

Radio Notes

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

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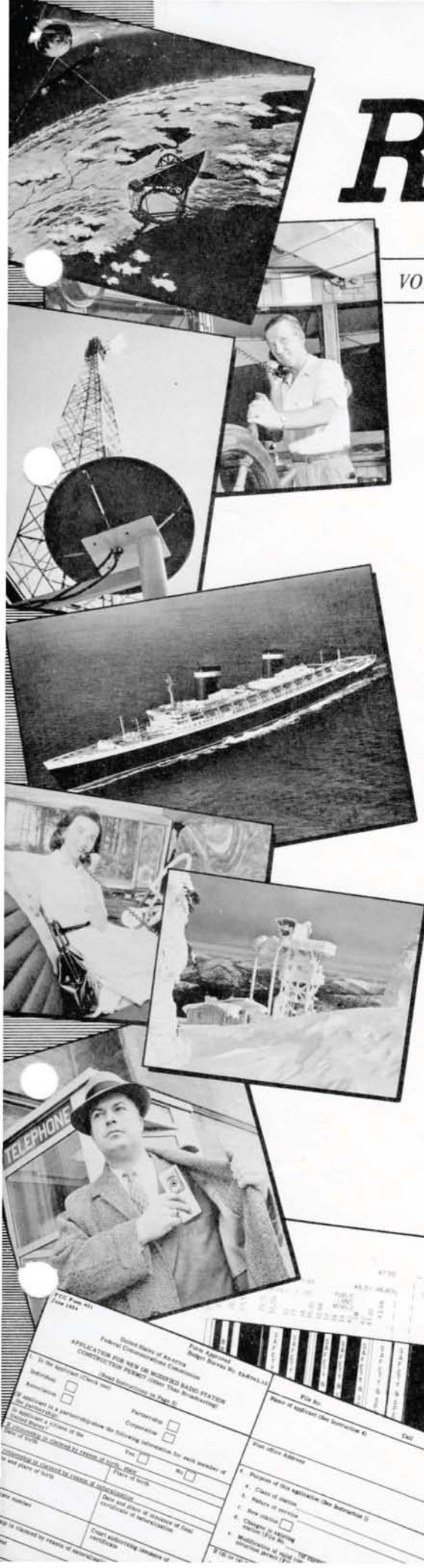
(Editor - Room 1710 - Telephone: EX 3-3926)

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Attached - Allocations Proposed by F.C.C. for Space Communications
in Frequency Bands Above 3.7 Gc/s

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FREQUENCY ALLOCATIONS - 25 TO 890 MEGACYCLES



FREQUENCY ALLOCATIONS FOR SPACE COMMUNICATION SERVICES

On May 17 the FCC adopted its Second Notice of Inquiry into the Allocation of Frequencies for Space Communications, Docket No. 13522. This Notice included a draft statement entitled, "Preliminary Views of the United States of America - Frequency Allocations for Space Radio Communication," which is intended to be used as a basis of discussion with foreign countries.

The portion of the document of most concern to the Bell System is that covering the allocation of frequencies in the region above 3.7 Gc/s. (Gc/s stands for gigacycles per second which is the same as kilomegacycles per second.) A copy of the FCC proposed allocations in this region is attached.

The A.T. & T. Co. filed a response to the Commission Notice on June 21. The principal comments are summarized below.

It was proposed that the definition of "Space Service" be clarified to specifically include communications between points on earth relayed by space stations.

The A.T. & T. position favoring exclusive bands for satellite communications was reaffirmed, but in recognition of an earlier Commission decision in Docket 11866, this matter was not pressed.

It was suggested that the footnotes associated with the bands 3.7-4.2, 5.925-6.425, 7.2-7.65 and 7.9-8.35 Gc/s be revised to permit transmission either from earth-to-satellite or satellite-to-earth rather than designating each of these bands for only one of these functions. The response showed how these frequency bands can be used more effectively if transmission in either direction is permitted.

