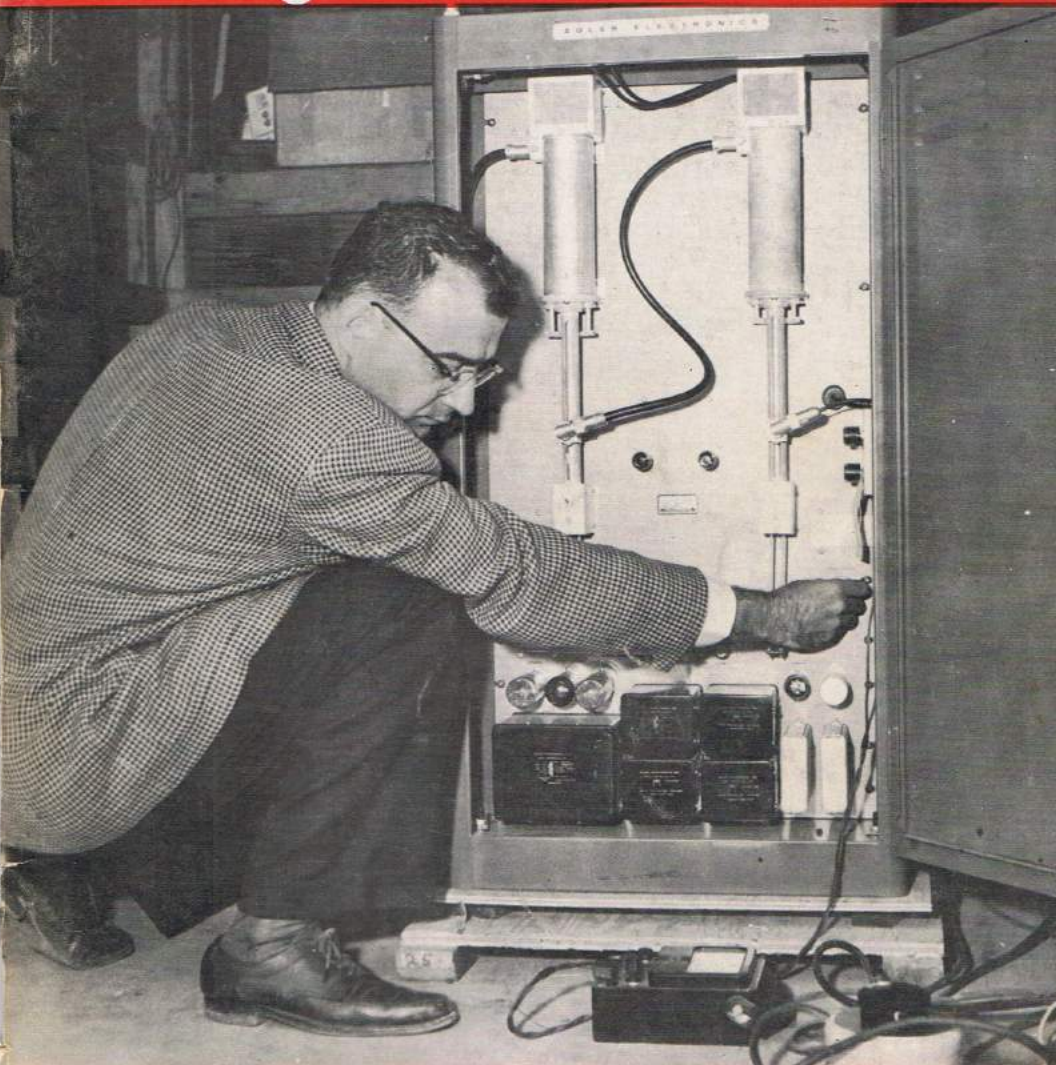


DXing HORIZONS

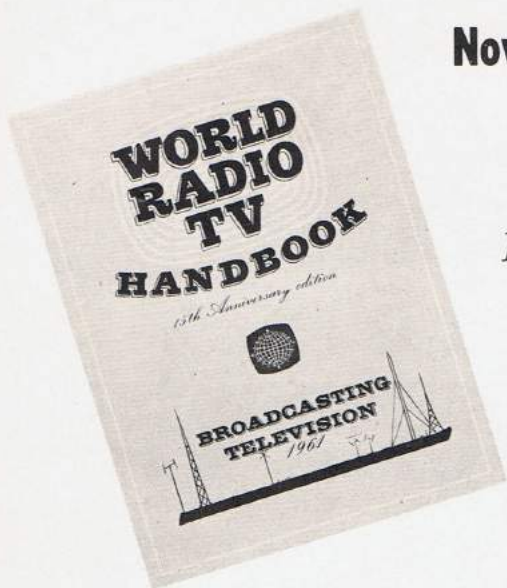


DEVOTED ENTIRELY TO RADIO AND TELEVISION DX RECEPTION

"UHF Expert, in the Field"

ADLER ELECTRONICS Translator
Troubleshooter Ed Galuska

(Page 10)



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At Sign Off

SAY IT ISN'T SO, ED!

While DXing Horizons has no desire to become known as a "crusading journal," we do believe in passing along to readers any and all pertinent information relating to our "STATE OF THE ART" series.

On this subject, the following out of text quotes taken from FCC INTER-OFFICE MEMORANDUM 72525, dated May 8, 1959. The memo comes from the desk of Ed Allen, FCC chief engineer, and is addressed to "The Commission."

It is concerned with "Comparative TV coverage of metropolitan areas (such as New York City) in the different frequency bands."

"For some time now questions have been raised as to whether or not a UHF TV station could serve adequately a heavily built-up metropolitan area." The report memo notes "... study indicates that the higher frequencies, including UHF should be able to service a heavily built-up metropolitan area, such as New York City, as adequately as the lower VHF frequencies."

And then the New York City UHF test was born; to research a problem, or, to prove a pre-decided point? Details on page three, "STATE OF THE ART."

ABC SOLE HOLDOUT

While NBC is granting permission to VHF-UHF Translators to carry its programs on a special arrangement, and CBS is granting outright privileges, ABC apparently is still sticking with their \$25.00 fee to VHF-UHF repeater operators. ABC's policy towards Translators was formulated nine months ago, prior to licensing procedure for VHF units; to the best of knowledge, it has never been enforced.

THE OTHER SIDE...

"Some things' Rotten in Rhinelander"

J. R. Karban, cited in a report appearing in CABLE DROP in December, would like his side of the Rhinelander, Wisconsin FREE TV versus CABLE TV feud told.

Basically the case involves charges and counter-charges between Karban, operator of four UHF Translators, and C. W. Gilley, owner of the Rhinelander Television Cable Corporation. Gilley claims Karban operates the Translators as an excuse for leasing UHF converters, on an exclusive basis in Rhinelander.

Karban counters with "It is my desire to serve all the people in the area with a better quality signal for a fraction of what it costs... the cable system subscribers. I felt that when the signal quality of the Cable System got so bad that a TV set in perfect condition would not operate at all, something had to be done.

After three or four years of that we now are running four UHF Translators... we have over a thousand people enjoying better TV for \$10.00 per year per set, not the \$42.00 to \$57.00, the cost to Cable subscribers."

Who's right, or, who's in the wrong? When the matter was captive to Rhinelander, the feud was

of minor importance to the weak signal world. During November and December pre-hearing conferences on the matter were scheduled in Washington by the FCC. Now it is of national concern.

COX FOR COMMISSION SEAT?

Normally the appointment of a man to a seat on the seven man Commission is of only passing interest to the weak signal services. It appears very certain one of the first things President-elect John Kennedy will attend to after January 20 is the appointment of a man to replace Eisenhower appointed Charles Henry King. The balance on the FCC is now Republican, four men to three. King is a Republican. His replacement will be a Democrat.

But the important concern, especially to DXing Horizons Cable readers, is the distinct possibility that King will be replaced by Kenneth Cox, a staff aid for Senator Warren Magnuson (D—Washington). Cox is best known for his 1958 research paper labeled "The Cox Report," which dealt with the so called economic impact of CATV systems on small town television. Cox is considered a foe of CATV, perhaps more so than any present Commissioner.

WATCH CHANNELS 72—76

Airborne tests of the Midwest Educational TV program are due to begin in mid-January, perhaps before. The first instructional programming over UHF channels 72 and 76 is scheduled for Monday, January 30. Please forward early reception reports of the test transmissions to DXing Horizons, including your location, time of reception, type of receiving equipment used and quality of reception.

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DXing Horizons, following its first year of rapid, sometimes amazing growth, is searching for a young man (25-30 preferably) with a background in Economics and Journalism: preference given to a solid electronics interest and knowledge of the fields covered by this publication.

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FRESNO 12 TO 30

First of apparent planned de-intermixture areas, Fresno, California is due to become all UHF shortly after January 1 when KFRE completes channel 12 to 30 move three months ahead of schedule.

DXing HORIZONS

JANUARY 1961
Volume 2, Number 1

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MARCH 3-4, SALT LAKE CITY, UTAH
(See page 34, details)

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All leading engineers and technicians, Translator groups and operators will be on hand.

Spend two days at this educational conference, and **learn more about VHF Translators than you have learned in the past five years!**

This conference is scheduled to answer all of your questions pertaining to FCC form 346, and to assist you in building your new Translator station this spring-summer. **See page 34 this issue for details.**

Register Early — Be assured of facilities! Send a man to represent your Booster, or join other area VHF units in your area to send a representative. If your group does nothing else in 1961, it **MUST ATTEND** the "First" **WESTERN VHF TRANSLATOR CONFERENCE!**

Registration Information: Mail completed Form and Registration Fee(s) to

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State of The Art

By ROBERT B. COOPER, JR.
Editor, DXing Horizons

(Part Two)

In the December DXing Horizons, part one of "State of The Art" reported on the proposed "VHF to UHF move" as outlined by FCC Commissioner Robert E. Lee. In closing, "State of The Art" offered one possible method of providing television saturation to virtually every area of the United States, utilizing UHF Translators and/or UHF On Channel Boosters.

Part two, "State of the Art," outlines the New York City FCC sanctioned high power UHF test. In the period ahead monthly reports will appear on these pages as the actual test transmissions begin.

OPINIONS

One prominent eastern VHF-UHF weak signal equipment manufacturer summed up his feelings on the UHF question, to this writer, in mid-October. "UHF on a nationwide basis, or at least entirely east of the Great Plains and in select western regions, is inevitable." He continued, "By my own observations, working with the New York City testing program, I would guess some of the FCC personnel, various Commissioners included, have already decided the UHF move will be a reality. At least 'some' of these 'experts' regard the New York City test a tool to prove their point."

FACTS

The UHF test is underway. Although no test signals have yet been transmitted, and the antennas, transmitter(s) and receivers have yet to be purchased and installed, the test is underway.

At the FCC, the test falls under the jurisdiction of the Engineering Department, E. W. Allen, chief, in charge. It is Allen's duty to organize and coordinate the efforts of top broadcasting and engineering personnel, who are donating their time and skills to this project.

The test divides into five distinct programs.

Organize: Chairman Ed Allen presides at meetings of the Organizational Committee, consisting of 12 top men representing such diversified groups as the "Joint Council on Educational TV" (Cyril M. Braum), "Department of Defense," (Ralph Clark), "Institute of Radio Engineers" (Laurence Cumming),

"Committee for Competitive Television" (William Putnam, Station WWLP, Springfield, Mass.), "Electronic Industries Association" (Virgil M. Graham), "Triangle Publications" (Henry E. Rhea), and the "National Association of Broadcasters" (Charles H. Tower).

Advise: The General Industry Advisory Committee (GIAC) will be working throughout the test to set down policy matters, hash over procedures and advise in special capacities as dictated from time to time by specific problems arising in the field of one of the experts on the GIAC. Readers of DXing Horizons will readily recognize such GIAC members as Ben Adler, President of Adler Electronics (Manufacturer of UHF Translator stations); Isaac Blonder, of Blonder-Tongue Laboratories, Inc. and Dr. George Town, Dean of Engineering at Iowa State University and a former Executive Director of TASO (Television Allocations Study Organization).

Transmitting: The Transmitting Industry Advisory Committee has been concerned with the problems of selecting a transmitting antenna to date. As will be discussed shortly, several problems have evolved in this particular phase of the test. The TIAC will also be concerned with selecting and installing the actual transmitter chosen for the test. Among the TIAC members familiar to DXing Horizons readers are Warren L. Braun of television station WWSA (a frequent contributor to CATV meeting technical sessions) and Arthur R. O'Neil Assistant General Manager at pioneer UHF station WSBT; and a contributor to DXing Horizons.

Receiving: The Receiving Industry Advisory Committee includes many of the top personnel previously mentioned as well as Jack Beaver, representing the Jerrold Company; and Harry Greenberg, Chief Engineer at the Channel Master Corporation.

Observations: With the receiving equipment installed, the Observations and Measurements Industry Advisory Committee (OMIAC) takes over the test. Standards of signal and noise measurements, types of measurements, all concern the OMIAC.

Analysis: While the receiving, transmitting, and observation committees will be essentially finished with their work at the close of the transmitting period (1962), the Analysis Industry Advisory Committee will begin its task. The analyzing is scheduled to continue for some months after the close of the actual transmitting-receiving test observations, and from the ream of analyzed test observations,

a decision will come . . . *Pro or Con for high power UHF, nationwide, or local in scope.*

TEST SPECS

Present plans (no changes expected) call for the use of educational reserved channel 31, in New York City. Following careful study of all possible sites in the city (Chrysler Building, RCA Building, Empire State Building, etc.), the decision was made to use the Empire State Building. Some problems have developed, however, in the mounting of a high gain UHF transmitting antenna with a 360 degree pattern. The existing 7 VHF antennas, already mounted at the top of the world's tallest building, take up all available space. The three most promising plans for the mounting of a UHF transmitting antenna are as follows:

(a) *The Carl Smith Plan:* (Editor's note: Smith is President of *Smith Electronics* of Breckville, Ohio) horizontal or circular polarization, radiating from crossed dipoles mounted on the existing structure within the channel 13 antenna and up to the channel 9 antenna.

(b) *Standard UHF Antenna,* mounted on an outrigger at or near the cap of the mooring mast on top of the Empire State Building.

(c) *Directional Antenna,* mounted either at the corner of the mooring mast or at the base of the present antenna tower.

The proposed use of a directional antenna has brought many comments, some favorable, others not so favorable. The use of a directional antenna may be necessary for a pair of reasons.

(a) *The cost of a practical high gain antenna, capable of raising the transmitter output to one million watts ERP may be greater than the 2.3 million dollar test budget can withstand. The use of a smaller directional antenna, getting its gain from directional characteristics, seems a likely alternative.*

(b) *The size of the high gain omni-directional antenna may be more than an outrigger, or top rigging can physically hold up during high winds.*

WHICH DIRECTION?

The GIAC discussed the best direction for coverage, should a special pattern be necessary, at their September 2 meeting. The final decision calls for a pattern directed northward, up the Hudson River, with a possible smaller antenna used to send some signal southward (a small amount) for measurement purposes.

SERVICE AREAS

The most important phase of the entire test will compare "how well the UHF test signal

measures up to VHF signals from the New York City stations." The general consensus of the GIAC calls for maximum attention directed at providing good coverage "close in" (less than 20 miles), with sacrifices, if necessary, in rural coverage.

SECOND TRANSMITTER

Several of the industry experts, as well as the FCC executives involved, have pushed for a "spread of channels" in the test, to test the different characteristics (if any) in transmission and reception over the UHF TV spectrum, 470 to 890 megacycles. It now appears a second site at Alpine, New Jersey will be leased from Columbia University. Alpine boasts a presently idle tower, previously used by FM pioneer Dr. Edward Armstrong. The site will probably be used with a standard UHF omni-directional antenna, and a second lower power transmitter in the upper UHF range (or possible "On Channel," boosting channel 31, NYC). Some observers point out the Alpine, N.J. site would make an ideal test point for examination of the thesis presented in the closing paragraphs of the December DXH (which stated, in *Hypothesis form, the FCC is considering the use of lower power UHF On Channel Boosters and Translators as a medium of local television for outlying areas of the United States*). The Alpine site could easily be adapted for On Channel, and Translator tests.

MEASUREMENTS

At the August 18 meeting of the TIAC, participants agreed the UHF transmitter should provide a minimum signal level of 300 mu/m to provide a picture equal in quality to 100 mu/m signals on existing VHF receivers.

In as much as "public" participation probably will be limited, the OMIAC (Measurements Committee) decided on the outright purchase of "school type receivers" for observations. One CATV line manufacturer suggested the receivers be modified to include an IF range between 108 and 174 mcs., where specific UHF channels (Channel 31, and the higher range channel from Alpine, N.J.) could be tuned for direct picture comparison with the VHF signals. In addition to the actual picture tube observations, portable field strength meters of unusual calibration accuracy will be in service. Only the aural carrier strength will be measured for comparison purposes. Professor William Hughes, of *Iowa State University*, suggested a semi-portable recorder, he reports in use near Fort Dodge, Iowa (channel 21, KQTV). These recorders

(according to Professor Hughes) consist of commercial mixer front ends (as used in CATV installations), followed by 25 mc. narrow band—90 db gain—IF circuits, with long time constants in the recorder to remove noise pulse bursts from the recorder data.

Professor Hughes suggested a meter for the entire project might contain the following characteristics:

Dynamic Range: from 50 microvolts to hundreds of millivolts

Input impedance: 50 to 75 ohms unbalanced 300 ohms balanced

Power supply: battery

Circuit: transistorized

Stability: plus or minus 1 db desirable, 2 db may be satisfactory over a two hour period

Meter: linear scale

Attenuator: in 10 db steps

Tuning Range: 54-216 mc. continuous, and 470-890 mc. continuous (or 4 fixed frequencies in the 470-890 mc. range)

GHOST MEASUREMENTS

When the Commission picked New York City for the UHF tests, several objectives were set forth. One involved the observation of ghosting, as effected by the bouncing and rebounding of the ultra short waves from the many oversized buildings "and man made valleys" throughout the city. The Commission felt, and still feels, *this may be the limiting factor with UHF, if there proves to be one.* One Million watts on channel 31 may prove to be enough to spray multi-images and secondary path signals all over the city, making viewing next to impossible, except with large highly directive outside antennas.

