

ORDER

8400.14

**AIR CARRIER IFR APPROVAL
FOR TRANSPONDER LANDING SYSTEM
SPECIAL CATEGORY I APPROACHES**



June 13, 2002

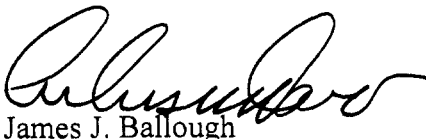
**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE**

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FOREWORD

This order identifies specific criteria which shall be satisfied before Instrument Flight Rules (IFR) operations can be authorized for qualified air carriers using Transponder Landing System (TLS) Special Instrument Approach Procedures (IAP) (not for public use) that are based on Instrument Landing System (ILS) requirements for facility installation and Microwave Landing System (MLS) criteria for the IAP. In addition, this order assigns responsibilities for determining that the criteria specified herein are satisfied. These criteria are to be used by all regions, district offices, and field offices for approving the IFR use of special use TLS operations based on special IAP. These procedures include approaches based on MLS criteria in Federal Aviation Administration (FAA) Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS), FAA Order 8260.36, Civil Utilization of Microwave Landing System (MLS), and International Civil Aviation Organization (ICAO) Procedures For Air Navigation Services Air Operations (PANS-OPS) and ICAO Annex 10, Volume 1.

for 
James J. Ballough
Director, Flight Standards Service

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CHAPTER 1. GENERAL

1-1. PURPOSE. This order identifies specific criteria which shall be satisfied before Instrument Flight Rules (IFR) operations can be authorized for qualified air carriers using Transponder Landing System (TLS) Special Instrument Approach Procedures (IAP) (not for public use) that are based on Instrument Landing System (ILS) requirements for facility installation and Microwave Landing System (MLS) criteria for the IAP. In addition, this order assigns responsibilities for determining that the criteria specified herein are satisfied. These criteria are to be used by all regions, district offices, and field offices for approving the IFR use of special use TLS operations based on special IAP. These procedures include approaches based on MLS criteria in Federal Aviation Administration (FAA) Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS), FAA Order 8260.36, Civil Utilization of Microwave Landing System (MLS), and International Civil Aviation Organization (ICAO) Procedures For Air Navigation Services Air Operations (PANS-OPS) and ICAO Annex 10, Volume 1.

1-2. APPLICABILITY. This order applies to air carriers that operate under Title 14 of the Code of Federal Regulations (14 CFR) part 121, 125, 129, or 135.

1-3. POLICY. TLS approach procedures are not available for public use. Special use TLS operations for a given applicant shall be approved on a case-by-case and site-by-site basis using operations specifications (OpSpecs) as per FAA Order 8400.10, Air Transportation Operations Inspector's Handbook. Special use TLS will only be authorized for part 121, 125, 129, or 135 operators. Only applicants operating under these Federal regulations will be considered for approval. TLS will be operated using "special use" instrument approaches and will not, ordinarily, be covered by Notices to Airmen (NOTAMS). Single-pilot IFR TLS operations are prohibited.

1-4. DISTRIBUTION. This Order is distributed to the branch level in the Offices of System Safety, and Airport Safety and Standards, to the Flight Standards, Aircraft Certification, Air Traffic, Air Traffic System Requirements, and Airway Facilities Services; to the branch level in Aviation System Standards; to the branch level in the regional Flight Standards, Aircraft Certification Directorates, Flight Standards Air Traffic, Airway Facilities and Airports Divisions; to the Flight Standards District Offices, and Certificate Management Offices; to Aircraft Certification Offices; to all Airport Traffic Control Towers and Flight Service Stations; to Airway Facilities General National Airspace Sectors, Air Route Traffic Control Center Sectors, and Sector Field Offices and Units; and to all Airports District Offices.

1-5. AUTHORITY TO CHANGE THIS ORDER. The Director of Flight Standards Service (AFS), AFS-1, is responsible for this order. Changes to criteria of this order involving organizations other than AFS, and related to TLS facilities in the United States, shall be coordinated with those organizations. AFS-1 has sole responsibility for operational approval related to the use of TLS. Outside the territorial limits of the United States, the proper authority of the country concerned has that responsibility. Operational approval to use international TLS facilities will be determined through appropriate OpSpecs.

1-6. RELATED PUBLICATIONS (current editions).

a. FAA ACs and Orders. Advisory circulars (AC) and orders may be obtained from the U.S. Department of Transportation, Subsequent Distribution Center, SVC-121.23, Ardmore East Business Center, 3341 Q 75th Avenue, Landover, Maryland, 20785.

(1) AC 120-53, Crew Qualifications and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under FAR Part 121.

(2) Order 6700.20, Non-Federal Navigational Aids and Air Traffic Control Facilities.

(3) Order 6750.24, Instrument Landing System (ILS) and Ancillary Electronic Component Configuration and Performance Requirements.

(4) Order 8200.1, United States Standard Flight Inspection Manual.

(5) Order 8200.40, Flight Inspection of the Transponder Landing System.

(6) Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).

(7) Order 8260.19, Flight Procedures and Airspace.

(8) Order 8260.36, Civil Utilization of Microwave Landing System (MLS).

(9) Order 8260.43, Prioritization for Development of Wide Area Augmentation System GPS Instrument Approach Procedures.

(10) Order 8260.48, Area Navigation (RNAV) Approach Construction Criteria.

(11) Order 8400.8, Procedures for Approval of Facilities for FAR Part 121 and Part 135 Category III Operations.

(12) Order 8400.10, Air Transportation Operations Inspector's Handbook.

(13) Order 8410.1, Designated Air Carrier Airman Examiner Handbook.

(14) FAA-E-2945, Transponder Landing System (TLS) Functional Equipment Specification.

b. International Civil Aviation Organization (ICAO). These documents are available from ICAO, Document Sales Unit, 999 University Street, Montreal, Quebec, H3C 5H7, Canada.

(1) ICAO Annex 10, International Standards and Recommended Practices (SARPs), Aeronautical Telecommunications, Volume I, Radio Navigation Aids.

(2) ICAO Doc 4444, PANS-OPS.

c. Technical Standard Documents. RTCA documents are available from RTCA, 1828 L Street, NW, Suite 805, Washington, DC, 20036. Society of Automotive Engineers (SAE) Documents are available from SAE, 400 Commonwealth Drive, Warrendale, Pennsylvania, 15096-0001.

(1) RTCA DO-264, Guidelines for Approval of the Provision and use of Air Traffic Services Supported by Data Communications.

