

Radio Notes

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FREQUENCY ALLOCATIONS - 25 TO 890 MEGACYCLES

1

FCC GRANTS AIR-GROUND AUTHORIZATIONS

The FCC granted construction permits on a developmental basis for ten air-ground stations on May 2, 1962, employing the six-frequency plan as proposed by the A.T. & T. Company (see RADIO NOTES February 28, 1962).

In addition to modifying the licenses of the present developmental stations (Chicago, Detroit, Pittsburgh, Washington and New York), five new ground stations were authorized for the expanded developmental service. These stations are: Beckly, W. Va.; Boston, Mass.; Dayton, Ohio; Elmira, N.Y. and Vincennes, Ind.

The FCC also invited comments by June 11th on their proposed rule-making for a nationwide public air-ground radiotelephone service. This proposal would permit regular public radiotelephone service between aircraft and the ground telephone system and would specifically allocate six channels for the service. The A.T. & T. Co. will prepare and submit comments in behalf of the Bell System concerning the proposed rule changes (Docket No. 14615).

A cutover date for the ten developmental stations has been tentatively set for June 30, 1962. Every effort is being made to have a new air-ground tariff, which is currently under consideration, in effect by that date.

Applications for additional stations beyond the initial ten developmental stations will not be accepted by the FCC until such time as the rules are finalized. Since this is not expected to come about before August or September, it appears that stations originally scheduled for service in the second and third quarters of this year will have to be rescheduled for service in the fourth quarter.

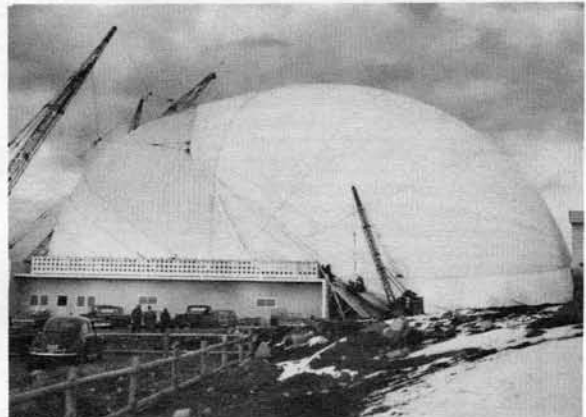
2

IT'S IN THE BAG AT ANDOVER

On April 19, the 12-ton temporary radome covering the big horn reflector antenna at Andover was successfully replaced by a 20-ton permanent model. This success was achieved on the second try. A first try on April 12 and 13 was halted

when an unexpected snow storm chased perfect weather that prevailed at the beginning of the attempt.

Replacement of the temporary structure began by partially deflating it to reduce its height. The permanent radome was then spread out on the ground cushioned by about five tons of hay and sawdust.



Next, five large cranes and one small one lifted a wad from one edge or hem of the permanent radome and placed it as high on the temporary bag as possible. It was then secured until the cranes could be disengaged and relocated to the other side of the temporary radome where they could reach up and pull the new bag over the rest of the way. It was then fastened to the foundation and inflated.

The temporary structure consisting of a crown and eight panels was further deflated and dismantled from inside by unsnapping.

The picture shows an intermediate stage in the pull over.

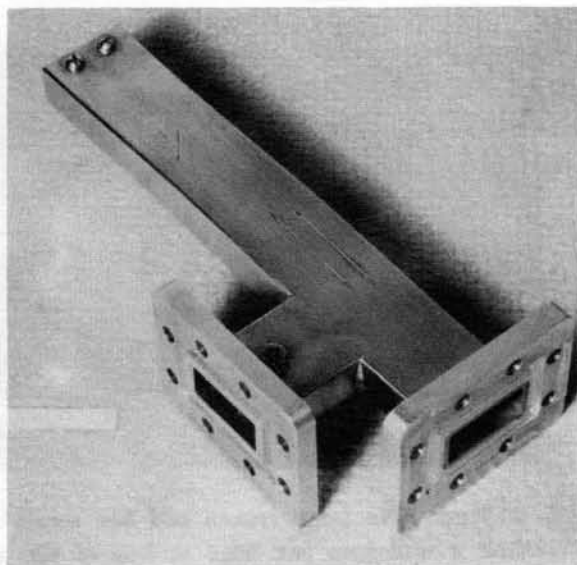
The permanent radome is capable of withstanding considerably more internal pressure than the temporary bag could. This permits it to withstand higher external winds such as hurricanes, etc.

