

Special Issue!

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FEBRUARY 1961

40 CENTS

DXing HORIZONS

REPORT '61

Broadcaster Cooperation



Retiring FCC CHAIRMAN Frederick W. Ford, addressing Eastern CATV Operators January 9, Washington, D.C., noted "There is no need to regulate all CATV systems in the nation." Story page 42.

with

CABLE SYSTEMS

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DEVOTED ENTIRELY TO RADIO AND TELEVISION DX RECEPTION

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At Sign Off

TRANSLATOR SATELLITES — WITH ORIGINATION!

Source within the FCC won't be quoted (although he is well known to VHF Translator operators), but the word is "The Broadcast Bureau has completed a preliminary study into the feasibility of establishing limited power UHF satellite stations which would, for the most part, be high power UHF Translators." Two factors make them unique, as the proposal now stands. Stations would operate on any "area assigned channel" from 14 to 70, and be allowed to originate a "certain amount" of local programming, available for local sponsor participation.

The entire proposal is reported to be ready for offering to the seven man Commission, which, we predict, will OK the service.

The Commission is expected to put its stamp of approval on the project for two very good reasons. In the Commission's overall (although not official) concept to move all TV to UHF within a seven year period, "local expression through television" is the key to the success of the plan.

By creating this "Satellite-Translator" service now, the Commission feels that "at such time as it has concluded the New York City UHF tests, and has convinced the broadcasters that UHF will do the same job as VHF," the localized Satellite-Translator service will be firmly entrenched in outlying fringe districts.

It will then be a simple matter for the Satellite-Translators to switch their pickup (input) channels to UHF, as the "Mother station" moves to UHF. Net result?

(a) Built-in fringe area coverage through UHF Satellite-Translators already established (i.e. the big city origination station will lose less coverage in the switch).

(b) The Commission's ideal of "local expression through video for all regions of the United States" will be a reality.

Opponents to UHF point out that should the V to U move fail, the UHF Satellite-Translator service will still cover the smaller outlying regions and perhaps relieve some of the pressure for VHF channels in areas where UHF could easily serve the smaller towns (reserving VHF for larger cities).

You can be sure the Commission will get a lot of mileage out of the new service, especially when it attempts to gain passage of a bill to force manufacturers to include all channel tuning in all sets sold for interstate commerce.

NBC NOT SURE...

William S. Duttera, Manager of Allocations Engineering at NBC tells DXH "NBC is not sure what steps it may take to extend its February 1 DEADLINE for VHF Translators to obtain permission to rebroadcast NBC net programs, IF the FCC extends the VHF Translator Form 346 filing date." The Commission did (see story page 12). Checkmate—NBC?

RCA BUILDING TRANSLATOR?

Rumors are rife at press time that Radio Corporation of America is field testing a VHF Translator for sale to Broadcasters. Unit reportedly is straight forward 6360 design, but will sell for two thousand plus dollars, putting it in a class with the Adler VT-1 (see page 12).

EMCEE TO BUILD UHF BOOSTER?

Word from the Commission (not EMCEE, Inc.) advises it has approached Dr. B. W. St. Clair, President of Electronics, Missiles and Communications, Inc., Mt. Vernon, New York, on the subject of a one watt UHF On Channel Booster to work in the UHF Translator range.

FCC proposes to hedge on granting of VHF Translator CP's to areas now served by UHF Translators, even though applicant is same as holder of UHF Translator license. FCC hopes EMCEE (or someone) can produce a UHF "On Channel" unit which will fill in the "dead spots" not presently covered by UHF Translator. Reason for anxiety? Commission fears ANY intermixing of VHF and UHF services, favoring an ALL UHF SERVICE right down the line.

KFRN FOLDS UP — NO SIGS ON 15.180 MC.

Shortwave DX fans can give up their vigil of watching for signs of KFRN, International Broadcast Station licensed to beam with 50 kw. to South America on 15.180 mc. Station, which began in Dallas, Texas, moved to Glenpool, Oklahoma in October, and then principal owner Albert Crain (W5SXT) sold out. Permit was turned back to the FCC in late December, and the FCC closed its file on KFRN December 30.

SALUTE TO EDWARD P. WHITNEY

"Retiring Executive Director, NCTA"

This "in print salute for a job well done" goes to Ed Whitney, who for the past three years, has guided the Cable TV Industry through its most harrowing period of growth. When E.P.W. joined the NCTA staff in 1957, he came as the first full time Executive Director. The National Community Television Association had but 250 member systems, and the industry was searching for leadership and guidance in a time of uncertainty. On February 15, when Whitney leaves the NCTA offices in the Perpetual Building, Washington, D.C. for the last time, to become the first National Sales Manager for AMECO, CATV manufacturing division of Antennavision, Inc., Phoenix, Arizona, he may look back with pride on the growth and cohesion he built into the nation's Cable TV Association.

At the latest count, more than 430 Cable TV operators belong to and support the NCTA. These same three years that Whitney has guided the association have seen remarkable growth within the industry. More than 750,000 new CATV viewers were added to the nation's CATV systems during the period, and 60 odd new CATV firms made their first drops.

In the last months as Executive Director, Whitney instigated a far reaching program of education for CATV operators, which will continue long after he leaves his Washington desk, to become perhaps the most important single activity ever molded into the NCTA operation.

A "Tip of the Hat" to Edward P. Whitney.

DXing HORIZONS

FEBRUARY 1961

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**EXCLUSIVE — ADVANCE
PRODUCT REPORT**

Watch Out For Winegard!

Editing an electronics publication is not normally a very *inspiring* job. True, we have our moments of inspirational genius, but these are soon soothed over by "time to think the problem out" and the inevitable "re-write of the inspired material."

We aren't knocking our chosen profession, merely bemoaning the fact that covering the electronics industry newsbeat is not as conducive to BANNER HEADLINES as reporting the Congo situation for a *Hearst* newspaper, ad infinitum.

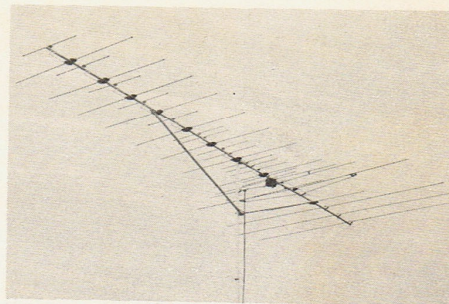
Today we are inspired! The WINEGARD COMPANY of Burlington, Iowa is responsible for this inspiration. But more than that, the energetic guiding light of the firm, *John Winegard, is responsible.*

On October 6th of this past fall, while hop scotching across the country visiting firms with a real first hand interest in the field of "deep fringe" reception, we flew into Burlington, Iowa on the only morning flight stopping at this quiet southeastern Iowa town. After a suitable plant tour, we chatted with WINEGARD sales manager Bob Fleming about what we felt the VHF-UHF fringe area's needed most. Invariably our discussion returned to more sensitive antennas capable of developing more and more signal "before the precious few microvolts began their trip down the transmission line to the receiver." Finally, we noticed, Fleming could contain himself no longer, and he hopped up to close the office door. Not quite certain what to expect, we fumbled in our brief case for a non-existent piece of paper, while he returned to his desk.

Beaming, he announced "WINEGARD has a new secret weapon!"

Trying not to look too disappointed (we had heard claims about new secret weapons before!) we swallowed hard and inquired "What is it?" not really expecting an answer.

I didn't get the answer, only the assurance that it would be something really revolutionary when it came. We probably wouldn't have thought too much about the subject, were it not for a sly wink Fleming gave his chief engineer some hours later while we were talking amplifiers in WINEGARD'S new second story amplifier design center. (WINEGARD, for the unaware, late last summer entered the field of "apartment house, motel and home



WINEGARD SP-44X SUPER POWERTRON
(30 elements—channels 2-13, antenna mounted 6DJ8/
6922 pre-amplifier)

distribution systems" with a series of 1, 4 and 7 tube low noise distribution amplifiers. Each amplifier features the recently developed ruggedized 6DJ8/6922 in the front end and all reports (including one in the January *DXing Horizons*, page 14) have praised the new line for low noise characteristics and durability.)

Fleming, obviously itching to tell me about the "secret weapon" asked the CE if he thought I should be told.

The engineer looked at my honest but zealous news hungry face and replied "no . . . not just yet."

I begged for an advance release, but the pair stood firm and I climbed back aboard the only night flight to Chicago not quite sure what to expect.

Back in California, NOW, with one of the first early production run POWERTRON'S 90 feet above our lab roof, and the lab jammed with eager Central California WINEGARD dealers (we have the only POWERTRON to date in this part of the country), we have cause to reflect on our 30 minute chat with the "old man himself (he's 39!)," John Winegard. We enjoy ourselves most while talking shop with a fellow enthusiast who really appreciates the problems of deep fringe reception. *John Winegard does.*

John, while piloting the Winegard Company with one hand, confesses his first love is his second story electronic laboratory (page 28) and "back lot" antenna testing shack behind the plant at 3000 Scotten Blvd. His comfortable office often goes days, we are told, without the "old man" as much as lowering himself into his overstuffed leather chair. During such periods he can be found tinkering with a new idea in one lab or the other.

Evenings, far into the night and on Saturdays, an alert passerby might spot a lone light burning from the second story lab. Inside

Cable System Operators

HORIZONS UNLIMITED...

"That's the phrase chosen by Bill Daniels, well-known Cable TV Pioneer and operator-manager of a score of CATV systems across the nation."

Bill Daniels, like the JERROLD COMPANY, BLONDER TONGUE LABS, Inc., SPENCER KENNEDY LABS and other firms with the most real kind of interest in CATV methods and operation, has thrown his support behind the PUBLIC RELATIONS and INFORMATION format of DXing Horizons Magazine, and our coverage of the CATV field.

Our interests are your interests! Your well being is OUR CONCERN!

TODAY IS THE DAY TO THROW YOUR SUPPORT BEHIND THE ONLY PUBLICATION "devoted to the well being of CATV Systems and Operators."

THROW YOUR MORAL SUPPORT
BEHIND DXing HORIZONS
CABLE DROP TODAY...BY
SUBSCRIBING TODAY!

YOU BET! Enter our subscription to CABLE DROP and DXing HORIZONS today. Enclosed our draft for \$4.00, to cover 12 issues, to begin with the March, 1961 issue.

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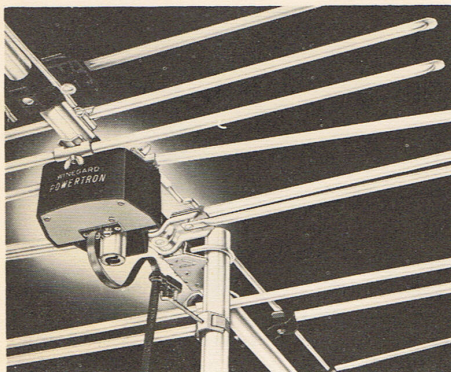
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Modesto, California



HEART OF THE POWERTRON

Directly coupled to the delta matched driven element, the 6922/6DJ8 pre-amp provides 14 db gain (mfg. specs.) across the VHF band.

John Winegard is bending over a "polar plot" or wiring a breadboard circuit, "just one more time."

Had that passerby on Scotten Blvd. peered into the lab last October, he probably could have of forewarned us about the POWERTRON!

THE POWERTRON

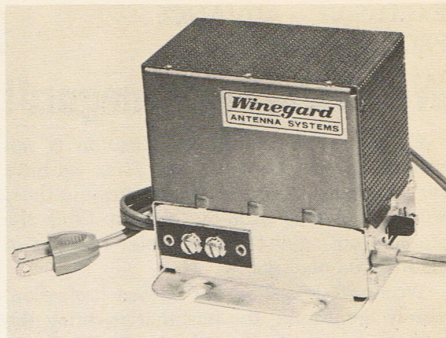
Antenna top boosters are not new. Nor are they always apt to give improved performance to the snow stricken viewer.

Allowing that the designs of past (the first antenna mounted booster was introduced in 1951) and present antenna top boosters are capable of giving gain at the antenna, the problem in making the unit perform as the book says it should has normally been one of installation. Unwary servicemen, and even those who know better, are seldom able to obtain a proper match between the antenna and the input of the antenna top booster. Operating under such conditions of "mis-match" (remembering that mis-match is nothing more, nor less than a power loss) the set owner seldom gets his money's worth from the topside booster installation. No fault of the booster . . . no particular fault of the antennas in use . . . and probably not the fault of the serviceman who installs the unit, according to supplied instructions.

Mis-match is mis-match, and with the inherent changing impedance characteristics of broadband all channel yagi antennas, and the fixed impedance of the 'tenna top booster, something is bound to give! And the signal usually does the giving.

One other inherent problem also grew up with the antenna top booster fad, tube life. The usual top side booster employs a twin triode of the 6BQ-BK 7 series. When these tubes are new, they do an acceptable job, but after a sustained period of operation (3 months and longer) the tube is likely to deteriorate. In the extreme weak signal areas, where such a unit is usually found, a weakening tube shows up fast, as the snow level comes up.

And then along came the Amperex 6922/6DJ8, a frame grid dual triode with all around improved low noise characteristics, high transconductance and 10,000 hour life! Certainly a perfect tube for



SET SIDE POWER SUPPLY

Through proper isolation networks, 24 volts DC is fed to the antenna pre-amp by the 300 ohm feedline, while the amplified TV signals return on the same line. This is Winegard's power supply for the POWERTRON.

hard to get at boosters mounted 100 feet in the blue.

WINEGARD, apparently aware the 6DJ8 was going begging for antenna mounted service, has redesigned its CL4 series all channel yagi, into a "delta match" system which WINEGARD engineers claim "perfectly matches the input circuit of the 6DJ8 broad band amplifier." Our text book tells us that a delta match (WINEGARD calls it a "Tapered T," but it is in fact a delta match) works "when the impedance between two points of a driven element varies symmetrically with respect to the center of the antenna." Our only immediate observation as to the apparent matching efficiency between the delta matched dipoles and the input circuit of the amplifier (contained in T1 and T2, schematic diagram one) is the quality of the color signal our SP-44X test model is producing at report time. Color signals on a 60 model RCA are (according to heavy foot traffic from area WINEGARD dealers) the best this fringe area has ever seen.

The new POWERTRON series is available in three models. The smallest of the series is the P-44, which is an up-dated version of the CL4, delta matched, and 6922/6DJ8 amplifier added. The next model is the P-44X, a further updated version of the CL-4X, with delta matched dipoles and amplifier. On top of the line is the SP-44X, a 30 element array on a 16 foot boom. The SP-44X is totally new, although it is faintly akin to the separate low and high band Transcoupler series yagis detailed in a July report in these pages. The akiness ends when you consider the WINEGARD TC series yagis were separate arrays for the high and low band, the SP-44X is a single array, for high and low bands (See photo one).

The gain of the antenna mounted amplifier is quoted as 14 db "across the VHF channel spectrum." WINEGARD's new advertising for the POWERTRON antenna includes both the antenna gain and the amplifier gain as the "total antenna gain." This will forewarn you about claims for 23-26 db gain for the SP-44X antenna, and accordingly lower values for the P-44X and P-44.

WINEGARD reports the antennas will drive up to six sets in fringe areas, 10 in higher signal level

(Continued on page 28)

REPORT '61

Broadcaster Cooperation with Weak Signal Services

Certainly no 12 month period has ever held so much promise for the extension of television service into regions of the United States and Canada now without "a visual link to the world."

Taken collectively, *Master Antenna (Cable) Television*, *VHF Boosters* and *UHF Translators* have extended television to an estimated six million Americans who would otherwise be without suitable television coverage. Viewed as a function of "set count," an estimated 1.8 television receivers perform solely due to the insight of a private businessman (*Master Antenna Cable TV*), or the determination of townspeople to bring television to their local area, where off the air direct reception is impossible (i.e. through *VHF Boosters*, *UHF Translators*).

But six million Americans is not an overly large number . . . not to an advertising agency in New York, Chicago or Los Angeles, accustomed to thinking in terms of 40-60 million people. The total number of viewers interconnected to one or more of the three weak signal services assumes an important role only when you view it in perspective; *to the total number of sets*, and viewers, *in a given area*. As a matter of example, when you add 104,000 CATV sets to the coverage of WDAU, UHF channel 22 in Scranton, Pa., WDAU assumes a dominant role in the Scranton market area.

The Fall-Winter edition of *TV Factbook* will tell you the Scranton, Pa. and Wilkes Barre, Pa. combined "market" areas have a total count of 158,000 TV receivers. Adding 100,000 receivers to the WDAU coverage pattern (allowing for those set owners who "could get the signal off the air" if they were not on a Cable) is quite a shot in the arm for WDAU! In fact, talking trade talk in terms of market areas, WDAU, claiming 100,000 CATV sets, plus its off the air coverage of 158,000 plus receivers, can from a position representing the number 104 market in America move up *set count wise* to metropolitan Atlanta, Georgia (254,000)!

In the VHF Booster world the figures are not nearly so earth shaking, nor quite as re-

liable. But an example of "joint addition" can be found in Wyoming, where 15,000 receivers TOTAL coverage is considered substantial. KFBC-TV, Cheyenne, Wyoming is currently carried on seven CATV systems, located in Wyoming, Colorado and Nebraska. These seven *Master Antenna Systems* extend the KFBC signal to 13,500 receivers *which would otherwise be without it's signal*. FCC figures indicate approximately 40 VHF Boosters also utilize the KFBC signal, adding an additional 5,200 receivers to the KFBC signal. All of these receivers . . . *the 13,500 on CATV, and the 5,200 via VHF Boosters* comprise "bonus coverage" which KFBC cannot for the most part reach directly. In affect, the bonus coverage doubles the KFBC "off the air" coverage of 15,000 receivers by 18,700 more receivers. *Like adding another Cheyenne, Wyoming to the KFBC signal area!* Its no wonder then stations like KFBC and WDAU are unusually vocal in their support of the weak signal services!

And is it any wonder that progressive weak signal service operators are capitalizing on what was once thought to be, "by nature" an unfriendly relationship?

