ORDER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

7031.4C

8/4/75

SUBJ: AIRWAY PLANNING STANDARD NUMBER FOUR - LEASED AIR TRAFFIC CONTROL COMMUNICATIONS SERVICES

1. PURPOSE. This order provides criteria for establishing and discontinuing leased communications services, establishes orderly and adequate methods of maintaining records of leased services and establishes periodical revalidation of the requirements for leased services.

2. DISTRIBUTION. This order is distributed to Air Traffic Service, Airway Facilities Service, Office of Aviation System Plans down to branch level in Washington; air traffic and airway facilities divisions down to branch level in regions and AAT and AAF branch level in areas; branch level at National Aviation Facilities Experimental Center and the Aeronautical Center, and all air traffic and airway facilities field offices.

3. CANCELLATIONS. Order 7031.4B, Airway Planning Standard Number Four - Leased Air Traffic Control Communications Services, is canceled.

4. GENERAL.

   a. The Federal Aviation Act of 1958 empowers the Administrator to regulate the use of navigable airspace in the interest of safety of aircraft and efficient use of such airspace. To discharge this responsibility, the FAA provides air navigation facilities, communications, radar and other components of the National Airspace System. This order contains criteria governing the provision of leased landline communications services used directly by personnel in the conduct of the FAA mission.

   b. Since 1951, the FAA and its predecessor organizations have used the establishment criteria published in the Airway Planning Standards as the primary means of allocating air navigation facilities and air traffic control services. The result has been an orderly distribution of services at locations where they benefit the greatest number of users for the least expenditure of resources, consistent with safety and operational efficiency.

   c. The existing National Airspace System satisfies essentially all of the current needs of the Air Traffic Service. The criteria in this order are oriented to adjustments as indicated by modernization, growth or reductions in air traffic control activity. Due to the nature of the air traffic control system, facilities must be interconnected as required by at least one circuit for rapid transmission

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of air traffic messages. The criteria for additional circuits must therefore be directly related to use and cost of the service. Many situations will require individual evaluation to determine if the need justifies the cost.

5. OBJECTIVES.

a. To provide usable criteria to guide regional offices in the provision and discontinuance of leased communications services.

b. To establish orderly and adequate methods of maintaining records of leased services.

c. To establish procedures for the periodic revalidation of the requirements for leased services.

6. SCOPE.

a. The scope of this order is generally limited to those communications circuits used directly by air traffic control personnel for the transmission of control instructions, flight activity messages, pilot briefing and flight plan service.

b. This order does not provide guidelines for circuits used for the control or monitoring of air navigation aids, remote center air/ground circuits, data circuits, facsimile circuits, radar transmission circuits, or teletypewriter circuits with the exception of flight plan collection circuits.

c. This order does not authorize funds for leasing circuits; it describes the conditions and criteria under which circuits may be established after funds have been appropriated and made available.

d. This order does not require the installation of circuits because criteria have been met. Other factors, such as funding, relative priority, etc., must be taken into account prior to placement of orders.

7. ABBREVIATIONS. The following abbreviations are used herein.

FAA	Federal Aviation Administration
USN	United States Navy
USAF	United States Air Force
ATC	Air Traffic Control
ARTCC	Air Route Traffic Control Center
FSS	Flight Service Station
TRACON	Terminal Radar Approach Control Facility (FAA)
RAPCON	Radar Approach Control (USAF)
RATCF	Radar Air Traffic Control Facility

	BASOPS	Base Operations Office
	FAS	Flight Assistance Service
	IFR	Instrument Flight Rules
	CSA	Communications Service Authorization
*	WATS	Wide Area Telephone Service *

8. RESPONSIBILITIES. In the general planning and administration of leased services, various offices have responsibilities as follows:

a. AT Facility Chiefs should remain cognizant of circuit arrangements and loadings. They initiate budget items as directed, including justifications based on the criteria in this order. When appropriate, they submit to the regional office the details needed for the preparation of orders to telephone companies.

(1) They keep regional offices advised of the progress of major modifications, especially changes in proposed service start dates. They are not authorized to make any change in orders received by telephone companies.

