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**Aerospace Medicine**

**RESPIRATORY PROTECTION PROGRAM**



**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 48-1, Aerospace Medical Program. This instruction gives policies and responsibilities for the Respiratory Protection Program. It applies to all military and civilian Air Force employees whose duties require the use of respiratory protection or maintenance of respiratory protection components, as determined by the Installation Medical Authority. It implements AFI 48-101, Aerospace Medical Operations, and TO 42B-1-22, Quality Control of Compressed and Liquid Breathing Air. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**SUMMARY OF REVISIONS**

This revision changes the instruction extensively. Responsibilities and procedures for using and maintaining airline respirator systems are added and discussed throughout this instruction. Airline fittings are required to be standardized throughout the base, unless a waiver is received from BE. Changes BES to BE, changes AFOSH Std 48-1 to AFOSH Std 48-137, Respiratory Protection Program, contact lens use is no longer prohibited, adds responsibilities for Contracting Directorate (OO-ALC/PK), adds responsibilities for the Technology & Industrial Support Directorate (OO-ALC/TI). A ( indicates revisions from the previous edition.

**1. POLICIES:**

- 1.1. Use of Respirators. Respirators will be used only when risks from identified inhalation hazards cannot be eliminated or reduced with engineering controls. The purpose of a respirator is to prevent the inhalation of harmful airborne substances or oxygen-deficient air.
- 1.2. Written Respiratory Protection Program. All workplaces where respirators are used must establish a written respiratory protection program in accordance with AFOSH Std 48-137, Respiratory Protection Program.

1.3. Type of Respirator. The type of respirator to be used in workplaces will be specified by Bioenvironmental Engineering (BE) personnel. Respirators will either be required because of a substance specific instruction or recommended after an evaluation of the workplace by BE. No elective-use respirators will be worn.

## 2. DEFINITIONS:

2.1. Installation Medical Authority. The Bioenvironmental Engineer or Base Respiratory Protection Program Administrator assigned to Bioenvironmental Engineering Flight (75 AMDS/SGPB), Hill AFB, is the Installation Medical Authority for the purpose of this instruction and AFOSH Std 48-137.

2.2. Required Use Respirator. A respirator that is required to be used in an area where BE has determined that exposures would exceed allowable health standards if a respirator was not worn.

2.3. Recommended Use Respirator. A respirator that is recommended to be used based on BE evaluation of a task or process where a potential exposure exceeding allowable health standards could occur.

2.4. Approved Respirators. A respirator is considered to be any device required or recommended by BE and worn by the worker to filter contaminants from the air or to provide a supply of air to the worker. Approved respirators have been tested and approved for use by the National Institute of Occupational Safety and Health (NIOSH). These respirators bear a NIOSH approval number issued based on testing results. Respirators without an approval number will not be used.

2.5. Filtering Face Piece Device (FFPD). For the purposes of this instruction, FFPDs are not considered respirators and may be used strictly for comfort purposes. Single strap dust masks are not authorized for use on Hill AFB but dust masks with two straps can be used as FFPDs. Personnel who wear FFPDs must receive initial and annual training on the limitations of the devices from their supervisor and the training must be documented.

## 3. RESPONSIBILITIES:

3.1. Unit Commanders and Directorate Officials will:

3.1.1. Ensure a respiratory protection program that conforms to the requirements of AFOSH Std 48-137 and applicable OSHA standards is properly established within their organization.

3.1.2. Ensure personnel using or supervising others who use respiratory protection devices are provided training as outlined in AFOSH Std 48-137.

3.1.3. Ensure new and existing processes and operations which may create airborne concentrations of hazardous materials are evaluated by BE.

3.1.4. Use engineering, work practice, or administrative controls instead of respirators when practical.

3.1.5. Ensure workplace supervisors receive initial and annual supervisor respirator training from BE each time the supervisor changes workplaces.

3.1.6. Reassign employees disqualified from wearing respirators to duties without respiratory hazards.

3.1.7. Ensure that the same type or brand of fittings and connectors are used on all breathing air-lines throughout the base. In coordination with OO-ALC/PK, each commander and directorate will use the same exclusive supplier/brand for such fittings and connectors to ensure basewide uniformity.

3.1.7.1. Contact BE if a waiver is required from the basewide uniform fittings and connectors. Waivers to use fittings other than the fittings selected for basewide use must be approved by BE, and will be determined on a case-by-case basis. Waiver may be granted by workplace or by entire directorate.