For the purpose of measuring the ghosts (expected), Jack Beaver of the Jerrold Company suggested a "sine squared pulse be transmitted during a blanking interval." The receiver(s) would be slightly modified so as to permit use of the signal on an oscilloscope. A triggered oscilloscope would be used to display the line containing the pulse.

By this ingenious method, the delay time, amplitude and intensity of each echo, as well as the total number of echoes would indicate how many ghost paths (multi paths) were present.

The ghosting could be measured to an intensity of plus or minus 1.5 db. The results could be compared with the visible ghosting on the receiver which may be photographed for direct analyzation at a later date.

SPECIAL PROJECTS

The high power test will provide many east

coast laboratories with a reliable source of signal for beyond the horizon UHF weak signal experimenting. Coaxial Transistors, antenna mounted tuners, super antennas are all in the mill from Boston to Harrisonburg.

DXing Horizons has indicated to FCC Chief Engineer E. W. Allen we will be participating in the test with 15 test observation sites, to be manned by DXH readers, equipped with identical receiving and measuring equipment, at distances of 50 to 250 miles. As the FCC test committees have indicated, little if any attention will be given to fringe area reception measurements, DXH measurements will concentrate in this area.

Blonder Tongue Laboratories will supply BTU-2S converters (and factory service every 90 days) for the test, while other firms are planning antenna and feedline cooperation.

One of the most unusual test observation points in the DXH sponsored series will be at the hilltop antenna testing site of the *Technical Appliance Corporation*, near Sherburne, New York. The *Taco* setup will utilize a gigantic 64 element Super Gain Bow Tie-Screen Reflector array (64 cut to channel driven elements, with screen).

IN FEBRUARY

About the DXH UHF receiving test program, and a look at laboratory devices now under development around the country.

LATE WORD . . . From Washington

Chief Engineer E. W. Allen informs DXing Horizons, at press time, a September start is planned for the New York City UHF test transmitter. Test transmissions will run through early 1962.

R.B.C.

FM/Q 

ANTENNAE SYSTEMS

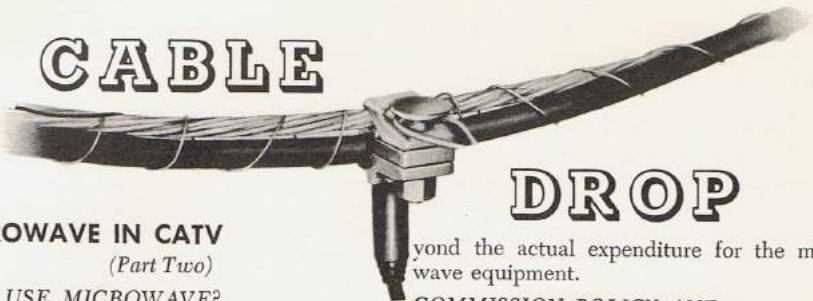
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CABLE



DROP

MICROWAVE IN CATV

(Part Two)

WHY USE MICROWAVE?

Why do CATV operators use microwave? We would like to think that as our relatively young industry gains maturity the CATV operators are becoming increasingly aware of the "public service" type of industry they are engaged in. We would like to believe that progressive CATV operators are conscious that the end result of how well their business succeeds is going to be directly proportionate to the quality of the service they provide. *Microwave provides the electronic arm to the poorly located CATV service region, by extending the CATV viewers the benefits and advantages of Grade A reception.*

More often than not in the past decade, the CATV operator has climbed a nearby convenient hill or mountain top, installed his high gain unwieldy yagi arrays, and made the most of spotty signals, poor evenings (which have a habit of stretching into poor weeks), and long expensive coaxial feeder lines.

But now, as our industry comes of age, and daily proves to the broadcasting world that *we are an important reception service*, the increasing desire of the progressive CATV operator to provide "maximum service to his viewers" is refreshing indeed.

Why do CATV operators use microwave? One Kemmerer, Wyoming CATV operator told DXing Horizons "At the time our system was installed we could see no appreciable improvement in cable quality signal with the addition of microwave over our 12,000 foot cable run." But now he notes "Bad power line noise has changed our situation."

An Alpine, Texas operator notes "The cable signal seemed strong enough when the cable was first installed, but now it has faded down." This operator drives his CATV system with 5.5 miles of coax.

Microwave, it would seem, provides the cable operator with a more saleable product, better service and more often than not, greatly increases the net worth of his system far be-

yond the actual expenditure for the microwave equipment.

COMMISSION POLICY AND DOCKET 11866

In December, part one of this series discussed the opening of the 12.2-12.7 Kmc band for CATV interests. On October 12, 1960 the Commission gave final consideration to the amendment of parts 7, 10, 11 and 16 of the rules governing the use of frequencies above 890 mc. In an 11 page brief, the Commission declared that the "non-availability of common carrier facilities should not be a condition of eligibility for private usage of the microwave frequencies," and "frequencies above 10,000 mc. only will be available for usage in the Business Radio Service, under which CATV microwave video point to point relays fall.

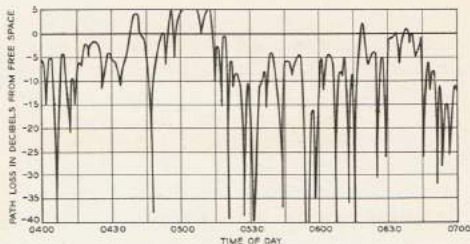
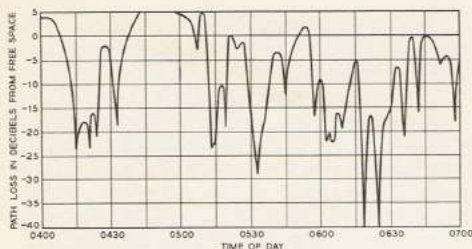
To clarify whether common carrier 6 Kmc permits will still be possible for CATV operations, and seeking procedural information of the application process under which CATV operators will apply for 12 Kmc permits, DXing Horizons uncovered this material from the desk of acting FCC Secretary Ben F. Waple.

"... (In regards to the 12.2-12.7 Kmc band) Applications will be accepted from persons proposing to transmit television program material from a pickup point to a cable distribution system via private microwave facilities. Applications should be made on FCC Form 400 in the Business Radio Service."

In regards to FCC stipulated technical specifications to govern the manufacture and sale of equipment (to be submitted for type acceptance), the Commission has extended from January 1, 1961 to July 20, 1961 the effective date for conforming to the new specifications. This will mainly be of concern to the manufacturers who will in some instances have some remodeling and redesigning to do to make their equipment conform.

HOP LENGTH - 12 KMC VS. 6 KMC

Joe Fordham, Sales Engineer for the Collins Radio Company, Western Division, told DXing Horizons "present 40-70 mile hops covered by a single link of 6 Kmc equipment will re-



quire two and perhaps three hops for the same path length on 12 Kmc."

Fordham also indicated that 12 Kmc video links will run "somewhat more" than their counterpart at 6 Kmc. He declined to be quoted on an exact figure however.

The reason for the "extra hop or two" required in 12 Kmc service appears to boil down to propagation . . . or the lack of it! For instance, these specifications were provided by the *Collins Radio Company*, covering its TV STL (6 Kmc) and 11-15 Kmc (covering the 12.2-12.7 Kmc region) microwave equipment. The higher region equipment is still recent enough to be called "new" by Collins, indicating perhaps the "state of the art" in this region is not fully known.

	6 KMC	12 KMC
RECEIVER		
Threshold Sensitivity	-118 dbw	-117 dbw
Receiver Noise Figure	14 db	15 db
IF Bandwidth	14 mc., 3 db points	15 mc., 3 db points
TRANSMITTER		
Power Output	100 mw nominal	100 mw nominal
Frequency Stability	Plus/minus 0.05%	without AFC

CONCLUSIONS

Generally speaking, it is obvious that according to the manufacturer's specifications, 12 Kmc equipment should offer very nearly equal circuit gains as 6 Kmc equipment. The limiting factors then must be in the propagation characteristics of the 12 Kmc waves vs. the 6 Kmc signals.

RAIN ABSORPTION

The January 1959 *Bell System Technical Journal* contained excellent reference data for prospective path planners of 12 Kmc video relay systems. The paper, entitled "Radio Attenuation at 11 Kmc and Some Implications Affecting Relay System Engineering" was prepared by S. D. Hathaway and H. W. Evans, following a series of experiments in southern

Mississippi between Mobile and Mt. Vernon.

The experiments undertook to measure the qualitative and quantitative affects of moderate to heavy rainfall on path propagation of microwave in the 11 Kmc band. As the authors pointed out, both bands (i.e. 6 Kmc and 11 Kmc) are subject to atmospheric fading, but propagation at 11 Kmc differs from the 6 Kmc band chiefly in its vulnerability to rainfall.

The radio energy (from the 11 Kmc transmitter) is absorbed and scattered by the rain drops, and these effects become more pronounced at the higher microwave frequencies where the signal wavelength and the raindrop diameter become nearly comparable.

"The excess attenuation caused by the rainfall depends on the number of drops per unit volume along the radio path, the square of the drop diameter and a complex factor representing the ratio of the total energy absorbed and scattered by a single drop to the energy in that area of the wave-front equal to the projected area of the drop."

It is interesting to note, however, that computations indicate that excess rain attenuation may not carry through with hail and snowfall. Indications are that hail causes attenuation of an order only one-hundredth that of rain, and that snow produces "very little attenuation," even when falling at the excessive rate of five inches per hour.

SELECTIVE FADING

Charts one and two indicate typical selective fading at both 4 Kmc and 11 Kmc. The number of fades, and the severity of the fades at 11 Kmc under "non-rain" conditions (consider a normal period of recording) is considerably greater than 4 Kmc, indicating a need for diversity reception protection to reduce "outages" caused by atmospheric.

MARGIN OF SAFETY

Obviously, the margin of safety (number of db signal should exceed the receiver noise level) will be greater at 11 Kmc than 6 Kmc. This means the system builder must engineer in a higher average signal, at 12 Kmc than 6

Kmc. Generally speaking, the Mississippi test indicated a rainfall of one inch per hour will produce 1.4 db loss per circuit mile at 11 Kmc while one inch fall on a 6 Kmc circuit will produce .2 db loss per mile. The loss equation produces a linear scale, and for a lesser amount of rainfall (i.e., here, .1 inch per hour) the circuit loss per mile will be .0135 db per mile at 6 Kmc, and .072 db per mile at 11 Kmc. Circuit losses at 12.2 Kmc can be expected to run approximately 20 percent greater than 11 Kmc.

While neither space nor probable general interest in the subject allow greater detailing of the subject matter at this time in this series, it should be very evident to the prospective CATV 12 Kmc user that fading margins at least 40 db above those considered tolerable at 6 Kmc will be necessary at 12 Kmc. Individual path locations, path lengths and power parameters will increase or decrease the fading margin for varying planners.

BACK WITH THE FCC

Acting Secretary Ben Waple has detailed for DXing Horizons procedures the FCC will "probably follow" in processing 12 Kmc CATV applications.

In accordance with Section 11.551 of part 11, Industrial Radio Services, the following persons, when engaged in lawful activities, are eligible to hold licenses in the Business Radio Service. (Only those affecting possible CATV operations are listed.)

(1) Any person engaged in a commercial activity.

(2) A subsidiary corporation proposing to furnish a non-profit radio communication service to its parent corporation or to another subsidiary of the same parent where the party to be served is engaged in a commercial activity.

DUPLICATION OF LOCAL STATION?

Last month, the opening paragraphs of "Microwave in CATV" raised some question as to whether the Safety and Special Services Bureau of the Business Radio Service might be in a position to institute hearings when a CATV system proposes to microwave signals into a region served by a local TV station. Such meetings have never been justified in the Common Carrier Bureau, although they have occurred. Said Waple, "The conditions under which the Commission will impose conditions relating to non-duplication on the CATV system of signals or programs carried by local TV stations will be handled on a case by case basis."

Waple continues, "The Commission proposes to limit the number of channels on each microwave system or circuit to the number which will best serve the public interest. It is expected that the granting of additional adjacent channels will be very limited in view of the large number of individual users who will require private microwave facilities."

And, "At the present time there is no limit as to the distance over which a private microwave system could transport TV signals. In other words, there is no restriction in reference to the distance between the TV pickup point and the CATV distribution system."

DETRIMENTAL TO LOCAL TV?

It is expected that the Commission will decide whether a particular CATV microwave application would, if granted, be detrimental to the operation of a local television station. According to Secretary Waple, "It is not proposed at this time that such authority will be delegated to the Safety and Special Radio Services Bureau."

NOW THE \$64 QUESTION

We inquired of Waple, "What will happen to expiring CATV microwave Common Carrier licenses?" We wanted to know if their holders will be required to move from 6 Kmc to 12 Kmc. Replied Waple, "As Common Carrier CATV microwave licenses expire the Commission proposes to examine the records of each licensee to ascertain whether or not he is a bona fide Common Carrier under the fifty percent rule. Those licensees who are performing a Common Carrier service should have no difficulty in obtaining renewal of their licenses provided of course that all necessary obligations are met. Those licensees who are not performing a Common Carrier service MIGHT consider a private microwave system in the Business Radio Service." End of interview. End of report.

Cable Talk . . .

OUTGOING FCC CHAIRMAN FORD

"Scheduled to address CATV Operators"

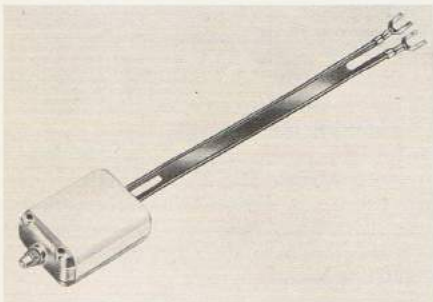
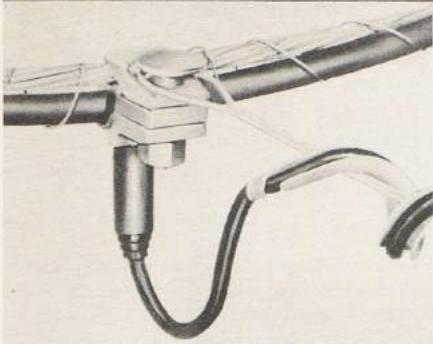
Under its new "education for better business" program, the NCTA has scheduled a January 9 Eastern Regional Management Seminar in Washington, D.C., designed to give CATV operators more insight into the television industry.

Featured speaker for the combination "closed-open" session will be FCC Chairman Frederick W. Ford, who, it is believed, will make public details about his pending proposed legislation affecting the CATV industry (see Speculative Source, "AT SIGN-OFF" page one for December). It is likely Chairman Ford will actually reveal his expected "Referee System" proposal January second or

(Continued on page 33)

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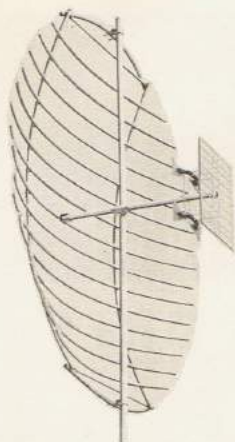
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UHF HORIZONS

"News of the UHF Translator World"

Conducted Monthly by
Harlow Speckhart*
Route 1, Box 317
La Grande, Oregon

THE BIRTH OF SMALL TOWN TV

Early in 1954, an enterprising individual living near Bridgeport, in the state of Washington sought to bring television to his valley town, barren of video reception because of surrounding mountains.

It was common knowledge that suitable signal levels from Spokane stations existed on nearby mountain peaks, but getting that signal down into the valley below was a challenge.

Little did he know his solution to the problem would mushroom until six years later it would become the most perplexing case ever presented to the Federal Communications Commission. The Bridgeport resident hauled a CATV line amplifier to the top of a nearby peak, connected up power, and installed a pair of antennas. One array received the Spokane signals, the second re-radiated the line amplifier output to the valley below. The first television Booster device was an accomplished fact . . . and an industry was born. Or almost.

Word spread rapidly of the success of the unit, and "On Channel Boosters" mushroomed throughout the northwest.

Nearly nine months after the first on channel boosting experiments, Marion McFadden of Manson, Washington approached skillful Wenatchee, Washington engineer George M. Frese, requesting help in bringing "relay television" to Manson. Frese, a registered professional radio and television consulting engineer,

*President, National Association of Low Power Television Broadcasters



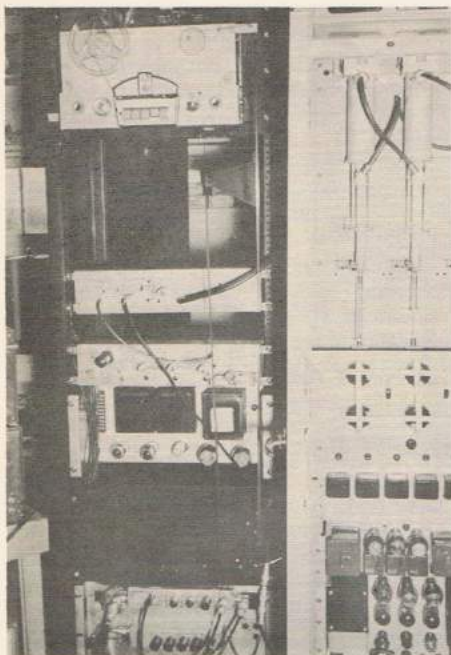
George Frese, pioneer Translator engineer.

pointed out the logical approach to the various "on channel problems" (feedback, ghosting, selective fading of audio and video, etc.) would be the conversion of the Spokane signals (operating channels 2, 4 and 6) to other channels not in use in the area to be served, obtaining a proper FCC license for the re-broadcast device, and properly engineering the layout to maintain the original characteristics of the Spokane signals (free of feedback, etc.). Two problems stood in the way of Frese's proposal. The FCC didn't recognize such conversion devices as an integral part of their allocations pattern, and, *no one had ever done it before*, meaning all of the engineering would have to be original.