(2) Society of Automotive Engineers, Aerospace Recommended Practice (SAE ARP) 4754, Certification Considerations for Highly-Integrated or Complex Aircraft Systems.

(3) SAE ARP 4761, Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment.

1-7. – 1-10. RESERVED.

CHAPTER 2. TRANSPONDER LANDING SYSTEM FACILITIES

2-1. SPECIAL USE TLS FACILITIES. A special use TLS facility is a navigation aid that is installed, owned, operated, and maintained by a non-federal entity to support the use of a special IAP. A special use TLS facility includes an Air Traffic Control Beacon Interrogator System (ATCBI), a time of arrival (TOA) and angle of arrival (AOA) positioning determination system with lateral and vertical guidance computers, an ILS-type localizer and glide slope (GS) transmitter, and a Remote Control Unit (RCU) operator interface with a human in the loop. These facilities and the associated special IAP are not available for general public use. Special use TLS facilities shall be approved on a case-by-case and site-by-site basis for one specific applicant in accordance with (IAW) this order.

a. TLS installations within the United States are subject to the provisions of Title 49 of the United States Code (49 U.S.C.) as well as Federal Communications Commission (FCC) Rules, parts 2 and 87. Special use IAPs predicated upon these facilities are not 14 CFR part 97 public use procedures, but, rather, shall conform to 14 CFR part 171 non-federal requirements for a navigational aid (NAVAID). Special authorization shall be obtained and special restrictions shall apply to the use of these facilities and procedures by all applicants. The applicant is ultimately responsible for the proper operation of all aspects of the TLS system to include the RCU operator.

b. TLS facilities operated by U.S. interests outside the United States and used by U.S. flag carriers operating under part 121, 125, 129, or 135 are evaluated and approved by AFS IAW this order. The special IAPs that are based on these facilities are developed and approved IAW this order and existing AFS guidelines.

2-2. – 2-10. RESERVED.

CHAPTER 3. TRANSPONDER LANDING SYSTEM CATEGORY I SYSTEMS

3-1. TLS CATEGORY I SYSTEMS. TLS Category I systems are defined as instrument approach systems which utilize ATCBI derived geometric position information to provide lateral and vertical flight guidance through standard ILS avionics. TLS instrument approaches are based on FAA Order 8260.3 and ICAO PANS-OPS MLS obstacle clearance criteria, as appropriate. ICAO Annex 10 identifies the standard non-visual aids to precision approach as ILS, MLS, and GNSS. Other non-visual aids, which may be used in whole or in part with aircraft equipment designed for use with ILS or MLS, must provide details of the parts utilized in an Aeronautical Information Publication (AIP). TLS shall incorporate a straight-in approach with a glide path angle optimized to approximately 3 degrees for all installations in the foreseeable future. Additionally, the TLS shall support the instrument approach procedure. This means that the 'localizer-like' and 'glide slope-like' guidance information shall support the requirements of the IAP throughout the area of coverage. Any restrictions shall be noted. The TLS shall comply with failure analysis as described in RTCA DO-264, Guidelines for Approval of the Provision and use of Air Traffic Services Supported by Data Communications with reference to Operational Safety Assessment (OSA) and Operational Services and Environment Definition (OSED), which is the current industry standard.

3-2. BACKGROUND.

a. Industry is interested in developing a TLS Category I instrument approach capability. This capability will be implemented through special use, non-federal facilities. The necessary instrument flight procedures will be developed through the special IAP process.

b. The FAA has determined that non-federally owned TLS facilities in the United States shall be administered through the part 171 process and that process shall follow appropriate regulations with respect to ground installations. The installation shall be determined to be equivalent to an ILS meeting Category I requirements by the Airway Facilities Service (AAF). Applicants should be informed that there is no plan to convert these facilities to public facilities in the future. Additionally, each airport shall meet the requirements as per 14 CFR part 139 with respect to precision approach runways and runway markings.

c. The FAA has also determined that all IAPs based on these facilities shall be developed as special IAPs and as such, are not considered to be part 97 public procedures. Special authorization and training for both flightcrews and the ground RCU operator is required before any applicant is approved to conduct these TLS special IAPs.

d. ICAO Annex 10, Volume 1, specifications for ILS and this order provide criteria for TLS Category I facilities.

3-3. OPERATION. The TLS derives the position of an aircraft requesting a TLS supported precision approach and establishes a track for the aircraft prior to transmitting guidance. This process is started with the pilot communicating the aircraft's assigned radar beacon transponder

code to a TLS ground RCU system operator who must enter it into the RCU. The TLS RCU operator then causes the system to commence sending out radar beacon interrogation signals within its service volume seeking out the entered transponder code. Once the transponder is identified, the TLS uses AOA and TOA information to determine the location of the aircraft transponder and to establish a track. Once the track is established, the TLS transmits both localizer-like and glide slope-like signals throughout the respective element service volumes (i.e., the localizer service volume produced by the Very High Frequency (VHF) signal and the GS service volume produced by the Ultra High Frequency (UHF) signal, which are distinct) causing the desired deflection of ILS receiver indicators to guide the aircraft to the approved approach profile. While this guidance is “correct” for the tracked aircraft, it is not “correct” and is misleading to any other aircraft attempting to utilize the TLS signals at the same time for approach and landing.

3-4. – 3-10. RESERVED.

CHAPTER 4. RESPONSIBILITIES AND PROCEDURES

4-1. ACTIONS, RESPONSIBILITIES, AND PROCEDURES. All special ground installations used to conduct TLS instrument approach operations shall be evaluated and approved IAW the criteria contained in this order. If the requirements herein are met, special use TLS installations shall be approved for use by the United States and qualified foreign operators to fly TLS instrument approaches. The responsibilities of AVR-1, the Director of Airway Facilities (AAF-1), and the actions necessary to initially implement special use TLS instrument approach operations are as specified herein.

a. Requests for Approaches.

(1) All requests to establish a TLS Category I instrument approach, or approve an operator to conduct these instrument approaches, shall be forwarded to the Flight Standards Flight Technologies and Procedures Division, AFS-400, through the regional Flight Standards Division. A potential applicant shall forward an original application package through their respective principal operations inspector (POI), who will in turn coordinate with the assigned regional All Weather Operations (AWO) specialist and the regional Flight Procedures Office (FPO). The AWO and the FPO are part of the Regional Airspace Procedures Team (RAPT), FAA Order 8260.43, Flight Procedures Management Program, which will coordinate all relevant and necessary resources needed to address the special use instrument procedure application. The RAPT will have overall responsibility for the administration of the application package and will coordinate with all necessary organizations required. This may involve not only the POI, AWO and manager of the FPO (Chairman of the RAPT), but also Aviation Systems Standards (AVN), AFS, the appropriate regional AAF Division and the regional Air Traffic Division points of contact in order to deliver the final request for the special approach to AFS-400, through the regional Flight Standards Division.