3.2. Workplace Supervisors or Appointed Workplace Respiratory Protection Program Administrator will:

3.2.1. Maintain copies of this instruction, AFOSH Std 48-137 and 29 CFR 1910.134. ANSI Standard Z88.2-1992 is recommended but not required.

3.2.2. Contact BE when workplace operations change for evaluation of new chemicals, processes, and procedures, or when engineering controls are modified or added.

3.2.3. Ensure BE coordinates on any work orders that involve processes that require respirators or breathing air systems, or where respirators or breathing air parts are specified.

3.2.4. Ensure each workplace where respirators are required or recommended maintains a written program for respirator use, care, maintenance, and storage.

3.2.4.1. Develop and maintain a workplace written respiratory protection program. Examples of these written programs may be obtained from BE. These written programs will be approved by BE and will be inspected during the annual BE workplace survey.

3.2.5. Forward names and social security numbers (SSN) of newly assigned employees to the BE COMMAND CORE office for entry into the COMMAND CORE Occupational Health Tracking System.

3.2.6. Ensure employees who have significant physical changes or medical conditions that could interfere with respirator use are rescheduled for medical examination and/or refit testing by BE.

3.2.7. Control the issue of respirators to those employees who are certified. Workplace supervisors will ensure the employee is issued only the specific respirators listed on his/her fit testing letter, in the COMMAND CORE system, and in the Depot Maintenance Hazardous Material Management System (DM-HMMS). All respiratory protection equipment will be issued using the DM-HMMS.

3.2.8. Not allow an employee to wear a respirator if anything interferes with the facepiece seal or valves. Anything which projects into the sealing surface or valves of the respirator is prohibited. This includes beards, mustaches, goatees, long hair, eyeglass temple pieces, and head coverings.

3.2.9. Appropriately discipline respirator wearers found to be in violation of program requirements.

3.2.10. Immediately notify BE at 777-4551 when any failure in respirator equipment causes any chemical or physical agent exposure requiring medical attention. Secure all respirator equipment involved in any incident or mishap. Ensure the equipment is given to BE during an after action investigation.

- 3.2.11. Work with Optometry (75 AMDS/SGPFE) to provide eyeglass inserts for those who require prescription lenses when wearing full-face respirators. Soft and gas permeable contact lenses are permitted.
- 3.2.12. Ensure breathing air quality tests are performed periodically on compressed breathing air per TO 42B-1-22 and furnish sampling results to BE. Ensure the breathing air system is sampled and results are reviewed by BE prior to initial use and after any major maintenance.
- 3.2.13. Document initial and annual respirator training on AF Form 55, Employee Safety and Health Record, or electronic equivalent.
- 3.2.14. Appoint an individual to be responsible for the use, maintenance, inspection, and care of common use, emergency, or escape respirators. BE will oversee training for workplace supervisors, workers, and those individuals appointed to oversee the use, maintenance, and care of common use or emergency escape respirators during annual BE surveys.
- 3.2.14.1. Ensure common use respirators are cleaned and disinfected before they are worn by another user.
  - 3.2.14.2. Maintain emergency use respirators in a clean and sanitary condition, in sealed wrap, and immediately ready for use at all times.
- 3.2.15. Advise all respirator wearers that they may leave the area at any time for relief from respirator use.
- 3.2.16. Ensure only qualified individuals trained in respirator maintenance replace parts on respirator systems. Ensure all replacement parts used in respirator systems are certified for use by the respirator manufacturer. All parts must be compatible in order for the system to maintain its certification.
- 3.2.17. Ensure workers are not placed in an area requiring respirators before physicals, fit testing, and training are completed. Ensure TDY or loaned to another workplace personnel have documentation on these requirements before allowing them to work in an area that requires respiratory protection.
- 3.2.18. Ensure all new personnel and TDY personnel receive a full workplace orientation; including personal protective equipment (PPE) requirements and understand the reason for the wear of the PPE prior to working in area. Ensure TDY personnel only wear the PPE for which they have been certified and that the PPE meets Hill AFB requirements. Contact BE for assistance with the PPE requirements.
- 3.2.19. Ensure workers do not maintain respirator parts, cartridges, filters, and fittings in their toolboxes. Have these items turned back into Material Issue Control.
- 3.2.20. Add a respiratory protection checklist for the required supervisor monthly inspections of industrial areas as required in AFI 91-301 AFMC Supplement paragraph 2.14.4.3.
- 3.2.21. Ensure that carbon monoxide (CO) alarms are installed on all compressors used to supply breathing air to airline respirators. The CO alarms must provide visible and audible warnings to the respirator wearer.

