



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ORDER
8240.41C

Effective Date:
10/01/05

SUBJ: Flight Inspection/ Air Traffic On-Site Coordination Requirements

1. **PURPOSE.** This order outlines flight inspection procedural and communication requirements and depicts flight maneuvers for flight inspection of Terminal Navigational Aids. Flight maneuvers are outlined and categorized by reference terms to provide for standardized communications between Flight Inspection and Air Traffic personnel.
2. **DISTRIBUTION.** This order is distributed to the Program Operations Office in Terminal Services; to the Airspace and Rules Office in System Operations Services; to the Western Central, and Eastern Service Areas; to the Aviation System Standards and Flight Inspection Field Offices in Technical Operations Services of the Air Traffic Organization.
3. **CANCELLATION.** Order 8240.41B, Flight Inspection/ Air Traffic Coordination, dated March 9, 1998, is canceled.
4. **BACKGROUND.** Coordination/ approval of flight inspection operations rely upon air traffic control preplanning and expertise. The safe, orderly, expeditious handling of air traffic can be severely impacted by certain flight inspection requirements (i.e., transitioning through facility sectors/ airspace boundaries, opposite direction approaches, etc.)
 - a. **Existing AT Directives.** Order 7110.65, Air Traffic Control Handbook, Chapters 2 and 9, and Order 7210.3, Facility Operation and Administration, Chapter 5, Section 2, specify the priority and special handling to be afforded flight inspection aircraft.
 - b. **To effectively and expeditiously accomplish flight inspection requirements,** controllers are relied upon to accomplish inter and intra facility coordination and adjust the flow of traffic. To minimize the impact of a flight inspection upon the system and the air traffic controllers, inspectors must communicate their plans, priorities, and options to the controllers. Air Traffic will always attempt to provide special handling, but it must be recognized that unforeseen wind conditions, weather, and/ or heavy traffic flows may affect the controller's ability to provide priority or special handling at the specific time requested. Preplanning, coordination, and understanding of respective capabilities, responsibilities, and terminology are the basis for the effective accomplishment of both Air Traffic and Flight Inspection missions. Standardization of flight inspection maneuvers and terminology will reduce operational impacts. To preclude confusion, the standard terminology found in this order should be used.

Distribution: Special Addressees

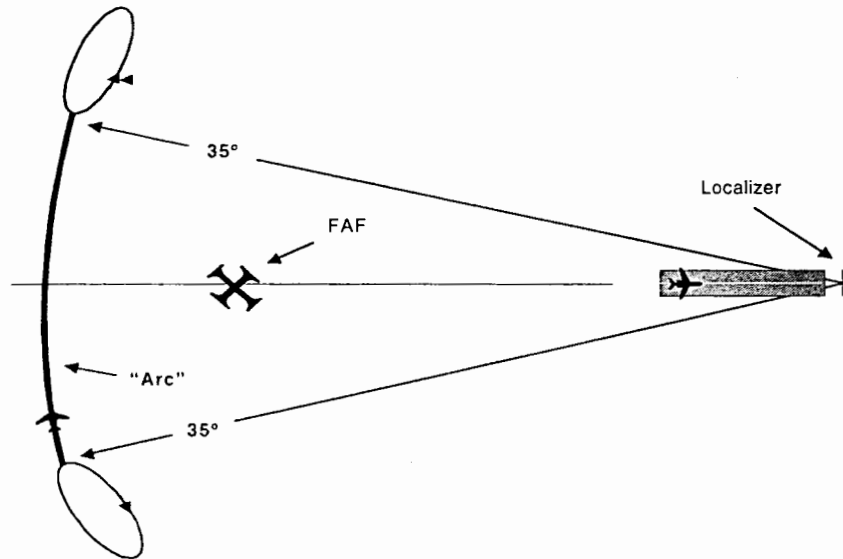
Initiated By: Flight Inspection
Operations Technical Support Team

c. **The consequences of discontinued recorded runs and/or denial of flight inspection requests include** increased costs to the agency, prolonged equipment outages, and possible extended delays to the users. Program requirements can best be met by the interaction and cooperation of both Air Traffic and Aviation System Standards personnel. The provisions of this Order have been coordinated with the Air Traffic Service.



