

**BY ORDER OF THE COMMANDER
ELLSWORTH AFB**

**AIR FORCE OCCUPATIONAL SAFETY AND
HEALTH STANDARD 91-501**



**ELLSWORTH AIR FORCE BASE
Supplement**

14 JUNE 2012

Safety

**AIR FORCE CONSOLIDATED
OCCUPATIONAL SAFETY STANDARD**

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(Lt Col Jason R. Sanderson)

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AFOSH STD 91-501, dated 7 July 2004, is supplemented as follows: The purpose of this instruction is to establish the Lockout/Tagout (LOTO) Program. This supplement applies to all organizations assigned or attached to the 28th Bomb Wing that require a LOTO program within their respective unit/work center. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. Send comments and suggested changes to this supplement through channels, using AF Form 847, *Recommendation for Change of Publication*, to 28 BW/SEG, 2300 Vandenberg Ct. Ste 121, Ellsworth AFB, SD 57706.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. The Ellsworth Air Force Base (EAFB) supplement was revised to align with AFOSH Standard 91-501 and AFOSH Standard 91-501, Air Combat Command (ACC) Supplement. This supplement is designed to meet specific EAFB LOTO requirements within the concept established by the basic Air Force (AF) directive. It revises LOTO safety procedures and program requirements for all EAFB LOTO personnel and work centers. Updates include minor administrative changes throughout

the document, and changes to training plan requirements. Other changes include the establishment of the Fall Protection Working Group, a requirement for a fall protection management book, and clarification of Emergency Shower and Eyewash requirements consistent with ANSI Standard 358.1-2009.

13.2.3.4. Each squadron with work centers that maintain fall protection equipment (i.e. trolleys, harnesses, lanyards, ect...) will establish Fall Protection Management (FPM) Books. The FPM books will be established at the appropriate level based upon the commander's discretion but will be no higher than flight level. Squadron commanders will also formally determine in writing the level they prefer and copies of this determination will be sent to 28 BW/SEG and maintained in each FPM book in TAB A. The FPM books will contain the following tabs:

- Tab A: Appointment letter (person responsible for the work center or flight level fall protection program and any competent persons which are knowledgeable of the equipment being used and how to inspect it and are not consider a "user" of the equipment.
- Tab B: A listing of fall protection equipment used in the work center or flight.
- Tab C: Copies of all manufacturers' instructions regarding the inspection, maintenance, cleaning and storage of fall protection equipment. Harnesses, carabineers, lanyards, trolleys, are just a few items which have manufacturers' instructions that must be maintained. Additional requirements for this tab will be either copies of or direct references to T.O. 00-25-245, AFOSH Standard 91-501, paragraph 13.2.3, and AFOSH Standard 91-100, paragraph 8.2.5 as applicable for flight line applications.
- Tab D: Inspection Logs and related documentation.
- Tab E: Unserviceable tags for defective equipment.
- Tab F: Fall protection training procedures.
- Tab G: Fall Protection Working Group meeting minutes.

13.2.3.5. **(Added)** All work centers or flight with fall protection requirements will have a representative at the Fall Protection Working Group (FPWG). The FPWG will meet at least quarterly or at the discretion of 28 BW/SEG to provide training, foster discussion regarding fall protection challenges, and inform attendees of new/revised guidance from HAF and ACC. Agenda items to include the date, time and location of the meeting and related minutes will be documented and distributed by 28 BW/SEG.

19.4.4. **(Added)** Eyewash bottles are intended as supplemental equipment only. They do not provide the minimum flush (15 minutes) required by AFOSH Standard 91-501 and will not be approved by 28 BW/SEG or 28 MDOS/SGPB for use by work centers in lieu of self-contained portable eyewash units with the exception of remote/field use applications. Remote/field use applications include vehicles or facilities that do not have appropriate heating or plumbing

necessary to meet requirements. For all other applications, if a work center has eyewash bottles they will be used in addition to, not instead of, properly installed and accessible eyewash/shower stations. See Attachment 3 (added) for the Ellsworth AFB approval checklist.

