) through d.(1)(c), below, because of a temporary or permanent medical condition:

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- (a) Receiving one or more required immunizations;
    - (b) Engaging in an optimal physical fitness program; or
    - (c) Performing one or more events required for passing the APFT or from performing the APFT altogether.
  - (2) Medical Waiver. A personal exemption from performing or engaging in one or more of the activities listed in d.(1)(a) through d.(1)(c), above, because of a temporary or permanent medical condition.
  - (3) Permanent Medical Condition: A medical condition that is unlikely to improve in the foreseeable future.
  - (4) Temporary Medical Condition. A medical condition that is likely to improve within 12 months from the date the MRO provides an opinion indicating the officer has a temporary medical condition.
- e. Program Administration. The Medical Waiver Program will be administered by OPHS. In doing so, OPHS will:
- (1) Establish policies and procedures for the consideration and review of temporary or permanent medical conditions and for granting medical waivers exempting officers from the activities listed in 7.d.(1)(a) through 7.d.(1)(c), above;
  - (2) Establish policies and procedures for reviewing medical waivers that have been granted by an MRO to ensure that only appropriate medical waivers are granted;
  - (3) Establish policies and procedures for reviewing requests for medical waivers that have been denied by an MRO to ensure that officers are able to obtain appropriate medical waivers when necessary.
- f. Designation of an MRO for temporary or permanent medical conditions. All health care providers assigned to the Office of Commissioned Corps Support Services (OCCSS)/Medical Affairs Branch (MAB) may grant medical waivers for temporary or permanent medical conditions. In addition, the following health care providers are also authorized to grant medical waivers contingent upon concurrence from OCCSS:
- (1) Any health care provider authorized to grant a medical waiver for a temporary or permanent medical condition by the Commanding Officer of a Military Treatment Facility (MTF);
  - (2) Any approved Tricare provider; and
  - (3) Under exceptional circumstances, any other health care provider authorized to grant medical waivers by OPHS.

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- g. General Procedures for Granting and Amending Medical Waivers.
- (1) If a MRO determines that an officer has a medical condition that warrants being granted a temporary or permanent medical waiver, the MRO will provide a written medical opinion on the appropriate form that specifically addresses what aspects of physical fitness and/or immunizations the officer is being exempted from. When the MRO is not assigned to OCCSS, the officer must submit all medical waiver request(s) and supporting documentation to OCCSS for review and/or concurrence (See section 7.(k), below).
  - (2) Permanent medical waivers may be amended at any time if clinically indicated, and will automatically be reviewed at the time of an officer's periodic medical examination. In addition, permanent medical waivers will be reviewed at least once every 5 years by an MRO and extended only upon concurrence by an OCCSS MRO.
  - (3) Temporary medical waivers must specify an expiration date. If no date is specified, the profile will automatically expire at the end of the third month. In no case will officers serving on extended active duty carry a temporary medical waiver that has been extended for more than 12 months collectively without positive action being taken to either correct the defect or recommend other appropriate disposition, i.e., total time that an officer can have a temporary medical waiver for the same condition is 12 months from the effective date of the medical waiver.
- h. Temporary Waivers During Pregnancy.
- (1) Officers who are diagnosed as being pregnant are automatically exempt from the APFT during the pregnancy. However, pregnant officers are encouraged to participate in a pregnancy physical fitness program where available. Prior to participating in such a program, pregnant officers must obtain approval from their health care provider.
  - (2) Officers who are diagnosed as being pregnant are exempt from taking all immunizations except influenza and tetanus-diphtheria.
  - (3) Officers who are diagnosed as being pregnant will immediately provide documentation to OCCSS establishing the diagnosis. Upon receipt, a OCCSS MRO will issue or approve a temporary waiver exempting the officer from taking the APFT and the immunizations listed in 7.h.(2).

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- i. Temporary Waivers during Postpartum period.
- (1) Postpartum officers are automatically exempt from the APFT for 180 days following conclusion of a pregnancy. Officers are expected to use the time in preparation for the APFT, after receiving clearance from the attending physician/health care provider to resume physical fitness training. If it is determined that the postpartum officer requires a longer temporary medical waiver because of complications or unusual medical program, the medical waiver can be modified by the attending physician/health care provider as appropriate.
  - (2) Upon conclusion of a pregnancy, officers should immediately notify OCCSS so that a OCCSS MRO may issue or approve a temporary waiver exempting the officer from the APFT as allowed in 7.h.(1), above.
  - (3) Officers who are breast-feeding may also be temporarily exempt from some immunizations pursuant to the recommendation of the officer's attending physician/health care provider. In such cases, officers must provide supporting documentation to OCCSS in order to have their medical waiver approved.
- j. Temporary or Permanent Waivers for Immunizations. As indicated above, officers may be granted temporary or permanent waivers from receiving selected immunizations. For example, officers may receive permanent waivers if they have an identified allergy to one or more of the components of a vaccine, or in some cases, are immuno-compromised. Likewise, officers may be granted temporary waivers from receiving selected immunizations during pregnancy or the postpartum period (See sections 7.i. and 7.j, above). The procedures for obtaining a permanent or temporary medical waiver are the same as for other medical conditions (See sections 7g., 7.h, above, and 7.i. below.)
- Note. Officers who have a history of a positive test to PPD may forego an annual PPD test. However, officers must show evidence of a course of TB prophylaxis therapy consistent with current medical standards, if indicated and/or a negative chest x-ray. This will not affect the officer's ability to achieve the advanced level of readiness.
- k. Approval and Effective Date of Temporary and Permanent Medical Waivers. Recommendations for medical waivers are contingent upon approval by OCCSS. Therefore, officers who are granted a temporary or permanent medical waiver by a non-OCCSS MRO, must submit all medical waiver request(s) and supporting documentation to OCCSS for review and/or concurrence. However, because there may be a delay between the time a non-OCCSS MRO grants a medical waiver and the time concurrent approval is obtained from OCCSS, the effective date of the medical waiver will be the date recommended by the non-OCCSS MRO unless otherwise modified by the OCCSS.
- l. Referral for Additional Evaluation. An OCCSS MRO may require an officer who has been granted a medical waiver to be evaluated at an MTF prior to giving concurrent approval on the waiver decision. Likewise, if an officer has been denied a medical waiver, an OCCSS MRO may also require that officer to be evaluated at an MTF.

- m. Denial of Medical Waivers. Officers who are denied temporary or permanent medical waivers may appeal the decision as follows.
- (1) Officers who are denied temporary or permanent medical waivers may appeal the decision to OCCSS. In doing so, officers must submit their request for reconsideration, all medical waiver request(s), and supporting documentation to OCCSS within 30 days of being informed of the initial denial;
  - (2) Upon receipt of a request for reconsideration, OCCSS will assign a physician MRO to review the request and accompanying information. Based upon this review, the physician MRO may:
    - (a) Affirm the MRO's decision to deny the officer's request;
    - (b) Overturn the MRO's decision denying the medical waiver and grant either a temporary or permanent waiver as medically indicated by the supporting medical the documentation; or
    - (c) Refer the officer to a MTF for further evaluation by a physician and based upon this referral, render a decision as to whether to grant or deny the officer's request.
  - (3) If the decision to deny an officer's request for waiver is affirmed, officers may appeal the denial to the SG for a final decision within 30 days of the denial.
- n. Assessment of Readiness. Officers who meet the basic or intermediate levels of readiness except for those standards that have been properly waived, will be deemed to have met the applicable level of readiness for purposes of promotion and/or assimilation. Permanent medical waivers for the standards required to meet the advanced level of readiness are not allowed.

Note: For PY2004, promotion scoring credit will be limited to the basic level of readiness or the CCRF Deployable Standard that was in effective until September 30, 2003 (See Section 5, above).

APPROVAL: I approve Manual Circular PHS NO. 375 and Exhibits 1-8 listed below.

Cristina V. Beale M.D.  
Acting Assistant Secretary for Health

DEC 18 2003  
Date

**EXHIBIT 1****STANDARDS FOR THE BASIC LEVEL OF READINESS**

Unless waived, officers must meet the 10 standards listed below in order to achieve the basic level of readiness.

