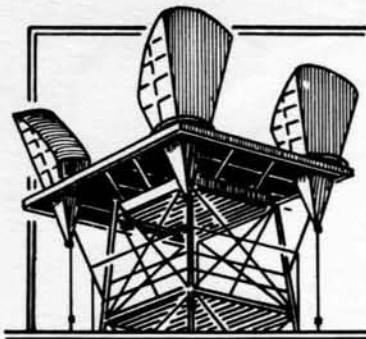

RADIO NOTES

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

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1. TOLL SERVICE RESTORED BY RADIO

Last September, Hurricane Gracie destroyed toll lines to Walterboro, South Carolina. This is a General Telephone Company CDO. After the storm, it was clear that it would take several days to rebuild the lines. Southern Bell and Long Lines Plant and Engineering forces worked together to restore the circuits on radio. Here's what they did.

They used two Raytheon 1000G microwave systems from the Walterboro central office to a TD-2 station eight miles away. There, Long Lines TE microwave was connected to TD-2 waveguide plumbing, and service was made good to Charleston on the protection channel. An OB, two OC and one C carrier systems were used to get 15 circuits working on this emergency facility. Emergency service to Walterboro was furnished until open wire lines were repaired - a period of about ten days.

In addition to the emergency Walterboro service, TD-2 radio provided the only telephone facility in and out of Charleston during this ten day period. Diesel emergency power got a good workout on this route - six days of continuous operation at one TD-2 repeater. In spite of the emergency power and lack of protection channel, no service interruptions were reported during this critical period. Emergency 221B equipment was used to restore order and alarm facilities in one TD-2 section.

2. BELLBOY PERSONAL SIGNALING SERVICE - 150 MC TRIAL

35 mc Bellboy PSS Systems are now operating in Allentown, Pennsylvania and Columbus, Ohio. Twelve additional systems will go into operation during the first half of 1960. These will employ about 24 base transmitters and over 2,000 a-m pocket receivers. Central office equipment and the portable receivers are to be supplied by Stromberg-Carlson. The base transmitters are made by Budelman Electronics.

To further improve this service increased range - especially inside large buildings - can be obtained operating this type of system at 150 mc. The Bell Laboratories will initiate a 150 megacycle PSS trial in New York City during the spring of 1960. Superheterodyne f-m pocket receivers designed and built by the Laboratories will be used. Three General Electric base transmitters will be installed to provide coverage from Central Park to the lower tip of Manhattan. About 80 pocket receivers will be available for the trial. Half of these will use replaceable mercury batteries. The rest will use rechargeable batteries with a small charger that can be used in the home or office. About 60 customers will be served during the trial.

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It is possible to use the pocket receivers in automobiles with an attachment which connects to the vehicle's antenna and power source. Apparatus to equip about 10 cars will be available. With this arrangement signaling ranges approaching those now possible with 150 mc urban service should be realized.

The trial will use direct customer dialing to the radio system. This method of operation will probably be included in the 35 mc system later in 1960.

3. PRIVATE MICROWAVE "STAY" GRANTED

A recent F.C.C. Order granted a temporary stay in implementing the Commission's new liberalized policy regarding private microwave systems. The action was a result of petitions filed by A.T.& T., Western Union, and General Telephone Service Corporation asking that no applications be granted under the more liberal eligibility rules until the Commission has acted on the petitionsof the common carriers for reconsideration of the overall policy determinations in the above 890 mc hearing (RADIO NOTES September 22, 1959).

The Commission staff has indicated that applications submitted under the new eligibility policy will be accepted but will be held in abeyance pending study of the above petitions.

4. FIELD EXPERIENCE WITH DISH ANTENNA SHIELDS

Long Lines experience in reducing coupling between dish antennas on the Minneapolis-Duluth route (according to the method described in P.E.L. 6530) has revealed that location of the shield is considerably more dependent on frequency than had been anticipated.

Various schemes have been suggested for obtaining a compromise adjustment to give the maximum coupling loss at all frequencies. One suggestion is to adjust the shield for maximum loss at some mid-band channel such as 3950 mc. Another scheme, which appeared to work satisfactorily on the Minneapolis-Duluth route, was to find an optimum shield position for the highest and lowest frequency channel. The shield was then set at a point between these two positions which gave a satisfactory loss at both frequencies.

The Long Lines people reported that positioning of the shield was considerably more critical at the higher frequencies. They also found that shield location was not nearly as critical with 10-foot dishes as with 8-foot dishes.