(2) Any matters of policy or technical direction outside the capabilities of the RAPT shall be forwarded, if necessary, to the National Airspace Procedures Team (NAPT) for disposition, which may obtain additional resources if necessary. Guidance for an application package can be found in FAA Order 8400.10. The RAPT is a recent development that is designed to facilitate instrument procedures approval and the applicant can gain further information about the process from the respective POI.

b. National Policy Guidance. Until specific TLS installation guidance is available, such as descriptive “fixed by function” examples, AAF shall use the national guidance and direction found in FAA Order 6700.20, Non-Federal Navigational Aids and Air Traffic Control Facilities, for field approval of TLS installations in the United States. Frequency assignments shall be made by the Office of Spectrum Policy and Management (ASR). AFS-400 shall develop national guidance and direction for field approval of TLS installations outside the United States, TLS Category I instrument approaches, and approval of operators to conduct these operations. This includes IAP design standards and authority for operators to conduct TLS operations.

c. Approved Facility List.

(1) AFS-400 shall establish and maintain a national list of the airports and runways, special IAPs, and operators approved for TLS instrument approach operations. The regional AAF division manager shall forward information regarding TLS facility establishment applications in the United States to AFS-400 through the FPO and the AWO.

(2) For facilities outside the United States, the POI for the air carrier shall forward a facility and operations evaluation report, with any recommended limitations and special provisions, to AFS-400 through the regional Flight Standards Division. Each TLS installation approved for use by U.S. operators (or foreign flag operations in the United States under part 129) shall be specified in the AFS-400 nationally approved list. The National Flight Procedures Office shall forward a copy of all completed TLS special IAPs to AFS-400 for concurrence.

d. TLS Facility Evaluations. Regional AAF organizations are responsible for evaluating TLS facilities in the United States. The evaluation process for TLS facilities is specified in FAA Order 6700.20. AFS is responsible for evaluating TLS facilities outside the United States. The Flight Standards District Office (FSDO) manager shall designate the Principle Avionics Inspector (PAI) to evaluate and recommend approval of the special use TLS facilities outside the United States. Results of the facility evaluation shall be forwarded to AFS-400 through the regional Flight Standards Division. Inspectors shall consult with AAF personnel familiar with TLS during the evaluation of TLS facilities outside the United States.

e. Instrument Flight Procedures Implementation. The regional FPO is responsible for the flight procedures formulation process for special IAPs specified in FAA Order 8260.19, Flight Procedures and Airspace. After the procedure request is made by the applicant to the POI, it must be coordinated with the FPO by the AWO before it is passed to the RAP. The FPO will also assist the assigned Flight Standards inspector in informing the applicant of the data necessary to perform obstruction clearance studies and formulate IAPs.

f. Flight Inspection. AVN shall ensure that flight inspections of TLS facilities and IAPs in the United States are accomplished IAW FAA Orders 8200.1, United States Standard Flight Inspection Manual, and 8200.40, Flight Inspection of the Transponder Landing System, and current AVN directives and orders. Outside the United States, flight inspection is the responsibility of the nation where the TLS is located.

g. Evaluation and Approval. Upon receiving an initial request from an operator to conduct TLS Category I operations, the applicable Certificate-Holding District Office (CHDO) or appropriate FSDO shall ensure that the applicant is provided sufficient information to comply with the requirements herein. The following evaluation and approval procedures shall be followed:

(1) **Coordination.** Coordination with AFS-400 and the regional FPO should occur concurrently with the beginning of approval activity. After receiving an operator's request, the

POI at the CHDO or FSDO shall, as soon as possible, initiate coordination with the regional AWO in order that he may work with the FPO and the RAPT concurrently to determine the procedural requirements and coordinate flight inspection schedules. AFS-400 shall also be notified through the regional Flight Standards Division. The POI at the CHDO/FSDO is responsible for the follow-up coordination process specified for special IAPs in FAA Orders 8260.19 and 8400.10 to ensure that the AWO and the FPO coordinate with the RAPT as appropriate.

(2) Design Approval for Ground Facilities. AAF-1 is the type acceptance and type approval authority for TLS in the United States.

(3) TLS Installation Evaluation.

(a) For TLS facilities in the United States, the responsible regional AAF manager shall ensure that the equipment is properly installed, performs its intended function, and meets all applicable provisions of this order and ICAO Annex 10, Volume 1. The performance parameters are required to meet the performance expected in TERPS and PANS-OPS for generic CAT I precision instrument approach capability. Successful completion of the installation evaluation is required prior to a commissioning flight inspection. The applicant is responsible for the analysis and flight trials under 14 CFR part 23 § 23.1309(b) and part 25 § 25.1309(b)(d), as appropriate, to include autopilot interoperability and antenna masking analysis in all operational aircraft configurations. These requirements are also standard for any ILS, MLS or Global Positioning System (GPS) operation for a Category I precision instrument approach. The CHDO or FSDO shall ensure that the TLS facility has been properly approved IAW this order. It may be necessary for the applicant to provide non-revenue proving flights in order to demonstrate compliance with the appropriate regulations and OpSpecs. This includes providing proof that the specific TLS facility meets the ICAO Annex 10 and RTCA DO-264 performance standards and guidelines for safety assessment, respectively.

(b) For TLS facilities outside the United States, AFS is responsible for the overall evaluation.

(4) TLS Instrument Procedure Evaluation. A draft TLS instrument procedure that has been forwarded to AVN-100 for quality control purposes will be approved for operational use by the Instrument Procedures Branch of Flight Standards, AFS-420, prior to use in any facility operational suitability evaluation. This step is mandatory for purposes of quality control for Flight Standards and potential acceptance by the Air Traffic Services. The draft TLS instrument approach is a key factor in any application for operational use of TLS under instrument conditions and in any subsequent operational suitability evaluation. It should be as complete and close to the final product as possible. This means that it should entail at a minimum: a frequency to be used, a final approach course, a missed approach, an initial approach fix (IAF) if appropriate, a final approach fix (FAF), a correct name for the approach, the controlling authority, a set of minimums to fly as well as terrain and obstacle information and minimum safe altitudes. The initial draft approach may come from any source, but the final draft product must

be approved by AFS-420 after quality control by AVN-100. It will then be coordinated with the regional AWO for use in the operational evaluation.

