

**BY ORDER OF THE COMMANDER,
18TH WING (PACAF)**

18TH WING INSTRUCTION 48-102

23 MARCH 2001



Aerospace Medicine

**RESPIRATORY PROTECTION PROGRAM
(RPP)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the AFDPO WWW site at:
<http://afpubs.hq.af.mil>.

OPR: 18 AMDS/SGPB
(Lt Col Ramon A. Cintron-Ocasio)
Supersedes 18 WGI 48-102, 8 July 1996

Certified by: 18 AMDS/CC
(Lt Col Dale R. Tidaback)
Pages: 12
Distribution: F

This instruction implements AFOSH Standard 48-137, *Respiratory Protection Program*. It establishes guidance for training requirements and section responsibilities. It applies to 18th Wing and associate units at Kadena AB and the US Air Force Reserve. This publication does not apply to the Air National Guard.

SUMMARY OF REVISIONS

Three major changes are incorporated into this standard. First, in addition to stating general respiratory protection (RP) program considerations for tuberculosis (TB), authority is delegated to the medical facilities to determine the appropriate recurring fit test frequency. Second, the total prohibition on use of contact lenses with respirators is deleted; soft and gas permeable contact lenses are permitted. Third, the standard incorporates 29 CFR 1910.134 requirements for medical qualification for RP users and fit test protocols. Refer to the 8 January 1998 and 23 April 1998 Federal Registers for 29 CFR 1910.134 and corrections, respectively. Several minor changes and corrections are also incorporated throughout this standard. A bar (|) indicates revision from the previous edition. Prescribed forms do not appear in this standard; they may be accessed at either <http://afpubs.hq.af.mil> or the Air Force Electronic Publications Library (AFEPL).

1. Terms Explained:

1.1. Respirator. An approved device designed to provide the wearer with respiratory protection against inhalation of harmful atmospheres. The respirator shall be tested and listed by the National Institute for Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA).

2. Responsibilities:

2.1. Unit commanders will enforce the provisions of this regulation within their respective organizations.

2.1.1. Maintain a Bioenvironmental Engineering Flight (BEF) approved workplace respiratory protection operating instruction (OI) as required by AFOSH STD 48-137. The content of the OI will include the items listed in AFOSH STD 48-137 Para, 9.3.3.

2.1.2. Request BEF evaluation and approval prior to implementing any new or significantly modified work process whenever respirators are proposed for worker protection.

2.2. Supervisors of workplaces where respirators are required will:

2.2.1. Direct workers assigned to jobs requiring respiratory protection to contact BEF for fit testing and training. Additional training may be requested if the supervisor determines the worker has insufficient knowledge of respirator use or the respirator appears to fit improperly.

2.2.2. Ensure each worker assigned to a job where a respirator is required is trained, fit tested, and given the proper respirator before beginning work.

2.2.3. Direct workers to the Optometry Clinic (18 AMDS/SGPFE) if corrected lenses are needed while wearing a full-face respirator. Provide the worker with the necessary system or kit for mounting the corrective lenses into the BEF-approved respirator. The system or kit is unique to each manufacturer's equipment and must be ordered along with the worker's respirator from supply.

2.2.4. Enforce the proper use of personal respirator equipment wherever a requirement for this equipment has been specified by BEF.

2.2.5. Ensure individually issued respirators are indelibly marked with each worker's name or unique identification code (i.e., last four of their social security number).

2.2.6. Attend annual supervisor refresher training provided by BEF. Contact BEF at 634-4752 to schedule annual refresher training for workers.

2.2.7. Provide a roster, listing all shop personal that require a respirator, to BEF on a quarterly basis.

2.2.8. For initial fit test provide a medical questionnaire for personnel that require fit testing to BEF one month prior to the individuals birth date.

2.3. Bioenvironmental Engineering Flight (18 AMDS/SGPB) will:

2.3.1. Identify potentially hazardous exposure conditions, evaluate the conditions under which respirators must be worn, and specify the types of respiratory protection for the work process.

2.3.2. Evaluate organizational respiratory protection procedures, practices, and operating instructions and recommend corrective actions when deficiencies are noted.

2.3.3. Monitor and restrict respirator issue from Supply as deemed necessary to ensure the appropriate respirators are issued to the workers.

