

**BY ORDER OF THE COMMANDER
AIR NATIONAL GUARD**



**AIR FORCE INSTRUCTION 21-
101_ANGSUP_ADD_B**

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Maintenance

**AIRCRAFT AND EQUIPMENT
MAINTENANCE MANAGEMENT (F-35
AIRCRAFT)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(ANG) This addendum implements AFI21-101_ANGSUP, Aircraft and Equipment Maintenance Management. This addendum prescribes policies and procedures governing aerospace equipment maintenance management of F-35 Aircraft for the ANG. This instruction applies to all ANG organizations (including ANG-led Active Associations) and personnel during non-federalized periods that maintain aircraft, aircraft systems, equipment, support equipment, and components. It does not apply to Classic and AFRC-led ARC Associations. Maintenance units will use this addendum in conjunction with the ANG Supplement to AFI 21-101; if a conflict exists between the ANG supplement and this addendum, the addendum will take precedence. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Process waiver request in accordance with Air National Guard Manual (ANGMAN) 33-360, Management of Air National Guard Waivers. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847 Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command. The National Guard Bureau (NGB) implements policy and management guidance. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, Records Management and Information Governance Program, and disposed of in accordance with Air Force Records

Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).

Chapter 1

MANAGEMENT OVERVIEW, SUPPORTING CONCEPTS AND REQUIREMENTS

1.1.1. **(ADDED-ANG)** Sustainment Operating Instructions (SOIs) are F-35 joint program instructions provided by the Joint Program Office (JPO). They are developed with Service/Partner participation and provide source documentation for Air Force policies/instructions specific to the F-35 where legacy instructions may not be adequate for the given topic. SOIs are considered applicable and source guidance for use when there is no other Air Force guidance available. If there is a conflict, Air Force guidance will take precedence. SOI source documentation and information that is relevant to AFI 21-101 ANGSUP is included in this publication and referenced to the specific SOI in applicable paragraphs of this publication. Ensure the SOI is current and active when referenced. SOIs may be accessed at the following web site: <https://cs2.eis.af.mil/sites/12097/sustainment/af%20soi%20library/forms/allitems.aspx?RootFolder=%2fsites%2f12097%2fsustainment%2fAF%20SOI%20Library%2fUSAF%20Approved%20SOI%20Final%20Folder&FolderCTID=&View=%7b011B1047%2d6A46%2d4809%2dB7CB%2d4584EBEE81D4%7d>

RootFolder=%2fsites%2f12097%2fsustainment%2fAF%20SOI%20Library%2fUSAF%20Approved%20SOI%20Final%20Folder&FolderCTID=&View=%7b011B1047%2d6A46%2d4809%2dB7CB%2d4584EBEE81D4%7d

1.1.2. **(ADDED-ANG)** The F-35 is a joint services platform that utilizes terminology that differs from legacy. For a frame of reference, the following are common terms (not all inclusive) and their legacy equivalent: ALIS=IMDS, JTD=MDS TO, RMA=DIFM, TCTD=TCTO, AR=107 request or ETAR, MEFL=MESL and LCN=WUC.

1.3. Maintenance Concept.

1.3.4. **(ADDED-ANG)** Action Requests (AR) are the primary method of problem reporting for the F-35 Air System. Refer to **paragraph 11.10** to submit ARs to the Autonomic Logistics Global Sustainment (ALGS) Operations Center through ALIS. SOI 1514.02.

1.3.5. **(ADDED-ANG)** Prognostic Maintenance Inspections.

1.3.5.1. **(ADDED-ANG)** Prognostics and Health Management (PHM) will be viewed and tracked in the same manner as scheduled maintenance inspections. **(T-2)**.

1.3.6. O+ Maintenance.

1.3.6.1. **(ADDED-ANG)** The F-35 Joint Program employs a 2 level maintenance concept defined as organizational and depot levels of maintenance. Within the Organizational level, there are on-aircraft and O+ maintenance tasks.

1.3.6.2. **(ADDED-ANG)** O+ Scheduled Maintenance:

1.3.6.2.1. **(ADDED-ANG)** Scheduled maintenance requirements for off equipment will be listed within applicable JTD. **(T-2)**.

1.3.6.2.2. **(ADDED-ANG)** O+ scheduled maintenance will be documented and tracked for particular assets as detailed below:

1.3.6.3. **(ADDED-ANG)** Program provided Support Equipment (SE) scheduled maintenance will be managed, tracked and documented within Computerized Maintenance Management System (CMMS). **(T-2)**.

1.3.6.4. **(ADDED-ANG)** Program provided Alternate Mission Equipment (AME) scheduled maintenance will be documented, tracked and managed within CMMS. **(T-2)**.

1.3.6.4.1. **(ADDED-ANG)** Tracking and managing scheduled inspections or shelf life of these same items while they are not installed on an Air Vehicle (AV) will be tracked in either Maintenance Management Production Asset Inspection Requirements (MM-PAIRS) as a shelf life tracked item or external to ALIS (i.e., LDM). **(T-2)**.

1.5. Aircraft and Equipment Readiness.

1.5.2. **(ADDED-ANG)** Management of all F-35 Air Vehicle (AV) Scheduled and Prognostic maintenance requirements are performed within the Autonomic Logistics Information System (ALIS). Scheduled and Prognostic maintenance is performed IAW Joint Technical Data (JTD), Time Compliance Technical Directive (TCTD) and as directed in an Action Request Response (ARR). Specific scheduled maintenance requirements are created by using the Health Inspection Task (HIT) in MM-PAIRS via ALIS. **(T-2)**.

1.6.2.1. **(ADDED-ANG)** Use of JTD. Verified JTD will be used for all maintenance actions/procedures. **(T-2)**. Where there is JTD that has not been authored or verified, refer to established SOI or User Guide procedures. **(T-2)**.

1.6.2.2. **(ADDED-ANG)** Aerospace Equipment Instructions (AEI) and System Checkout Procedures can be used with the assistance of a Field Support Engineer (FSE) or Field Support Representative (FSR) when JTD is not adequate, a follow up JTD AR will be submitted by work center. **(T-2)**.

1.9. Publications.

1.9.6. **(ADDED-ANG)** Lockheed Martin (LM) Aeronautics is the Joint-Service Technical data Manager (LM- JTDM) and has management responsibility for all JSF program technical data and technical data requirements. LM-JTDM provides overall management of the JTDAR internal process and updates required for all JSF JTD. Refer to established SOI or User Guide procedures.

1.9.7. **(ADDED-ANG)** Recommend improvements, corrections or additions to JTD by submitting a Joint Technical Data Action Request (JTDAR) to ALGS Operations Center through ALIS The request will be clear, concise and provide enough detail to identify the recommendation. Additionally, the request will provide a recommended solution if known. The initiator shall recommend a JTDAR processing priority of as applicable. **(T-2)**.

1.9.8. **(ADDED-ANG)** Expedited JTDAR are accomplished when personnel/property hazards, safety- of-flight conditions exist or a change that pertains to a procedure that will result in a work stoppage or damage to equipment if left uncorrected. **(T-2)**.

1.9.9. **(ADDED-ANG)** Routine JTDAR are accomplished for all other changes that do not meet the Expedited or Category 1 (CAT 1) Action criteria. **(T-2)**.

1.9.10. **(ADDED-ANG)** Additional technical data waivers, deviations, improvements, corrections, or procedures are submitted using an AR to the ALGS Operations Center through ALIS. **(T-2)**. Refer to established SOI or User Guide procedures.

1.9.11. **(ADDED-ANG)** Support Equipment Maintenance Matrix (SEMM). Refer to established SOI or User Guide procedures.

1.9.11.1. **(ADDED-ANG)** The primary source for technical data used by authorized personnel to conduct maintenance for SE is verified JTD. In the absence of verified JTD, F-35 program approved legacy general tech data may be used.

1.9.11.2. **(ADDED-ANG)** The SEMMs are configured and managed by Air System Contractors (ASC), intended to be used as cross reference tools for SE authorized maintenance personnel to assist in determining whether or not a particular SE maintenance task is authorized when no released JTD exists.

1.9.11.3. **(ADDED-ANG)** The referenced SE maintenance technical data in the SEMM is comprised of Original Equipment Manufacturer (OEM) and/or vendor Operation & Maintenance (O&M) manuals, Department of Defense (DoD) Service SE technical publications and ASC-authored work cards.

1.11. (ANG) Modification Management. Submit an AR to the ALGS Operations Center through ALIS for program specific equipment and aircraft modifications. Refer to established SOI or User Guide procedures.

Chapter 2

ROLES AND RESPONSIBILITIES

2.4. Maintenance Group Commander (MXG/CC) Responsibilities. The MXG/CC (or equivalent) will:

2.4.32. **(ADDED-ANG)** Stock Record Account Number (SRAN) engine manager duties are performed by the contractor.

2.4.33. **(ADDED-ANG)** Engine Health Management Plus (EHM+) duties are performed by the contractor.

2.4.37. **(ADDED-ANG)** Appoint a project officer for Aircraft Structural Integrity Program (ASIP) function, when required. ASIP and the Individual Aircraft Tracking (IAT) portion of ASIP are an integrated function within ALIS and the aircrew debriefing process. There is no maintenance intervention in the ASIP/IAT data collection or reporting of quarterly data to the MAJCOM at this time. **(T-2)**.