(5) Initial Authorization. When the requirements of this order are met, and following coordination with the regional Flight Standards Division and concurrence from AFS-400, the POI at the CHDO or FSDO for the air carrier is authorized to issue approval (through OpSpecs) for the operator to conduct IFR TLS special IAPs.

(6) Continuing Compliance. For TLS facilities in the United States, the responsible regional AAF office shall perform the required periodic facility technical inspection and ensure that the applicant complies with the Operations and Maintenance Manual (OMM) and the Memorandum of Agreement (MOA) for operation of the TLS installation. For TLS facilities outside the United States, the appropriate CHDO or FSDO assigned to the applicant shall ensure that the applicant continues to comply with the requirements of this order. The applicant's approval to conduct TLS operations shall be withdrawn if there is evidence of noncompliance or the RCU operator fails to meet minimum standards set forth in this order.

(7) Annual Review. The TLS special instrument approach authorizations for all air carrier operators shall be renewed on an annual basis for compliance purposes.

4-2. – 4-10. RESERVED.

CHAPTER 5. APPROVAL OF TRANSPONDER LANDING SYSTEM INSTALLATIONS IN THE UNITED STATES

5-1. ESTABLISHMENT OF TLS INSTALLATIONS FOR SPECIAL CATEGORY I INSTRUMENT APPROACH OPERATIONS IN THE UNITED STATES.

a. General. Special use TLS facilities can be established for civil instrument approach operations when properly authorized by the FAA. Approval of the TLS installation includes the siting, assignment of transmission frequencies, physical installation and performance, commissioning, and maintenance programs.

b. Federal Communications Commission Licensing. The applicant shall pre-coordinate with the responsible regional AAF office to obtain a properly engineered frequency assignment for the TLS installation. The applicant shall also obtain any required FCC radio station licenses to operate on these frequencies.

c. Operations and Maintenance Program. The applicant shall present an acceptable operations and maintenance program, documented in the OMM as outlined in FAA Order 6700.20. The operational, quality assurance, maintenance, and return to service procedures shall be acceptable to the responsible regional AAF office.

d. Flight Inspection. Flight inspection of special use TLS facilities and IAP is required and shall be performed by AVN. A copy of the flight inspection report shall be forwarded to the responsible regional AAF office manager or published via standard AVN procedures. The following flight inspection criteria shall be used for special use TLS installations and the associated IAP:

(1) General Flight Inspection Requirements. AVN shall ensure that flight inspection of TLS signals and IAPs are accomplished IAW Orders 8200.1, 8200.40, and current AVN directives and orders.

(2) Commissioning Requirements. A commissioning flight inspection shall be conducted on a special use TLS installation before IFR approval is granted. Any anomalies, such as restrictions to the TLS coverage and signal-in-space, shall be documented in order that they may be addressed on the instrument approach procedure.

(3) Periodic Requirements. Periodic flight inspections are required and shall be accomplished IAW Orders 8200.1 and 8200.40.

(4) Funding Policy. Funding for flight inspection, procedure development, and procedure maintenance in the United States shall be IAW standard practices for reimbursable agreements.

e. TLS Facility Classification. Each TLS facility used for instrument approaches shall have an approved FAA classification. The classification assigned to these facilities is equivalent to those assigned an ILS IAW FAA Orders 6750.24, Instrument Landing System and Ancillary

Electronic Component Configuration and Performance Requirements, and 8400.8, Procedures for Approval of Facilities for FAR Part 121 and 135 Category III Operations. Any deviation from this approval process shall require a waiver by Flight Standards.

f. Application to Establish a Special Use TLS Facility. The TLS applicant shall forward to the Non-Federal Coordinator in the responsible regional AAF office an FAA Form 7460, Notice of Proposed Construction or Alteration, and an application for a non-federal facility with all prescribed attachments (see FAA Order 6700.20) as appropriate.

(1) Any special use TLS facility shall be evaluated by AFS. Authorization to operate and/or use a special use TLS installation to support a special IAP can only be granted to an applicant operating under part 121, 125, 129, or 135. The applicant shall submit a letter of application to obtain this approval, and it shall include:

- (a) a description of the facility;
- (b) an installation plan;
- (c) a proposed procedure for facility operation;
- (d) the training program for all required personnel;
- (e) the proposed commissioning criteria;
- (f) the proposed periodic inspection and maintenance program; and
- (g) a description of any required test equipment and calibration procedures.

(2) The application shall specify the persons responsible for operating and maintaining the facility, and it shall also include copies of any licenses and authorizations required by the appropriate telecommunications authority.

g. Special Use TLS Ground Facilities. Each request to establish a special use TLS facility shall be evaluated on a case-by-case basis IAW the national guidance and direction provided by this order. Approval of a TLS facility shall be based on a finding that the facility meets the requirements of ICAO Annex 10, Volume 1 regarding ILS and FAA Order 6700.20.

h. Special Use TLS Facility Evaluation Process. The regional AAF office manager is the focal point for the establishment program for TLS facilities in the United States. The AAF and other regional divisions are responsible for the actions specified in this order and Order 6700.20. Requests to establish TLS facilities in the United States shall be processed IAW Order 6700.20. Order 6700.20 and the national policy guidance and direction specified in this order shall be used to evaluate TLS facilities. Following a satisfactory facility evaluation and flight inspection, the AAF System Management Organization shall forward commissioning data to the regional AAF office.

5-2. – 5-10. RESERVED.

CHAPTER 6. APPROVAL OF TRANSPONDER LANDING SYSTEM INSTALLATIONS OUTSIDE THE UNITED STATES

6-1. ESTABLISHMENT OF TLS INSTALLATIONS AND APPROVAL TO CONDUCT SPECIAL CATEGORY I INSTRUMENT APPROACHES OUTSIDE THE UNITED STATES.

a. General. Special use TLS installations at locations outside the United States can be approved for use in civil instrument approach operations by part 121, 125, 129, or 135 operators when properly authorized by the controlling State's civil aviation authority and approved by the FAA. Approval of the TLS installation includes the siting, transmission frequency, physical installation and its performance, commissioning, and inspection and maintenance programs.

b. Frequency Licensing. Authorization to use the required aeronautical radio frequencies shall be obtained from the appropriate governing authority. The applicant shall obtain the necessary frequency protection and licensing approvals from the appropriate telecommunications authority for that particular sovereign state.

c. Operations and Maintenance Program. The applicant shall present an acceptable operations and maintenance program, documented in an OMM. The operations and maintenance program shall be evaluated for acceptability by the PAI for the air carrier. Selected minimum contents of the OMM are provided in Appendix 2.

d. Flight Inspection. Flight inspection of TLS facilities is required. The country concerned shall arrange for the appropriate flight inspections that are required.

e. TLS Facility Classification. Each TLS facility used for instrument approaches shall have an approved FAA classification. The classification assigned to these facilities is equivalent to those assigned an ILS IAW FAA Orders 6750.24 and 8400.8.

f. Application for Approval to Use a Special Use TLS Facility.