The suggestion was made that footnotes be added to the bands 3.7-4.2, 5.925-6.425 and 6.425-7.2 Gc/s providing that these bands are available to stations in the space service only for relaying communication between fixed stations on earth and associated operational functions. This suggestion was made to protect the terrestrial microwave services against possible interference which might arise if mobile earth stations are allowed to use these bands.

The Commission was advised that we would be glad to discuss and exchange information regarding some of the technical information concerning space propagation which appeared in the document.

In reference to a statement in the Notice of Inquiry that the Commission is planning a separate rule-making proceeding looking toward the designation of a minimum number of sites for earth terminals of space systems and the establishment of protection criteria to be observed by the sharing services, the A.T. & T. response stated a number of reasons why it believes such action is undesirable and requested that the Commission reconsider the matter.

PROPOSED RULE-MAKING TO PERMIT MOBILE RELAY USE FOR TELEPHONE MAINTENANCE

The FCC has issued proposed rule-making to permit the use of 150 mc "mobile relay" stations (rebroadcast of mobile transmissions by the base station) in the telephone industry's wireline maintenance activities. (The rules already permit "mobile relay" in the 450 mc "telephone maintenance" frequencies.) Comments are due August 11.

In its notice, the Commission pointed out that it feels, from its three years of experience with the service, that "extended range mobile-to-mobile communications are highly desirable to efficient and timely telephone wireline maintenance activities," and that "two-frequency operation of radio systems in this service is an essential requirement to facilitate interconnection with wireline circuits."

According to the Commission, the "basic predicate" for removing the restriction on the use of the frequency 151.985 mc for telephone maintenance service mobile relay operations "is recognition and acknowledgement of the fact that mobile relay is the normal or typical and required method of operation in the service." "The channel in question (151.985 mc) is allocated exclusively to the telephone maintenance service, thus raising no interservice interference or coordination problems and also because exemplary frequency coordinating committees

exist within the service, maintaining a high degree of discipline in usage and selection of frequencies."

A.T. & T. is preparing comments on behalf of the Bell System in support of this proposed rule-making.

3

NEW FAA TOWER REGULATION

Applicants for radio station construction permits or licenses in cases where an antenna tower of 150 ft. or higher, or one near an airport is involved, are required to submit notices to the Federal Aviation Agency 30 days in advance of their filings with the FCC. This ruling became effective July 15, 1961.

This action was announced by the FAA on June 21, following rule-making proposals dating to last September and which have been the subject of controversy between the FAA and the FCC as to which agency holds statutory authority to make the final determination of whether a particular radio tower should be authorized. In view of the widespread effect the new FAA regulation will have on FCC licensing procedures, a last-minute request for reconsideration from the FCC was considered possible, but no action was taken and the regulation went into effect as scheduled.

FAA Administrator N.E. Halaby announced the regulation as being designed to "insure the safety of air navigation and the efficient use of the navigable airspace by establishing rules, procedures and criteria for determining potential hazards to air navigation which might be created by proposed tall structures." He said it is the "first single regulatory document containing rules, procedures and criteria for determining the effects of proposed structures on air navigational safety."

It was pointed out that the new regulation does not apply to structures already in existence by July 15 "except where an alteration to a structure is planned."

4

COASTAL HARBOR STATION WOX EXEMPTED FROM 2182 KC WATCH

New York Company's Public Coast Station

WOX was granted a one-year exemption from the requirement for standing watch on the 2182 kc calling and safety frequency effective May 1, 1961. This action by the Federal Communications Commission follows several months of cooperative investigation by the United States Coast Guard and the New York Company. It has been limited to a twelve-month period so that complete evaluation can be made of this arrangement where all 2182 kc watch-standing is performed at New York by Coast Guard radio stations.

Since July 1954, all Public Class II B coast stations have been required by FCC Rules to be equipped for and to stand continuous watch on 2182 kc. Many Coast Guard radio stations also guard this channel and provide coverage over much of the same coastal waters as the public coast stations. Thus there is a full duplication of this service to maritime users in a certain few areas. Where this is true and 2182 kc is not used for coast station calling purposes, it has been felt that the Coast Guard should be singularly responsible for standing the safety watch. The expected result would be a more economical, efficient and effective overall operation.