3

WAVEGUIDE DRIPPER

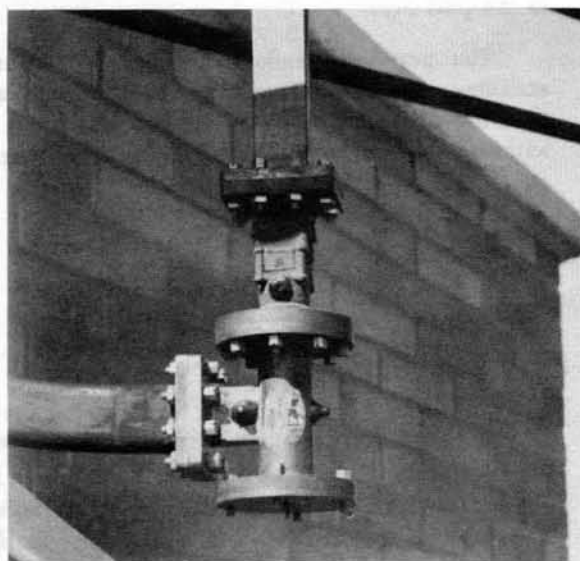
A 1410A Network has recently been developed to drain 11 kmc waveguide (WR90) runs of condensate. This new device permits moisture drainage by gravity via an open port to the

atmosphere minimizing the use of more expensive dehydrating or pressurization methods. This network will be satisfactory for draining both vertical and horizontal waveguide runs if it is properly mounted at the low point in the waveguide system. The 1410A transmission loss is less than 0.2db.



1410A Network

About this time last year a 1409A Network was made available as an interim waveguide drain device to coordinate with the first shipping dates of TL radio equipment. The 1409A used an existing 1405A Network (normally used as a dual polarizer at the antenna feed) assembled for single polarization and mounted as shown in the photograph. This interim design has the disadvantages of being more expensive than the new 1410A and not as satisfactory for draining horizontal waveguide runs.



1409A Network

The 1410A Network will be introduced as a Class B change to existing drawings and will be made available for shipment late this year. The price will be considerably less than that established for the 1409A.

4

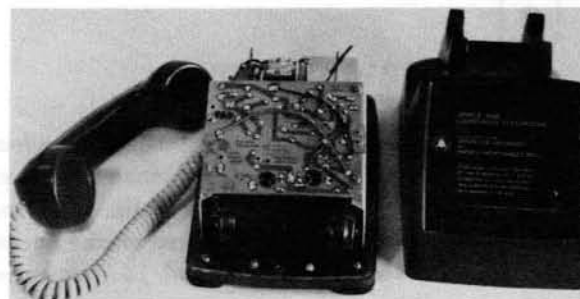
CORDLESS TELEPHONE AT SEATTLE WORLD'S FAIR

In order to provide telephone communication from the rotating Space Needle Restaurant at the Seattle World's Fair, a special cordless telephone was locally developed by the Pacific Northwest Bell Company's Radio Transmission and Customer Equipment Groups. The restaurant rotates at the top of a 600-foot tower which makes conventional wiring impossible.

Five instruments were provided by using "M" carrier terminals for the base station end; loops buried in plaster walls were used for coupling to loop antennas in the base of the set. The operator with a Call Director Type switchboard is located in the cloakroom and calls are handled in a normal manner.