Engineer Frese proposed to overcome the engineering problems by converting (to become known as translating) a low band VHF signal to the UHF band, where there was plenty of space available. The FCC was dubious over the proposal, but Frese was persistent and the people of Manson, Washington were unusually vocal in their support of the project, so an experimental license was granted for a single station (call letters KO2XBX) to operate on channel 16 with 15 watts of power. The signal of KXLY in Spokane was chosen for re-broadcast and translating purposes.

WENATCHEE, WASHINGTON

George Frese designed and built the prototype UHF Translator in his Wenatchee laboratory. The only components Frese found he could not properly build locally were the *silver plated cavities* (photo two), which serve as the "amplifying chambers" for the ultra high frequency signal. Frese had heard of some



The first UHF Translator — a la George Frese.

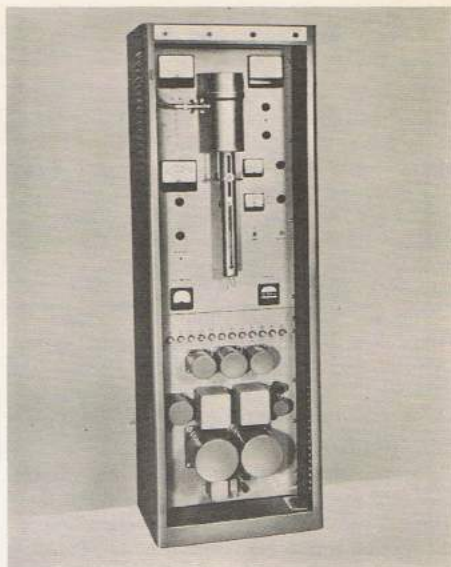
On Channel UHF tests performed by Ben Adler of Adler Electronics in New Rochelle, New York. Adler's experiments, in New England, had sought to develop a low power rebroadcast device to serve small towns. As a part of his plant's research in the field, a half dozen "fixed injection cavities" were assembled. A pair of these units came to Wenatchee where they proved instrumental in the effectiveness of the first "Frese UHF Translator."

Ben Adler, as most readers know, became intrigued with the "translating approach" proposed by engineer Frese, and followed the tests eagerly. Adler Electronics later became the primary manufacturer of the UHF Translator unit, with more than 500 Adler TV rebroadcast Translators in operation today around the globe.

The design of the first completed unit, built on Frese's work bench, was so sound that today's most recent production line units differ only slightly from it.

DESIGN PROBLEMS

Perhaps the largest single problem encountered in the early day rebroadcast experiments was the fading of the received signal. In fringe area reception, the fading is often characterized by separate fading of the audio



Late Production Run Adler UHF Translator, changed only slightly from Frese's first unit.

and video segments of the signal. The problem was one of maintaining the proper ratio of video to audio voltages. When the sound ran too high, horizontal "sound bars" appeared in the video. If the sound dropped to too low a level, it became garbled. The first attempt to rectify the "selective fading" was a *notch filter*. This unit tracked the section of the signal fading down into the noise, boosted it with AGC and brought it back to a preset level. But when the fading encompassed more than just a narrow segment of the TV signal, the narrow band *notch filter* was ineffective. Frese finally overcame the fading problem through the use of a specially designed *diplexer* which divided the signal into its audio and video components, ran both through separate audio and video amplifiers and AGC, and then recombined them for the "translating process."

ANTENNA PROBLEMS

The receiving antennas were a little problem. They had to be sturdy, and electrically sensitive. Ruggedized yagis usually filled the bill.

The transmitting antennas were something else again. The transmitting antennas had to have some gain, unusual patterns and the ability to withstand mountaintop weather in the Cascades.

The first attempt at a transmitting antenna was a 24 element colinear type, tilted (mechanically) to favor the valley below the

mountain top site. *It was ineffective.* Engineer Frese next designed a basic unit which is still in use today.

LOCATION AND COST

The first UHF Translator station was erected at the 5,300 foot level of Bear Mountain, near Manson, and commenced operation in June, 1955. During the summer of 1957 a second site, at the 7,000 foot level of Slide Ridge, was selected for its superior line of sight path to Spokane. The move was accomplished in the summer of 1958.

The first UHF unit, built from scratch in Wenatchee, by Frese, cost the Manson group an estimated \$10,000. Mass production has reduced the present base price for the same Transmitter unit to a range of \$2500 to \$3025.

FCC WATCHING

During the course of the experiment KO2XBX was closely monitored by the television broadcasting industry, and the FCC. As the service was a new one, the first Translator was instrumental in establishing technical specifications adopted by the FCC. Today's technical and legal requirements for translator operation is based on the Manson experimental station, with some further refinements added.

IT WORKS!

It was only a matter of a year after KO2XBX came on the air that the FCC was ready to place the UHF Translator into formalized legal service. More than 20 applications were filed with the FCC in the fall of 1956. As could be expected, some special interest groups objected to the small town TV devices, and there was a series of complaints filed in Washington. One complaint charged the La Grande, Oregon group with starting construction prior to the issuance of a construction permit. Others suggested to the FCC that UHF Translators might eventually grow to the stage of inhibiting small town TV growth, by importing "big city signals" into regions which could not support, financially, a local station equipped to buck the big city signals. This, the opponents claimed, would result in many towns never having local origination television. *It was proposed that UHF Translators should be required to leave the air when local stations came on the air in their service regions.*

These factors, and others, led to the formation of the *National Association of Low Power Television Broadcasters* (NALPTB), which hired Spokane attorney George Shoemaker to carry the ball to Washington. The UHF enthusiasts were small in number in the begin-

ning, but very determined and more vocal than their size would indicate.

A bitter fight ensued, but the UHF Translator regulations remained unchanged thanks to the action of the early dedicated enthusiasts. Today UHF Translators are recognized as significant contributors to small town television across the United States, serving not only the mountainous west, but the plains of the midwest and the rolling hills of New England.

All are indebted to the foresight and pioneering spirit of George Frese and the residents of Manson, Washington for the development of the UHF Translator.

UHF NEWS TOPICS

"From the Editor of DXing Horizons"

Our welcome mat is extended to operators, service personnel and viewing enthusiasts served by UHF Translators across the states.

While we were discussing this (then) pending column with various interested parties early in October, we learned a great deal about the thinking that has gone into the current UHF Translator situation. Today more than 500 UHF units are in operation, or are building. Before the year is out the number will undoubtedly surpass the total number of operating origination stations in the United States. And all of this has transpired in a five year period! Interesting enough, we believe, is the hard fact that despite the recent licensing of VHF Translators and the continued growth of the nation's CATV systems, UHF Translator application continue at a rapid rate, equaling the average pace set soon after the legalization of the unit!

Among the many topics Speckhart is working with the regular DXH editorial staff on, are the following:

"What's Wrong with Translator Servicing?"

We don't mean to throw any mud . . . but DXing Horizons isn't known for pulling punches. If anything can hold back the orderly growth of UHF Translators, it is the almost deplorable lack of proper servicing techniques in many regions. DXH has a few recommendations in this field . . . which we feel will benefit your Translator group.

"Financing Your Translator"

Private, fund drive or tax district? All three methods have been used to advantage . . . each has its good points. The Utah Amusement Tax Law will be discussed, as will the Nevada law legalizing Public Utility TV Tax Districts. Various methods for raising funds in your town, or county, will also be detailed. You can learn by the mistakes of others.

"Products"

The Blonder Tongue Company is testing prototype of a newly designed UHF set booster, which is broad banded for UHF channels 70-83. As the first UHF signal booster, it promises to push back UHF Translator fringe areas. A full report will appear first and exclusively in DXing Horizons.

"And our Secret Weapon"

If towns of under 5,000 isolated soles are to ever have local origination television, it will have to be by the most economical means possible.

(Continued on page 31)

VHF TRANSLATOR STATIONS

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WEAK SIGNAL TECH NOTES

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TWO APPROACHES TO THE 6922

Without adding confusion to the confused, let it be stated that there are right and wrong avenues of approach to the 6DJ8/6922, in RF amplifier service.

Two current and fairly new approaches to this low noise high transconductance twin triode are our subjects for review this month. In one instance, DXing Horizons has not completed tests on the unit, and will not attempt to give a factual report on performance. In the other instance, the manufacturer does not wish to release a circuit diagram of his unit, for publication purposes, and we do not feel under the circumstances our "trace out schematic" should be printed. Both manufacturers have been very cooperative, however, in our testing and analyzing of their circuits (we cast no stones here!).

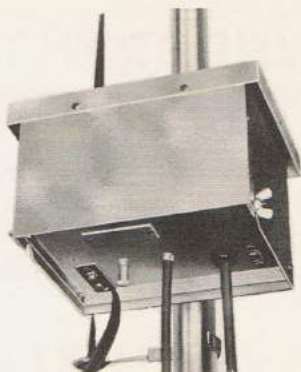
BLONDER TONGUE CB AMPLIFIER

The model CB is a single channel series of amplifier enclosed in a weatherproof housing for antenna top mounting. It revives the most popular "Tenna Top" booster fad of some year ago when such a unit was often desirable in marginal signal areas. Much is to be said for amplifying the weak signal before some of the precious microvolts are lost in feed line absorption, on the way to the receiver.

Model CB can also be used at set side, and features twin outputs (both 75 ohm) for matching and mixing to other CB amplifiers. Should a series of stacked yagis be used for different channels, a CB unit at each set of antennas could provide more gain and better signal to noise ratio than a common broad band unit fed with several antennas.

Obviously, fitting into this discussion, the CB amplifier uses a 6DJ8/6922 series tube. The manufacturer rates its gain for channels 2-6 at 17 db, channels 7-13 at 15 db. Response, specs say, is plus or minus one-half db over a six megacycle channel.

Diagram one depicts the unit, sans power supply, and minus value designations for all tuned circuit



CB Unit by Blonder Tongue

components. This includes the input matching transformer (marked T1); the cathode bypass condensers (marked C1, C2) which incidentally are 1K, GMV for channels 2-6, and 27 mmf for channels 7-13; the interstage coupling transformer



WBC-4 by Winegard

(T2-T3); the output matching transformer (T4); and the RF chokes in the B plus lines (marked L1, L2).

Important points for consideration: plate voltage on each section is 90 volts (pins 1 and 6); cathode

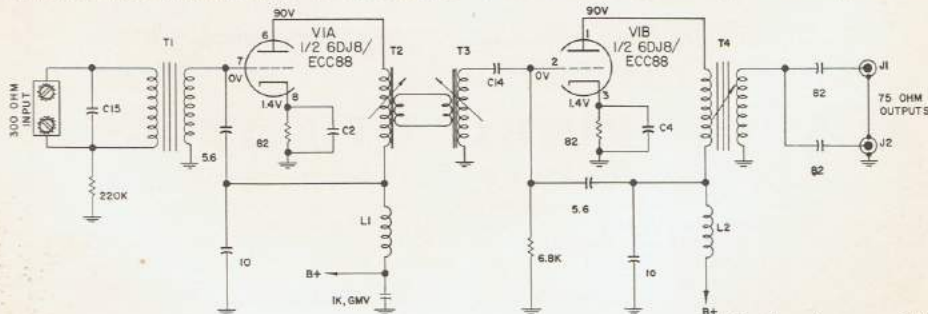


DIAGRAM ONE

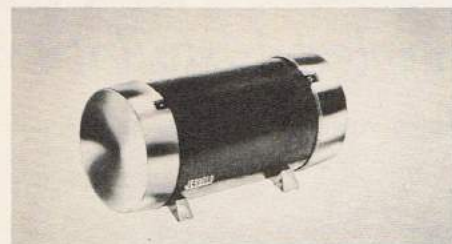
(Continued on page 21)

TV Reporting

(TV DX reports to be evaluated for possible inclusion in the February issue of DXing Horizons should arrive in Modesto, California no later than January 19, 1961.)

REPORT ON THE JERROLD TRAP EASE

TV DX enthusiast Donald Voegele, Lancaster, New York wrote "How about some work on rejecting (strong) adjacent channels? In my case we



Jerrold Trap East Model HQ-91

have local stations on channels 2 and 4, which messes up channel 3 for DXing.

The complaint is a common one among DX enthusiasts, and you don't need to live under the transmitting tower of a local station to suffer from overloading signals. DXers as a rule use souped up receivers which are more sensitive than average to strong adjacent channel signals.

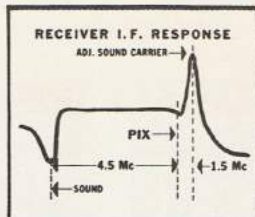
Even strong skip signals on the lower channels have been reported to cause hash on adjacent channels, making other skip reception difficult.

Even non DX enthusiasts in many heavily populated eastern areas suffer the affects of adjacent channel "herringbone" patterns in their daily TV reception.

There is a cure for the problem... and though it may surprise many DX enthusiasts, it is not entirely new. The "cure" is manufactured by the Jerrold Company of Philadelphia, Pa., and is known as the TRAP EASE. The TRAP EASE is a tuneable trap device which (as shown in diagrams one and two) "tunes out" the strong adjacent channel sound carrier (or video carrier) in the case of hash on the next channel lower) allowing the receiver to reproduce the weaker adjacent channel signal, free of herringbone video and "swishy" audio.

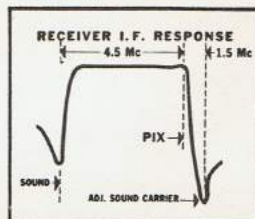
In addition to tuning out the actual interference (which is generated in the receiver's IF section), the extra selectivity added to the receiver "ahead of the tuner stages" allows the tuner to run with full gain on the weaker signal.

If you are unfortunate enough to have (as an example) a strong signal on channel 2, the audio from channel two slops over, in the IF section, to channel 3. This produces the herringbone pattern. However, of perhaps greater importance to the DXer, the influence of the strong adjacent channel signal also de-activates the receiver AGC system, causing the receiver to run at low gain. Thus the combination of the "hashed up video," and the receiver running at low gain results in very poor reception on the weaker "adjacent channel."



In case shown Receiver AGC is held down by a strong adjacent channel sound carrier. This lowers receiver gain and prevents proper reception of the desired channel. "Beat" or "Herringbone" pattern is predominant on the screen.

Users of the TRAP EASE find it also "phases out" ghosts, which are very annoying in some mountainous locations, and, if carefully tuned, can bring the weaker of two "co-channel" (same channel) stations through for identification (more on this in February).



The adjacent sound carrier has been suppressed by some 50 db, which: (1) Enables the signal level of the desired channel to control the AGC action of the receiver. (2) Completely removes the "beat", leaving a clear, strong picture.

DXing Horizons finds the TRAP EASE an excellent investment at under \$20.00, and recommends it to all viewers troubled with adjacent channel interference. It is available in two models, the Low TRAP EASE for channels 2-6 (Model HQ-91) and the High TRAP EASE for channels 7-13 (Model HQ-92).

GREATEST NOVEMBER-DECEMBER

It began in the mid-south November 24, and moved slowly north with a warm weather front... the biggest and most widespread November tropics opening on record. B. J. Bingham, Festus, Missouri found Birmingham (WBRC-WAPI, 450 miles), Mobile (WALA-10, 650 miles) and signals from closer stations in Tennessee, Mississippi, and Missouri the morning of the 24th. On the 25th the slow steady DX signals moved north with high band signals from Iowa and Chicago seen out to 400 miles. On the 26th the TV signals (mostly high band, channels 7-13) literally poured through, from both the north and the south. New stations for Bingham included WAFB-9 (660 miles, Baton Rouge), WJHL-11 (500 miles, Johnson City, Tenn.) and WTVY-9 (665 miles, Dothan, Alabama). Tropics extended north to WJIM-6, Lansing, Michigan, 500 miles, and Milwaukee, WISN-12, 440 miles.

On November 27, the warm air mass moved north and east, taking the DX signals into the Great Lakes. Thomas Hidley, Chicago, reports tropics signals from WIBW-13, 460 miles at 0820 EST on the 27th, and from many closer stations.

Also in Chicago, David Swanson logged KFVS-12, Cape Girardeau, over a 350 mile path between 1945 and 2040 on the 26th.

Bill Hauser, Oklahoma City found the early morning session of November 26 good for signals as far north as WHO-TV, channel 13 in Des Moines (475 miles).

(Continued on page 21)

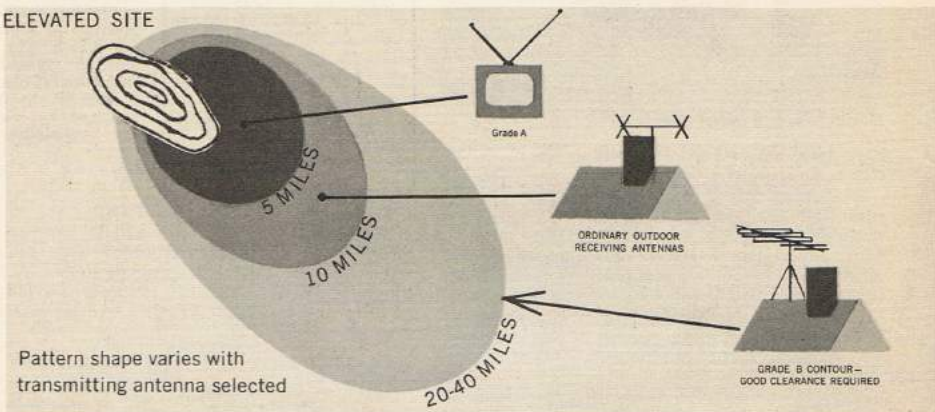
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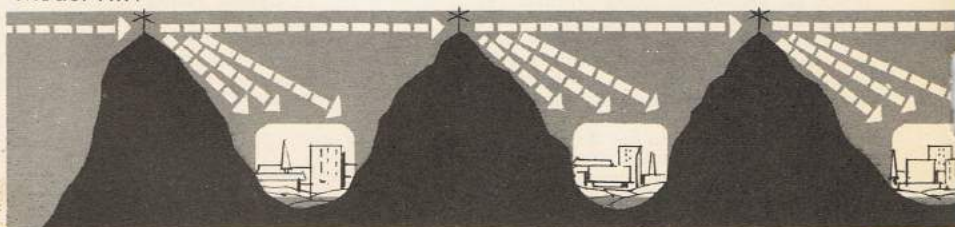
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*Model HRV



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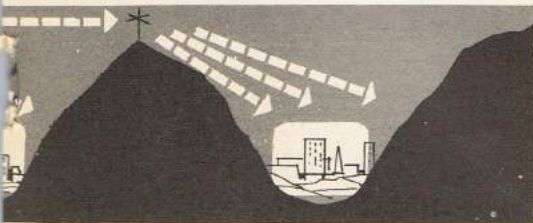
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TRANSLATOR

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TOPICS

Pocketful of Notes

The more we know, the less we know! News has showered this desk from several quarters, and perhaps the best method of attack would be an area break down of reports.