(2) They are responsible for notification of regional offices of the completion of orders by telephone companies, with certification that installations were made exactly as ordered (or otherwise) and are operating satisfactorily.

* b. The Chief, Regional Air Traffic Division, is responsible for the review and approval of all recommendations submitted by the Facility Chiefs. After approval, information shall be submitted to the Chief, Regional Airway Facilities Division, for implementation.

c. The Chief, Regional Airway Facilities Division, is responsible for implementation of the leased service program, maintenance of records of expended funds, and preparation of the annual circuit directory.

9. POLICY. The FAA shall provide leased communications services when justified by safety considerations and operational requirements in accordance with the following policy: *

a. Cost/Benefit. Inasmuch as the FAA must provide leased communications services within defined budgetary limitations, services shall be allocated in such a manner as to obtain maximum operational effectiveness from the funds expended. This cost/benefit philosophy will apply primarily to additional services after the minimum operational
* requirements have been satisfied. *

b. Establishment of Service. Air traffic control and other Government facilities qualify for the establishment of leased services when:

(1) The criteria specified herein are met for the most recent fiscal year, calendar year or other twelve-month period, (if the moving average count is used, each month the base period is changed by adding the data from the most recent month and discarding the data from the earliest month) or,

(2) The Regional Director concurs with the recommendation of the Chief, Regional Air Traffic Division, that a valid operational requirement exists for which no guidance is given herein. The region's judgment will be final in such cases, but the Director, Air Traffic Service should be advised of the circumstances so that criteria may be established or revised as appropriate.

(3) Service shall not be provided when there is reason to expect that the retention criteria will not be met.

c. Discontinuance. A communications service shall be discontinued when:

(1) The type of activity for which it was established is discontinued,

(2) The activity level falls below the criteria specified herein, or

(3) Revalidation reviews show the service is no longer required.

PAYMENT FOR SERVICES. The FAA Act of 1958 charges the FAA with the responsibility for providing the air traffic control system, which includes essential communications services. The Federal Air Regulations require aircraft operations to file instrument flight plan approval requests with the FAA, implying the responsibility on the part of the operator to assume costs involved. From this basic guidance, the following policies have evolved to determine responsibilities for payment of leased services:

a. The FAA will pay costs of the basic system as determined by the FAA to be essential for interconnection of FAA air traffic facilities.

b. The FAA will pay the costs of extensions of the basic system to military and civil airport traffic control towers and to military base operations offices and other government offices as required to carry out the FAA safety mission.

c. When military activities require circuits primarily for use in their missions, but not essential for air traffic control, such circuits may be leased by the military agency and terminated in FAA switching systems as considered desirable by the appropriate regional office.

d. Military offices, air carriers and general aviation operators, with whom the FAA does not consider communications as essential to the FAA mission, may procure, at their expense, receive-only or send-receive extension service on certain FAA circuits, in order to receive

information not available by other means. Generally, the information required is obtained by monitoring a circuit with a loudspeaker, but direct two-way communications with FAA offices may be used when necessary. This extension service is obtained by application to the serving telephone company after receiving FAA regional office approval. Such approval will not obligate the FAA to maintain special circuit configurations in order not to increase costs to extension service users. The extension service users must also agree to utilize communications circuits only for essential contacts with FAA offices and not for "company business." Loudspeakers on extension services shall not be installed where they can be heard by the general public. It is the prerogative and responsibility of the FAA to refuse extension service which would derogate air traffic control.

e. The FAA will provide its field facilities with local exchange telephone service adequate for communications with locally based aircraft operators and other administrative requirements.

(1) Dependent upon activity levels, separate telephone services may be supplied to the administrative and operational sections of a field facility.

(2) The establishment of airport PBX or interoffice communications systems will be encouraged. The FAA will provide its field facilities with stations on such systems.