With this in mind, and with the concurrence of the Coast Guard, the New York Company requested from the Commission an exemption for their Station WOX. Application was based on the provision of the FCC Rules which says any coast station may be exempted from the watch requirement if the Commission considers the frequency 2182 kc is adequately guarded by other stations. A thorough joint investigation of their respective 2182 kc radio facilities and coverage areas was conducted by the Third Coast Guard District and the New York Company. Field strength measurements and computations were made. As a result, it was established that the Coast Guard stations at New York have coverage on the safety channel equal to or more extensive than Station WOX. To support these technical data, a six-month trial of New York Coast Guard answering all 2182 kc calls further proved the adequacy of their 2182 kc watch.

Under this latest exemption, the WOX 2182 kc channel facilities will remain in plant in operative and available condition. Normally, this station will not listen nor operate on 2182 kc. The New York Company will, however, resume operation and watch-standing should the Coast Guard experience service difficulties with their facilities. Complete procedures have been set up for official Coast Guard notification of the

New York Company when WOX 2182 kc operation is required during a Coast Guard outage. To reactivate the WOX system, the licensed control terminal attendant has two alternative methods of operation depending on duration and other aspects of the emergency. He may either perform all watch-standing duties or reactivate the lamps at the Traffic switchboard so the marine operator may resume the monitoring.

The Coast Guard and the Bell System may be able to consider expanding this arrangement to other locations at some future date. This will depend on further experience and evaluation of the New York case. The Commission has invited comments by February 1, 1962 of those parties who feel this exemption is not in the public interest. Of course, future selection of other locations for similar 2182 kc watch exemption also will be determined largely by the Coast Guard and their radio facilities in each particular area.

5

TL RADIO PRODUCTION

Western Electric production of TL radio became a reality during the first week of July 1961. This event took place exactly as it was scheduled a year and a half ago when the Bell Laboratories and Western were given a green light on the TL project. It is significant that the normal development interval of about three years for such a project was sliced in half for the TL system. Excellent cooperation and plenty of hard work by everyone concerned permitted the successful launching of TL radio.

Actually two TL units passed final inspection during this first week of July. One was an outdoor cabinet-mounted unit, and the other was a nine-foot bay mounted unit. Both will be applied to the Billings-Hardin, Montana system (RADIO NOTES, September 28, 1960) scheduled to be shipped August 19th.

It was originally planned to ship 100 TL microwave units during 1961. Because of the large demand for this equipment, production schedules have already been revised twice to increase this figure to 135. The Western Electric plant is scheduled for vacation during July, but the TL production line will be kept active during this period. Meeting short intervals, keeping the equipment cost down, and producing a reliable system has keynoted the entire TL project.

6

TH RADIO

The Long Lines Department has asked for construction permits to add TH to the existing 2-hop TD-2 route between Norway, Illinois and Chicago No. 2. Initially, two broad band and two auxiliary channels will be installed in each direction.

Upon completion of currently authorized construction, 1 hop of this route will have only 1 interstitial TD-2 channel not equipped; and an application has been filed for an additional southbound television channel which will use half of the remaining interstitial channel.

Norway is to become a Regional Center in the nationwide switching system with full 4A switching capability. By the end of 1962, 350 additional circuits will be needed between Chicago and Norway for this Center and for normal Long Lines and Illinois Bell growth.

The TH system, which will be capable of handling over 1800 circuits initially and which is expected to be in service by June 1962, will care for this present need and will provide a high capacity route out of Chicago to care for future growth.

7

IMPROVED CHANNEL AND HORN SWITCH

An Employee Suggestion recently submitted by the Southern Bell Telephone and Telegraph Company proposes a simple switch arrangement for use with a mobile radio to select one of two channels and to select a horn or bell signal. Two single-pole, double-throw toggle switches are mounted on a metal angle bracket. Standard designation strips are used to denote channel and signal switch positions. The photograph shows the device equipped with a channel switch only.

The device can be used on any two-channel non-reverting mobile installation and provides a neat method of channel and signal selection and designation without defacing the customer's car.

