

Primer MIL-P-23377 Type II Class II
Sealant MIL-S-81733 Type III
MEK/Acetone
Toluene
PR-1826 sealant and promoter
B-1/4
B-1/2
B-2
Petrolatum (VV-P-236)
Purging Fluid (38299)
Leak detection fluid (372E)
Electron dielectric cleaner used for Non Destructive Inspection
Cleaning solvent Mix 3101
Polyurethane fuel tank primer (yellow) MIL-C-27725 TY IICIA)
Epoxy Primer (Green) (MIL-P-2377, TY IICIC)
Isopropyl Alcohol (TT-I-7358)

Note- the small quantities of all chemicals used do not create an atmospheric hazard.

4. Technical Data Required: Air Force T.O.'s 1-1-3, 1A-3-1-1, AFOSH STD 91-25, MABOI 91-25, 1A-10A-2-28MS-1 and the current Bio Survey.

5. Prevention of Unauthorized Entry: Confined Space Entry Point signs will be posted at aircraft in the direction of the most common approach, indicating which space is being entered. Attendant will monitor entry point.

6. Potential Hazards

6.1. Potential Hazard Description: See the hazards listed in Table 1.1. LEL, oxygen deficiency, entrapment in installed lines and bracings. Chemicals used in this MEP are permitted in quantities which will not cause the generation of a hazardous atmosphere. To further protect all entrants, fresh air ventilation of the space is required before and throughout entry.

6.1.1. Failure of the ventilation system, observations by the attendant of condition changes in the space, changes or failure to communicate by the entrant and/or detection of early exposure symptoms by the entrant will result in the space being evacuated and if necessary the attendant calling for immediate emergency assistance.

6.2. Control of Hazards. All hazards are controlled with methods consistent in the current Bio Survey, MSDSs on all products approved for use in this confined space and applicable AFOSH Stds. Reference paragraphs 8.1.through 8.2 and Table 1.1.of this MEP. Also see 1A-10-2-28MS-1 and T. O. 1A-3-1-1.

6.2.1. Chemical goggles will be used for eye protection. Exposure to the eyes will require immediate care at the closest eyewash station followed by medical assessment and care.

6.2.2. Exposure to skin will be limited by the use of tri-layer coveralls when fuel is present. Employees will use gloves and goggles as stated in the current PEG survey. Change out of coveralls will be before moisture breakthrough. Used coveralls will be hung between uses and exchanged when soiled or soaked through. Employees will wash hands, arms, and faces after entries and before consuming food, drinking or using tobacco products.

6.2.3. Hazards from inhalation will be controlled by the use of respirators identified in the current respirator OI for this PEG.

6.2.4. Fire hazards are eliminated by establishing and maintaining an LEL of 20% or less during fuel foam removal, and 5 % or less when aircraft defueling and purging are completed. This is accomplished by the elimination of any spark producing tool or equipment and the use of continuous ventilating air into the space.

6.2.5. Confined space entrants must be cognizant of areas of the confined space in which they could become entangled, such as protruding tank structure, lines, conduits and converging areas of the interior of the tank.

7. Entry Permit- AF Form 1024 Confined Space Entry Permit

7.1. Permit Requirements- Permit will not be issued until confined space meets requirements and acceptable entry conditions specified in paragraph 8.1. through 8.2

8. Entry Procedures

8.1. Confined Space Isolation Methods/Lockout Tag out: Aircraft power should not be applied. Lock out tag out requirements will be in Accordance With (IAW) T.O. 1-1-3 paragraphs 2.7.10, 2-11.1.2 e. (1) and 1A-10-2-28MS-1 and T.O. 1A-3-1-1.

8.2. Acceptable Entry Conditions: Lock and tag out requirements listed in paragraph 8.1 must be complied with. The fuel tank must be drained, purged, depuddled, mopped out, and fuel lines drained. The confined space must be continuously fresh air ventilated. LEL will be maintained at 10% or less for confined space entry, (20% for foam removal) and oxygen content will be between 19.5 and 23.5 %. Respirators will be required. The availability of emergency rescue services must be confirmed. Call MAB Control at 7-2812 to confirm the availability of Hill AFB Emergency Rescue. If work is performed on graveyard shift in any facility other than Hangar 1, the authorizing supervisor will notify MA Customer Service, 7-3238 of the location of the aircraft and the start time of the entry. MA Customer Service will be notified at the completion or cancellation of the permit.

8.2.1. When working fuel equipped aircraft the LEL will be monitored continuously or checked every two minutes using a non continuous

combustible meter. Readings will be taken at the entry point and progressively into the space.

