

1 APRIL 2003

Maintenance

**FUNCTIONAL/OPERATIONAL
CHECK FLIGHTS**



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the AFDPO WWW site at:
<http://www.e-publishing.af.mil>

OPR: 939MXG/QA (SMSgt Wayne Firth)
Supersedes 939 ARWI21-103, 18 June 2001

Certified by: 939MXG/CC (Maj Anthony Baity)
Pages: 7
Distribution: F

PURPOSE: This 939th Air Refueling Wing Instruction (ARWI) establishes procedures for performing functional check flights (FCF) in accordance with (IAW) Air Force Policy Directive (AFPD) 21-1, *Managing Aerospace Equipment Maintenance*, Air Force Instruction (AFI) 21-101, *Aerospace Equipment Maintenance Management*, Air Force Reserve Command Instruction (AFRCI) 21-101, *Aircraft Maintenance Guidance and Procedures*, and Technical Order (T.O.) 1-1-300, *Acceptance Functional Check Flights and Maintenance Operational Checks*. This instruction delineates the controls established for safely accomplishing an FCF. It applies to all 939th Maintenance Group (MXG) aircraft maintenance personnel and aircrew members in the flying squadrons of the 939th Operations Group (OG).

SUMMARY OF REVISIONS

This revision changes unit designation from 939th Rescue Wing to 939th Air Refueling Wing. A bar (|) indicates revision from the previous edition.

1. FCF Requirements:

1.1. An FCF is performed to determine whether an aircraft and its various components are functioning according to predetermined specifications while subject to a flight environment. Conditions requiring an FCF are specified in the applicable -6 technical orders for the KC-135. FCF requirements may also be mandated by time compliance technical orders (TCTO). Additionally the wing commander and logistics group commander through the maintenance superintendent or quality assurance (QA), may direct an FCF be performed for conditions or maintenance actions not specified in the -6 technical order.

1.2. An FCF crew brief is required for each FCF, unless the aircraft is down for adjustments or minor maintenance that is performed in conjunction with the FCF.

1.3. All FCF crews will be debriefed at the end of the day's flying to maintain continuity of the program. The FCF checklist will be retained by QA. If the same crew continues the FCF a short brief will be held in QA prior to the first flight of the day. A new crew will receive a complete brief.

1.4. The operations group commander will ensure only FCF qualified crewmembers perform FCFs, IAW T.O. 1-1-300.

1.4.1. The operations group commander or squadron commander will certify all FCF crewmembers. If a one-time flight authorization is required for any crewmember, the flight order will be signed by the operations group commander or senior ART. Individuals not specifically certified may be authorized on the flight orders ("Z" code).

1.4.2. Maintenance personnel will not be carried on the aircraft unless they are required to perform essential procedures or troubleshooting during an FCF. The operations group commander will approve all mission essential group personnel (MEGP) flown during an FCF.

1.4.3. Safety will be the first consideration in FCF accomplishment. If an item cannot be safely accomplished, it will be deferred until a safe environment is assured.

2. Responsibilities and Procedures Prior to FCF. The following procedures will identify the individual responsibilities of all work centers/sections involved with the FCF process.

2.1. Operations group commander will:

2.1.1. Ensure procedures are established to create a safe FCF environment.

2.1.2. Ensure FCF aircrew members are properly certified.

2.1.3. Approve the FCF areas. (See [Attachment 1](#) for maps of approved areas.)

2.1.4. Coordinate for improvements to safe flying operations with the operations group stan/eval (OGV) and MXG/QA.

2.2. The aircraft commander will brief the crew to ensure:

2.2.1. Compliance with Go-No-Go procedures.

2.2.2. Knowledge of the FCF requirements for the flight.

2.2.3. Knowledge of the FCF procedures for the flight.

2.2.4. Understanding of the local FCF area.

2.2.5. Compliance with weather requirements for the flight as specified in T.O. 1-1-300.

2.3. Crew Chief will:

2.3.1. Have the appropriate FCF entry placed into the discrepancy block of the Air Force Technical Order (AFTO) Form 781A, **Maintenance Discrepancy and Work Document**. Contact QA for the job control number (JCN) for the FCF entry.

