

**BY ORDER OF THE COMMANDER
910TH AIRLIFT WING**

**910TH AIRLIFT WING INSTRUCTION
91-208**



19 JULY 2011

Safety

**PROCEDURES FOR OPERATIONAL CHECK
OF LAIRCM MODIFIED AIRCRAFT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction establishes specific guidelines for the system operational check procedures for Large Aircraft Infrared Countermeasures (LAIRCM) modified aircraft which require special safety handling and coordination. The following procedures must be accomplished to ensure the safety of personnel is observed on any aircraft on Youngstown Air Reserve Station (YARS) due to the operation of lasers. All personnel working with LAIRCM modified aircraft must be trained and familiar with the hazards involved and with the requirements of Air Force Occupational Safety Health Standard (AFOSHSTD) 48-139, *Laser Radiation Protection Program*. Any maintenance performed on and operation of LAIRCM systems will be in compliance with 910th Airlift Wing Instruction (910 AWI) 40-201, *Radiation Safety*, Technical Orders 1C-130H-2-99JG-10-6, 1C-130H-2-99FI-00-1, applicable (Air Force Reserve Command)AFRC supplements, and AFOSH 48-139. This AWI incorporates procedures recommended by the Federal Aviation Administration (FAA) during laser operation. Refer recommended changes and questions about this publication to 910 AW/SGPB using the AF IMT 847, *Recommendation for Change of Publication*; route AF IMT 847s from the field through the appropriate functional's chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.mv.af.mil/gcss-af61a/afirms/afirms/>.

SUMMARY OF CHANGES

This is the initial publication of 910th Airlift Wing Instruction 91-208

1. General. Safety is paramount and is everyone's responsibility. Observe safety practices during all operations that involve the use of lasers. The two-person concept will be in force at all times. Any concerns or questions on laser operation and safety should be directed to the Base Radiation Safety Officer (RSO) 910th Medical Squadron, Environmental Health Office (910 MDS/SGPB). **Safety Precautions for LAIRCM Aircraft.**

2. Safety Precautions. The following safety precautions will be strictly adhered to:

2.1. All personnel involved with the LAIRCM system operational check, working on or around the aircraft will be trained in Laser Radiation safety. The concept of restricted access to the aircraft to only personnel directly involved in the LAIRCM maintenance will be strictly enforced. Personnel will be trained in accordance with: AFI 91-202, *The US Air Force Mishap Prevention Program*, AFI 91-202, AFRC Sup 1, *The US Air Force Mishap Prevention Program*, 910 AWI 40-201, *Radiation Safety*, and AFOSH 48-139, *Laser Radiation Protection Program*.

2.1.1. Vehicles, aircraft, and unauthorized personnel not directly involved with the LAIRCM system operational check will remain at least 200 feet from the aircraft under test. A safety zone will be cordoned off in accordance with the hazard zone drawing (see attachment 2). A safety zone radius of 43 meters (141 feet) will be established when one laser transmitter is in the field-of-view and 61 meters (200 feet) when two lasers transmitters are in the field-of-view prior to the start of the operational check. Open beam paths shall be clearly identified and shall not cross populated areas, traffic paths, unauthorized airspace, or enter into any other unauthorized space.

2.1.2. During periods of laser maintenance activity, a minimum of two Laser Safety Observers will be in direct communication with other LAIRCM test personnel. A LAIRCM Team Supervisor will be stationed in the aircraft cockpit monitoring the LAIRCM systems controls ensuring that should any aircraft, vehicle, or other personnel enter the LAIRCM Nominal Hazard Safety Zone that the LAIRCM system will be placed to the 'OFF' position. The Avionics personnel in the cockpit will be the LAIRCM team supervisor and will be in constant radio contact with the Maintenance Operation Control Center (MOCC)/ Flightline Expeditor. Personnel trained as Laser Safety Observers will be identified on an appointment letter signed by the 910th Maintenance Group Commander (910 MXG/CC). These individuals will have eye examinations scheduled by Occupational Health with the ophthalmologist or optometrist as required by 910 AWI 40-201 paragraph 15.4, Medical Examinations.

2.1.3. When lasers are being tested during the operational check, authorized personnel inside the hazard zone will wear ANSI Z136.1-2007 approved laser protective goggles issued by the Avionics Flight and clothing to cover as much of exposed skin as possible to include long sleeved shirt or outer garment.

2.1.4. Personnel operating the equipment will take every precaution to prevent laser beams from extending in any runway, taxiway, movement area, or towards any person, vehicle, or building.

2.1.5. Discontinue all operations when lightning is within 5 nautical miles or the wind speed exceeds 30 knots.

2.1.6. Operational checks will not be conducted during periods of darkness unless authorized by 910 MXG/CC.

2.2. Unexpected Conditions. Any unusual or unexpected occurrences that affect the safety of personnel and/or aircraft will be grounds for immediate suspension or termination of the operation. The operation will not continue until the condition is removed. The Team Supervisor will be the responsible individual to determine if the operation can be continued safely. The operation will not continue until the Team Supervisor gives his approval.

3. Aircraft Parking Locations.

3.1. For the system operational check requiring laser maintenance operation, the primary testing location will be the Spot 1 on the YARS parking ramp, nose of the aircraft pointing in a South Easterly direction up the ramp as per attachment 2. There will not be any other aircraft on spots 1A, 1F, 2 and 3 to allow for the nominal hazard zone properly. The alternate testing location will be the upper aircraft parking ramp, on Spot 13 with no other aircraft on spots 11-15. The aircraft will also be turned with the nose of the aircraft in a south easterly direction as per Attachment 3. The alternate locations will only be used if the primary testing location is unavailable, not just for the ease of maintenance. The aircraft will be parked observing the nominal hazard zone as specified in paragraph 4.3.