IDAHO

With the news that the Tri State TV Repeater Association channel coordination plan has apparently been passed up by area groups, in favor of "doing it themselves" Idaho Booster operators are undecided how they will tackle the problem of picking channels. Many "On Channel devices" saturate western and northern Idaho, and when they rebuild to include conversion equipment, the channels available will disappear quickly. Many towns use several "On Channel Boosters" to serve their area. If all continue to operate, with conversion, there simply won't be enough interference-free channels to go around. It has been suggested by some progressive groups that small (under one-third watt) units now operating independent pool their resources, and in place of two, three or four "On Channel units," construct one well situated legal conversion Translator to serve the entire region.

In eastern and southern Idaho, Booster groups who have filed their form 347-A with the FCC wonder what to do about KIFI, new channel 8 in Idaho Falls. KIFI has taken the NBC affiliation (from KTLF, Pocatello), leaving KTLF "high and dry." It is expected KTLF will assume ABC programs, as KID-Idaho Falls, carries CBS programs. Former and current users of the KTLF signal, having filed 347-A with the FCC, and having stated they are using the KTLF signal (for NBC programs) are now faced with the loss of NBC programs, or switching to KIFI. The coverage area of KIFI is reportedly much smaller than KTLF, so NBC may have unknowingly lost many rural viewers in the switch. Editor's note to groups proposing to change to KIFI: You must file a "Modification of 347-A" with the FCC if you contemplate changing over to the channel 8 signal for pickup.

MONTANA

A meeting in Missoula, at the studios of KMSO-TV, brought out 24 representatives from the 18 Boosters now using the channel 13 signal. On hand was your editor, and visiting dignitaries Pat Quinn of Video Utility Company (Seattle), and Dr. B. W. St. Clair, of Electronics, Missiles and Communications Inc. (EMCEE), Mount Vernon, New York. Quinn detailed the problems facing rebuilding Booster operators, while KMSO-TV offered the use of its lab equipment, and engineers, to any area Booster-Translator groups who need the advice of trained personnel, and the use of lab standard mea-

*Secretary, National TV Repeater Association, Tri-State Repeater Association.

suring and aligning equipment. KMSO-TV promotion manager Don Hayes told DXing Horizons station engineers are working on VHF Corner Reflector antennas in hopes of improving transmitting patterns for one watt Translators. The meeting was held December 8th.

Dr. St. Clair, from EMCEE, told your editor one of the first special units his firm will make available will include a UHF input, for pickup from either an existing UHF originating station, or a UHF Translator. Dr. St. Clair also expressed concern over the remote control problem. He noted that his understanding was that in many areas of Idaho, Montana, eastern Washington-Oregon, Wyoming and Colorado, it is not possible to get to the VHF Translator site in 15 minutes travel time (as required by FCC regulations), at all times of the year. He mentioned that FCC regulations require remote control in such cases, and several methods of accomplishing this were discussed. He seemed to favor radio control, noting that a long "twisted pair" line merely in series with the power supply or antenna relay is not fail-proof, as required by the FCC. He promises an early breakthrough on this problem at EMCEE.

THE DAKOTAS — MINNESOTA

Blonder Tongue has announced that Don Martin, of Martin, Inc., Struthers Arcade Building, Marshall, Minnesota will be handling B-T Benco Translators in part of this region.

Mid America Relay Systems (M.A.R.S.) has a new booklet out dealing with filing FCC form 346. The booklet gives the procedures to follow, lists possible equipment additions-modifications and shows several transmitting antenna plots, with various coverage patterns, to aid the groups planning on bringing their antennas up to par. The booklet is free, and may be obtained by writing to M.A.R.S., 601 South Main Street, Rapid City, South Dakota.

M.A.R.S. is also working on a lower power (less than one watt) unit which they say will be akin to their pre-translator days "Farmer's Unit." The Farmer's Unit consisted of eight tubes, and provided around one-third watt output on a conversion channel for isolated ranch areas, where one watt would only be wasted. They say it will meet all FCC requirements, and cost "less than the one watt unit." Other developments are underway at MARS, but we promised to keep mum for awhile.

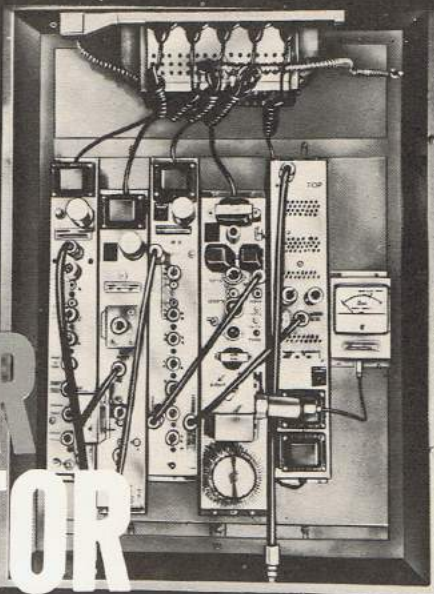
Several groups in South Dakota have written requesting information on building transmitting antennas for Translators. More information concerning our efforts to induce one or more antenna manufacturers to come out with an inexpensive line of transmitting VHF antennas will follow in February.

THE SOUTHWEST — MIDWEST (Including Utah — Nevada)

The last big group of VHF Booster filings (form
(Continued on page 20)

AVAILABLE FROM BLONDER-TONGUE

NEW BENCO LOW POWER TRANSLATOR



MODEL T-1

(FCC TYPE ACCEPTED)

FEATURES STABLE OPERATION... MINIMIZES 'FALSE' SHUT-OFFS

The new Benco T-1 is the reliable way to increase coverage of existing TV signals. Engineered and manufactured by Benco (Canada) this new translator is now available through the Blonder-Tongue organization in the United States. The T-1 offers a host of advantages over other translators that can be summed up as long life and trouble-free operation, stable operation, foolproof automatic shut-off, and ease of maintenance. It is FCC type approved.

MINIMIZES "FALSE SHUT-OFFS" CAUSED BY SIGNAL FADING — will not shut off unless the input signal from the remote master station falls below 10 microvolts for longer than 4 seconds.

FOOLPROOF AUTOMATIC SHUT-OFF — when the remote master station goes off the air, the automatic shut-off turns off the transmitter even when operating at the end of a long coaxial cable where line amplifiers have been used to re-amplify signals from the receiving antenna. The transmitter will not switch off when remote master stations go off the air due to line amplifiers opening up to full gain and supplying noise voltage to the transmitter, thus defeating the automatic shut-off.

PROVIDES STABLE OPERATION EVEN AT THE END OF POOR QUALITY POWER LINES — voltage regulating power transformer supplies the various units in T-1 with stable voltage. Eliminates stress on components caused by unstable supply voltages.

LONG LIFE AND TROUBLE-FREE OPERATION — full sized, underrated transmitting tube in output stage. Less stress on components due to stable operation.

EASY PERFORMANCE CHECKS — a built-in direct-reading power indicator checks power output; built-in test jacks for monitoring plate voltage and current of output tube.

RAPID SET UP OF CODING WHEEL OF IDENTIFICATION UNIT — The appropriate call letters for your area can be set up rapidly without need to cut copper contacts.

TECHNICAL SPECIFICATIONS

Translates input VHF channels to output VHF channels (2-13).

Primary power source	117 V \pm 20% 60 c/s
Power Consumption	150W
Temperature Ambient	-30°C to +50°C
Input	75 Ohms
Output	75 Ohms
Recommended input	50-2000 microvolts
Max. Permissible Power	1 Watt
Overall Noise Figure:	
Low Band	4 db \pm 1 db
High Band	6 db \pm 1 db
Gain:	.02%
50 microvolts input to one (1) watt output	105 db
2000 microvolts input to one (1) watt output	73 db
Maximum gain	135 db
Band Width between Carriers	4.5 Mc (\pm 5 db)
Dimensions of Housing	35" x 28" x 10 1/2"
Weight	130 lbs.

for further details contact—

engineered and manufactured by

BLONDER-TONGUE

9 Alling St., Newark, N. J.

Canadian Division: Benco Television Assoc., Ltd., Toronto, Ontario. Export: Morhan Export Corp., New York 13, N. Y.
home TV accessories • UHF converters • master TV systems • industrial TV systems • FM-AM radio

TRANSLATOR TOPICS

(Continued from page 18)

347-A) came from this area, with concentrations in New Mexico, and Kansas.

Station WIBW, Topeka, Kansas (channel 13), under the direction of Paul Winders, is purchasing one each of the new Translator units (i.e. B-T, EMCEE, M.A.R.S.), and will be installing them soon on a test basis. Winders at WIBW says he believes the units will eventually multiply many times, and add substantially to the WIBW coverage area. He tentatively plans to test each of the three competing units, and pick the one he finds most suitable to WIBW, for mass use (perhaps 20 in all).

The TV Booster Club, Prescott, Arizona, has decided to give up VHF in favor of a locally produced UHF Translator. The club operated a three watt VHF unit carrying KPHO-5 Phoenix. It is expected other VHF Boosters in and around Prescott will follow suit and switch to UHF. Reasons given for the change include: (a) "if we have to rebuild, let's go to UHF now and save a second change later," and (b) "one watt will not cover the area on VHF."

NEBRASKA — COLORADO — IOWA

There has been some talk of reactivating the "NATIONAL TV REPEATER ASSOCIATION," which is sorely needed. With headquarters in Denver (Jesse A. Slusser, President), there has been little or no direction from this national representative group since they circulated a pamphlet entitled "The Dilemma of the TV Repeaters... and a Solution," last spring.

With so many local groups (not even on a state level) breaking off into their own channel coordination assemblies, the FCC IS WORRIED and CONCERNED over the prospects of bad interference, bound to result, when the present "on channel units" change to conversion units (and therefore take up much more spectrum space).

If we might prod the NTRA a bit in print, some effort must be made NOW, before the various groups have filed their form 346's. If the NTRA cannot assume the lead, we feel the organization should be disbanded, and re-organized with real purpose and intent. (Preceding added to Translator Topics in Modesto by DXH Editor R. B. Cooper, Jr.)

A Scottsbluff, Nebraska group reportedly called Pat Quinn at Video Utility Company with a request for aid, during December, and noted to Quinn "But we don't need to file form 346, we aren't planning to do any constructing!" To set the record straight once again, "Every TV Booster now operating must file form 346 with the FCC. Form 346 is your construction permit. Granted you have already constructed... but you still have more to do! The FCC is willing to forget that you built a TV repeater without their authorization (i.e. illegal VHF Booster), IF you file with them (which you have already done on form 347), and IF you rebuild your Booster to make it conform to FCC VHF Translator regulations. If you are not clear on what the regulations are, write to DXing Horizons for a copy. The fact that you have filed form 347 (which registered you with the FCC) does not mean you are now legal. It is the first of three steps to make you legal. The next step, to be completed either by February, or, if the com-

mision extends the form 346 filing date, by May 1, is to indicate to the FCC (a) what equipment you now have, and (b) how you plan to modify it to conform to the legalized VHF Translator service. When you have completed and filed form 346, the FCC will decide if your plans are complete enough to make your unit legal. If they are, the FCC will issue your Booster a "construction permit," which will entitle your group to go ahead and build or rebuild as the case may be. Only when you have finished rebuilding, and have the modified unit working, will you be entitled to your "legal status, and a full license." Repeating, if you operate a VHF Booster, you must file form 346 (application for construction permit).

THE WEST COAST

Blonder Tongue has announced the appointment of General Electronics, 4156 Piedmont Avenue, Oakland and Bill's Radio-TV, 686 Monterey Blvd., San Francisco, California to handle the B-T Benco line of equipment.

B and J Television Services, Tecopa, California writes to Modesto "We are sorry that we are so late in learning of your publication. We are one of the original (VHF) Translator operators, hidden in fear of the FCC for many years. We now wish to step into the open and be recognized for what we are and intend to be."

Washington area Booster operators reportedly are working through the office of Senator Warren G. Magnuson (D-Washington) to have the February 1 deadline for filing of FCC form 346 extended. It is hoped the FCC, acting from a suggestion from the Senate, or on its own initiative, will extend the February 1 deadline. If it does not, various groups are prepared to file petitions in support of a 90 day extension. At present time, fewer than a dozen groups have filed form 346, while nearly 1,000 have submitted form 347-A.

HAWAII — ALASKA

The KNIK TV Club in Alaska was refused use of channel 5, for repeating KTVA 11, Anchorage. FCC has reminded VHF Translator aspirants in Alaska and Hawaii that channels 5 and 6 may not be used in these states because of military occupation of the frequencies.

Blonder Tongue reports Industrial Electronics, 832 South Queen St., Honolulu, Hawaii now distributes the B-T Benco Translator unit in the islands.

WITH THE FCC

Jim Sheridan, on the staff of FCC Chairman Frederick Ford, tells your editor the FCC is genuinely concerned over the lack of development of a "Channel Coordination Board," within the VHF Translator field. As you know, the FCC will not assign channels, although they do not intend to grant construction permits to groups intending to use the same channel in the same area. However, the FCC feels the VHF Translator industry must establish a board to govern ourselves. Sheridan points to the current channel coordination program in use in the VHF common carrier (two way mobile) field. The industry itself does its own policing, and selects its own people to sit on a board which determines what frequencies are available, and where.

Something must be done... and soon! But it is going to take a lot more cooperation that is evi-

(Continued on page 34)

WEAK SIGNAL INDUSTRY

(Continued from page 14)

bias resistor is 82 ohms, developing 1.4 volts on pins 3 and 8. And everything is matched from input to output, removing transient noise and unbalance.

As stated on previous occasions in this department (actually in "TECH NOTES," the forerunner to "Weak Signal Tech Notes") high gain in the 6DJ8/6922 stage is not necessary when the tube is employed in front end service. If the tube establishes a noise figure for the circuit, it has, in theory, done its job by improving the signal to noise ratio. DXing Horizons has not completed tests on the CB unit, although a pair are destined for performance at the head end of our channel two "ionospheric scatter test." Field reports from CB users, queried at press time, are all favorable.

WINEGARD WBC-4

Unlike the Blonder Tongue CB unit, the Winegard WBC-4 is intended for mass consumer use, and probably was not designed with weak signal areas in mind.

The WBC-4 has a single input, but four outputs, uses a single 6DJ8/6922, and operates broadband from 54-108 mc., and 176-216 mc. Used as a four set "splitter booster," the WBC-4 claims a nominal 6 db gain, which in effect overcomes the circuit losses of the signal splitting process. Used as a single set booster, however, the manufacturer claims the unit delivers 12.5 db gain, minimum, on all 12 VHF channels.

Since the unit was unveiled early last fall, it has created some stir in the Winegard Marketing organization. Dealers are using the unit to split and amplify single down leads in their showrooms, for demonstration purposes; consumers (bless their hearts) have found it a handy gadget for delivering good signals to four separate wall terminals throughout their homes.

In its most strict sense, the WBC-4 reflects the marketing format at Winegard, "something for the mass buyer." Where tubeless set couplers lose signal in the splitting process, the WBC-4 can (in theory) add a little.

In its most practical sense, Winegard may have unknowingly (and we say this with no malice intended) developed a broadband front end amplifier ideal for any area with multiple channel weak signal reception (including FM).

Case to point: One of the standard "early" tests performed on any amplifier at DXing Horizons is to connect it ahead of our test bench MATTISON receiver. As many readers know, the MATTISON custom built receiver has many low noise high gain qualities which makes it perhaps the most ideal deep fringe receiver on the market today. It derives a portion of its sensitivity from a carefully constructed 6BN4 front end tuner. While our particular lab MATTISON is a product of pre "semixer" and frame grid tuner days, its front end noise figure has always been equal to or better than anything we have had in the lab (prior to the CB unit, also).

Until we made the routine WBC-4 test, and found to our surprise the signal to noise ratio on every channel, 2-13 was "measurably improved." Our immediate reaction was "check the 6BN4, because something must be wrong." But several 6BN4's later we were convinced... the WBC-4 did (and still does) improve signal to noise, evi-

denced in "blacker blacks, whiter whites" and all around less snow (noise) on marginal signals.

Running a known signal level first into a RADION variable sensitivity Field Strength Meter, and then into the WBC-4, allowed DXH to measure the signal level after it had run through the Winegard product.

With the "no amplifier measurement," and "after amplifier measurements" we found little difference in microvolt readings. While the signal level does increase slightly above non-amplifier levels, after running through the WBC-4 (especially channel two, where the signal source repeatedly jumped from 300 uv to 425 uv), the increase was never enough, we felt, to result in the considerably improved video and audio levels.

Our conclusion? The noise figure of the WBC-4 appears to be at least 2 db better on channels 7-13, and 1.5 db better on channels 2-6 than our MATTISON receiver. This makes it a very hot item.

Incidentally, thinking we may have been shipped a unit with a "hot 6DJ8," we substituted 5 new 6922's direct from Amperex we had in stock, and observed the results on the field strength meter. We found one lemon, but the other four performed every bit as good as the 6DJ8 shipped with the unit... and one even slightly better.

Summing it up, we make no comparisons between the Blonder Tongue CB amplifier and the WBC-4... and wouldn't even if tests were completed on both units. Each is intended for an entirely different job, and their similarity stops when the 6DJ8 is pulled from the respective socket. A later report will appear on the CB unit. The WBC-4 (Note: Winegard) is a booster Coupler... but a booster first, and a coupler second. Price: \$27.50 list.