Nor is it so surprising to learn that a "score" of TV Broadcasters are planning VHF Booster outlets in surrounding centers of population, which today do not receive good quality "off the air" reception?

As the facts will point out, *most Broadcasters do want to cooperate* with the weak signal services. But in many cases, where the non-progressive weak signal service operator is backward in HIS thinking about interservice cooperation, the broadcaster has no alternative but to attack the problem himself.

UHF TRANSLATOR COOPERATION

Undoubtedly the most publicized use of UHF Translators by a broadcast station licensee is in New England. Springfield Television Broadcasting Corporation (licensee of WWLP -22) has long been an advocate of "competitive television" based on use of the UHF spectrum by all TV Broadcasters. William Putman, President of the concern, is one of 12 men on the organization committee involved in the *High Power New York City UHF Test* detailed in the January *DXing Horizons*. WWLP is repeated through two UHF Translators located in Claremont and Lebanon, New Hampshire, both owned and maintained by the station. Springfield Television holds construction permits for two additional UHF Translators for Athol and Adams, Massachusetts.

In the "far west" Hawaii is another hot bed of Broadcaster owned Translators. Lihue, on the island of Kauai, boasts three units operated by three Honolulu Broadcasters. Engineers familiar with the installations told *DXing Horizons* the UHF units operate from a bluff with an over water shot to Honolulu. Each Honolulu station (Kaiser owned KHVH-4, KONA-2 and KGMB-9) is responsible for maintaining its respective Translator, serving Lihue.

Henry J. Kaiser also operates a channel 76 Translator at Honohina which repeats Kaiser owned KMVI-12 in Wailuku.

Except for the Hawaiian examples, broadcaster owned UHF Translators are located where UHF Translators for the most part aren't normally found. This is true in New York state where WINR-40, Binghamton, New York operates a pair, in Hillcrest and Johnson City. This is also true of what is commonly thought to be flat land, Ohio, where the states entire three UHF Translators are owned, and operated, by UHF broadcasters desirous of increasing their coverage. Zanesville station WHIZ-18 spotted UHF Translators in Cambridge and Coshocton to give its signal a little better range. Marietta, Ohio is the new home of UHF Translator W7OAD, operated by the Zanesville Publishing Company (Licensee of WTAP-15, Parkersburg, West Virginia).

In Pennsylvania, the competitive spirit seems to have carried from Lihue, Kauai, Hawaii to Clarks Summit-Waverly. High atop the summit, not far from the New York state line, WBRE-28 Wilkes Barre and WNEP-16 Scranton have spotted UHF units W79AC and W73AC respectively.

The future use of UHF Translator by Broadcasters is perhaps dependent upon the future of television itself. Readers will recall a "hypothetical FCC solution" to the allocations problem reported in the December *DXing Horizons*, which included as an integral part of the solution the use of UHF Translators licensed for *restricted local programming*. Certainly the UHF Translator has proved it can be a useful aid to extending coverage, and a low cost method of filling in coverage nulls.

MASTER ANTENNA CABLE TV— BROADCASTER COOPERATION

The examples of inter-service cooperation in the CATV field are many. In instances where Broadcasters have established a policy of working with area CATV systems, the Broadcaster has been richly rewarded with many new sets added to his coverage area. The only station in the United States currently believed

to have a full time "CATV Liason Officer" is WDAU in Scranton. Thomas J. Jones, in charge of CATV contacts for the station, tells *DXing Horizons* "The total number of extra viewership represented by CATV subscribers in our coverage area becomes larger each month. The recent additions of several new systems to WDAU-TV's radius umbrella brings out total CATV homes to 104,000.

This CATV coverage makes it possible for WDAU-TV to claim 1.5 million viewers in 20 Pennsylvania and 8 New York Counties.

Coverage wise, "Ithaca, New York to our north (72 miles); east to Port Jervis, New York (62 miles); south to Lewistown (125 miles); and west to Lock Haven (100 miles) represents quite an enlargement of WDAU-TV's coverage" thanks to CATV systems.

So enthusiastic is WDAU-TV over its working relationship with the area CATV operators that the station habitually reserves a hospitality suite at the annual convention of the nation's Community Television System operators.

HOW DOES CATV HELP BROADCASTING BUSINESS?

It may be a matter for sorted wisecracks among station managers, but the hard fact is that on the one hand Broadcasters are delighted to add CATV coverage to their rate card material, while on the other hand, they would just as soon quietly "knock CATV viewers from the total set count" when film sellers are in the office. CATV-station relationships have not yet matured to the stage where a CATV viewer is considered *just another viewer*; i.e. John Q. Public and his rabbit ears. Consequently, station time salesmen, not quite sure how to handle their CATV coverage, often reserve it as an "afterthought" to be used when a prospective client is on the border line of signing a contract for air time. Thrown in as "Oh yes, did you know we have 50,000 viewers on Cable TV systems" often does the trick as a surprise bonus to the prospective advertiser.

But on the other hand, the same station may wish to deny it is used by a single CATV system, when a film salesman is in the office to peddle "Lassie." This is because films are charged to the station on a complicated formula based upon the number of receivers within the range of the station's signal. *According to theory, the more receivers, the higher the cost to the station.*

But despite these "yet to be ironed out problems" the simple fact is "anytime a television broadcast station is able to add a substantial number of viewers to its coverage without cost

to the station, station management is delighted." Any expressions the contrary are pure hypocrisy.

On the documented side, Broadcasters aware of the CATV potential, and anxious to work with area CATV operators, report they have established friendly working relations with CATV engineers and management personnel. The same stations report they can rely on CATV operators to verify certain facts about station coverage otherwise difficult to obtain. Armed with these facts (concerning not only set coverage, but also viewer habits, etc.) the station is often able to obtain a better standing in the eyes of advertising agency representatives, time buyers and other media personnel.

One station executive reports that when he visited a New York City Advertising agency, the agency personnel queried the station's reception in a certain city. The station operator was able to verify his station's standing in that city by telephoning the CATV system operator there, who in turn described the station's reception on his Cable System.

Many stations make it a point to visit all systems within their areas, whether the system is using the station's signal or not. The object of the visit is to explain to the system operator why the system's viewers would "prefer" their station to others available. Some of the sales points stressed by the station personnel include local weather reports, local spot news events, local sports, local commentaries and special feature programs concerned with local issues.

A few systems encourage system managers or engineers to phone the station collect when problems arise at the system because of apparent transmitter difficulties. Such events as sudden-unexpected co-channel interference, etc. may often be corrected or explained at the station, which may save the CATV system engineer from an arduous trip to his remote antenna site.

Reversing the process, many stations call the CATV systems when trouble develops at the station transmitter. In other instances, when trouble develops at the transmitter (ie. loss of sound) stations have been known to transmit special video slides directed at CATV viewers, advising that *the trouble is with the station, and NOT the CATV system*. One CATV operator reports this simple station courtesy often keeps his phone *on the hook*, when previously it would ring continually while the transmitter trouble continued.

Frequently CATV System operators receive visits from station personnel anxious to maintain Cable operator goodwill, and many stations continually feed copies of external written material going from the station, to area system operators.

It is not unusual for CATV people, meeting in a regional confab, to be the guests of local TV stations for a guided tour of the "real head end equipment" feeding their system. Such a recent tour was arranged by Richard Dunning, station manager at KHQ in Spokane, when the Pacific Northwest CATV Association met there.

Other reports of cooperation between Broadcasters and system operators include:

"At least one station buys outdoor billboard space advertising programming in towns with a system receiving its signal."

"Some stations prepare special filmed on-the-spot or live programs saluting CATV communities."

"A number of stations use 'stringers' (local in town reporters to feed the station items of interest) from CATV covered towns."

"System managers work with TV Guide, or the area programming guide, to assure proper station listings for their area."

"System engineers frequently make signal strength measurements for Broadcasters, and on occasions have done so throughout long periods of time while the station was testing different antenna patterns."

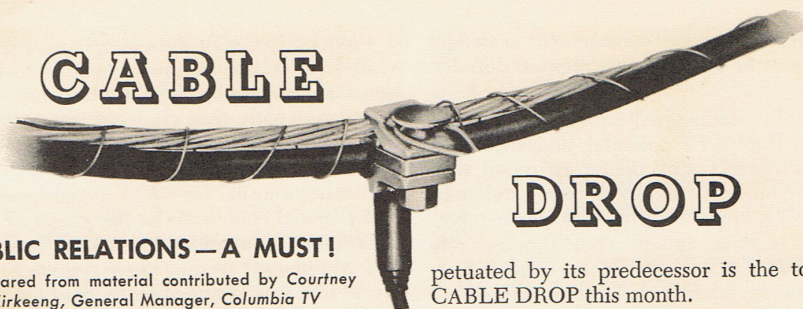
All told, the CATV operator-Broadcaster relationship is destined to improve even faster in the 60's, and especially in the year ahead. *A growing awareness of each end of the job being done by the counterpart is certainly a healthy sign for all concerned.*

VHF BOOSTERS-TRANSLATORS

Utilization of the coverage expressed by VHF Boosters fall into two distinct categories. *The present, and, the future.* In terms of the present, an estimated 1500 VHF repeater units (two thirds of these have registered with the FCC) serve 1.4 million Americans with their only viewing fare. VHF Boosters, serving areas which for the most part are too small and spread out for CATV systems, and too small population wise to afford the more expensive UHF Translator, serve a real need in the TV allocations picture. One very good example of cooperation afforded to Booster operators by a Broadcaster can be found in western Montana, within the coverage area of KMSO-13, Missoula. Don Hayes, National Sales Man-

(Continued on page 16)

CABLE



DROP

PUBLIC RELATIONS—A MUST!

"Prepared from material contributed by Courtney M. Kirkeeng, General Manager, Columbia TV Service Company, Kennewick, Washington."

The successful operation of a Cable TV business demands a strange mixing of talents and skills of a high level nature. Too much promotion and too little service is one "product" sure to produce more than spurious images along the line!

Cable TV operators today must pay particular heed to rising costs (continually maintaining or reducing overhead costs), *the quality of their service* and perhaps of greatest importance, *their overall PR SCORE*. Many systems have been thrown onto the rocks of failure for less reason than a sagging "public image," but when below par community service participation couples with a low grade product, and the system affords no service to complaining customers, *the system is in real trouble!*

Such was the apparent story when *Columbia TV Service Company* was formed to take over franchises for Pasco and Kennewick, Washington from the Tri City Television Company. Tri City TV had what looked to be on the surface "a good thing going." The two towns of Pasco and Kennewick, in close physical proximity, had a potential of nearly 7,500 television receivers. There *was* no local TV, and in fact no off the air reception at all! Residents of the two video-land locked towns were more than willing to pay a regular monthly service charge for a watchable picture. No new system ever had a more golden opportunity to build a successful, profitable and respected community service business.

Yet at the end of nearly four years of operation, Tri City TV's books showed only 250 subscribers, many of whom refused to remit their monthly service charges because of the poor quality signal. To top the entire situation off, the firm was not acting to correct complaints. The public relations score for this Cable firm was down . . . down . . . DOWN!

The steps *Columbia TV Service Company* took to rectify the four years of ill will per-

petuated by its predecessor is the topic for CABLE DROP this month.

NO PICTURE!

The old company, lacking sound management and under the influence of ill advised engineering data simply could not produce a product people would buy.

NO SERVICE!

Even after paying the installation charge of \$135 (plus tax), there was no guarantee to the customer the drop would be made. When the drop finally was made, the signal quality seldom produced a satisfied customer. When customers complained about the signal quality, their complaints were seldom acted upon. *The reason?* The serviceman knew that adequate signal levels didn't exist on the line, so, *he just didn't bother* to answer service complaints!

Residents living outside the immediate service areas were often promised *the Cable* would be extended "soon" but these promises were rarely kept.

NO PUBLIC RELATIONS!

As could be expected, when a company was operating in the manner described above, the public's attitude towards the firm was not exactly the best! All of the employed personnel working for the company were so involved attempting to improve the head end signal, none "had the time" to assume the job of public relations. *End result*, the phrase "TV Cable," or "Cable TV" carried such a stigma with it that *Columbia TV Service Company* decided it would not sell "Cable TV."

THE REBUILDING JOB

The first requirement of the new firm was to obtain a good selection of well qualified personnel to take over the entire operation.

The second step was to eradicate the name "TV Cable" from the people's minds. They chose to call the new service "Microwave TV," and the firm launched a full scale advertising and public relations program heralding the approach of the "New Microwave Television."

Twenty-three miles of open wire line was shut down and replaced with coaxial cable.



Batter UP! And watch the customers flock in to see the show! The upstairs balcony of the Columbia TV "Microwave Theatre" packed with World Series fans during the 1956 inaugural period.

New amplifiers (adding AGC to the system, etc.) were installed throughout the thirty miles of Cable "then in town" while the amplifiers were respaced, and brought up to date in each case. A new antenna site was chosen for "off the air pick-up" from the three Spokane stations (KREM-2, KXLY-4, KHQ-6), a building erected at that site and microwave equipment installed to beam the 6 KMC signals into town. In Kennewick, a second building was constructed to house the microwave receiving equipment. Finally, the local UHF station (KEPR-19) was added at the microwave receiving building through the use of high band amplifiers.

The entire system was shut down on August 1, 1956, some thirty days after the firm was purchased. In sixty days time (September 29) the entire remodeling task was completed and in operation in time for the first game of the World Series!

MEANWHILE—BACK AT THE FORT . . .

While the technical crew was very busy making electronic amends with the equipment, the management crew set out to mend a few public relations fences. All past due old accounts incurred by Tri City TV were paid up (including unpaid city Franchise Taxes, pole line rental charges, power charges, material bills, etc.) in full.

New *personal contacts* were made with city officials, the local press and television station, and service dealers and the servicemen. The management crew, under the direction of Courtney Kirkeeng, new General Manager, asked the town for its cooperation and support while the new owners tried to prove to the city, by their actions, that *Columbia TV Service Company* was worthy of the cooperation sought.



205 Kennewick Avenue, the home of Columbia TV Service Company. Four channels carried by the system are displayed on the six "flush mounted" monitors in this attractive window display of the firm's downtown office. The window area in front of the screens is donated to local civic organizations for display of their activities.

But city response was cool and even frigid. The problem was a clear cut one, it would take some doing to overcome the predecessor's low esteem in the community, after four years of mismanagement.

PLAN OF ACTION

The new firm faced one of the most difficult attitudes imaginable. People in the service area who had personal experience with the cable had been subjected to the worst possible kind of television. And, those not on "the Cable" who had purchased TV receivers were accustomed to reception only from the local UHF station. KEPR carried a mixture of live network programming, kinescopes, and live local talent. As a result, local residents felt television was a pretty poor investment, which produced either snowy unwatchable pictures from out of town stations, or local UHF programming.

Columbia TV Service Company not only had to overcome the bad name the previous company had earned for "Cable TV" but it also had to fight viewer apathy. Most residents with television, but not on the cable, expressed the feeling "TV is just for the kids, why should we pay to have more than one channel of questionable entertainment value?"

To combat these feelings about the Cable, and about television in general, an educational program was instigated to *drive home* the many advantages and benefits of "big city local programming, and a complete selection of three network programming."

Columbia TV Service Company designed and constructed a small CABLE TELEVISION THEATRE on a balcony above the office area (photo one). The theatre was kept open Monday nights during shopping hours,

and people were invited to drop by and watch "Microwave Television." Later, through the cooperation of a Kennewick TV dealer, a color receiver was brought into the theatre, and the Cable firm arranged to hold color shows on the balcony. The dealer also used the theatre to hold private showings of the color reception to groups of prospective customers.

During the World Series (which meshed nicely with the opening of the new system), the balcony theatre provided both black and white and color reception of the games. Needless to say the theatre was jam packed (photo one)! While the World Series was being shown at "the theatre" *Columbia TV Service Company* set up a concession stand selling peanuts, popcorn and coffee to the baseball fans. *All proceeds went to the Tri City Braves Baseball team* which was having financial difficulties at the time. *Columbia TV Service Company* didn't make the team a great deal of money, but the fans really decided the firm was civic minded, and the activity won a lot of new friends for "Microwave Television."

In January of 1958 a second local station took to the airwaves (KTRX-31). KTRX was immediately placed on the system and given many free plugs in the TV guide printed by the company. Free engineering aid on several occasions was given to the station when it left the air due to equipment failure. But, KTRX folded in just nine months of operation. In a letter addressed to General Manager Kirkeeng of Columbia TV, Philip Berman, an active stockholder in the UHF station lauded the Cable firm with "... *Columbia TV Service Company gave us every assist possible and the finest cooperation in our overall operation of the station while we were actively engaged in daily telecasting.*"

Columbia TV Service Company spent an excess of \$10,000 to add the KTRX channel 31 signal on the system as channel 13.

In January 1959 a third local station took to the airwaves in nearby Walla Walla, Washington (KNBS-22). *Columbia TV Service Company* placed the KNBS signal on the system, gave the station free promotion in the region and introduced the station personnel to the people of Kennewick and Pasco. (*Editor's note: KNBS-TV left the airwaves in December 1960, leaving only the original KEPR on the air in the region.*)

REAL PUBLIC SERVICE!

The Columbia TV Service Company office, located in the center of Kennewick and in a high foot traffic region, was a natural spot to



Hello there . . . and what's your name? The young lad was lost (he said!) and wanted his mother to find him "on TV" at the Pasco Home Show. *Columbia TV Service* demonstrated closed circuit TV to the Homeshow goers, and many residents saw themselves on TV for the first time. All in all, a great Public Relations tool . . . THIS TELEVISION!

start promoting "Microwave TV." To make the most of the traffic, five TV monitors were placed in the window (photo two) and each displayed one of the five signals (then) viewable on the system. With the TV sets installed at eye level, the window space in front of the receiver monitors was kept clear and available. *Columbia TV Service Company* made the window display area available to local scouting groups, civic organizations, the city park department, and others, as a spot of high public interest where they could display their topics free of charge.