(1) Any special use TLS facility used by U.S. operators shall be evaluated by AFS. Authorization to operate and/or use a foreign special use TLS installation to support a special IAP can only be granted to an applicant operating under part 121, 125, 129, or 135. The applicant shall submit a letter of application to obtain this approval. The application shall include:

- (a) description of the facility;
- (b) an installation plan;
- (c) a proposed procedure for facility operation;
- (d) the training program for all required personnel;

- (e) the proposed commissioning criteria;
- (f) the proposed periodic inspection and maintenance program; and
- (g) a description of any required test equipment and calibration procedures.

(2) The application shall specify the persons responsible for operating and maintaining the facility. The application shall also include copies of any licenses and authorizations required by the appropriate telecommunications authority for that sovereign state.

g. Special Use TLS Facility Evaluation Process. AFS shall evaluate these installations IAW this order, ICAO Annex 10, Volume 1, and current AFS directives and orders. Approval to use a special use TLS installation shall only be issued to persons operating under part 121, 125, 129, or 135. Applicants shall submit a letter of application to the CHDO. The appropriate CHDO or FSDO for the carrier shall forward, upon receipt of the request, information regarding the application to AFS-400, through the regional Flight Standards division. Evaluation of the TLS facility shall be performed by the PAI for the air carrier. If delegated by the responsible inspector, the actual on-site evaluation may be performed by another avionics specialist. Part 129 operators shall submit a letter of application through their aviation authority to the respective POI responsible for their international OpSpecs.

(1) Following a satisfactory facility evaluation and flight inspection, a facility and operations evaluation report, with any recommended limitations and special provisions, shall be forwarded to AFS-400 through the regional Flight Standards division for concurrence. This shall include any planned waivers to the contemplated operation.

(2) The applicant shall agree to notify the FAA prior to any plans to withdraw the facility from service. Also, the applicant shall agree to provide periodic reports and allow FAA inspection of the facility and its operations, when requested by the FAA.

h. Approval to Operate Special Use TLS Facilities Outside the United States. Each request for approval to use a special use TLS facility shall be evaluated on a case-by-case basis IAW national guidance and direction provided by this order. Recommendations for approval shall be based on a finding that the facility meets the requirements of ICAO Annex 10, Volume 1, in use worldwide. The approval to use a TLS facility with any necessary limitations, provisions, and procedures shall be specified in the OpSpecs issued to the applicant. Concurrence from AFS-400 shall be obtained prior to issuing any approvals to conduct instrument approach operations using special use TLS installations outside the United States in conjunction with the foreign state's civil aviation organization whether or not the TLS is owned and/or operated by U.S. interests.

6-2. – 6-10. RESERVED.

CHAPTER 7. APPROVAL OF TRANSPONDER LANDING SYSTEM SPECIAL CATEGORY I OPERATIONS

7-1. APPROVAL TO CONDUCT TLS SPECIAL CATEGORY I INSTRUMENT

APPROACHES. The authority for a civil operator to use an FAA-approved special use TLS facility to conduct TLS instrument approaches shall be obtained from AFS. Approval shall only be issued to applicants operating under part 121, 125, 129, or 135.

a. Application. To obtain approval to conduct TLS Category I special IAP, air carriers shall submit a letter of intent to the CHDO or the assigned FSDO, respectively. The application shall document the operator's ability to safely conduct TLS Category I operations. The proposed location(s) for the TLS operation shall be stated. If an approved and commissioned TLS facility is not installed at each location contemplated, a package containing the appropriate materials called for in FAA Form 7460, Notice of Proposed Construction or Alteration, and an application for a non-federal facility with all prescribed attachments (see FAA Order 6700.20) and guidance given in Chapter 5 of this order. Additionally, see Appendix 5 for a typical special instrument procedure processing checklist. The application shall also provide documentation for the following items:

(1) Pilot Training and Qualification. The application shall document the proposed pilot training and qualification program. This program shall address at least the following requirements:

(a) Crew training and qualification for TLS Category I instrument approach operations should be consistent with the qualifications required for the use of ILS, VHF omnidirectional range (VOR)/distance measuring equipment (DME), area navigation (RNAV), and multi-sensor RNAV Flight Management System (FMS) systems in Order 8400.10; Order 8700.1, General Aviation Operations Inspector's Handbook: AC 120-53, Crew Qualifications and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under FAR Part 121; part 61, 121, 125, 129, or 135; and Special Federal Aviation Regulation (SFAR) 58. Although these standards do not specifically address TLS systems, the principles are appropriate for TLS operations, and the criteria can be used to evaluate crew knowledge procedures, checking, and recency of experience, until other criteria are available. No special crew qualification requirements, other than those necessary for RNAV and ILS instrument approach qualification are specified for TLS Category I approaches. The applicant shall furnish differences training for the TLS versus ILS operation for all flightcrews and flightcrew members who will use the TLS. For example, the duties and interaction with the RCU operator are totally different than with ILS. Other aspects of TLS are also unique to its use compared to ILS such as acquisition of the signal. Therefore, example communications phraseology with the RCU operator may be appropriate to ensure verification that the TLS system is operating, the correct transponder code is set, and the system has, in fact, acquired the correct aircraft. It must be noted that, even though it is observed that the 'localizer' needle gives evidence that the 'localizer-like' guidance has been acquired, if the GS is not acquired before reaching the FAF, a missed approach should be initiated. To ensure appropriate situational awareness for all parties involved, the flightcrew should announce to the RCU operator the passing of the FAF inbound by the aircraft (as well as inbound from any

IAF used). Otherwise, the RCU operator has no way of knowing the progress or status of the approach. This should be part of both the flightcrew and the RCU operator training syllabus. Pilots must still make required calls on UNICOM at non-towered airports and when making a precision approach as per the AIM. Additionally, to ensure situational awareness for the flightcrew on progress of the approach, the aural TLS navigational signal (ident) should be monitored in order to receive the aural indication of the TLS-generated marker tones inside the FAF, since there are no marker beacons per se. Any commissioned TLS should provide the aural markers as an inherent part of the TLS system or the TLS, itself, may not obtain operational approval. As with ILS, the pilot should not intercept the GS from above. Request for 'acquisition' should not be made when outbound from the station to minimize loss of TLS capture. Upon landing the flightcrew should notify either the RCU operator or ATC or company as appropriate.