TV REPORTING

(Continued from page 15)

New TV DX enthusiast David Combs, Columbia, Missouri watched the groundwave signals extend out on both the 26th and 27th, reaching west into central and southern Kansas (MAKE-10, 280 miles, KTVH-12 310 miles).

E SKIP TOO!

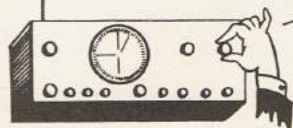
While the Midwest and Great Lakes states were enjoying phenomenal groundwave results, the far west and southwest were wondering if it was "June in November." According to the best information available, the E skip also took its share of enthusiasts all over the United States. The openings of December 5, 6 and 8 were among the best on record for any wintertime period, and certainly far above average for early December. E skip December 5 appeared to concentrate over the Great Lakes and northeastern states. E skip between New England and Illinois-Minnesota is reported as early as 1200 EST. E skip also hit over the western Plains states and into the Rockies December 18, around 2100 EST.

But in the far west, things really popped. Arizona was apparently well situated, for DXer Ed Hepp, Tucson found E skip on November 25 (Idaho, Oregon, Northern California around 2100 EST), November 26 (due north, 2125 EST, December 1 (Texas, Louisiana, Mexico, 2130-2400 EST), December 2 (Mexico, XEZ, XEWO, 2030-2130), December 3 (KPRC-2, Houston, 1200-1215 EST), December 4 (Mexico, Illinois, Missouri, 2145-

(Continued on page 33)



THE WORLD



OF DX

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LOCATION—A Plague on Your House

It has been suggested from time to time, that all DX contests, award systems, and "Supremacy Listings" be done on a handicap system, based upon how good, or, how poor one's location may be. As most old pros, and beginners alike realize, *where in North America, or the world, you happen to call home, can and does have a great deal to do with how much DX you hear*, regardless of whether it be shortwave, medium wave or FM. If you are a city dweller, your DXing is plagued with manmade noise, lack of sufficient room to erect long effective antennas, and more often than not, over powering local stations, crushing your receiver's sensitivity-selectivity, eradicating all signs of weak signal DX. The problem of overpowering locals is perhaps most severe in the FM range, only slightly better at medium wave, and (at least in the United States) only a minor problem in shortwave. Leaving out of this discussion TV DXing, we will acknowledge that city dweller TV DXers, with the present 12 VHF channels in greatest use, are handicapped the worst of all.

Eliminating for the rest of this discussion the advantages and disadvantages of city dwelling DX enthusiasts, let's pass on to geographical location. DX pro (SW, MW, TV and FM alike) Hank Holbrook, Bethesda, Maryland notes "*Location in this hobby has a lot to do with a DXer's achievement. A west coast DXer has fewer countries to aim at than a BCB DXer in the east. Here in the east we have Europe*

and Africa, and on occasions we can dig up a TP (Trans Pacific station) from the west coast listeners back yard. West Coast listeners have a more difficult time hearing a TA (Trans Atlantic station) than we in the east have hearing a TP. (World location wise) New England and New Zealand are considered tops."

DXer Holbrook notes "*Perhaps a handicap system such as in use in sports would be a (good) solution. Because in the (DXing) hobby, location is an all important factor, an award doesn't entirely reflect the ability of the DXer, in my opinion."*

The question raised by the *World Wide DX League* awards system themselves raise further questions. *What does an award prove? Do you look upon an award, or your position in a comparative listing of DXers, as an indication of personal achievement? Or, as an indication of "relative achievement and skill," to be weighed against that of other DXers, who are perhaps operating under entirely different listening conditions? Are awards (WVWX-L or anyone's) "great equalizers . . .," or, were they even intended to be?*

DXers are known for their strong opinions of subjects akin to this one . . . what about yours?

FIRST COPY READER?

You receive DXing Horizons every month for \$4.00. The very latest SW-MW DX news. Subscription blank page 3A.

SHORTWAVE STATION REPORT

DXing Horizons Salutes . . . THE FAR EAST BROADCASTING COMPANY

The FEBC is now 15 years old!

In December 1945, the Far East Broadcasting Company was incorporated to build and operate missionary radio stations in Asia. Fifteen outlets now reach large audiences in Asia and Latin America."

When the first small station went on the air at Manila, the Philippines, in June 1948, there was little idea that by 1960 one transmitter would have been added for each year of FEBC's existence. At Manila, FEBC now operates 10 transmitters, using 12 frequencies. These are divided into three program services which carry programs in 36 languages—Philippine Service (using languages of the Philippines); Overseas Service (using languages of countries in Asia); English Service (using English for both Philippine and Overseas listeners). One of the stations, DZFE, is known as Manila's "Fine Music Station" when it is not coupled to either the Philippine or English Service. These program services broadcast simultaneously, making a total of 54 program hours on the air each day.

Programs for the Overseas Service are provided mostly from recording studios in the various countries. They are produced by nationals under the supervision of missionaries. The tapes are sent to Manila for broadcasting to the country from which they came.

The original vision of the founders of FEBC (Robert H. Bowman, now president of the organization, John C. Broger, and William J. Roberts, now vice-president and secretary) was to build stations in several locations in Asia. In 1957, the door was opened for establishment of stations in Okinawa. At Naha, FEBC operates KSAB (1020 kc., 3 kw.) with programs in English for the thousands of U.S. servicemen stationed on the island, and KSDX (1250 kc., 1 kw.) with programs in Japanese for the local Ryukyuan population.

Sixty miles north of Naha, Okinawa, is KSBU, a 100-kw. station (850 kc.) beaming Chinese programs to the mainland of Red China. Reports from behind the "Bamboo Curtain" indicate a strong signal. When the antenna is at peak efficiency, KSBU will have an effective radiated power of 1 million watts centered on Shanghai, and should be heard throughout the whole country during nighttime transmissions; primarily on the coast during the day. A recording studio has been established in Hong Kong as a center to provide Chinese programs for KSBU and the Manila stations.

Some time ago, FEBC acquired KGEI, "The Voice of Friendship," in Belmont, California (near San Francisco), which now operates on 15.225 at 2300-0300 GMT daily to Latin America; plans are being made to inaugurate beams from KGEI to other parts of the world.



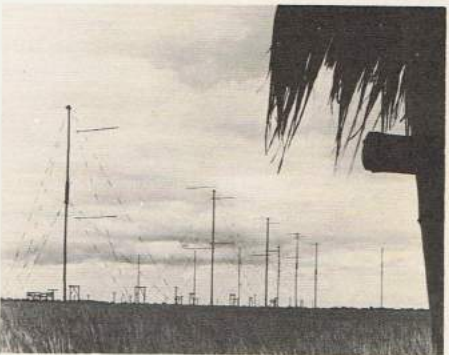
On Feb. 14, 1960, President P. Garcia of the Philippines, dedicated the NEW 50-kw. shortwave transmitter of the FEBC, "The Voice of the Orient," at Manila. President Garcia expressed the hope that this station (the reactivated "Voice of Freedom" transmitter of World War II days) would be able "to discharge the mission to which it has consecrated itself, the mission of broadcasting the thoughts, the ideals, and the sentiments of freedom, not only in the Philippines but throughout the entire continent of Asia."

One very integral part of the FEBC ministry is the "Portable Missionaries." These are receivers, pre-tuned to FEBC frequencies, which are given out on a loan basis. More than 1,100 of these receivers have been distributed throughout the Philippines. There are about 1,300 applications on file in the Manila office from those wanting to receive "PMs" when sets are available. As a result of this ministry, hundreds have heard a radio for the first time in their lives.

Headquarters address of the FEBC, Inc., is Box 1, Whittier, California.

It is indeed a pleasure to salute the FEBC and its capable staff, and to extend heartiest congratulations and best wishes as FEBC continues to broadcast "Christianity to the World by Radio!"

—KEN BOORD



This is the antenna array of the Far East Broadcasting Company, Inc., "The Voice of the Orient," Manila, the Philippines. In addition to both SW and BCB outlets at Manila, the FEBC operates three BCB stations in Okinawa, and the SW station KGEI, "The Voice of Friendship," at Belmont, California (near San Francisco).

MEDIUM WAVE

DXing HORIZONS

Edited by DXing Horizons
Medium Wave Editor

Glen Kippel

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Sterling, Colorado, U.S.A.

DX conditions during December tended to be spotty due to irregular solar activity. LA reception was predominant but on 12-5 there was an outstanding TP opening. Of interest, though the CRPL geomagnetic index was identical on 12-5 and 12-12, there was no TP DX to speak of on the 12th. The "huge" solar flare that had been predicted for 12-7 increased absorption only slightly, and made no other change in skip conditions the morning of 12-8.

The TP opening that had been predicted for 11-27 failed to materialize for most of us, though stations in the southern U.S. were heard in New Zealand, and 160-meter hams enjoyed outstanding trans-continental contacts on that date.

FORECAST . . .

Due to the vagaries of propagation, forecasts extended beyond one 27-day cycle cannot be depended upon to be completely accurate, and should be regarded as a general idea of what is expected, much as an extended weather forecast.

Conditions are expected to be mediocre throughout January, aside from quiet periods near the beginning and end of the month.

To the subscribers who reliably send in monthly reports, your Editor is attempting to send the latest short-term propagation forecasts. This service is, at present, free to any subscriber who can be counted upon for regular reports.

WEST INDIES . . .

Keith Robinson notes that West Indies stations have been on till 0230 or 0300 EST with Australia-West Indies cricket matches. These matches run Friday through Wednesday, with Sunday off. The tourney is expected to continue through Jan. 11th.

DEADLINE . . .

Ordinarily, the 10th of each month. For regular contributors, deadlines are arranged individually. To insure the latest news, please observe deadlines closely. Thanks!

Medium Wave Log Book

All times are in 24 hour EST. Please make your reports conform to the following standards.

AMERICA

- 550 Panama—HON31 usually dominates freq Mon AM's. (Roys, Indiana)
- 575 Costa Rica—TIJJM, Alajuela, fair at 0031, 12-8. (Ed.)
- 590 Japan — JOAK, Tokyo, fair 0525-0540 w-QRM. (Golden, Calif.)
- 625 Costa Rica—TIDCR, "Voz de la Victor" R4 sig at 0045. (Ed.)
- 650 Venezuela—YVQO, Puerto la Cruz, in around 2200-2300 on 11-16, 12-7, strong. (Hauser, Okla.)
- 650 Hawaii—KORL, Honolulu, a regular Mon. AM's. (Roys, Indiana)
- 660 Columbia—HJAO, "R. Miramar," Cartagena, FB sig 11-19 2130 s-off 2359. (Millar, Wash.)

- 12-7 vy strong till 2300. (Hauser, Okla.)
- 670 JAPAN—JOBK, Osaka, good 12-5, 0430-0500. (Roys, Indiana)
- 700 Mexico—Sounds like an XEW relay here, around 0800, 12-10. (Millar, Wash.)
- 720 Venezuela—YVQR, "R. Cumana," hrd 12-7 at 2100-2105, fair. (Hauser, Okla.)
- 730 Colombia—HJAN, "Emisoras Unidas," Barranquilla, hrd 0545-0602 on 11-21, strong. (Hauser, Okla.)
- 750 Jamaica—J.B.C., Poort Maria, powerful sig w-cricketscores on 12-12 till s-off 0259. Is this regular? (Ed.)
- 752 Nicaragua—YXN, Managua, hrd w-ID 0033 "R. Equis (X)." (Ed.)
- 765 El Salvador—YSKL s-on 0600 12-7, good for hour after. (Millar, Wash.)
- 780 Venezuela—YVOD, "Ecos del Torbes" San Cristobal, 0528-0535 on 12-5. (Hauser)
- 800 VENEZUELA — YVMB, "Ecos del Zulia," Maracaibo, good 11-14, 0530-0555.
- 840 BRAZIL—PRH9, Sao Paulo, in weakly around 0300. (Roys, Indiana)
- 840 UNIDENTIFIED—News in Sp. 0500, 12-2; not HJCC, as they s-on 0530, nor "R. Caribes." (Millar, Wash.) PRH9? (Ed.)
- 854 PERU—OAX4A, Lima, tuned 2354 w-s-off ann; off w-NA 2357, 50 over S9 and R4 on 12-11. (Ed.)
- 870 UNIDENTIFIED — "Radio" in Spanish over-under KAIM, ID w-chime 0230, 12-11; also on 12-12 0407-0431, seems to be Venezuela. (Ed.)
- 890 VENEZUELA—YVLW, "R. America," Valencia, s-on strong 0530. (Roys, Indiana)
- 955 Costa Rica—TIAC "R. Fides" hrd here, along w-several others. (Roys, Indiana)
- 970 Virgin Is.—WIVI, Christiansted, hrd at s-on 0425, S7. (Golden, Calif.)
- 1090 Mexico—XEHR, Puebla, hrd 12-12, 0328-0357 over CX28. Don't confuse the two! (Ed.)
- 1090 Uruguay—CX28, "R. Imparcial," booming in 12-5 at 0300. (Roys, Indiana)
- 1095 UNIDENTIFIED—SS w-lots of QRM from KTHS hrd 0013, 12-11. (Ed.)
- 1100 Colombia—HJCN, Bogota, good Mon. AM's. (Roys, Indiana; Ed.)
- 1140 PUERTO RICO—WITA, "R. el Imparcial" atop other SSers at 0432. (Ed.)
- 1170 HAWAII — KOHO hrd w-pop Japanese music 0337-0415, 12-12. (Ed.)
- 1180 Ryukyu Is.—Voice of America, Okinawa, hrd from s-on 0600-fadeout 1040, most every AM. (Golden, Calif.)
- 1200 Colombia — HJCV, Bogota, fair AN Mon. (Roys, Indiana)
- 1380 Hawaii—KPOI, Honolulu, a regular Mon. AM's. (Roys, Indiana)
- ATLANTIC
- 650 Liberia—ELBC, Monrovia, hrd closing 1845, S5-6 but lots of QRM. (Ericson)
- 740 China — Urumchi, Sinkiang, hrd w-news in Chinese and Uighur 1900. (Ericson)

- 910 China—Urumchi also noted here in parallel w-740. (Ericson)
- 817 Morocco—Moroccan State Radio has two stations here, one in Spanish, in Dersa, Tetuan, the other in Arab, this is Tangier? (Ericson)
- 1079 Spain—EFE22, "R. Oviedo" now here. Hrd closing 1858. (Ericson, Sweden)
- 1097 Spain—EFE50 "Voz de Cataluna" has moved here. S-off 1900. (Ericson)
- 1150 PAKISTAN — APR, Rawalpindi hrd 2200 with native music, S7. (Ericson)
- 1394 Azores—R. Clube de Angra hrd s-off 2000, 12-1. Nonstop music last half hour. (Ericson, Sweden)
- 1562 International Waters—"CNBC Radio," P. O. Box 244, Hilversum, Holland, hrd w-loud sigs 1900-2000, 0200-0300 in ENGLISH. Is to increase to 65 kw. power. (Ericson)

PACIFIC

- 570 Philippines—DXWW has moved from 1180, now here w-10 kw. (Cushen, N.Z.)
- 820 North Korea—Pyongyang logged till s-off 1200. (Robinson, N.Z.)
- 1035 South Korea—HLKU, Pusan, logged 1002. (Robinson)
- 1060 Philippines—DZRB, Naga City, in fair to s-off 1100, 12-1. (Robinson)
- 1079 Poland—Katowice hrd 1227. (Robinson)
- 1180 Philippines—DXAW, Davao, logged 0520, ex-570. (Robinson)
- 1250 South Korea—AFKN, Pusan hrd 1205 (Robinson)
- 1340 Ryukyu Is.—KSDT has moved here from 1370, s-off 1030. (Robinson)
- 1490 Japan—JOSE, Nagoya, logged 0423. (Robinson)
- 1260 SIBERIA — Unidentified Japanese-English station heard by Cooper, Calif. September 5 apparently Siberia relay of Radio Moscow. Apparently very powerful. Several N.Z. DXers have rcvd veries via Moscow.

Splatter

- AUSTRALIA—3WV, 580, now 50 kw. The following are proposed: 8DN, Darwin, 1240, 2 kw.; Mout Isa, 1370, 500 w. These to go 2 kw. day, 1 kw. night: 3BA-1320, 3BO-960, 3CS-1130, 3CV-1440, 3GL-1350, 3YB-1210, 4VL-920. (DX Times)
- COSTA RICA—Verie letter from TIW-775 states that they were on 755, but reassigned to 775 with 5 kw., 0700-0100. (Millar, Wash.)
- HAITI—4VE, Cap Haitien, sent QSL folder verifying 1035 kc., 2.5 kw. (Millar, Wash.) Call is 4VE here, 4VEC is 6-mc. call. (Ed.)
- HAWAII — KOHO, 1170, veried w-PP card from Frank Fitch. (Robinson, N.Z.)
- IRAN—Airmail letter rcvd fr reception of new 100 kw. at Ahwaz on 1358. Address is General Department of Publications and Broadcasting, Teheran. (Robinson, N.Z.)
- ISRAEL—4XB34, Tel Aviv, 737, veried by air v-card, letter and tourist info from Eileen Hyman, Assistant to the Director, Overseas Department, Israel Broadcasting Service, Jerusalem. (Robinson, N.Z.)
- JAPAN—Changes are JOUG, 680, to 5 kw., JOPC, 720, ex-1240 to 10 kw. JOSD, 790, ex-1420, 1kw. JOUB, 1520, now 10 kw. (Branks, N.Z. via Robinson)
- NICARAGUA—Prized letter verie for YNW1, 875, Leon; specific as to call and freq. (Millar, Wash.)

World Radio TV Handbook

... Out and Available

Publisher O. Lund Johansen has released his 1961 edition (the 15th) of the only handbook available for international shortwave and medium wave fans around the world.

an anniversary issue, and notes the current issue is DXing Horizons received an airmail copy for review purposes in mid-December. Among the features we found highly interesting in this year's edition, "Shortwave Conditions in 1961," "DX Programmes," "Table of Most Suitable Shortwave Bands," and the large complete listings of stations, operating times, power and frequencies, which have made WRH so useful over the years.