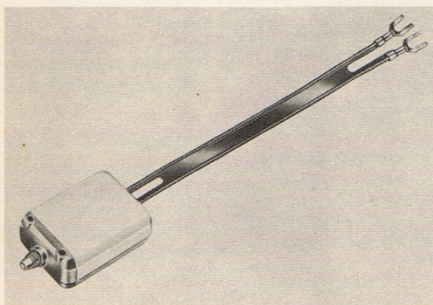
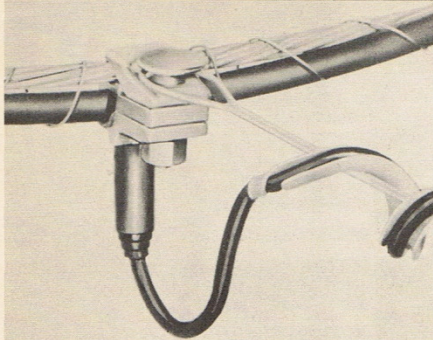
Additionally, company technicians joined the JAYCEE's; and the firm loaned the men and a ladder truck to the town during the Christmas period to assist in erecting decorations. GM Kirkeeng became active in the local Chamber of Commerce, and in 1957 was elected to its Board of Directors. In 1958 Kirkeeng was elected to "captain" the Kennewick C of C, and he was appointed to the Benton County Park and Recreation Board. Many other similar activities, including heading up action to build a 475 acre park for the area resulted in Kirkeeng receiving an "Outstanding Community Service Award" for 1960.

In terms of dollars and cents, the Kennewick-Pasco system has grown so today it boasts 2,800 subscribers (present potential approximately 5,000) or ten times the number interconnected in 1956 when *Columbia TV Service Company* took over the operation.

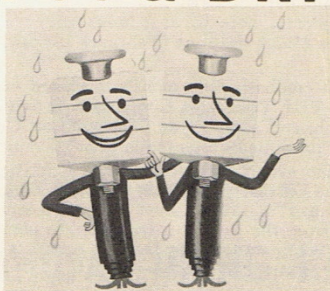
Seven channels are now available for Cable TV (both low and high channels are used in this system, skipping adjacent channels),

(Continued on page 40)

All Sales Records Broken with new **JERROLD**



HI-FI & DRI*



**WATERPROOF, WEATHERPROOF
CORROSION-RESISTANT
PRESSURE TAP TWINS**

MODEL T-377 Matching TRANSFORMER

We sold ourselves out of stock, on three occasions, after announcing the 1960 Fall Tap-Off Campaign. But now, our supply of these two outstanding products has been replenished . . .

The new HI-FI & DRI PRESSURE TAPS eliminate all weather hazards at the block, the attenuator, and the connector . . . will even operate completely immersed in water. Vertical positioned isolation network features protective boot, neoprene sealing gland. Specify Model HFD-1491 for single shielded cables, HFD-1492 for double.

Model T-377 is a quality designed "back-of-the-set" matching transformer. It is rugged, compact and inexpensive and is the most widely used transformer in the industry.

*Trademark

Order from your Jerrold factory representative



ELECTRONICS CORPORATION

Community Sales Division

Main Office: The Jerrold Building, Philadelphia 32, Pennsylvania

TRANSLATOR

Prepared monthly by
James Beamer*
P. O. Box 833
Livingston, Montana

TOPICS

MORE — Pocketful of Notes

Response from readers to the state by state report on prominent Booster-Translator activities in January was so favorable, it will be repeated again this month. If, per chance, you do not see your group's number one news item displayed in print, make a mental note to drop your editor a line before the March deadline (February 15) with full details.

Special emphasis this month is placed on the Western VHF Translator Conference in Salt Lake City, Utah, and a report on "Selecting an Output Channel" for your Booster (soon to be) -Translator.

Headline events include the FCC's decision to extend the February 1 deadline for filing Form 346 to April 1, 1961. This allows you approximately 50 days from the time you read this, to complete your application for a construction permit (Form 346) and return it to Washington.

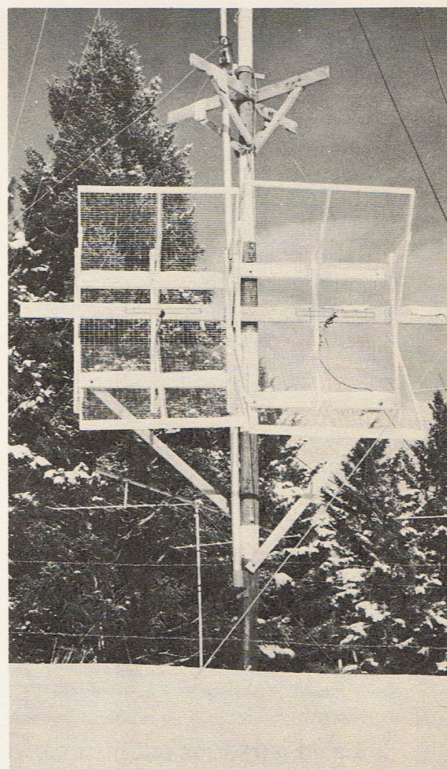
The extension went through after many petitions reached the FCC. Among those who asked for the extension were Video Utility Company, Seattle, State of Washington TV Reflector Association, State associations in Colorado and Wyoming, and DXing Horizons Magazine. Some of those filing asked for a 90 day extension, but it should be noted the FCC, in such matters, seldom gives more than 60 additional days.

Another headline event of great importance is the Type Acceptance granted by the FCC to two more VHF Translator manufacturers. In addition to EMCEE, Inc. (Mt. Vernon, New York) which received Type Acceptance for its Model HRV Unit December 22, MARS (Mid America Relay Systems, Inc.) received type acceptance on the Model RX-17B January 9. MARS had applied for type acceptance early, but the FCC sought additional data regarding their harmonic radiation around 2000 megacycles! This shows how insistent the Commission is that their regulations and criteria for Type Acceptance be met! The Benco-Blonder Tongue VHF Translator Model T-1 received type acceptance from the Commission January 12. Still pending is type acceptance for the new Adler unit VST-1, and the General Electronics Manufacturing, Inc. unit GEM-1.

Finally, in the headline department, the appearance of the ADLER Electronics VST-1 VHF Translator, and the General Electronics Manufacturing, Inc. GEM-1.

The Adler unit will sell for "around \$2,100" and according to the company, is designed more for the Broadcaster than the Local Town. Adler plans primarily to market their one watt output unit to Broadcasters who wish to extend VHF service to shadow areas. It includes the heterodyne conversion

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



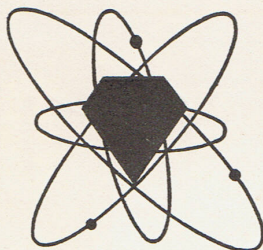
TWO VERY SPECIAL FEATURES are scheduled for the CONFERENCE ISSUE of DXing Horizons in March; both are in particular special to VHF Translator operators. Pictured here, part of our construction feature, "RATTLE-SNAKE FREE TV BUILDS A CORNER REFLECTOR TRANSLATOR ANTENNA." This array is actually two antennas, housed in front of a mutual screen corner reflector. Total cost? Less than \$10.00. TOTAL COVERAGE? You bet! This may be the answer to your Translator's transmitting antenna problem. The second feature for Translator Operators in March... HOW TO USE RADIO REMOTE CONTROL WITH VHF TRANSLATORS.

approach, with the usual unattended operation and remote control facilities.

General Electronic Manufacturing, Inc. is the first VHF Translator company to form in the far west. The GEM-1 VHF Translator has, according to the manufacturer, been under field test serving Sutherlin, Oregon, for more than one year. It features a 6360 in the final amplifier, one watt output,

(Continued on page 14)

A STAR IS BORN



A New Star is Shining Over the Pacific Northwest

**It's a "GEM" of a VHF Translator by
GENERAL ELECTRONIC MANUFACTURING, INC.
ROSEBURG, OREGON**

★ **SENSITIVITY**

25 uV input will deliver one FULL watt output!

★ **BANDPASS**

Flat within ½ db, provides quality COLOR or sharp, clear black and white.

★ **AGC CONTROL**

Less than 2 db output variation with 40 db input level change.

★ **REMOTE CONTROL**

Built for site operation, landline or Radio remote control. FLEXIBLE!

★ **RATING**

Premium Quality 10,000 hour tubes used in converter and final amplifier. All components substantially overrated. BUILT TO LAST!

★ **REGULATIONS**

Meets all FCC VHF Translator regulations.

★ **PROVEN PERFORMANCE**

A GEM-1 VHF Translator has been field tested in the Sutherlin, Oregon area for more than one year. Total Operating Cost during the past 12 months—LESS THAN \$50.00! Total outage time—TOO SMALL TO CALCULATE!

★ **CONVENIENT OPERATION**

The GEM-1 Translator is supplied in a TRUE weatherproof housing, ready for pole or tower mounting! (Rack mounting model also available.)

★ **SIMPLEST FILING**

IN FILING WITH THE FCC, merely note "GEM-1"—which is already on file in Washington!

★ **FREE FILING SERVICE**

GEM will complete and file your FCC Form 346 free of charge!

"REALISTIC PRICE"

\$995.00

Your Cost, F.O.B. Roseburg, Oregon

Write for full details today!

GENERAL ELECTRONIC MANUFACTURING, INC. (GEM)

POST OFFICE BOX 865 • ROSEBURG, OREGON

GEM, Inc.—From the Land Where People Know Translators Best... The Pacific Northwest!

TRANSLATOR TOPICS

(Continued from page 12)

adequate bandpass for full color, unattended operation and 10,000 hour tubes. GEM, Inc. plans to market other weak signal VHF-UHF devices, including a 416B pre-amplifier which they claim will give snowfree pictures with as little as 10 uV input on VHF.

WASHINGTON

Mid State Radio Supply, Wenatchee, is participating with area VHF Translators to work out conversion equipment. Mid State says they will take in present equipment, for the Benco T-1 they are authorized to handle, and, "in many cases the present equipment used as a trade-in will equal the cost of the new antennas, and engineering that goes along with the Benco T-1 units" they sell. In other words the total cost, they report, in most T-1 installations will be the cost of the unit itself ... no more.

The Washington Translator Association reports it has its house in order, in regards to Form 346. The Washington operators have created a master map spotting the locations of all VHF units, and all necessary channel allocations and changes have been completed on paper. The 346's will be kept back from filing, however, until the last minute, to allow individual operators an opportunity to see more of the equipment available in the field, and make changes in their equipment line-ups IF they decide some of the "yet to come" gear is better suited to their needs than that now on the market. Many of the Washington operators are planning to caravan to Salt Lake City, March 3 and 4, to attend the DXing Horizons Translator Conference and see first hand equipment available in the field.

IDAHO

The Idaho Translator Association has hit upon the idea of doing their own engineering and installing. To finance the plan, they are actively soliciting bids from VHF Translator manufacturers who "will sell to the association directly, at jobber cost and the individual clubs working through the Association will pay the standard list price. The difference in monies between the Association's "net" buying price, and the Club's "list user price" will go into a kitty, which the Idaho operators hope will pay for engineering and installation costs in the VHF Translators for the state. At press time, no word was available how manufacturers are reacting to the proposal. As one Booster operator points out, Idaho is saturated with "on channel boosting equipment, and there will be many complete units sold here." As a consequence, it may be a golden opportunity for a VHF Translator Manufacturer.

MONTANA

The big news in Montana is the bill introduced in the Helena legislature to create Tax Districts for VHF and UHF Translators. Your editor traveled to the state capitol to present the bill which, we have been promised, will receive no organized opposition from the state's CATV operators. The bill, as it now stands, will provide for a "use tax on TV receivers using the VHF Booster Translator signal. People inside the Translator coverage area but not using the Translator signal (i.e. on CATV, or receiving "off the air" reception) will not be assessed under the pending bill. The tax monies collected by each district will go into the

incorporated Translator's operating kitty for maintenance and modifications.

Mid America Relay Systems, Inc. (MARS) has reportedly organized the Translators in southeastern Montana into a "service route" with MARS contracting on a monthly fee basis to service all units at regular intervals. MARS will be responsible for the units continued operation. MARS is equipped to "fly the service route" if necessary, and fast service is promised by the Rapid City firm.

In western Montana, channel 8 has an applicant in Missoula (KMSO-13 there now) and this means that should the grant go through the Rattlesnake Free TV Club will be forced to move their VHF Translators now operating on channels 7 and 9. The Channel 7 unit repeats KXLF from Butte into Missoula, while the channel 9 unit repeats the channel 13 Missoula signal back into Missoula. This "double coverage" of the KMSO signal is necessary because of extremely rough terrain in some parts of the town where the direct signal is filled with ghosts. Under present plans, the channel 7 Unit (KXLF repeater) will move to channel 6 and KMSO itself will take over operation of the channel 9 unit, moving it to channel 2. There is some concern over possible signal leakage into the Cable system in Missoula, which currently operates on channels 2 through 6. The Translators, on channels 2 and 6, may get into the system if the shielding is not adequate in all areas.

WYOMING

The big news in Wyoming is a progress report on the state association's plan to handle the conversion of all area equipment. It is reported that Fleming Supply Company, in Casper, is working out the final plans for a code identifier unit which the Wyoming Association will manufacture "through Fleming Supply" for all of that state's VHF Translators. The profits from the sale of the Code Identifier, will apply to towards financing engineering at the existing Boosters during the conversion period to legalized Translators.

COLORADO

Colorado operators, where the balance between quasi-legal "conversion units" and on channel Boosters is about 50-50, are still groping for an area plan. Secretary Salerno, of the Colorado Club told your editor the state association is shooting for a plan which will speed custom certification of equipment now in the field, with suitable modifications. However only a portion of the Colorado operators are behind the plan, and it appears that the VHF Translator Manufacturers will deal with Colorado operators on a Booster by Booster basis. Many Colorado operators have indicated they will be in Salt Lake City at the Translator Conference, to "talk things over with Translator manufacturers."

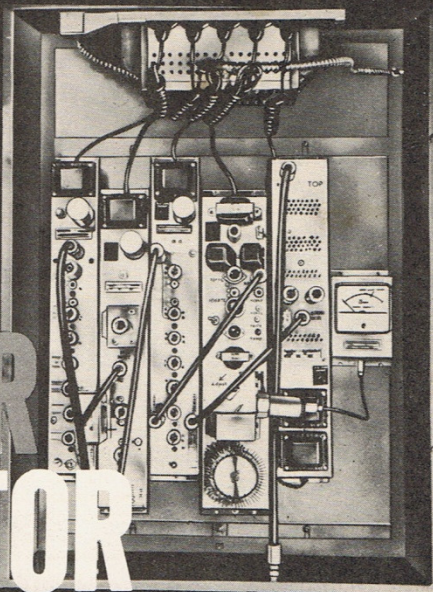
NEW MEXICO

Of perhaps prime importance to VHF Translator operators in areas with CATV systems, is a possible battle shaping up in and around Bloomfield, New Mexico. As reported previously, the Aztec Community TV System, (New Mexico) filed a complaint with the FCC in December, charging VHF Translators were put on the air in Bloomfield, New Mexico after the July 7 deadline. It appears that one of the three units operating actually was put on the air after the 7th, although two others were on prior to the 7th. William Reager,

(Continued on page 41)

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
Frequency Stability	.02%
Gain:	
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

BROADCASTER COOPERATION

(Continued from page 7)

ager for KMSO told *DXing Horizons* "Our coverage area, though large, is confined within some pretty high mountains to the east and the west. We are extending our coverage into "valley communities" by means of the VHF Boosters. All 18 of the VHF Boosters now re-broadcasting KMSO-TV were set up in past years by citizen's groups who wanted our line up of NBC, CBS and ABC programs. Booster equipment salesmen and the citizen's groups worked together to complete installations and KMSO did not participate.

"... As it is important to KMSO-TV to gain additional TV viewers in order to compete for national spot and network advertising, we are taking steps to help Boosters put out as good a signal as possible within the one watt restriction (limit). As we have the most and best electronic test equipment available in the area, we are offering to let Booster Technicians bring their equipment here for repair work.

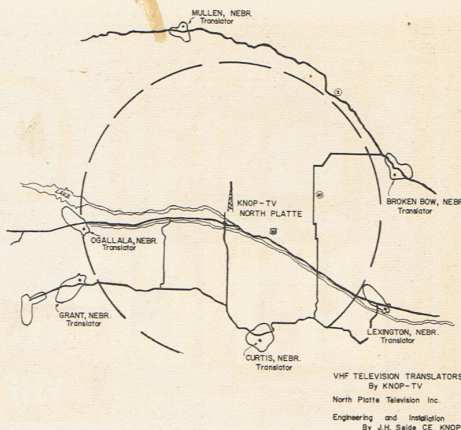
"... The reason for KMSO-TV's move to set up our own servicing plan of assistance is because it was necessary in order to assure the viewers a good picture."

KMSO-TV did not actually participate in the establishing of any of the Booster units, but when they came, they did all they could to help out. Another approach to Boosters was taken by Chief Engineer J. H. Seide at station KNOP-TV in North Platte, Nebraska. Seide told *DXing Horizons* "We at KNOP-TV found we had holes in our coverage, due to the terrain or a noise factor at the receiving site. Lengthy studies told us that increasing our effective radiated power (now 26 KW visual) would only partially correct this lack of coverage, and would be very costly, at least \$150,000. We finally decided that six VHF (Boosters) Translators would fill in the major "coverage holes," where there was substantial population, and they would cost us, installed, around \$2,000 each.

"In the first six months of operation we had only one failure that just replacing a tube or tubes would not correct. The Translators are serviced every 50 to 60 days, and we found that with power line regulators, this is often enough.

"There are a total of 11 VHF units repeating our station (that we know about). We have considered adding more at a later date."

