BY ORDER OF THE COMMANDER
WARNER ROBINS AIR LOGISTICS COMPLEX

WARNER ROBINS AIR LOGISTICS COMPLEX INSTRUCTION 91-202

13 AUGUST 2024

Safety

SLINGS AND BELOW THE HOOK LIFTING DEVICES

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This instruction implements Department of the Air Force Manual (DAFMAN) 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 29 Code of Federal Regulations (CFR) 1910.184, *Slings*, and American Society of Mechanical Engineers (ASME) B30 series standards. It applies to all WR-ALC personnel. This publication addresses maintenance of wire rope, alloy steel chain, metal mesh, synthetic web, safety nets, cargo nets, beam slings, and restraints. A sling is defined as an assembly which connects a load to material handling equipment and/or a holding device. Improper use of slings can cause injury, death, and property damage. Mishaps often occur when loads are dropped or slip because the sling or its attachments break. Most sling mishaps can be attributed to inadequate design, improper selection, poor inspection, failure to make sure loads are properly attached and secured, or improper storage and care. This publication establishes policies and procedures to implement the WR-ALC sling program and to mitigate these factors. In addition, this publication assigns responsibilities to individuals and organizations (users) to implement. Squadron commanders are ultimately responsible for ensuring compliance where organizations or users are referenced. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Department of the Air Force (DAF) Form 847, Recommendation for Change of Publication. This instruction may be supplemented at any level, but all direct supplements must be routed to the OPR of this instruction for coordination prior to certification and approval. Requests for waivers must come through the chain of command from the commander or civilian director of the maintenance group or staff office seeking relief from compliance. Ensure that all records created as a result of processes prescribed in this instruction are maintained in accordance with (IAW) AFI 33-322, *Records Management*

and Information Governance Program, and disposed of IAW the AF Records Information Management System Records Disposition Schedule. See **Attachment 1** for a glossary of references and supporting information.

SUMMARY OF CHANGES

This document has been revised to better define roles and responsibilities for managing and maintaining slings and below the hook devices. References were also updated.

1. Responsibilities.

1.1. The 402d Maintenance Support Group (402 MXSG) director appoints, in writing, a WR-ALC (Complex) sling program manager (SLPM) to manage the WR-ALC sling program.

1.2. WR-ALC group commanders/directors will appoint, in writing, to Complex SLPM (402 MXSG), a primary and alternate sling monitor.

1.3. Complex SLPM (402 MXSG):

1.3.1. Reports any discrepancies to the owning organization.

1.3.2. Assists owning organizations sling monitors with questions and discrepancies concerning slings and Facilities and Equipment Maintenance (FEM).

1.3.3. Inputs new sling information into FEM from a WR-ALC Form 38, FEM Database Action Form & Certification of Proof Test or computer equivalent, provided by the owning organization.

1.3.4. Attaches completed WR-ALC Form 38 with proof testing documentation for slings in FEM.

1.3.5. Attaches manufacturer's sling certification in FEM when provided by the owning organization.

1.3.6. Assigns sling identification (ID) numbers and inputs information into FEM.

1.3.7. Builds asset record for all new items submitted by owning organization into FEM.

1.3.8. Prepares preventative maintenance instructions for slings IAW applicable manufacturer's instructions, drawings, ASME B30 series standards and technical orders.

1.3.9. Files most recent appointment letters received from the owning organizations.

1.3.10. Completes any sling status changes (hold, decommission, etc.) in FEM with a completed WR-ALC Form 38 provided by the owning organization.

1.4. Inspection and Testing organization (402 MXSS/MXDVAB):

1.4.1. Reviews drawings, tech data, and verifies sling assemblies are complete.

1.4.2. Reviews statement of work provided by the owning organization to verify it is accurate and rejects incomplete statements of work.

1.4.3. Completes sling inventory transfer sheet with owning organization at drop off.

1.4.4. Performs proof/load tests (if required) and then performs periodic inspections on slings and attachments IAW all applicable manufacturer's instructions, technical orders, drawings, DAFMAN 91-203, and ASME B30 series standards.

1.4.5. Determines if slings require Non-destructive Inspection (NDI), depaint and/or paint IAW all applicable manufacturer's instructions, technical orders, drawings, DAFMAN 91-203, and ASME B30 series standards.