<b>STANDARDS FOR BASIC LEVEL OF READINESS</b>	<b>OFFICER RESPONSIBILITIES</b>
(1) Possess a current valid and unrestricted professional license, certification, and/or registration appropriate for officer's category or discipline	(a) Record information on CCRF Web site - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch (OSB), Division of Commissioned Personnel (DCP).
(2). Complete AHA Basic Life Support for health care providers or ARC CPR/AED for the professional rescuer.	(a) Record information on CCRF Web site - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the OSB.
(3) Complete all readiness training for the basic level of readiness.	Login to <a href="http://ccrf.umbc.edu/">http://ccrf.umbc.edu/</a> and complete all nine of the mandatory Web-based training modules for the basic level of readiness listed in Exhibit 8, "PHS Commissioned Corps Readiness Training," <u>plus</u>  (a) Three elective Web-based modules from Group A; <u>or</u>  (b) Three elective Web-based modules from Group B.
(4) Achieve currency in clinical role (if applicable.)	Record clinical hours on the CCRF Web site (if applicable) - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(5) Record BMI/BF.	Record BMI/BF on the CCRF Web site - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(6) Have a current medical examination <u>and</u> pass the Corps' Annual Physical Fitness Test (APFT).  <u>Note.</u> For PY2005, officers must pass the APFT to meet this standard unless they possess a current medical waiver.	For PY 2004, officers are only required to ensure that a current medical examination is on file with Office of Commissioned Corps Support Services.
(7) Identify response role.	Record a response role from those listed on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .

<b>STANDARDS FOR BASIC LEVEL OF READINESS</b>	<b>OFFICER RESPONSIBILITIES</b>
(8) Obtain and/or begin required immunizations.	(a) Obtain current TD, MMR, Polio, & Varicella immunizations, an annual PPD test & Influenza immunization, <u>and</u> have started the Hepatitis A and Hepatitis B series.  (b) Record immunizations on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  <u>Note.</u> Positive titers confirming immunity are acceptable for MMR and Varicella.
(9) Login every 3 months/Update demographics.	Login to the CCRF website every 3 months and when necessary, update demographic and/or other information - website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(10) Possess required uniforms.	Record that officer has obtained the required uniforms on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .

**EXHIBIT 2****STANDARDS FOR THE INTERMEDIATE LEVEL OF READINESS**

Unless waived, officers must meet the 12 standards listed below in order to achieve the intermediate level of readiness.

<b>STANDARDS FOR INTERMEDIATE LEVEL OF READINESS</b>	<b>OFFICER RESPONSIBILITIES FOR CLINICAL RESPONSE ROLE</b>	<b>OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH RESPONSE ROLE</b>
(1) Possess a current valid and unrestricted professional license, certification, and/or registration appropriate for officer's category or discipline	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch, DCP.	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch, DCP.
(2). Complete AHA Basic Life Support for health care providers or ARC CPR/AED for the professional rescuer.	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch.	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch.
(3) Complete all readiness training for the intermediate level of readiness.	Login to <a href="http://ccrf.umbc.edu">http://ccrf.umbc.edu/</a> and complete all 35 mandatory web-based training modules for the intermediate level of readiness listed in Exhibit 8, <u>plus</u>  (a) The web-based clinical curriculum training modules if the officer is a physician, physician assistant, nurse practitioner, nurse midwife, nurse anesthetist, nurse, or dentist.	Login to <a href="http://ccrf.umbc.edu">http://ccrf.umbc.edu/</a> and complete all 35 mandatory web-based training modules for the intermediate level of readiness listed in Exhibit 8.
(4) Achieve currency in response role (if applicable).	Perform 112 clinical hours every calendar year in the officer's discipline or specialty and record the hours on the CCRF website – <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Not Applicable.

STANDARDS FOR INTERMEDIATE LEVEL OF READINESS	OFFICER RESPONSIBILITIES FOR CLINICAL RESPONSE ROLE	OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH RESPONSE ROLE
(5) Meet BMI/BF standards at the intermediate level	<p>(a) Male officers must meet the following standards: BMI that is &lt; 30 <u>or</u> an estimated BF percentage of &lt;= 26%.</p> <p>(b) Female officers must meet the following standards: BMI that is &lt; 30 <u>or</u> an estimated BF percentage of &lt;= 36%.</p> <p>(c) Record BMI/BF on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a>.</p>	<p>(a) Male officers must meet the following standards: BMI that is &lt; 30 <u>or</u> an estimated BF percentage of &lt;= 26%.</p> <p>(b) Female officers must meet the following standards: BMI that is &lt; 30 <u>or</u> an estimated BF percentage of &lt;= 36%.</p> <p>(c) Record BMI/BF on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a>.</p>
(6) Have a current medical examination <u>and</u> pass the APFT.	Have a current medical examination on file with Office of Commissioned Corps Support Services within the last 5 years and pass the APFT each calendar year.	Have a current medical examination on file with Office of Commissioned Corps Support Services within the last 5 years and pass the APFT each calendar year.
(7) Complete training for response role.	Select and complete all requirements for one of the clinical roles listed on the CCRF website.	Select and complete all requirements for one of the public health roles listed on the CCRF website.
(8) Obtain required immunizations.	<p>(a) Obtain current TD, MMR, Polio, &amp; Varicella immunizations, an annual PPD test &amp; Influenza immunization, <u>and</u> complete the Hepatitis A and Hepatitis B series.</p> <p>(b) Record immunizations on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a>.</p> <p><u>Note.</u> Positive titers confirming immunity are acceptable for MMR and Varicella.</p>	<p>(a) Obtain current TD, MMR, Polio, &amp; Varicella immunizations, an annual PPD test &amp; Influenza immunization, <u>and</u> complete the Hepatitis A and Hepatitis B series.</p> <p>(b) Record immunizations on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a>.</p> <p><u>Note.</u> Positive titers confirming immunity are acceptable for MMR and Varicella.</p>
(9) Login every 3 months/Update demographics.	Login to the CCRF website every 3 months and when necessary, update demographic and/or other information - website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Login to the CCRF website every 3 months and when necessary, update demographic and/or other information - website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .

STANDARDS FOR INTERMEDIATE LEVEL OF READINESS	OFFICER RESPONSIBILITIES FOR CLINICAL RESPONSE ROLE	OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH RESPONSE ROLE
(10) Possess required uniforms.	Record that the officer has obtained the required uniforms on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Record that the officer has obtained the required uniforms on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(11) Have response experience that is approved by the Surgeon General.*	Not required. However, officers should have response experience of at least 7 days every 5 years.	Not required. However, officers should have response experience of at least 7 days every 5 years.
(12) Fit tested for N-95 or greater respirator.  <u>Note.</u> To be fit tested, officers may not wear beards.	(a) Fit-tested for N-95 or greater respirator annually.  (b) Record that officer has been fit-tested on the CCRF website- <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	a) Fit-tested for N-95 or greater respirator annually.  (b) Record that officer has been fit-tested on the CCRF website- <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .

\* Note. In order to fulfill the response requirement, the following requirements must be met:

1. The officer has “responded.” For purposes of this Manual Circular, an officer “responds” when he/she is directed to leave his/her normal work assignment in order to participate in activities related to one of the following: a) a national emergency; b) a natural or manmade disaster; c) an urgent public health need; d) a request for assistance by an international or nonprofit organization; e) a request for assistance by an organizational component of the Federal government, or a state or local government; or f) a National Special Security Event as defined by the Department of Homeland Security; and
2. The Department or one of its organizational components exercises supervision over the officer during the response unless:
  - (a) The Department or one of its organizational components has assigned the officer to a non-departmental organization that exercises supervision over the officer during the response, e.g., HHS directs EHO officer to assist local health officials with disaster at chemical plant (short term TDY situation); or
  - (b) The officer is detailed to a non-departmental organization or a component of the Armed Forces and such entity exercises supervision over the officer while engaged in a response activity; and
3. For activities not encompassed by sections 1 and 2, above, the activity has been approved as a “response” activity by the Surgeon General or his/her designee.

**EXHIBIT 3****STANDARDS FOR THE ADVANCED LEVEL OF READINESS**

Officers must meet the 12 standards listed below in order to achieve the advanced level of readiness. Standards for the advanced level of readiness may not be permanently waived.