(3) Air carrier and fixed base aircraft operators may desire to lease discrete circuits to centers and towers. These will require specific approval of the regional office. They will be approved only if no PBX or airport interoffice communications system is available, and then only if the proposed use of the circuit will not interfere with air traffic control. They will normally be terminated in a single non-FAA leased instrument. They may be terminated in FAA leased switching systems at the assistant chief or flight data/assistant positions if unused circuit pickup buttons are available. However, such position key equipment shall not be augmented to provide FAA leased circuit terminations until all non-FAA terminations have been removed.

f. Fire and crash alarm circuits are considered to be part of the airport alarm system and shall be provided by the airport management or fire department. They should be terminated in a desk instrument, preferably red, in the FAA tower cab, but may be terminated in key systems at the discretion of the regional office. If so terminated as alarm circuits, manual ringing or special key locks shall be provided to prevent inadvertent alarms. Key terminations must also be arranged so that a switching system failure will not affect the circuit capability.

g. The FAA will provide discrete purpose leased circuits, foreign exchange or other special service for Flight Assistance Service in accordance with criteria herein. All such services must be arranged so as to be available to the public at all times.

h. With the approval of the regional office, general aviation fixed base operators may obtain flight assistance service by leasing discrete circuits to flight service stations.

11. CRITERIA.

a. Radar Handoff Circuits. These are discrete two-point circuits, using voice signaling. They are sometimes described as "hot lines." One circuit may be provided between each radar control position in a facility and a counterpart radar control position in another facility controlling traffic in contiguous airspace. If two or more radar positions feed a single position in another facility, only one circuit is permissible.

b. Inter-center Dial Circuits. These circuits are terminated in the primary common answering (PCA) feature of each center switching system to provide full selective signaling to supervisory, manual, and assistant control positions. They are used primarily for the exchange of advanced flight information. These circuits shall be type 7 unless other type circuits are operationally more advantageous. Where the type 7 circuits are feasible, all other type circuits in use should be converted to a type 7 circuit/s.

(1) Criteria for type 7 circuits concerning ARTCCs with computer-to-computer capability have not as yet been fully developed. Based on each center's current inventory of inter-center dial circuits plus their computer-to-computer capability all centers are considered to have an adequate number of circuits to meet all foreseeable needs. Therefore, until the criteria is developed, any requests for additional inter-center dial circuits shall be fully justified. Such requests shall be submitted to AAT-100 for approval.

(2) Centers not having automatic flight data processing capability are authorized one circuit between adjacent centers. Additional circuits are authorized on an individual basis where specific justification so dictates. Approval for additional circuits will be granted only by Washington Headquarters.

c. Center Intra-area Circuits. These are circuits which connect a center with one or more other facilities within its control area. Dependent upon the facility activity, discrete circuits or drops or multipoint circuits may be provided, or both. However, no more than one multi-point circuit drop is normally authorized for a facility in order to minimize costs. To reduce the noise from a loudspeaker on a busy

multipoint circuit, two-way selective dialing (SS-1) may be ordered subject to review and approval of the regional air traffic division. Criteria governing the establishment or discontinuance of center intra-area circuits are set forth below:

FSS/BASOPS - Normally one multipoint circuit drop.

Tower (Level IV) - Authorized one discrete circuit between each position and a counterpart position in the center controlling traffic in contiguous airspace. If two or more positions feed a single position in another facility only one discrete circuit is permissible.

Tower (Level III)- One discrete and/or multipoint circuit between the terminal, TRACON, RAPCON, RATCF, and the center.

Tower (Level II and below) - One multipoint circuit drop. Where coordination between an ARTCC controller and nonradar approach controller (or local controller in a nonapproach control tower) requires "hot-line" capability to minimize delays to aircraft, a discrete type 9 circuit may be provided.

RAPCON, RATCF - Same as Level III.

d. Tower En Route Control Circuits. These are circuits provided between two or more terminal control facilities for the conduct of tower en route control.

(1) Center intra-area circuits shall not be used for this function except as a temporary expedient.

(2) A discrete circuit may be provided between two or more terminal control facilities exercising tower en route control. The discrete circuit to be used shall be a voice-call circuit (type 9) or a ring-down circuit (type 3).

e. Circuits to Satellite Towers. These are circuits provided between TRACONs, RAPCONs, RATCF, and satellite towers under their jurisdiction.