2.4.61. **(ADDED-ANG)** Ensure MXS/AMXS Squadron MOO/Chief, AMU MOO/Chief, AMXS/MXS Production Superintendents, Fabrication Flight Chief, LO ASM Section Chief, and all scheduling personnel (2R1X1) attend Low Observable Maintenance Management Training (Course Code 006050). This course may be instructed locally by the LO Section or LO SME. **(T-2)**.

2.7.12.2. **(ADDED-ANG)** Ensure JPO provided weapons load crew CTK contents meet production contract procurement requirements. WWM may modify CTKs providing an AR is submitted to JPO to approve the weapons load crew CTK contents change. **(T-2)**.

2.8.1.1. **(ADDED-ANG)** The Operating Unit/Squadron will report mishaps/accidents in accordance with existing Service procedures and instructions and are also responsible for contacting the ALGS Ops Center in accordance with the F-35 Mishap Communication Instruction. Operating Unit/Squadron policy will determine individuals or positions that will notify the ALGS Ops Center in the event of a mishap/accident. **(T-2)**.

2.8.15. **(ADDED-ANG)** Establish and maintain an effective Low Observables (LO) maintenance program. **(T-2)**.

2.8.15.1. **(ADDED-ANG)** Work closely with the OG/CC to balance flying requirements with maintenance capability to minimize LO backlog. **(T-2)**.

2.8.15.2. **(ADDED-ANG)** Ensure all maintenance personnel complete annual LO awareness, panel handling training through the MTS. **(T-2)**.

2.8.15.3. **(ADDED-ANG)** Approval authority for flying aircraft in approved Aero Only configuration as outlined in the latest revision of Interim Maintenance Procedure, F35- IMP-A0110510105-960A-A. **(T-2)**.

2.8.15.4. **(ADDED-ANG)** Should ensure panels are not removed from aircraft undergoing annual audits.

2.8.15.5. **(ADDED-ANG)** Establish a robust LO quality assurance program that includes focus on aircraft Outer Mold Line (OML) inspections, LO annual audits, and LO repair processes.

2.8.16. **(ADDED-ANG)** Ensure hot wash/lessons learned from each Theater Support Package (TSP) and/or contingency deployment are captured and shared with the NGB Weapons System Manager (WSM). **(T-2)**.

2.9.2. **(ANG)** Engine data is maintained in ALIS.

2.9.19. **(ANG)** ARs are used in ALIS to report materiel deficiencies. Refer to established SOI or User Guide procedures.

2.10. Flight Commander/Flight Chief (Flight CC/Chief) or Aircraft Maintenance Unit (AMU) Officer in Charge (OIC)/Chief.

2.10.25.3. **(ADDED-ANG)** F-35 program of record deficiency reporting will be accomplished IAW JTD AR Submittal Guide. **(T-2)**.

2.10.26. **(ADDED-ANG)** Review and track RMAs to ensure they are turned in within five calendar days. **(T-2)**.

2.10.27.1. **(ADDED-ANG)** Work center supervisors request bench stock levels via the unit Supply Section. The Supply Section will forward Pre-Expended Bin (PEB) levels through the quarterly review process. Refer to established SOI or User Guide procedures.

2.12. Section NCOIC/Chief.

2.12.8.2. **(ADDED-ANG)** Ensure that CMMS has been reviewed on a daily basis to monitor scheduled and deferred events. Refer to established SOI or User Guide procedures. **(T-2)**.

2.12.9.1. **(ADDED-ANG)** Review and ensure work center ALIS data entries for the previous day and all preceding non-fly days in CMMS for job accuracy and completeness. **(T-2)**.

2.12.9.2. **(ADDED-ANG)** Will ensure ALIS information (BIRT reports, P&S data, Configuration) is backed up at least once per day and stored for use in case of an ALIS offline situation unless mission dictates otherwise. Refer to ALIS offline User Guide procedures. **(T-2)**.

2.12.23.2. **(ADDED-ANG)** F-35 - HAZMAT may be collocated with common HAZMAT—storage is a local decision. Wherever it is stored, in addition to tracking in ESOH, HAZMAT use must be tracked in SCM to ensure proper information is available for tracking and replenishment by the HPSI (A). Hazardous material may be physically stored in the main warehouse or at a HAZMAT facility. Note: Once issued to maintenance, HAZMAT must be tracked using local procedures.

2.12.24.3.3. **(ADDED-ANG)** Customers are responsible for warehousing of common hazardous material, including common petroleum, oil, and lubricants (POL).

Chapter 3

AIRCRAFT MAINTENANCE SQUADRON (AMXS)

3.5. Production Superintendent.

3.5.2.1. **(ADDED-ANG)** Release (exceptional release (ER)) aircraft for flight via the CMMS tool in ALIS IAW SOI 1505.18. An ER will include review of all opened, closed, and deferred work packages produced since last ER. Additionally, all Production Asset Inspection Requirements (PAIRs) will be reviewed for currency. Refer to established SOI or User Guide procedures. **(T-2)**.

3.5.13. **(ADDED-ANG)** The Production Superintendent has authority to waive holes/EELs/inconsistencies to MC aircraft when authorized by the MXG/CC IAW **Chapter 11** and **Table 11.1** of this instruction. **(T-2)**.

3.5.13.1. **(ADDED-ANG)** The holes/EEL/inconsistencies must be determined to have been caused by an update, SPIR, DTR and that the part in question can be verified to be correct and installed. **(T-2)**.

3.5.13.2. **(ADDED-ANG)** Life Limited Parts/TCI or PAIRS items with holes/EELs/inconsistencies will not be waived. **(T-2)**.

3.5.13.3. **(ADDED-ANG)** An AR must be written in ALIS to report the holes/EELs/inconsistencies prior to being waived, IAW JTD AR Submittal Guide and Paragraph 11.34.. **(T-2)**.

3.5.13.4. **(ADDED-ANG)** Input a note in the Air Vehicle status page of CMMS with the holes/EELs/inconsistencies that has been waived and the AR number. **(T-2)**.

3.6. Flightline Expediter.

3.7. Aircrew and Maintenance Debrief Section.

3.7.12. **(ADDED-ANG)** PHM Data Download.

3.7.12.1. **(ADDED-ANG)** Portable Maintenance Device (PMD) will be downloaded at the end of the flying day for each sortie. **(T-2)**. Exceptions listed below:

3.7.12.1.2. **(ADDED-ANG)** Per Aircraft Release Authority's decision where ALIS is not available (away from the AV host Standard Operating Unit (SOU)) for a prompt processing of the PMD download.) **(T-2)**.

3.7.12.1.3. **(ADDED-ANG)** An approved AR, A2UN or JTD guidance where ALIS is not available. **(T-2)**.

3.7.12.1.4. **(ADDED-ANG)** For failed PMD downloads follow the F-35 program current debrief users' guide. **(T-2)**.

3.7.13. **(ADDED-ANG)** Check ALIS for Airframe Time.

3.8. Aircraft Section.

3.8.1.2. **(ANG)** Red gear (-21) is tracked in CMMS.

3.8.1.4. **(ADDED-ANG)** Perform propulsion tasks to include Engine Equipment Maintenance Section responsibilities.

3.8.1.5. **(ADDED-ANG)** Perform engine trailer MX, unless a local MOA exists for AGE flight to perform MX. **(T-2)**.

3.8.1.6. **(ADDED-ANG)** Perform pneumatic and hydraulic systems/components maintenance. **(T-2)**.

3.9. Specialist Section.

3.9.2. Avionics Specialist Section will:

3.9.2.2. **(ADDED-ANG)** Perform all Electro/Environmental tasks. **(T-2)**.

3.9.2.3. **(ADDED-ANG)** Manage a SPRAM Accounts: KIV-78 must be included in a SPRAM account. **(T-2)**.

3.9.2.4. **(ADDED-ANG)** Perform BOS cart MX. **(T-2)**.

3.9.2.5. **(ADDED-ANG)** Perform nitrogen cart bottle (i.e. 8 Bottle, 6 Bottle, etc.) MX. At the discretion of the MXG/CC this requirement may be delegated to another workcenter. **(T-2)**.

3.9.2.6. **(ADDED-ANG)** Manage and perform maintenance on removed 270 and 28 VDC batteries. **(T-2)**.

3.10. Weapons Section.

3.10.1.17.1. **(ADDED-ANG)** Ensure all automatically or manually populated AME data and on/off equipment requiring life tracking/usage parameter(s) in ALIS are correctly reviewed for accuracy. **(T-2)**.

3.10.1.17.2. **(ADDED-ANG)** AME Storage Designation: The physical storage location is virtually designated and annotated in CMMS.

3.10.1.17.3. **(ADDED-ANG)** AME Operating Unit/Squadron Acceptance: Supply notifies the receiving Operating Unit/Squadron that a due-in AME item has been delivered and is ready for pickup, or per local SCM policies. Refer to established SOI or User Guide procedures.

3.10.1.17.4. **(ADDED-ANG)** Receiving Initial/New AME: When the gaining Operating Unit/Squadron receives AME they shall access CMMS and establish a life limited Track Usage Record (TUR) per the PAIR as listed in JTD A13-10 tables. **(T-2)**. Using the tools within CMMS, populate the TUR with the required life limited tracking data/usage parameters. Once established, the aircraft AME usage must be manually entered into CMMS. **(T-2)**.

