

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 63-140

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Acquisition

**AIRCRAFT STRUCTURAL INTEGRITY
PROGRAM**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This publication implements the integrity program requirements related to structural integrity in Air Force Policy Directive (AFPD) 63-1/20-1, *Integrated Life Cycle Management*, and is consistent with DoD Directive 5000.01, *The Defense Acquisition System*, and DoD Instruction 5000.02, *Operation of the Defense Acquisition System*. This instruction requires aircraft program offices and lead/using commands to collaborate on Aircraft Structural Integrity Programs (ASIP) that support mission readiness and airworthiness assurance through a series of programmatic time-phased tasks during the development, acquisition, production, modification, and sustainment of Air Force aircraft.

To ensure standardization, any organization supplementing this instruction must send the implementing publication to Deputy Assistant Secretary of the Air Force for Acquisition Integration (SAF/AQX) for review and coordination before publishing. Refer recommended changes and questions about this publication to SAF/AQXA using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through functional 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 Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).

This publication applies to all military and civilian Air Force personnel including major commands (MAJCOMs), direct reporting units (DRUs) and field operating agencies (FOA), and to other individuals or organizations as required by binding agreement or obligation with the Department of the Air Force (DAF). This publication applies to the Air Force Reserve Command (AFRC) and Air National Guard (ANG), except as noted in the publication.

In accordance with the acquisition chain of authority specified in AFI 63-101/20-101, *Integrated Life Cycle Management*, mandates to the acquisition execution chain are not considered Wing level mandates and tiering per AFI 33-360, *Publications and Forms Management*, does not apply.

SUMMARY OF CHANGES

With the rescission of AFPD 63-10, this AFI is realigned under AFPD 63-1. It requires aircraft programs to use MIL-STD-1530, *DoD Standard Practice for Aircraft Structural Integrity Program (ASIP)*, and clarifies the roles and responsibilities of each organization that directly supports the AF ASIP. It mandates the development of ASIP master plans, which must be approved by the Program Executive Officer (PEO). It establishes ASIP OPRs at operational commands and at FOAs, and establishes roles and responsibilities for the AF ASIP Technical Advisor. It mandates adherence to ASIP data capture rates and requires program offices to report any data capture deficiencies to the MAJCOM ASIP OPRs.

1. Applicability.

- 1.1. The goal of the AF Aircraft Structural Integrity Program (ASIP) is to ensure the desired level of structural safety, performance, durability, and supportability with the least possible economic burden throughout the aircraft's service life.
- 1.2. This publication applies to all Air Force aircraft programs.

2. ASIP Objectives.

- 2.1. The objectives of the AF ASIP are to:
 - 2.2. Define the structural integrity requirements necessary to support airworthiness assurance and the program manager's (PM) assurance of operational safety, suitability and effectiveness.
 - 2.3. Establish, evaluate, substantiate, and certify the structural integrity of aircraft structures.
 - 2.4. Acquire, evaluate, and apply aircraft usage and maintenance data to ensure the continued structural integrity of operational aircraft.
 - 2.5. Provide quantitative information for decisions on force structure planning, inspection, modification priorities, risk management, expected life cycle costs and related operational and support issues.
 - 2.6. Provide a basis for improving structural criteria and methods of design, manufacturing, evaluation, and substantiation for future aircraft systems and modifications.

3. ASIP Requirements.

- 3.1. The PM shall establish an ASIP for each Mission Design Series (MDS) the Air Force acquires, uses, or leases.
- 3.2. For each aircraft MDS developed or modified by the Air Force, the ASIP shall comply with MIL-STD-1530, *DoD Standard Practice for Aircraft Structural Integrity Program (ASIP)*. For these MDS, the PM shall:

3.2.1. Draft an initial ASIP Master Plan for the program as early as possible in the Technology Maturation and Risk Reduction phase. The initial ASIP Master Plan shall identify the tasks required to achieve structural integrity and to determine structural safety, performance, durability, supportability, and life cycle costs for the aircraft structure.

3.2.2. Obtain PEO approval for the ASIP Master Plan before the System Requirements Review (SRR).

3.2.3. Update the ASIP Master Plan during the Engineering and Manufacturing Development, Production & Deployment, and Operations & Sustainment phases of the program to document changes in the ASIP.

3.2.4. For aircraft in sustainment, execute the ASIP program as an integral part of the total system engineering and management effort in the sustainment of the aircraft.

3.2.5. For aircraft that are to be modified, fly new missions, or whose operation will extend past the aircraft's certified design service life, develop a revised ASIP Master Plan and obtain PEO approval of the revised plan before modifications are executed, regular flights begin under the new mission, or commencing operations beyond the previously certified service life.

3.3. For each aircraft MDS operated by the AF but not developed or modified by the Air Force, the PM shall use MIL-STD-1530 as the basis for determining those ASIP tasks and elements necessary to ensure the aircraft's structural safety, performance, durability, supportability, and affordability for the operational life of structural components, while remaining consistent with the program's acquisition strategy and engineering authority over the aircraft. For these MDS, the PM shall:

3.3.1. Document the tailored program in an ASIP Master Plan.

3.3.2. Finalize the ASIP Master Plan and obtain PEO approval before the Air Force operates the aircraft.

4. Roles and Responsibilities.

4.1. Assistant Secretary of the Air Force for Acquisition (SAF/AQ) will:

4.1.1. Oversee AF ASIP policy.

4.1.2. Support aircraft program office ASIP implementation as a part of the integrated life cycle management of systems from their entry into defense acquisition management system through retirement and disposal.