3.2. Aircraft towing and parking will be coordinated with the Airfield Manager to the approved Laser Maintenance testing spots by Maintenance Supervision. Avionics Flight Supervision will coordinate with the Maintenance Pro-Super, Maintenance Operations Control (MOC), Wing Safety Office, Bioenvironmental Health, and Security Forces to ensure the LAIRCM maintenance can be accomplished safely, efficiently, and in a timely manner, in compliance with all applicable references listed in this instruction.

4. System Operational Check. For the procedures to operational check the LAIRCM system, refer to T.O. 1C-130H-2-99JG-10-6, section 1, for the specific step-by-step procedures.

4.1. Maintenance Team. The team will consist of at least four team members. Two fully qualified Avionics technicians with the Air Force Specialty Code (AFSC) of 2A5X3C, one of which will be the LAIRCM Team Supervisor, and a minimum of two trained Laser Safety Observers.

4.2. Safety Briefing. The LAIRCM Team Supervisor will conduct a safety briefing prior to the starting of the system operational check and be responsible for the entire task. No step within the task shall be performed until a specific request is made by the LAIRCM Team Supervisor. The safety briefing will contain as a minimum:

4.2.1. Assigned tasks and responsibilities to all maintenance personnel involved in the task.

4.2.2. A review of the LAIRCM Safety Summaries listed in the T.O. 1C-130H-2-99JG-10-6.

4.2.3. Any specific safety requirement to include personal protection equipment such as approved ANSI Z136.1-2007 laser protective goggles and adequate clothing for the lasers being tested.

4.2.4. Review of any applicable aircraft system interfaces such as the ALE-47, Chaff and Flare System.

4.2.5. Review of any supplemental technical data such as Interim Operational supplements or Technical Assistance Requests (TARs) pertaining to the LAIRCM system and its operation.

4.2.6. Emergency Procedures. The procedures will contain as a minimum:

4.2.6.1. Evacuation route, distance, and location.

4.2.6.2. Procedures in case of fire.

4.2.6.3. Procedures for notification of the emergency. The LAIRCM Team Supervisor will notify MOCC by radio of the circumstances of the emergency.

4.3. Nominal Hazard Zone (NHZ). The Nominal Hazard Zone for the C-130 configuration will be 200 feet to the forward and aft of the aircraft where both lasers are in the field of view and 141 feet to the left and right of the aircraft where only one laser is in the field of view, see attachment 2. The maintenance team will cordon off the Nominal Hazard Zone (NHZ) area as shown in Attachment 2 with a minimum of 8 safety cones, with 2 each at the front of the NHZ spaced evenly, 2 each at the each wing tip spaced evenly, and 2 each at the tail of the aircraft, spaced evenly, to secure the area of operation prior to start of the operational check. The safety cones will have a laser symbol/placard displayed. The team will remain vigilant throughout the operation to ensure unauthorized personnel, vehicles, or aircraft do not enter the marked off area during the operation. The safety cones will remain around the aircraft until the check is completed.

4.4. Operational Check Notification. The LAIRCM Team Supervisor will notify the Flight Line Expediter, who will then notify MOCC of the start of the LAIRCM operational check. MOCC will then comply with the LAIRCM Maintenance Notification checklist. The Notification checklist will include the FAA Control Tower, Wing Safety, Security Forces, and Fire Department, informing them that a LAIRCM system operational check involving lasers will be conducted and to avoid movement into or near that location of the testing. The LAIRCM Team Supervisor will notify the Flight Line Expediter who will then relay that information to MOCC informing them when the operation on the aircraft is completed. MOCC will then inform offices on the LAIRCM checklist when the operation is complete.

STEPHEN J. LINSEMEYER, Col, USAFR
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 91-202, AFRC Sup 1, *The US Air Force Mishap Prevention Program*, 22 February 2007

AFOSHSTD 48-139, *Laser Radiation Protection Program*, 10 December 1999

T.O. 1C-130H-2-99JG-10-6, *Defensive Systems, Infrared Countermeasures Systems, USAF Series CH-130H Aircraft*, 15 February 2010

T.O. 1C-130H-2-99FI-00-1, *Fault Isolation, Defense System*, 15 February 2010

Abbreviations and Acronyms

910 AWI—910th Airlift Wing Instruction

910 MDS/SGPB—910th Medical Squadron Environmental Health Office

910 MXG/ CC—910th Maintenance Group Commander

AFMAN—Air Force Manual

AFOSH—Air Force Occupational Safety Health

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFSC—Air Force Specialty Code

FAA—Federal Aviation Administration

LAIRCM—Large Aircraft Infrared Countermeasures

MOCC—Maintenance Operation Control Center

NHZ—Normal Hazard Zone

OPR—Office of Primary Responsibility

RDS—Records Disposition Schedule

RSO—Base Radiation Safety Officer

TAR—Technical Assistance Request

YARS—Youngstown Air Reserve Station

Attachment 3

NOMINAL HAZARD ZONE, LAIRCM SYSTEM INSTALLED ON C-130 PARKING LOCATION SPOT 1

Figure A3.1. Nominal Hazard Zone LAIRCM System Installed on C-130 Parking Location Spot 1.