3.10.1.17.5. **(ADDED-ANG)** AME removed from aircraft requires a Work Order and attached serviceability/unserviceability tag with the following information: current status, pressurized or depleted, part number, serial number, usage information, removed date. The AME item physically becomes the property of the gaining Work Center/assigned squadron and resides in their designated storage spot. **(T-2)**.

3.10.1.27. **(ADDED-ANG)** Establish and monitor gun room security and explosive licenses if required. **(T-2)**.

3.10.2. Weapons Expediter.

3.10.2.6.1.2. **(ADDED-ANG)** Maintain ALIS for installed guns, gun systems, and gun component TCIs or inspection data, based on round count limits listed in the PAIR JTD Data Module, including updating rounds from the AF Form 2434 or locally developed form. **(T-2)**.

3.12. AMU Decentralized Material Support (DMS). Supply support will track:

3.12.1.1. **(ADDED-ANG)** Requisition parts through ALIS/CMMS tool. When necessary, Supply personnel can assist with follow up via contacting JSF Supply warehouse.

3.12.4.2. **(ADDED-ANG)** DMS will perform weekly inventory of TNB assets to verify accuracy. **(T-2)**.

3.12.4.3. **(ADDED-ANG)** DIFM/RMA assets will be tracked within the PBL construct via JSF Supply warehouse using the Industrial and Financial System (IFS) tool. **(T-2)**.

3.12.4.4. **(ADDED-ANG)** The Due-In list page in CMMS allows users to view and manage parts that are awaiting turn-in from maintenance. This screen will be used to process retrogrades to accomplish turn in correctly. Note: this does not include initial issue turn-ins (i.e. AME, SE). **(T-2)**.

3.12.5.1. **(ADDED-ANG)** The unit is responsible for management, including replacement of damaged or lost reusable containers. The LRS will subsume F-35 packaging and reusable container responsibilities consistent with process used for legacy assets. **(T-2)**.

3.12.6.1. **(ADDED-ANG)** All work orders associated with parts in TNB must be reviewed in conjunction with the ADR to ensure they are still open. Note: Coordinate with maintenance to ensure WO number has not changed. Turn in part if no longer needed. **(T-2)**.

3.12.6.2. **(ADDED-ANG)** During TNB inventory, if part has been in TNB 30 days or longer and is not required for a TCTD, Time change, pending AR, or critical safety item, perform turn in. Note: Coordinate with Pro Super/Expediter prior to Turn-In. **(T-2)**.

Chapter 4

MAINTENANCE SQUADRON (MXS)

4.2. Maintenance Supervision Responsibilities.

4.2.2. **(ADDED-ANG)** Base level repair capability is performed through the established PBL standards, if applicable. **(T-2)**.

4.2.6.1. **(ADDED-ANG)** Use the CRM tool in ALIS to submit an AR for JTD changes/clarification. **(T-2)**.

4.4. Accessories Flight. Electro Environmental responsibilities reside in Specialist Section in AMXS.

4.4.5. **(ADDED-ANG)** Hydraulic Section does not exist on F-35. Pneumatic and hydraulic systems/ component responsibilities reside in the Aircraft Section.

4.5. Aerospace Ground Equipment (AGE) Flight.

4.5.1.5.1. **(ADDED-ANG)** Support Equipment is managed and maintained in ALIS. The Support Equipment Maintenance Matrix (SEMM) is the primary source for AGE technical data until the technical data is entered into JTD. For detailed information on the SEMM refer to established SOI or User Guide procedures. **(T-2)**.

4.5.2.11.1. **(ADDED-ANG)** Ensure equipment is shipped according to AF SECA disposition instructions/requirements. **(T-2)**.

4.6. (ANG) Armament Flight. Armament Flight responsibilities are accomplished through the AMU Weapons Section. (T-2).

4.7. **(ANG)** Avionics Flight. Avionics Flight does not exist under the F35 maintenance concept.

4.8. Fabrication Flight.

4.8.4.5. **(ANG)** Establish/obtain NDI inspection technique files by submitting an AR to ALGS Operations Center and LST through ALIS. **(T-2)**. Refer to established SOI or User Guide procedures.

4.8.5. Low Observable (LO) Aircraft Structural Maintenance (ASM) Section. LO ASM Section manages all aspects of LOHAS; Low Observable Defect Entry Module (LODEM), Signature Assessment Module (SAM) and LO Maintenance Management Module (LOMMM) for assigned aircraft. **(T-2)**.

4.8.5.7. **(ADDED-ANG)** Follow guidance contained in Joint Strike Fighter (JSF) Maintenance Coding Reference Guide (F35-UGP-A0122000104-090A-A) in JTD to ensure Maintenance Work Orders created in Computer Managed Maintenance System (CMMS) capture qualitative and standardized data for LO Reliability & Maintainability analysis. **(T-2)**.

4.8.5.8. **(ADDED-ANG)** Establish a Post Operations Service (POS) final finish team rotation plan to ensure all LO personnel remain proficient. Final finish POS inspections are required at the end of each flying day. **(T-2)**.

4.8.6. **(ADDED-ANG)** LO Signature/Fleet Management Section

4.8.6.1. **(ADDED-ANG)** Monitor fleet LOHAS Maintenance Margin Used (MMU) values and ensure aircraft are scheduled for LO margin reduction when individual aircraft LOHAS values reach 80% of the MMU. It is recommended that the LOHAS MMU be reduced as opportunistic maintenance opportunities arise and at the discretion of the MXG/CC. LOMMM “What If” capability will be utilized to determine residual LOHAS impacts from repairs and balance this against improvements to the MMU. **(T-2)**.

4.8.6.2. **(ADDED-ANG)** Coordinate with production superintendent(s), aircraft maintenance unit supervision and/or PS&D to schedule aircraft for LO margin reduction based on overall fleet health and/or LOMMM damage priority screen. **(T-2)**.

4.8.6.3. **(ADDED-ANG)** Schedule aircraft with an LOHAS exceedance equal to or greater than 100% MMU at the earliest opportunity and/or during the next Shared Resources meeting. **(T-2)**.

4.8.6.4. **(ADDED-ANG)** Unscheduled F-35 LO maintenance/LO FOM may be scheduled separately from Shared Resources meeting. **(T-2)**.

4.8.6.5. **(ADDED-ANG)** Responsible for performing annual Outer Mold Line (OML) audits on each assigned aircraft. The audit is used to confirm that damages and repairs entered into the LOHAS during routine OML inspections provides for an accurate representation of the LO system health. OML audit must be completed by separate entity within the LO section, excluding OML team members. This can only be performed by physically matching aircraft damages/repairs with the entries in the LODEM. Errors identified during the audit must be recorded in an audit historical file, corrected on the aircraft OML and reflected in LOHAS for defects or repairs found deficient. Any aircraft audit that results in a +15% or -15% LOHAS margin deviation indicates a potential deficiency with the OML inspection process. See [Attachment 4](#) for Audit procedures and reporting requirements. **(T-2)**.

4.8.6.6. **(ADDED-ANG)** Report fleet LOHAS mission capable status to ACC.A4V35@us.af.mil and ACC.A5FL@us.af.mil at the beginning of each week. LOHAS fleet average reports must not include non-possessed aircraft. See [attachment 3](#) for a LOHAS Fleet Average Template and notes for additional reporting information. **(T- 2)**.

4.8.6.7. **(ADDED-ANG)** Key information includes LOHAS maintenance margin used number for each aircraft, fleet LOHAS average, a brief description of damages or repairs that drive a signature delta from previous Outer Mold Line (OML) and identify aircraft in an “Aero Only” configuration and associated panels. **(T-2)**.

4.8.6.8. **(ADDED-ANG)** LOHAS margin values for each aircraft with a LOHAS exceedance will be reported as identified in LOMMM until it reaches 200% of the MMU. Do not report values greater than 200% to ensure fleet averages are not unnecessarily impacted. **(T-2)**.

4.11. (ANG) Propulsion Flight. Propulsion Flight does not exist under the maintenance concept. Responsibilities to include Engine Equipment Maintenance Section responsibilities are performed by the Aircraft Section.

4.12. Test, Measurement, and Diagnostic Equipment (TMDE) Flight.

4.12.2. **(ANG)** Local USAF PMEL should be used for calibration support whenever capability exists. **(T-2)**.

4.12.3. **(ANG)** When USAF PMEL capability does not exist, the Product Support Integrator (PSI) shall plan, schedule and ensure calibration support.

Chapter 5

MAINTENANCE OPERATIONS (MXO)

5.2.1.5.2. **(ADDED-ANG)** Use ALIS to manage ICAO codes for on/off-station possessed aircraft. Since the capability does not exist for utilization of PICs in ALIS, submit Purpose Identifier Code changes in LIMS-EV. **(T-2)**. Note: ALIS CMMS status only allows the aircraft to be in a FMC, PMCM, PMCS, NMCM, NMCB or NMCS status. Legacy statusing is utilized, but does not match ALIS.

5.2.1.10. **(ANG)** Base level repair is Not Applicable.