3.2.22. Identify workplaces using respirators during Environmental, Safety, and Occupational Health (ESOH) reviews and Safety Engineering assessments relating to industrial process changes.

3.2.23. Ensure that airline couplings used with airline respirators are incompatible with outlets for non-respirable worksite air or other gas systems to prevent the inadvertent provision of non-respirable gases to airline respirators.

3.2.24. Ensure that no asphyxiating substance can be introduced into breathing airlines (e.g., ensure fittings on nitrogen and all other non-breathable gas sources are incompatible with breathing air source fittings).

3.3. Individuals Who Wear Respirators will:

3.3.1. Wear only the respirators they were fit tested and trained for. Ensure fit testing and training is done annually or when they are assigned to a new workplace, including when on TDY or loaned to another workplace. Use their respirator according to the instructions and training received from BE. Review the requirements of this instruction, AFOSH Std 48-137, and the workplace written program.

3.3.2. Inspect respirator parts prior to use. Perform positive and negative pressure leakage tests each time air-purifying respirators are put on and whenever adjustments are made during use. Ensure all parts on the respirator are made by the same manufacturer or are certified for use in the system.

3.3.3. Properly maintain and store respirator according to the workplace written program. Wash the respirator on a periodic basis or return it to the Respirator Cleaning Facility for cleaning, Building 535 (Pollution Prevention Division (OO-ALC/EMP)).

3.3.4. Inform the supervisor of any system discrepancies or leakage test failure that can't be corrected. Contact the supervisor or the workplace respiratory protection program administrator so an appointment with BE can be obtained for refit testing if required.

3.3.5. Inform your supervisor if you wear contact lenses.

3.3.6. Maintain the NIOSH certification by not mixing parts from different respirator manufacturers. This includes but is not limited to cartridges, fittings, and airline hoses.

3.3.7. Provide the workplace supervisor a copy of their fit test letter that shows which respirators, cartridges, etc. have been approved by BE.

3.3.8. Ensure parts replacement to respirator systems are performed only by qualified individuals trained in respirator maintenance.

3.4. Individuals Who Repair and Maintain Respirators and/or Breathing Air Systems will:

3.4.1. Ensure all work orders involving respirator repairs, including breathing air compressors and airline fittings, have been coordinated on by BE.

3.4.2. Ensure that only parts made by the same manufacturer are used in any respirator repair. For a supplied air breathing system, all parts from the wall connection to and including the face piece must be made or certified by the same manufacturer. The only exception is where a part made by another manufacturer is specifically certified by the respirator manufacturer of the fittings and

connectors supplier selected by OO-ALC/PK in coordination with the commanders and directorates. For example, Bullard, 3M, and MSA all allow specific Schrader fittings.

3.4.3. Use no parts that are locally manufactured.

3.4.4. Ensure that sorbent beds and filters of air purifying systems are maintained and replaced or refurbished periodically according to the manufacturer's recommendations.

3.4.5. Keep a tag at the compressor containing the most recent date of sorbent bed and filter replacement or refurbishment, along with the signature of the person performing the change.

3.4.6. Receive training from the manufacturer on the maintenance of their valves, regulators, alarms, and compressor systems.

### 3.5. 75 AMDS/SGPB will:

3.5.1. Appoint an individual as the base Respiratory Protection Program Administrator (RPPA). This individual is the base level authority on selection, use, fit testing, limitations, and maintenance of respirators.

3.5.2. Give advice and guidance on all industrial hygiene aspects of the Respiratory Protection Program to all workplaces on Hill AFB.

3.5.3. Evaluate airborne contaminant hazards through air samples and process evaluation.

3.5.4. Specify the type of respirator needed for each process/workplace.

3.5.5. Verify respiratory protection requirements at least once a year in each workplace using respirators.

3.5.6. Coordinate with Occupational Medicine (75 AMDS/SGPFO) to schedule respirator fit testing and training.

3.5.7. Conduct initial, annual, and periodic fit testing and training for each worker requiring a respirator. Re-fit test each employee who has a bad facepiece fit or who changes workplace potential exposure groups (PEG). Notify the supervisor of employees who cannot get a satisfactory respirator fit.