Since many new and improved operating features in connection with mobile telephone service are currently being considered, including automatic multi-channel access in both directions (car to base station and base station to car),

standardization of the switch is not contemplated at this time. However, there may be many worthwhile applications of such a device in existing



two-channel non-reverting systems where installation and designation of present switches have been a problem.

8

FACSIMILE SERVICE FOR THE WALL STREET JOURNAL

The Pacific Company is proceeding with plans for a broadband facsimile service for the Wall Street Journal between San Francisco and Riverside (outside Los Angeles), California. The service will be used to remotely make plates for the printing of the Journal in the Los Angeles area.

Although experimental systems of this kind have been tried in the past, this will be the first full scale commercial use of a broadband facsimile system for remotely printing a newspaper.

The service will be provided over existing TD-2 microwave facilities from San Francisco to Los Angeles and a new 2-hop TJ microwave extension to Riverside. The early service date of November 1, 1961 is being met by using TJ equipment previously planned for another job.

9

RTCM SPECIAL COMMITTEE 46 HOLDS FIRST MEETING

Those of you on the Radio Technical Commission for Marine Services roster received notice of the first meeting of Special Committee No. 46 held on June 16, 1961, in Washington, D.C. More than eighty people attended indicating the wide interest in this important Committee which

is to come up with a "Program for the Development of Maritime Telecommunications."

This first session was devoted largely to a detailed explanation of the objectives and a general discussion of the Committee's organization. Commodore E.M. Webster, Chairman of the RTCM Executive Committee, conducted the meeting and introduced the SC-46 General Chairman, Admiral A.C. Richmond. The latter, who is Commandant of the U.S. Coast Guard, and RTCM Vice-Chairman John S. Cross, who is an FCC Commissioner, were among those making statements in support of this comprehensive study to establish an overall program for future development of maritime communications.

Admiral Richmond, with the assistance of Commodore Webster, will next select sub-committee or panel chairmen to guide the three major divisions of the work. Thereafter, an invitation to participate on the committee will be sent to all RTCM and other interested people. Included will be a status report of the panel chairmen selections and notes covering the initial meeting.

Both Jim Stubner and Frank Oblinger of "195" have been participating in the formation of this special committee and its terms of reference. Should you desire more information or have any comments, please call either of them.

10

PERMANENT RESTORATION OF REPEATER STATIONS

On July 3, 1961 the TD-2 repeater stations at Cedar Mountain, Utah and Wendover, Nevada, were restored to permanent operation 35 days after an explosion destroyed them on May 28. The new facilities replace the temporary arrangements that had been quickly set up following the disaster, including temporary towers and wooden buildings to house the equipment (see RADIO NOTES June 30, 1961).

On July 5 the K carrier repeater station at Knolls, Utah was restored to permanent operation.

11

NEW YORK TD-2 PATH BLOCKED

Several years ago the Long Lines Department installed a TD-2 link between Jackie Jones

Mountain, N.Y., and the building on W. 50th Street in New York City. At Jackie Jones the same antenna was used for two paths, one to 50th Street and one to 32 Avenue of the Americas.

The microwave path between 50th Street and Jackie Jones will be blocked by a new telephone building being constructed at 811 Tenth Avenue to house New York City's second 4-A Toll Crossbar Switching System. The service to 50th Street has, therefore, been rerouted by moving the microwave equipment to 32 Avenue of the Americas and using A2A cable facilities between there and 50th Street.

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RADIO NOTES HAS A NEW FACE!

The new cover page on this month's issue of RADIO NOTES is designed to depict some of the services which make use of radio.

Represented are Project Echo; Coastal Harbor, High Seas, Land Mobile, Air-Ground and

BELLBOY services; TD-2, TH, TJ and TL microwave equipment and — important in the background of radio services — a frequency allocation chart and an application for construction permit. The ocean liner is the "United States" which is equipped for ship-to-shore telephony.