5.2.2. Maintenance Operations Center (MOC).

5.2.2.1. The MOC will:

5.2.2.1.1. **(ANG)** Use ALIS to monitor and coordinate sortie production, maintenance production, communicate priorities, and execution of the flying and maintenance schedules while maintaining visibility of fleet health indicators. For air vehicle status reporting, refer to established SOI or User Guide procedures. **(T-2)**.

5.2.4. Plans, Scheduling, and Documentation. PS&D will be the POC for managing and tracking TCTD, PAIRs, and aircraft equipment transfer. **(T-2)**.

5.2.5. Maintenance Management Analysis (MMA) Section. MMA requirements are limited by ALIS capabilities.

5.2.5.1.16. **(ADDED-ANG)** ALIS administrators are responsible for system database management.

Chapter 6

QUALITY ASSURANCE (QA)

6.2.6.1. **(ADDED-ANG)** Coordinate with PS&D on all Maintenance Request Forms (MRF) for Depot Maintenance no more than 60 days prior to induction. **(T-2)**.

6.4. Chief Inspector Responsibilities.

6.4.10. **(ANG)** A master standardized AFTO Form 781-series forms binder is not applicable.

6.9. QA Product Improvement Programs (PIP).

6.9.5.1.3. **(ADDED-ANG)** Use an AR in ALIS to report materiel deficiencies, IAW JTD AR Submittal Guide and paragraph 11.34.. **(T-2)**.

6.9.5.1.7.1. **(ADDED-ANG)** Perform all RSP actions as the point of contact for MXG. **(T-3)**.

6.10. (ANG) Configuration Management (CM) and Modification Management. CM and modifications are managed within ALIS. Use an AR in ALIS to resolve discrepancies, IAW JTD AR Submittal Guide and paragraph 11.34.. **(T-2)**.

6.11. (ANG) Technical Order Distribution Office (TODO). JTD is managed by ALGS and LST.

6.11.1. **(ADDED-ANG)** Date stamping TCTDs is not compatible with program requirements as TCTDs are distributed through ALIS. **(T-2)**.

6.11.2. **(ADDED-ANG)** Maintain and utilize the SEMM in the same manner as an AF Technical Order. Follow procedures outlined within TO 00-5-1 ANGSUP, to the fullest extent possible. **(T-2)**. Address any deficiency or gaps with the SEMM by submitting an AR in ALIS IAW JTD AR Submittal Guide and paragraph 11.34.. **(T-2)**.

6.13. (ANG) Functional Check Flights (FCFs) to include Operational Check Flights (OCFs). The criteria used to determine if/when a Check Flight is required is identified within JTD, directed by AR, during TCTD follow-on checks, via an Aircraft Return Action (ARA) or as outlined in AFI 21-101. **(T-2)**.

6.15. Weight and Balance (W&B) Program.

6.15.1.2. **(ADDED-ANG)** If discrepancies exist within Weight and Balance records/data, an AR must be submitted utilizing the CRM tool in ALIS to correct discrepancies, IAW JTD AR Submittal Guide and paragraph 11.34. **(T-2)**.

6.15.5. **(ADDED-ANG)** Transfer of Air Vehicle Weight Balance records.

6.15.5.1. **(ADDED-ANG)** The transferring of data files between ALIS work station and the Government Furnished Equipment (GFE) laptop/work station hosting the Automated Weight and Balance System (AWBS) software is carried out in accordance with established SOI or User Guide procedures. Data transfer devices will comply with service policies and regulations. This can include TCTD mod packages, Zero Fuel Mass Properties (ZFMP) ADL and Form F records. **(T-2)**.

Chapter 7

IMPOUNDMENT PROCEDURES

Chapter 8

TOOL AND EQUIPMENT MANAGEMENT

8.2.7. **(ADDED-ANG)** Each end item is marked with an appropriate LCN or Part Number and sequence number or EID. **(T-2)**. Global Pooled Tools do not belong to the unit and should not be permanently etched or marked.

8.2.10.1. **(ADDED-ANG)** Support personnel will requisition a new tool in ALIS. Ensure replacement tools received are appropriately marked. **(T-2)**.

8.2.10.1.1. **(ADDED-ANG)** Common Hand Tools and Tool Containers procured under emergency conditions may be delivered unmarked. In those cases, the receiving unit shall locally etch the replacement tool or container with the same Tool ID number as the broken or lost tool/container it is replacing. **(T-2)**.

8.2.10.1.2. **(ADDED-ANG)** Global pooled tools on loan to another unit will be transferred in ALIS. Re-etching is not necessary. **(T-2)**.

8.2.10.1.3. **(ADDED-ANG)** The unit will not re-etch any global pooled asset.

8.2.11.1. **(ADDED-ANG)** All locally manufactured, developed, or modified tools used on program provided equipment or aerospace vehicle will be submitted through an AR for approval. **(T-2)**.

8.3.6. **(ANG)** CMMS is unable to provide MIL, restrict tools, track shift change inventories, or perform basic tool control procedures. Until CMMS is able to accomplish these tasks a Commercial-Off-the-Shelf (COTS) product (e.g. TC-Max) may be used to aid in tool accountability. As each version of ALIS is upgraded, units will evaluate whether or not CMMS has basic tool control capabilities. Units will keep accurate status of all global pooled assets in the COTS product and ALIS. **(T-2)**.

8.6.1. **(ANG)** ALIS may be used for accountability and control of tools.

8.6.1.1. **(ANG)** Global Pooled Tools do not belong to the unit and should not be permanently etched or marked. **(T-2)**.

8.7. (ADDED-ANG) All locally manufactured, developed, or modified tools used on program provided equipment or aerospace vehicle will be submitted through an AR for approval. (T-2). END CHAPTER

Chapter 9

MATERIEL MANAGEMENT SUPPORT

9.1. General. Supply chain management functions are regulated through PBL.

9.2.4.2.1. **(ADDED-ANG)** Backorder review will be accomplished monthly to ensure orders no longer required are cancelled and to remove erroneous data. **(T-2)**.

9.5. (ANG) Bench Stock (PEB). The main users of bench stock items are Maintenance and back shops, where bench stock may also be stored. Note: CMMS currently does not identify shelf-life items, recommend tracking using manual procedures.

9.5.1.1. **(ADDED-ANG)** When bench stock falls below the minimum supply level established in CMMS (Note: this is not necessarily 50%), authorized bench stock personnel initiate a material request in CMMS and Warehouse personnel follow procedures in the Supply Users Guide (SUG) to issue the items (if available locally) or items will be backordered (if not available locally). PEB will be inventoried monthly as a minimum, but replenishment orders can be placed at any time.

9.5.1.2. **(ADDED-ANG)** Parts ordering for consumables and PEB are carried out to support the WO execution for replacement of minor hardware and consumable items. Refer to <https://cs2.eis.af.mil/sites/12097/Supply%20Chain/Forms/AllItems.aspx> for the General Use Consumable (GUC) List. Consult unit DMS for ordering details. Note: consumable, shop use, and RMA initial issue items can be ordered through the parts catalog.

9.5.1.3. **(ADDED-ANG)** Excess PEB items identified by CMMS maximum quantity must be returned to the warehouse.

9.5.1.4. **(ADDED-ANG)** Minimum quarterly Warehouse and Maintenance personnel will communicate any suggestions/changes regarding bench stock inventory to their Supply Field Service Representative (FSR). This includes requests for bench stock items that are not currently stocked, suggestions to remove items from bench stock that are no longer needed, and requests to increase or decrease the quantity of specific items. FSRs collect these suggestions and, on a quarterly basis, communicate them to the HPSI (A). The HPSI (A) validates the PEB additions/deletions/changes and orders any additional or new bench stock items needed.

9.6. (ANG) Readiness Spares Package (RSP) Review.

9.6.1. **(ANG)** Extraction of assets from the DSP for MICAP requirements is to be considered as a last-resort source of supply and must be approved by both the participant who owns the DSP and the JPO (or service-designated POC). **(T-2)**.

9.6.1.1. **(ANG)** Any request to extract a component from a DSP is initiated by the HPSI. Note: If a participant removes a part from a pre-assembled DSP without following the BR #160 process, normal replenishment (Priority 3) would occur.

9.15. Time Compliance Technical Order (TCTO) Kit Procedures. When ordering TCTD material, annotate item is marked for TCTD within the notes section of CMMS. **(T-2)**.

9.16. Supply Points.

9.16.4. **(ADDED-ANG)** Follow guidelines contained within the Supply User Guide (SUG) for inventory of all Supply Points, to include Wheel and Tire.