A half-watt transistorized transmitter and a sensitive receiver incorporating Collins mechanical channel filters are packaged into the instrument base, which is the same size as a 565 subscriber set. Low frequencies from 155 to 410 kilocycles are used as dictated by the "M" carrier allocations which also help meet the radiation limits imposed by the FCC rules. In this way, no licensing is required.

Although this locally designed wireless telephone system is serving its purpose at the Seattle World's Fair, it is not planned to extend this type of equipment to other Bell System applications. The Bell Telephone Laboratories are currently investigating the broad area of telephones without wires but the work is still in its very early stages.



5

SOUTHERN T.C. EXTENDS WESTWARD

The southern transcontinental TD-2 microwave system is being extended westward from El Paso, Texas. (See RADIO NOTES June 1961 — St. Louis-El Paso.) A joint project between Long Lines and Mountain States has been engineered to construct a new section between Rim Rock Mountain, Texas (a junction station near El Paso) and Phoenix, Arizona. A two-hop spur will connect the main route with Tucson, Ariz. In laying out the El Paso-Phoenix route, it was found to be impractical, because of the terrain, to use the Las Cruces station on the Albuquerque-El Paso route as a junction point. A new station, called Fairacres, will be established to serve both routes. Applications for construction permits have been filed for nearly 500 route miles of new construction between El Paso, Phoenix and Tucson.

Initially, the new route will carry television and protection channels in the westbound direction between Rim Rock Mountain and Phoenix. The spur from Phoenix to Tucson will be equipped with one channel in each direction for telephone (for the Mountain States Company), one each way for protection and a southbound TV channel. The television channels will permit releasing L-3 coaxial channels between El Paso and Phoenix, now being used to serve television network customers.

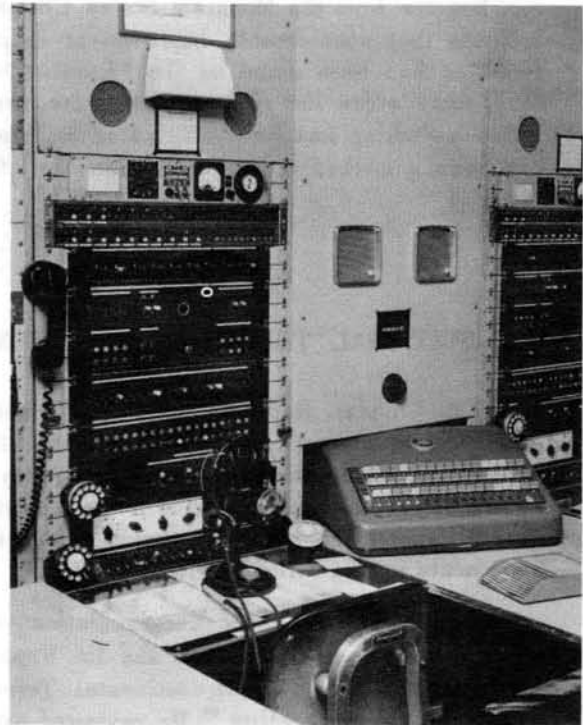
Alarms, order circuits and automatic switching control circuits will be carried over most of the route on 6kmc light route auxiliary channels.

6

COMBINING MARITIME OPERATIONS AT CHICAGO, ILLINOIS

Effective April 1, 1962, the traffic control of the Chicago VHF Maritime Service has been relocated from the Chicago Toll Mobile Switchboard to station WAY at Lake Bluff, Illinois. Included are the XY and XJ public correspondence channels and the calling-and-safety frequency. This consolidation of the Coastal Harbor and the VHF Maritime radio traffic functions should result in improved service to customers on the Great Lakes and the Illinois Waterway.

In the Coastal Harbor maritime radio service, station WAY is equipped with both the six duplex channels on the Great Lakes and six simplex channels on the Inland Waterways. Also the 2182 kc calling-and-safety channel is included in this service. The combined operation of these maritime systems will allow more efficient traffic handling as well as improvement of the technical aspects of selecting the proper channel for completing a call.