Thomas C. Accardi
Director of Aviation System Standards

(Phraseology) **“FLIGHT INSPECTION ARC”**
ILS/MLS Front or Back Course



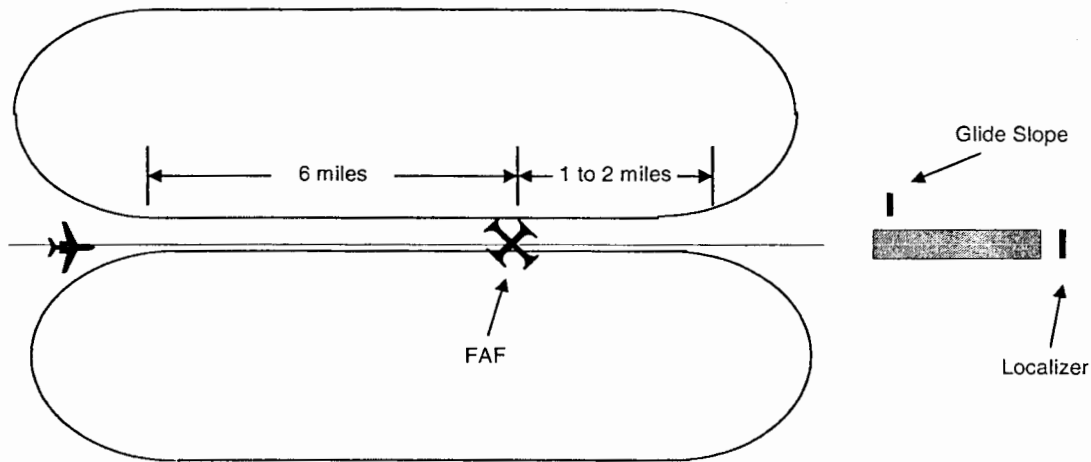
The pattern is used for localizer width checks. It is flown 90° to the localizer centerline with approximately 5 mile legs each side. Distance from the Localizer antenna is between 4 and 18 miles (normally 10 nm) from the Localizer antenna.

Flight Inspection

1. Altitude: Glide slope intercept (GSI) altitude to 4,500’.
Altitude assignments above the glide path intercept altitude may be requested; however, pilot concurrence cannot be assured due to inspection limitations. Altitude assignments can provide for arrival/ departure tunneling. Flight Inspection aircraft may be vectored or delayed outside of the 35° recording area. Direction of turns outside of the recording area is at the discretion of Air Traffic. If aircraft enter the localizer critical areas during the flight inspection arc, advise the flight inspection aircraft if possible.
2. IAS: 170 - 250 knots
3. Number of runs/ avg time per run

Periodic:	1 run	10 minutes
Periodic with monitors:	4 – 10 runs	45 minutes to 1.5 hours