4.1.3. Work with Commander, AF Materiel Command (AFMC/CC) to designate the AF ASIP Technical Advisor.

4.2. Deputy Chief of Staff (DCS), Logistics, Installations and Mission Support (HQ USAF/A4/7) will:

4.2.1. Integrate ASIP into maintenance policy.

4.2.2. Support ASIP-related planning, programming, and budgeting activities for each aircraft program.

4.3. AFMC/CC will:

- 4.3.1. Include ASIP master plan development, maintenance, and implementation requirements in compliance checklists.
- 4.3.2. Sustain and enhance a data management capability to support ASIP (e.g. the Aircraft Structural Integrity Management Information System).
- 4.3.3. Provide technical advice and capabilities that sustain and enhance ASIP, to include Non-Destructive Inspection (NDI) capability.

4.4. Operational Commands and Field Operating Agencies (FOA) will:

- 4.4.1. Establish an ASIP OPR for managing the ASIP program command-wide.
- 4.4.2. Develop, publish, and update documentation specifying MAJCOM or Lead Operating Command ASIP responsibilities in accordance with this instruction.
- 4.4.3. Assist PMs in the development, maintenance, and implementation of ASIP master plans as requested.
- 4.4.4. Install, operate, and maintain ASIP hardware including loads/environment spectra survey (L/ESS) and individual aircraft tracking (IAT) data collection transfer and analysis systems sufficient to support the valid data capture rates required by the aircraft-specific ASIP Master Plans.
- 4.4.5. Ensure that unit personnel collect and report data IAW the valid data capture rates defined by the ASIP Master Plans.
- 4.4.6. Assist program office ASIP Managers in the development and implementation of corrective actions as needed to achieve required valid data capture rates.
- 4.4.7. Plan, program and budget for funds, per AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon System*, necessary to obtain the equipment, data, analyses, and testing required to ensure the structural integrity baseline for the aircraft is being maintained.
- 4.4.8. Evaluate annual ASIP summaries as they apply to force structure, aircraft operational use and budgeting.
- 4.4.9. Ensure that structural inspections required by an aircraft's ASIP are conducted in accordance with the appropriate schedules, processes, procedures, and technical orders.

4.5. AF ASIP Technical Advisor will:

- 4.5.1. Review all ASIP master plans including updates and make approval recommendation to the PEO.
- 4.5.2. Review execution of the ASIP for each MDS, identify trends, gaps, and opportunities for improvement in the ASIP execution, and report these findings to PEOs and operating/lead MAJCOMs.

4.6. Program Executive Officers (PEO) will:

- 4.6.1. Ensure ASIPs are established and ASIP Master Plans are developed for each MDS operated by the Air Force in their portfolio.

4.6.2. Ensure aircraft PMs are executing the ASIP requirements in a timely manner as an integral part of life cycle management.

4.6.3. Utilize ASIP information in modification management and implementation.

4.6.4. Approve all ASIP master plans including updates.

4.7. Program Managers (PM) will:

4.7.1. Plan, program, and budget funds required to develop, maintain, and execute the ASIP.

4.7.2. Ensure that program life cycle cost estimates developed IAW AFI 65-508, *Cost Analysis Guidance and Procedures*, include estimated costs of supporting the ASIP.

4.7.3. Oversee the development, modification and execution of the ASIP and ensure that the ASIP Master Plan is approved, updated and executed.

4.7.4. Appoint an aircraft ASIP Manager.

4.7.5. Ensure the usage collection and evaluation systems for L/ESS and IAT achieve the valid data capture rates defined in the approved ASIP Master Plan. Monitor all ASIP flight data retrieval results to identify incomplete or missing data. Notify MAJCOM ASIP OPRs of flight data retrieval discrepancies.

4.7.6. Ensure processes are in place for collecting, processing, storing, analyzing and reporting structural maintenance data essential to evaluating aircraft structural integrity.

4.7.7. Annually provide summaries to Lead Commands of past operational usage and the effect on the structural integrity.

4.7.8. Establish and document the life cycle inspection and modification actions and schedules required to maintain the structural integrity of each aircraft system.

4.7.9. Ensure ASIP aircraft usage data requirements are integrated with mandatory crash survivable data recorder requirements when identifying the aircraft flight data parameter recording, storage and transmission capability.

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Assistant Secretary of the Air Force
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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

DoD Directive 5000.01, *The Defense Acquisition System*, 12 May 2003

DoD Instruction 5000.02, *Operation of the Defense Acquisition System*, 25 Nov 2013

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon System*, 8 Mar 2010

AFPD 63-1/20-1, *Integrated Life Cycle Management*, 3 Jul 2012

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 6 Jul 2010

AFI 63-101/20-101, *Integrated Life Cycle Management*, 7 Mar 2013

AFI 65-508, *Cost Analysis Guidance and Procedures*, 6 June 2012

MIL-STD-1530, *DoD Standard Practice, Aircraft Structural Integrity Program (ASIP)*, 1 Nov 2005

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

ASIP—Aircraft Structural Integrity Program

DCS—Deputy Chief of Staff

IAT—Individual Aircraft Tracking

L/ESS—Loads/Environment Spectra Survey

MAJCOM—Major Command

MDS—Mission Design Series

MIL—STD—Military Standard

OPR—Office of Primary Responsibility

PEO—Program Executive Officer

PM—Program Manager