8.2.2. Tanks will be continuously air ventilated when entered. IAW T.O. 1-1-3 paragraph 2.6.3.1. JP-8 vapor concentration must be measured using a photoionization detector (PID). A PID measures JP-8 vapor in parts per million (ppm). The concentration of JP-8 vapor must be below 600 ppm (10 % LEL) before tank entry is authorized.

Warning: If mechanical ventilation is interrupted, the attendant will command entrant to exit the space immediately. The entrant will respond immediately to the command

8.2.3.

A respirator may still be required to prevent exposure to specific substances in accordance with other health standards , An atmosphere which could have health effects from exposure, but will not cause incapacitation or limit the ability for self-rescue is not considered a hazardous atmosphere for a confined space.

9. Authorization

9.1. Confined Space Entry Team Responsibility:

9.1.1. Entry Authorizing Supervisor: The work center employee, identified as the Entry Authority and Alternates in this MAB-004 MEP, will:

9.1.1.1. Maintain the organizational MEP.

9.1.1.2. Issue entry permits consistent with the MEP.

9.1.1.3. Revoke the permit and contact MAB Safety when any entry conditions are not consistent with the MEP.

9.1.1.4. Determine that acceptable conditions are present at a permit space when entry is planned.

9.1.1.5. Ensure a qualified person (trained in the operation of direct-reading oxygen, flammability, and toxicity monitoring equipment) evaluates the space for entry safe conditions.

9.1.1.6. Ensures workers are properly trained and qualified in safe operating and emergency procedures, use of PPE and how to egress.

9.1.1.7. Ensures workers who are ill or are on medication that may affect their ability to safely perform assigned tasks, are excused from the operation.

9.1.1.8. Briefs workers on the hazards of the entry.

9.1.1.9. Inspect the work area, tools and equipment to identify and correct hazards

9.1.1.10. Selects the PPE consistent with the current PEG survey.

9.1.1. 11. Insure all lockout tag out and acceptable entry conditions listed in paragraph 8.1 through and 8.2.3 are complied with.

9.1.1.12. Ensures that any equipment necessary to perform the entry task or to aid in an emergency rescue is readily available.

9.1.1.13. Determines the availability of the Fire Department Rescue team by calling MAB Control, 7-2812.

9.1.1.14. Authorize the confined space entry permit, making sure the entry permit is complete, dated and signed prior to entry.

9.1.1.15. Cancels the permit if conditions are no longer acceptable.

9.1.1.16. Never permit entry into an Immediate Danger to Life or Health (IDLH) atmosphere.

9.1.1.17. Establish a system for controlling entries.

9.1.2. Attendant:

9.1.2.1. Is responsible for monitoring the entry area and maintaining effective communication with entrant(s) and can easily summon help in the case of an emergency. Do not attempt rescue involving entry. Provide all possible support without entering the fuel cell. Attendants will have authority to order entrants to exit the space at the first indication of an unexpected hazard.

9.1.2.2. Comply with all requirements of the entry permit.

9.1.2.3. Limit entry to those authorized.

9.1.2.4. In the event of an emergency the primary function of the attendant will be to order the evacuation of the space by all entrants and to notify emergency response personnel. Emergency calls will be made by calling 911 using the office phone. The Attendant will notify the Runner to place the call to summon emergency personnel. The attendant will provide to the runner the exact location of the aircraft, the nature of the emergency and any other information when either phone call is placed.

9.1.2.5. Order evacuation of tank as necessary and remain at the attendant's post and not leave for any reason except self-preservation unless replaced by an equally qualified person.

Note: 1. If a radio transmitter is used, confirm its operating strength from the work area of the confined space. The radio will be maintained at the distance required by the fuel safety zone from the open fuel cells until they are purged and maintained at an entry safe LEL IAW T.O. 1-1-3 Para 2-7.6.2.

9.1.2.6. If an attendant is monitoring more than one entry all entrants must be ordered to evacuate the spaces in the event of any emergency in any of the spaces.

9.1.2.7. The attendant is authorized to assist the entrant in self-rescue if the assistance can be rendered without the attendant breaking the plane of the space.