All of which brings us to the future, and VHF Translators. As CE Seide of KNOP has pointed out, \$2,000 will install a VHF repeat-

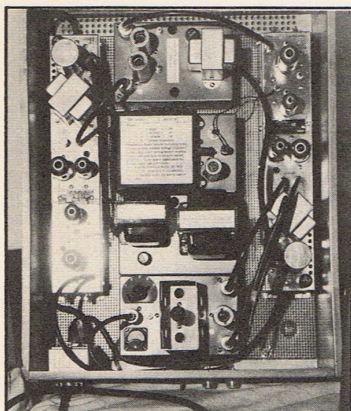


er station. You can spend more, but even a free cash man would be hard pressed to spend more than \$3,000 for a first class one watt VHF Translator installation. That this comparative low cost method of extending a TV station's coverage is attracting the interest of TV Broadcasters around the country is not surprising. But, a TV Translator must operate on a clear channel and create no interference to off the air reception. In most areas of the congested eastern two thirds of the country, few such channels exist. None the less, Broadcasters have been filing form 346 with the FCC in increasing numbers in past weeks, with one apparent aim in mind. "Where geography does not allow their primary signal to penetrate a nearby (but not close enough) secondary market, the opportunity to erect a low cost VHF Translator, to serve that market, seems golden indeed." Cases to point: WLOS-TV, channel 13 in Asheville, North Carolina has filed for three VHF Translators to repeat its signal on channel two into the Tennessee towns of Bristol-Kingsport and Johnson City, in affect giving WLOS primary coverage in the bulk of these three town. Total added receivers: 30,000 plus. Total cost, approximately \$7,000! Combined total of sets with WLOS market area of 29,000 sets; 59,000 sets!

Oh yes, Johnson City-Bristol-Kingsport has a local station, WJHL. Will they contest the applications? YOU BET THEY WILL!

Second case to point. WLVA-TV filed for a construction permit to construct a channel 5 VHF Translator in Roanoke, Va. WLVA, in Lynchburg, cannot now claim Roanoke coverage. Meanwhile WSL-12 and WDBJ-7, licensed to Roanoke, have protested the appli-

(Continued on page 18)



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

TYPE ACCEPTED BY THE FCC JANUARY 10, 1961!

M.A.R.S. RX-17B— *The only VHF Translator with six years of proven performance. Ask any one of 500 western Translator operators . . . and they will tell you*

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

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.

MID AMERICA RELAY SYSTEMS

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.

WE WILL COMPLETE YOUR APPLICATION FORM 346 WITHOUT CHARGE!

Write for a FREE copy of "The VHF TRANSLATOR LICENSING GUIDE"

MID AMERICA RELAY SYSTEMS, INC.
601 Main Street Rapid City, South Dakota

BROADCASTER COOPERATION

(Continued from page 16)

cation before the FCC, claiming WLVA is attempting to become a two market station.

Meanwhile an additional twist has been dumped into the FCC's lap, which it is felt, never meant the VHF Translator service to cover any area now receiving adequate off the air reception.

WRVA-12, Richmond, Virginia has filed for construction permits to build VHF Translators in Harrisonburg and Staunton, Virginia. Harrisonburg has a local station (WSVA-3), Staunton does not. WRVA is carried on the *Staunton Video Corporation Cable System*, and the *Harrisonburg Trans-Video Company Cable System* in that city. Apparently not satisfied with its "bonus Cable coverage," WRVA has applied for VHF Translators in the two towns.

Similar filings have been made in Ponce, Puerto Rico, Rome, New York, and Canadian, Texas. Some VHF Translator manufacturers believe "the really big market" for their product will finally be not the local Civic Groups, but with the station's themselves. It will probably take the next Convention of the *National Association of Broadcasters*, and a ruling on the contested "market hopping application" of WLVA in Lynchburg, Virginia, by the FCC, to decide the matter once and for all.

Certainly the aggressive Broadcasters are filing their applications early, fearful that other competitors will beat them to the draw.

Our industry, composed of three very much proven methods of bringing television reception to homes now devoid, or lacking sufficient diversification of programs, is on the verge of one of the biggest expansion periods in communications. Soon, perhaps, the FCC's allocation dream of "television for everyone" will become a reality.

FCC Invites Allocation Comments

The FCC, either on its own initiative, or acting on petitions filed, invites comments on the following proposed changes in the television allocation structure.

Madison, Wisconsin — WMTV-33 proposes channel 15 be substituted for channel 33, to allow it (WMTV) to move to channel 15. Channel 15, currently allocated to Richland Center, will be replaced by channel 40.

Newark, Ohio—Newark (Ohio) public schools request channel 28 be moved to Newark for educational use by changing channel 28 now allocated to Lancaster, Ohio for channel 68. Newark Public Schools state they will relay WOSU-TV (34) Columbus, Ohio Educational programs to Newark area on channel 28 if grant is made.

Vincennes, Indiana — Vincennes University requests allocation of UHF channel 52 to Vincennes, and move current channel 44 allocation to Princeton, Indiana.

Ogden, Utah—Ogden City Board of Education requests channel 24 be reserved there for educational use.

Lexington, Kentucky — Bluegrass Broadcasting Company requests channel 37 be substituted for channel 70 in Lexington, stating it will apply for same if allocation is changed.

Columbia, South Carolina — WNOK-TV (67) requests channel 14 be added to Columbia, and that channels 19 (reserved for education) and 67 be deleted in Columbia. Also requests channel 31 be reserved for educational purposes, and substitute channel 19 for 14 in Camden, S.C. and substitute channel 67 for 31 in Lancaster, S.C.

Albion, Nebraska — KHOL-KHPL (Bi-States Company) request channel 8 (plus) be dropped in at Albion, with condition that station could also be allocated to serve nearby Brookings, South Dakota.

WEAK SIGNAL

... TRADE 'n SWAP

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

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

WANT TO BUY—All types Cable TV equipment. Tap offs, Amplifiers, Towers, Cable. Reply Community TV Service, Box 226, Terrace Bay, Ontario, Canada.

WANT TO TRADE—Several near new BENCO amplifiers for Mid America Relay Systems gear. Will give cash difference. Reply Charley Starr, Rocky Point, Wyoming.

SELL—6 Entron BA4B Electro NIC splitters. Reply "Magog Television Service, Inc." 328 Pine Street, Magog, P. Quebec, Canada.

MANUFACTURERS of all types of coaxial cable, pressure taps, wire and cable. We invite your inquiries. VIKING CABLE CO., 830 Monroe Street, Hoboken, N.J.

SELL Blonder Tongue MLA-B amplifier. Less than 5 hours air use. \$70.00 to first check, we pay shipping. Packing box fresh. WS-Box 1, P. O. Box 3150, Modesto, California.

70 Foot Tower. 7 ten foot sections, inter-lock with twist of handle. Painted (alternate bands red and white) Brand new, never in the air. Will support 200 pounds of antennas. Price F.O.B. Modesto, California \$60.00. WS-Box 2, P. O. Box 3150, Modesto, California.

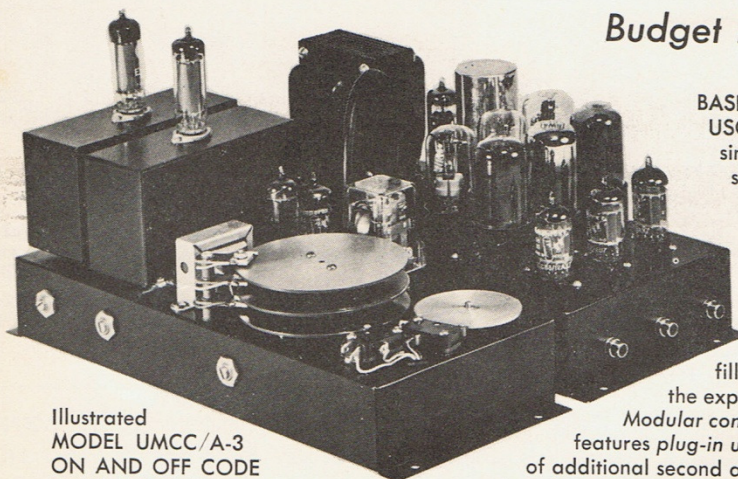
VHF TRANSLATOR STATIONS



your NEXT move should be to

VIDEO UTILITY CO.

Budget Priced!

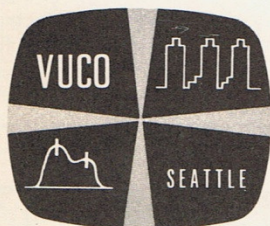


Illustrated
MODEL UMCC/A-3
ON AND OFF CODE
DECK IDENTIFIER

BASIC MODEL
USCC/A is for a
single channel
system only.
Modular construction
features
future expansion
of the
UM series to
fill the needs of
the expanding system.
Modular construction
features plug-in units for control
of additional second and third channels,
at lower cost than the first channel.

VUCO has the EXPERIENCE... ENGINEERS... and BUILDS the EQUIPMENT,
to make your system conform to FCC Regulations.

*UM SERIES identification-shut down equipment available at your
local distributor or associate field office of Video Utility Company.*



VIDEO UTILITY CO.

2444 Market St. • Seattle 7, Washington • SUNset 4-1111

Dedicated to the Advancement of Low Power Television

COMMUNITY

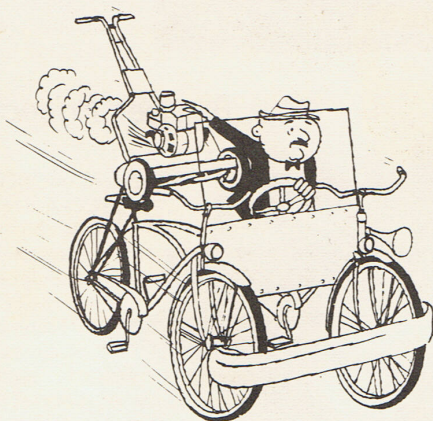
EDUCATION

INDUSTRY

A FIRST! FCC-Type Accepted*

EMCEE VHF TRAN

Selected for Custom Design, Easy Installation,

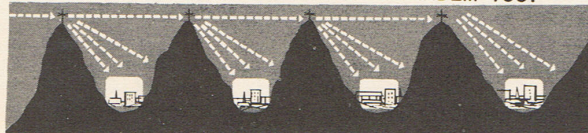


BUILD A CAR OUT OF BICYCLE PARTS?

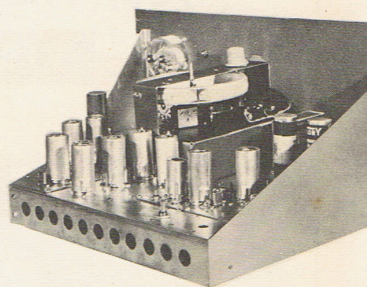
Of course not! Yet many translators ARE made this way—with "make-do" sub-assemblies from other type systems. The result is often a cumbersome unit that delivers more trouble than performance.

EMCEE TRANSLATORS operate at maximum efficiency because EVERY CIRCUIT is specially designed and integrated and every component is specifically engineered and precision made for *this* particular translator. No "lash-ups"! No forced fits of existing products! Dependability and reliability are actually ENGINEERED into each section so that all parts and circuits work with each other to perfection assuring long years of maintenance-free performance.

TRANSLATORS MAY BE RUN IN TANDEM TOO!



** MODEL HRV FCC TYPE ACCEPTED



TECHN

Input: Down to 50 Microvolts
A.G.C.: 30 db input variation
from 50 microvolts to 50,000 n
Output: 1 watt with no measur
Mountings available: 8 1/4 rack

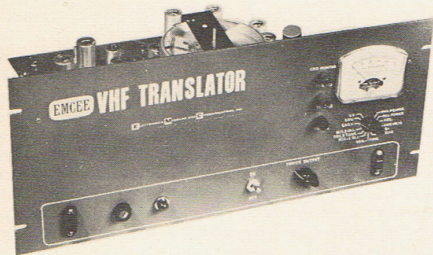
- **Model HRV**
Complete FCC-Type Accepted VHF Translator.
- **Model UHRV**
Same as Model HRV With UHF Input Included.
- **LEGALIZER**
For existing installations...provides 1 watt output...automatic on-off and identification...makes compliance with FCC rules easy. Factory measured electrical characteristics minimize field measurement. Exhibits included with equipment simplify filing FCC forms.

ELECTRONICS, MISS

262 East Third Street

SLATOR

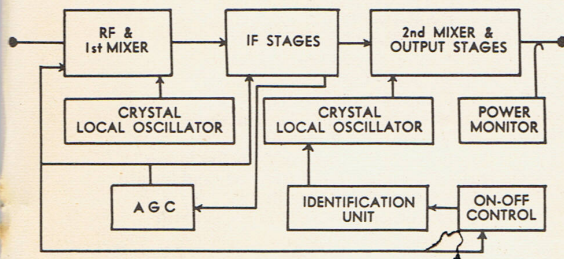
& Top Performance!



ICAL DATA

on 75 ohm line.
produces less than 1 db output variation for signals
microvolts.
able sync compression; 50 or 75 ohms.
or cabinet; self-contained outdoor housing available.

EMCEE DOUBLE CONVERSION VHF TV TRANSLATOR



ILES AND COMMUNICATIONS, INC.

• Mount Vernon, New York • MO 8-3012

linger-Harned Co., Allentown, Pa., to \$1.25 per year his store costs by 2. Hollmer says his estimate as registered every gained to department. Depending where at the place. If an extra more per benefits as pointed out. Reasons for difficulties in money are a retail sale customer cre stocks at said.

FCC ISSUES TYPE ACCEPTANCE TO EMCEE TRANSLATOR

Electronic Missiles and Communications Translator Becomes First In Industry To Win FCC Type Acceptance

the salesgirl that each

The big story is in trade publications coast to coast! NOW...the new EMCEE VHF TRANSLATOR becomes the FIRST** TYPE ACCEPTED BY THE FEDERAL COMMUNICATIONS COMMISSION! This stamp of approval is further assurance of quality results never before obtainable in commercial translators. Now read the facts that mean faithfully-rebroadcast color and black and white signals in your community - all on a new channel that won't interfere with direct reception in overlapping areas!

- **CONVERSION FLEXIBILITY**...any input channel to any non-adjacent output channel.
- **FREEDOM FROM INTERFERENCE**...no internal signals which coincide with input to any other translators.
- **EASY OPERATION UNDER FCC RULES**...simple control and identification unit minimizes maintenance and reduces cost...no operator required.
- **EASY-INSTALLATION**...available for cabinet/rack mounting or in weatherproof housing.

DEALER INQUIRIES INVITED

Factory-trained local organizations are available for assistance in most translator areas

ELECTRONICS, MISSILES AND COMMUNICATIONS, INC.

262 east third street • mount vernon, new york

Gentlemen:

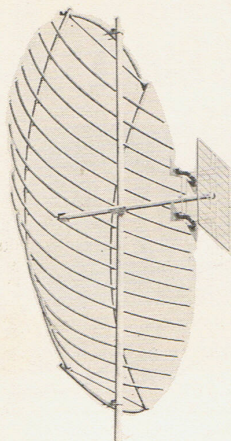
- My community needs better television. Please rush free planning package including data sheet, complete installation check list, coverage calculation form.
- UHF input
- LEGALIZER for existing installations
- Please send free reprint of FCC rules covering translators.

NAME _____

ADDRESS _____

CITY _____ STATE _____

FREE
reprint of
FCC rules
covering
translators



UHF HORIZONS

"News of the UHF Translator World"

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

NUMBER ONE EVIL — LACK OF PREVENTIVE MAINTENANCE!

There are at least two ingredients for success, at every UHF Translator operation. Primarily, the Translator must have signal to work with... day in and day out, all year long. This is a function of proper site selection. Secondly, there must be a planned routine of preventive maintenance. Which is the most important, is a matter for conjecture. Certainly without either the Translator has no hope of staying on the air. Lacking the first, the group installing the unit will find few residents in the region served willing to contribute to its support. Lacking the second, the result is the same... although perhaps to a greater degree.

When UHF Translator design engineer George Frese (Wenatchee, Washington) wrote his January 1957 report to the FCC, detailing his experience with the operation of the nation's first UHF Translator station (experimental KO2XBX), he was concerned about the amount of "check up and check out" work needed to keep such a unit on the air. Today his concern has been multiplied many times over as Translators have literally attached themselves to every third mountain top in the west, and across the country, and with each new installation comes new "routine maintenance problems." Frese made several recommendations to the FCC, and while they were not adopted into Translator rules, they might well be adopted by malfunctioning Translator groups today who bemoan their unit's failure following each shut down for equipment repair.

FRESE RECOMMENDED

(A) It is essential that a local resident technician be employed by the Translator organization. It is very desirable, although not absolutely necessary, that he be in charge of monitoring the Translator. He should be directly responsible for some "routine" (checks) and all emergency maintenance he can handle. His duties might include:

1. Oil all blowers at regular intervals.
2. Change certain predesignated tubes at regular intervals (i.e. First tube in RF pre-amplifier picking up the "off the air" signal).
3. Adjust interstage RF padding to maintain proper internal levels.
4. Adjust power output for proper level.
5. Depending upon the season of the year, the climate and the altitude, adjust shack (or unit) heaters and/or ventilators, to maintain proper external operating temperatures.
6. Tune all frequency multipliers for maximum output.
7. Check all meter readings, and record them in the transmitter log.
8. Change any tubes low and obviously not performing up to a preset level.
9. Make any repairs necessitated by climate and weather (i.e. Repair antennas damaged by wind, etc.).
10. Set AGC voltage to proper center operating value.

Normally, the resident technician should visit the Translator once every week to ten days. In mid-winter many sites are not readily accessible, and during such periods routine checking should be juggled between "snow storms" and bad periods of other inhumane weather. If no trouble develops suddenly, the equipment may function properly for as long as three months without attention.

(B) Above and beyond the above listed "routine maintenance activities," a higher level of maintenance is necessary by someone properly qualified. In most cases the local resident technician is not properly qualified, or, because of the small size of the region covered, local funds will not support the purchase of elaborate equipment needed for "complete maintenance." Many years of experience dictates that "advance stages of maintenance" should be performed at least once every three months. There are no short cuts to this end, and to attempt to get away for less is a sure path to a degraded signal from the Translator and dissatisfied "subscribers" to the UHF unit.