DXing Horizons recommends the '61 edition of the handbook to all SW-MW and TV (lists all world TV stations) DX enthusiasts as a most valuable reference work for year 'round listening.

WRH is available again this year in the United States through Gilfer Associates, P. O. Box 239, Grand Central Station, New York 17, New York.

World Wide DX League

Inquiries are received daily as to the progress of the LEAGUE. LEAGUE Directors report that invitations were mailed to the American SWL Club, The National Radio Club and The Newark News Radio Club, early in September, to join forces through the world wide auspices of the LEAGUE, as a means of presenting a united front of listeners to the broadcasting world.

To date, following several repeat inquiries mailed to the NRC and NNRC, only the AMSWLC has shown an interest in fostering the ideals of the LEAGUE.

The immediate aim of the LEAGUE (cooperation from local and national clubs willing) is to enroll the ranks of DX listeners all over the world into a single body. This primary job accomplished, the DXing world will be in a position to offer real listening cooperation, on a world wide scale, to the world's broadcasters. The immensity of the task is overwhelming, and perhaps this has stopped non-responding club officials from throwing their support behind the movement. At the same time, we note with disgust some club officials have chosen to either remain silent or plead ignorant to the motives of the LEAGUE.

As long as we can remember, or trace into history via cherished copies of club bulletins of decades ago, club enthusiasts have been vocal in lamenting the inter-club squabbling and lack of cooperation between "rival groups."

If DX clubs around the world really do desire international DXer cooperation, and are enthusiastic over the prospects of ending such petty differences as have cropped up over the years, we offer this as a challenge to their officials to rally behind the first truly non-partisan, globe circling organization ever offered... THE WORLD WIDE DX LEAGUE.

Silence, or continued blatant attacks upon the goals of the LEAGUE can only be taken as a public admission of a "lack of desire" to promote real good will and world understanding through DXing, and DXer cooperation.

R.B.C.

ENGLISH LANGUAGE SW HORIZONS

"A monthly review of 'casts heard in North America in the English Language"

By
A. R. "Al" Niblack
420 Shelby Street
Vincennes, Indiana, U.S.A.

With the initial release of this column last month DXing Horizons added a new feature with the intent of aiding and abetting the beginner as well as the veteran.

Once the listening "shack" is set up, the antenna erected, the first problem confronting the beginner is what shortwave band (bands) to tune? From long experience and practice the veteran DXer knows the answers. For the beginner the following will be of assistance:

90 meter band (3.200-3.400 kcs)
60 meter band (4.750-5.000 kcs)

Generally speaking the 90 and 60 meter bands are used for local broadcasting in tropical areas. During the evening hours in North America it is possible to hear South and Central Americans. And for the more practiced DXer it is possible to log many African signals from Angola, Union of So. Africa, Kenya, Mozambique, and so on. In the early morning hours it is possible to log Far East broadcast stations.

49 meter band (5.900-6.400 kcs)
41 meter band (7.100-7.400 kcs)
31 meter band (9.200-9.700 kcs)
25 meter band (11.600-12.000 kcs)

The 49, 41, 31, and 25 meter bands contain the major portion of the shortwave stations in the world. These bands are year around performers with conditions peaking during the evening hours (before midnight) and just before sunrise.

19 meter band (15.100-15.450 gcs)
16 meter band (17.700-17.900 kcs)
13 meter band (21.450-21.750 kcs)
11 meter band (25.400-26.100 kcs)

While the 19 meter band may possibly be considered a year around performer yielding good daylight and sometimes night reception, the 16, 13, and 11 meter bands are more erratic. The three latter are at optimum only during the daylight hours.

MONTHLY LISTENING TIPS

The following listing consists of stations currently heard throughout North America in their ENGLISH sessions (sprinkled in the group is some real DX).

(Times are in GMT, frequencies in megacycles.)

FOR LISTENERS IN THE EAST COAST

NORTH AMERICA AREA (acknowledgement to Cox, Dela.)

ALBANIA—R. Tirana, Tirana, 7.157(M), 2230.
CHINA—R. Peking, Peking, 11.945, 0245 (This one should show with increased signal strength during January).

GUIANA (BR.)—ZFY, Georgetown, 3.255, 2300.
GHANA—Accra, 4.915, with N-E, 2100.

KENYA—Nat. Service, Langata, 4.885, 0315.

INDIA—AIR, New Delhi, 11.710, 1945.

INDONESIA — Voice of Indonesia, Djakarta, 9.585, 1100.

IRAQ—R. Baghdad, Baghdad, 6.030, with N-E, 2045.

KOREA (SO.) — Voice of Free Korea, Seoul, 15.410, 0530.

MOZAMBIQUE — L. Marques, 4.840AV, 0330-0430A.

NIGERIA—Nat. Prgm., Lagos, 4.990, with N-E, 0600.

RHODESIA—FBC, Salisbury, 3.396, 0400.

SIERRA LEONE — SLBS, Freetown, 3.316, with N-E, 0700.

UNION OF SO. AFRICA — SABC, Paradays, 25.800, 1300 (This frequency of SABC should peak during January).

USSR — R. Tashkent, Tashkent, 11.695, 1200. (Check for improving signals from Tashkent around this hour).

FOR LISTENERS IN THE CENTRAL U.S.A. AREA

AUSTRALIA — R. Australia, Melbourne, 11.840, 2045.

CANADA—Station CFRX, Toronto, 6.070, 0300.

GERMANY (FED.)—DW, Cologne, 11.795, with N-E, 2315.

OKINAWA — VOA Relay, Naha, 15.215, with N-E, 0100.

PANAMA — R. Atlantico, Colon, 9.505, 2130. (May be Sundays only)

POLAND—R. Warsaw, Warsaw, 11.803A, 0230.

PORTUGAL — Station CSA66, Lisbon, 17.895, 1730.

ROUMANIA — R. Bucharest, Bucharest, 5.980, 0130.

SWAN IS.—R. Swan, 6.000, ENGLISH ID, 0400 s-off.

SWEDEN—R. Sweden, Stockholm, 9.725, 0315.

USSR—R. Moscow (Siberian Relay), 11.850, 0300 (This service of R. Moscow should peak around 0400).

FOR LISTENERS IN THE WEST COAST— NORTH AMERICA AREA

 (acknowledgement to Balbi, Calif.)

BURMA—BBS, Rangoon, 6.015, 1500.

CEYLON—R. Ceylon, Colombo, 9.520, 1300.

JAPAN — NHK, Tokyo, 11.800, parallel 6.880, 0530-0700.

KOREA (NO.)—R. Pyongyang, Pyongyang, 6.250, 1300.

MALAYA—R. Malaya, Kuala Lumpur, 7.200, with N-E, 1330

PAKISTAN—R. Pakistan, Karachi, 11.675A, with N-E, commentary, 1530-1545.

PHILIPPINES—FBCB, Manila, 11.920, paralleled by 9.730, 1300.

SINGAPORE—BCCFES, Singapore, 11.820, paralleled by 11.955, 1100.

NEW GUINEA—VLT6, Port Moresby, 6.130, with ABC N-E, 1100 and 1300.

SOLOMON IS. — Station VQO2, Honiara, 5.960, with BBC N-E, 0915.

SARAWAK — R. Sarawak, Kuching, 4.950, airs BBC N-E, 1300.

TAIWAN — BBC, Taipei, 11.725, paralleled by 6.100, 0130-0200.

"Happy Hunting" and make a note to visit with us again in February.

A.R.N.

COSTA RICA—TIFC, 9.645, San Jose, gud level to 0500 c-d. (Sisler, W. Va.) TIDCR, 9.618A, hrd in Sp. 01515-0525 w-mx. (MacKenzie, Calif.)

CUBA—R. Rebelde, 6.440A, Havana, noted in Sp. 2330-0500. (Rowell, Minn.) Has frequent time checks. (Stephenson, Okla.)

CYPRUS—BBC, 6.170, Limassol, currently is audible w-N-E relay 0330-0345, then w-Ar.; fair level but w-QRM on spot. (Niblack, Ind.)

CZECHOSLOVAKIA—R. Prague, 7.340, gud level arnd 0300-0400 in ENG. to N. Am. (Sisler, W. Va.) Fqs in parallel include 5.930, 9.550, 9.580, 11.990. (Bohac, N.J.)

DAHOMY—R. Cotonou, 4.870, hrd 2130 in Fr., native mx. (Rowell, Minn.)

DOMINICAN REP.—"The Voice of the West Indies, that circles the world," R. Caribe, appears to have settled down on 15.065A, opening 1100A parallel 9.485; runs to POSSIBLY 0300, after which the old 6.210 channel parallels 9.485 to 0400 or later. (Rowell, Minn.; Howard, Mo.; Balbi, Calif.; Niblack, Ind., others) Now has a MAIL-BAG session in BOTH SP., ENG., arnd 2130-2200; woman anncr says all ltrs will be answered via radio or mail; each ltr is read in BOTH SP., ENG., and mx is featured. (Howard, Mo.; Ferguson, N.C., others) The 15.065 channel is gud in Denmark fr arnd 1800-2030 fade-out; at times has QRM fr R. Peking, 15.060. (Jensen) Fq MEASURED 15.063. (Cox, Dela.)

EGYPT (UAR)—R. Cairo, 11.745, which REPLACES 11.670, noted 0300-0700 in Ar.; 0630 N-Ar. at dictation speed; also noted 1500-1700, fair to gud level in Calif. Noted on 11.915A at 1900-2230 to Eur., fair level; N-E 2145. (Balbi) Hrd on 7.050 at 0452-0500 and also 1500 in Ar. (Howald, Calif.)

EL SALVADOR—YSS, 9.555, San Salvador, tuned 0205 w-ID and N-Sp. to 0207, then mx and talks in Sp.; still gud 0230. (Ferguson, N.C.)

ETHIOPIA—At press time, R. Addis Ababa was NOT being hrd on TEST channel 11.955 arnd 1810-1848 dly—may have moved? (Rowell, Minn.)

FIJI IS.—FBC, 5.980, Suva, noted w-Hindi-type mx 0815; weak to fair but clear sign in Dela. (Cox)

FINLAND—ENG. b-c fr Helsinki on FRI. 2100-2130 is carried over 6.120; rpts wanted. (ISWC)

FRANCE—RTF, Paris, is noted w-ENG. 1400-1458 SAT., SUN. ONLY on 7.160. (Pearce, England) Observed opening on 6.175 at 0500 in Ar., SINPO 33333 in N.Y. (Washington)

GERMANY (EAST)—R. International, 9.730, noted w-N-E 2000-2015. (Saylor, Va.) Acgdg to verie, has xmsn to Afr. 0415-0500 in ENG., 0500-0545 in Fr., on 12.008. (Cushen, N.Z.)

GERMANY (WEST)—Fqs for R. Liberty, Munich, are 3.990, 6.055, 7.130, 7.245, 9.565, 9.730, 11.935, 11.965, 15.340, 15.370, 15.395, 15.410, 17.730, 17.865; hrd in Russian 1900 s-on w-IS on 15.340. (Roth, Conn.) RIAS, 6.005, hrd 0715 and again 1440 w-mx (Malmo DX-aren)

GHANA—R. Ghana, Accra, hrd TESTING on 7.275 w-anncmts in ENG., Fr., vernacular 1834-1900 and asking for rpts. (Pearce, England) Observed TESTING on 15.190 at 1600-1630 s-off, strg level, ID in ENG., Fr., vernacular; heard irreg on 9.640 at 0700-0745, w-N-E 0700. (Balbi, Calif.) Noted 2025-2215 s-off BETWEEN 9.525-9.545. (Bowker, New Hampshire) MAY BE TESTING NEW HIGHER-POWERED XMTR? Noted by

Howald, Calif., on 3.366 at 0530 s-on but soon faded out.

GREECE—R. Athens, 11.720A, parallel 15.345, noted 1720 Fr., 1730 ENG. (Pearce, England)

GUINEA REP.—R. Conakry, 4.910, hrd 0645 w-ENG. LESSON to 0700, then drum IS, ID in Fr., then N-Fr. (Buchanan, Mo.)

HAITI—4VW1, Cap Haitien, has RETURNED to 9.773 fr 9.770 to escape QRM; 4VEH has MOVED fr 6.000 to 6.120A; if proper crystal can be had, will use 6.122. (Sisler, W. Va., others) 4VU, R. Lumiere, Cayes, has MOVED its 90-m. band xmtr to 2.410 w-250 w., beaming N-S; veries promptly via ltr. (Stanbury, Ont., Canada) R. Caribes, Port-au-Prince, has MOVED fr 6.004 to 6.015. Sked for La Voix du Sud, 5.740, Cayes, is 1100-1300, 2300-0500; has commercial spots in ENG., Sp.; official lang is Fr. (Roth, Conn.)

HOLLAND—R. Nederland hrd s-on 0130 in Dutch on 6.075; 0200 had ENG. mx prgm to 0300 s-off. (Saylor, Va.) Hrd opening 0030 on 11.800A in Sp. to L. Am. (Rowell, Minn.) The 9.590 channel has REPLACED 15.220 at 2115-2205 parallel 11.730 to Eur.-N. Am.; N-E 2115. (Balbi, Calif.)

HONDURAS—HRVF, 9.705M, tuned 0425 and hrd ID as "Voz de Suayapa, Tegucigalpa, Honduras"; noted to s-off 0500; hrd another day at 2350 w-ID. (Ferguson, N.C.) HRQ, 6.125, San Pedro Sula, noted in Sp. 2300-0200. (Stephenson, Okla.) A NEW stn is HRD4, "La Voz de las Colinas," 4.755, 0.5 kw., operating 1900-2100. (WRHB)

INDIA—N-E fr Delhi 1530 is b-c on 6.190, 7.120, 7.225, 9.605, 9.705, 9.740, 15.280. (Ayres, England, via AMSWLC) Hrd w-N-E to SE Asia 1330 on 17.705. (Washington, N.Y.) AIR, 4.920, Madras, noted to 1703 c-d. (ISWL)

INDONESIA—Djakarta has REPLACED 11.825 w-11.710 arnd 1615-1900 to Eur., parallel 9.585, fair level in Calif. (Balbi) Also noted in Denmark. (Jensen) YDG3, 4.875, Surakarta, noted in Malay 1145-1200, nx and oriental mx; listed 10 kw. (Roth, Conn.) RRI, 5.030, Medan, observed w-N-Indonesian 1430. (DX-Radio)

IRAN—Altho R. Teheran, 15.105, is hrd arnd 1900-2100 in various langs, the ENG. sked 2045 is NOT noted (has another lang then). (Rowell, Minn.)

IRAQ—R. Baghdad, 3.297, weak 2105 w-Ar. nx by man; off arnd 2118. (Cox, Dela.; Pearce, England) YIH62, 6.030, fair w-ID and N-E. 2030. (Berg, Conn., others) Has much improved sig lately. (Roth, Conn.) Hrd on 7.180 arnd 1830 in Ar. (GDX-aren)

ISRAEL—Tel Aviv, 11.922.5M, excellent 2015 w-N-E by man, parallel 9.009. (Cox, Dela.) Hrd on 9.009 in Hebrew opening 0515. (Washington, N.Y.)

ITALY—RAI noted on 9.720 INSTEAD of 9.575 at 0305-0325 s-off to WCNA w-N-E. (Balbi, Calif., others) Hrd parallel over 6.010. (Niblack, Ind.)

IVORY COAST—R. Abidjan, 7.215, has N-E MON.-SAT. 1900-1915. (GDX-aren)

JAPAN—JOA17, 17.855, Tokyo, usually gives good sig in 0030 xmsn too ECNA; the 15.135, 11.800 outlets normally have Latin QRM. (Ferguson, N.C.) FEN, 11.750, hrd 0830 at gud level in N-E, mx. (Sanderson, Australia)

JORDAN—Amman noted on 9.530 in Ar. 0645 to close 0805; also noted on 7.155 to 2200 c-d. (Pearce, England)

KATANGA STATE—In verie-ltr to Berg, Conn., an official of R. Katanga said shortly would be xmtg w-20 kw. and still later w-50 kw. "At that time, we shall be able to be heard all over the world, and we shall extend our programs, particularly with information in foreign languages, especially in ENGLISH," it was stated. QRA is Box 1152, Elisabethville, Katanga State, via Brussels and Usumbura. Noted on 11.865 frn arnd 0400-0530 and 1900-2100 by Rowell, Minn., Buchanan, Mo., others.

KENYA—Nairobi, 4.934, noted 2045 w-"Spotlight on Music" feature. (Sanderson, Australia)

KOREA (NO.) — R. Pyongyang, 2.850, hrd 1430-1440 in Korean, mx; 6.195 noted 0818 in native. (Howald, Calif.) Hrd on 6.250 at 1330-1400 w-N-Japanese, Korean mx. (DSWCI)

KOREA (SO.) — HLKA, 9.640, Seoul, noted 2200-2300 in ENG., Fr. to Eur.; has MAILBAG in ENG. on SUN.; QSA4, w-QRM AFTER 2300 when has N-Korean. (Jensen, Denmark) Noted 1430-1500 w-N-E, mx. (Rowell, Minn.) Hrd on 9.640 to WCNA 0530-0630, REPLACING 15.125, parallel HLK5, 11.930. (Balbi, Calif.)

KUWAIT—KBS, 4.967.5, hrd frn 0230 w-Ar. ID by man; N-Ar. to 0242, then chants; clock chimes 0300, more news or talk followed by instrumental 0315; peaked arnd 0300; also noted frn 2015. (Cox, Dela.) Often strg level in Denmark arnd 1930-2030 w-Ar. nx, mx. (DSWCI)

LIBERIA—ELWA, 11.745, Monrovia, noted w-religious b-c arnd 1800-1830. Observed on 4.770 at 2130-2200. (Rowell, Minn.) The 15.085 outlet noted more recently TESTING frn 2015 to N. Am. (Huff, Balbi, Calif.) Good on 15.085 at 1700-1800 w-Fr. religious session to Madagascar, Congo; also 1830-1930 wkdays, 1815-2000 SUN. (Jensen, Denmark) Hrd opening on 15.085 at 1530. (KBLP) Observed on 11.985A w-Afr. nx 0615-0620, gud level in Va. (Saylor)

LIBYA—Benghazi, 3.305, hrd 0455 w-celeste IS, then Anth. 0500, followed by N-Ar. and Ar. chants. (Berg, Conn.)