21.6.1.3.1.1. **(Added)** Locks will be standardized by type, size, or shape and only used for lockout operations

21.6.2.1.3. **(Added)** Training: The work center supervisor or designated representative shall provide training to all personnel where LOTO is utilized. Each training plan will be coordinated and approved by 28 BW/SEG annually. Training plans will be updated whenever new processes or equipment are introduced to the work center. The LOTO training plan shall include as a minimum:

- Completion of the LOTO ancillary computer based training (CBT) located in Advance Distributed Learning Service (ADLS) under the Safety section.
- Reading the work center LOTO specific procedures for each piece of equipment on which LOTO procedures are applied.
- Reviewing LOTO sequences contained in AFOSH Standard 91-501 paragraphs 21.7.2.4. and 21.7.2.5

21.6.2.1.3.1. **(Added)** Familiarization training will be conducted for affected personnel who may work in areas where LOTO procedures are utilized, but who do not use the program themselves. Familiarization training will be conducted in conjunction with job safety training and incorporated into the work center's job safety training outline in either Section 1 or Section 2.

21.6.2.1.3.2. **(Added)** USRs assigned to a unit with LOTO program(s) will complete LOTO ancillary training computer based training (CBT) located in Advance Distributed Learning Service (ADLS) under the Safety section. Authorized LOTO personnel will be designated in writing by the shop superintendent, NCOIC, or foreman.

21.6.2.4.1. **(Added)** The AF Form 55 or an equivalent product (e.g. AFFORMs, CAMs, CAS-B, GO81) will be used to document initial and recurring LOTO training. The written LOTO program and documentation of training will be maintained by the supervisor within the work center.

21.6.4. **(Added)** A LOTO device log will be established and maintained either in Tab F of the LOTO Management Book or at the LOTO equipment board. If located with the equipment board, then Tab F will have a cross-reference sheet indicating its specific location. The log will be maintained for a minimum of 12 months. The log will contain:

- Date and time LOTO is used.
- The name of the individual who performed LOTO.
- Which piece of machinery or equipment LOTO is used on.
- Reason why LOTO is used.
- Date and time LOTO was removed.

21.6.5. **(Added)** Ensure all personnel comply with the restrictions and limitations imposed upon them during the use of the LOTO program. No members, upon observing a machine or

piece of equipment locked or tagged out, will attempt to start or use that machine or equipment.

21.6.5.1. **(Added)** Each work center with a LOTO program requirement shall have representation at the LOTO meetings. LOTO meetings will occur at least quarterly at the discretion of 28 BW/SEG. Meeting minutes must be maintained for 12 months in Tab G of LOTO Management Book.

21.6.5.2. **(Added)** Each work center with a LOTO program requirement will establish a LOTO Management Book containing the following tabs:

- Tab A: Authorized LOTO personnel designation letter (sample at Attachment 4).
- Tab B: Work center training program (sample at Attachment 5).
- Tab C: Work center listing equipment listing requiring the use of LOTO.
- Tab D: Work center specific LOTO procedures (sample at Attachment 6).
- Tab E: Annual and periodic self inspections/assessment of work center LOTO program (sample at Attachment 7).
- Tab F: LOTO Device Log or cross reference sheet indicating specific location.
- Tab G: Miscellaneous documents related to the work center LOTO program.

MARK E. WEATHERINGTON, Colonel, USAF
Commander, 28th Bomb Wing

ATTACHMENT 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFOSH STD 91-100, *Aircraft Flight Line- Ground Operations and Activities*, 1 May 1998
Certified Current 6 January 2012

AFOSH STD 91-501, *Air Force Consolidated Occupational Safety Standard*, 7 July 2004

AFOSH STD 91-501_ACCSUP, *Air Force Consolidated Occupational Safety Standard*, 14
August 2004, Certified Current 14 July 2010

AFMAN 33-363, *Management of Records*, 1 March 2008, AFGM1.1 9 April 2012

T.O. 00-25-245, *Technical Manual, Testing and Inspection Procedures for Personnel Safety and
Rescue Equipment*, Change 1 – 17 April 2006