9.18. (ANG) DIFM Management. Retrograde/RMAs will be managed IAW applicable SOIs, SUG and ALIS work instruction. **(T-2).**

9.18.3.2. **(ADDED-ANG)** RMA parts must be turned in to the supply warehouse within 5 duty days with the exception of a serviceable part in a one-for-one swap. Warehouse personnel must receive the unserviceable part from Maintenance, though there are exceptions for certain remain-in-place items (i.e. TCTD, Time-Change, parts pending AR, critical safety issue) Note: CMMS notification must be processed & received in SCM prior to turn-in. **(T-2).**

9.18.3.3. **(ADDED-ANG)** DMS or sections with RMAs (i.e. backshops) will use Retrogrades to be Returned List from SCM to monitor retrogrades that are owed. **(T- 2).**

9.18.3.3.1. **(ADDED-ANG)** Status of each retrograde will be provided to the warehouse weekly to assist with RMA monitoring/management. **(T-2).**

9.18.3.3.2. **(ADDED-ANG)** Ensure all packaging and container material received is reused for the retrograde part being returned. **(T-2).**

9.18.3.3.3. **(ADDED-ANG)** Ensure that the failure information is in CMMS before returning retrograde to supply. **(T-2).**

9.18.3.4. **(ADDED-ANG)** Ensure serviceable/unserviceable part tags from CMMS are filled out completely and accompany parts to include applicable failure data/HRC codes (if unserviceable), part number, serial number, if part was ever installed on aircraft (if serviceable) and CMMS requisition ID, as a minimum. **(T- 2).**

9.18.3.4.1. **(ADDED-ANG)** If the part contains fluid, ensure drain and purge tags accompany the part for turn in. Ensure container is leak proof (i.e. turned-in in plastic bag to prevent leakage). **(T-2).**

9.18.3.4.2. **(ADDED-ANG)** If the turn-in is an oxygen cylinder, it will be accompanied by a completed Oxygen Cylinder Pressure Certificate certifying that it is below 29 psi. **(T-2).**

9.19. Tail Number Bins (TNB).

9.19.5. Track property placed in the TNB by tail number, serial number, or equipment identification number. Each entry will indicate:

9.19.5.1. **(ANG)** Date received. **(T-2).**

9.19.5.2. **(ANG)** Noun. **(T-2).**

9.19.5.3. **(ANG)** Requisition ID. **(T-2).**

9.19.5.4. **(ANG)** Status (FOM, Issue/Due-Out Release (ISU/DOR), TCTO, etc.). **(T-2).**

9.19.5.5. **(ANG)** Removal information (date, time, signature, and employee number of the person who picked up the property). **(T-2).**

9.19.5.6. Remarks. **(T-1).** Enter "NONE" if no remarks are necessary.

9.19.5.7. **(ANG)** Current work order number. **(T-2).**

9.19.5.8. **(ANG)** Pick ticket. **(T-2).**

9.19.5.9. **(ANG)** AFTO 350 Tag that shows the part number, work order, and air vehicle tail number. **(T-2).**

9.23. (ANG) Buildup Items. ALIS will be used to manage built up items (e.g. wheel/tire) from alternate locations. **(T-2).**

9.23.1. **(ANG)** Send items to appropriate work centers for build-up and return them to the section (i.e. DMS) for re-issue. **(T-2).**

9.23.1.1. **(ANG)** Use locally developed control log to track items being sent for build-up. **(T-2).**

9.23.1.2. **(ANG)** Validate control log daily, follow-up actions required for items over 10 days old. **(T-2).**

9.28. (ADDED-ANG) Parts Ordering. Parts are ordered through CMMS/SCM interface by appointed maintenance or supply personnel. (T-2).

9.28.1. **(ADDED-ANG)** Any requisitions outside of ALIS, using either legacy or other processes/systems, will be:

9.28.1.1. **(ADDED-ANG)** Accomplished according to service policy. **(T-2).**

9.28.2. **(ADDED-ANG)** Ordering and turn in of GFE/Government Furnished Material (GFM) parts will be:

9.28.2.1. **(ADDED-ANG)** Accomplished using legacy system(s). **(T-2).**

9.28.3. **(ADDED-ANG)** Parts ordering for On/off-Equipment maintenance will be:

9.28.3.1. **(ADDED-ANG)** Carried out to support the WO execution phase. Parts that are considered retrogrades (RMA) need to be ordered through the WO/Solution Set and not as an Ad Hoc order unless with Pro Super approval. **(T-2).**

9.29. (ANG) Parts Processing. Mission Capable sourcing and request for upgrade, downgrade and cancel MICAP requirements are coordinated with JSF Supply. Sample Pri 1 Verification Worksheet (**Attachment 5**) may be used to assist in the verification process prior to backorder.

9.29.1. **(ADDED-ANG)** Upon receiving a part from the warehouse, all parts should be signed for in CMMS to close out the requisition order process in both CMMS and SCM. This can be done at the maintainers ALIS terminal, but must be physically signed for at the point of receipt (i.e. pick ticket or local tracking log). Note: If order does not close in CMMS due to system error, consult ALIS Admin to fix. **(T-2).**

9.29.2. **(ANG)** CMMS Order cancellation can be accomplished from the Material Request Details Page and only on requisitions in the state of New, Released, or Picked. This will only be accomplished by DMS or appointed supply representatives. Note: Order cancellation must be done prior to Work Order Cancellation and must include in notes block the cancellation reason and MICAP authority. **(T-3).**

9.29.2.1. **(ADDED-ANG)** Only DMS personnel can cancel Priority 1 requisitions in ALIS. Ensure the notes block is annotated with reason for cancellation. **(T-2).**

9.29.3. **(ADDED-ANG)** All parts, with the exception of incomplete TCTD kits will be picked up and signed for from the warehouse within 3 duty days or warehouse personnel will turn back in to stock. **(T-2).**

9.30. (ANG) Deficiency Report (DR) Exhibits. F-35, Deficiency reporting is done via an Action Request (AR) submitted in ALIS/CRM. (T-2).

9.30.1. (ADDED-ANG) DMS will verify that the AR number is annotated on the unserviceable tag prior to turn in. (T-2).

Chapter 10

MUNITIONS POLICY AND WEAPONS LOAD CREW PROGRAM

Chapter 11

ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS

Table 11.1. (ADDED-ANG) Mandatory Special Certification Roster (SCR) and Prerequisites.

43 (ADDED)	Waive holes/EELs/inconsistencies	MSgt or higher (or civilian equivalent). (Note 1)
Notes:		
1----Approved by MXG/CC		
2----Approved by Operations Officer/MX SUPT		
3----Operations Officer/MX SUPT may delegate approval authority to the AMU OIC/SUPT or Flight CC/Chief.		
4----Munitions inspectors who are trained and certified may annotate serviceability tags for munitions items (TO 11A-1-10).		
5---Appointed by the Unit Commander (or equivalent) of units possessing NWRM		

11.8. (ANG) Foreign Object Damage (FOD) Prevention Program.

11.8.6.2.1. **(ADDED-ANG)** For suspected material failure, submit an AR in ALIS/CRM. Refer to established SOI or User Guide procedures.

11.10. Aircraft Structural Integrity Program (ASIP). Refer to **paragraph 2.4.37** of this instruction.

11.11. Identification Friend or Foe (IFF) Program.

11.11.1. **(ADDED-ANG)** The F35 has a self-test function for IFF checks. This self-test function will verify that the system is operational. However, the self-test function does not verify that the correct/current keys required are loaded for the required mission set. **(T-2)**.

11.11.1.2. **(ADDED-ANG)** Units will ensure fully operational IFF Mode IV systems by performing checks on all aircraft:

11.11.1.2.1. **(ADDED-ANG)** Departing the Continental United States (CONUS) to overseas locations. **(T-2)**.

11.11.1.2.2. **(ADDED-ANG)** Flying overseas theater to theater missions (does not include intra-theater flying by overseas based aircraft). **(T-2)**.

11.11.1.2.3. **(ADDED-ANG)** Flying outside US airspace and returning to CONUS. **(T-2)**. (Missions originating in Alaska, Hawaii, or U.S. Territories and do not depart U.S. controlled airspace are viewed as if they are missions remaining in CONUS).

11.17. Engine Run Training and Certification Program.

11.17.11. **(ADDED-ANG)** Personnel qualified for “In cockpit Integrated Power Plant (IPP)” will be tracked on the SCR. **(T-2)**.

11.17.11.1. IPP operators are not required to be tracked on the SCR if PMA only IPP operations are conducted. **(T-2)**.

11.28. (ANG) Crash Damaged or Disabled Aircraft Recovery (CDDAR) Program.

11.28.1. (ANG) Additional CDDAR training can be provided at the Integrated Training Center (ITC) or lead command approved locations.

11.41. (ADDED-ANG) Customer Relationship Management Program. Refer to established SOI or User Guide procedures.

11.41.1. (ADDED-ANG) Responsibilities. (T-2).

11.41.1.1. (ADDED-ANG) The CRM is a tool within ALIS that shall be used to report problems via an AR. All ARs raised via CRM shall be transmitted via the Optional and Required Screening Points (OSP & RSP). These points screen ARs for integrity and accuracy of entries and information as well as prevent classified, sensitive or International Trade in Arms (ITAR) information from being transmitted. OSP and RSP personnel shall be designated via an ALIS System Permission Request (ASPR) to ALIS administrators. Those units not assigned to established groups will be designated by the appropriate site lead or QA department. (T-2).

11.41.1.1.1. (ADDED-ANG) RSP for the MXG will reside in the QA office.

11.41.1.2. (ADDED-ANG) ARs shall be submitted for reporting actions that require rectification outside the capability of the local unit. Examples of such cases are JTD changes, modifications, engineering analysis, ALIS issues, TCTD discrepancies, etc. Many of these occasions have specific forms in existing policy documents; the AR process will replace these mediums in the F-35 environment. (T-2).

11.41.2. (ADDED-ANG) Overall timelines for ARs.