9.1.3. Entrant:

9.1.3.1. Must understand all procedures, safeguards and emergency egress/rescue procedures associated with the entry.

9.1.3.2. Alert the attendant to any changes or conditions and responds immediately to the attendant’s evacuation orders.

9.1.3.3. Review the entry permit prior to entry ensuring acceptable entry conditions are valid.

9.1.3.4. Obey instruction from attendant, responding immediately to the attendant’s evacuation order.

9.1.3.5. Notify the supervisor if any hazards are found that were not identified in the MEP

9.1.3.6. Notify the supervisor if they are ill or on medication of any type.

9.1.4. Runner:

9.1.4.1. Respond to the attendants request to notify the Hill AFB Emergency Rescue for assistance.

9.1.4.2. Direct the emergency rescue team to the location of the entrant.

10. TRAINING:

10.1. All members of the Confined Space Entry Team, Entry Authorizing Supervisor, Entrant, and Attendant will receive the following training:

MAD Course 0523 Confined Space Generic	Frequency: Initial Trainer: TIU	Trainer: TIU	Document AF Form 55
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MAB A-10 Aircraft Confined Space Specific Course	Frequency: Annual	Trainer: MABMT	Document AF Form 55
Respirator Fit Test and Training	Annual	75 AMDS/SGB and Supervisor	Document AF Form 55
Confined Space Awareness AF Form 55 Brief Item 20.	Initial and at least Annual	Trainer: Supervisor	Document AF Form 55
MAB Atmospheric Tester Course	Annual	Trainer: MABMT	Document AF Form 55

Note: Non-fuels system personnel must have fuel system/tank familiarization training as well as the training listed in this MEP.

10.2. All MAB employees will receive Confined Space Awareness training as part of the AF Form 55 initial and annual briefing. This briefing will be documented in block IV on the AF Form 55.

11. Entry Equipment and Location:

11.1. Atmospheric monitoring equipment in Special Equipment Crib- Eagle Tester and Multi RAE PLUS PID Tester.

11.2. MA-1 Blower with required filter, to prevent the blower from picking up sand, dust and dirt and blowing it into the space. Filters in the assembly should be cleaned and replaced as required. Blowers shall be delivered to the work site by the AGE contractor.

11.2.1. The blower will be placed, and bonded to aircraft as required by T.O. 1-1-3 paragraph, 2-12.2. and 8-7.3. A complete approved equipment listing is found in T.O. 1-1-3 Table 8-1.

11.3. Tri-layer coveralls, , white with no pockets and no spark-producing buttons are issued from tool crib in Building 225.

11.4. Nitrile or butyl gloves are issued at the SSC.

11.5. Respirators (air purifying and supplied air) and cartridges are issued at the SSC.

11.6. PPE required is listed in the current PEG survey.

11.5. Confined Space signs are located at the docks and will be in place at the aircraft during the entry indicating the space being entered.

12. Testing:

12.1. Atmospheres will be tested and documented by the A-10 Confined Space Entry member using the issued LEL and Oxygen tester following manufacturer instructions and in accordance with training on the use of the equipment. Testing results, times, make and model of the testing equipment, and last date of calibration will be annotated on the AF Form 1024. The Eagle tester, RKI Industries, Multi Gas Detector will be used until the MultiRAE PLUS PID Tester becomes available.

MultiRAE PLUS PID Tester	RKI Instruments Inc	Portable Multi- Gas Detector
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12.1.1. All personnel who perform tests must be certified by training on each type of testing equipment. Training will be documented in the employees form 55.

12.2.

Testing must be accomplished for oxygen levels first and then LEL content. This requirement exists because the tester will not display the proper LEL if there is not enough oxygen.

12.3. Concentrations of toxic materials will be evaluated during annual surveys by Bio Environmental Engineering and before new processes are established for the space.

12.4. Testing will be accomplished prior to starting the ventilating air and after the air has been turned on, and as required throughout the entry. Each time the space is tested the results and times will be recorded on the AF Form 1024. Testing will also be accomplished any time the ventilation air has been shut down and before reentry every time the confined space is vacated for any reason.

12.5. Aircraft which use JP-8 may not , under certain circumstances, require purging and can have the LEL maintained at acceptable levels by ventilating the tanks. Entry-safe condition is 10 % LEL or 600 ppm or less. Tank shall be continuously ventilated during all entries.

13. Communication and Observation:

13.1. The attendant will communicate with the entrant verbally. In the event of an emergency the attendant will give the command to the runner to call 911. When on HAFB call 777-1911 from cell phones and call 91 1 using Base phones. The person placing the call will give the dock location of the aircraft and the nature of the emergency. The runner will direct the emergency rescue team to the location of the entrant. See paragraph 14.

14. Rescue: The primary rescue plan for this MEP is self-rescue. The entrant and attendant will be aware of early symptoms that may include but are not limited to headache, dizziness, weakness, loss of coordination or inability to respond to verbal communication or exit orders. Any of these or other symptoms will require the attendant to order the entrant to exit the space or will require the entrant to initiate self-rescue. The entrant will respond to exit commands given by the attendant at any time during the entry.