(Phraseology) “FLIGHT INSPECTION HOLDING PATTERN”
ILS/MLS Front course only

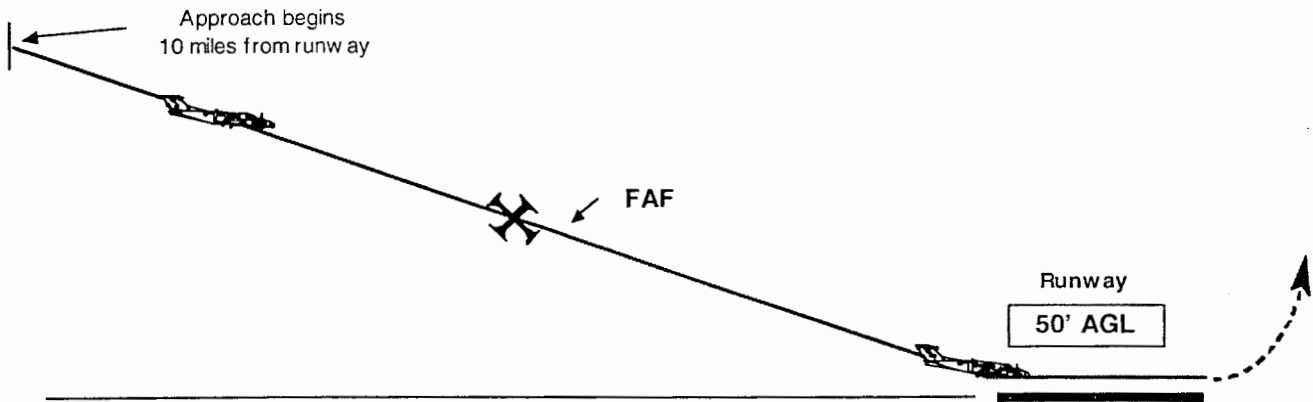


The flight inspection holding pattern is flown on centerline from 6 miles outside the Final Approach Fix (FAF) (approximately 10 miles from the runway) to approximately 2 miles inside the FAF. The altitude will normally be at GSI corrected to true altitude. Left or right turns are at the discretion of Air Traffic. Altitude assignments can provide for departure/ arrival tunneling. Aircraft may be vectored on outbound legs.

Flight Inspection

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|-----------------------------|---|-------------------------|
| 1. Altitude: | GSI – Air traffic may request a higher altitude for the inspection; however, pilot concurrence cannot be assured due to inspection limitations. | |
| 2. Indicated air speed: | Approximately 170 - 200 knots | |
| 3. Number of runs/ avg time | | |
| Periodic: | 1 run | 8 minutes |
| Periodic with monitors: | 4 - 10 runs | 32 minutes to 1.5 hours |

(Phraseology) **“FLIGHT INSPECTION LOW APPROACH”**
ILS/ MLS Front or Back Course



Flight Inspection

1. Altitude: Start approximately 500' above the glide slope intercept altitude on the front course. The approach begins 10 miles from the runway and terminates at the departure end of the runway. Flight down the runway will be at approximately 50' AGL, from the threshold to the departure end.
2. Indicated air speed: Approximately 140 - 180 knots
3. Number of runs/ avg time

Periodic:	1 run	10 minutes
Periodic with monitors:	4 - 6 runs	40 - 60 minutes
4. Turnout: As directed by Air Traffic. Normally completed within 3 miles of the departure end of the runway. Controller preplanning for avoidance of wake turbulence over the runway is mandatory.
5. Considerations: Air Traffic must ensure no departures or arrivals over fly the localizer transmitter antenna and that the **CRITICAL AREA** remains clear of aircraft and airport vehicles when the flight inspection aircraft is inside the FAF.

APPENDIX 2. ON-SITE COORDINATION/ COMMUNICATION REQUIREMENTS

To ensure Air Traffic awareness of the operational mode of flight inspection aircraft, the following procedures must be utilized:

a. Flight Inspection. Utilize call sign "Flight Check (Aircraft #)" for all operations in Aviation System Standards aircraft.

b. Air Traffic

(1) Provide special handling to flight inspection aircraft as provided in Order 7110.65, Chapters 2 and 9.

(2) Ensure pilot awareness of anticipated delays, and, to the maximum extent possible, offer alternative courses of action to expedite completion of inspection programs.

(3) Adhere to the provisions of Order 7210.3, Paragraph 5-2-2d, with respect to passing impending flight inspection information on to subsequent shifts and/or immediately notifying Flight Inspection Central Operations (FICO)/ PIC(s) when facility Air Traffic activities make it impossible to handle flight inspections expeditiously. The FICO telephone number is 405-954-9780.

(4) Ensure user awareness of NAVAID status while a flight inspection is in progress. Recorded ATIS or appropriate NOTAM(s) should advise users of facility status. Caution should be used when issuing clearances which might utilize a facility being flight inspected without coordinating with ground NAVAIDS Maintenance or the flight inspection aircraft.

(5) Coordinate with the flight inspection aircraft to determine when, if at all, critical areas should be protected.