<b>STANDARDS FOR ADVANCED LEVEL OF READINESS</b>	<b>OFFICER RESPONSIBILITIES FOR CLINICAL RESPONSE ROLE</b>	<b>OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH RESPONSE ROLE</b>
(1) Possess a current valid and unrestricted professional license, certification, and/or registration appropriate for officer's category or discipline.	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch, DCP.	(a) Record information on CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch, DCP.
(2). Complete AHA Basic Life Support for health care providers or ARC CPR/AED for the professional rescuer.	Record information on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  (b) Ensure that information is on file with the Officer Support Branch.	Record information on the CCRF website - <a href="http://ccrf.hhs.gov/">http://ccrf.hhs.gov/</a> .  (b) Ensure that information is on file with the Officer Support Branch.
(3) Complete all readiness training for the advanced level of readiness.	Login to <a href="http://ccrf.umbc.edu/">http://ccrf.umbc.edu/</a> and complete all 35 mandatory web-based training modules for the advanced level of readiness listed in Exhibit 8, <u>plus</u>  (a) Forty hours of advanced course work in the last 5 years for officers in a clinical track. The advanced courses that meet this requirement are listed in Exhibit 8, <u>and</u>  (b) The web-based clinical curriculum training modules if the officer is a physician, physician assistant, nurse practitioner, nurse midwife, nurse anesthetist, nurse, or dentist.	Login to <a href="http://ccrf.umbc.edu/">http://ccrf.umbc.edu/</a> and complete all 35 mandatory web-based training modules for the advanced level of readiness listed in Exhibit 8, <u>plus</u>  (a) Forty hours of advanced course work in the last 5 years for officers in a public health track. The advanced courses that meet this requirement are listed in Exhibit 8.

<b>STANDARDS FOR ADVANCED LEVEL OF READINESS</b>	<b>OFFICER RESPONSIBILITIES FOR CLINICAL ROLE</b>	<b>OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH ROLE</b>
(4) Achieve currency in response role (if applicable).	Perform 112 clinical hours every calendar year in the officer's discipline or specialty and record the hours on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Not Applicable.
(5) Meet BMI/BF standards at the advanced level.	(a) Male officers must meet the following standards: BMI that is $\leq 27.5$ or an estimated BF percentage of $\leq 26\%$ .  (b) Female officers must meet the following standards: BMI that is $\leq 25$ or an estimated BF percentage of $\leq 36\%$ .  (c) Record BMI/BF on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	(a) Male officers must meet the following standards: BMI that is $\leq 27.5$ or an estimated BF percentage of $\leq 26\%$ .  (b) Female officers must meet the following standards: BMI that is $\leq 25$ or an estimated BF percentage of $\leq 36\%$ .  (c) Record BMI/BF on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(6) Have a current medical examination <u>and</u> pass the APFT.	Have a current medical examination on file with the Medical Affairs Branch within the last 5 years and pass the APFT each calendar year.	Have a current medical examination on file with the Medical Affairs Branch within the last 5 years and pass the APFT each calendar year.
(7) Complete training for response role.	Select and complete all requirements for one of the clinical roles listed on the CCRF website.	Select and complete all requirements for one of the public health roles listed on the CCRF website.
(8) Obtain required immunizations.	(a) Obtain current TD, MMR, Polio, & Varicella immunizations, an annual PPD test & Influenza immunization, <u>and</u> complete the Hepatitis A and Hepatitis B series.  (b) Record immunizations on the CCRF website – <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  <u>Note.</u> Positive titers confirming immunity are acceptable for MMR and Varicella.	(a) Obtain current TD, MMR, Polio, & Varicella immunizations, an annual PPD test & Influenza immunization, <u>and</u> complete the Hepatitis A and Hepatitis B series.  (b) Record immunizations on the CCRF website – <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .  <u>Note.</u> Positive titers confirming immunity are acceptable for MMR and Varicella.

STANDARDS FOR ADVANCED LEVEL OF READINESS	OFFICER RESPONSIBILITIES FOR CLINICAL RESPONSE ROLE	OFFICER RESPONSIBILITIES FOR PUBLIC HEALTH RESPONSE ROLE
(9) Login every 3 months Update demographics.	Login to the CCRF website every 3 months and when necessary, update demographic and/or other information – website – <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Login to the CCRF website every 3 months and when necessary, update demographic and/or other information – website – <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(10) Possess required uniforms.	Record that the officer has obtained the required uniforms on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	Record that the officer has obtained the required uniforms on the CCRF website - <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .
(11) Have response experience that has been approved by the Surgeon General.*	Required. Must have responded for a minimum of 7 days within the last 5 years.	Required. Must have responded for a minimum of 7 days within the last 5 years.
(12) Fit tested for N-95 or greater respirator.  <u>Note.</u> To be fit tested, officers may not wear beards.	(a) Fit-tested for N-95 or greater respirator annually.  (b) Record that officer has been fit-tested on the CCRF website- <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .	(a) Fit-tested for N-95 or greater respirator annually.  (b) Record that officer has been fit-tested on the CCRF website- <a href="http://ccrf.hhs.gov">http://ccrf.hhs.gov</a> .

\* Note. In order to fulfill the response requirement, the following requirements must be met:

1. The officer has “responded.” For purposes of this Manual Circular, an officer “responds” when he/she is directed to leave his/her normal work assignment in order to participate in activities related to one of the following: a) a national emergency; b) a natural or manmade disaster; c) an urgent public health need; d) a request for assistance by an international or nonprofit organization; e) a request for assistance by an organizational component of the Federal government, or a state or local government; or f) a National Special Security Event as defined by the Department of Homeland Security; and
2. The Department or one of its organizational components exercises supervision over the officer during the response unless;
  - (a) The Department or one of its organizational components has assigned the officer to a non-departmental organization which exercises supervision over the officer during the response, e.g., HHS directs EHO officer to assist local health officials with disaster at chemical plant (short term TDY situation); or
  - (b) The officer is detailed to a non-departmental organization or a component of the Armed Forces and such entity exercises supervision over the officer while engaged in a response activity; and
3. For activities not encompassed by sections 1 and 2, above, the activity has been approved as a “response” activity by the Surgeon General or his/her designee.

**EXHIBIT 4****PRE-PARTICIPATION CARDIOVASCULAR SCREENING QUESTIONNAIRE**

Step 1. Answer "yes" or "no" to the statements listed under History and Symptoms, below.

History

You have had:

- a heart attack \_\_\_\_\_
- heart surgery \_\_\_\_\_
- cardiac catheterization \_\_\_\_\_
- coronary angioplasty \_\_\_\_\_
- pacemaker/implantable defibrillator \_\_\_\_\_
- heart valve disease \_\_\_\_\_
- heart failure \_\_\_\_\_
- heart transplantation \_\_\_\_\_
- congenital heart disease \_\_\_\_\_

Symptoms

- You experience chest discomfort with exertion \_\_\_\_\_
- You experience unreasonable breathlessness \_\_\_\_\_
- You experience dizziness, fainting, blackouts \_\_\_\_\_
- You are pregnant \_\_\_\_\_
- You take heart medications \_\_\_\_\_
- You have musculoskeletal problems that interfere with your ability to exercise.

Step 2. If you answered "yes" to any of the statements under History or Symptoms, above, consult your healthcare provider before engaging in physical exercise.

Step 3. Answer "yes" or "no" to the statements listed under Cardiovascular Risk Factors, below.

Cardiovascular Risk Factors

- You are a male older than 45 or a female older than 55 \_\_\_\_\_
- You have had a hysterectomy or you are post-menopausal \_\_\_\_\_
- You smoke \_\_\_\_\_
- Your blood pressure is greater than 140/90 \_\_\_\_\_
- You take blood pressure medication \_\_\_\_\_
- Your blood cholesterol is  $\geq$  240mg/dL \_\_\_\_\_
- You are diabetic or take medication to control your blood sugar \_\_\_\_\_
- You are physically inactive (i.e., less than 30 minutes of physical activity at least 3 days/week \_\_\_\_\_
- You are more than 20 pounds overweight \_\_\_\_\_

Step 4. If you answered "yes" to two or more of the statements under Cardiovascular Risk Factor, above, consult your healthcare provider before engaging in physical exercise. If you answered no to all questions under "History," "Symptoms," and "Cardiovascular Risk Factors," above, you should be able to exercise safely.