(b) Other site specific special flight requirements may be outlined, as needed, in the agreement between the TLS ground equipment owner (and/or air operator) and ATC on a case-by-case basis. For instance, the applicant is required to equip with two radios in order to continue to monitor ATC while in contact with the RCU operator. Since the RCU operator may, necessarily, communicate on the UNICOM frequency, continued contact with ATC will ensure a safe and continuous operation. This is one of the reasons for requiring a flightcrew for the TLS procedure. The pilot not flying (PNF) is encouraged to conduct the communications for a safe operation, while the pilot flying (PF) can concentrate on flying the approach, controlling the aircraft and maintaining situational awareness. Both pilots can monitor the TLS frequency in order to be aware of the 'marker tones' at the appropriate locations, since situational awareness is at a premium with TLS due to the existence of possible synchronous overlap or improper guidance.

(c) Ground training shall ensure that each flight crewmember has the knowledge required for the TLS special IAP to be flown. Part 121, 125, 129, or 135 operators shall successfully complete an FAA-approved training curriculum segment for TLS Category I operations, as applicable. The ground training should include at least the following subjects: principles of TLS navigation; limitations of the TLS equipment; specific operating techniques and procedures to be used with the equipment; normal indications of the Built-in-Test (BIT) cycle during flight; and contents of the OpSpecs. Field inspector information and guidance will be made available on the Flight Standards website pending updated guidance being included in future revisions of the inspector handbooks. It should be noted that the BIT cycle may interrupt TLS guidance at any time during the effort to "acquire."

(d) Initial qualification, continuing qualification, and requalification flight training shall ensure that each flight crewmember has the knowledge, skills, and abilities necessary to safely conduct the proposed operations. Flight crewmembers of part 121, 125, 129, or 135 operators shall successfully complete the operator's approved TLS Category I flight training program, as appropriate.

(e) Accomplishment of TLS instrument approaches may be credited for recency of experience, if proper approval is obtained, for other equivalent types of approaches. TLS Category I approaches may be recognized as acceptable for precision approach qualification.

(2) RCU Operator Training and Qualification. The application should document the proposed RCU operator training and qualification program. The program shall address at least the following requirements:

(a) The RCU operator requires special training by the TLS ground equipment owner (and/or air operator) regarding all aspects of the TLS operations from initial pilot coordination to completion of the approach.

(b) Training shall ensure that each RCU operator can demonstrate the ability to successfully operate the RCU equipment.

(c) Initial qualification, refresher and requalification training shall ensure that each RCU operator has the knowledge, skills, and abilities to successfully perform the duties of RCU operator (Appendix 3).

(d) Accomplishment of TLS acquisitions a certain number of times in a particular timeframe (as per quarter) may be credited for recency of experience.

(3) Operational Procedures. The applicant shall establish operational procedures that are compatible with its TLS Category I capabilities and limitations.

(a) "Before departure procedures" should specify how the flightcrew will determine that the required TLS approach(es) can be conducted at the takeoff airport (for an emergency return) and destination airport. This shall require the RCU operator to be available for every departure from a "TLS airport," if required, in addition to the arrival duties. Before departure, a means shall be provided to evaluate the airplane's capability to execute the planned operation. Procedures shall be established which prohibit the use of an airport as a required alternate airport if the only suitable instrument approach at that airport is a GPS approach.

(b) A procedure shall be established for flightcrew (and dispatcher, if applicable) to determine, prior to departure and in-flight, that any required TLS approaches will be available at the destination airport. The above procedures mitigate the necessity for NOTAMs in regard to TLS operations.

(c) If a TLS operation is contemplated at the destination airport, the dispatcher shall ensure contact with the RCU operator prior to takeoff from the originating airport and coordinate the tentative arrival time and ten minutes prior in order to ensure the presence of the RCU operator upon arrival of the flight at the respective initial approach fix. This is a critical factor in the operation in order to ensure the proper level of availability of the TLS operation. Lack of availability of the RCU operator at the destination airport on a repeated basis constitutes grounds for removal of approval for the applicant to conduct TLS operations. This shall be monitored by the appropriate POI and specifically noted on a monthly basis for the first year of operation. Afterwards, it shall be monitored on an annual basis.

(4) Obstacle and Airport Data. If the runway is not currently served by an instrument approach, the operator may also be required to provide charts, airport layout plans, and

environmental impact assessment, and other data required to perform obstruction clearance studies and formulate the IAP. If TLS is to be used, the airport shall be designated a 14 CFR part 139 airport and meet the necessary runway markings and precision approach obstruction clearances.

b. Part 121, 125, 129, or 135 Operators.

(1) To obtain approval, each operator shall demonstrate its ability to conduct the type(s) of TLS operations requested. All evaluations and approvals shall be accomplished IAW this order. These operators should apply to the CHDO for original issuance or amendment to specifications authorizing TLS Category I operations, as applicable.

(2) The Automated Operations Specifications Subsystem (OPSS) and checklist do not facilitate including TLS Category I instrument approach operations in OpSpecs paragraphs C052 for aircraft and H102 for rotorcraft. A new non-standard paragraph, as appropriate, shall be added. Paragraphs C064e for aircraft and H114e for rotorcraft shall also be amended to include the specific special IAPs that are authorized to be conducted using TLS. Until the OPSS and checklist are changed to specifically address TLS operations, the following subparagraphs (a) and (b) shall be added as subparagraph C052-1 or subparagraph H102-1, as applicable:

(a) The operator is authorized to conduct, IAW the authorizations, provisions, and limitations in these OpSpecs, the following additional instrument approach operations. The certificate holder shall not conduct any other TLS instrument approach operations under these OpSpecs.

(b) The certificate holder is authorized to conduct TLS Category I instrument approach operations.

c. Approval.