11.41.2.1. (ADDED-ANG) Established timelines will be adhered to in the AR process. These timelines are general guidelines for AR initiation. Every level of approval must remain cognizant of timelines to prevent undue delay of ARs. Delays must be communicated to the OSP and RSP during the AR initiation process. (T-2).

11.41.3. (ADDED-ANG) AR Submission Process.

11.41.3.1. (ADDED-ANG) Initiator shall:

11.41.3.1.1. (ADDED-ANG) Exhaust all available means of resolution prior to submitting an AR.

11.41.3.1.2. (ADDED-ANG) Inform AMU production, Flight and shop supervision of AR requirement.

11.41.3.1.3. (ADDED-ANG) Utilize JTD AR Submittal Guide to ensure correct AR categorization, severity and classification.

11.41.3.1.4. (ADDED-ANG) Notify workcenter OSP of AR submittal.

11.41.3.1.5. (ADDED-ANG) Monitor AR status via CRM tool.

11.41.3.2. (ADDED-ANG) For OSP responsibilities, refer to JTD AR Submittal Guide

11.41.3.2.1. (ADDED-ANG) Notify RSP of AR submittal.

11.41.3.2.2. (ADDED-ANG) Monitor AR status via CRM tool.

11.41.3.3. (ADDED-ANG) For RSP responsibilities refer to JTD AR Submittal Guide

11.41.3.3.1. **(ADDED-ANG)** Once request is validated submit AR and monitor the AR's status via CRM tool.

11.41.3.4. **(ADDED-ANG)** ALGS role.

11.41.3.4.1. **(ADDED-ANG)** ALGS responsibilities are outlined in JTD AR Submittal Guide.

11.41.4. **(ADDED-ANG)** Resolution of AR Disparities:

11.41.4.1. **(ADDED-ANG)** Disparities will be resolved by the MXG/CC or OG/CC.

11.41.5. **(ADDED-ANG)** AR Review Team.

11.41.5.1. **(ADDED-ANG)** ARs shall be reviewed at all levels to ensure proper categorization and severity is assigned. Refer to established SOI or User Guide procedures.

11.41.5.2. **(ADDED-ANG)** Squadron OSP and respective RSP must consider fleet implications when preparing ARs for submittal. Depending upon the circumstances for the AR, an AR may have an impact on all assigned aircraft/equipment regardless of the squadron.

11.41.6. **(ADDED-ANG)** Contingency Back-up. In the event CRM is down, the following process shall be utilized to initiate an AR.

11.41.6.1. **(ADDED-ANG)** Submit AR through designated RSP via: Fax #: 1-817-777-1868: Email address: jsf-alsg-center.fcaero@lmco.com and/or Phone # 1-888-433-5677.

11.41.6.2. **(ADDED-ANG)** Responses must filter through RSP.

11.41.7. **(ADDED-ANG)** Classified AR procedures.

11.41.7.1. **(ADDED-ANG)** Ensure classified ARs are produced IAW JTD AR Submittal Guide.

11.41.7.2. **(ADDED-ANG)** Consult ALIS admin for assistance, if necessary.

Chapter 12

MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT (CDA)

Chapter 13

CENTRALIZED REPAIR FACILITIES (CRF)

Chapter 14

MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)

14.1.4.5. (ANG) Provide SME on all maintenance scheduling issues. Electronic equipment logbook (EELs) management embedded in ALIS replaces AFTO Form 95s. (T-2).

14.1.5.2.1. (ADDED-ANG) The Wing AVDO ensures the asset transfer approval process and coordination between losing and gaining units required prior to, during, and after an Asset transfer is accomplished and coordination on any outstanding supply demands.

14.1.5.2.3. (ADDED-ANG) Coordinate on possession codes/reporting while awaiting AR disposition.

14.1.5.2.3.1. (ADDED-ANG) Utilize LIMS-EV for aerospace vehicle inventory transactions.

14.2. Data Documentation.

14.2.1.2. (ADDED-ANG) EELs are embedded in ALIS and replace legacy AFTO Form 95. (T-2).

14.2.2.3.7. (ANG) Engine Records are embedded within ALIS. (T-2).

14.2.2.3.12. (ADDED-ANG) F-35 uses Joint Technical Data (JTD). (T-2).

14.2.2.3.13. (ADDED-ANG) ARs are stored within CRM application in ALIS. (T-2).

14.2.2.3.14. (ADDED-ANG) ALIS does not support pulled forms. No pulled AFTO Form 781-series aircraft forms. (T-2).

14.2.3. (ANG) Aircraft Document Reviews (ADR). At a minimum, the following items will be reviewed during the ADR. (T-2).

14.2.3.1. (ANG) Perform an engine BEM comparison. (T-2).

14.2.3.2. (ANG) Perform aircraft PAIR audit. (T-2).

14.2.3.3. (ANG) Verify all TCI's coming due within 60 days are locally tracked and are either on hand or have an outstanding requisition. (T-2).

14.2.3.4. (ANG) Verify all outstanding TCTD's are being tracked for status, expiration date, have valid JCN's, and parts on order as required. (T-2).

14.2.3.5. (ANG) Verify all required LOCAL PAIR's are loaded. (T-2).

14.2.3.6. (ANG) Verify correct engine S/N is being tracked for JOAP purposes. (T-2).

14.2.3.7. (ANG) Perform a -21 inspection. (T-2).

14.2.3.8. (ANG) Verify there are no overdue SI's or TCI's in MM-PAIRS. (T-2).

14.2.3.9. (ANG) Review all open/deferred write-ups and HRC's. (T-2).

14.2.3.10. (ANG) Verify all open requisitions are valid and assigned to open JCN's. (T-2).

14.2.7.1. (ANG) ALIS administration office serve as the MMA for ALIS lock out procedures. IAW [Chapter 5](#) of this instruction. (T-2).

14.3. (ANG) Configuration, TCTO, SI and TCI Management.

14.3.2. (ANG) Configuration Management (CM) is managed by ALIS.

14.3.2.1. (ANG) Units are responsible for accurate reporting of AV configuration in ALIS. (T-2).

14.3.2.2. (ADDED-ANG) Maintenance personnel discovering an item with a missing data plate, or one which does not have a serial number, will submit an AR within CRM application in ALIS for disposition. (T-2).

14.3.2.4. (ANG) ALIS notifications notify users real time of out of configuration items.

14.3.3.3.1.3. (ANG) Copies of TCTDs are within ALIS.

14.3.3.3.1.4. (ANG) Supplies (including WRM) affected by the TCTD are automated within ALIS.

14.3.3.3.1.5. (ANG) The CRM application in ALIS is used to submit an AR to report TCTD deficiencies IAW **paragraph 11.10** of this instruction. Refer to established SOI or User Guide procedures.

14.3.3.3.2.1. (ANG) Total number of end items applicable is automated within JTD. (T-2).

14.3.3.3.2.2. (ANG) Chair a TCTD planning meeting with attendees from QA, owning and performing work centers and ASC, PSC and/or supply equivalent. (T-2).

14.3.3.3.2.3.1. (ANG) TCTD folders will be standardized and include the completed AF Form 2410 or locally developed product and messages. (T-2).

14.3.3.3.2.3.2. (ANG) Rescinded TCTDs are automatically removed from JTD.

14.3.3.3.2.3.4. (ANG) F-35 TCTDs are not listed within REMIS.

14.3.3.3.2.5. (ANG) TCTD kits are managed by the ASC or PSC. Use supply change management (SCM) requisition option to order required parts/kits/tools. TCTD kits are managed by ASC or PSC. (T-2).

14.3.3.3.1.1.1. (ADDED-ANG) Upon notification from F-35 OPS Center of new and/or revised TCTD's, work with LM ALIS Administrators / FSR's and PS&D to determine applicability and coordinate an acceptable timeframe to upload TCTD's in JTD. (T-2).

14.3.3.3.2.6.2. (ANG) The ASC and/or PSC will ensure kits and/or parts are assembled prior to release. (T-2).

14.3.3.3.2.7. (ANG) PS&D will control and release TCTD kits from contractor sources.

14.3.3.3.2.12.1. (ADDED-ANG) Ensure status and time remaining until expiration is being tacked for all TCTD's. (T-2).

14.3.4.1. (ANG) Job Standard Master Listing (JML)/ PAIR Management

14.3.4.1.1. (ANG) ALIS MM-PAIRs, Local PAIRS, and A13-10 table within JTD represent all PAIRs applicable to an aircraft.

14.3.4.2.1.2. (ADDED-ANG) Develop a matrix/chart depicting each LOCAL PAIR to be loaded in the MIS for each assigned aircraft. (T-2).

14.3.4.2.4.2. (ANG) Perform a semi-annual review of the A13-10 Table and all PAIRs for accuracy and currency when PAIR audit TCTD is received. (T-2).

14.3.4.2.4.2.1. (ANG) PS&D will review PAIRs in the MIS when a new PAIR Baseline is received within ALIS, and will promptly notify all affected sections for action. (T-2).

14.3.4.2.4.2.1.1. (ADDED-ANG) Establish Local PAIR's to track inspection and time change requirements not covered by Enterprise PAIRs. Common examples being Aircraft Wash, Aircraft W&B and unique inspection criteria directed via AR response. (T-2).

14.3.4.2.4.2.2. (ANG) PS&D will monitor PAIRs for all inspections and time changes listed in the JTD A13-10 table within ALIS. JSTs are automated by JTD A13-10 table within ALIS. (T-2).