Citation. Joint Position Statement. AHA/ASCM Joint Statement: Recommendation for cardiovascular screening, staffing and emergency policies and health fitness facilities (June 1998).

**EXHIBIT 5****PHS COMMISSIONED CORPS ANNUAL PHYSICAL FITNESS TEST (APFT)****1. GENERAL**

All officers serving on extended on active duty on or after October 1, 2004, will be required to take the APFT at least one time every calendar year unless granted a medical waiver that excludes the officer from performing any APFT event. To pass the APFT, officers must meet or exceed the basic level, "Level 1," standard in each section, below, i.e., the cardiovascular health, upper body strength, and core muscle strength events. The event tables listed below are modified from the U.S. Navy and U.S. Coast Guard physical fitness requirements (See OPNAVINST 6110.1F dated May 1, 2000).

**2. CARDIOVASCULAR HEALTH EVENT****a. The 1.5 mile Run Walk**

Men				
Fitness Level	Age			
	20-29	30-39	40-49	50+
Level 4	≤ 8:13	≤ 8:44	≤ 9:30	≤ 10:40
Level 3	8:14-10:16	8:45-10:47	9:29-11:44	10:41-12:51
Level 2	10:17-12:51	10:48-13:36	11:45-14:29	12:52-15:26
Level 1	12:52-15:12	13:37-15:52	14:30-16:28	15:27-17:29

Women				
Fitness Level	Age			
	20-29	30-39	40-49	50+
Level 4	<10:47	<11:49	<12:51	<14:20
Level 3	10:48-12:51	11:50-13:43	12:52-14:31	14:21-15:57
Level 2	12:52-15:26	13:44-15:57	14:32-16:58	15:58-17:55
Level 1	15:27-17:21	15:58-18:00	16:59-18:31	17:56-19:30

## b. The 500 Yard Swim

<b>Men</b>				
<b>Fitness Level</b>	<b>Age</b>			
	20-29	30-39	40-49	50+
Level 4	≤ 7:30	≤ 7:45	≤ 8:00	≤ 8:15
Level 3	7:31-8:45	7:46-9:00	8:01-9:15	8:16-9:30
Level 2	8:46-11:30	9:01-11:45	9:16-12:00	9:31-12:15
Level 1	11:31-13:00	11:46-13:15	12:01-13:30	12:16-13:45

<b>Women</b>				
<b>Fitness Level</b>	<b>Age</b>			
	20-29	30-39	40-49	50+
Level 4	≤8:45	≤9:15	≤9:45	≤10:00
Level 3	8:46-10:00	9:16-10:30	9:46-11:00	10:01-11:15
Level 2	10:01-13:15	10:31-13:45	11:01-14:15	11:16-14:45
Level 1	13:16-14:30	13:46-15:00	14:16-15:30	14:46-15:45

## c. 450 Meter Swim

<b>Men</b>				
<b>Fitness Level</b>	<b>Age</b>			
	20-29	30-39	40-49	50+
Level 4	< 7:20	< 7:35	< 7:50	< 8:05
Level 3	7:21-8:35	7:36-8:50	7:51-9:05	8:06-9:20
Level 2	8:36-11:20	8:51-11:35	9:06-11:50	9:21-12:05
Level 1	11:21-12:50	11:36-13:05	11:51-13:20	12:06-13:35

Women				
Fitness Level	Age			
	20-29	30-39	40-49	50+
Level 4	<8:35	<9:05	<9:35	<9:50
Level 3	8:36-9:50	9:06-10:20	9:36-10:50	9:51-11:05
Level 2	9:51-13:05	10:21-13:35	10:51-14:05	11:06-14:35
Level 1	13:06-14:20	13:36-14:50	14:06-15:20	14:36-15:35

### 3. UPPER BODY STRENGTH EVENT

The Push-Up

Men				
Fitness Level	Age			
	20-29	30-39	40-49	50+
Level 4	> 81	> 74	> 67	> 59
Level 3	71-80	64-73	56-66	49-58
Level 2	47-70	41-63	34-55	30-48
Level 1	37-46	31-40	24-33	19-29

The Push-Up

Women				
Fitness Level	Age			
	20-29	30-39	40-49	50+
Level 4	≥ 44	> 41	> 37	≥ 33
Level 3	39-43	35-40	32-36	28-32
Level 2	21-38	17-34	12-31	10-27
Level 1	16-20	11-16	7-11	2-9

**4. CORE MUSCLE STRENGTH EVENT**

## a. The Sit Up

Men				
Fitness Level	Age			
	20-29	30-39	40-49	50+
<i>Level 4</i>	$\geq 98$	$\geq 92$	$\geq 85$	$\geq 78$
<i>Level 3</i>	87-97	81-91	76-84	71-77
<i>Level 2</i>	58-86	51-80	44-75	37-70
<i>Level 1</i>	46-57	40-50	35-43	29-36

Women				
Fitness Level	Age			
	20-29	30-39	40-49	50+
<i>Level 4</i>	$\geq 98$	$\geq 92$	$\geq 85$	$\geq 78$
<i>Level 3</i>	87-97	81-91	76-84	71-77
<i>Level 2</i>	58-86	51-80	44-75	37-70
<i>Level 1</i>	46-57	40-50	35-43	29-36

## b. The Side Bridge Exercise

MEN	
Fitness Level	Time
Level 4	$\geq 163$ seconds
Level 3	128 - 162 seconds
Level 2	60 - 128 seconds
Level 1	26 - 59 seconds

WOMEN	
Fitness Level	Time
Level 4	$\geq 135$ seconds
Level 3	103 - 134 seconds
Level 2	41- 102 seconds
<b>Level 1</b>	10 - 41 seconds

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**EXHIBIT 6****BODY MASS INDEX ASSESSMENT PROCEDURES AND BMI TABLE****1. ASSESSMENT PROCEDURES FOR BMI****a. Height Measurement**

- (1) Officers may be measured for height in an authorized Corps uniform, a standard physical training uniform, or gym clothing. Shoes may not be worn during the measurement.
- (2) Officers will stand on a flat surface with the head held horizontal looking directly forward, with the line of vision horizontal, and the chin parallel to the floor. The body should be straight, but not rigid, similar to the body position when standing at attention.
- (3) Height measurement will be recorded to the nearest inch as follows:
  - (a) If the height fraction is less than  $\frac{1}{2}$  inch, the screener will round down to the nearest inch; and
  - (b) If the height fraction is  $\frac{1}{2}$  inch or greater, the screener will round up to the nearest inch.

**b. Weight Measurement**

- (1) Officers may be measured for weight in an authorized Corps uniform, a standard physical training uniform, or gym clothing. Shoes may not be worn during the measurement. Any extraneous equipment or outer clothing will be removed if the field utility uniform is worn.
- (2) The measurement will be made on calibrated scales and recorded to the nearest pound as follows:
  - (a) If the weight fraction is less than  $\frac{1}{2}$  pound, the screener will round down to the nearest pound; and
  - (b) If the fraction is  $\frac{1}{2}$  pound or greater, the screener will round up to the nearest pound.
- (3) Screeners may subtract up to 3 pounds for clothing worn during official weight checks.

\*\*\* BMI TABLE NEXT PAGE

**2. BMI TABLE**

(BMI Table Represents Maximum and Minimum Screening Weights  
Based on Selected BMI Standards (regardless of age))

Height in inches	Max Allowable Weight for Men <u>Intermediate</u> (BMI < 30)*	Max Allowable Wt for Women <u>Intermediate</u> (BMI < 30)*	Max Allowable Weight for Men <u>Advanced</u> (BMI <= 27.5)**	Max Allowable Wt for Women <u>Advanced</u> (BMI <= 25)**	Min Allowable Weight for All (BMI 18)**
58	143	143	131	119	91
59	148	148	136	124	94
60	154	154	141	128	97
61	158	158	145	132	100
62	166	166	151	136	104
63	170	170	155	141	107
64	175	175	160	145	110
65	180	180	165	150	114
66	185	185	170	155	117
67	191	191	175	159	121
68	196	196	180	164	125
69	203	203	186	169	128
70	208	208	191	174	132
71	215	215	197	179	136
72	220	220	202	184	140
73	227	227	208	189	144
74	234	234	214	194	148
75	240	240	220	200	152
76	245	245	225	205	156

Citation.

\* Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. The Evidence Report. NIH Publication No. 98-4803, September 1998, page xvi.

\*\* DoD Instruction 1308.3, "DoD Physical Fitness and Body Fat Program Procedures, November 5, 2002.

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**EXHIBIT 7****BODY FAT ASSESSMENT PROCEDURES AND PERCENTAGE TABLES****ASSESSMENT PROCEDURES FOR ESTIMATING BODY FAT PERCENTAGE****1. GENERAL**

- a. All circumference and height measurements are in inches.
- (1) Round calculated results to an integer value, erring on the side of the Corps member; decimal values imply a greater than actual precision in body fat estimation.
- (2) These equations have been converted into look-up tables and are attached as Tables E3.T1. and E3.T2.
- b. Examples of suitable body fat calculation equations.
- (1) Males
- The percentage of body fat =
- $$86.010 \times \log_{10}(\text{abdomen} - \text{neck}) - 70.041 \times \log_{10}(\text{height}) + 36.76$$
- (All circumference and height measurements are in inches.)
- (2) Females
- The percentage of body fat=
- $$163.205 \times \log_{10}(\text{waist} + \text{hip} - \text{neck}) - 97.684 \times \log_{10}(\text{height}) - 78.387$$
- (All circumference and height measurements are in inches.)

**2. CIRCUMFERENCE MEASUREMENT TECHNIQUES**

- a. Discrepancies in body fat estimates have frequently been traced to improper measurement techniques. The most common discrepancies stem from improper handling of the measurement tape, errors in the choice of measurement sites, and improperly calibrated height measurement devices. The measurement of officers will be based on the instructions provided in this Exhibit.
- b. When measuring circumferences, apply the tape so that it makes contact with the skin, conforms to the body surface being measured, and does not compress the underlying soft tissues. In the hip circumference measurement, however, you may need firmer pressure to compress standard physical training uniform or gym clothing. Make all circumference measurements in the horizontal plane (i.e., parallel to the floor).

- 
- c. Use a tape measure made of non-stretchable material, preferably fiberglass. Do not use cloth or steel tapes. The tape measure width should be 1/4-3/8". The tape measure should be calibrated (i.e., compared with a yardstick or a metal ruler to ensure validity). This is done by aligning the fiberglass tape measure with the quarter inch markings on the ruler. The markings should match those on the ruler; if not, do not use that tape measure.

### **3. HEIGHT AND WEIGHT MEASUREMENTS**

- a. The height measurement will be taken with the officer in an authorized Corps uniform, a standard physical training uniform, or gym clothing, standing on a flat surface with the head and line of vision held horizontal looking directly forward, and the chin parallel to the floor. Shoes will not be worn. The body should be straight but not rigid, similar to the body position when at attention. The measurement will be recorded to the nearest 1/2 inch.
- b. The weight will be measured with the officer in an authorized Corps uniform, a standard physical training uniform, or gym clothing. Shoes will not be worn. Any extraneous equipment or outer clothing will be removed when the field utility uniform is worn. The measurement shall be made on calibrated scales available in units and recorded to the nearest pound with the following guidelines:
- (1) If the Corps member's weight fraction is less than 1/2-pound, round down to the nearest pound; and
  - (2) If the Corps member's weight fraction is 1/2-pound or greater, round up to the next whole pound.

### **4. BODY FAT MEASUREMENTS**

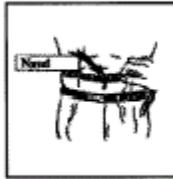
- a. Take all circumference measurements three times and record them to the nearest 1/2 inch. If any of the three measurements differs by more than one inch from the other two, take an additional measurement and compute a mathematical average of the three closest measurements to the nearest 1/2 inch and record this value.
- b. Each set of measurements will be completed sequentially to discourage assumption of repeated measurement readings.
- (1) For male officers, complete one set of abdomen and neck measurements, not, for example, three abdomen circumferences followed by three neck circumferences. Continue the process by measuring the abdomen and neck in series until three sets of measurements have been obtained.
  - (2) For female officers, complete one set of waist, hip, and neck, measurements, not, for example, three waist measurements followed by three hip measurements. Continue the process by measuring the waist, hip, neck series until three sets of measurements have been obtained.

**5. BODY FAT DETERMINATIONS**

- a. The percentage of body fat for male officers will be determined by subtracting the neck from the abdominal measurement and comparing this value against the height measurement from Table E3.T1.
- b. The percentage of body fat percentage for female officers will be determined by adding the waist and the hip measurements together, subtracting the neck measurement from the sum of the waist and hip measurements, and then comparing this value against the height measurement from Table E3.T2.

**6. CIRCUMFERENCE SITES AND LANDMARKS FOR MALE OFFICERS**

- a. Abdomen. Measure abdominal circumference against the skin at the navel (belly button), level and parallel to the floor. Arms are at the sides. Record the measurement at the end of member's normal, relaxed exhalation. Round abdominal measurement down to the nearest  $\frac{1}{2}$  inch and record in accordance with subparagraph E3.1.5.1. (e.g., round  $34 \frac{3}{4}$  to  $34 \frac{1}{2}$ ).



- b. Neck. Measure the neck circumference at a point just below the larynx (Adam's Apple) and perpendicular to the long axis of the neck. Do not place the tape measure over the Adam's Apple. Officers should look straight ahead during measurement, with shoulders down (not hunched). The tape will be as close to horizontal as anatomically feasible (the tape line in the front of the neck should be at the same height as the tape line in the back of the neck). Care should be taken so as not to involve the shoulder/neck muscles (trapezius) in the measurement. Round neck measurement up to the nearest  $\frac{1}{2}$  inch (e.g., round  $16 \frac{1}{4}$  inches to  $16 \frac{1}{2}$  inches).



**7. CIRCUMFERENCE SITES AND LANDMARKS FOR FEMALE OFFICERS**

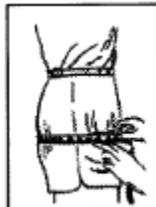
- a. Neck. Measure neck circumference at a point just below the larynx (Adam's Apple) and perpendicular to the long axis of the neck. Officers should look straight ahead during measurement, with shoulders down (not hunched). Round the neck measurement up to nearest  $\frac{1}{2}$  inch (e.g., round 13  $\frac{3}{8}$  inches to 13  $\frac{1}{2}$  inches).



- b. Waist. Measure the natural waist circumference, against the skin, at the point of minimal abdominal circumference, usually located about halfway between the navel and the lower end of the sternum (breast bone). When you cannot easily see this site, take several measurements at probable sites and use the smallest value. Be sure that the tape is level and parallel to the floor. An officer's arms must be at the sides. Take measurements at the end of officer's normal relaxed exhalation. Round the natural waist measurement down to the nearest  $\frac{1}{2}$  inch (e.g., round 28  $\frac{3}{8}$  inches to 28 inches).



- c. Hip. Measure the hip circumference while facing the officer's right side by placing the tape around the hips so that it passes over the greatest protrusion of the gluteal muscles (buttocks) as viewed from the side. Make sure the tape is level and parallel to the floor. Apply sufficient tension on the tape to minimize the effect of clothing. Round the hip measurement down to the nearest  $\frac{1}{2}$  inch (e.g., round 44  $\frac{3}{8}$  inches to 44 inches).