5. NEW TJ RADIO SYSTEMS

The following planned TJ radio systems have progressed beyond the application for construction permit stage and have not previously been reported in RADIO NOTES:

MICHIGAN	Hops
Allenville-Dead River	6
Allenville-Sault Ste. Marie	2
Escanabe-Forsythe	2
MOUNTAIN	
Prescott-Winslow, Arizona	3
NORTHWESTERN	
Bismark-Minot, N.D.	4
Des Moines-Ottumwa, Iowa	4
Rapid City-Elsworth AFB, S.D.	1
Minneapolis-Soderville, Minn.	1
Omaha Vicinity-SAC Project, Neb.	5
SOUTHERN NEW ENGLAND	
Canaan-Harwinton, Conn.	2
Derby-Bridgeport	2
New Haven-Harwinton, Conn.	3
Torrington-Harwinton	1
Waterbury-Wolcott	1

PACIFIC	Hops
Albany-Silverton, Oregon	2
Baker-John Day, Oregon	3
Beagle AFB-Wolf Creek, Calif.	1
Dale-John Day, Oregon	4
Kenyon-Roseburg, Oregon	2
Los Angeles-Compton, Calif.	1
Los Angeles-El Monte, Calif.	2
Los Angeles-Oak Mountain	1
Mt. Rose-Peavine, Nev.	1
Peavine-Eagle Ridge, Nev.	1
Peavine-Stead AFB, Nev.	1
Peavine-Wolf Creek, Calif.	3
Raredon-Callesville, Wash.	4
Red Top-Cameron, Calif.	2
San Francisco-Oakland, Calif.	1
SOUTHERN	
Hattiesburg-Laurel, Miss.	2

6. LETTERS ON NON-BELL RADIO APPLICATIONS TO BE DISCONTINUED

For the past few years we have made it a practice to send letters to the Companies calling their attention to applications by non-Bell Telephone Companies for Mobile Radio Systems in order that these may be properly coordinated with existing Bell Telephone Systems. Recently the question came up as to whether we should also send letters advising of non-telephone common carrier point-to-point microwave applications. These latter applications are of interest since the 6000 mc band is generally used and must be considered in planning TH installations.

The F.C.C. publishes weekly notices listing the above, and copies are sent to the Companies. Unless we hear to the contrary, we plan to discontinue our letters and suggest that the Public Notices be carefully reviewed for possible interference problems with existing or planned radio systems.

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7. F.C.C. EQUIPMENT DESIGNATIONS

F.C.C. Rules require that after January 1, 1960, all radio transmitters licensed under Part 21, with the exception of a few microwave transmitters, must be type accepted. The acceptable equipments are listed by the F.C.C. in their Radio Equipment List C.

To meet F.C.C. requirements, the identification on the equipment and the type number on the station authorization must be the same and appear in the F.C.C.'s Radio Equipment List. In some instances, there are in the field equipments which, although type accepted are incorrectly coded. For transmitters known to be type accepted it is permissible to stamp or stencil the proper code in a conspicuous place on the equipment. Also the station authorization should be appropriately amended.

Attention is called to the necessity of checking all RCA TV microwave equipments of the 1/10 watt TTR model. Any one or more of the following conditions require changing or modifying the name plate:

1. Transmitters incompletely indentified by the manufacturer.

2. Use of a klystron not equivalent to the type provided by the manufacturer.

3. Modification to common carrier 6 kmc operation.

P.E.L. 6563 (1S3.9F-80) discusses the RCA problem in more detail and includes recommendations for proper identification.

8. MARYLAND MOBILE EXPANSION

During the spring of 1960 the Chesapeake and Potomac Company of Maryland plans to extend their VHF general mobile telephone service, now serving metropolitan Baltimore and Washington, to include Easton, Salisbury, Frederick and Hagerstown. This expansion includes the addition of urban land station facilities arranged for both MTS and DDS. The first Maryland telephone maintenance radio channel is also included in these plans.

The new mobile telephone service areas will use WJ channel. This channel will thereby be used as the roving or common urban channel for the Maryland service areas. In addition, mobile service at Baltimore is being enlarged by adding a third urban (JR) channel. The maintenance radio channel will be installed concurrently with the urban installation at Salisbury. All base station locations will include sufficient equipment space to accomodate one additional urban channel as well as a plant maintenance channel.

9. BETTER CHECK YOUR ANTENNA MARKING

A recent F.C.C. notice is a reminder that January 1, 1960 is the deadline for repainting radio towers that are presently painted with white bands half the width of the orange bands. The change in rules to require equal color bands went into effect in 1953 with a "grandfather" clause that extended the compliance date to January 1, 1960 for towers which at that time were marked with color bands of unequal width.