2.3.4. Enroll in the RPP and monitor all workers who are required to wear any type of respirator in the performance of their duties.

2.3.5. Conduct recertification fit testing of workers who wear negative pressure respirators at least once every 12 months unless required more frequently by a specific Air Force or Occupa-

tional Safety and Health Standard (i.e., asbestos, lead, benzene, every 6 months). Perform worker recertification fit testing if the supervisor determines the worker has insufficient knowledge of respirator use or the respirator appears to fit improperly.

2.3.6. Document all fit tests on PortaCount Fit Test Report, and provide worker with a copy to file with their training records.

2.3.7. Provide initial and annual refresher training during the occupational health visit to supervisors of respirator users.

2.3.8. Provide annual refresher training to workers. This training will be conducted in conjunction with the workers annual preventive health assessment (PHA).

2.3.9. Provide assistance as required to procure respirators.

2.3.10. Coordinate with Public Health and the 18 MDG Infection Control Officer concerning exposure to TB. Establish local procedures for control of exposures to TB.

2.3.10.1. Ensure personnel that work with active TB patients directly are trained and fitted in the proper wear of the N95 particulate mask.

2.4. The Occupational Health Working Group (OHWG) will identify and initiate scheduling of workers who require an initial RPP occupational health exam.

2.5. Flight Medicine Office (FMO) will review medical questionnaire to determine continued medical clearance for wear of a respirator.

2.5.1. The FMO or the Primary care manager (PCM) will see all personnel not cleared for fit testing on a walk-in basis when they show for their PHA.

2.6. Base Fire Department (18 CES/DEF) will:

2.6.1. Train all emergency response workers who must use a self-contained breathing apparatus (SCBA) annually.

2.6.2. Advise SCBA inspection and maintenance.

2.7. Optometry Clinic (18 AMDS/SGPFE) will:

2.7.1. Ensure current and adequate refractive prescriptions are used for respirator insert lenses for the wear of a respirator.

2.7.2. Ensure necessary corrective lens mounting system or kit is obtained from worker.

2.7.3. Coordinate acquisition and insertion of respirator insert lenses into mounting system or kit.

2.7.4. Verify completed system or kit prescription lenses for accuracy as per American National Standards Institute (ANSI) standards.

2.8. Det 44, Aerospace Fuels Lab will: Ensure bottled air for use in emergencies is tested and meets all breathing air quality requirements.

2.9. All workers assigned to jobs requiring use of respirators will:

2.9.1. Wear respirators properly and consistently for chemicals and processes identified by BEF. For example, paint spray respirators will be used only for painting operations; surgical masks or

asbestos respirators will not be substituted because they may give a false sense of security yet permit unacceptable exposure to chemicals.

2.9.2. Report any respirator problems immediately to the supervisor, e.g., noticeable chemical odors damaged respirator, incomplete seal, etc.

2.9.3. Remain clean shaven to ensure the face-to-facepiece seal can be maintained when using an air-purifying respirator.

2.9.4. Perform positive and negative pressure checks each time the respirator is donned.

2.9.5. Wear only approved corrective lenses when using full facepiece respirators recommended by 18 AMDS/SGPB. Ensure spectacle insert does not interfere with proper wear of the respirator. Contact BEF for respirator fit retesting if necessary. Do not wear normal eyeglasses with full-facepiece respirators. Contact lenses may be worn as long as they are soft and gas permeable, IAW AFOSH Std 48-137.

2.9.6. Inspect all respirators or supplied-air system components before each use and perform necessary cleaning and maintenance as prescribed by AFOSH Std 48-137.

3. Policy:

3.1. Respirator Certification. Respirators used under this program will be certified by the National Institute for Occupational Safety and Health (NIOSH). Certification numbers are prefixed with the letters TC (Test Certification).

3.2. Respirator Use. Respirators will be worn where specified by an applicable directive or when recommended in writing by BEF. Normally, the need to wear a respirator will be validated by the results of air sampling conducted in the workplace. However, respirator policies specified in technical orders, regulations, or higher headquarters policy letters will take precedence over air sampling results. In work situations where timely air sampling is not feasible, BEF may recommend respiratory protection based on observation of the work process and professional judgment and experience.