3.5.8. Provide fit test certification (AF Form 2772, Certificate of Respirator Fit Test, or COMMAND CORE letter) to each employee when they are fit tested and trained. Maintain the fit test records of all personnel until the next fit test is administered.

3.5.9. Educate and train workplace supervisors, workers, and those individuals appointed to oversee the use, maintenance, and care of common use or emergency escape respirators during annual BE surveys.

3.5.10. Keep a master file in COMMAND CORE of all employees who have been fit tested and trained.

3.5.11. Investigate any incident or mishap involving respirators. Analyze the equipment to determine if failure occurred.

3.5.12. Evaluate breathing air quality test results and give recommendations if required. Keep a master file of breathing air quality results.

3.5.13. Check and approve at least annually all workplace written programs relating to respiratory protection.

3.5.14. Periodically inspect the central respirator cleaning and maintenance facility.

3.6. Supply Division (75 ABW/LGS) will:

3.6.1. Order only the respirators indicated on the worker's fit testing letter. Substitutions are not permitted.

3.6.2. Issue respirators and components (cartridges and air-supplied hoods, masks, hoses, fittings) to workers through the DM-HMMS computer system. Issuing personnel will ensure that the items they are issuing are certified as a unit by checking the NIOSH information with the respirator and components.

3.6.3. Inform workers if respirator issue is denied to the DM-HMMS. Print the worker a copy of the denial so the denial can be resolved.

3.6.4. Assist with identification of respirator parts in the supply system and control of the respirator parts through DM-HMMS and the IEX coding process.

3.7. Public Health Flight (75 AMDS/SGPM) will:

3.7.1. Make sure all respirator users have been correctly coded to receive baseline and annual medical evaluations.

3.7.2. Inspect the workplace respirator program during shop visits. Any identified discrepancies or potential problems will be identified to BE.

3.8. 75 AMDS/SGPFO will:

3.8.1. Arrange for scheduling and conducting initial and routine medical surveillance of respirator users.

3.8.2. Notify workers and supervisors if a worker is disqualified from the respirator program due to medical conditions.

3.9. 75 AMDS/SGPFE. 75 AMDS/SGPFE will provide respirator eyeglass inserts for those workers needing them.

3.10. Aerospace Medical Council. Aerospace Medical Council will review the required components for medical surveillance of respirator wearers.

3.11. Ground Safety Division (OO-ALC/SEG). OO-ALC/SEG will assist BE with investigations of any incident or mishap involving respirators. OO-ALC/SEG should ensure that organization safety personnel assist BE by monitoring the use of respirators in the workplace, and reporting any discrepancies to BE.

3.12. Fire Team A & B Operations (75 CEG/CEFO). 75 CEG/CEFO will provide initial and annual training on self-contained breathing apparatus to workers required to use them for work or escape purposes. A list of workers requiring this training will be provided by BE monthly, after the medical qualification is completed.

3.13. OO-ALC/PK will:

- 3.13.1. Identify a single point of contact to coordinate all respirator procurements. In coordination with commanders and directorates, identify a sole source for purchase of all breathing air fittings and connectors to ensure supply airline fitting and connector uniformity throughout the base, that will prevent air supply hoses from being connected to any non-breathing airline.
  - 3.13.2. Ensure all breathing air equipment and parts procurements are reviewed by 75 AMDS/SGPB.
  - 3.13.3. Procure only the respirator system identified. No substitutes will be procured without specific approval of 75 AMDS/SGPB.
- 3.14. OO-ALC/TI will:
- 3.14.1. Ensure Precision Measurement Equipment Laboratory (PMEL) Branch (OO-ALC/TIPL) provides PMEL support as requested and required by the using organization.
  - 3.14.2. Ensure Production/Equipment Maintenance Branch (OO-ALC/TIPM) installs, repairs, and maintains respiratory protection systems as requested and required by the using organization.
  - 3.14.3. Ensure Science and Engineering Laboratory Branch (OO-ALC/TIEL) collects and analyzes all breathing air samples for all compressed breathing air systems to ensure the quality meets grade "D" breathing air specifications.

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