MARTINIQUE — RM, 5.996M, Fort-de-France, found 2205 in Fr. and 2207 had ID by woman, cont'd w-mx, Fr. (Ferguson, N.C.) Noted in Fr. 0030. (Rowell, Minn.) Logged in Britain at 2330 on 2.420. (ISWL)

MONACO—Transworld Radio, Monte Carlo, 9.705, is now sked 0630-0830; however, also has been noted arnd 0845-1030 w-religious releases. Rpts can be sent to Monte Carlo or to 114, Wegmore St., London W1, England. (Saylor, Va.; Pearce, England) Acddg to an official of the stn, by now Transworld Radio should have NEW curtain-type antennas in operation w-gain of frn 12 to 14 dbs; provisional antennas had gain of ONLY 3 dbs. (Bowker, New Hampshire)

MOROCCO—R. Marocaine, 11.735, noted 2000 w-N-Fr., Ar. 2200-2330; fair. (Balbi, Calif.; Rowell, Minn.) Hrd 1800-1830 in ENG. (Pearce, England) Excellent in Fr. 0700 ID on 7.225. (Roth, Conn.)

MOZAMBIQUE — CR7BF, Lourenco Marques, is again audible on 11.760A arnd 0430 w-usual pop mx; however, when tuned on a MON., was using Afrikaans and NOT ENG. (Niblack, Ind.) Hrd in Calif. 1550-1600 in ENG. (Howald) And as early as 0335, SINPO 44344. (MacKenzie, Calif.)

NEW CALEDONIA—R. Noumea, 6.030, noted 0810 w-N-Fr. (Howald, Calif.)

NEW GUINEA (AUSTR.)—VLT6, 6.130, Pt. Moresby, noted 0800 w-ABC N-E; vy gud sign in Mo. (Buchanan)

NEW GUINEA (NETH.)—RANG, Biak, has MOVED frn 6.070A to 6.065; is clear of CFRX, Toronto, Ont., Canada, now 0900-1330, but w-poor sig; using NEW type of s-on ID in Dutch, ENG. (Balbi, Calif.) Hrd 0900 in Australia. (Sanderson)

NIGERIA — Widely reported throughout the world is the Eastern Nigeria Broadcasting Service at Enugu, 4.855. Roth, Conn., others, have rd word frn the stn that xmsns began Oct. 1, Nigeria's INDEPENDENCE DAY, using 10 kw. xmtrs frn Pye Limited of England; uses 4.855, 9.635 at various hrs of day and night. Rpts are wanted to Box 350, Enugu, Nigeria. Roth observes ID at 2015 on 4.855 is now "The Voice of Eastern Nigeria." Cox, Dela., finds this one excellent 0615 w-BBC "Radio Newsreel" feature, ID 0629. Ferguson, N.C., notes the 4.855 outlet s-on 0500 w-ID, time check, then "Breakfast Club" session. Ferguson hears Lagos, 4.990, opening 0500 w-religious service; 0510 prgm preview by woman; 0515 ID, then w-lang prgm. Roth, Conn., notes Ibadan, 7.285, s-on 0500 in native, 0530 IS, drums, then N-E to 0540; clear until 0545 fade-out. Acddg to ltr frn stn, Western Nigerian Radiovision Service, Ibadan, will have SW xmtrs on 3.360 (day) and 6.050 (night); now uses 610 kc., 660 kcs. MW, Roth rpts.

PAKISTAN — APK, 15.160M. Karachi, noted 1410 w-native mx; 1415 ID in lang, cont'd w-mx; still gud 1425 in lang. (Ferguson, N.C.) Noted on 11.885 w-N-E 0230-0245, then goes into lingo. (Sisler, W. Va.; Niblack, Ind., others) Hrd on 21.590 at 0800 w-N-E, commentary, mx; on 17.745 at 1200 w-N-E, mx; on 7.010 at 2030 w-N-E, commentary, mx. (Sanderson, Australia)

PERU — OAX4T, 15.150, Lima, hrd w-ENG. 2115-2130. (Bowker, New Hampshire) Tuned 2030 w-pop mx, Sp. annctms; 2100 ID in Sp.; 2105 N-Sp. to 2107, mx to 2115 ID, then woman in ENG. gave talk on Inca village; closed ENG. 2128 and Ger. followed by woman; sked for ENG. is MON.-WED.-FRI. (Ferguson, N.C.) Hrd in Minn. arnd 1800-0500. (Rowell)

PHILIPPINES—DZH7, 9.730, Manila, FEBC, now hrd w-N-E 0800 (NOT 0900), fair to gud, parallel DZH8, 11.855, latter seldom audible in Calif. (Balbi) DZF2, 11.920, noted 1600-1630 w-religious release in ENG., strg level in Minn. (Rowell) Hrd in Calif. 1130-1605, but is OFTEN JAMMED or QRM'd; noted 2100-2300 on 17.805, 15.300; N-E 2145; on DZF3, 15.385, 2300-0030, w-N-E 2330. (Balbi)

POLAND — R. Warsaw, 7.315, noted w-ENG. 2030-2100. (Pearce, England)

PORTUGAL—Lisbon noted using 6.025, 9.740, 11.840 to N. Am. arnd 0000-0400. (Rowell, Minn.) R. Renascenca, 6.154, observed arnd 2300. (Malmo DX-aren)

PT. INDIA (GOA)—Emissora Goa was recently logged on 21.585 at 1530 to arnd 1630 w-all-Pt. session; N-Pt. 1600, preceded and followed by martial-type mx; then pop mx to 1630 when ID as "Emissora de Goa," then appeared to go into an Indian dialect. (Pearce, England) Acddg to a Goa newspaper, is TESTING in Pt. to Afr. 1530-1630, and in Concani 1630-1730 on 21.580. (Roth, Conn.)

RHODESIA — Lusaka logged on 5.975AV at 1530 w-N-E and translation of EACH SENTENCE

into a vernacular; news in native 1540-1545, gave ID, then said to return to outlets in 41-, 90-m. bands; strg level. (Balbi, Calif.) Hrd in Kansas 0500 w-Afr. nx and sports nx in ENG.; ID "This is the African Service of FBC" at 0510, then Afr. mx. (Craighead) Salisbury, 3.396, noted 2000 w-"Popular Girl Contest," chimes, commercials. (Sanderson, Australia) A NEW 10-kw. SW xmtr at Gwelo carries the So. Regional Prgm 0400-0600 (wklys ONLY), 1550-1900, 4.965; 1000 (SUN. 1100)-1545, 9.735. The 2.5-kw. xmtr at Zomba operated on 3.955 at 1600-1900; vernacular 1600-1800, ENG. 1800-1900. (WRHB)

ROUMANIA—R. Bucharest, 11.810, found 0445 w-ENG. prgm to 0457 c-d. (Ferguson, N.C.)

SAUDI ARABIA—Djeddah, 11.950, noted 0420 in Ar.; also observed "briefly" arnd 1615 and at 1825 to after 1845 in Ar. (Rowell, Minn.)

SENEGAL—R. Senegal, 11.895, is widely noted w-N-E arnd 2025, strg level. (Newhart, Ind., others) Noted on 4.950 at 0727 w-native mx, anncmts in Fr., excellent sig. (Buchanan, Mo.)

SPAIN—RNE, 6.140M, Madrid, powerful sig 2030-2045 w-N-E by woman. (Cox, Dela.)

SUDAN—R. Omdurman, 5.039M, noted in Ar. frm tuning 0415-0500 s-off; fair to gud level, w-some CWQRM. (Saylor, Va.; Ferguson, N.C.) Hrd on this MEASURED fq w-Ar. chants 2035, fair level; Ar. ID and N-Ar. by man 2100; some CWQRM. (Cox, Dela.)

SWAN IS. — CURRENT SKED of R. Swan, 6.000, is 1330-1500 Sp.; 2330-2400 ENG.; 0000-0400 Sp. (Stephenson, Okla., others) FULL ID in ENG. is given arnd 0400 just prior to c-d. (Niblack, Ind.)

SWEDEN—R. Sweden, 11.705, noted 1615 in ENG., strg level in Minn. (Rowell) Hrd on 9.605 at 1445-1515 s-off to SE Asia; N-E 1445; strg, parallel 11.880. (Balbi, Calif.) Noted on 17.840 at 1400 in ENG. to ECNA. (Washington, N.Y.)

TAHITI—Papeete, 6.135, hrd 0430-0500 in Fr., native mx. (Rowell, Minn.) Hrd in Mo. 0530 at excellent level. (Buchanan)

TAIWAN (FORMOSA)—"The Voice of Free China," Taipei, noted on 6.095, 15.235 at 1005-1050 w-ENG. (Cushen, N.Z., others) The 15.235 outlet observed parallel 17.785 in xmsn to U.S.A. 0130-0200; anncs 11.725, 6.095 as also in parallel then. (Balbi, Calif.; Ferguson, N.C.) The 17.785M outlet is gud level 0130 w-N-E to 0138, then Chinese-type mx. (Cox, Dela., others)

TANGANYIKA — Dar-es-Salaam, 5.050, noted frm tuning 0400-0445 in Swahili, and w-ENG. ID at s-off; fair level at times thru hvy RTTY-QRM. (Saylor, Va.)

TCHAD REP. — R. Tchad, 4.904.5, Ft. Lamy, fair frm 2045 w-classical mx, man in Fr.; c-d 2100A. (Cox, Dela.)

TOGO—R. Lome, 5.047, noted 0600 s-on to 0645; N-Fr. 0630. (Buchanan, Mo.)

TUNIS — R. Tunis, 9.630, noted in Australia 0645 w-N-Fr., then Ar. and mx. (Sanderson) Hrd on 11.970 in Ar. frm arnd 1800-1900—BUT more recently is believed to be Ar.-spkr then on 11.925A. (Rowell, Minn.)

TURKEY—TAP, 9.745, Ankara, noted 2100 w-N-E, mx. (Sanderson, Australia) Technical University, 6.280, Istanbul, noted 1815-1845 w-native mx. (GDX-aren) Ankara now noted w-ENG. for W. Eur. 2145-2230 over TAS, 7.285. (Pearce, England)

UNION OF SO. AFR. — The SABC's NEW

21.495 outlet noted at gud level frm arnd 1400 to 1600, and the NEW 17.855 channel is hrd arnd 1700-1800. (Rowell, Minn., others) SABC, 9.720, hrd s-on 0530 w-nx followed by commercials, redgs; gud level in Va. (Saylor)

U.S.A.—KGEI, San Francisco, FEBC's "Voice of Friendship," has MOVED frm 17.795 to 15.225 in its dly xmsn 2300-0300. (Balbi, Calif., others) Latest sked for AFRTS, Los Angeles, includes 0200-0630, 15.210; 2300-0330, 21.460, 17.815; 0400-1500, 9.700, 5.990; 0400-1145, 6.085; 1200-1500, 15.310. (AFRTS)

USSR—R. Erevan, Armenia, veried by registered airmail in ENG. Stn noted on 5.470 arnd 2000. (Cushen, N.Z.) Vladivostok, 5.015, noted frm 2200 fade-in to 2235 fade-out, all in Russian; weak but vy clear; strgr on a 4.040 arnd 2215 in Russian. (Cox, Dela.) R. Tashkent, 11.690, note w-ENG. 1400-1430. (Rowell, Minn.) And 1200-1230. (KBLP) R. Moscow noted on 9.595A, 9.605, 9.680, arnd 0430-0500 in ENG. to ECNA; on 11.710, 11.850, 9.540 at 0400-0530 in ENG. to WCNA (not full sked). (Rowell)

VIETNAM (NO.) — Hanoi, 15.020A, noted 1530-1600 in Vietnamese and w-native mx. (Rowell, Minn.)

VIETNAM (CO.) — R. VTVN, Saigon, noted on NEW 9.725 at 1100 w-same prgm on 7.239, 6.165; relays H. Serv. prgms in Vietnamese; full sked is believed 0800-1500. (Cushen, N.Z.) Fair on 9.725 at 1230 w-ID, then in oriental lingo by two women. (Schwartz, Conn.)

WINDWARD IS. — WIBS, St. George's, Grenada, now appears to be using 15.396M (but annc 15.400) arnd 2100-2245, and 11.715A frm 2300-0215. (Ferguson, N.C.; Bowler, New Hampshire, others) Hrd on 5.010 at 2205 w-"World Today" feature; at 2235, requested listeners to tune to 3.365 and c-d. Sked on 5.010 seems to be 2100-2230A; on 3.365, 2230A-0215. (Ferguson, N.C.)

YUGOSLAVIA — R. Belgrade, 6.100, gud sig 1830-1900 in ENG., QRM'd by Moscow. (Cushen, N.Z.)

DEADLINE—PLEASE SEND YOUR TOP-NOTCH ITEMS TO REACH ME BY THE 14TH OF THE MONTH FOR THE NEXT ISSUE. Thanks for your FB cooperation! QRA is Ken Boord, 948 Stewartstown Road, Morgantown, West Virginia, U.S.A. See YOU next month? ... K.R.B.

PRESS-TIME FLASHES!—CANARY IS.—"La Voz de la Isla de La Palma" has MOVED DOWN to 7.345 frm 7.388; still hrd frm as EARLY as 2000 to dly s-off 2300. (Berg, Conn.) ... CUBA—"Radio Cuba Independiente," operating frm a ship off coast of Cuba, noted first on Dec. 13 on 6.132; fair level but w-JAMMING on 6.135; all-Sp. ID hrd 0100 as "Aquies Radio Cuba Independiente." Is strgly anti-Castro and pro-U.S. Believe operated by refugees from Miami. (Berg, Conn.) ... INDIA—AIR, 4.990A, Hyderabad, hrd w-gud sig 1400 talks in dialect, native mx. (Schwartz, Conn.) ... KENYA — ENG. NAT. SERV., Nairobi, hrd opening 0400 (SUN.) on 7.240; SINPO 32433, on same fq as R. Moscow. (Washington, N.Y.) ... VIETNAM (SO.)—Ltr frm VTVN, Saigon, lists NEW fqs as 11.950, 9.620, 7.265, 7.245, 6.165, 6.116, 4.808. (Schwartz, Conn.)

UHF HORIZONS

(Continued from page 12)

Many towns in this category already have Translators operating. The additional cost of adding local originating equipment to the Translators would be incidental, when compared with "package low power television stations" now on the market, selling in the \$30,000 up category.

By opening up the 10 watt, or 100 watt UHF Translator for "restricted local origination," the small town will have all of the advantages of big city television (through the network and live shows rebroadcast from the origination station), as well as the one ingredient now totally lacking in most UHF Translator support... GENERAL

LOCAL ENTHUSIASM.

DXing Horizons feels the addition of local newscasts (perhaps managed by the personnel of a local radio station), local discussion shows (all live) would have vast and far reaching effects on the enthusiasm element so lacking now.

By slight modification of the FCC regulations, such local originations would be entirely feasible. By further slight alterations, such local originations could be opened to restricted local sponsorship... the monies from which, going as they would to the non-profit Translator, would be earmarked for much needed resident engineers or technicians to maintain the now poorly operated equipment.

As an early article will point out, the only really successful UHF Translators now in operation, with satisfied viewers, are located in either very large

service areas (where only a small percentage of "honest viewers" need contribute to the cause, to maintain the unit), or in areas of Nevada and Utah where tax districts maintain first class technical and engineering help (one man reportedly receives \$9,000 salary per year to maintain a series of UHF and VHF Translators in a Nevada district) to keep the units up to snuff.

A recent survey taken by DXing Horizons has indicated to this desk that the prime reason for lagging public support is lagging signal quality. Transient technicians, often not properly qualified, ride herd on tens of units, making circuit riding trips performing tasks ranging from changing 2C39A's to removing a few pounds of cremated moths from an unscreened cavity.

Translator groups will tell you, "try to get the people to support a snowy picture that works only a few nights a week!" The problem is universal... when the units are not properly maintained, and local interest dwindles.

By increasing local interest in the Translator, by offering it as an advertising medium to local merchants, we envision greatly improved local service to all viewers.

Incidentally, the proposal for local origination has been tossed around before FCC Washington personnel already. Let it be known they are informally agreeable! All the move will take is organization. DXing Horizons suggests... even urges... that all UHF Translator groups move behind "UHF Horizons" and the NALPTB right now... while interest is here, and the pathway is clear.

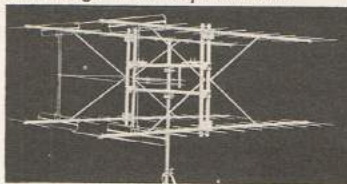
SITCO

Heavy Duty Quads and Yagis

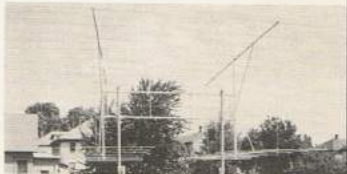
Designed by SITCO for Translator off-the-air pickup, Community TV and extreme fringe area requirements.

The SITCO Models 94 and 102 Quad Mount Antenna Arrays are designed to produce high gain, high front-to-back ratio and large aperture to weak signals. A completely balanced system which reduces noise pick-up and greatly improves the signal-to-noise ratio.

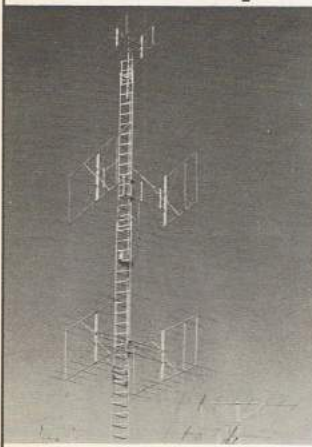
NOW, all SITCO element ends are machined to reduce static leakage. The signal-to-noise ratio is increased at sites where signal levels are low.