Adopted Forms

AF Form 55, *Employee safety and Health Record*

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

28 BW/SEG—28th Bomb Wing Ground Safety

ACC—Air Combat Command

ADLS—Advanced Distributed Learning Service

AF—Air Force

CBT—Computer Based Training

EAFB—Ellsworth Air Force Base

FPM—Fall Protection Management

FPWG—Fall Protection Working Group

LOTO—Lockout/Tagout

NCOIC—Noncommissioned Officer in Charge

USR—Unit Safety Representative

ATTACHMENT 3 (Added)

EMERGENCY SHOWER AND EYEWASH UNIT CHECKLIST

Emergency Shower and Eyewash Units Evaluation Checklist Reference: AFOSH Standard 91-501, Chapter 19		Date (YYYY/MM/DD)	
BEF Workplace Identifier	Base Ellsworth AFB	Organization/Office Symbol	
Workplace		Bldg No/Location	Room/Area
<p>Purpose of this Checklist. The checklist was jointly developed by 28 MDOS/SGPB, Bioenvironmental Engineering Flight (BE) and 28 BW/SEG, Ground Safety staff to evaluate the compliance status of emergency shower and eyewash units at various workplaces on Ellsworth AFB in accordance with (IAW) AFOSH Standard 91-501, Chapter 19. This check list once completed serves as required documentation for evaluation and inspection per paragraph 19.3 and 19.10.5 of AFOSH Standard 91-501. Refer to the AFOSH Standard for any details.</p>			
I. Evaluation – “Need For Emergency Shower and/or Eyewash Units”.			
<p>Q1. Are there any potential skin/eye hazards in the workplace require emergency shower and/or eyewash units? <u>Evaluation Guideline.</u> Refer to Attachment “BE Occupational Health Program Guide” for details. Use comments section in next page to describe your evaluation as needed. <input type="checkbox"/> No <input type="checkbox"/> Yes, (If “Yes”, describe the hazards below. If “No”, go to Q2.). (e.g. Acetic acid and ammonia compound contained in film developer and fixer used during film processing in the dark room)</p>			
Q2. Existing units.			
<p>a. Are there any permanently-installed emergency shower and/or eyewash units in the workplace? <input type="checkbox"/> Yes <input type="checkbox"/> No If “Yes”, describe number & location of permanently-installed emergency shower and/or eyewash units:</p>			
<p>b. Are there any self-contained units in use in the workplace? <input type="checkbox"/> Yes <input type="checkbox"/> No If “Yes”, describe number & location of self-contained units, and go to question b. If “No” go to section II (if both “a” & “b” are “No”, check “N/A” in all items in section II):</p>			
<p>c. If “b” above is yes, are they acceptable with meeting one of the following situations IAW AFOSH Std 91-501, paragraph 19.4.3? (if “Yes”, check one of applicable situations below) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> As an interim fix, pending installation of a permanently-installed unit ^{Note}. <input type="checkbox"/> If the employee is exposed to irritants rather than substances that could damage the eye (<u>including voluntary use</u>). <input type="checkbox"/> In temporary locations where a permanent installation would not be economically feasible or may not be possible. <input type="checkbox"/> In field operations, such as remote Intercontinental Ballistic Missile (ICBM) sites, where a source of potable water is not available.</p>			
<p>Note: If the workplace has submitted CES a work order to install a permanent unit, obtain a copy of it.</p>			
<p>d. Self-contained units shall only be used when approved by the installation ground safety manager and the BE. Based on paragraph c, use of the unit(s) mentioned in paragraph b is approved by: <input type="checkbox"/> BE <input type="checkbox"/> SE or Disapproved <input type="checkbox"/> ^{Note} Note: If disapproved, describe reasons in the comment section.</p>			

Based on Q1&2 above, if the workplaces requires emergency eyewash and/or shower units but no permanently-installed or appropriate self-contained unit available, identify it as a discrepancy and describe recommended actions in comments section.

II. Compliance Items (applicable only when Q 1 in Section I above is “Yes”) These items are not all inclusive. Refer to AFOSH Std 91-501, Figure 19.8 for details.