Engineer George Frese outlined, for the FCC, a list of equipment he felt the "advanced grade of engineer" should have available for maintenance:

1. VHF Sweep Generator
2. VHF Crystal Calibrated Marker Generator
3. UHF Sweep Generator
4. Calibrated UHF Marker Generator
5. Wide Band Oscilloscope
6. 75 ohm Sweep Demodulator
7. 50 ohm UHF Demodulator
8. Channel 70-83 dipole
9. Well shielded UHF converter
10. TV Monitor Receiver
11. Reliable TV Terminal (field) Meter
12. Large selection of RF cords and fittings
13. Vacuum Tube Voltmeter
14. Multimeter — 20,000 ohm per volt
15. Selection of RF pads
16. Grid Dip Oscillator
17. Tube Tester

With this equipment at hand, or available, the duties suggested by Frese for the advanced caliber engineer include:

1. Sweep and properly align the spare RF pre-amplifier. Change it with the pre-amp in use. Retune and re-align the one taken from operation, and leave it with the Technician as a working spare.

2. If more than one pre-amp, or RF line amplifier is in use, to get the off the air signal to the transmitter building, these too should be checked and re-aligned.

3. RF levels from the receiving antenna to the Translator should be measured, and properly padded.

4. All oscillator and multiplier circuits in the Translator should be swept, tubes tested and replaced where necessary, and the amplifier correctly aligned.

5. Checking out the 2C39 stages.

a. Measure cathode current while the tubes are in service.

b. Sweep the UHF stages as prescribed by the factory (in most cases) and completely re-tune the cavities. Equipment should be at average operating temperature when this is done.

6. Checking the output.

a. Check to ascertain that the "output indication" diode reads the proper value.

b. Composite video as viewed on the oscilloscope should be in the proper proportions, and should decrease (not remain the same, or increase) as RF drive power is decreased.

c. The final picture (UHF) should be viewed on the monitor and show no signs of degradation from the VHF input signal.

7. Should the conditions under number 6 above not be met, the 2C39 in the final should be changed, the stage re-aligned and step six repeated.

8. The sound notch filter, if employed, should be checked for proper positioning.

9. VSWR should be checked on the reflectometer.

10. The maintenance log should be kept in duplicate, and where applicable, a copy left with the resident technician for his reference should trouble develop after the engineer has finished his work and left the area.

TWO GRADES OF LICENSE?

Not considering for the moment whether the following proposal may fit into already established FCC "radio-telephone" licensing levels (i.e. first phone, second phone, third class operator), it has been suggested that two grades of FCC licenses are needed for UHF (and soon VHF) Translator maintenance personnel. One class of license (the lower) would permit a local TV technician to do a lower level of routine maintenance on the Translator. The higher class (which probably could be absorbed by the present FCC first class license) would be the engineer, required for tuneup once every three months.

Almost all existing Translators have either one, or the other type of maintenance available. Too many however rely solely on the "once every three month" variety, which simply is not often enough. DXing Horizons proposes to the FCC and the industry that a move get underway to establish a licensing procedure for the lower class of maintenance man. We feel that if such a class of license existed, almost every town with a Translator operating could find at least one person either technically qualified, or competent enough to become qualified to pass the test and assume regular weekly or bi-weekly maintenance duties. Many of the ills besetting UHF units (in particular) today are



Adler Electronics field crew demonstrating UHF Translator operation to Laramie, Wyoming from a peak above town. Photo courtesy of Adler.

borne out of ignorance for the "simple adjustments" and "routine maintenance."

The license need not require a high degree of analytical ability, but rather should be based on simple diagnosis of problems likely to arise in the day-in and day-out operation of a UHF Translator. It must be by nature a few steps higher than a tube changer, but by necessity a few steps lower than a first class all around engineer. There is a happy medium, and with the nearly five years of UHF Translator operation behind us, we believe enough is known of the units operation (whether it be an Adler, Eitel or Texas Translator unit) to warrant establishing such a grade of license. Surely the upgrading of Translator operation is of enough importance to warrant backing such a proposal at the FCC!

UHF TRANSLATOR GRANTS, APPLICATIONS (Compiled from FCC data to January 23, 1961)

UHF Translator Applications — Accepted for Filing

Farmington, Bloomfield, New Mexico

San Juan Non-Profit TV Association, seeks channel 83-ERP 1610 watts (repeat KGGM-13), channel 73-ERP 1610 watts (repeat KOB-4), channel 77-ERP 1610 watts (repeat KOAT-7), channel 80-ERP 155 watts (repeat channel 83 above to Farmington), channel 75-ERP 155 watts (repeat channel 77 above to Farmington). Adler equipment.

Florence, Oregon

West Lane Translator, Inc., seeks channel 71-ERP 451 watts (repeat KOIN-6), channel 73-ERP 451 watts (repeat KCBY-11), channel 76-ERP 451 watts (repeat KPTV-12).

Romeo-La Jara-Manassa, Colorado

San Luis Valley Television, Inc. Seeks CP to modify existing K82AC 218 watt ERP unit to ERP 3117 watts thru addition of Adler RA-7 100 watt final and new antenna.

UHF CONFERENCE

Interest is growing on the subject of holding a UHF-VHF Translator Operator's Conference during the summer months. The purpose of the meet would be to mold all Translator operators (VHF and UHF) into a single organization.

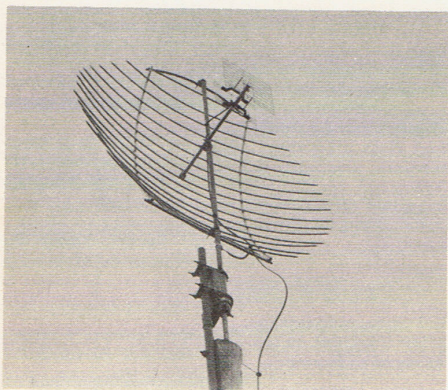
DXing Horizons invites comments from interested parties, and suggestions as to the location and topic matter to be covered at such a session.

The UHF Home Receiving Installation

(Part One of Two)

By
Edward Pelissier
Rt. 1, Box 281A
Hermiston, Oregon

"Weak signal UHF enthusiast Pelissier has been working with reception in the 818 to 890 mc. range for more than three years. His experience and success has led many troubled with good home reception, from UHF Commercial and Translator stations, to the Pelissier doorstep. Now, in print, his 'creed' for a successful UHF reception installation."



Author's UHF Parabolic Antenna. Note "looping" of transmission line around rotor, and spring mounted stand off above insulator.

First, let us look into the problems the UHF reception enthusiast faces, and then break them down in the text to follow.

1. High signal loss in the transmission line (from receiving antenna to set) at UHF frequencies.
2. Lack of adequate weak signal equipment. Antenna mounted boosters (for example) are non-existent, and the UHF fan troubled with snow must compromise between transmission line loss and antenna height.
3. Inadequate receivers. The UHF/VHF home receiver uses only a mixer stage in the UHF tuner. Signal loss in this stage may exceed 6 db.
4. Critical installation. The so-called "trial set-up," often OK at VHF, is not applicable at UHF. Installations must be correct the first time, or completely redone.
5. (Previous) lack of suitable antennas. "Signal shift" at UHF frequencies may leave the time worn yagi with much to be desired. The two most successful antennas now available have proven to be the "Translator Queen" (with tri-reflector) and the Channel Master six foot Parascop (see photo

A). Other antennas produce a usable signal one day, and perhaps none the next.

6. Lack of adequate information. Research in UHF reception fields has fallen far behind its counterpart at VHF. Often an inquiry to a manufacturer produces a reply which reads at best as a "shrug of the shoulders."

Do not count on the many gadgets available for VHF work to do a job at UHF (i.e. antenna switches, etc.). Above all, do not be discouraged. Servicemen and engineers alike discouraged my first efforts only to copy my installation at a later date.

TOWER SITE

Over-emphasis cannot be placed on the selection of a site for the receiving antenna. The author has verified the propaganda about trees. They don't help UHF one bit! I knew of one UHF enthusiast who was surrounded with a large growth of fir trees. His screen resembled a blizzard in Alaska! One day I stopped by to see him and discovered he had bulldozed down several dozen fir trees in a 20 foot wide path towards the local UHF station. It probably cost him several hundred dollars, but he was happy. His picture had cleared up to nearly grade A!

It is not uncommon for a few microvolts of signal at UHF frequencies to make the difference between a watchable picture and a snowstorm. Many UHF tuners seem to have a very sharp threshold of sensitivity. Picture quality is seldom a logarithmic function of signal strength.

Always avoid installing a transmission line on a horizontal plane. And do not leave excess transmission line hanging from a loop on the tower (mast) or dangling behind the set. Cut off the excess after completing a good "taunt" installation. How important a few feet of "left over twin lead" can be is obvious by checking through the following table of transmission line losses.

TRANSMISSION LINE LOSS AT 500 MC. (in db)

Type of Line	DRY 100 ft.	DRY 50 ft.	WET 100 ft.	WET 50 ft.
*FLAT	3.5	1.7	20	10
Tubular	3	1.5	7	3.5
Slotted	3	1.5	10	5
Open-wire	2	1	4	2
Oval	2	1	4	2
**Celluline	2.9	1.4	**	**

*Flat line used for VHF for comparison only

**Registered Trade Mark, see text, Belden, type 8275

Of the transmission lines listed, the Oval line is without doubt the most popular at UHF. Loss in this line is only 1 db per 50 feet (at 500 mc.) when dry, and 2 db when wet. If you can shorten the transmission line run to the receiver, you may affect a worthwhile saving in precious signal. The table above is based on a frequency of 500 mc. Unfortunately, manufacturers seldom (if ever) provide line loss data for the Translator range above 800 mc. At translator frequencies the line loss really zooms up! As an example, check the listing for "Celluline (Trade Mark Reg.)," which has a loss of 2.9 db per 100 feet at 500 mc. At a frequency of 900 mc. the loss has climbed to 4.3

db per 100 feet. Not too bad you say? Line loss in other popular cable types may reach 50% of the total signal received for each 100 feet (when dry!) at these frequencies. When it gets wet, you are forced to close down and go back to listening to the radio . . . or whatever it was people did before TV.

Assuming the tower site has been selected, the transmission line purchased, now let's talk about antennas. Unlike VHF, we cannot use antenna mounted pre-amplifiers (mainly because they don't exist yet!). So the antenna must develop enough signal voltage across its terminals to insure that when it reaches the bottom (after traveling through the sponge like transmission line), there is sufficient signal remaining to produce a good picture. After considerable "climb and try" experimenting, the author was fortunate enough to obtain an early model Channel Master model 425 Parabolic UHF antenna (Editor's note: DXing Horizons tested this array in July, and found it to be a very hot item. See July DXH for a report.) At my location the six foot Parabolic dish solved a very serious "fade" problem, due to signal shift. Erecting conventional yagis in a good spot one day often brought no signal the next day, as the signal "shifted" down a foot, to the right a foot, or perhaps up two feet. It was layering, and I simply couldn't move my antenna around fast enough to keep up with the "shift"! The 6 foot dish however has a capture area sufficiently large that it "seems to be everywhere at once," regardless of where the signal shifts. My experience has been that unless the shifting is very pronounced (i.e. more than 2-3 wavelengths vertical or horizontal) the Parabola handles it with not ever the slightest flicker on the screen. The signal may shift around, but as long as it is intersected by the plane of the six foot dish, the signal is "reflected" to the pick up bow ties.

In the transmission line (lead in) department, a variety is available. Only the best will do. The author is currently using the relatively new "Celluline (R)" No. 8275 (manufacturer's number) put out by Belden. This is a brown polyethylene plastic jacket filled with inert gas in a unicellular core. At high frequencies (i.e. 818-890 mc.) the antenna line current tends to concentrate on the outer surface of the conductor. Taking advantage of this "surface flow" the manufacturer used 7x28 stranded, copper coated steel wire for the conductors. In this way the strength of the steel is combined with the well known high conductivity of copper. With its strength, the line is able to retain nearly all of the field within the polyethylene core. This unique feature nearly eliminates added loss from adverse weather conditions (i.e. rain, etc.). After more than a year's use, I still find this line performing well. Cost is about five cents per foot in coil lots, compared to four cents per foot in the higher loss air core type. If you must use air core line, be certain you construct a "drop loop" to drain condensation moisture out of the inside of the line during wet spells. Always seal the top of the line shut (at the antenna) with a hot soldering iron "before you erect the antenna. Sealing the line will keep torrents of rain water from pouring down the line and into your house, if you also forget to drill the loop hole. It is not

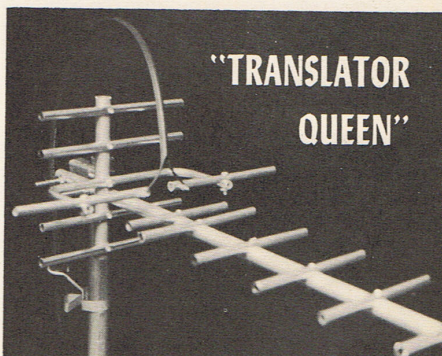
uncommon for a serviceman in a UHF area to be called out to service a set which, after a heavy downpour, produces no picture. The first item he will usually check is the feed line. Often it has filled up with water and dirt, absorbing all of the signal.

While installing the transmission line, keep these recommended aids in mind. Always "go around" metal gutters, pipes, etc., coming no closer than six inches to anything metal. The proximity of the metal will "suck signal out" of the transmission line as it goes by, and you will never even know how it left!

Always use a "WallThru" to bring the line into the house. This device consists of a polystyrene tube 14 inches in length which mounts through the wall (hence, WallThru). Properly installed, it will allow you to bring the transmission line from the outside "inside" to the receiver antenna terminals without added signal loss.

The WallThru is mounted according to supplied instructions in a three-quarter inch hole drilled through the wall. Never bring UHF transmission lines through a window or under a sash. Crimping the line under a sash can do far more damage than all of the care you have taken up to that point can rectify. WallThru's are packed with rubber bushings, one for the outside, and one for the inside. Throw them away! Do not use them with UHF transmission lines, as the line needs plenty of air circulation room.

In March this series will conclude with a discussion of UHF receivers, converters and general installation techniques.—E.P.



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Broad Band Channels 70-83**
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For DXers Only

(Combining TV Reporting, FM Horizons. Send all TV-FM reports to arrive in Modesto, California no later than February 17 to appear in March.)

MORE JERROLD TRAP EASE

In January this department reviewed the Jerrold TRAP EASE device, models HQ-91 and HQ-92. The TRAP EASE is designed to filter out strong signals from an adjacent channel, which are "sloping over" to a channel not used in your area. For instance, a strong channel 3 station will cause herringbone audio hash on a weak channel 4 station, and put "frame bars and video" on a weak channel 2 station. The trap, tunable, will remove this interference and allow the DXer's receiver to pull in the weak ones.

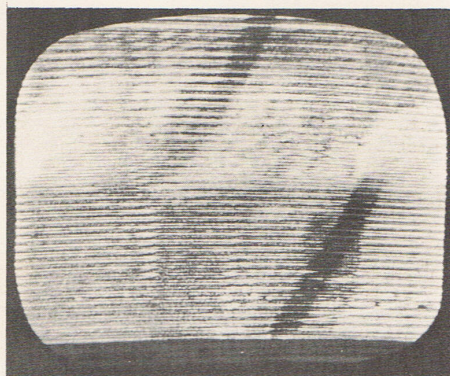


PHOTO ONE



PHOTO TWO

If carefully tuned, the TRAP EASE will also allow the DXer to pull in the weaker of two audio signals (not video) and at the same time, clear up the 10 kc. or 20 kc. interference on a station you are trying to identify. Examples are shown in photos one and two. Photo one is channel 8 from the DXH lab, antenna directed north at KOLO in Reno. The 10 kc. interference is KSBW in Salinas, off the back of the antenna. The TRAP

EASE has two controls, a broad clearly marked channel selector, and a fine tuning. The fine tuning when carefully rotated "after" the broad tuning was set on channel 8, produced photo two, a snowy but readable signal from KOLO. At the same time, the audio went from a non-understandable "hash" to the KSBW audio. Net result? You identify two stations, the weaker one by audio, the stronger one by video. Painless and very helpful!

MUCH-MUCH DX (for a winter session)

DXer Dave Swanson notes (January 9) "This was the first winter E skip I have ever seen." Swanson logged KBTX-3 and KROD-4 from Texas between 2020 and 2108 EST.

In Colorado, Jim Himes, located on the eastern plains of this Rocky Mountain State noted E skip as early as 1835 EST on January 9, when WESH and WJXT-4 Jacksonville, Florida were logged. From that time to 2315 EST Himes caught identifications from video stations in Georgia, West Virginia, South Carolina, Louisiana, Texas and Tennessee.

In the far west, Ed Hepp, Tucson, Arizona really went to work on TV and FM, with his new AJ-10 Heathkit Tuner on FM. Starting at 2100 EST, Hepp caught WKYB-FM (Paducah, Ky.) 93.3 and KVOO-2 on TV (Tulsa). Around 2130 Hepp caught outstanding FM haul KCUR-FM (89.3) from Kansas City, a 450 watt educational station, along with KARD-3 Wichita and KFEQ-2 St. Joseph on the video. Shortly after, KCMO-FM (Kansas City) was logged at 94.9 mc., and Hepp noted FM skip to 100.3 mc. at 2200 EST. KTVI-2 St. Louis was the last video haul of the session, at 2300 EST. NOT BAD FOR WINTERTIME FM E SKIP!

At the DXing Horizons Eastern TV Testing Lab in Kokomo, Indiana, Project Engineer Jim Gould noted E skip at 1930 EST with KPRC-2 Houston logged. In Kokomo, E skip peaked on channel 6 at 2022 with stations in Florida (Educational WUFT-5 Gainesville) and New Mexico (KOB-4) logged at the same time! KMID-2 Midland, logged at 2100, was the last haul on skip for the session.

OTHER DX DATES

DXer Dave Beal, Tucson reports he logged E skip December 18 (Mexico), 20 (Gulf Coast), 21 (Gulf Coast and Mexico), January 3 (Idaho east to Nebraska, south to Tennessee), 8 (Illinois, Missouri) and the 9th (Oregon, Idaho, Alberta, Canada).

In the Northeast, John Dranchak, Bridgeport, Conn reports WBAY-2 Green Bay, Wisc. on January 5, 1915 EST.