(1) When radar coverage below initial approach altitude is not available at a satellite tower a ring-down circuit (type 3) only may be provided.

(2) A discrete voice-call circuit (type 9) may be provided when radar coverage below initial approach altitude is available at the satellite airport.

(3) Where existing key systems provide the capability, remote

override circuits may be provided when IFR approaches to satellite airports under the jurisdiction of one radar controller exceeds 20 during the peak hour of the busy day. When there is a requirement for remote override between the local control position in the satellite tower and more than one position in the TRACON, a remote multiple override circuit should be considered on a cost/benefit basis.

NOTE: This is an optional feature and its function is described in FAA Specification FAA-S-2206a, February 14, 1972, for the Telco type 301A switching system. There are locations where individual remote override circuits are installed between the local control position in the satellite tower and several positions in the TRACON. These circuits shall be considered for replacement with one remote multiple override circuit if a cost/benefit can be realized.

f. Tower Coordination Circuits. Airport traffic control towers require communications with certain adjacent towers and with one flight service station for the handling of flight information.

(1) An intertower coordination circuit may be provided between towers, one of which must be FAA operated, where regular coordination is required because of conflicting traffic patterns.

(2) Each FAA airport traffic control tower shall be provided with a discrete circuit or drop on a multipoint circuit to the nearest flight service station for handling flight information and other messages. Center intra-area circuits should not be used for this purpose.

(3) Multipoint circuits should be considered for low activity facilities when economically advantageous, for example, one circuit to serve an FSS and two low activity towers.

g. Utility B Data Circuits. These are local circuits for direct entry of IFR flight plans to air route traffic control centers (ARTCCs). Two circuits may be terminated in the center. Military and civil aircraft operations/dispatch offices are authorized use of these circuits. The FAA will provide or pay the costs of terminal equipments and leased circuits to government facilities. Extension service for nongovernment users and terminal equipment in their offices will be provided by the user. All circuit arrangements are the responsibility of the Chief, Regional Air Traffic Division through coordination with AAT-140.

Category I. These send/receive circuits provide means for acknowledgement of receipt of the flight plan by the ARTCC.

Category II. These receive-only circuits do not provide means

* for acknowledgement of receipt of the flight plan by the ARTCC.

h. Flight Assistance Service (FAS) Circuits. FAS is available to pilots by personal visit to the FSS and by local exchange telephone from within the local dialing area. Additional communications facilities are available as follows:

(1) With the specific approval of the Chief, Regional Air Traffic Division, in each case, general aviation activities may lease private lines to an FSS. Where Automatic Call Allotter equipment is installed, direct lines should be terminated directly into the equipment.

(2) Foreign Exchange (FX) or Zenith/Enterprise telephone service, whichever is most practical and economical, may be provided by the FAA to a community with an airport that has at least-- 1) 30 active based aircraft, 2) airports in the same telephone exchange area that collectively have at least 30 active based aircraft. Service shall be discontinued when the number of active based aircraft falls below 25.

(3) Additional FAS lines may be provided when the total number of incoming calls on existing lines exceeds 9,000 per line over the latest six consecutive months. Lines shall be discontinued when the number falls below 7,200 for the latest six-month period.

(4) Temporary service of the most suitable type may be provided for short-term high activity conditions at the discretion of the Chief, Regional Air Traffic Division.

(5) When a community does not meet the minimum criteria, and there is a requirement for FAS, the Chief, Regional Air Traffic Division, may authorize leased services support taking into consideration the operational impact on the facility and budgetary limitations.

(6) When the cost of the incoming calls equals or exceeds the cost of an FX line, Zenith/Enterprise service should be converted to an FX line. When incoming calls on an FX line decline to the point where Zenith/Enterprise would be more economical, the line should be changed to Zenith/Enterprise service.

(7) At certain locations, such as resort areas that have high seasonal activity, Zenith/Enterprise service may be more economical over a 12-month period than an FX line.

