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Maintenance

**NORMAL AND EMERGENCY X-RAY
PROCEDURES**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This Instruction implements AFD 21-1, *Air and Space Maintenance*, and establishes the normal and emergency procedures for use of industrial, X-Ray producing, equipment by 926th Maintenance Squadron (MXS) personnel. References for this instruction are: T.O. 33B-1-1, *Non-Destructive INSP Methods*; T.O. 1A-10A-36, *Aircraft Structure and , Components, USAF Series A-10A/0A-10A Acft Serno 75-0258 and Subsequent*; AFI 21-101, *Aerospace Equipment Maintenance Management*; AFI 21-105, *Air and Space Equipment Structural Maintenance*; AFI 48-125, *The US Air Force Personnel Dosimetry Program*; AFOSH STD 91-110, *Nondestructive Inspection and Oil Analysis Program*; 159 LOI 21-11, *Normal and Emergency X-RAY Procedures*.

SUMMARY OF REVISIONS

This revision changes group and office symbols due to the Maintenance Group reorganization. It is advised to read this instruction thoroughly to review changes implemented. A bar (|) indicates revisions from the previous edition.

1. Responsibilities: The senior Non-Destructive Inspection (NDI) technician/NCO present during x-ray operation is responsible for complying with procedures and precautions outlined in this instruction and T.O. 33B-1-1.

2. Normal Procedures:

2.1. Unshielded area: X-ray operations shall be conducted utilizing the 159th Fighter Wing's Alert Facility, NAS JRB New Orleans, LA. Qualified flightline personnel shall be provided to tow/reposition aircraft.

2.2. Shielded area: X-ray operations shall be conducted within the 159th Fighter Wing's NDI Exposure Room 102D, Bldg 425, NAS JRB New Orleans, LA. **NOTE:** Shielded areas are limited to removed parts.

2.3. Scheduling shall be conducted with full cooperation of both 926 FW and the 159 FW Production Supervision. 926 Maintenance personnel shall comply with this FWI and 159 LOI 21-11 when operating within host facility.

2.4. A minimum of two qualified radiographers shall be present at all times during operation of X-ray equipment. Other maintenance personnel are utilized as needed and briefed on the duties and responsibilities of radiation safety monitor assistants when required. Coordination with Bioenvironmental Engineer will be accomplished prior to each X-ray operation.

2.5. All industrial radiographers and radiation safety monitors will wear their Dosimeter (TLD), issued by the Bioenvironmental Engineer, and one digital alarm device (DAD). When the X-ray controls cannot be placed in a central location, visible to all personnel involved in the X-ray process, an adequate means of communication is used that has been specified by the Bioenvironmental Engineer during a survey of the radiographic inspection area and operation. Adequate means of communication include, but are not limited to, two-way radios and whistles.

2.6. Radiation safety monitor assistants are utilized, to prevent unauthorized access into radiographic inspection areas. Assistants are stationed outside the radiation area, but in such a location to prevent barrier penetration. Assistants are at all times, in contact with the radiographer-in-charge, to affect radiation termination if required.

2.7. Precision Measurement Equipment Laboratory (PMEL) calibrated survey meters shall be used to monitor radiation levels during all X-ray operations.

2.8. During X-ray operations, a qualified radiographer remains at the X-ray control at all times. If for any reason the radiographer-in-charge must leave the X-ray unit unattended, he/she shuts down the unit and locks it.

2.9. When operating X-ray equipment, NDI technicians do so IAW step-by-step procedures outlined in appropriate T. O. or operator's handbook furnished with equipment.

2.10. When deployed, X-ray operating procedures shall comply with host facility LOI's and FWI's. However, procedure shall never deviate from minimum requirements prescribed by T.O. 33B-1-1 and AFOSH STD 91-110.

2.11. The senior NDI technician present maintains the radiation log for each X-ray. The log shall include the AFTO Form 115, **Digital Alarm Dosimeter Results Log** and the AFTO Form 125, **Industrial Radiography Utilization Log**.

3. Emergency Procedure (X-ray overexposure to personnel):

3.1. Cease all X-ray operations and report incident to supervisor.

3.2. Obtain name, social security number, and organization of all personnel suspected of overexposure.

3.3. Collect all TLD's and complete AFTO Forms 115 and 125.

3.4. Determine and record exact position and duration of exposure. Record all other pertinent data.

3.5. Notify the Maintenance Operations Center (MOC)/Expediter, and Bioenvironmental Engineer, Phone 678-9876, Pager 823-2218. Bioenvironmental Engineer shall determine further action.

3.6. Obtain a signed statement from exposed individual(s) and of actions resulting in (or contributing to) the exposure.

3.7. A complete report of the incident shall be prepared by the NDI Element Chief I.A.W. T.O. 33B-1-1. See Air Force **NOTE** in Section 6.9.15.2 of T.O. 33B-1-1.

4. Adopted Forms: AFTO Form 115, AFTO Form 125.

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