1. Location and Installation of Units (Ref: AFOSH Std 91-501, para. 19.6 and 7)	Ye s	No	N/ A
a. Permanently-installed units and self-contained units installed in fixed locations identified with a highly visible sign and well lighted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Travel distances to eyewash stations do not exceed 10 seconds to reach and free of obstruction which may prohibit the immediate use of the equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Placement of the unit is in a central location where the need is the greatest?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Appropriate audible alarm, blinking light or the buddy system is used to indicate that the unit is in operation for units in remote areas or where an individual is working alone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Water spray could come in contact with an energized electrical circuit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Any chemical reactions of contaminants accelerated by water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Self-contained units and the water lines of permanently installed units are protected from freezing and heat sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Testing and Operation (Ref: AFOSH Std 91-501, para. 19.10)	Yes	No	N/A

<p>a. Permanently-installed units activated weekly (except infrequently used areas) or prior to any hazardous operation (infrequently used areas)?</p> <p>b. Monthly inspections conducted on permanently-installed units and documented (including date and name of inspector)?</p> <p>c. Self-contained units tested, refilled, and maintained according to manufacturer's instructions? These units shall provide a minimum of 15 minutes continuous flow (except for voluntary use) and the stored fluid shall be protected against contaminants and temperature extremes.</p> <p>d. For self-contained units when tap water is used, fluid is checked and replaced at least monthly?</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>3. Permanent-installed <u>Emergency Showers Specifics</u> (Ref: AFOSH Std 91-501, para. 19.13.1)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>a. Shower-actuating devices are easy to locate and readily accessible to the user? Hand-actuating devices are easily accessible? (Hand pull devices should be located not more than 69" nor less than 55", and Push handles and/or paddles should be approx. 40", above the surface on which the user stands)</p> <p>b. Floor drain or containment is available to capture shower water after activation? (Recommended practice, not regulatory requirement for existing units)</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<p>4. Permanently-installed <u>Eyewash Units Specifics</u> (Ref: AFOSH Std 91-501, para. 19.13.2)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>a. Controlled flow of potable water or its equivalent is provided to both eyes simultaneously at a pressure low enough not to be injurious to user?</p> <p>b. Nozzles are protected from contamination? and if protective covers are used, their removal does not require a separate motion by the operator when activating the unit?</p> <p>c. Units are positioned with the water nozzles 33" to 45" from the surface on which the user stands?</p> <p>d. Eyewash-actuating devices are easy to locate and readily accessible?</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>5. Training (Ref: AFOSH Std 91-501, 19.11) - Have all applicable employees been instructed in:</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>a. Initial treatment for a hazardous substance splash? (Answer: Wash affected areas at least 15 minutes and remove affected clothing during showering period)</p> <p>b. Eye washing procedures? (Answer: Hold eyelids open and roll eyeballs so that water flows over all surfaces and skin surrounding the eyeballs)</p> <p>c. When to seek medical attention? (Answer: Immediately after using an emergency shower and/or eyewash units)</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Comments:</p>			
<p>For BE personnel: Completed checklist will be filed in Tab D of the casefile. When any self-contained unit is used in the workplace, provide a copy of the checklist (wo/attachment) to the workplace supervisor as an approval for its use.</p>			
<p>For SEG personnel: Scan and file this checklist with in the appropriate folder on the ERK. Provide a copy without the attachment to the work center supervisors as an approval for use.</p>			
<p>Checklist Completed By (Name, Grade, AFSC)</p>			
<p>BE Representative</p>	<p>Signature:</p>	<p>Date:</p>	
<p>Safety Representative</p>	<p>Signature:</p>	<p>Date:</p>	

ATTACHMENT 4 (Added)

SAMPLE APPOINTMENT LETTER FOR LOCK OUT/TAG OUT PROGRAM

(Place on squadron letterhead)

DATE

MEMORANDUM FOR 28 BW/SEG

FROM: Unit/Office symbol

SUBJECT: List of Authorized Personnel for Lockout/Tagout & List of Authorized Equipment Operators

1. The following individuals are authorized to install and remove Lockout/Tagout devices in the _____ Section.

- a.
- b.
- c.
- d.
- e.