1.4.6. Shall disassemble and reassemble slings requiring disassembly for testing.

1.4.7. Routes slings to 571 CMXG for required blasting, NDI, and painting.

1.4.8. Updates next due date tags when inspection is complete.

1.4.9. Documents MXSG's work performed in FEM workorder log before closing the workorder.

1.4.10. Attaches completed Lean Depot Management System (LDMS) Work Control Document Air Force Sustainment Center (AFSC) Form 959, Work Control Document, from 571 CMXG to the sling workorder in FEM.

1.4.11. Contacts customer to pick up slings when preventative maintenance workorder is complete.

1.4.12. Will perform proof/load tests at flight line pull station if slings are too large for pull testing at MXSG Building 321 pull station.

1.4.13. Shall destroy and discard all slings that have conditions present (see 29 CFR 1910.184 and ANSE B30 series standards for criteria) that require removal from service that cannot be repaired IAW 29 CFR 1910.184 and ASME B30 series standards once received from the owning organization.

1.4.14. Prior to being placed into service, proof test all locally manufactured slings. A record of the most recent proof test will be retained in FEM.

1.4.15. Ensure all slings are tagged IAW ASME B30 series standards and include the asset ID (SL0#), a brief description, working load limit, owning RCC (MNP#), drawing number if available and the serial number if available.

1.4.16. All 402 MXSS/MXDVAB mechanics performing inspections and testing on slings shall first successfully complete the 78 ABW MRXMAS0000900SU Sling Training course.

1.5. Owning Organization:

1.5.1. Tracks sling work schedule in FEM.

1.5.2. Delivers slings to drop off/pick up point in MXSG Building 321 no earlier than 5 days before due date, Monday through Friday between 7:00 a.m. and 10:00 a.m.

1.5.3. Will deliver slings that are too large to be pull tested at MXSG Building 321 pull station to the flight line pull station after coordinating with MXSG.

1.5.4. Provides all applicable technical orders, drawings, and a completed AFSC Form 137, Routed Order (PROJ DIR), with statement of work along with slings for periodic inspection and testing.

1.5.5. Completes statement of work on a AFSC Form 137 in box 30. The AFSC Form 137 shall include the asset number, part number (if available), nomenclature, stock number (if available), serial number (if available), owning RCC (MNP#), point of contact with phone number and the FEM workorder number.

1.5.6. Shall pick up the completed sling from drop off/pick up point from MXSG Building 321 within 3 business days of being notified.

1.5.7. Shall submit a WR-ALC Form 38 requesting any sling to be decommissioned that have conditions present (see 29 CFR 1910.184 and ANSE B30 series standards for criteria) that require removal from service that cannot be repaired IAW 29 CFR 1910.184 and ASME B30 series standards and deliver the sling to MXSG to be destroyed and discarded.

1.5.8. Can provide past due reports to group commanders/directors when requested.

1.5.9. Reports discrepancies to sling program manager (SLPM) for corrections.

1.5.10. Coordinates the acquisition process for purchasing and outsourcing new slings (locally manufactured and/or commercially purchased).

1.5.11. Maintains FEM access.

1.5.12. Maintains sling inventory IAW AFI 23-101, *Materiel Management Policy*.

1.5.13. Requests out-of-cycle inspections/load testing through the Complex SLPM (402 MXSG).

1.5.14. Provides completed WR-ALC Form 38 to the Complex SLPM (402 MXSG) for new items to be entered into FEM.

1.5.15. Requests to the Complex SLPM (402 MXSG) any sling status changes (hold, decommission, etc.) in FEM with a completed WR-ALC Form 38.

1.5.16. If provided by the sling manufacturer, provides manufacturer's sling certifications to the SLPM for documentation.

1.5.17. Maintains appointment letters from group commander/director. Provides complex SLPM with updated sling appointment letters when there are updates.

1.5.18. Performs visual inspection on slings from the production support center (PSC), tool crib, or shop storage location prior to signing out IAW DAFMAN 91-203; Chapter 12, manufacturer's instructions, technical data, and ASME B30 series standards.

1.5.19. Removes all dirt, grease, or oil from all web sling prior to returning to the PSC, tool crib, or shop storage location. Use only soap or water-soluble detergent to clean web slings.

1.5.20. Routes all slings that have conditions present (see 29 CFR 1910.184 and ANSE B30 series standards for criteria) that require removal from service that cannot be repaired to MXSG to be destroyed and discarded.

1.5.21. Lubricates metal slings and restraining devices every 30 days or prior to each use. ***Note*:** IAW T.O. 35D6-1-106, *Aircraft and Engine Slings (General) and Restraining Devices*, Section 4, for lubrication instructions, including type of lubricant.