Gould, Indiana reports Halifax and Boston around 1830 on January 3, and unusual ground wave January 10, 12, 14 and especially the 16th (UHF to Wisconsin, VHF to Iowa and west). Incidentally, a report that slipped by us from our Eastern Lab, covers November 20th when Gould logged WMSL-23, Decatur, Alabama from the Kokomo laboratory. This 413 mile path, over land and in the middle of the fall "doldrums" bears further study! It indicates many of us are missing at least a good bet on UHF now and then, even in the winter! Gould telephoned the station, which promptly verified his reception. WMSL was logged from 0025 to 0100 EST November 20. At the same time stations in Tennessee were "overpowering" on VHF, covering up his local WISH-8 in one case!

(Continued on page 29)

The DX Enthusiast

By
Gordon E. Simkin
Idaho Falls, Idaho

DXing Horizons is exceedingly pleased to bring the well-known talents of TV DXer extra-ordinaire Gordon Simkin to a monthly spot in these pages. This is to be a regular series, ALL ABOUT DXing and the DXer. The scene is George's TV Service Shop.

"BUYING A RECEIVER FOR DXing"

"Say George, my Dad said I could buy a second hand TV just for DXing if I could get one for under \$100. Do you think a hundred dollars would buy a TV any good for DXing?" Jim blurted as he entered the room. "Seems to me you once said you never pay that much for a DX set here at the shop."

"That's right Jim. I wouldn't be surprised if you could get one for less and buy a new rotor for your antenna besides."

"That's a good idea . . . but . . ."

"But nothing! Here, take this pencil and paper . . . jot down the things you want in a set just for DXing."

Jim took the pencil and noted these items:

- (1) Good sensitivity.
- (2) Good contrast and brightness for photographing the DX call slides.
- (3) Large screen.
- (4) Positive channel tuning.
- (5) 300 ohm twin lead balanced input.
- (6) No electrical shock hazard.
- (7) Few repairs.

After a little more thought time, Jim handed the list to George and sat down on the shop stool.

"Hmmm . . . are you sure this is exactly what you want Jim?"

"Well" answered the tall lad of 18, "I think it is."

George smiled, "what about the sound?"

"Oh, of course I want good audio" came the reply.

"And adjacent channel rejection?"

"That would be good" said the lad.

"And horizontal and vertical hold stability?"

Jim slid from the stool. "Guess I need that too," grinned the youth.

"And what about locking in the best video and audio at the same spot on the fine tuning?"

"Gosh . . . looks like I missed quite abit," Jim replied sheepishly.

"Now," said George, "about this large screen."

Jim was quick to defend his point. "Larger screens have sharper pictures . . . don't they?"

"No Jim, the screen size has very little to do with the picture sharpness. A ten inch screen can be just as sharp as its larger brothers. And since you want this TV just for DXing, you will usually be sitting right in front of the tube, not across the room. At this range the big tube may just be filled when heavy co-channel interference bars, when an identical receiver with a 12 to 17 inch picture tube would give better definition for the ID, with smaller interference bars."

The youth smiled. "Say I'll go along with that. I know I have to get 6 to 8 feet back from my folks 21 inch to make out the call letters on a snowy picture."

"So let's re-write that list, and this time include the changes" suggested George.

The list's final form appears in table one, below.

TABLE ONE

Good sensitivity.
Good contrast.
Good brightness.
12 to 17 inch screen.
Positive channel tuning.
300 ohm antenna input.
No electrical shock hazard.
Few repairs.
Good sound.
Good adjacent channel rejection.
Stable horizontal hold.
Stable vertical hold.
Best sound and video at same setting of the fine tuning.

George took the completed list and taped it to his service mirror before Jim.

"But George, how can I get all that for \$100, or less, and how am I going to tell if a set has all of these features?"

The old servicing pro smiled, and turned towards the back of the shop. Over his shoulder he invited "Let's go into my storeroom and look over a few sets, with the aid of a few gimmicks."

The pair made their way into George's back room, where George moved a 7 and 12 inch pair of chassis next to a 21 inch set he was working on.

"Now," said George, "we will compare all three sets. I might warn you none of them have all of the features you want, but perhaps we can decide which one is most desirable, and which features we might compromise a little on."

"I'm watching" beamed Jim.

George soon had all three sets perking, but none had an antenna connected. He proceeded to short out the antenna terminals on each receiver with short lengths of bare copper wire.

Jim, puzzled, stayed silent as long as he could, and then as George moved the channel selector to 13 on each set, he blurted out "What do you think you are doing . . . and why channel 13?"

George smiled knowingly. "Do you remember that every TV receiver has a small transmitter in

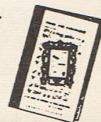
(Continued on page 29)

FM/Q

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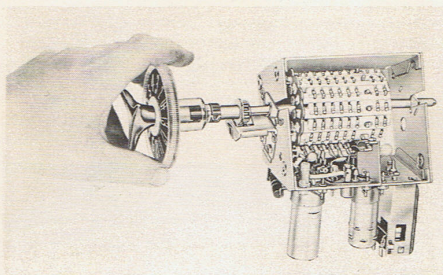


FM/Q WETHERSFIELD 9, CONN.

WEAK SIGNAL TECH NOTES

"A monthly discussion of current circuits, products and procedures in weak signal TV-FM reception."

NEW ZENITH TUNER



Zenith Gold Video Guard Turret Tuner

Introduced in new ZENITH TV is company's Video Guard Turret Tuner. Handcrafted, no printed circuits, the new tuner features a "PERMA-SET" control which the manufacturer notes allows the set owner to tune his local oscillator from the "fine tuning" control, for each individual channel. In deep fringe districts, this new approach to "fine tuning" will allow you to adjust for each individual station, per each channel, and "peak each for maximum signal without affecting reception on other channels."

Tuner also features 16K filled gold, alloyed to platinum and silver, contact points (104 in all) which ZENITH claims will greatly lengthen tuner life, and simplify servicing.

The new Gold Video Guard Tuner will be available soon in the 1961 line of receivers.

COLLINS ONE WATT MICROWAVE

First delivery is expected in June, 1961, of the new One Watt line of 6 Kmc Collins Microwave equipment. Collins also expects to release a one-half watt 12 Kmc unit at about the same time.

ALL PRODUCTS TOWERS — RUGGED YAGIS

All Products Co., Mineral Wells, Texas has released a new catalog detailing their line of ruggedized yagi antennas and towers for exacting commercial and military applications. All Products will supply data sheets on electrical and mechanical (ice and wind loading) characteristics for their antennas and towers free upon request. Write ALL PRODUCTS CO., Box 110, DEPT. AB-DXH, Mineral Wells, Texas.

WATCH OUT FOR WINEGARD!

(Continued from page 4)

areas, and send signal through up to 1,320 feet of transmission line without need for further amplification.

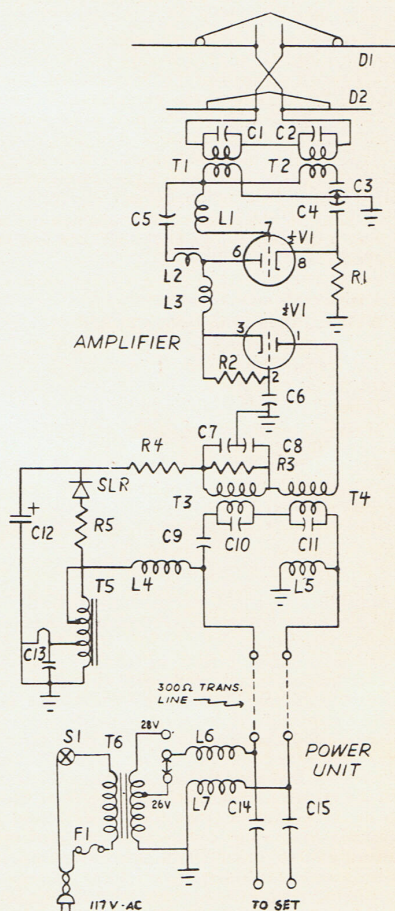
Mechanically, the antenna series retains "flip-out elements" that lock in place, and the boom sections now slip into place on a new "crimp fit" basis.

The amplifier, mounted on the boom, is in what WINEGARD calls a "weatherproof housing" (only time will tell!), with the tube mounted vertically, upside-down.

With the basic design now developed, the number of further "improvements" which might be added to the line are numerous. A coaxial output model (72 ohms) would not be amiss for many western locations, and an FM model is said to be around the corner.

As noted in the opening paragraphs, it's not any too often we feel inspired in this business. *But today we are, and John Winegard is responsible.* We think our readers will feel inspired too, when they observe the POWER-TRON in action at their nearest WINEGARD Distributor.

R.B.C.



Winegard Powertron Schematic. (Courtesy Winegard)

DX ENTHUSIAST

(Continued from page 27)

it? It's called the local oscillator."

Jim, still in the dark, replied "seems I have heard that before."

"This local oscillator is operating at a frequency above the channel that the set is tuned to. With more than one set, operating so close together, one set could interfere with another, when one is tuned to a higher channel than the next. By tuning all three to the highest channel, I know the "local oscillator" will be operating above the channel 2-13 range, and the local oscillators from the sets won't interfere with our testing of the third set, while we are testing it.

Next George adjusted each set for minimum sound, maximum contrast and he set the brightest for equal amounts of black and white "snow dots" on the screen.

Jim's interest jumped. "George, am I right that the 12 inch set has the best sensitivity? It sure has the most snow?"

George winked at his student. "No, that is a common idea. But it's not always so. That's one of the reason's I picked this TV for our little demonstration. This is one of the exceptions to the rule of thumb which tells you to pick a set with lots of snow on the high channels. And that is why I shorted out the antenna terminals with the bare copper wire. Let me see if I can demonstrate to you. Watch as I change to channel 2."

Jim jumped. "Hey, the snow looks just the same on 2 as it did on 13. My Dad's TV has lots more snow on 2."

"And that is our first clue Jim. Do you know what snow is?"

"Well... seem's I heard it's noise."

"Right" replied George, "But where is the noise coming from? The antenna terminals are shorted, no antenna is connected."

"Tubes?"

"Mostly. This set is one of the odd balls with a high gain IF and a noisy mixer in the tuner. Most, if not all of the snow on the screen, is mixer noise. This means the TV signal must be fairly strong to override the mixer noise.

"You lost me George. What is the IF, and who's mixer is making so much noise?"

"I'm sorry Jim. I forgot you aren't familiar with all of these terms. Here, let me take out my favorite tuner type... a turret tuner."

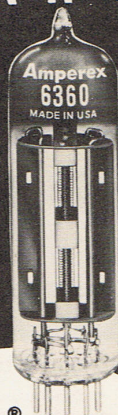
While George spends the next 30 days looking for a turret tuner, plan to be with us again in March when George and Jim investigate TV tuners, and how they affect DX reception.

FOR DXers ONLY

(Continued from page 26)

In the far west, Dennis Smith, home over Christmas in Wasco found tropics hot on VHF and FM on a "day in and day out" basis. This portion of California often succumbs to two week long "fog spells" which effectively makes these periods the best for the year, ground wave wise. Smith found KVIP-7 400 miles an almost daily logging with good FM signals from stations in the Bay Area (235 miles), Sacramento (240 miles) and other areas closer to him.

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Grid No. 2 Resistor	—	27	8.2 K ohm
DC Grid No. 1 Voltage	—45	—	— volts
(Fixed or from common resistor)	—	18	15 K ohm
DC Plate Current	2x50	2x40	2x42 ma
DC Grid No. 2 Current	3.0	2.4	3.1 ma
DC Grid No. 1 Current (approx.)	3.0	2.5	3.0 ma
Driving Pow. (approx.)	0.20	0.15	0.18 watts
Plate Dissipation	2x6	2x3.5	2x3.4 watts
Grid No. 2 Dissipation	0.6	0.45	0.55 watts
Grid No. 1 Dissipation	2x0.1	2x0.15	2x0.18 watts
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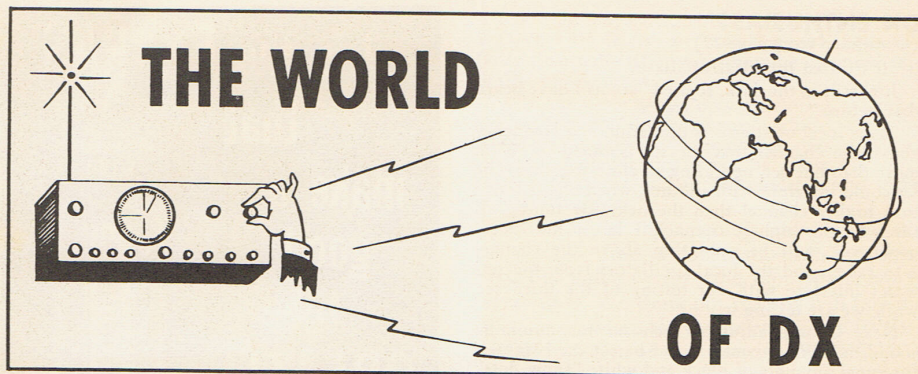
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ON MATTERS DX...

In answer to literally "too many letters to count" here is the status of WWDX-L Membership certificates, and associated matters.

As many of you noted on page one for January, we here at DXing HORIZONS are in the midst of a keen search for a full-active partner in the publication of this monthly magazine. The work load in keeping the book above water has increased to the point that "more creative talent is needed . . . NOW."

In non-glowing terms, there simply aren't sufficient hours in the week, even working seven days per, 18 hours to the day, to make all of the wheels go around.

Consequently, while the search for a talented type with partnership ambitions continues, several projects have been placed on the "Hold Shelf." This includes *World Wide DX League* expansion, a new FM section of real magnitude, and "a shortwave addition that will pop your eyes out!"

To keep the wolves away from our door while we are expanding here at DXH, we continue to honor *World Wide DX League* Membership Applications with the very meanial issuance of call letters. The Membership Certificates (see, I did get back to the topic!) are ready for action . . . *but not until the manpower situation improves*. For press release purposes, a rather attractive design by League member Marv Robbins, WWOEA of Omaha, Nebraska has been selected for the Member-

ship Certificates. We think it is truly modern, and yet it still manages to retain the classic "certificate look."

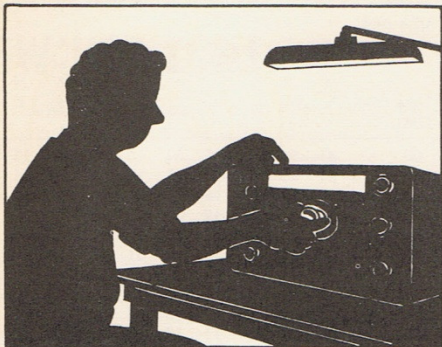
When you read that the DXH Shortwave expansion is really moving, and learn that a talented type working eager beaver has been found (WHAT? *You are one of these? Drop us a line for full partics on getting in on the ground floor at DXH!*), then the Certificate activity will move ahead.

Two other subjects must be disposed of this month. The *Medium Wave DX Log*, prepared with such loving care and great craftsmanship by MW Editor Glen Kippel will not be issued this season. By hook or by crook, *it will come out in ample time, and in advance of the fall 1961 DX season* for the Medium Wave fans.

Most readers noticed the name of Drayton Cooper, Decatur, Georgia on the masthead last month as editor for "SHACK HORIZONS." Drayton had been lined up to do this most interesting new column scheduled to begin in January. We are indeed sorry (from a purely selfish viewpoint) that Drayton's Seminary studies have begun to sap so much of his time, and he has been forced to greatly curtail his editing activities. However he hopes to be graduated and ordained as a full minister later this spring, and once settled down and out of school, we look forward to his fine guiding light in the form of many earth (and heaven!) shaking articles.

R.B.C., Publisher, DXH

SHORTWAVE PROFILE



Mr. Jerry Berg
West Hartford, Connecticut, U.S.A.

"I began DXing about three and one-half years ago, using a one-tube regenerative set, and then a two-tube set," reports Jerry Berg, 42 Dover Road, West Hartford 7, Connecticut, U.S.A., one of the top teenage SWLs of the world.

"Of necessity," Jerry continues, "these sets weren't very sensitive, but I certainly wasn't lacking in enthusiasm when I first heard the Moscow chimes or the deep tones of Big Ben! From there, I purchased an inexpensive three-tube regenerative set, and then hopped to the famous HEATH AR-3, five-tube superhet. This was a surprisingly sensitive receiver, considering its price and relatively simple circuitry—and with it I logged more than 100 countries.

"In 1959, I purchased a KNIGHT (ALLIED RADIO) R-100, 10-tube communications receiver, for which I have only the greatest praise. In addition, I'm using a WILCOX-GAY tape recorder. My antenna system consists of a 135 foot E-W longwire, an 80 foot N-E longwire, and a new MOSLEY SWL-7 dipole running NE-SW.

"What interested me at first was the ability to hear broadcasts from places so distant from us," Jerry explains, "and as my knowledge grew, so did my interest. Today, I am still as fascinated at hearing the news from the SBC, Berne, Switzerland, as in hearing the native drums from Tahiti.

"Among my best veries are those from Radio Beirut, Lebanon, 8.000A, 2 kw.; Radio Baku, Azerbaijan, SSR, 4.958; Austrian Shortwave Service, 300 watts; VRH3, Fiji Islands, 5.980, 250 watts; Santa Cruz de La Palma, Canary Islands, 350 watts; Radio Mediter-



Jerry Berg of West Hartford, Connecticut, U.S.A., one of the world's top-flight teenage DXers, uses a KNIGHT (ALLIED RADIO) R-100, 10-tube communications receiver and a WILCOX-GAY tape recorder. Jerry has logged 137 countries and has 123 of them verified—all on SWBC.

aneo, Spain, 6.995, 1 kw.; CR6RH, Angola, 400 watts; CR6RL, Angola, 1 kw.; CQM, Portuguese Guinea, 500 watts, and Radio Santa Isabel, Spanish Guinea, 6.240, 3 kw. My current total stands at 137 countries logged, 123 confirmed—all on SWBC.