(1) The approval and any necessary limitations, conditions, and procedures are specified in an OpSpec paragraph issued to the operator, as appropriate. TLS instrument approach operations are limited to those airports and runways contained in the OpSpec paragraph, as appropriate. Processing and final approval of TLS Category I special IAPs shall be coordinated with AFS-400 IAW this order and FAA Order 8200.1. Upon determining that the applicant meets the requirements of this order, and with the concurrence of AFS-400 and the regional Flight Standards division, the CHDO or FSDO is authorized to issue OpSpecs:

(2) OpSpecs can be issued to part 121, 125, 129, or 135 operators. The OpSpecs approval shall be issued IAW FAA Order 8400.10, volume IV, chapter 2, sections 1 through 4; and Order 8410.1, Designated Air Carrier Airman Examiner Handbook, chapter 4 and chapter 8, paragraph 190.

7-2. – 7-10. RESERVED.

CHAPTER 8. AERONAUTICAL INFORMATION

8-1. AERONAUTICAL INFORMATION. NOTAMs are not provided for special IAPs. Chapter 7 requires that a procedure shall be established for flightcrew (and dispatcher, if applicable) to determine, before departure and in-flight, if any required TLS approaches will be available at the destination airport and the degree of prior coordination with the RCU operator.

- General information about TLS operations may be provided in the Aeronautical Information Manual (AIM) where appropriate.
- Any contemplated non-normal procedures, limitations, or cautions regarding TLS operations will be dealt with by OpSpecs that will be issued to the applicant.

8-2. – 8-10. RESERVED.

APPENDIX 1. LIST OF ACRONYMS

The following is a list of the acronyms related to the Transponder Landing System contained in this order.

14 CFR	Title 14 of the Code of Federal Regulations
49 U.S.C.	Title 49 of the United States Code
AAF	Airway Facilities Service
AC	Advisory Circular
AFS	Flight Standards Service
AIM	Aeronautical Information Manual
AIP	Aeronautical Information Publication
AOA	Angle of Arrival
ASR	Office of Spectrum Policy and Management
ATC	Air Traffic Control
ATCBI	Air Traffic Control Beacon Interrogator System
AVN	Aviation Systems Standards
AVR	Associate Administrator for Regulation and Certification
AWO	All Weather Operations
BIT	Built-in-Test
CHDO	Certificate-Holding District Office
DA(H)	Decision Altitude/Height
DME	Distance Measuring Equipment
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FAR	Federal Aviation Regulations
FCC	Federal Communications Commission
FMS	Flight Management System
FPO	Flight Procedures Office
FSDO	Flight Standards District Office
GPS	Global Positioning System
GS	Glide Slope
IAF	Initial Approach Fix
IAP	Instrument Approach Procedures
IAW	In Accordance With
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
MLS	Microwave Landing System
MOA	Memorandum of Agreement
NAPT	National Airspace Procedures Team
NAS	National Airspace System
NOTAM	Notice to Airmen
OMM	Operations and Maintenance Manual
OpSpecs	Operations Specifications

OSA	Operational Safety Assessment
OSED	Operational Services and Environment Definition
PAI	Principal Avionics Inspector
PANS-OPS	Procedures for Air Navigation Services Air Operations
PF	Pilot Flying
PNF	Pilot Not Flying
POI	Principal Operations Inspector
RAPT	Regional Airspace Procedures Team
RCU	Remote Control Unit
RNAV	Area Navigation
RTCA	industry forum that develops standards (formerly was Radio Technical Corporation of America)
SFAR	Special Federal Aviation Regulation
TERPS	Terminal Instrument Procedures
TLS	Transponder Landing System
TOA	Time of Arrival
UHF	Ultra High Frequency
USSFIM	United States Standard Flight Inspection Manual
VHF	Very High Frequency
VOR	VHF Omni-directional Range (a radio navigation NAVAID)

APPENDIX 2. MINIMUM OPERATIONS AND MAINTENANCE MANUAL FOR TRANSPONDER LANDING SYSTEM FACILITIES OUTSIDE THE UNITED STATES

1. PURPOSE. This appendix describes the minimum contents of the Operations and Maintenance Manual (OMM) for TLS facilities outside the United States.

2. BACKGROUND. An acceptable operations and maintenance program, documented in an OMM, shall be provided for the special use TLS facility installed outside the United States.

3. MANUAL CONTENTS. The OMM shall include the following as a minimum:

a. Theory and Principles of Operation. The manual shall present a concise overview of system operation, including hardware interfaces, component functions, monitoring, and maintenance philosophy.

b. Technical Performance Parameters. The manual shall provide a complete list of all technical performance parameters for each system function and/or components. Each of the parameters listed shall show a nominal value and acceptable range that has been established by the manufacturer and accepted during commissioning. In addition, those performance parameters that are crucial to system performance shall be identified as, "Key Performance Parameters."

c. Certification Requirements. The manual shall identify all system performance parameters that are to be routinely evaluated to ensure proper operation of the system. It shall also state the intervals for system and facility evaluation.

d. Facility Operation. The manual shall provide procedures for the satisfactory operation of the facility. These operating procedures shall include necessary guidelines for normal and abnormal operations.

e. Periodic Maintenance Requirements. The manual shall list all required periodic maintenance activities and their scheduled intervals. Each periodic maintenance activity shall describe the procedure for performing that maintenance task.

f. Maintenance Procedures. The manual shall provide a detailed description (i.e., procedures) of all contemplated maintenance tasks, including all the periodic maintenance activities identified in the Periodic Maintenance Requirements paragraph above. A listing of all necessary test equipment and associated calibration requirements for each shall be provided in the manual. Also, the accept/reject criteria shall be provided for each procedure.

g. Personnel and Facilities. The manual shall identify contract maintenance facilities if maintenance is to be performed off-site. The manual shall also list the authorized, qualified, certificated, and/or licensed personnel to be used in the maintenance and return to service of the

TLS facility. Training and certificates and/or authorizations held should be included for each authorized individual.

h. Return to Service. The manual shall provide procedures for returning the facility to service. These procedures shall include quality assurance and inspection tasks associated with accepting new equipment, as well as returning repaired equipment to service.

i. Records. All activities relating to the TLS installation shall be recorded. The manual shall provide the procedures and describe the documents to be used for recording all activities, including all site visits, all periodic and corrective maintenance, all equipment failures, all observed technical performance parameters, and all facility certifications. Such records will contain the legal written record of facility operation and shall be maintained on site for a minimum of two years. The records shall be maintained for longer periods if required by other regulations or laws of the foreign country.

j. Documentation Control. To ensure currency and availability, the manual shall specify the procedures for controlling all documents, specifications, technical data (including software), and other essential information used in the operation of the TLS facility.