14.3.4.2.4.3. (ANG) For Remaining Life Estimate (RLE)/ Time to Maintenance (TTM), red is displayed upon the end of life or time limit reached and extensions can only be granted via the AR process or MAJCOM policy. Upon reaching the end of life or time limit, a WO will automatically be generated for that event. If a WO is not automatically generated, manually generate a WO. Refer to established SOI or User Guide procedures.

14.3.4.2.4.3.1. (ANG) ALIS JTD A13-10 table depicts the total number of SIs and TCIs loaded for each assigned aircraft/system.

14.3.4.3. (ANG) TCI accomplishment is managed in ALIS MM-PAIRs by PS&D

14.3.4.3.1. (ANG) Monitor, schedule and manage TCIs through JTD application within ALIS. AFI 21-201, Conventional Munitions Maintenance Management or identified as Federal Supply Group (FSG 13) and Materiel Management Code AQ Items. (T-2).

14.3.4.3.1.2. (ADDED-ANG) TCI components may be ordered Priority 2 within 60 days of ground date and should be upgraded to Priority 1 within 30 days of ground date. For TCI's with non-calendar tracking parameters (i.e. ALA (advanced lifing algorithm), flight hours, etc.), establish local parameters for calendar equivalents based on A/V utilization rate. (T-2).

14.3.4.3.2. (ANG) MM-PAIRs application within ALIS automates RLE / TTM.

14.3.4.3.3. (ANG) ALIS is the source of record for all egress data. (T-2).

14.3.4.3.3.3. (ANG) Forecasting of CAD/PAD items for long-term CAD/PAD spare requirements will be accomplished by Supply Chain management through Lockheed Martin management and control. Note: Beginning first quarter of FY2020, F-35 CAD/PAD components are programmed to transfer to DoD management. Upon this activation, JSF CAD/PAD will then follow existing procedures for forecasting, requisitioning and inventory processes, unless otherwise directed by NGB F-35 WSM, ACC/A4W, or higher instruction. (T-2).

14.3.4.3.4. (ANG) Initiate, validate, and submit TCI extension requests via AR within CRM application in ALIS. (T-2).

14.3.4.3.12. (ANG) All time changes are ordered through SCM guidelines within ALIS. (T-2).

14.3.4.4. (ADDED-ANG) Management of all AV and PS Scheduled and Prognostic Maintenance will be carried out within ALIS via MM-PAIRs.

14.3.4.5. (ADDED-ANG) Scheduled Maintenance Inspections:

14.3.4.5.1. **(ADDED-ANG)** Only authorized individuals will perform PAIR creation. PAIRs. Refer to established SOI or User Guide procedures.

14.3.4.5.2. **(ADDED-ANG)** Each PAIR is applicable to specific TVEs as detailed in JTD. Specific details about the PAIR and work requirements will be detailed within JTD.

14.3.4.5.3. **(ADDED-ANG)** Authorization to deviate, along with any applicable latitudes, from Scheduled/Prognostic maintenance requirements may be granted via the AR process.

14.3.4.5.4. **(ADDED-ANG)** If an AR Response directs an inspection requirement, the MM-PAIRs/Local PAIRs tool will be used to initiate these requirements.

14.3.4.5.5. **(ADDED-ANG)** If there is a requirement to adjust or correct usage on an aircraft or part, the MM-PAIRs can be utilized by an ALIS administrator to make the necessary changes through AR submission. **(T-2)**. Modification of usage to any component requires consensus between PS&D, QA and the owning work center. **(T-2)**. PS&D will maintain a listing of approved personnel who may modify equipment usage records. **(T-2)**.

14.3.5. **(ANG)** Coordinate on all major maintenance through AR submission within ALIS through CRM application. **(T-2)**.

14.3.8. **(ADDED-ANG)** Depot Induction.

14.3.8.1. **(ADDED-ANG)** Maintenance Unit/Squadron will prepare aircraft and equipment for entry to depot level work efforts. Refer to established SOI or User Guide procedures.

14.3.8.2. **(ADDED-ANG)** Maintenance Unit/Squadron will participate in the Pre and Post meetings for their respective aircraft. Pre-dock will be held no later than 30 days prior to aircraft induction into depot. Pre-dock/induction meeting will have, as a minimum, the Baseline Scheduled Work Package (SWP) and the F-35 Maintenance Request Form. Aircraft configuration required for depot induction will be discussed during Pre-dock/induction meeting. A Post-dock meeting will be held no later than 10 days prior to scheduled aircraft completion.

14.3.8.3. **(ADDED-ANG)** Maintenance Unit/Squadron will report unsatisfactory receipt, at either the squadron or depot level, through the Depot Feedback Questionnaire within 30 days. Submit an AR as required.

14.3.8.4. **(ADDED-ANG)** Additional work requests (Unit Level TCTDs), One Time Inspections (OTIs), Delayed Discrepancies, PAIRs will be annotated on a Maintenance Request Form submitted to the F-35 JPO no later than 60 days prior to aircraft induction for consideration. The F-35 JPO will notify requesting unit of what work will be approved and included in the depot work package.

14.3.8.5. **(ADDED-ANG)** Non-ALIS portion of an asset's records will be transferred by electronic media/jacket file.

14.3.8.6. **(ADDED-ANG)** When directed to transfer an asset, the originating unit will input all current state data associated with a PAIR for the AV to a Deferred Work Order.

14.3.8.7. **(ADDED-ANG)** In addition to ALIS SOU transfer, aircraft jacket file must be transferred.

14.3.8.8. **(ADDED-ANG)** CMMS will cancel all requisitions after the initiation of an asset transfer. The losing and gaining unit will coordinate to ensure necessary demands are transferred.

14.3.8.9. **(ADDED-ANG)** The losing Maintenance Unit/Squadron will ensure all requisition details are included in any, deferred WO or Follow on Maintenance Requirement prior to asset transfer.

14.3.8.10. **(ADDED-ANG)** The losing Maintenance Unit/Squadron will inform local SCM administrator/user of any outstanding requisitions that must be transferred/redirected to the gaining Operating Unit/Squadron. Transferal or redirection of open requisitions is a SCM responsibility.

14.3.8.11. **(ADDED-ANG)** The receiving unit will ensure that all necessary requisitions are reordered on the gaining unit's SOU. If problems or anomalies occur, an AR is to be initiated for resolution.

14.3.8.12. **(ADDED-ANG)** The gaining ALIS admin will notify the losing unit to initiate the deletion of the AV from their SOU after the gaining unit has loaded and verified the data.

14.4.1. **(ADDED-ANG)** Propulsion Flight does not exist under the maintenance concept. EM responsibilities are performed by the AMXS/AMU Dedicated Scheduler.

14.4.1.1.1. **(ADDED-ANG)** EM Focal point is Pratt & Whitney at Hartford, CT for both the Engine Trending and Diagnostics (ET&D) and Engine Health Management (EHM+) program when applicable.

14.4.1.2. **(ANG)** AMXS/AMU/EM Dedicated Scheduler will:

14.4.1.2.5. **(ANG)** Engine PAIRs are automated within ALIS through MM-Pairs application.

14.4.1.3. **(ADDED-ANG)** SRAN Engine Manager does not exist under the maintenance concept.

Chapter 15

AIRCRAFT SUN SHADE SUSTAINMENT

Chapter 16

AIR NATIONAL GUARD ADDITIONAL MAINTENANCE REQUIREMENTS AND

DONALD K. CARPENTER, Brig Gen, USAF
Director of Logistics, Engineering and Force
Protection

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

AFI 21-101, *Aircraft and Equipment Maintenance Management*

AFI 21-101_ANGSUP, *Aircraft and Equipment Maintenance Management*

Abbreviations and Acronyms AA—Air abort

AD—Addition

AI—Air abort IFE

ADL—Aircraft Data Load

ALIS—Autonomic Logistics Information System

ALGS—Autonomic Logistics Global Sustainment

AME—Alternate Mission Equipment

AR—Action Request

ARA—Aircraft Return Action

ARR—Action Request Response

ASC—Air System Contractor

ASIP—Aircraft Structural Integrity Program

ATC—Air traffic control

AVDO—Aerospace Vehicle Distribution Officer

AWBS—Automated Weight and Balance System

BOS—Before Operations Servicing

BR—Business Rule

CMMS—Computerized Maintenance Management System

COTS—Common Off The Shelf

CRM—Customer Relationship Management

CX—Cancellation

DIFM—Due-In From Maintenance

DIT—Data Integrity Team

DMS—Decentralized Maintenance Support

DSP—Deployment Spares Package

DTR—Distribution Tracking Record

EEL—Electronic Equipment Log

EHM+—Engine Health Management Plus
EL—Early landing
ER—Exceptional Release
ET—Early take-off
ET&D—Engine Trending and Diagnostics
ETAR—Engineer Technical Assistance Request
FCF—Functional Check Flight
FE/IFE—In-Flight emergency
FSE—Flying Scheduling Effectiveness
FSR—Field Service Representative
GA—Ground Abort
GAA—Ground abort, before engine start, maintenance
GAB—Ground abort, after engine start, before taxi, maintenance
GAC—Ground abort, after taxi, maintenance
GFE—Government Furnished Equipment
GFM—Government Furnished Material
GUC—General Use Consumable
HAZMAT—Hazardous Material
HIT—Health Inspection Task
HPSI—Hybrid Product Support Integrator
HRC—Health Reporting Code
HQ—Headquarters
IAT—Individual Aircraft Tracking
ICAO—International Civil Aviation Organization
IFF—Identification Friend or Foe
IFS—Industrial and Financial System
IOS—Interim Operational Servicing
IPI—In Process Inspection
IPP—Integrated Power Plant
JDL—Joint Strike Fighter Data Library
JML—Job Standard Master Listing
JPO—Joint Program Office