"I believe that hearing a rare DX station is 'only half the battle'; then you have to go after its QSL. In my opinion, that is the most satisfying part of the hobby; that, plus an occasional tape recording to an unusual station, or to a station that has just come on the air. Oftentimes, a station that is heard for only a few minutes will quickly verify a tape report, whereas at the same time it would be nearly impossible to write out a report on only a few minutes' logging. As for NEW stations, these broadcasters are generally eager to know *exactly* how they're being heard, and where. There is nothing better than a tape in situations such as these—no matter how well you can describe the signal quality, a tape is always better."

Jerry, who is 17 and a senior in high school, hopes to attend George Washington University and then to follow a career in the United States Foreign Service (Diplomatic Corps).

"I could add that this is the greatest, most interesting hobby in the world," Jerry concludes, "but any DXer 'worth his salt' knows that!"

It is indeed a pleasure to dedicate this issue of the Shortwave Department of DXing HORIZONS to this remarkable teenage SW DXer . . . Jerry Berg . . . and to wish him every future success!—KEN BOORD

Propagation Horizons

Prepared monthly by
Stanley Leinwoll
Radio Frequency and Propagation Manager
RADIO FREE EUROPE

February is a month of transition. As the earth travels around the sun, its position and distance with respect to the sun changes constantly. These changes affect the behavior and characteristics of the ionosphere.

Because of these changing seasonal propagation conditions, there will be a trend away from the 11 meter band during the daylight hours, particularly toward the end of the month. Optimum DX daytime opportunities should exist in the 13 and 16 meter bands to most parts of the world. Night time DX should be best in the 31, 41, and 49 meter bands, with 49 meters becoming less useful as the month progresses.

During February, noise levels, which have been at a mid-winter minimum, begin to increase, although they will continue at relatively low levels for several months more.

Unusual DX openings in both the 60 and 90 meter bands should again be possible on quiet nights when atmospheric noise levels are low.

Radio conditions during the past several months have been worse than at any time since the present sunspot cycle began in 1954. Some radio men insist that they are worse than they ever have been, and reports from the Central Radio Propagation Laboratory of the National Bureau of Standards tend to bear these out. During November, for example, 22 days were classified as subnormal. In December, 23 days were below normal.

The reasons for these exceptionally poor short-wave radio conditions are two fold: First, several unusually active sunspots have appeared on the sun recently; these produced large flares and were the cause of SID's, magnetic and ionospheric storms, and aurora.

Secondly, during this part of the sunspot cycle (two to five years after maximum) the sun exhibits a 27-day recurrence tendency, during which some types of storm tend to repeat with each solar rotation. At this writing, for example, a disturbance lasting about four days has recurred for five successive solar rotations.

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 western listener in the 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.

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

SUNSPOT COUNT FOR DECEMBER — As hrd frm HER4, 9.535, Berne, Switzerland. DECEMBER AVERAGE—83.3. PREDICTED — JAN. 90; FEB. 88; MARCH 86; APRIL 84; MAY 82; JUNE 80.—Grady C. Ferguson, North Carolina.

Between Western USA and	W e s t	E a s t	N o r t h	S o u t h	N e a r	N o r t h	S o u t h	F a r	S e a s t	A u s t & N e w Z
Time GMT	E u r o p e	E u r o p e								
00	41	25	13	11	31	16	11	11	11	
02	41	25	13	13	31	19	11	11	11	
04	41	25	19*	16	31	25	19	19	13	
06	41	31	25*	19	31	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	16	25	13	13	13	13	41	41	31	
18	16	31	13	11	13	13	41	16	13	
20	25	31	13	11	25	13	31	19	11	
22	41	25	13	11	31	13	31	31	11	

Between Eastern USA and	W e s t	E a s t	N o r t h	S o u t h	N e a r	N o r t h	S o u t h	F a r	S e a s t	A u s t & N e w Z
Time GMT	E u r o p e	E u r o p e								
00	31*	41	13*	13*	31	31*	19	16	13	
02	31	41	19*	19*	31	31	25	25	16	
04	31	41*	19*	19	31	31	31	25	25	
06	31*	41	19*	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 s t	E a s t	N o r t h	S o u t h	N e a r	N o r t h	S o u t h	F a r	S e a s t	A u s t & N e w Z
Time GMT	E u r o p e	E u r o p e								
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	31	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	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.

ENGLISH LANGUAGE SW HORIZONS

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

By
A. R. "Al" Niblack

Having established, last month, the boundaries of the most popular shortwave bands, along with the hours and the seasons at which they are at optimum, our next subject is the listener's antenna.

Nearly all shortwave listeners go through a period of experimentation before coming to definite conclusions. In the final analysis most of us want a good general coverage antenna.

In the December 1960 issue of DXing HORIZONS the Mosley SWL-7 Antenna was reviewed. With trap assemblies, it covers the major International Shortwave bands. It is suggested that you give same consideration. A good "ground" connection is also advisable. For full coverage of the subject refer to the April and September DXing HORIZONS.

MONTHLY LISTENING TIPS

And now, to the dials! The following listing consists of stations heard throughout North America in their ENGLISH sessions.

(Times to tune are in 24 hour GMT, frequencies in megacycles. EST subtract 5 hours, CST subtract 6 hours, PST subtract 8 hours.)

ARGENTINA—R. Nacional, Buenos Aires, 9.690, 0315.
CEYLON—R. Ceylon, Colombo, 15.265, 0130.
CONGO (REP. OF)—R. Congo, Leopoldville, 11.755A, with N-E, 2245A.
CYPRUS—BBC Relay, Limassol, 6.170, with N-E, 0330-0345.
CZECHOSLOVAKIA—R. Prague, Prague, 5.930A, 0400.
ENGLAND—BBC, London, 9.510, 0230.
FINLAND — Station OIX4, Helsinki, 15.190, paralleled by 17.800, 1600A (gives ENGLISH ID).
GERMANY (EAST)—R. International, Leipzig, 9.730, 2005.
GHANA — R. Ghana, Accra, 9.640, with N-E, 0700.
GUATEMALA—Station TGNA, Guatemala City, 5.952A, 0400.
GUIANA (BR.) — R. Demerara, Georgetown, 5.981, 1030.
INDONESIA — Voice of Indonesia, Djakarta, 9.586, 1530.
ISRAEL—Tel Aviv, 11.922 (NEW), with N-E, 2015.
IRAQ—R. Baghdad, Baghdad, 6.030, 2045.
ITALY — RAI, Caltanissetta, 6.060, with N-E, 0430A.
JAPAN—FEN, Tokyo, 6.160, 1100-1300.
KATANGA STATE—R. Katanga, Elisabethville, 11.866 (announced), 0430 (gives short ENGLISH ID).
KOREA (SO.)—Voice of Free Korea, Seoul, 9.640, 1430.



Indicative of the interest with which the majority of shortwave stations view reports is this picture showing Mr. Gunnar Nygard of Norsk Rikskringkasting (Radio Norway) pin pointing shortwave reports from Norwegian sailors in the Indian Ocean. Radio Norway's programmes are meant primarily for Norwegians abroad—but for the benefit of English speaking shortwave listeners the station gives identification in English as well as Norwegian every fifteen minutes. Radio Norway also presents special feature programmes exclusively in English.

LIBERIA — Station ELWA, Monrovia, 11.825A, 1930.
MOROCCO—R. Morocaine, Rabat, 11.735, 1815 (time may VARY).
MOZAMBIQUE—L. Marques, 7.252, 0330.
NIGERIA—Ibadan, 6.049, with N-E, 0530, (may be NEW station).
NORWAY—R. Norway, Oslo, 11.850, 0130.
PAKISTAN—R. Pakistan, Karachi, 15.145, with N-E dictation speed, 1530.
PHILIPPINES — FEBC, Manila, 11.855, 2330, (gives ENGLISH ID).
RHODESIA—FBC, African Service, Lusaka, 9.577 (NEW), with N-E, 0500-0508A.
SINGAPORE—BBCFES, Singapore, 9.690, with N-E, 1400.
SWITZERLAND—SBC, Berne, 6.165, 0130.

Though receiving conditions have been poor and spotty since early in the present DX season, indications are conditions are taking a turn for the better and may stabilize. As this is being written there have been a few very good openings. Look for: TANGANYIKA—Dar-es-Salaam, 5.050, 0330; UNION OF CO. AFRICA, SABC, Paradys, 3.316, 4.810, 4.945, and 7.185, 0400, to show an improvement in signal strength during mid-February and March. In conjunction with this, improved reception should occur from AUSTRALIA (Domestic) VLM4, Brisbane, 4.920; VLI6, Sydney, 6.090; and VLT6, Port Moresby (NEW GUINEA), 6.130, around 0800, during the month of February (acknowledgements to Cox, Dela.).

In the March "English Language SW Horizons" your conductor will explore a new time slot tabular method of listing English Language SW 'casts. Join me then?—A.R.N.

MEDIUM WAVE

DXing HORIZONS

Edited by DXing Horizons
Medium Wave Editor

Glen Kippel

905 So. 2nd Ave., No. 3
Sterling, Colorado, U.S.A.

This space this month will be given over to top-notch 160-meter ham, Brice Anderson, W9PNE, who has developed an accurate method of determining propagation conditions at low frequencies.

Brice comments, "There is no sure fire way to predict 160-meter openings. WWV announcements don't mean much, as I have worked ZL's when the forecast was W4, and have been unable to hear them when the forecast was N6. Likewise to Europe."

Brice has kept a careful log on several 50-kw. BCB clears and found that when their signal strength is abnormally high, steady with slow, shallow fading, then long skip is optimum. From Illinois, WLW-700, WWL-870, WHO-1040, WRVA-1140, WHAM-1180, WOAI-1200, and WCAU-1210 were logged and recorded for a period of several months. DXers elsewhere may try KFI-640, WCCO-330, CBW, WBZ-1030 or any of the other more powerful stations. Log several stations to insure hitting on the best indicators for your particular area. When signal strength is 20 db above average, DX will be exceptionally good. A spot check of your key stations will be sufficient to determine long-haul band conditions. As Brice adds, "This permits me to go to bed without worrying about all the DX I might be missing, hi!"

NEW REPORTERS...

While it would be impossible to individually thank all the reporters who sent in such fine reports to this column, our appreciation is still just as great. Special thanks to a pair of overseas contributors, Victor Jaar of Barhona, Dominican Republic, and Private Wells Perkins, in service in Germany.

LA CONTEST...

There is still time to send in your Christmas loggings for the MW DX Contest, if you wish to be entered. At present, unofficial leaders are Millar, Washington, with 93 points; Hauser, Okla., 99 points; and MacLaughlan, Quebec, 35 points. Remember, these are unofficial standings, and they should be backed by QSL's to make them official.

DEADLINE...

The 10th of each month for most reports. For those promising regular reports, deadlines will be arranged individually. Thanks!

Medium Wave Log Book

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

AMERICA

- 560 British Guiana — ZFY, Georgetown, quite good after 1800. (Jaar, Dominican Republic)
- 610 Trinidad — "R. Guardian," Port of Spain, good from 1700. (Jaar, Dominican Republic)
- 670 JAPAN—Osaka JOBK noted 0435-0620 1-23. (Cooper, Calif.)
- 700 JAPAN—Kitami JOKP first noted 0505, under

WLW, readable Q5 until 0630 1-23. (Cooper, Calif.)

700 MYSTERY — Who would be programming Eng. under WLW as early as 0505? Hrd 1-23 behind JOKP. (Cooper, Calif.)

700 Cuba—CMJT s-on 0553 w-own call, joined all-Cuba network 0600. (Millar, Washington)

730 Trinidad—R. Trinidad hrd 12-30 to 0302 s-off w-Aust. cricket match. (Mainwaring, N.Y.)

750 JAPAN—JAIB Sapporo appearing as early as 0230 (1530 Tokyo time)! Usually under WSB until 0330. Excellent sign that eastern DXers should find Asian sigs popping in during next 8 weeks. (Cooper, Calif.)

775 Costa Rica—TIW hrd eves, some WBBM QRM. Verie gives "Circuito Radio City," "Le Habla a la Nacion," "La Red Mas Rote ente y Mas Extensa de Costa Rica" slogans. Signer Antonio Murolo, Gerente General. (Hathaway, Texas)

785 KOREA (NORTH)—Pyongyang logged with strongest signal noted in five years 0532-0635, peaking S9 with deep slow fades 1-23. Variety programs, Opera in Russian 0600-0615. (Cooper, Calif.)

820 SURINAM—R. Apinte (?—Ed.) apparently freq change hrd 0430-0500 w-Hindu music. (Roys, Indiana)

830 JAPAN—JOB Osaka outstanding sig from Japan most mornings, peaked 40 over 9 0600 1-23. (Cooper, Calif.)

840 BRAZIL—PRH9, Sao Paulo, usually shows between 0200-0300. (Roys, Ind.)

860 CUBA—CMBL now announcing "Radio Libre de America, Havana, Cuba" when logged 0430 1-23. (Cooper, Calif.)

870 Colombia—HJCE, Bogota, on AN XMAS, veries promptly. Freq change from 860. (Roys, Indiana)

870 PANAMA—HOHO, "R. Musical" seems to be AN. (Roys, Indiana)

870 JAPAN—JOLB Fukuoka peaking 20 over 9 between 0355 and 0630 1-23. News—Eng. at 0400. NHK ID now 3 pips and a chime, followed by "NHK... station call." (Cooper, Calif.)

880 VENEZUELA—YVKU, Caracas, hrd clobbering WCBS 2130. (Rugg, Que.) 0551-0600. (Hauser, Okla.)

880 Colombia—HJDM, "R. Vision," Medellin, hrd 2350. (Tavares, Brazil)

890 Venezuela—YVLW, Valencia, fair 0530-0555. (Hauser, Okla.)

930 Colombia—HJAF, Cartagena, in frequently under WPAT. (Rugg, Que.)

940 TAIWAN (Formosa)—Taipei BEP22 logged clear 0514-0528, S9 0518 with variety program in Cantonese. Covered 0528 QRM. (Cooper, Calif.)

950 Colombia — HJLA, "La Voz del Tolima" Ibague, hrd 2330 w-ID. (Tavares, Brazil)

970 KOREA (SOUTH)—HLKA in clear 0452-0457 1-23 when WVOP s-on covered. Peaking S8. (Continued on page 42)

AT FADE-OUT

(The following pages of DX News represent the combined listening and reporting efforts of DXing Horizons SW readers in 73 countries, detailing the very latest available SW DX news. All times are in GMT.)

I have simply been "swamped" with your FB reports this month. Sorry that space limitation would not allow use of all of them. Now to this month's DX roundup.

ALBANIA—Stn hrd in ENG. on 9.700 at 0045-0058 ID for "R. Tirana, Albania," asked for rpt; at 0100, however, R. Sofia, Bulgaria, took over spot—so earlier xmsn most likely was a RELAY of Tirana by Sofia (?). (Sisler, W. Va.; Dary, Va.) R. Tirana, 7.157A, hrd frm 2200; ENG. 2300. (Jaar, Dom. Rep.)

AFGHANISTAN—R. Kabul, 9.705, hrd w-ENG. to Eur. 1900-1930. (Pearce, England)

ALGERIA—R. Algerie, 11.835, noted 1615 w-IS, Fr. lang. (Howald, Calif.)

ANDORRA—Andorradio, 6.305, noted 0822-0843, mostly Fr. mx, annmcs in Fr. (Robbins, Nebr.)

ANGOLA—CR6RH, Sa da Bandeira, has SHIFTED fq frm 5.024 to 5.022M; hrd 1216 w-instrumental mx; final ID in Pt. 2130 by man, then "A. Pt."; fair, clear sig in Dela. R. Diamang, Dondo, hrd on NEW 9.475 frm 1910 to 1930A s-off in Pt. (Cox)

ARGENTINA—LRA, 9.690, Buenos Aires, tuned 0400 w-ID for "RIA" and mx; gud level in N.C. (Ferguson) Observed on 11.730A at 2303-2400 in ENG. for Eur. (Bowker, N.H.)

AUSTRALIA—When R. Australia brought REVISED skeds into effect Jan. 13, the NEW 100-kw. xmtr VLE came into operation for several regular dly beams including to S, SE, SW Asia 0559-0945, 15.180, and 0958-1730, 9.580; to E Asia and N Pacific Is. 2015-2300, 15.240. Robbins, Nebr., notes VLM4, 4.920, Brisbane, Queensland. w-variety show 1145-1200 or later; hrd by Buchanan, Mo., w-N-E 1230; noted by Bowker in N.H. 0800-1030, w-ABC N-E 0900.

AUSTRALIAN NEW GUINEA—Port Moresby has brought its 31-m. channel (9.520) into operation again, noted 0600-0645 s-off. (Balbi, Calif.) Current sked is VLTD, 9.520, dly 2215-0645; VLT6, 6.130, 2000 (SUN. 2030)-2200, 0700-1330 (SAT. 1400). (R. Australia) Has ABC N-E 0900, 1100, 1300. (Balbi)

AUSTRIA—Vienna's TEST fqs which have been hrd so well recently in N.Z. are all 50 kw. (Stafford) Recently hrd list fqs and times as 6.155, 0500-0900, 1900-2100; 7.135, 1300-1530; 7.245, 0900-1100, 1530-1700, and 9.770, 1100-1400. (Alcock, Fla.)

AZORES—Ponta Delgada, 4.865, noted 2330-0005 w-opera; man ID in Pt. and s-off 0005 after "A. Pt." Gud sig, little QRM from weaker Brazilian. (Robbins, Nebr.)

BELGIUM—ORU, 9.760M, Brussels, tuned 0025 w-ID and mx; 0044 ID and N-E by woman

to 0058 when said closing to N. Am.; now IDs as the "International Goodwill Station." (Ferguson, N.C.) Hrd on 17.86 Oat 1702-1740 in Fr. (Robbins, Nebr.; Howald, Calif.)