Three operator positions were established for the VHF maritime radio system and each equipped with a modified 507 cordless PBX board. The XJ, XY and calling-and-safety channels were wired into these boards along with eight two-way toll trunks. These trunks give the station operator at WAY access to any town or telephone number available to toll operators and gives the toll operators direct access to the radio station.

7

TJ DIVERSITY SWITCH REPLACEMENTS

The first replacement of diversity switch and transmission units used in TJ radio systems was made on the Phoenix-Flagstaff microwave

route in late January. The change, which was made by Western Electric on a Class A basis, is necessary to overcome incompatibilities that exist between pilot monitor operation of the diversity switch and various functions of the alarm system. An unnumbered letter, dated December 15, 1961 from Mr. Weppler to all Transmission Engineers, gave details of the change. Schedules have been set up for replacing all units in operation in the Bell System this year.

Reports from the Mountain States Company indicate that considerable improvement in performance has been noted on the Phoenix-Flagstaff route since the replacements were made. False switching has been eliminated and there has been a marked reduction in alarm activity.

8

INTERNATIONAL TELEVISION SYMPOSIUM

H.E. Weppler, Radio Engineer, participated in the Second International Television Symposium in Montreux, Switzerland from April 30 to May 4. Nearly 500 representatives of some 20 countries met there to discuss current problems and developments in television broadcasting.

The subject of space communication was given a good deal of attention and Mr. Weppler presented a paper on "Intercontinental Television Relaying by Satellite." He reviewed some of the technical aspects of satellite communication and the feasibility of relaying television programs and large numbers of telephone conversations over the same satellite systems. Direct broadcasting from satellites poses very severe problems and seems much farther in the future. Intense interest was expressed, particularly in the plans for Project Telstar.

On May 3, Mr. Weppler attended the dedication of the new I.T.U. building in Geneva. This is the permanent headquarters of the International Telecommunications Union and its technical bodies, the C.C.I.R., C.C.I.T.T. and I.F.R.B. U Thant, Secretary-General of the United Nations, was present for the dedication as were officials of many of the specialized agencies of the United Nations. Mr. J.C. Gross, Secretary-General of the I.T.U., presided.

The international communications carriers of the United States, including the Bell-System, have provided the staff lounge in the new build-

ing. It is officially known as the American Lounge and has been furnished and decorated in a most attractive manner, using typical materials and furnishings from the U.S.A.

9

IMPROVED SERVICE ON CALLS TO THE BAHAMA ISLANDS

Effective May 20, most of the "Overseas" calls from the United States and Canada to the Bahama Islands will be ticketed and timed by the originating long distance operator and handled in a manner similar to domestic calls, eliminating the need for the calling subscriber to hang up while the connection is being completed.

The new procedure provides for the originating long distance operator to reach the Nassau operator who will establish the connection to the called telephone. These calls will be routed via the "over-the-horizon" radio circuits with transmission comparable to that of cable circuits.

Bimini, Cat Cay, Freeport and West End Islands are served by high frequency radio circuits from Miami, and calls to these places will continue to be handled by the Miami overseas operator, as will all calls from the Bahamas to the United States and Canada.

10

N.Y. COASTAL HARBOR STATION WOX EXEMPTED FROM 2182 KC WATCH

The FCC has granted the New York Telephone Company an exemption from maintaining a watch on the 2182 kc calling-and-safety frequency. As covered in the July 1961 issue of RADIO NOTES, extensive tests were made in cooperation with the U.S. Coast Guard to demonstrate that the Coast Guard is effectively guarding this channel and also providing the same coverage as WOX. A one-year trial, effective May 1, 1961, was conducted so that complete evaluation could be made of the arrangement where all 2182 kc watch-standing at New York is performed by the Coast Guard radio stations.

11

A.T. & T. CO. FILES PETITION PROTESTING GRANT OF FREQUENCIES

The General Microwave Carrier Corporation has filed with the FCC an application in the Industrial Radio Service and has requested a waiver of the FCC Rules to permit operation on common carrier frequencies in the 6000 mc band.