## 8. BODY FAT ESTIMATIONS/CALCULATION TABLES

### a. Table E3.T1. Percent Fat Estimation For Men

Circumference Value*	Height (in)									
	60.0	60.5	61.0	61.5	62.0	62.5	63.0	63.5	64.0	64.5
13.5	9	9								
14.0	11	11	10	10	10	10	9	9		
14.5	12	12	12	11	11	11	11	10	10	10
15.0	13	13	13	13	12	12	12	12	11	11
15.5	15	14	14	14	14	13	13	13	13	12
16.0	16	16	15	15	15	15	14	14	14	14
16.5	17	17	16	16	16	16	15	15	15	15
17.0	18	18	18	17	17	17	17	16	16	16
17.5	19	19	19	18	18	18	18	17	17	17
18.0	20	20	20	19	19	19	19	18	18	18
18.5	21	21	21	20	20	20	20	19	19	19
19.0	22	22	22	21	21	21	21	20	20	20
19.5	23	23	23	22	22	22	22	21	21	21
20.0	24	24	24	23	23	23	23	22	22	22
20.5	25	25	25	24	24	24	24	23	23	23
21.0	26	26	25	25	25	25	24	24	24	24
21.5	27	27	26	26	26	26	25	25	25	25
22.0	28	27	27	27	27	26	26	26	26	25
22.5	29	28	28	28	28	27	27	27	27	26
23.0	29	29	29	29	28	28	28	28	27	27
23.5	30	30	30	29	29	29	29	28	28	28
24.0	31	31	30	30	30	30	29	29	29	29
24.5	32	31	31	31	31	30	30	30	30	29
25.0	32	32	32	32	31	31	31	31	30	30
25.5	33	33	33	32	32	32	32	31	31	31
26.0	34	34	33	33	33	33	32	32	32	32
26.5	35	34	34	34	34	33	33	33	33	32
27.0	35	35	35	35	34	34	34	34	33	33
27.5	36	36	36	35	35	35	35	34	34	34

\* Circumference Value = abdomen circumference – neck circumference (in inches)

Table E3.T1. Percent Fat Estimation For Men, continued

Circumference Value*	Height (in)									
	65.0	65.5	66.0	66.5	67.0	67.5	68.0	68.5	69.0	69.5
13.5										
14.0										
14.5	10	9	9							
15.0	11	11	10	10	10	10	10	9	9	
15.5	12	12	12	11	11	11	11	11	10	10
16.0	13	13	13	13	12	12	12	12	12	11
16.5	14	14	14	14	14	13	13	13	13	12
17.0	16	15	15	15	15	14	14	14	14	14
17.5	17	16	16	16	16	16	15	15	15	15
18.0	18	18	17	17	17	17	16	16	16	16
18.5	19	19	18	18	18	18	17	17	17	17
19.0	20	20	19	19	19	19	18	18	18	18
19.5	21	21	20	20	20	20	19	19	19	19
20.0	22	21	21	21	21	21	20	20	20	20
20.5	23	22	22	22	22	21	21	21	21	21
21.0	24	23	23	23	23	22	22	22	22	21
21.5	24	24	24	24	23	23	23	23	23	22
22.0	25	25	25	25	24	24	24	24	23	23
22.5	26	26	26	25	25	25	25	24	24	24
23.0	27	27	26	26	26	26	26	25	25	25
23.5	28	27	27	27	27	27	26	26	26	26
24.0	28	28	28	28	28	27	27	27	27	26
24.5	29	29	29	29	28	28	28	28	27	27
25.0	30	30	30	29	29	29	29	28	28	28
25.5	31	31	30	30	30	30	29	29	29	29
26.0	31	31	31	31	31	30	30	30	30	29
26.5	32	32	32	32	31	31	31	31	30	30
27.0	33	33	32	32	32	32	32	31	31	31
27.5	34	33	33	33	33	32	32	32	32	32

\* Circumference Value = abdomen circumference – neck circumference (in inches)

Table E3.T1. Percent Fat Estimation For Men, continued

Circumference Value*	Height (in)									
	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5
13.5										
14.0										
14.5										
15.0										
15.5	10	10	9	9	9					
16.0	11	11	11	10	10	10	10	10	9	9
16.5	12	12	12	12	11	11	11	11	11	10
17.0	13	13	13	13	13	12	12	12	12	11
17.5	14	14	14	14	14	13	13	13	13	13
18.0	15	15	15	15	15	14	14	14	14	14
18.5	17	16	16	16	16	15	15	15	15	15
19.0	18	17	17	17	17	16	16	16	16	16
19.5	18	18	18	18	18	17	17	17	17	17
20.0	19	19	19	19	19	18	18	18	18	18
20.5	20	20	20	20	19	19	19	19	19	18
21.0	21	21	21	21	20	20	20	20	20	19
21.5	22	22	22	21	21	21	21	21	20	20
22.0	23	23	23	22	22	22	22	22	21	21
22.5	24	24	23	23	23	23	23	22	22	22
23.0	25	24	24	24	24	24	23	23	23	23
23.5	25	25	25	25	25	24	24	24	24	24
24.0	26	26	26	26	25	25	25	25	25	24
24.5	27	27	27	26	26	26	26	26	25	25
25.0	28	28	27	27	27	27	26	26	26	26
25.5	29	28	28	28	28	27	27	27	27	27
26.0	29	29	29	29	28	28	28	28	28	27
26.5	30	30	30	29	29	29	29	28	28	28
27.0	31	30	30	30	30	30	29	29	29	29
27.5	31	31	31	31	30	30	30	30	30	29

\* Circumference Value = abdomen circumference - neck circumference (in inches)

Table E3.T1. Percent Fat Estimation For Men, continued

Circumference Value*	Height (in)									
	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5
13.5										
14.0										
14.5										
15.0										
15.5										
16.0										
16.5	10	10	10	10	9	9				
17.0	11	11	11	11	10	10	10	10	10	9
17.5	12	12	12	12	12	11	11	11	11	11
18.0	13	13	13	13	13	12	12	12	12	12
18.5	14	14	14	14	14	13	13	13	13	13
19.0	15	15	15	15	15	14	14	14	14	14
19.5	16	16	16	16	16	15	15	15	15	15
20.0	17	17	17	17	17	16	16	16	16	16
20.5	18	18	18	18	17	17	17	17	17	16
21.0	19	19	19	19	18	18	18	18	18	17
21.5	20	20	20	19	19	19	19	19	18	18
22.0	21	21	20	20	20	20	20	20	19	19
22.5	22	22	21	21	21	21	21	20	20	20
23.0	23	22	22	22	22	22	21	21	21	21
23.5	23	23	23	23	23	22	22	22	22	22
24.0	24	24	24	24	23	23	23	23	23	22
24.5	25	25	25	24	24	24	24	24	23	23
25.0	26	25	25	25	25	25	24	24	24	24
25.5	26	26	26	26	26	25	25	25	25	25
26.0	27	27	27	27	26	26	26	26	26	25
26.5	28	28	27	27	27	27	27	26	26	26
27.0	29	28	28	28	28	28	27	27	27	27
27.5	29	29	29	29	28	28	28	28	28	27

\* Circumference Value = abdomen circumference - neck circumference (in inches)

b. Table E3.T2. Percent Fat Estimation For Women

Circumference Value*	Height (in)									
	58.0	58.5	59.0	59.5	60.0	60.5	61.0	61.5	62.0	62.5
45.0	19									
45.5	20	20	19							
46.0	21	20	20	20	19					
46.5	21	21	21	20	20	20	19	19		
47.0	22	22	22	21	21	20	20	20	19	19
47.5	23	23	22	22	22	21	21	21	20	20
48.0	24	23	23	23	22	22	22	21	21	21
48.5	24	24	24	23	23	23	22	22	22	21
49.0	25	25	24	24	24	23	23	23	22	22
49.5	26	26	25	25	24	24	24	23	23	23
50.0	27	26	26	26	25	25	24	24	24	23
50.5	27	27	27	26	26	26	25	25	25	24
51.0	28	28	27	27	27	26	26	26	25	25
51.5	29	28	28	28	27	27	27	26	26	26
52.0	29	29	29	28	28	28	27	27	27	26
52.5	30	30	29	29	29	28	28	28	27	27
53.0	31	30	30	30	29	29	29	28	28	28
53.5	31	31	31	30	30	30	29	29	29	28
54.0	32	32	31	31	31	30	30	30	29	29
54.5	33	32	32	32	31	31	31	30	30	30
55.0	33	33	33	32	32	32	31	31	31	30
55.5	34	34	33	33	33	32	32	32	31	31
56.0	35	34	34	34	33	33	33	32	32	31
56.5	35	35	35	34	34	34	33	33	32	32
57.0	36	36	35	35	34	34	34	33	33	33
57.5	37	36	36	35	35	35	34	34	34	33
58.0	37	37	36	36	36	35	35	35	34	34
58.5	38	37	37	37	36	36	36	35	35	35
59.0	38	38	38	37	37	37	36	36	36	35
59.5	39	39	38	38	38	37	37	36	36	36
60.0	40	39	39	38	38	38	37	37	37	36
60.5	40	40	39	39	39	38	38	38	37	37
61.0	41	40	40	40	39	39	39	38	38	38
61.5	41	41	41	40	40	40	39	39	38	38
62.0	42	42	41	41	40	40	40	39	39	39