APPENDIX 3. REMOTE CONTROL UNIT (RCU) OPERATOR DUTIES

1. PURPOSE. This appendix provides a guide for specifying the minimum duties expected of the RCU operator. An applicant may choose to add to this list in order to ensure that the Transponder Landing System (TLS) is available and adequately monitored when required.

2. DUTIES.

- a.** The RCU operator, upon request, shall inform the pilot of availability of the TLS.
- b.** The RCU operator, upon pilot notification, shall enter the aircraft's transponder code into RCU and activate the TLS.
- c.** The RCU operator has no responsibility to verify or question the pilot's qualifications or authorization to fly a TLS approach.
- d.** The RCU operator shall not terminate the TLS service once the aircraft has acquired the signal and the system is "tracking" the aircraft.
- e.** From the time that the pilot contacts the RCU Operator and throughout the approach to landing or commencement of missed approach procedures, the RCU operator shall have no other duties not directly related to the TLS operation in progress. The RCU operator shall remain at the Remote Control Unit until TLS operations are concluded.
- f.** The RCU Operator shall confirm TLS acquisition and guidance with the pilot and verify the transponder code.
- g.** The RCU Operator shall inform the pilot of any change in status that would render the system unavailable while the TLS is attempting to acquire the aircraft.
- h.** The RCU operator shall inform the pilot if the TLS fails to acquire the aircraft, if more than 60 seconds transpire from the time that the attempt to acquire was made and the system shows a continued attempt to "search" and the pilot should acknowledge the message. The pilot cannot be left to fly on waiting for the signal to come up. For example, the pilot may be on a vector to intercept having been vectored by Air Traffic Control.
- i.** The RCU operator shall inform the pilot if the TLS system goes into a "Standby" mode after the aircraft has been "acquired," and is being "tracked" as may be the case, if the aircraft flies out of coverage of the GS, but is still within the coverage of the localizer when flying outbound in holding at the initial approach fix. This is because the TLS will not automatically "re-acquire" nor reset itself and the pilot must then decide what to do.
- j.** The RCU operator shall inform the TLS ground equipment owner and/or air carrier of any TLS alarm and alert conditions in accordance with locally established procedures, so that agreed upon notifications may be completed. The RCU operator shall then complete records to assist

maintenance actions as required. Any alerts, termination, failure to acquire or equipment malfunction should be entered into the record for later diagnostic action.

k. The RCU operator may, upon coordination with the flightcrew, be required to standby after takeoff in order to activate the TLS system should the flight have to return and land at the airport when under instrument weather conditions should the circumstances dictate.

APPENDIX 4. EXAMPLE PHRASEOLOGY

1. PURPOSE. Since the duties of the Remote Control Unit (RCU) operator are part of a non-federal and non-standard installation with no precedence in the U.S. National Airspace System, it is recommended that a standard phraseology be applied to each Transponder Landing System (TLS) that is commissioned for special use Instrument Flight Rules (IFR) operations. The following is an example of such phraseology, but may be modified as necessary and appropriate for the specific applicant.

2. STANDARD SCENARIO. Upon arrival at the airport area by the applicant's aircraft, the initial contact with the RCU operator should request the status of the TLS facility giving the call sign of the aircraft, the destination airport TLS base call sign and state the intentions of the aircraft upon arrival at the airport.

When established or turning inbound to the TLS station, in order to minimize TLS dropping acquisition from flying out of service volume coverage, the aircraft will call to request 'acquisition' (i.e., the aircraft should not call for acquisition when flying outbound from the TLS station. Flying out of GS coverage after the aircraft has been acquired will cause the TLS to revert to "Standby" and the system does not automatically re-acquire.)

Aircraft: "Smalltown TLS base , this is Northcap 455 commencing TLS approach to runway 7. Our transponder code is 1234."

RCU: "Roger, Northcap 455, this is Smalltown TLS base. TLS to runway 7 at Smalltown, squawking 1234."

(at this time the RCU operator will put the transponder code into the TLS system and activate the acquisition process.)

"Northcap 455 this is Smalltown TLS base. I have initiated acquisition of TLS to runway 7."

Aircraft: "Roger, Smalltown TLS base, TLS to runway 7, call when acquired."

RCU: "Northcap 455, I am "tracking" you on Smalltown TLS for runway 7 approach."

Aircraft: "Roger, Smalltown TLS base, Northcap 455 for TLS to runway 7."

(The RCU operator should continue to monitor the communications frequency throughout the approach until the aircraft calls and reports on the ground or discontinues the approach.)

Aircraft: Smalltown TLS base, Northcap 455 is on the ground."

RCU: "Roger, Smalltown TLS base out."

3. TERMINATION PROCEDURE.

Aircraft: "Smalltown TLS base, Northcap 455 has not (cannot) acquire the TLS."

RCU: "Roger Northcap 455, do you want me to reset?"

(upon receiving a negative answer)

"Roger, Smalltown TLS base."

Aircraft should then proceed with a missed approach and coordinate with ATC.

APPENDIX 5. SPECIAL INSTRUMENT PROCEDURE PROCESSING CHECKLIST

The following issues should be addressed when applying for a TLS special instrument approach procedure and should be a part of the application package:

- 1. OBSTACLE EVALUATION (OE) STUDY PLAN.** A plan is on file to accomplish the obstacle evaluation normally afforded FAA-developed instrument procedures.
- 2. NOTAM PLAN.** Normally for a navaid, a plan is on file to notify all operators of items covered by the FAA Notices to Airman (NOTAM) system. However, for TLS no plan is called for. The need for NOTAM notification is mitigated by the contact made during dispatch coordination for air carriers.
- 3. PROCEDURE MAINTENANCE.** A plan is on file for the periodic review and amendment, if necessary, as required by FAA Order 8260.19, Flight Procedures and Airspace.
- 4. ENVIRONMENTAL STUDY.** All environmental actions necessary for the processing of this procedure have been satisfied.
- 5. FLIGHT INSPECTION.** This procedure has passed flight inspection and the appropriate procedure form is annotated with a certifying signature.
- 6. LOCAL ASSOCIATION COORDINATION.** This procedure has been coordinated with the local flight association, if any.
- 7. AIRPORT MANAGER.** This procedure has been coordinated with the airport manager.

The applicant is responsible for completing this checklist and ensuring that Air Traffic Services is contacted by the Regional Airspace Procedures Team (RAPT) to develop necessary operational procedures and radar video maps, if necessary.

The earlier this checklist is addressed the better is the chance for success of the process.