A.T. & T. filed, on April 23, a petition protesting the grant of these frequencies in the Industrial Service. The petition read in part:

"Petitioner believes that the proposed deviation from the allocation table would not be in the public interest. The Commission has in the past taken a firm position in protecting the rights of all parties eligible for particular segments of the frequency spectrum and all users have been able to rely on this position. It would appear the relaxation of this policy could lead to undesirable and even chaotic conditions. For these reasons, Petitioner urges the Commission to continue its policy of adherence to the frequency allocation table and to deny the

application assigned FCC File Number 13434-1B-12X."

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"MARINE RADIO TELEPHONY" BOOKLET

An earlier version of this booklet has been a standard text to small craft non-commercial boat operators informing them how to correctly operate their radio telephone set in the 2 Mc/s band. It has now been updated to reflect recent changes in the FCC Rules and revised with an attempt to consolidate the material. Orders for this new edition can be placed with the Radio Technical Commission for Marine Services. The postpaid price is 50¢ for a single copy, 40¢ each for 2 through 10 copies, 30¢ each for 11 through 25 copies and 25¢ each for 26 copies or over.

Marine organizations and equipment distributors are being urged to stock quantities for resale or free distribution with new equipment. Your Company may also want to review this publication regarding its merit for distribution to customers registering for Coastal Harbor Radio-telephone service.



13

RADIO INFORMATION

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

BSPM 811A -

BSPM 811B - 632-426-200, Issue 1 - TV Systems - Coaxial Splicing - .375 Disc to Solid

BSPM 812 - AA636.760, Issue 3 - Performance Requirements - TH Radio Broadband Channel Radio Transmitter - Toll Systems

Correction Notice

R90.404.01 - Change to Issue 2

BSPM 812A -

BSPM 812B -

BSPM 813 - AA636.821, Issue 2 - Performance Requirements - D1 Alarm and Control Circuit and Order Wire Circuit - Toll Systems

AA636.822, Issue 2 - Performance Requirements - D2 Alarm and Control Circuit and Order Wire Circuit - Toll Systems

R00.010, Issue 17 - Numerical Index and Checking List

BSPM 813A -

BSPM 813B -

BSPM 814 - App. 1

AA264.127, Issue 1 - Basic Message Connecting Link for Connection of TL Radio to Super-groups 1, 2, 3 and 4 of L Carrier-Toll Systems

AA636.772, Issue 1 - Performance Requirements - TH Auxiliary Channel Terminal - Toll Systems

BSPM 814A -

BSPM 814B -

BSPM 814B1 -

BSPM 815 - R90.314.53, Issue 2 - J68331 Transmitter-Receiver-Bench Tests (TD-2 Radio System) IF Main Amplifier

Cancelled Section

R90.314.63, Issue 1 - J68331A Transmitter-Receiver Bay (TD-2 Radio System) - Bench Tests Using the J68345A Test Set IF Main Amplifier

BSPM 815B - Lists New Plant Series Numbers for Television System Practices formerly in the E Series

P.E.M. 7903 - Television - A2A Systems and Television Operating Centers - Electron Tube Improvements

P.E.M. 7904 - TL Radio - Maintenance Spare Parts and Carrying Cases (1S3.9P-10)

P.E.M. 7911 - TJ Radio - RF Test Set - Quick Disconnect Waveguide Clamp (1S3.9J-25)

Unnumbered Letter to Marketing Department and Commercial Managers

3-29-62 Air-Ground Service - Marketing Plans

Unnumbered Letter to Marketing Department

4- 6-62 Educational Television - National Display

Unnumbered Letter to Marketing Dept., Traffic Mgrs. and Commercial Mgrs.

4-16-62 BELLBOY Service – BELLBOY Sales Program
Unnumbered Letter to Chief Engineers
4-18-62 1961 Associated Company Short Haul Microwave Systems List
 (1S3.9F-88)
Unnumbered Letter to General Plant Supervisors
4-27-62 Mobile Radio Cost Results Summary