APPENDIX 3. ON-SITE COORDINATION STANDARD OPERATING PROCEDURES

Flight inspection of navigational aids requires in-flight evaluation of signals-in-space and the associated airspace. Flight inspection procedural requirements of specific interest to Air Traffic are:

a. ILS/MLS/VGSI

(1) **For the purpose of Air Traffic Control/ Flight Inspection Coordination, ILS/MLS/VGSI flight inspections are of five basic types; commissioning (12+ hours), special flight inspections (variable), periodic (1/2 hour), periodic with monitors (2½ hours), and surveillance. To preclude confusion, the standard terminology should be used.**

(2) **Routine ILS/MLS/VGSI flight inspection maneuvers are depicted in Appendix 1, which contains supplemental information of mutual concern to Flight Inspection/ Air Traffic and specific phraseology to be utilized by both controllers and flight inspection crews. The actual number of recorded “runs” can be estimated by the PIC and furnished to Air Traffic prior to the actual flight inspection. Flight inspection planning is predicated upon ground equipment configuration, number of transmitters, etc. Air Traffic must be aware that ground and/ or airborne problems can require modification of initial plans. Changes must be relayed to Air Traffic as soon as feasible. ILS/MLS/VGSI flight inspection requirements for regularly scheduled evaluations are:**

(a) **Periodic (P):** A regular scheduled flight inspection to determine facility performance and compliance with established tolerances. Unless required by out-of-tolerance conditions, the flight inspection will require the following (sequence may vary):

Front Course

“FLIGHT INSPECTION ARC”	=	1 recorded run
“FLIGHT INSPECTION HOLDING PATTERN”	=	1 recorded run
“FLIGHT INSPECTION LOW APPROACH”	=	1 recorded run

(b) **Periodic with Monitors (PM):** A scheduled flight inspection to ascertain that both facility and electronic monitor performance are within established limits. Depending upon ground equipment type and configuration, single or dual transmitters, and determination of facility performance, the flight inspection may consist of (sequence may vary):

Front Course

“FLIGHT INSPECTION ARC”	=	4 - 10 recorded runs
“FLIGHT INSPECTION HOLDING PATTERN	=	4 - 10 recorded runs
“FLIGHT INSPECTION LOW APPROACH”	=	4 - 6 recorded runs

b. VOR/ VORTAC/ TACAN/ RNAV

(1) **Commissioning.** Comprehensive evaluations requiring lengthy (up to 10 + hours) flight evaluation will not be covered in this Order (reference United States Standard Flight Inspection Manual, Order 8200.1). Commissioning flight inspections will be coordinated with Air Traffic prior to the actual evaluation.

(2) **Special Flight Inspections:** Handled on an individual basis and will be coordinated with Air Traffic Control. Special inspections could be single radial evaluations for after accident inspection, multiple radial inspections on a user complaint, or commissioning type inspection on an equipment changeout or frequency change.

(3) **Periodic:** Scheduled flight inspection flown to determine facility performance and compliance with established tolerances. Unless required by out-of-tolerance conditions, the flight will require evaluation of terminal approach radials, airborne and ground receiver checkpoints, alignment radial, alignment and coverage orbits, and standard instrument approach procedures (SIAP(s)).

c. Procedures (Including RNAV Procedures)

(1) In addition to evaluation of navigational equipment, Flight Inspection personnel must verify controlling obstacles on all segments (final approach, missed approach, circling areas, arrivals, and departures) of published IFR flight procedures (reference United States Standard Flight Inspection Manual, Order 8200.1, Instrument Flight Procedures Section).

(2) All terminal flight obstructions must be confirmed prior to procedure publication and periodically thereafter. Flight inspection aircraft may accomplish obstacle verification when visual flight rules (VFR) exist for the visual observation of the segment to be evaluated. Controlling obstacles within each segment of a procedure are visually confirmed with special emphasis on obstructions close to the airport.

(3) Terminal Air Traffic personnel can expect flight inspection aircraft accomplishing procedural evaluation missions to follow a Procedural Track at or below published minimum altitudes at reduced airspeeds.

(4) Situations will exist when other than normal flight patterns and low altitude flight for obstacle height determination are required. In all instances, the flight inspection pilot must coordinate with Air Traffic prior to the actual evaluation and obtain ATC clearance for VFR operation within the segment being flown.