Model No. 102-HD 48-element Quad



Model No. 94-HD 32-element Quad



A Typical SITCO Installation

SIMPLICITY TOOL COMPANY

2850 NORTH MISSISSIPPI • PORTLAND 12, OREGON

Propagation Horizons

Prepared monthly by

Stanley Leinwoll

Radio Frequency and Propagation Manager

RADIO FREE EUROPE

The Zurich provisional sunspot number for November was 87. This is the lowest level of sunspot activity since early 1956.

All of 1961 is expected to be characterized by the continued steady decline in sunspot activity, and with it, of course, the continued decrease in the range of effective shortwave frequencies usable for DX.

In December, 1960, a smoothed sunspot number of approximately 60 is expected. This compares to a high, three years ago, of over 200.

Winter propagation conditions, which are characterized by high signal levels over daylight paths on 11 to 16 meters, should continue in January.

During the nighttime hours, 31, 41, and 49 meters will give the best DX results.

During quiet nights, when atmospheric noise levels are low, openings in both the 60 and 90 meter bands can be expected for unusual DX.

SATELLITE OBSERVATIONS

The first satellite specifically designed to gather information exclusively about the ionosphere was launched by the National Aeronautics and Space Administration (NASA) last November third.

Explorer VIII, with a 90 pound payload, has been sending data about the ever-changing structure and density of the ionosphere back to earth for two months.

Eight separate sets of instruments have been sending back information about sunspots, solar flares, auroral displays, and magnetic storms.

Since Explorer VIII was already in orbit during the two extremely severe disturbances which occurred during the middle part of November, it is expected that a great deal of new information about eruptions on the sun and the resulting ionospheric storms will be obtained.

DX TABLES

The tables at the right show the SW band most likely to produce DX between the locations shown, for the time periods appearing under the "Time GMT" column. For example, a listener in the Eastern U.S.A. will find the 11 meter band optimum over circuits to the Far East at 00 GMT. At 12 GMT, the 25 meter band will be best for circuits to Australia and New Zealand.

Since propagation over a path does not usually change radically over a short period, data is given only for even hours.

In addition to shortwave propagation data, the hours during which medium wave DX is most likely are shown with an asterisk (*).

SUNSPOT DATA FOR NOVEMBER—As hrd from HER3, 6.165, Berne, Switzerland. NOVEMBER AVERAGE—87.0. PREDICTED — DEC. 96; JAN. 94; FEB. 92; MARCH 90; APRIL 88; MAY 86.—Grady C. Ferguson, North Carolina.

Between Western USA and	W	E	N	S	N	S	F	S	A
	e	a	o	o	o	o	a	E	u
	s	s	L	L	A	A	r	s	s
	t	t	A	A	f	f	E	A	&
	E	E			r	r	a	i	N
Time GMT	u	u					s	a	Z
	r	r					t		
00	41*	25	13	11	31	16	11	11	11
02	49*	25	13*	13	31*	19	11	11	11
04	49	25	19*	16*	41	25	19	19	13
06	49	31	25*	19	41	25	41	31	16
08	41	25	25	25	31	25	41	41*	19*
10	31	31	25	25*	31	31	41*	41*	25*
12	31	31	31*	25*	31	31	41*	41*	25*
14	31	31	16	25	31	31	41*	41	49*
16	13	25	13	13	13	13	41	41	31
18	16	31	13	11	13	13	41	16	13
20	25	31	11	11	25	13	31	19	11
22	41	25	11	11	31	13	31	31	11

Between Eastern USA and	W	E	N	S	N	N	S	F	A
	e	a	o	o	r	o	o	a	u
	s	s	L	L	E	A	A	r	s
	t	t	A	A	a	f	f	E	t
	E	E			s	r	r	a	N
Time GMT	u	u			t			s	Z
	r	r						t	
00	41*	41*	13*	13*	31	31*	19	16	13
02	41	41	19*	19*	31	31*	25	25	16
04	41	41*	19*	19	31	31	31	25	25
06	41*	41	25	19	31	31	31	31	25*
08	41*	31	25	25	31	31	31	31	25*
10	41	31	31*	31*	31	31	41	31	31*
12	25	25	13	19	25	16	11	31	31
14	11	13	13	13	13	11	13	41	25
16	11	13	13	13	13	11	13	41	19
18	13	25	13	13	25	13	13	41	13
20	19	41	13	13	25	19	13	41	13
22	31*	41*	13	13	31	25	13	41	11

Between Central USA and	W	E	N	S	N	N	S	F	A
	e	a	o	o	r	o	o	a	u
	s	s	L	L	E	A	A	r	s
	t	t	A	A	a	f	f	E	t
	E	E			s	r	r	a	N
Time GMT	u	u			t			s	Z
	r	r						t	
00	41*	31	13*	13	31	31	13	11	11
02	41*	31	16*	13*	31	31*	19	13	11
04	49	31	25*	19*	41	31	25	25	16
06	49*	31	25*	19	31	41	25	41	19*
08	41	31	25	25	31	31	31	41	25*
10	31	31	31	25*	31	31	31	41	25*
12	31	31	31*	25	31	31	41	41	31
14	25	25	13	16	31	16	13	41	31
16	11	19	13	13	16	11	11	31	19
18	13	31	13	13	25	13	11	31	13
20	25	41	13	13	25	11	31	11	
22	31	41	13	13	31	25	11	31	11

Abbreviations: No—North, So—South, Nr—Near, Eur—Europe, Afr—Africa, SE—Southeast, LA—Latin America, Aust&NZ—Australia and New Zealand.

TV REPORTING

(Continued from page 21)

2335 EST), December 5 (KREM, KOOK, 2030-2120 EST), December 6 (Louisiana, 1130-1300, and Nebraska, Idaho, N.D. and Calif., 2030-2400 EST), December 7 (KPRC, 1020-1100 EST). All we can say is WOW!

Here in California, the Modesto lab was in transit to a new location during the first week of December (a period we picked for moving, confident we would not miss too much!). We can add that the December 6 opening was a humdinger here, and we found E skip on December 8 (apparently this one did not hit Arizona) between 2228 and 2310, with KMID-2 Midland logged. More E skip on the 18th (2130-2210, KMID-2, KROD-4 logged). E skip continued to press time, with XEW (1900 miles) XEZ-3 (1900 miles) and XHTV-4 (1900 miles) logged both December 21 and 22 between 2150 and 2300 EST.

CABLE DROP

(Continued from page 8)

third, as is customary, before Congress convenes.

When the Kennedy administration takes over January 20, Ford is expected to be replaced by a Democratic Chairman.

In future months, the NCTA plans further "Seminar Sessions" in line with its internal education goal.

CATV WORKSHOP MEETING

"Radio and TV Executives Society of New York"

While working to better educate CATV operators with the practical details of the TV industry, the NCTA also announces it will participate in a session designed to better acquaint the TV industry with CATV. Scheduled for January 18, in the Commodore Hotel, New York City, newly appointed NCTA President William Dalton will had up a contingent of CATV people who will present the merits of CATV to this group, composed of executives from advertising agencies, time buyers, film producers-distributors, station representatives and network officials.

The CATV workshop session will consist of a pair of speakers "for CATV," and two broadcasting representatives. Also scheduled to appear is Dorothy Mugford, former CATV liaison official from WDAU-TV, Scranton, Pa.

AMECO TO BUILD NATIONAL CATV SALES PROGRAM

Current NCTA executive director Edward P. Whitney is due to resign his post effective February 15, to become new National Sales Manager for AMECO, manufacturing and supply division for Antennavision Company of Arizona. AMECO President Bruce Merrill announced Whitney will direct the company's plans for expansion into nationwide CATV equipment sales. AMECO was formed in 1953 to provide "high quality CATV line equipment" for Merrill's Antennavision Company, which virtually saturates the southwest with CATV service. Antennavision operates, or is constructing CATV systems in 19 Arizona and Southern California towns.

CANADIAN CATV OP'S ORGANIZE

"Present United Front to Opposition"

While the NCTA (Canadian Cable TV Organi-

zation) is several years old, the present threatened regulation from the BBG and DOT is apparently doing a great deal to solidify the ranks of the Cable operators. An estimated 225 CATV system operate in Canada, concentrated in the provinces of Quebec, Ontario and British Columbia. With the Canadian Association of Broadcasters (CAB) pressing for CATV regulation, akin to rules governing the broadcasters themselves, the CATV people are anxious to present their side of the story to a committee formed at the request of the Minister of National Revenue.

The CAB, pressing for CATV regulation, made it clear that while they (the broadcasters) do not agree that government control over broadcasting is necessary, they do feel that if the control exists, it should also be in force for competing systems to the broadcasters, and in this case, "wired TV" was cited. Kenneth J. Easton, General Secretary for the NCATA, and W. Z. Estey, Legal Counsel, have been nominated to meet with the "Committee on Wired Systems" while the NCTA moves ahead to unite all CATV operators against the threat of unnecessary regulation.

THIRD "V" FOR SYRACUSE, ROCHESTER?

The FCC desires comments prior to January 6 on a proposed channel swap in up state New York which would add channel 9 to Syracuse, moving 5 from Rochester to Syracuse (where it began years ago!), and shift 8 from Syracuse to Rochester.

At the same time channel 13 would be added in Rochester, leaving Rochester with channels 8, 10 and 13, and Syracuse with 3, 5 and 9.

WEAK SIGNAL

... TRADE 'SWAP

(DXing Horizons monthly make available this classified display space for readers wishing to dispose of equipment. We assume no liability for statements appearing, or transacting resulting, from items listed here. No charge for blind box numbers.)

RATES: \$3.00 per 5 lines, 15 lines maximum per advertiser per month. 5 lines minimum. Adjust insertions to 35 letters per line. Enclose payment with listing.

WANTED: Used Jerrold Univamp model WVA99 or UVA 98. State condition, price wanted. Santiam TV Cable, Box 377, Mill City, Oregon.

AM EQUIPMENT SOUGHT — Interested in 250 kw. AM BC station, associated studio equipment. Complete package or parts. Include list of equipment, best price. H and H Inc., P. O. Box 487, Heppner, Oregon.

SELL Blonder Tongue MLA unit. Less than 5 hours use. aLte Serial Number. \$75.00 for first check. Guaranteed packing crate condition. WS-Box 1, P. O. Box 3150, Modesto, Calif.

SELL—7 Line Loss equalizers LLE-1; 17 PD-20 Line Attenuator Pads; 3 Jerrold WADO-3 distribution outlets. Make offer. Columbia TV Service Co., P. O. Box 655, Kennewick, Wash.

TRANSLATOR TOPICS

(Continued from page 20)

dened in the field right now.

If you have any thoughts on the subject, let us hear from you.

PRESS TIME NEWS FROM WASHINGTON

DXing Horizons learns that the FCC plans careful look see into VHF Translator applications from areas with UHF Translators in service. One industry official inquired "suppose a group of people up the canyon, and around the bend aren't able to receive the UHF Translator, may they apply for a VHF unit to fill in their "coverage hole?" FCC answer to not so hypothetical question was vague, and indicated such applications may be handled on a case by case basis. It is likely VHF unit will be granted C.P., IF the UHF group does not protest. It appears that should the UHF Translator group prove overlappin gservice areas, VHF will get the axe.

REMOTE CONTROL

In answer to questions posed, the FCC will allow class C license holders in the citizens band service to use 27 megacycles for radio remote control of VHF Translators. This will mean more economical radio control than many had expected, had the remote control been limited to 450 MC citizen band. More on this topic in February.

EMCEE RECEIVES TYPE ACCEPTANCE

Electronics, Missiles and Communications Incorporated received FCC Type Acceptance for its equipment type HRV Thursday, December 22. FCC's engineering evaluation personnel dealing with Type Acceptance applications, reportedly are concerned over possible irregularities appearing in some pending equipment.

SPECIAL ANNOUNCEMENT

ALL VHF BOOSTER OPERATORS

Save the weekend of March 3-4. And make your plans to travel to Salt Lake City, Utah, via whatever method of transportation is handy.

DXing Horizons is planning a two day "WESTERN VHF TRANSLATOR CONFERENCE," with two days of talks, demonstrations, illustrations, question and answer periods, lecture sessions, and the works.

The tentative center for the two day session will be the Hotel Utah, and the Hotel Utah Motor Lodge. Each and every Booster group is urged to send at least one representative to the conference, so your group will get firsthand answers to all of the questions currently troubling you. List everything you don't know about making your VHF Booster a legal Translator, and bring the list with you. DXing Horizons is making arrangements to have industry speakers from the following firms on hand to conduct seminar sessions.

EMCEE, Inc., Mt. Vernon, New York
Adler Electronics, New Rochelle, New York
Video Utility Company, Seattle, Washington
M.A.R.S., Rapid City, South Dakota
SITCO Antennas, Portland, Oregon
TACO Antennas, Sherburne, New York
Blonder Tongue-Benco, Newark, N.J.
Amperex Electronics, Hicksville, N.Y.
Winegard Company, Burlington, Iowa

Other industry leaders in the weak signal TV field are being contacted as this is being prepared. Plan on attending, no matter what else you plan to do in 1961. The two day session should answer all of your questions, and provide you with enough material to make your VHF Booster a first class Translator.

Some of the topics to be covered:

Receiving Antennas

Transmitting Antennas

Erecting Towers

Filing Techniques (How to properly complete form 346, and save your group countless communique with the FCC)

Remote Control (what you will need, how to do it)

Low Noise Pre-Amplifiers (how to use them)

Weatherproofing Translator Installations

Fund Raising (various methods of doing it)

Plotting a Site

Interference Problems (FCC personnel will be on hand to answer questions)

The "WESTERN VHF TRANSLATOR CONFERENCE" will be the scene of the first public display for much of the new equipment in the field, and your group will have the opportunity to compare, on the spot, the virtues of each line.

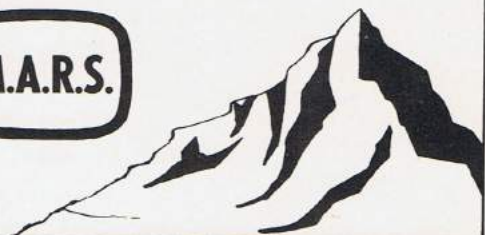
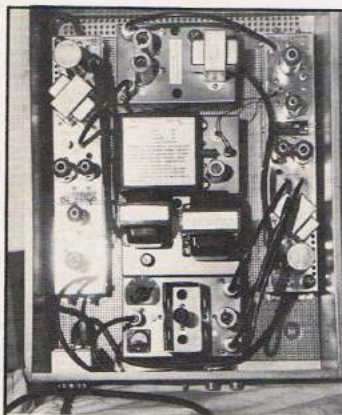
We plan to bring in servicing people from all over the west, and make available conference sessions for each region so that you can get to know your closest servicing expert. The entire meeting will be detailed next month, as the fine points are completed.

DXing Horizons publicly states that if your firm has not been contacted, or if you are an area serviceman, contact DXing Horizons immediately, and make arrangements to participate by sending your representative to the CONFERENCE.

A complete printed program will be given to all registered participants, detailing where to find those present, meetings, etc. Because of the nature of the CONFERENCE, you will have to be registered to be admitted to most meetings. A registration form is provided on page 3A, in this month's magazine. Register early! DXing Horizons has made arrangements with the Chamber of Commerce in Salt Lake City to assist with overnight lodging for the night of March 3. When you register, indicate how many in your party, and what type of rooming accommodations you will want. We will forward your request to the proper spot, and they will contact you directly. It is hoped early registrants will be quartered in the HOTEL UTAH MOTOR LODGE, where the meeting will take place in a spacious auditorium and special conference room wing. If you wish to be quartered there, Register early, and save yourself some downtown Salt Lake City traveling!

TRANSLATOR CODE OF ETHICS

Response to the CODE, outlined last month, has been excellent. The first CODE subscribers will be listed next month. The first public display of the CODE will be in Salt Lake City, March 3. J.B.



RX-17-B One Watt VHF TRANSLATOR...\$1,097.00

Only M.A.R.S. offers all of these advantages in a VHF Translator

(Check these M.A.R.S. features, compare our price, reputation and know how. THEN CONTACT M.A.R.S. for your VHF TRANSLATOR requirements!)

TO INSURE PROPER ALIGNMENT

- (1) Temperature controlled housing.
- (2) Vibration cushioned tower mount.
- (3) Voltage regulated A.C.

FLEXIBLE — DEPENDABLE

- (4) All conversions available.
- (5) Built in, frame grid low noise pre-amp.
- (6) 10,000 hour premium quality tubes.
- (7) Adjustable to match any practical input level.
- (8) Jack for remote control switching, or radio controlled shut off unit.

- (9) Easily converted for higher output should future FCC regulations permit.

COMPLETE — CONVENIENT TO SERVICE

- (10) Time delay on automatic shut off.
- (11) **Optical control** identifier, eliminates exposed arcing and corroding contact points.
- (12) All tubes "top mounted" on chassis, standard bases, no mis-alignment by changing plate caps.
- (13) Built in POWER, OUTPUT and S.W.R. meter.
- (14) EXCEEDS ALL FCC REGULATIONS.

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The world's first and oldest VHF Translator manufacturers, continuously leading in design improvements for highest efficiency and minimum maintenance.

We offer highest quality at reasonable cost. FULLY GUARANTEED PERFORMANCE, and, TRADE ALLOWANCES on OLD UNITS.

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- Let us outline an investment program in the field of CABLE TELEVISION.
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- Capital gains is often the only answer to depreciation problems.
- In selling you must contact the broadest possible market to obtain the best price.
- You gain the best advantage before selling by obtaining the appraisal of independent experts.
- Our job . . . to find buyers of competent ability and financial responsibility.

For discreet representation, sound advice and quick results — contact the CATV authority recognized throughout the United States and Canada. More than 90% of the CATV system sales to date, have been handled by DANIELS & ASSOCIATES, Inc.

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**Number three of a series. This gigantic tower, supporting various multi element yagis and broad band arrays boasts to be the receiving end of the world's longest television reception path, London, England to Williamstown, Victoria, Australia, 10,800 miles. (Photo courtesy George Palmer, long range TV enthusiast, Australia)*