JTD—Joint Tech Data
LCN—Logistics Control Number
LDM—Logistics Data Manager
LIMS-EV—Logistics Information Management System-Enterprise View
LL—Late landing
LO—Low Observable
LODEM—Low Observable Defect Entry Module
LOHAS—Low Observable Health Assessment System
LOMMM—LO Maintenance Management Module
LST—Lightning Support Team
LT—Late take-off
MEFL—Minimum Essential Function List
MEL—Minimum Essential Level
MICAP—Mission Impaired Capability Awaiting Part
MIL—Master Inventory List
MMU—Maintenance Margin Used
MT—Maintenance
NIE—Normally Installed Equipment
OCF—Operational Check Flight
O&M—Operation & Maintenance
OEM—Original Equipment Manufacturer
OML—Outer Mold Line
OMS—Offboard Mission Support
OP—Operations
OSP—Optional Screening Point
OT—Other
P&W—Pratt & Whitney
PAIR—Production Aircraft Inspection Requirement
PBL—Performance Based Logistics
PEB—Pre-Expended Bin
PHM—Prognostics and Health Management
PIC—Purpose Identifier Codes

PMA—Portable Maintenance Aid
PMD—Portable Maintenance Device
POS—Post Operations Service
PS—Propulsion System
PSC—Propulsion System Contractor
PS&D—Plans Scheduling and Documentation
PSI—Product Support Integrator
QA—Quality Assurance
RLE—Remaining Life Estimate
R&M—Reliability and Maintainability
RMA—Return Material Authorization
RLE—Remaining Life Estimate
RSP—Required Screening Point
SAM—Signature Assessment Module
SCM—Supply Chain Management
SE—Support Equipment
SEMM—Support Equipment Maintenance Matrix
SHM—Squadron Health Management
SOI—Sustainment Operating Instruction
SOU—Standard Operating Unit
SP—Spare
SPIR—Sustainment Parts Information Record
SRAN—Stock Record Account Number
SSI—Supplemental Servicing Inspection
SU—Supply
SWP—Scheduled Work Package
SY—Sympathy
TCTD—Time Compliance Technical Directive
TNB—Tail Number Bin
TS—Tail number swap
TTM—Time to Maintenance
TUR—Track Usage Record

UTE—Utilization Day

WO—Work Order

WRM—War Reserve Material

WST—Weapons System Team

WWM—Wing Weapons Manager

WX—Weather

XEH—Exercise higher headquarters

XEL—Exercise local

ZFMP—Zero Fuel Mass Properties

Attachment 2

EXAMPLE AR ROUTING SCENARIOS

A2.1. Example AR scenario where first level RSP submits AR to ALGS.

A2.1.1. Maintenance personnel discovers a broken nut plate that requires drilling. During the repair process the drill bit fails and creates a scratch in the aircraft panel. JTD is not available to repair the damaged panel. AR is drafted for repair procedures and submitted by initiator to OSP for review. OSP reviews the AR, annotates comments, approves AR and forwards to RSP. RSP reviews the AR, annotates comments, approves the AR and forwards to ALGS. AR Review Team is not organized because damage is from a known source and does not have fleet wide implications.

A2.2. Example AR scenario with fleet implications.

A2.2.1. Maintainer discovers a stress crack on panel 100. JTD does not exist to repair damage on the panel. AR is drafted for repair procedures by and submitted by initiator to OSP for review. OSP reviews the AR, annotates comments, accepts and forwards the AR to first level RSP. First level RSP reviews the AR, annotates comments and determines stress crack may have fleet wide implications. First level RSP informs additional squadrons and starts actions to stand-up AR Review Team. AR Review Team reviews AR and agrees with potential impact to the fleet. First level RSP annotates AR upon completion of AR Review Team review. In this scenario, an AR Review Team review is conducted because the damage is caused by an unknown source and may have fleet wide implications. The first level RSP will ensure all units are aware of potential fleet problem. First level RSP will annotate AR after AR Review Team review is complete.

Attachment 3

LOHAS FLEET AVERAGE TEMPLATE

Figure A3.1. LOHAS Fleet Average Template.

LOHAS FLEET AVERAGE TEMPLATE

//FOUO//
 UNCLASSIFIED
 DAILY LOHAS Maintenance Margin Used (MMU) ROLLUP
LOHAS MMU per Tail Number
 Current as of:
February 14, 2017
8:30

Aircraft: 13-5XXX (AFXXX)			Aircraft: 13-XXXX (AFXXX)		
Margin:	LOHAS Margin	%	Margin:	LOHAS Margin	%
No Change			No Change		
	Previous Day			Previous Day	
Notes:		%	Notes:		%
Standard Ranking Pending	Difference		**Standard Ranking Complete**	Difference	
		%			%
Aircraft: 13-XXXX (AFXXX)			Aircraft: 13-XXXX (AFXXX)		
Margin:	LOHAS Margin	%	Margin:	LOHAS Margin	%
LH Vert Bulb Seal Replaced			No Change		
	Previous Day			Previous Day	
Notes:		%	Notes:		%
Standard Ranking Pending	Difference		**Standard Ranking Pending**	Difference	
		%			%
Aircraft: 13-XXXX (AFXXX)			Aircraft: 13-XXXX (AFXXX)		
Margin:	LOHAS Margin	%	Margin:	LOHAS Margin	%
No Change			No Change		
	Previous Day			Previous Day	
Notes:		%	Notes:		%
Standard Ranking Pending	Difference		**Standard Ranking Pending**	Difference	
		%			%
				Fleet LOHAS MMU Average	%

A3.1. Note: Key information includes LOHAS maintenance margin used number for each aircraft, fleet LOHAS average, a brief description of damages or repairs that drive a signature delta from the previous OML and number of aero only panels. LOHAS margin value will be capped at 200% for each aircraft with a LOHAS margin exceedance over 100%.

Attachment 4**F-35 AUDIT PROCEDURES, DOCUMENTATION AND REPORTING TEMPLATE****Table A4.1. F-35 Audit Procedures, Documentation and Reporting Template.**

Create a work order in Computer Managed Maintenance System (CMMS) for the audit.
Perform Aircraft Safe for Maintenance (F35-AAA-A05210100000-120A-A) JTD Data Module.

Perform audit utilizing Post Operations Servicing (POS(OML))- Inspection (F-35-AAA-A13210300000-281-A) JTD Data Module.

Input new damages and compare all damages/repairs to the OML with entries contained in LODEM. Update LODEM as the audit progresses.

Maintain an ongoing records during the audit for starting LOHAS MMU number, damages added, damages deleted, damages edited and final audit LOHAS MMU value for audit historical files.

The LOHAS and OML audit historical files will be maintained for 5 years. Each audit file will include at a minimum:

- Name of person(s) performing the audit.
- Date of audit.
- Pre-audit LOHAS margin percentage.
- Post-audit LOHAS margin percentage.
- Number of new damages identified.
- Number of previously repaired damages not removed from LOHAS.
- Number of duplicate entries identified.
- Root cause and corrective action when post audit results in a +15% or -15% change.

NOTE: Report audits results upon completion to: ACC.A4V35@us.af.mil and ACC.A5FL@us.af.mil

Attachment 5

SAMPLE MICAP VERIFICATION WORKSHEET

Figure A5.1. Sample MICAP Verification Worksheet.

Tail number	NOUN	Part Number
Requisition ID	Quantity	Priority
Job Control Number	IFS Purchase Order#	IFS Customer Order # 1
Maintainer Who Ordered Part	Pro Super Signature	Pro Super Print

CANN Action

CANN From Aircraft & LCN	CANN To Aircraft & LCN
CANN From JCN	CANN To JCN
Pro Super Signature	Pro Super Print

Supply Checklist

Checklist Item	Yes	No	N/A
Is the warehouse balance zero?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are assets available in TNB?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has base repair capability been verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you document MICAP on Supply Status Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Cancel MICAP

Cancellation Code	Pro Super Signature	Pro Super Print
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MICAP Cancellation Codes

1-RECEIVED FROM ALTERNATE F35 SOURCE

2-RECEIVED FROM GOVT SERVICE/OTHER SERVICES (GFE/DLA)

3-CANNIBALIZATION ACTION

4-RECEIVED FROM BASE ASSETS (DSP/BENCHSTOCK/PEB)

5-ALT P/N SATISFIED REQUIREMENT

6-SUSTAINMENT DIRECTED (would include IM directed cancellations and requirements we would not track such as TCTD, time change, mod etc.)

7-OTHER

9-REPORTED/ORDERED IN ERROR BY MAINT

0-ADMINISTRATIVE/CMMS ERROR/CONFIGURATION

Comments

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