ORDER DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6030.44

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SUBJ: IMPLEMENTATION OF AIRWAY FACILITIES VHF/UHF FM RADIO COMMUNICATIONS SYSTEM

1. PURPOSE. This order delineates responsibilities, provides system design guidelines, and implementation philosophy for Airway Facilities very-high frequency/ultra-high frequency (vhf/uhf) frequency modulation (fm) maintenance radio communications systems.

2. DISTRIBUTION. This order is distributed to division level in Washington headquarters, except to branch level in the Airway Facilities Service, to section level in the regional Airway Facilities divisions; to branch level in the regional Airports, Air Traffic, Flight Standards, and Logistics divisions; to section level in the Airway Engineering Support Division, FAA Academy, and FAA Depot at the Aeronautical Center; to division level at the National Aviation Facilities Experimental Center; to all Airports district offices, flight inspection district offices, field offices, and groups, Flight Standards district offices; and Airway Facilities and Air Traffic field offices.

3. BACKGROUND. The latest edition of Order 6030.37 authorizes the installation and use of vhf/uhf fm radio communications equipment as an alternative when other radio communications equipment will not provide satisfactory service. Due to the varied operational features and implementation concepts associated with vhf/uhf fm equipment it is necessary to define the performance and operational characteristics of equipment required to support Airway Facilities activities. In addition, such definition will provide the basis for needed flexibility of operation and system expansion where required.

4. GENERAL. VHF/UHF fm radio communications capability will be provided to meet day-to-day operational requirements such as dispatching and redirection of Airway Facilities personnel, support periodic and corrective maintenance activities and emergency situations including the emergency operations facilities (eof) network. VHF/UHF fm radio communications equipment design operational use and frequency selections shall comply with applicable laws, regulations, and policy. Systems may consist of base stations, mobile units, stationary and portable repeaters, handheld units, tone selective calling devices and telephone interconnect devices as described in appendix 1, System Design Guidelines.

5. RESPONSIBILITIES.

a. Airway Facilities Service.

(1) Establish and provide Airway Facilities maintenance radio communications plans, policies, and guidelines.

Distribution: A-W-2(Minus AF); A-W(AF)-3; A-X(AS/AT/FS/LG)-3; A-Z-2;A-Y(AE/AY/DE)-4; A-FAS-1(Std); A-FAT-0(Std); A-FFS-4/7(Std); A-FAF-0(Max); A-X(AF)-4

Initiated By: AAF-720

(2) Specify, procure and distribute communication equipment within budgetary allocations.

(3) Provide for overall frequency management plans and guidelines.

b. Regional Airway Facilities Divisions.

(1) Develop system requirements in response to the annual budgetary call for estimates or separate solicitation.

(2) Specify, procure and distribute communication equipment within budgetary allocations and guidelines provided in appendix 1 until an item for the national call for estimates is formulated.

(3) Provide regional engineering in support of communications system installation.

(4) Provide assistance as required to field offices for the installation and checkout of equipment.

(5) In coordination with Airway Facilities Service, provide for necessary frequency management requirements.

c. Airway Facilities Sectors.

(1) Install and maintain their communications system with assistance from Airway Facilities divisions when required.

(2) Assist Airway Facilities divisions in establishment of requirements.

(3) Establish local operating procedures to ensure compliance with applicable laws and regulations.

6. IMPLEMENTATION PHILOSOPHY. VHF/UHF fm Airway Facilities maintenance radio communications systems will be implemented in the following order (existing systems should not be realigned to meet the requirements of this Order).

a. Phase I. Installation of a basic coverage system at Airway Facilities maintenance hubs associated with large and medium airport traffic control towers having more than 250,000 total annual aircraft operations and locations susceptible to severe weather or geographical conditions disruptive to maintenance communications.

b. Phase II. Installation of a basic system at Airway Facilities maintenance hubs associated with large and medium sized airport traffic control towers having between 200,000 and 250,000 total annual aircraft operations and expanded systems at towers having more than 200,000 total annual operations.

c. Phase III. Installation of systems as determined by regional Airway Facilities divisions in consideration of Maintenance Philosophy Steering Group Report objectives.

7. MAINTENANCE CONCEPT. Equipment purchased will be of solid-state and modular construction. Spare modules will be obtained to support centralized sector repair facilities. No training, FAA Depot logistics support, specialized test equipment, or direct work staffing authorization will be provided.

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APPENDIX 1. SYSTEM DESIGN GUIDELINES

1. The basic coverage system should be designed to provide 10-30 mile radius coverage around airport traffic control towers; and comprised of:

a. Base Station/Repeater (One Unit)

(1) Channelling - Transmit T_{F2} Receive R_{F1}

(2) Remote Control, Six - 10 units, dc or tone control (regional option)

(3) Selective Call - regional option

(4) Power output, 10-65 watts

(5) Backup dc power

(6) Autopatch/telephone patch (regional option)

(7) Interface with hf sideband radio (future)

b. Mobile (10-20 Units) 1/

(1) Channelling - Channel 1 T_{F1}, R_{F2}

Channel 2 T_{F2}, R_{F2}

Channel 3 (Future)

Channel 4 (Future)

(2) Selective call - regional option

(3) Power output, 10-30 watts

(4) Telephone patch control - (one management vehicle)

c. Handheld (Four to Eight Units) 1/

(1) Channelling - same as mobile

(2) Selective call - same as mobile

(3) Power output, two to six watts

(4) Rechargeable batteries.

1/ NOTE: Equipment where handheld units are integral to mobile units may be substituted where greater flexibility of use and overall economy can be realized.

d. General

(1) Plug-in modular construction

(2) Solid-state design

(3) High gain antennas

(4) Duplexer for base/repeater

(5) Battery charger for handheld units

(6) Spare modules kits

2. The expanded coverage system is designed to provide 30-300 mile radius coverage and is comprised of:

a. Base Station (One Unit)

(1) Channelling - T_{F3}, R_{F4}

(2) Remote control - One unit, dc or tone control (regional option)

(3) Selective call - regional option

(4) Power output - 30-100 watts

(5) Backup dc power

(6) Autopatch/telephone (regional option)

(7) Interface with hf sideband radio (future)

b. Mobile (Three - 10 Units)

(1) Channelling - Channel 1 T_{F1}, R_{F2}
Channel 2 T_{F2}, R_{F2}
Channel 3 T_{F3}, R_{F4}
Channel 4 (Future)

(2) Selective call - regional option

(3) Power output - 10-60 watts

c. Repeater (Zero to Five Units)

(1) Channelling - T_{F4}, R_{F3}

(2) Selective call - regional option

(3) Backup dc power

(4) Power output - 30-100 watts

d. General. See 1.d. above.