\* Circumference Value = waist circumference + hip circumference – neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	58.0	58.5	59.0	59.5	60.0	60.5	61.0	61.5	62.0	62.5
62.5	42	42	42	41	41	41	40	40	40	39
63.0	43	43	42	42	42	41	41	41	40	40
63.5	44	43	43	42	42	42	41	41	41	40
64.0	44	44	43	43	43	42	42	42	41	41
64.5	45	44	44	44	43	43	43	42	42	42
65.0	45	45	45	44	44	43	43	43	42	42
65.5	46	45	45	45	44	44	44	43	43	43
66.0	46	46	46	45	45	45	44	44	43	43
66.5	47	46	46	46	45	45	45	44	44	44
67.0			47	46	46	46	45	45	45	44
67.5				47	46	46	46	45	45	45
68.0					47	47	46	46	46	45
68.5							47	46	46	46
69.0								47	47	46
69.5										47
70.0										
70.5										
71.0										
71.5										
72.0										
72.5										
73.0										
73.5										
74.0										
74.5										
75.0										
75.5										
76.0										
76.5										
77.0										
77.5										
78.0										
78.5										
79.0										
79.5										

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	63.0	63.5	64.0	64.5	65.0	65.5	66.0	66.5	67.0	67.5
45.0										
45.5										
46.0										
46.5										
47.0										
47.5	19	19								
48.0	20	20	20	19						
48.5	21	21	20	20	20	19				
49.0	22	21	21	21	20	20	20	19	19	
49.5	22	22	22	21	21	21	20	20	20	19
50.0	23	23	22	22	22	21	21	21	21	20
50.5	24	23	23	23	23	22	22	22	21	21
51.0	25	24	24	24	23	23	23	22	22	22
51.5	25	25	25	24	24	24	23	23	23	22
52.0	26	26	25	25	25	24	24	24	23	23
52.5	27	26	26	26	25	25	25	24	24	24
53.0	27	27	27	26	26	26	25	25	25	24
53.5	28	28	27	27	27	26	26	26	25	25
54.0	29	28	28	28	27	27	27	26	26	26
54.5	29	29	29	28	28	28	27	27	27	26
55.0	30	30	29	29	29	28	28	28	27	27
55.5	31	30	30	30	29	29	29	28	28	28
56.0	31	31	30	30	30	30	29	29	29	28
56.5	32	31	31	31	30	30	30	29	29	29
57.0	32	32	32	31	31	31	30	30	30	29
57.5	33	33	32	32	32	31	31	31	30	30
58.0	34	33	33	33	32	32	32	31	31	31
58.5	34	34	34	33	33	33	32	32	32	31
59.0	35	35	34	34	34	33	33	33	32	32
59.5	35	35	35	34	34	34	33	33	33	33
60.0	36	36	35	35	35	34	34	34	33	33
60.5	37	36	36	36	35	35	35	34	34	34
61.0	37	37	37	36	36	36	35	35	35	34
61.5	38	37	37	37	36	36	36	36	35	35
62.0	38	38	38	37	37	37	36	36	36	35

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	63.0	63.5	64.0	64.5	65.0	65.5	66.0	66.5	67.0	67.5
62.5	39	39	38	38	38	37	37	37	36	36
63.0	40	39	39	39	38	38	38	37	37	37
63.5	40	40	39	39	39	38	38	38	37	37
64.0	41	40	40	40	39	39	39	38	38	38
64.5	41	41	41	40	40	40	39	39	39	38
65.0	42	41	41	41	40	40	40	39	39	39
65.5	42	42	42	41	41	41	40	40	40	39
66.0	43	42	42	42	41	41	41	41	40	40
66.5	43	43	43	42	42	42	41	41	41	40
67.0	44	44	43	43	43	42	42	42	41	41
67.5	44	44	44	43	43	43	42	42	42	41
68.0	45	45	44	44	44	43	43	43	42	42
68.5	45	45	45	44	44	44	43	43	43	43
69.0	46	46	45	45	45	44	44	44	43	43
69.5	46	46	46	45	45	45	44	44	44	44
70.0	47	47	46	46	46	45	45	45	44	44
70.5			47	46	46	46	46	45	45	45
71.0				47	47	46	46	46	45	45
71.5						47	47	46	46	46
72.0							47	47	46	46
72.5								47	47	
73.0										
73.5										
74.0										
74.5										
75.0										
75.5										
76.0										
76.5										
77.0										
77.5										
78.0										
78.5										
79.0										
79.5										

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5
45.0										
45.5										
46.0										
46.5										
47.0										
47.5										
48.0										
48.5										
49.0										
49.5	19									
50.0	20	20	19							
50.5	21	20	20	20	19	19				
51.0	21	21	21	20	20	20	19	19		
51.5	22	22	21	21	21	20	20	20	20	19
52.0	23	22	22	22	21	21	21	21	20	20
52.5	23	23	23	22	22	22	22	21	21	21
53.0	24	24	23	23	23	22	22	22	22	21
53.5	25	24	24	24	23	23	23	23	22	22
54.0	25	25	25	24	24	24	24	23	23	23
54.5	26	26	25	25	25	24	24	24	24	23
55.0	27	26	26	26	25	25	25	25	24	24
55.5	27	27	27	26	26	26	25	25	25	25
56.0	28	28	27	27	27	26	26	26	25	25
56.5	29	28	28	28	27	27	27	26	26	26
57.0	29	29	29	28	28	28	27	27	27	26
57.5	30	29	29	29	29	28	28	28	27	27
58.0	30	30	30	29	29	29	29	28	28	28
58.5	31	31	30	30	30	29	29	29	29	28
59.0	32	31	31	31	30	30	30	29	29	29
59.5	32	32	32	31	31	31	30	30	30	29
60.0	33	32	32	32	32	31	31	31	30	30
60.5	33	33	33	32	32	32	32	31	31	31
61.0	34	34	33	33	33	32	32	32	32	31
61.5	35	34	34	34	33	33	33	32	32	32
62.0	35	35	35	34	34	34	33	33	33	32

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5
62.5	36	35	35	35	34	34	34	34	33	33
63.0	36	36	36	35	35	35	34	34	34	34
63.5	37	37	36	36	36	35	35	35	34	34
64.0	37	37	37	36	36	36	36	35	35	35
64.5	38	38	37	37	37	36	36	36	36	35
65.0	38	38	38	38	37	37	37	36	36	36
65.5	39	39	38	38	38	37	37	37	37	36
66.0	40	39	39	39	38	38	38	37	37	37
66.5	40	40	39	39	39	39	38	38	38	37
67.0	41	40	40	40	39	39	39	39	38	38
67.5	41	41	41	40	40	40	39	39	39	38
68.0	42	41	41	41	40	40	40	40	39	39
68.5	42	42	42	41	41	41	40	40	40	39
69.0	43	42	42	42	41	41	41	41	40	40
69.5	43	43	43	42	42	42	41	41	41	41
70.0	44	43	43	43	43	42	42	42	41	41
70.5	44	44	44	43	43	43	42	42	42	42
71.0	45	44	44	44	44	43	43	43	42	42
71.5	45	45	45	44	44	44	43	43	43	43
72.0	46	45	45	45	45	44	44	44	43	43
72.5	46	46	46	45	45	45	44	44	44	44
73.0	47	46	46	46	45	45	45	45	44	44
73.5		47	47	46	46	46	45	45	45	44
74.0				47	46	46	46	46	45	45
74.5					47	47	46	46	46	45
75.0							47	46	46	46
75.5								47	47	46
76.0										47
76.5										
77.0										
77.5										
78.0										
78.5										
79.0										
79.5										