2. This letter supersedes all others on same subject. For information on the workcenter Lockout/Tagout program in the _____ section, please contact _____ at ext 385_____.

FIRST NAME LAST NAME, Rank, USAF
Duty Title (usually the ranking person)

ATTACHMENT 5 (Added)

SAMPLE APPOINTMENT LETTER FOR LOCK OUT/TAG OUT TRAINING PLAN

(Place on squadron letterhead)

XX September XXXX

MEMORANDUM FOR ALL____ PERSONNEL

FROM: 28 _____

SUBJECT: Work center training plan for lockout/tagout (LOTO) items

1. All _____ personnel will complete the following work center training prior to conducting LOTO procedures:
 - Completion of the LOTO ancillary training computer based training (CBT) located in Advance Distributed Learning Service (ADLS) under the Safety section.
 - Reading the work center LOTO specific procedures for each piece of equipment on which LOTO procedures are applied.
 - Reviewing LOTO sequences contained in AFOSH Standard 91-501 paragraphs 21.7.2.4. and 21.7.2.5
2. AF Form 55 or an equivalent product (e.g. AFFORMs, CAMs, CAS-B, GO81) will be used to document initial and recurring LOTO training
3. This letter supersedes all others on same subject. If there are any questions, please call MSgt _____ or TSgt _____ at 385-_____.

FIRST NAME, LAST NAME, Rank, USAF
Duty Title (usually the ranking person)

1st Ind

Approve/Disapprove

FIRST NAME, LAST NAME, Rank, USAF
28 BW/SEG

ATTACHMENT 6 (Added)**SEQUENCE OF LOCK OUT/TAG OUT PROCEDURES OF EQUIPMENT**

The steps that will be used for lockout of the following piece of equipment are:

Equipment: (Name)

Location: (Located in Bldg and room#)

Power source: (Type of power supplied: Hydraulic, Electrical, Steam etc.)

Magnitude: (200 Voltage, 700 psi, 600 degrees Fahrenheit, etc.)

Lockout Device to be used: (What you plan on using; Padlock with key, chain with lock, valve cover)

Sequence of Lockout or Tagout System Procedures should include as a minimum:

1. Notify all work center and affected personnel that a lockout or tagout system is going to be utilized and the reason. Ensure the individual knows the type and magnitude of energy that the machine or equipment utilizes and understands the hazards it presents.
2. If the machine or equipment is operating, shut it down by the normal stopping procedures
Explain how you shut it down i.e. depress stop button, open toggle switch, etc.
3. Operate the switch, valve, or other energy isolating devices to verify that equipment is isolated from its energy sources. Explain how to dissipate or restrain stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) by methods such as repositioning, blocking, bleeding down, etc. (List the types of stored energy and methods used to dissipate or restrain.)
4. Lockout or tagout the energy isolating devices with assigned individual locks or tags (methods selected; i.e., locks, tags, additional safety measures, etc.).
5. After ensuring that no personnel are exposed, and as a check, operate the push button or other normal operating controls to make certain the equipment will not operate (types of equipment checked to ensure disconnection).
CAUTION: Return operating controls to “neutral” or “off” position after the test.
6. The equipment is now locked out or tagged out.

Restoring Machines or Equipment to Normal Production Operations:

1. After the servicing or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure no one is exposed.
2. After all tools have been removed from the machine or equipment, guards have been reinstalled, and personnel are in the clear, remove all lockout or tagout devices. Notify personnel that the locks or tags have been removed and the equipment is in service and verify proper operation of equipment.

ATTACHMENT 7 (Added)

ANNUAL/PERIODIC LOCKOUT/TAGOUT SELF INSPECTON LOG

NAME _____
SIGNATURE _____
DATE _____

AFOSH Standard 91-501, paragraph 21.6.3.2. states “Periodic self-inspection shall be conducted by the unit to ensure compliance with all program elements. The self-inspection shall include as a minimum, the identification of the machines and equipment on which the lockout and tagout program is used, a review of each person’s responsibilities under the program, and that all necessary training has been conducted and documented. The self-inspection shall be documented to include the date of the inspection and the unit representative conducting the self-inspection.”