1.6. User:

1.6.1. Prior-to-use inspections.

1.6.1.1. Prior to use, the user must perform prior to use inspection IAW ASME B30 standard series and applicable technical orders and if a defect is discovered, the user will record the defect in Part V of the Air Force Technical Order (AFTO) Form 244, Industrial/Support Equipment Record, IAW T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, And Procedures*.

1.6.1.2. Uses slings and lifting/restraining devices only for the purpose they are intended, and in a manner consistent with DAFMAN 91-203, ASME B30 series standards and applicable technical orders.

1.6.1.3. Return damaged slings to PSCs. PSCs will initiate repair or decommission process.

1.7. 571 CMMXS:

1.7.1. Planner reviews slings/parts and updates sling inventory transfer sheet.

1.7.2. Reviews AFSC Form 137 with statement of work, including the asset number (SL0), part number (if applicable), the nomenclature, NSN (if available), serial number (if available), owning RCC (MNP#), POC with phone number, and the FEM workorder number.

1.7.3. Reviews drawings, technical orders, and verifies sling assemblies are complete.

1.7.4. Reviews statement of work provided by MXSG to verify accuracy and rejects incomplete statements of work.

1.7.5. Creates LDMS Work Control Document AFSC Form 959.

1.7.6. Removes paint from slings/parts if required.

1.7.7. Performs NDI on slings/parts if required.

1.7.8. Paints slings/parts as required IAW drawings and/or technical orders.

1.7.9. Scheduler updates the sling inventory transfer sheet.

1.7.10. Routes slings with sling inventory transfer sheet to MXSG.

1.7.11. Emails LDMS Work Control Document AFSC Form 959 to MXSG to attach to the FEM workorder.

1.7.12. Shall perform all required blasting, depainting, NDI, and painting.

1.8. 573 CMMXS:

1.8.1. Performs weld repairs on slings as required per LDMS Work Control Document AFSC Form 959.

1.8.2. Routes repaired slings backed to 571 CMMXS.

2. Acquisition (Owning Organization):

2.1. Commercially procured material handling and lifting equipment or parts shall comply with design manufacturing requirements and specifications in OSHA standards and as applicable, ANSI/ASME requirements and specifications.

2.2. Slings procured for DAF use shall comply with design and manufacturing requirements in 29 CFR 1910.184, Slings, and ANSI/ASME B30 series standards, Slings. Locally manufactured slings that do not meet the engineering requirements of ANSI/ASME B30 series standards are prohibited and shall be disassembled and removed from service. Note: Design and manufacturing requirements are specified in OSHA's Tables and Figures: Guidance on Safe Sling Use: **https://www.osha.gov/dsg/guidance/slings/tables-** figures.html. IAW DAFMAN 91-203.

2.3. The purchaser will obtain a certified document of proof test performed by the manufacturer if available or an initial proof test will need to be accomplished by qualified personnel before the asset can be put into service.

2.4. For locally purchased and locally manufactured slings, the owning group engineering authority will specify on the blueprint the maximum working load capacity and how to perform the load test. Also, they will need to specify on the blueprint that the manufacturer will etch or stamp this information permanently in a conspicuous place on the sling. Slings shall be marked or identified with a durable and legible tag or stencil.

2.5. Local manufacture: Whole slings or components may be manufactured locally. Component parts manufactured locally will be made IAW engineer's or manufacturer's drawing for that part. 572 CMXG accomplishes local manufacture for metal slings, and/or synthetic web slings and their component parts. Locally manufactured slings will comply with DAFMAN 91- 203, ASME B30 series standard and 29 CFR 1910.184.

2.6. For locally manufactured slings, contacts the Depot Maintenance Account and Production System Office, 78 ABW/SCPM, to establish a cost class 4 job order number (SJON number) so labor can be charged to the owning organization.

2.7. Permanently etches or stamps the maximum safe load capacity on a tag and attaches to locally manufactured sling.

2.8. Marks locally manufactured slings IAW DAFMAN 91-203.

JON A. EBERLAN
Brigadier General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 23-101, *Materiel Management Policy*, 22 October 2020, DAFI23-101_DAFGM2023-02, 14 August 2023

AFI 33-322, *Records Management and Information Governance Program*, 28 July 2021

ASME B30.9, *Slings*, 22 December 2021

DAFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 25 March 2022

WR-ALC OI 91-203, *Occupational Safety*, 28 March 2017

29 CFR 1910.184, *Slings*, 1 July 2021

T.O. 35D6-1-106, *Aircraft and Engine Slings (General) and Restraining Devices*, 3 July 2023