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5
45.0										
45.5										
46.0										
46.5										
47.0										
47.5										
48.0										
48.5										
49.0										
49.5										
50.0										
50.5										
51.0										
51.5										
52.0	20	19	19							
52.5	20	20	20	19	19					
53.0	21	21	20	20	20	20	19	19		
53.5	22	21	21	21	21	20	20	20	19	19
54.0	22	22	22	21	21	21	21	20	20	20
54.5	23	23	22	22	22	22	21	21	21	20
55.0	24	23	23	23	22	22	22	22	21	21
55.5	24	24	24	23	23	23	23	22	22	22
56.0	25	25	24	24	24	23	23	23	23	22
56.5	26	25	25	25	24	24	24	24	23	23
57.0	26	26	26	25	25	25	24	24	24	24
57.5	27	26	26	26	26	25	25	25	25	24
58.0	27	27	27	27	26	26	26	25	25	25
58.5	28	28	27	27	27	27	26	26	26	25
59.0	29	28	28	28	27	27	27	27	26	26
59.5	29	29	29	28	28	28	27	27	27	27
60.0	30	30	29	29	29	28	28	28	28	27
60.5	30	30	30	30	29	29	29	28	28	28
61.0	31	31	30	30	30	30	29	29	29	28
61.5	32	31	31	31	30	30	30	30	29	29
62.0	32	32	32	31	31	31	30	30	30	30

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Table E3.T2. Percent Fat Estimation For Women, continued

Circumference Value*	Height (in)									
	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5
62.5	33	32	32	32	32	31	31	31	30	30
63.0	33	33	33	32	32	32	32	31	31	31
63.5	34	34	33	33	33	32	32	32	32	31
64.0	34	34	34	34	33	33	33	32	32	32
64.5	35	35	34	34	34	33	33	33	33	32
65.0	35	35	35	35	34	34	34	33	33	33
65.5	36	36	35	35	35	35	34	34	34	33
66.0	37	36	36	36	35	35	35	35	34	34
66.5	37	37	37	36	36	36	35	35	35	35
67.0	38	37	37	37	36	36	36	36	35	35
67.5	38	38	38	37	37	37	36	36	36	36
68.0	39	38	38	38	38	37	37	37	36	36
68.5	39	39	39	38	38	38	37	37	37	37
69.0	40	39	39	39	39	38	38	38	37	37
69.5	40	40	40	39	39	39	39	38	38	38
70.0	41	40	40	40	40	39	39	39	38	38
70.5	41	41	41	40	40	40	40	39	39	39
71.0	42	41	41	41	41	40	40	40	39	39
71.5	42	42	42	41	41	41	41	40	40	40
72.0	43	42	42	42	42	41	41	41	40	40
72.5	43	43	43	42	42	42	42	41	41	41
73.0	44	43	43	43	43	42	42	42	41	41
73.5	44	44	44	43	43	43	42	42	42	42
74.0	45	44	44	44	44	43	43	43	42	42
74.5	45	45	45	44	44	44	43	43	43	43
75.0	46	45	45	45	44	44	44	44	43	43
75.5	46	46	46	45	45	45	44	44	44	44
76.0	47	46	46	46	45	45	45	45	44	44
76.5		47	46	46	46	46	45	45	45	44
77.0			47	47	46	46	46	45	45	45
77.5					47	47	46	46	46	45
78.0						47	47	46	46	46
78.5								47	47	46
79.0										47
79.5										

\* Circumference Value = waist circumference + hip circumference - neck circumference (in inches)

Citation. The calculation tables listed above, are derived from the body fat equations originating from the research and statistical analysis performed by: a) Hodgdon, J.A. and M.B. Beckett (1984) Prediction of percent body fat for U.S. Navy men from body circumferences and height. Report no. 84-11, Naval Health Research Center, San Diego, CA; and b) Hodgdon, J.A. and M.B. Beckett (1984) Prediction of percent body fat for U.S. Navy women from body circumferences and height. Report no. 84-29, Naval Health Research Center, San Diego, CA.

**EXHIBIT 8****PHS Commissioned Corps Readiness Training****1. Modules Required for Basic Level of Readiness (Total of 12)**

CCRF Overview  
 PHS History  
 Disaster Response  
 Health Consequences and Response  
 Disaster Triage  
 Critical Incident Stress Management  
 Infectious Disease Management  
 Terrorism  
 ABCs of Bio-Terrorism

PLUS three modules from Group A or three from Group B

Group A	Group B
Preventive Medicine for Field Operations	NDMS in Review
Safety and Security Awareness	DMAT Roles and Responsibilities
Personal and Family Preparedness	Disaster Mortuary Operational Response Teams

**2. Modules Required for Intermediate and Advanced Levels of Readiness- (Total of 35)**

The three courses you did not complete from Group A or Group B above, plus all courses from *Field Issues, Special Environments, and International Responses*

***Field Issues***

Veterinary Issues in Disasters	Incident Management System
Media Relations and the Role of the PIO	Hazardous Materials Awareness
Health Consequences and Response	Personal Gear
Occupational Safety and the Disaster Response Worker	

***Special Environments***

NDMS Team Operations in Hostile Environments	Refugee Health Care
Cultural Awareness	Civil Military Operations
Mass Gathering Medicine	Outreach Activities
Health System Design	Basic Concepts in Epidemiology
Public and Environmental Health	Incident Command System

***International Responses***

International Deployment	Staying Healthy Overseas
The Fog of Relief	Working Effectively Overseas

**Additional Modules Required for Clinicians Only – Intermediate and Advanced Status**

Airway Management	Abdominal Trauma
Thoracic Trauma	Spinal Injuries
Head Injuries	Blast Injuries
Heat Exposure Injuries	Cold Exposure and Hypothermia
Burn Injuries	Crush Injuries
Pediatric Care/Triage	Field Dentistry
OB-GYN Issues in Disasters	Eye Care Following Disasters
Resuscitation Fluids in Disasters	Orthopedic Injuries & Stabilization During Disasters

3. **Modules Required for Advanced Level of Readiness** Requires Additional Training Courses (a minimum of 40 hours of course work from either the Clinical Track or Public Health Track from the following listing)

**Clinical Track**

Advanced Trauma Life Support  
 American Red Cross Nursing  
 American Red Cross Mental Health  
 Combat Casualty Care Course (C4) (DMRTI)  
 Trauma Nursing Care Course (DMRTI)  
 Radiological Emergencies (CCRF)  
 Medical Management of Chemical and Biological Casualties Course (USAMRIID)  
 Mass Vaccination Course (CCRF) or Mass VAXX/NPS Course  
 Forensic Odontology (AFIP)  
 Medical effects of Ionizing Radiation (AFRRI)  
 Medical Planning and Care in Radiation Emergencies (REAC/TS)  
 Handling of Radiation Emergencies by Emergency Department Personnel (REAC/TS)

**Public Health Track**

Combined Humanitarian Assistance Response Training (CoE)  
 Disaster Assistance Relief Training (USAID)  
 Forensic Odontology (AFIP)  
 First Responder Course (State-based certification)  
 Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) Course  
 Homeland Security Leadership Medical Executives Course (DMRTI)  
 Critical Reactions Aimed Toward Emergency Response (CCRF) (CRATER)  
 Radiological Emergencies (CCRF)  
 Strategic National Stockpile Training (CCRF/CDC) or NPS Course (CCRF/CDC)  
 Joint Operations Medical Management Course (DMRTI)  
 Liaison Course (CCRF)  
 Emergency Coordinator Augmentee Course (CCRF/RHA)  
 Integrated Emergency Management Course (CDC/FEMA)  
 Prevention Effectiveness Course (CDC)  
 EIS Summer Course (CDC)  
 FDA Food/Drug/Blood/Biologics Security Coursework (beyond “new hire” training)  
 Introduction to Principles and Practices of Clinical Research (NIH)