3.3. Discretionary use of respirators is not permitted in accordance with AFOSH Standard 48-137, *Respiratory Protection Program*.

GARY L. NORTH, Brigadier General, USAF
Commander, 18th Wing

Attachment 1

RESPIRATORY TRAINING AND FIT TESTING PROCEDURES

A1.1. Give training on the program.

A1.1.1. Use the outline provided (you can give to them and let them read it; have them take a copy).

A1.1.2. Show them how to clean it and inspect for defects.

A1.2. Enter Port-a-Count program.

A1.3. Locate Individuals medical questionnaire in the shop folder.

A1.3.1. Shop folders are located on the desk in the training room.

A1.3.2. Ensure all medical questions are answered no or that a doctor has signed it if there are yes' circled.

A1.4. Have individual sign in on sign in sheet located in shop folder.

A1.5. Turn on Port-a-Count.

A1.5.1. Put wick in Port-a-Count before turning on.

A1.5.2. Once 60-second test is complete, presses COUNT on machine to ensure it is working.

A1.5.2.1. Count should be zero when filter is attached to hose.

A1.5.2.2. Take off filter to get count of ambient air.

A1.5.2.2.1. Ambient air should be between 15,000 and 40,000.

A1.5.2.2.2. If ambient air is <10,000, light the candle.

A1.6. Give individual respirator and have him/her put it on.

A1.6.1. If refresher training ask individual for size; if initial, use best judgement for what size they wear.

A1.6.2. The following shops use the following respirators:

Table A1.1. Workplace on Respiratory Protection Program.

Shop	Shop
18 MXS Structural Maintenance	18 CES Water Systems
18 MXS Corrosion Control	18 CES Liquid Fuels Maint
18 MXS Fuels System Repair	18 CES Entomology
18 MXS Modular Repair	18 CES Furniture Repair
18 MXS Propulsion Flight	18 CES HazMat Team
18 MXS Metals Tech	18 CES Fire Dept
18 MXS Repair & Reclimation	18 TRANS Allied Trades
18 MUNS Maintenance Fabrication	Det 35 Industrial Area
18 MUNS Conventional Maint	353 MXS Corrosion Control
18 MUNS Bomb Renovation	353 MXS Fuel Cell
18 MUNS Equipment Maintenance	909 ARS Sortie Generation
18 SVS Golf Course Ground Maint	961 Radar Maintenance
18 SVS Chibana Golf Course Maint	653 Dep Aircraft Maintenance

A1.6.3. Change fit-factor pass level for all full-faced respirators fit tests.

A1.6.3.1. This is done by pressing **alt** and arrow to the right to **Customize** then arrows down to fit-factor pass level.

A1.6.3.2. Change fit-factor pass level to 1000 for full face and 100 for half face. (You only have to do this once unless you exit the Port-a-Count Program)

A1.6.3.3. Do **Communication Test** (under **Begin Test**).

A1.7. Fill out personal information for individual under **Start fit test**.

A1.7.1. To enter **Start fit test**, press **alt**, then arrow to the right to **Begin test** and then down.

A1.7.2. Fill out information using medical questionnaire or sign in sheet.

A1.7.2.1. Put in full social security # (i.e., 555-42-1234).

A1.7.2.2. Autosave Filename @ bottom is name on folder (i.e. SHOPS.DBF).

A1.7.2.3. Certification # is next # in green log book (i.e., 980012).

A1.7.2.4. DO NOT change the file name.

A1.7.2.5. Press **enters** to begin test.

A1.7.3. If ambient air (count of particulate) goes above 40,000 particulate, blow out candle. (Ideal count of particulate is 25,000).

A1.7.4. Once you see that the individual is going to pass fit test, fill out information in green logbook.

A1.8. Once test is complete;

A1.8.1. Have individual remove mask and wipe out using alcohol-free pads.

A1.8.2. Remove hose from mask and

A1.8.2.1. If going for lunch break, turn off machine.

A1.8.2.2. Remove wick and replace with “for storage only”.

A1.8.2.3. Press **enters** to save test and press **enters** again to exit fit test.

A1.8.2.4. Go into **Print** and print two copies of test.