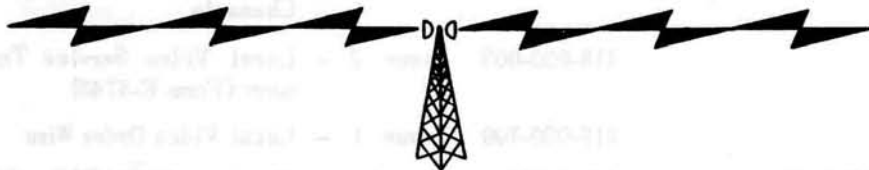
Our object in changing the face of RADIO NOTES was to give a more varied representation of all the activities in the radio field. We hope you like it.

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ORGANIZATION CHANGE

Weldon C. Ingersoll of the Mobile Radio Group returned to the Western Electric Co. on July 1.

While at 195, Weldon has been responsible for practices on Air-Ground and Mobile Radio equipment.



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RADIO INFORMATION

The following have been forwarded since the last issue of RADIO NOTES.

BSPM 774	Addendum R20.734	Issue 1 — Stromberg-Carlson Model TR-308 Radio Receiver — Maintenance Methods
	Addendum R20.735	Issue 1 — Stromberg-Carlson Model TR-308 Radio Receiver — Description and Operating Principles
	App. 1 AA264.123	Issue 1 — Basic Message Connecting Link for Connection of L Supergroups 1, 2, 3 and 4 to TJ Radio Toll Systems
	App. 1 AA266.026	Issue 6 — TD-2 Radio Transmitter-Receiver Bay — Toll Systems
BSPM 774A	—	
BSPM 774B	—	
BSPM 775	<u>Cancelled Sections</u>	
	R06.030	Issue 2 — Local Video Service Trouble Summary
	R06.240	Issue 2 — Glossary of Video Terms
	R06.300	Issue 1 — Television — Jack Field and Supplementary Designations

	R06.320	Issue 1 - Television - Service Procedures on Local Video Channels
BSPM 775A	-	
BSPM 775B	318-000-000	Issue 2 - Numerical Index - Div. 318 - Television Systems
	318-015-000	Issue 2 - Glossary of Video Terms
	318-015-005	Issue 1 - Jack Field and Supplementary Designations
	318-015-100	Issue 2 - Television Signal Analysis
	318-015-101	Issue 1 - Picture Transmission - Relationship Between Quality, Bandwidth and Time of Transmission
	318-015-102	Issue 1 - Effects of Frequency Cutoff Characteristics on Spiking and Ringing of TV Signals
	318-015-110	Issue 1 - Low Frequency Noise Associated with Remote Television Pick-Ups - Engineering Report No. 1
	318-015-111	Issue 2 - Video Tape Signal Analysis - Engineering Report No. 2
	318-020-000	Issue 1 - Service Procedures on Local Video Channels
	318-020-003	Issue 2 - Local Video Service Trouble Summary (Form E-3745)
	318-020-100	Issue 1 - Local Video Order Wire
BSPM 776	AB11.126	Issue 18 - Checking List AB26 - Program and Television Transmission Practices
	AB11.127	Issue 10 - Checking List - AB27 - Channels for Miscellaneous Purposes
	AB11.146	Issue 19 - Checking List - AB46 - Electron Tube Data
P.E.L. 6761		Television - KS-15512 L3, L4 and L5 Oscilloscope - New IRE Rolloff Characteristic
P.E.L. 6862		TD-2 and TH Radio Systems - Noise and Interference Considerations (1S3.12-41)
P.E.L. 6863		Studio-to-Transmitter Circuit Requirement for Stereophonic Broadcasting
P.E.L. 6866		TL Radio System - Waveguide Component Losses (1S3.9P-3)
P.E.M. 7618		KS-15654 Video Monitor - Anti-Glare Picture Tube
P.E.M. 7625		Television - KS-15512 Oscilloscope - 1958A IRE Rolloff
Unnumbered Letter to Traffic Managers		
6-16-61		Mobile Service Results - First Quarter 1961 (File No. 3B3.2H)
Unnumbered Letter to Marketing Dept.		
6-22-61		Public Mobile Telephone Service - Quiz
Letter to Commercial Managers		
C.L. 1511	6-16-61	Claims and Adjustments on Overseas and High Seas Calls