2.3.2. Prepare the aircraft for flight, and review the aircraft forms to ensure all required maintenance/servicing is completed. The production superintendent will be responsible for reviewing the aircraft forms before they go to QA. The maintenance superintendent will review the aircraft forms if an FCF is required after ISO/phase. Inspection flight chiefs, if required, will accompany the crew chief to QA for the aircrew FCF brief.

- 2.3.3. Ensure the exceptional release is completed.
- 2.3.4. Report to the quality assurance office with the aircraft forms.
- 2.3.5. Coordinate the correction of any problems found in the aircraft forms by QA.
- 2.3.6. Be present for aircrew brief to answer questions.

2.4. QA will:

- 2.4.1. Make all FCF entries into GO81 and provide the JCN to the crew chief or specialist who will enter the event number in the forms.
- 2.4.2. Review the aircraft forms. Any problems found in the forms will be brought to the attention of the crew chief and fixed prior to calling the command post/maintenance operation center (MOC).
- 2.4.3. Identify any additional work centers required for the FCF aircrew briefing.
- 2.4.4. Complete the FCF checklist IC-135-(K)R-6CL-1.
- 2.4.5. Make entry in FCF log.
- 2.4.6. Notify the MOC and the expediter when the aircraft forms have been reviewed and QA is ready for FCF aircrew.
- 2.4.7. Notify crew chief when aircrew arrives at QA for the briefing.
- 2.4.8. Brief the FCF aircrew IAW AFI 21-101, *Aerospace Equipment Maintenance Management*, and AFRC supplement.
- 2.4.9. Notify the expediter when the FCF brief is complete.

2.5. Expediter will:

- 2.5.1. Provide as much advance notice as possible to QA, MOC, and plans and scheduling (PS&D) of any FCF requirements. Provide enough information to start/complete the FCF checklist to QA.
- 2.5.2. When a tentative FCF aircrew schedule is received notify the crew chief, QA, and PS&D.

2.6. Command post will:

- 2.6.1. Contact operations and determine FCF crew availability and report it to the expediter.
- 2.6.2. After being notified by QA inform the FCF crew QA is ready to brief the FCF.

3. Procedures During FCF. All events that require the application of or reduction of power to the airframe (other than that required for normal flight to get to/from the FCF area) will be accomplished within the designated FCF area.

4. Procedures After FCF:

- 4.1. FCF aircrew will report to QA for FCF debrief after the last flight of the day with the FCF checklist, aircraft forms and any technical orders used to perform the FCF.
- 4.2. QA will:

4.2.1. Debrief FCF aircrew, review FCF checklist, and aircraft forms to determine if all FCF requirements have been complied with. If the FCF is not complete ensure the FCF checklist and aircraft forms are updated to the current aircraft status. The debrief should collect enough information to be able to brief the next FCF aircrew on the status of the aircraft and the FCF checklist.

4.2.2. If the FCF is completed, complete the FCF log entry and GO80. If the FCF is to continue, make appropriate entries in the log.

4.2.3. Notify the expediter when the aircrew debrief is completed.

5. Off Station FCF Procedures:

5.1. The OIC, NCOIC or LGQ will assign a person to perform the QA duties specified in paragraph 2.4. as appropriate for the deployed location.

5.2. Quality assurance will provide training and handbook for the assigned QA representative.

6. OCF Procedures:

6.1. An FCF Checklist will be used and items requiring an OCF will be identified.

6.2. OCFs will be flown by experienced aircrews (not required to be an FCF qualified aircrew) and will be accomplished following the same maintenance criteria as FCFs. The crew for each OCF will be determined on a case by case basis. Fly OCFs when an operational check is not listed as a -6 FCF requirement and when either of the following conditions exist:

6.2.1. Test equipment does not exist to perform the operational check on the ground.

6.2.2. An in-flight operational check is required.

MARK A. KYLE, Col, USAFR
Commander, 939 ARW

Attachment 1

FCF AREA





