

ORDER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6520.2

1/25/74

GUIDELINES FOR PLANNING BACKUP EMERGENCY COMMUNICATIONS SYSTEMS
SUBJ: (BUEC) FOR AIR ROUTE TRAFFIC CONTROL CENTERS (ARTCCs)

1. PURPOSE. This order provides guidelines for planning Backup Emergency Communications Systems (BUEC) for ARTCCs to accomplish appropriate backup capability for en route air-ground communications channels. It also defines Phase I and Phase II of the BUEC system to assist in development of future plans and budget submissions.
2. DISTRIBUTION. The appropriate branches of Airway Facilities and Air Traffic Services in Washington headquarters; Airway Facilities Branches and Air Traffic Divisions and Branches in the regions; also to Airway Facilities and Air Traffic Field Offices.
3. ACTION. The Backup Emergency Communications (BUEC) program as developed will provide reliable backup VHF and UHF communication coverage for all ARTCCs.

The domestic regions have submitted detailed plans for implementation of Phase I. Due to limitations in funding, the program was planned in two phases,

The initial phase (Phase I) was limited to installing transceivers at the ARTCCs and all FAA long range radar locations which are **remoted** via FAA owned RML links to appropriate ARTCCs.

The second phase (Phase II) calls for installation of transceivers at FSSs, VORs and other FAA locations to fill in communication holes not covered by Phase I. Additionally, Phase II envisions **remoting** via voice channels on RML systems or, where RMLs are not available, leased **service**. Plans for the second phase of the BUEC program should be developed by the Air Traffic and Airway Facilities Divisions in conjunction with ARTCCs. The following guidelines are to assist in the development of future BUEC plans.

a. BUEC transceivers may be planned for:

- (1) Long range radar (LRR) or RML sites **remoted** to the ARTCCs via FAA microwave systems or leased **services**.
- (2) FSSs, RTR sites or VORs. Planning for these sites should be based upon provisions of adequate coverage (by analysis of map studies) for single site coverage and include a routing

Distribution: WAT/AF-3; RAT/AF-3, FAT-0;
FAF-0 (minimum); MAF-2/MAT-2

Initiated By: AAT-110

1/25/74

(normally leased circuits) to the **ARTCCs** separate and diversified from the circuitry used for **remoting** the primary communications channels,

- b. **BUEC** transceivers planned at locations listed in **3.a.** above should provide backup communications for a minimum of two sectors.
 - c. Prior to requesting funds and equipment through the F&E budgetary process, the Air Traffic Divisions must submit their proposals to the Air Traffic Service for approval. The proposal should include a map showing existing **BUEC** sites, proposed sites, sectors provided backup coverage and a detailed listing of **RCAG** sites involved in primary communications and the latest data on outages by type, i.e., **FAA** or **Telco**.
4. **BACKGROUND**. In **1967**, due to damage to a telephone cable between one **ARTCC** and the main telephone service center, **22** air-ground channels were lost for 4 hours, This incident caused the agency to develop an emergency backup communications system, The system developed includes a fast response processor, status boards, controller stations and audio transfer panels located at the **ARTCC**, and **tuneable** VHF and UHF transceivers, each with associated control adapters, located at various remote sites. Funds were provided in the **FY 1969** F&E budget to procure this system for **20** domestic centers. Bids received from contractors were in excess of the funds available and a decision was made to procure one-half the equipment required. At that time the plan was to install transceivers (VHF/UHF) at **75 FAA LRRs** and the **20 ARTCCs**, leaving **11 LRRs** out of the original plans. This first phase was labeled Phase **I**. Due to limitation of funds and equipment, the first phase, i.e., to install one VHF and one UHF transceiver at **75 LRRs** and the **20 ARTCCs**, was labeled Phase **1a**. Since the original concept, plans have been modified and the transceiver allotment will be on a ratio of **3-VHF** and **3-UHF** at each location. This phase will be completed by a final procurement of equipment with **FY 1974 F&E** funds. Installation of a complete **BUEC** system at the **Oakland ARTCC** revealed that complete communications coverage from a backup system could not be obtained using only the long range radars **remoted** to the center by **FAA 2-way** microwave links. The experiment at **Oakland** required **3** additional gap filler locations to provide complete area communication coverage, The number of gap filler locations required to provide desired communication backup coverage at the other **19** centers, together with the ratio of VHF and UHF transceivers, will differ with each facility and must be decided on an **individual** basis,



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