14.1. OO-ALC/MAB has no organizational rescue teams. Consistent with the requirements of AFOSH 91-25 and AF TO 1-1-3, the 75 ABW / CEF is the primary rescue service for all MAB confined space entries.

14.2. If a command to exit is given and there is no response, or if a verbal communication is not answered by the entrant, the attendant will immediately summon emergency help alerting the runner to use the office phone. Call 911 on base phones or 777-1911 from a cell phone to summon Hill Fire Department Emergency Rescue. The attendant can not use a radio at the confined space. The runner can use a radio or cell phone as long as he/she is out of the fuel safety zone. The attendant can not leave the confined space unattended. The Attendant will never leave the space unless he is replaced by a trained qualified person or his life is in danger. Communication equipment design and Hazard Class will be IAW T.O. 1-1-3 Section III.

Warning: Cell phones and radio transmitters must not be used in the fuel safety zone

14.2.1. Any personnel in the area will begin to move support equipment out of the way and place a stand or JLG for the rescue team to access the entry point. Hangar doors will be opened to allow unobstructed entry by the Fire Department.

14.2.2. The entry permit will be available at the job site, and will be provided to Fire Department Emergency Rescue when they arrive on scene.

14.2.3. The attendant will not leave the entry point until instructed by the Fire Department Rescue Team.

14.3. This MEP authorizes the cutting of openings by rescue personnel for access to spaces if that is the only means to reach an entrant.

14.4. 75 ABW/ CEF will be provided current copies of all MAB MEPs to facilitate training and rescue plans.

15. CONTRACTORS:

15.1. When a contractor is contracted to perform work that required permit-required confined space entry, MAB fuels Management will insure the contractor is:

15.1.1. Notified in a statement of work that work will be performed in a permit-required confined space.

15.1.2. Briefed on emergency rescue responsibilities and the need to determine whether the contractor or Base Fire Department is expected to supply a rescue function.

15.1.3. Briefed on the contents of the space and what makes the space permit-required and any potentially hazardous conditions associated in the area of the confined space. They must also be notified that they must contact the entry authorizing supervisor or alternate listed in this MEP to review all existing permits for the space to be entered.

15.1.4. Briefed on precautions and procedures that have been implemented to protect Air Force workers.

15.2. MAB Fuel Management will coordinate entry operations and procedures with the contractor and agree upon the permit entry system to be used

when both MAB organizational and contractor personnel will be working in a permit-required confined space.

15.3. Contractors will be required to complete and post a job specific permit for all entries. Contractors are required to contact the entry-authorizing supervisor or alternate identified on this MEP to review any existing entry permits and must be informed of all hazardous conditions associated with the area to be entered. Reference AFOSH Standard 91-25 Chapter 7 for Contractor responsibilities.

15.4. Contractors will brief MAB Fuels Management of any previously unknown hazards encountered or hazard that may have been introduced into the space as a result of the contract work.

16. Permit Routing and Control:

16.1. Copies of all canceled and/or completed permits must be provided by authorizing authority to the MAB Safety office on the last working day of each month. MAB Safety will maintain the permits for one year from date of entry.

17. Amendment to the MEP: The MEP must be reviewed at least once a year and coordinated with the Confined Space Program Team (CSPT) Changes and amendments to the MEP other than spelling and grammar must be coordinated with the Entry Authority, MAB/Safety, Bio Environmental Engineering/75 AMDS/SGPB, Fire Department/75 ABW/CEF and Center Safety Office/ OO-ALC/SEG.

18. Coordination:

OO-ALC/MABA /Second Level _____ Date

OO -ALC/MABA Division Chief _____ Date

Division Safety/MABP _____ Date

OO -ALC /SEG _____ Date

Bio Environmental/SGP _____ Date

Fire Department 75 ABW/CEFT _____ Date

Confined Space Entry Authorization

The following personnel in MABAPA authorized to approve and sign confined space entry permits for work to be performed in A-10 Fuel Tank Permit Required Confined Spaces.

Name	Office Symbol	Primary/Alternate
Roy Cole	MABAPA	Primary
Larry Milton	MABAPA	Primary
Earl Whetton	MABAPA	Primary
Chad Chamberlain	MABAPA	Primary
Matt D'Andrea	MABAPA	Primary
Jeff Cadway	MABAPA	Primary
Nathan Hale	MABAPA	Primary
Mike Driver	MABAPA	Primary