A1.8.2.4.1. Sign both copies and have individual sign both copies.

A1.8.2.4.2. Give one copy to him/her and keep one copy for us.

A1.8.2.5. Sign and date medical questionnaire and initial in space for cleared for respirator use.

A1.9. File our copy of the test in the shop folder with other tests.

A1.10. If it has already been signed by a doctor, place it in the folder labeled “Completed”.

A1.10.1. If you are the only one that has signed it, place it in the folder to go to FSO.

A1.10.2. All personnel trained will be put into Command Core by the end of the day.

Attachment 2

SAMPLE RESPIRATORY PROTECTION O.I. TEMPLATE FOR SHOPS

DEPARTMENT OF THE AIR FORCE
(Squadron)
(Shop)
Kadena AB, Japan

Operating Instruction 48-137

(Date)

**AEROSPACE MEDICINE
RESPIRATORY PROTECTION PROGRAM**

This operating instruction establishes procedures for the conduct of an effective Respiratory Protection Program (RPP). Reference: AFOSH Std 48-137. Specific questions concerning the RPP should be directed to 18 AMDS/SGPB, Bioenvironmental Engineering Flight (BEF) at ext 634-4752.

A2.1. General: Respiratory protection is required in the work area because certain operations may generate airborne contaminant levels above occupational exposure limits (OEL's). In particular, these respirators and cartridges must be worn when performing the listed operations:

<u>HAZARDOUS OPERATION</u>	<u>RESPIRATOR</u>	<u>CARTRIDGE</u>
----------------------------	-------------------	------------------

(Get information from BEF Survey)

A2.2. Respirator User Training: BEF will provide initial supervisory and worker training concerning the RPP and respirator use.

A2.2.1. Refresher training is required annually (unless specified differently by BEF).

A2.2.2. Training will be documented by the shop supervisor on the worker's AF Form 55.

A2.3. Respirator Issue: Requisition documents for respirators will be coordinated through BEF to ensure the correct respirator is being ordered. Respirators are nationally stock listed in the 4240 stock class. Respirators issued to personnel in the shop will be maintained by the person to whom they were issued.

A2.4. Pre- and Post-Use Respirator Inspection: **Attachment 1** to this OI is a checklist for respirator inspection. Respirators will be inspected before and after each use. Problems with respirators will be brought to the attention of the supervisor for correction. Ensure items specifics to the respirator, which are covered in the manufacturer's literature, are also inspected.

A2.5. Routine/Non-Routine Respirator Use and Monitoring:

A2.5.1. Positive/negative pressure check: Each time a respirator is donned for use during one of the operations listed in 1 above, a positive and negative pressure check will be performed.

A2.5.1.1. Positive pressure test: Close off the exhalation valve and exhale gently onto the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

A2.5.1.2. Negative pressure test: Close off the inlet opening of the cartridge(s) by covering with the palm of the hand(s) or by replacing the seal(s), inhale gently so the facepiece collapses slightly, and hold the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

A2.5.2. Cartridge replacement: Particulate filters will be replaced when breathing becomes harder than usual, or when their ability to trap contaminants has been visibly compromised. Chemical cartridges will be changed when the wearer smells, tastes, or otherwise detects the contaminant. Prefilters will be changed each work shift as a minimum, or as required during a work shift. Cartridges will be used only up until their shelf life runs out. Cartridges will be replaced when the wearer detects an odor or smells the chemicals being used. For chemical without a good warning sign for smell or taste, BEF will determine the cartridge replacement frequency.

A2.5.3. Maintenance: Respirator maintenance will be carried out quarterly, or more often if necessary to maintain the integrity of the respirator. Each wearer shall be provided with a respirator that is clean and in good operating condition. Maintenance shall include:

A2.5.3.1. Washing, sanitizing, rinsing, and drying (see [Attachment 4](#)).

A2.5.3.2. Inspection for defects (see [Attachment 3](#)).

A2.5.3.3. Replacement of worn or deteriorated parts and repair, if necessary. Repairs can only be made with parts designed for that respirator. Inter change of parts between types or manufacturers voids approval of the respirator. No attempts will be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations. Reducing or admission valves and regulators will be returned to the manufacturer or other trained technician for adjustment and/or repair.

