

**BY ORDER OF THE COMMANDER  
AIR FORCE MATERIEL COMMAND**

**AIR FORCE MATERIEL COMMAND  
INSTRUCTION 21-104**

**20 NOVEMBER 2019**



**Maintenance**

**CONTROLLED INTERVAL EXTENSION  
(CIE) PROGRAMS**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

---

**ACCESSIBILITY:** Publications and forms are available for downloading or ordering on the e-publishing website at [www.e-publishing.af.mil](http://www.e-publishing.af.mil).

**RELEASABILITY:** There are no restrictions on releasing this publication.

---

OPR: HQ AFMC/A4/10-EN

Certified by: HQ AFMC/A4/10  
(Luke H. Burke)

Supersedes: AFMCI 21-104, 31 Jan 02

Pages: 5

---

This instruction implements AFD 21-1, *Maintenance of Military Materiel*. It provides guidance and procedures for establishing and monitoring CIE programs for aerospace equipment. This instruction does not apply to the Air National Guard or US Air Force Reserve units and members. This AFMCI may be supplemented at any level. 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 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, *Publications and Forms Management*, **Table 1.1** 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. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). 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.

**SUMMARY OF CHANGES**

This instruction has been revised to incorporate minor corrections, clarifications, and relevant information from other directives.

1.	Purpose.....	2
2.	Terms and Definitions. ....	2
3.	Procedures. ....	2
Table 3.1.	CIE Sample Size .....	2
4.	Responsibilities. ....	3
5.	Interface with Other Programs. ....	4
<b>Attachment 1— GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION</b>		<b>5</b>

**1. Purpose.** CIE programs set up controlled conditions for extending or reducing maintenance and inspection intervals without sacrificing safety of flight or reliability.

**2. Terms and Definitions.** Terms and abbreviations used in this instruction are listed in

**3. Procedures.** Programmed depot maintenance (PDM) intervals are best determined by evaluating aircraft safety and reliability requirements, compared to weapon system and cost effectiveness. This technique relies heavily on maintenance requirements, known operational limits, and engineering judgment. By allowing a percentage of the force to exceed the established PDM interval, then comparing the amount of wear and damage found on them with that found on baseline PDM aircraft, the possibility of extending the interval can be evaluated. By extending the interval, mission readiness would increase and overall cost would decrease; however, this must be done without sacrificing safety of flight or reliability. Alternatively, more frequent shorter duration PDM cycles may provide increased aircraft availability, increased opportunities for economical repairs, and reduced field level maintenance and inspections.

3.1. CIE programs will consist of plateaus. To provide an acceptable confidence level, the number of aircraft placed on each plateau will follow the CIE sample sizes shown below. The time between plateaus is usually 6 to 12 months. Factors such as PDM tasks, missions, experience, environment and hourly or calendar age will be considered in determining time between plateaus and CIE aircraft. The CIE sample size for the mission, design and series (MDS) force will be determined by deducting the following from the total MDS inventory: aircraft in storage at the Aerospace Maintenance and Regeneration Center, aircraft on bailment, aircraft on loan to other government agencies, and aircraft belonging to foreign countries supported under international logistics programs.

**Table 3.1. CIE Sample Size**

<b>CIE Sample Size</b>	
<i>Force Size</i>	<i>Sample Size</i>

37-56	11
57-109	12
110-399	13
<b>NOTE:</b> CIE programs are not required for MDS forces of 36 or less.	

3.2. Example. For a force size of 100 aircraft with a 36-month PDM cycle and a CIE program for 42, 48, and 54 months, a total of 36 aircraft with 12 aircraft at each plateau will be required.

3.3. The major command (MAJCOM) is the authority for changes to the CIE sample sizes.

3.4. The selection of CIE sample aircraft will be finalized by coordination with the using command or commands.

3.5. Close observation of the effects of CIE on readiness and cost effectiveness is an integral part of the CIE program and will be a major consideration for continuing such an effort.

3.6. It may be necessary to selectively set up more thorough phased or isochronal inspection requirements on CIE sample aircraft to ensure critical equipment or components are in operating condition and to promote confidence in continued operation.

3.7. At the end of the CIE period, each CIE sample aircraft will be scheduled for PDM and considered as a prime candidate for including in an Analytical Condition Inspection (ACI) sample.

**4. Responsibilities.** This instruction assigns the following responsibilities:

4.1. MAJCOM.

4.1.1. Identifies those systems for which a CIE program is recommended.

4.1.2. Exercises surveillance over CIE programs.

4.1.3. Reviews annually, as part of the PDM review, proposed CIE programs and the results of existing CIE programs.

4.1.4. Evaluates Program Office (PO) requests for deviations from CIE sample sizes.

4.2. Air Logistics Complex (ALC).

4.2.1. Reviews annually, as part of the PDM review, proposed CIE programs and the results of existing CIE programs.

4.3. Program Office (PO).

4.3.1. Sets up and monitors required CIE programs for assigned aircraft.

4.3.2. Determines CIE program needs to include the length of extension, corresponding plateaus, and any special inspections required.

4.3.3. Encourages the using commands to participate in the CIE program by requesting their recommended extension intervals and additional inspection needs.

4.3.4. Publishes a special -6 technical order listing CIE aircraft by serial number and those additional special inspection requirements necessary to ensure airworthiness during the extended period.

4.3.5. Formulates the proposed CIE program as an integral part of the PDM package and submits for ALC and MAJCOM review.

4.3.6. Summarizes results of CIE programs as an integral part of the PDM package and submits for ALC and MAJCOM review.

4.3.7. Analyzes CIE report data and correlate with data from ACI, PDM, field reports, material deficiencies, accident reports and incident reports to develop recommendations for PDM interval changes.

4.3.8. Makes adjustments to technical order and depot inspection requirements resulting from analysis of CIE data.

4.4. Source of Repair (Organic or Contract).

4.4.1. Accomplishes ACI and PDM on CIE aircraft as programmed by the PO.

4.4.2. Reports significant deficiencies in detail immediately upon discovery to the responsible PO for guidance, corrective action, or disposition.

**5. Interface with Other Programs.** ACI type reports of PDM inspections conducted on CIE and baseline PDM aircraft will provide data for analysis under the CIE program. Consideration should be given to combining ACI, PDM, and CIE programs on the same aircraft.

STACEY T. HAWKINS, Major General, USAF  
Director of Logistics, Civil Engineering, Force  
Protection, and Nuclear Integration

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

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFMAN 33-363, *Management of Records*, 1 March 2008

AFPD 21-1, *Maintenance of Military Materiel*, 1 August 2018

***Prescribed Forms***

None

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

***Abbreviations and Acronyms***

**ACI**—Analytical Condition Inspection

**ALC**—Air Logistics Complex

**CIE**—Controlled Interval Extension

**MDS**—Mission Design Series

**PDM**—Programmed Depot Maintenance

**PO**—Program Office

***Terms***

**Analytical Condition Inspection (ACI).**—The systematic disassembly and inspection of a representative sample of aircraft to find hidden defects, deteriorating conditions, corrosion, fatigue, overstress and other deficiencies in the aircraft structure or systems.

**Controlled Interval Extension (CIE).**—The controlled extension of a programmed depot maintenance interval based on condition analyses of a representative sample of aircraft. This concept of a controlled interval adjustment can also apply to the reduction of depot maintenance intervals.

**Plateau.**—The number of months a sample number of aircraft can exceed the normal programmed depot maintenance interval.

**Programmed Depot Maintenance (PDM).**—Depot level inspections and maintenance scheduled on a cyclic basis.