T.O. 35-1-246WC-1, *Periodic Inspection Work Cards*, 13 March 2024

T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, 19 December 2023

Prescribed Form

WR-ALC Form 38, *FEM Database Action Form & Certification of Proof-Test*

Adopted Forms

AFMC Form 206, *Temporary Work Record Request*

AFSC Form 137, *Routed Order*

AFSC Form 959, *Work Control Document*

AFTO Form 244, *Industrial/Support Equipment Record*

DAF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

AFMC—Air Force Materiel Command

AFSC—Air Force Sustainment Center

AFTO—Air Force Technical Order

ASME—American Society of Mechanical Engineers

CFR—Code of Federal Regulations

CMXG—Commodities Maintenance Group

DAF—Department of the Air Force

DAFMAN—Department of the Air Force Manual

DoD—Department of Defense

FEM—Facilities and Equipment Maintenance

IAW—In Accordance With

ID—Identification

LDMS—Lean Depot Management System

MIS—Maintenance Information System

MXSG—Maintenance Support Group

NDI—Nondestructive Inspection

OI—Operating Instruction

OPR—Office of Primary Responsibility

PSC—Production Support Center

SLPM—Sling Program Manager

TO—Technical Order

WCD—Work Control Document

WR-ALC—Warner Robins Air Logistics Complex

WSSC—Weapon System Support Center

Terms

Chain—A series of links pivotally joined together for conveying or transmitting motion or power. General classes of chain are detachable, pintle, combination, roller, rivetless, coil, inverted tooth, and bar link chains.

Chain, Roller Link—A chain consisting of a series of stamped steel plates fastened with pins, bushings, and rollers, giving articulation in only one plane.

Chain, Welded Link—A chain consisting of a series of interwoven links formed and welded from round bar stock.

Critical Load—Materials that if damaged or destroyed during a lift would present an unrecoverable loss or unacceptable risk. DAF materials will be designated as critical loads for purposes of lifting or hoisting by an appropriate Program Manager or the functional manager at the facility where the lift will occur. Items for consideration in making a critical load determination include, but are not limited to:

- Personnel injury or significant adverse health impact.
- Damage resulting in serious economic consequences (non-availability of necessary funds to repair or replace the item).
- Damage resulting in unacceptable delay to schedule (mission impairment) or other destructive programmatic impact, e.g., loss of vital data.
- Undetectable damage that would jeopardize future operations or safety of a facility.

- Damage that may occur without exceptional care in handling because of close-tolerance installation, high susceptibility to damage or other unusual characteristic.
- Damage that would result in significant release of hazardous materials.
- Damage that may occur because the item, although noncritical, must be lifted above a critical item, e.g., loads of any sort in close proximity to a nuclear component or near concentrations of hazardous materials.

Prior—to-Use Inspection—A visual inspection of equipment performed once each day prior to initial use. If the equipment is not used on a daily basis, this inspection is performed prior to each use and is not required on those days the equipment is not used. The use of additional items such as ladders, personnel lifts, or special tools or disassembly of lifting equipment is not required by this standard for this inspection. ***Note*:** The daily or prior-to-use inspection is not an operational test.

Load Rating—A rating in pounds established by the manufacturer as the maximum safe working load for an individual hoist, crane, or related lifting equipment.

Load Test—Also called rated-load test. A test of the rated capacity (working load limit), as determined by type of equipment and designated by the manufacturer and DAFMAN 91-203. See individual chapters for applicable equipment-specific test procedures.

Load (Working)—The external load, in pounds, applied to the crane, including the weight of load-attaching equipment such as load blocks, shackles, slings, and ropes.

Proof Test—A nondestructive tension test performed by the manufacturer or qualified person to verify construction and workmanship of a lifting device. See individual chapters for applicable equipment-specific test procedures.

Rated Load—Sometimes called rated capacity or working load limit. The maximum working load, as designated by the manufacturer, for which a crane, individual hoist, or related hoisting equipment is designed and built.

Rated-Load Test—Also called load test. A test of the rated capacity (working load limit), as determined by type of equipment and designated by the manufacturer and DAFMAN 91-203. See individual chapters for applicable equipment-specific test procedures.

Shall—Indicates a mandatory requirement.

Sling—An assembly which connects a load to the material handling equipment and/or holding device.

Will—Is also used to indicate a mandatory requirement; in addition is used to express a declaration of intent, probability, or determination.