10. NEW TD-2 ROUTES

The Long Lines is planning to construct a new radio relay route from St. Louis to Jackson, Mississippi, via Memphis Junction, Arkansas, and Vicksburg, Mississippi. The proposed route will make use of 13 existing stations and require construction of 11 new stations. New route mileage will total 305 miles. Of the existing stations, 3 are on the Atlanta-Dallas route and 10 are on the St. Louis-Memphis-Jackson, Tennessee route.

Initially there will be two message channels and one protection channel between St. Louis and Jackson, one message and one protection channel from Memphis Junction and one northbound TV channel from Vicksburg to Memphis via Memphis Junction.

The Long Lines is also planning construction of a TD-2 route from Amarillo Junction to Lubbock Junction, Texas. One northbound and two southbound channels will be provided for television service. At Amarillo Junction the new route will connect with the southern transcontinental TD-2 route to Los Angeles. At Lubbock Junction it will connect with the Lubbock-Odessa-Midland route.

The new route from Amarillo Junction to Lubbock Junction will require construction of three new repeater stations and will add 124 route-miles to the TD-2 network.

11. ORGANIZATION CHANGE

Effective October 15, 1959, Mr. H. E. Weppler was appointed Acting Radio Engineer. Ed is from the Michigan Company and more recently has been Toll Planning Engineer here at 195. He will be in charge of the Radio Section during the remainder of this year while Mr. Ryan is serving as a member of the United States delegation to the International Conference in Geneva, Switzerland. Upon Mr. Ryan's retirement February 29, 1960, Mr. Weppler will become Radio Engineer.

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12. RADIO INFORMATION

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

BSPM 688A	-	
BSPM 689	R06.350	Issue 1 - Bellboy Personal Signaling Service Records and Reports (35 Mc Band)
	A301.838,	Issue 2 - J86473 Power Supply - Regulated AC and DC Voltages - TJ Radio
	AA636.761,	Issue 1 - Performance Requirements - TJ Radio - Order Wire, Alarm and Control Bay
	AG25.220,	Issue 1 - Erection of B Guyed Towers
BSPM 690	AA266.076,	Issue 2 - TH Radio - Maintenance Center - Test Equipment - Toll Systems
BSPM 690A	-	
BSPM 691	R90.334.30,	Issue 1 - TJ Radio System - Auxiliary Bay Tests and Adjustments - General
	R90.334.45,	Issue 1 - TJ Radio System - Telephone with Diversity System Tests and Adjustments - Comparator Tests
	R90.334.46,	Issue 1 - TJ Radio System - Telephone with Diversity System Tests and Adjustments - Pilot Tone Levels
	R90.334.47,	Issue 1 - TJ Radio System - Telephone with Diversity System Tests and Adjustments - Pilot Monitor Tests
	A301.917,	Issue 2 - KS-16153 Dehydrator and Associated Waveguide Alarms - Operating Methods
	H51.349,	Issue 2 - KS-16153 Dehydrator and Associated Waveguide Alarms - Operating Methods
	Cancelled H51.918,	Issue 2 - KS-16153 Dehydrator and Associated Waveguide Alarms - Operating Methods
BSPM 691A	-	
BSPM 692	AA266.028,	Issue 4 - Radio and Express Radio Order Circuit Equipment - for Use with TD Microwave Radio System - Toll Systems

P.E.L. 6554 F.C.C. Rules - Amendment of Parts 7 and 8 to Provide for Voluntary Radiotelephone Alarm Signal (1S4.1-215)

P.E.L. 6561 Antenna Clearance for Temporary Antennas (1S4.1-217)

P.E.L. 6559 Forwarding Copies of F.C.C. Applications for A.T.& T. Files (1S4.1-216)

P.E.L. 6563 RCA TV Microwave Equipment - Nameplates - LF Kits - Trade-Ins (1S3.9F-80)

P.E.L. 6562 F.C.C. Equipment List (1S4.1-218)

P.E.L. 6525 TD-2 Microwave System - KS-16669, L1 Timing Test Set (1S3.7-100)

P.E.L. 6548 TD-2 Microwave System - Improved Design Microwave Generator (1S3.9G)

P.O.L. 1833 Motorola Microwave Components (1S3.9F-83)

P.O.L. 1848 Bellboy Personal Signaling Service

Unnumbered Letter to Plant Managers

10-20-59 TD-2 Microwave System - Increasing Coupling Loss Between Parabolic Antennas

Unnumbered Letter to Military Coordinators

10-19-59 SAGE - Radar Interference Frequency Diversity Radars FPS-24 and FPS-26

Unnumbered Letter to Chief Engineers

10-27-59 TD-2 and TH Microwave Systems - Assembly of Systems Combining Network (1S3.4-135)

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