A2.5.3.4. Written records of maintenance actions taken will be kept for one year after the action is taken.

A2.5.4. Storage: Respirators shall be stored to protect against dust, sunlight, excessive heat, extreme cold, excessive moisture, damaging chemicals, and physical damage. The storage area must be a convenient, clean, and sanitary location. Respirators will not be stored in lockers or toolboxes, or under vehicle seats unless it is in a sealable (zip seal) plastic bag in a crush proof carrying case or carton. Respirators will not be hung by their straps for storage. If the respirator cannot be stored in the manufacturer's original plastic bag and box it shall be stored in a sealable (zip seal) plastic bag in a single layer. The storage position will be in such a way that the facepiece and exhalation valve rest in a normal position and the function of the respirator will not be impaired by the elastomeric parts taking a set in an abnormal position.

A2.5.5. A respirator wearer will be permitted to leave the hazardous area for any respirator-related cause. Reasons which may cause a respirator wearer to leave a hazardous area include, but are not limited to:

A2.5.5.1. Failure of the respirator to provide adequate protection.

A2.5.5.2. Malfunction of the respirator.

A2.5.5.3. Detection of the leakage of air contaminant into the respirator.

A2.5.5.4. Increase in resistance of respirator to breathing.

A2.5.5.5. Severe discomfort in wearing the respirator.

A2.5.5.6. Illness of respirator wearer, including: sensation of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, and chills.

A2.6. Respiratory Hazard Monitoring: The supervisor will ensure the hazard requiring the use of respirators are properly evaluated.

SIGNATURE BLOCK

Attachment 3

SAMPLE RESPIRATORY INSPECTION CHECKLIST

A3.1. Insure respirator surfaces are clean.

A3.2. Verify all applicable components are available and check for deterioration, weathering, or contamination.

A3.2.1. Facepiece (dirt, pliability, cracks, tears, or holes).

A3.2.2. Faceshield (cracks, breaks, gouges, abrasions, or distortions that would interfere with vision or tightness).

A3.2.3. Inhalation/exhalation valves (holes, warpage, cracks, and dirt).

A3.2.4. Inhalation/exhalation valve covers (bent, warped).

A3.2.5. Gaskets (distortion).

A3.2.6. Cartridges (dents, punctures, corrosion, expiration date, protection limitations).

A3.2.7. Headbands and straps (breaks, tears, loss of elasticity, broken attachment, snaps, and proper tightness).

A3.3. Check connections for tightness.

A3.4. Check the pliability and level of deterioration of rubber and elastomeric parts by pulling on them with a firm tearing motion.

A3.5. Check the function of the respirator by performing positive and negative pressure checks.

Attachment 4**WASHING, SANITIZING, RINSING, AND DRYING PROCEDURES**

A4.1. Remove any filters, cartridges, or canisters.

A4.2. Disassemble the facepiece assembly by removing valves, straps, breathing tube, or speaking diaphragms.

A4.3. Wash the facepiece and accessories in warm (110 to 120 degree F), soapy, potable water, scrubbing gently with a hand brush (not wire) to facilitate removal of dirt. Do not use the brush on the facepiece, use a soft cloth. Do not use water hotter than 120F or solvents to clean respirators. If an organophosphate pesticide was used, rinse in 50% isopropyl or ethyl alcohol and water solution before cleaning.

A4.4. Rinse all parts thoroughly in clean, warm water, preferably running water.

A4.5. Disinfect by immersing the facepiece and accessories for two minutes in a warm disinfecting solution. Disinfecting solution can be made by adding one milliliter of laundry bleach to one liter of water, producing a 50 ppm chlorine solution. Disinfecting solutions are not stable and should be disposed of after use: they can age rubber parts and corrode metallic parts, therefore immersion times should not be extended.

A4.6. Thoroughly rinse in clean water to prevent damage to the respirator or dermatitis to the wearer.

A4.7. Dry with a lint-free cloth or air-dry in a clean uncontaminated area.

A4.8. Stretching and massaging the rubber or elastomeric parts will keep them pliable and prevent them from taking a set in an abnormal position during storage.

A4.9. Reassemble, inspect, and store the respirator in a proper manner.