(8) For certain geographical flight service areas, Wide Area Telephone Service (WATS) may be more practical and economical than existing combinations of Zenith/Enterprise, FX, and direct *

lines. Such lines may be discontinued and replaced with inward Intrastate WATS and/or inward Interstate WATS, if operationally feasible.

i. Special Use Circuits. Circuits as required for operation of En Route Flight Advisory Service, the ATC Systems Command Center, the Military Automatic Voice and Automatic Digital Networks (AUTOVON and AUTODIN) are designed to fulfill unique requirements and will be provided subject to review and approval of the Director, Air Traffic Service.

j. Miscellaneous Circuit Requirements. No national standards have been established for miscellaneous local circuits such as electrowriter, automatic weather briefing, closed circuit television, etc. Installation and retention shall be in accordance with guidance issued by Washington or regional offices involved. New type circuit requirements should be brought to the attention of the Washington Office (AAT-100) so that criteria may be included in revisions of this order. *

12. INTERNATIONAL CIRCUITS. These circuits are designed in accordance with stated and agreed upon requirements and are included in the Regional Communications Plans of the International Civil Aviation Organization (ICAO). They are provided by negotiation between the countries involved.

a. Circuits to Canada and Mexico. These circuits are provided generally in accordance with policy for domestic circuits, as modified by unique requirements and agreements. Each country provides that portion of the circuitry within its boundaries, with the boundary crossover point being the most appropriate point for the type of facilities involved. *

b. Overseas International Circuits. These circuits are established following negotiations with countries involved. As a general rule, each country pays an equal share of the circuit costs. Because of the comparatively high costs of international circuits, their use is often shared by ARTCCs and IFSSs.

c. Overseas circuits to Hawaii, Alaska, Puerto Rico, Canal Zone, etc., are planned and provided at FAA cost to fulfill unique requirements, not covered by specific criteria.

13. CIRCUIT RECORDS AND DIRECTORIES. Each regional office (Airway Facilities Division) shall maintain current records of circuits under its jurisdiction. A circuit directory shall be published annually and updated. Three copies shall be forwarded to the Air Traffic and Airway Facilities Service (RIS: AT 7031-3). The format of the directories shall be at the discretion of the regional office but shall contain information as follows:

a. Required Information.

(1) Name of each air traffic field facility, with type of interphone

switching system and number of positions.

(2) Circuit number of each circuit terminated in system.

(3) Identity or name of each facility or office served by each circuit.

(4) Indicate who funds for the circuit, e.g., FAA, USAF, etc.

(5) Intercircuit switching arrangements, if any.

(6) Type of signaling used on circuits.

(7) Any radio control, teletypewriter, facsimile or other circuits under the jurisdiction of the region.

(8) Listing of circuits in numerical order for cross-reference purposes.

(9) Any information desired by the region for the administration of leased services.

14. REVALIDATION OF CIRCUIT REQUIREMENTS. Circuit revalidation shall be accomplished during the first three months of each calendar year. *

a. ARTCCs shall revalidate the requirement for all FAA leased circuits terminated in their interphone switching systems. Recommendations for economy and improvement should be submitted to the Chief, Air Traffic Division of the region involved.

b. Inter-center Circuits shall be revalidated by both ARTCCs concerned. Revalidation should be on the basis of quantities of each type circuit, rather than individual circuits.

c. Terminal control facilities shall revalidate all circuits terminated in the interphone switching system, except those also terminated in ARTCCs.

d. FSSs shall revalidate all circuits terminated in the station switching system, except those which also serve ARTCCs and terminal control facilities.

e. The Washington Offices involved will revalidate special circuit requirements.

f. Miscellaneous circuits will be revalidated as directed by regional offices.

g. Revalidation Report (RIS: AT 7031-4). At the completion of the revalidation process, a report shall be submitted by the Chief,

Regional Air Traffic Division, to the Director, Air Traffic Service, certifying that circuits have been examined and revalidated. The report should be in narrative form covering the results of the revalidation process. This report should be forwarded on or before October 15.

APR

for James E. Dow
Acting Administrator