BRAZIL—Direct frm Bauru Radio Clube, SW Dept., Attn. Giacomo Perolo, Caixa Postal 446, Bauru (Est. de S. Paulo), Brazil, comes word that rpts frm overseas listeners are WELCOMED; operates PRG8, 1,210 kc., MW, and ZYR31, 3.275, SW, both 1 kw., 0900-0300 dly; aerials are omnidirectional. QSL cds were to be ready mid-Jan for any DXer "who supplies us enough details to prove he really listened to our signals." If an air-mail reply is desired, enclose an IRC; otherwise, QSL will be sent via surface mail. (ZYR31) R. Guaiba, 11.785, Porto Alegre, hrd 2200-2300 w-variety prgm in Pt., veries via ltr; R. Educadora de Parnaiba, 4.825, hrd 2300-2400, 500 w; R. Iracema, 4.815, Fortaleza, hrd 0100-0130 in Pt., fair some CWQRM; R. do Maranhao, 4.735, Sao Luis, 2335-2400 w-political commentary in Pt.; R. Relogio, 4.905, Rio de Janeiro, hrd arnd 0335, gives time every min between annmcs, commercials, gud level; R. Cultura de Pocos de Caldas, 9.645, hrd arnd 0105 w-N-Pt.; R. Soviedade Farroupilha, 9.730, noted frm 0035-0135, gud level. (Wendland, France)

BRT. HONDURAS—BHBS, 3.300, Belize, relays VOA N-E frm Washington 2100. (Kary, Va.)

BULGARIA—R. Sofia, 9.700, 11.850, noted 2335-2400 dly w-concert in ENG. to N. Am. and Eur. (Bowker, N.H.)

CAMEROON—Sked of R. Yaounde is dly 0515-0730, 1115-1300, 1630-2100 (SAT., SUN. 2200) on 4.972.5; 9.663 at 1130-1300, Fr. and ENG. (Roth, Conn.) R. Yaounde, 4.972A noted 0514-0529 using BOTH Fr., ENG. (Robbins, Nebr.)

CANADA—NEW Afr. Serv. is sked dly 1830-1915 ENG., 1915-1945, Fr., 17.820, 15.320; 1945-2000 Fr., 15.320. Australasian Serv. 0820-0905 dly is no w on 9.630 ONLY. (CBC) Has ceased to use call-letters for its SW outlets. (Howard, Mo.)

CANARY IS.—An official of La Voz de La Palma, Santa Cruz de La Palma, notified Berg, Roth, Conn., that power is ONLY 350 w. Berg, Roth, others note has MOVED DOWN to 7.345 frm 7.388; still hrd as EARLY as 2000 to dly s-off 2300. Also hrd by Robbins, Nebr., closing 2303 w-Sp. Nat. Anth., and by Buchanan, Mo.

CEYLON—Commercial Serv. of R. Ceylon, 9.520, Colombo, noted frm 0130 s-on to arnd 0400; has bad QRM frm R. Denmark when latter is on air; some days clear ID, however, is hrd 0200. (Rowell, Minn.; Saylor, Va., others) Hrd to s-off 1635 w-religious prgm; all-ENG. (Roth, Conn.; Cooper, Calif.; Jensen, Denmark; Bowker, N.H., others) Closes w-"Strike Up the Band." (Kippel, Colo.)

CHINA—Kunming, 10.006M, Yunnan Province, hrd 1230 w-Chinese mx, lang; weak. Peking, 5.125, gud 2215 w-woman in oriental lang, weaker on 5.220, light CWQRM, faded by 2300. (Cox, Dela.) Peking opens in ENG. 0200 on 11.965A w-nx 0200-0230; power is 120 kw. (Stitt, Nebr.)

CLANDESTINE—"R. Free and Fighting Algeria" (FLN), 6.428M, strg 2115 w-Ar. talks and woman annrc; "Algerian Renaissance Radio" (pro-Fr.), 6.430, hrd w-Ar. mx, talks 2115, sig equal to 6.428M in strength. (Cox, Dela.)

COLOMBIA — R. Sutatenza, Bogota, hrd on 5.094M parallel 5.075 at 2130 w-mx. (Cox, Dela.) R. Bucaramanga, 4.845, hrd 0330-0400 w-ENG. session called "Colombia Calling the World" (not sure if DLY OR NOT). Niblack, Ind.) The NEW R. Santa Fe outlet, 4.965, seems to be on 24 hrs a day, accdg to recent checks and overseas rpts; hrd 0815 w-L. Am. mx. (Newhart, N.J.) Hrd in Denmark arnd 0630-0900, SINPO 42323. (Jensen) HJEF, 4.765, Cali, gud 0220-0257 check. (Robbins, Nebr.)

CONGO REP.—Brazzaville hrd w-N-Fr. 0500-0515, then N-E on 9.732, 11.725, both gud level in Va. (Kary) Hrd on 11.725 w-N-E 1700. (Cooper, Calif.) Hrd on 9.545 at 2315-0100; at times parallels 11.725. (Balbi, Calif.) Noted on 11.725 to N. Am. w-N-E arnd 0122; Fr. Lesson 0145, off 0200, strg in Nebr. (Stitt) Hrd in Denmark on 11.725 at 0700-0730 s-off w-pop Fr. tunes. (Jensen) And in England on 15.190 w-ENG. 1930-2000. (Pearce)

CONGO (THE)—Leopoldville, 4.879, logged frn 1940 w-native vocals, instrumentals; final ID in Fr. 2030 and stn c-d. Coquilhatville, 5.993, hrd 0538 at weak level w-native vocals, poor sig by 0545. (Cox, Dela.) R. Congo, Leopoldville, 11.755, has begun REGULAR xmsns to N. Am. 2200-2400; mostly mx, w-N-Sp. 2215, in ENG. 2245, in Fr. 2315. (Berg, Conn.; Bowker, N.H.; Combs, Mo.; Bromley, Ont., Canada; Newhart, N.J.; Roeske, Argentina; Dary, Va.; Balbi, Calif.; Smolik, Ill.; Wilt, Ohio; Stitt, Nebr.; Robbins, Nebr.; Bohac, N.J.; Rowell, Minn., others) N-E hrd 2000. (Howard, Mo.; Ferguson, N.C.; Bowker, N.H., others) Recently MEASURED as 11.756, strg w-N-Fr. 1910. (Cox, Dela.) Has MAILBAG prgm for U.S.A.-Canada on SUN. AFTER N-E 2245. (Howard, Mo.) Leopoldville noted on 9.700 at 0515 w-mx request session. (Kary, Va.) Hrd opening 0400 w-N-Fr. (Rowell, Minn.)

COOK IS.—Raratonga, 4.965, noted THURS. 0530-0630; QRM'd to 0600 by Latin. (Rowell, Minn.)

COSTA RICA—TIQ, R. Casino, 5.954, Puerto Limon, noted w-ENG. religious prgm 1200-1215. (Roth, Conn.)

CUBA—What seems to be a NEW Havana outlet noted on 11.762M frn arnd 1600 to 0500 in Sp.; anncs "La Gran Cadena de Libertad." (Ferguson, N.C.; Rowell, Minn.; Niblack, Ind., others) Cuban on 6.440A gud arnd 2250 check in Sp. (Wilt, Ohio) Seems to carry SAME PRGM as 11.762M arnd 2300-0500. (Rowell, Minn.) Stn hrd on 6.125 arnd 0100 w-ID for "Radio Cuba Independiente," carrying anti-Castr propaganda in Sp., is believed operating frn a ship off the coast of Cuba. (Berg, Conn.)

CZECHOSLOVAKIA—R. Prague, 5.935, noted 0500 w-ENG. ID, strg but w-CWQRM. (Cox, Dela.; Niblack, Ind.; Robbins, Nebr.) Logged on 15.280 at 0758-0805 in S. Pacific Serv.; s-on after trumpets, 6 time pips; N-E 0800 by man; sig had rapid flutter, peaked S6. (Cooper, Calif.)

DAHOMEY—Cotonou, 4.870, appears to have N-Fr. 0615-0625A; bad RTTQRM. (Kary, Va.; Robbins, Nebr.) Hrd w-Fr. mx when tuned 2130. (Saylor, Va.)

DENMARK—OZF7, 15.165, Copenhagen, noted w-gud sig on a SAT. 1410 in ENG. (KBLP) Hrd 1745-1800 in Danish, mx, nx. (Howald, Calif.)

DOMINICAN REP.—NEWER channel of R. Caribe, 15.065A, gives excellent recptn in N.Z. arnd 1930. (Stafford) MEASURED 15.069 at 2130-2200 w-variety prgm. (Cooper, Calif.) Hrd on 6.210 at 1100-1205 w-dance and other mx; ID 1200, then talk in Sp.; started to fade arnd 1145. (Sundstrom, N.J.) R. Caribe opens 1000, closes 0700; xmtrs are HI2U, 6.210, 1 kw.; HI3U, 9.485, 50 kw.; HI4U, 15.069M, 20 kw. Radio Caribe new on 3.322 (HI5V); announced English Programs would start January 16 beamed to N.A., Africa, Scandinavia over HIRU (9.485) and HI4U (15.055). Other freqs to continue Spanish programming. (Jaar, Dom. Rep.)

ECUADOR—Direct frn Clayton Howard of HCJB comes word that the stn recently put a NEW 49-m.b. xmtr into operation on OLD 6.050 channel w-increase of power frn 1 to 30 kw.; wants rpts on this higher power; ENG. is carried on 6.050 frn arnd 0415. Herd, Dela., recently noted HCJB, 17.890, 15.110, parallel, 2200-2230 w-TEST prgm to Brt. Isles; powerhouse-like sigs on both! HCJC3, R. Fenix, 8.900, hrd by Saylor, Va., w-Sp. mx when tuned 0100.

EGYPT (UAR)—R. Cairo has dictation-speed N-E 0630 on 7.050, 11.705. (Roth, Conn.) Noted on 11.915 at 2130 w-ENG. for Eur., N-E 2145; in lang at 2230 recheck; had Sp. 2125 tune-in. (Ferguson, N.C.; Rowell, Minn.) Hrd on 17.915 w-ENG. for India-Pakistan 1330-1400. (Pearce, England)

FINLAND — Helsinki, 15.190, hrd on a FRI. 1610 tune-in to 1630 w-DX prgm; S7, flutter. (Cooper, Calif.) Hrd on a MON. 1601 w-woman in ENG., anncg mx; 1605 man gave N-E to 1609, then mx to 1624 when man gave talk on Lapland; at 1629 anncd for 16- and 19-m. (Ferguson, N.C.)

FRANCE—Eur. Serv. of RTF, Paris, hrd at strg level to 2000 c-d on 9.570. (Washington N.Y.)

GABON — Libreville, 4.777M, excellent 2143 w-man in Fr.; formerly on 4.775. (Cox, Dela.) Also noted in N.H.; runs to 2200 on SAT., other days closes 2100A. (Bowker)

GERMANY (WEST)—R. Bremen plans a SW outlet to operate on 6.190. (AMSWLC)

GHANA — Accra has locally-originated N-E 0600, relay of BBC's "R. Newsreel" 0615; 4.915 slightly better than 3.366 which has strg hell-schreiber QRM. (Kary, Va.) The 3.366 outlet noted readable EARLY as 2035 w-talk on Congo situation. (Cox, Dela.; Robbins, Nebr.) Noted on 3.366 w-N-E 0600, 0700, 2130. (Saylor, Va.) Noted TESTING 0700-0800 on 9.640; hrd on 9.520A at 2100 w-N-E. (Pearce, England)

GREECE—What appears to be Jannina, 7.079M hrd arnd 0630 w-Greek mx and lang, woman anncr; fair but w-poor modulation. (Cox, Dela.)

GUINEA (REP.) — Conakry, 4.910, w-ID of "Ici Conakry, Radiodiffusion National," has N-Fr. 0630-0645, 0700-0715; ENG.-Fr. Lesson 0645-0655; (Kary, Va.) Hrd in Nebr. 0705-0805, strg carrier, weak modulation; drums 0804, then left air. (Robbins) Hrd in N. H. 0600-0800; ENG. Lesson 0625-0645. (Bowker)

GUINEA (PT.) — CQM 7.947, hrd 2231-2300 w-all-Pt. mx session; s-off suddenly 2300 w-"A Pt.;" much TTYQRM. (Robbins, Nebr.)

GUINEA (SP.) — Santa Isabel, 6.240, Fernando

Poo, noted weak w-s-on some dys arnd 0630; all-Sp. (Robbins, Nebr.)

HAITI — R. Lumire, 4VU, Cayes, noted on NEW 2.410 fq frm as EARLY as 2155 w-classical mx; ID in Fr. 2200. (Cox, Dela.) Some dys 4VEH, 6.120, Cap Haitien, is BETTER than 4VWI, 9.773 at 1000. (Balbi, Calif.)

HOLLAND — R. Nederland, Hilversum, noted on NEW 6.085 for Dutch xmsn opening 0130. (Roth, Conn.)

HUNGARY — R. Budapest, 7.220, hrd w-ENG. 2015, vy poor sig in Ohio. (Wilt)

ICELAND — Reykjavik, 11.779.5M, fair level 2025 w-classical mx; nx in Icelandic by man 2030-2045. (Cox, Dela.)

INDIA — AIR, 11.710, Delhi, noted 0230 w-N-E. (Niblack, Ind.; Ferguson, N. C.; Buchanan, Mo., others) Hrd 1530 w-N-E on 9.740. (Cooper, Calif.) Hyderabad, 4.988A, hrd 1200 (NOT at 1400) w-talks in native dialects. (Schartz, Conn.) Bombay, 9.550, strg 1440 w-Indian mx, some ORM underneath. Bhopal, 4.820, fair in lang nx by man 1235. Delhi, 6.190, strg 1215 w-Indian mx and lang session. (Cox, Dela.) Bombay, 9.555, hrd w-IS 1258, opens 1300; stn on 9.530 at 2345-0015 s-off is NOT Calcutta, accdg to ltr frm stn; Calcutta begins xmsn 0130. (Roth, Conn.) Delhi, 9.620, hrd 1500-1615, strg; N-E 1530-1545. (Balbi, Calif.) Hrd 1330 w-N-E to SE Asia on 17.705; 1345 Indian mx. (Ferguson, N. C.) Noted parallel on 21.565A. (KBLP) Hrd on 9.530 w-N-E 0030-0040, then nx in Burmese. (Bowker, N. H.)

INDONESIA — YDG, 4.873, Surakarta, fair to gud 1240 w-nx in native by man. YDF, 6.045 Djakarta, hrd thru Latin QRM 2235 w-man in Indonesian nx; "out" BEFORE 2300 in Dela. (Cox) YDA, 3.205, Bandung, poor quality but in CLEAR 1130 w-Indonesian vocals; Denpassar, 7.118M, noted w-vy weak sig 1135 w-talk in Indonesian. (Schwartz, Conn.) Djarta, 9.585, hrd 1123 w-N-E, then mx; went into Chinese 1200. (Buchanan, Mo.) Hrd on 9.585, 11.715 w-ENG. for Eur.-N. Z. 1900-2000. (Pearce, England)

IRAN — R. Teheran, 15.105, noted 1800-2100 in various langs. (Rowell, Minn.)

IRAQ — R. Baghdad, 3.297M, weak 2105-2115 w-Ar. nx by man; s-off arnd 2117. (Cox, Dela.) Observed on 7.180 at 0447-0515, mixing Ar. mx and regular orchestrals w-all annmnts seemingly in Ar.; gud level but w-ham CWQRM. (Robbins, Nebr.) Noted on 6.030 w-N-E arnd 2040 lately. (Pearce, England)

ISRAEL — Tel Aviv appears to be using 11.910 parallel 9.009 now, hrd arnd 2000-2100 or later. Ltr and verie from stn "admitted" use of 11.910 but advised to listen on 9.009 "as it comes in much better." (Schwartz, Conn.) Hrd in Ont. on 9.009 EARLY as 1930, S4; up to S9 by 2045. (Bromley, Canada) Strg in lang 1530-1545, and again s-on 1615 in lang. (Balbi, Calif.) Hrd in Dom. Rep. EARLY as 1810. (Jaar) Has N-E 2015-2030. (Rowell, Minn.)

ITALY — The "Nocturnal" prgm frm RAI at Caltanissetta, 6.060, noted w-short ENG. newscast and ID arnd 0403; annces 9.515 in parallel. (Niblack, Ind.)

IVORY COAST — After 0629 s-on, Abidjan, 4.940, skeds recorded mx to 0645 when airs N-Fr. to 0700; ID w-"Ici Abidjan, Radiodiffusion de la

Cote d'Ivoire;" fair strength w-mild het. (Kary, Va.) Also noted in Calif. (Howald)

JAPAN — JOZ2 noted 1100 w-ID, giving fq in ENG., followed by Japanese folk mx, on 6.065, MOVED frm 6.055. (Roth, Conn.) FEN, 6.160, Tokyo, fair, clear 1300 w-N-E by man. (Cox, Dela.) JOA17, 17.855, hrd 0555-0120 in ENG. to ECNA w-gud sig, in clear and 100 per cent readable in N. C. (Ferguson) Hrd parallel over 11.800. (Updike, Mo.; Wilt, Ohio, others)

JORDAN — Amman, 7.156, fair level despite considerable CWQRM frm 0345 onwards; IDs frequently in Ar. w-"Idhaat Mamlakah al-Urdumiyah al-Hashimiyah." (Kary, Va.) Also hrd in Ont. (Bromley, Canada) Hrd arnd 2045 w-Ar. vocals, 2100 N-Ar.; s-off 2200. (Pearce, England) Hrd closing 2200 w-ID for "Huna Amman," and "short Royal Anth." (Jaar, Dom. Rep.)

KATANGA — Elisabethville, 5.933M, hrd frm 1950 w-native vocals, woman anncr in Fr.; N-Fr. by man 2000; also noted 0500 w-N-Fr., gud level in Dela. (Cox) Widely rptd is R. Katanga, Elisabethville, on MEASURED and now ANNCD 11.866; asks for rpts to R. Katanga, Elisabethville, Katanga, and uses both Fr., ENG. (Bobby Hankins, Pa.) Hrd at various times and now ANNCEs as operating on 11.866 w-EXPERIMENTAL xmsns 0400-1200, 1600-2100. (Bowker, N. H.; Cooper Calif.; Niblack, Ind.; Roth, Conn.; Combs, Mo.; Newhart, N. J.; Balbi, Calif.; Ferguson, N. C.; Sundstrom, N. J.; Wilt, Ohio; Saylor, Va.; M. Gibson, Calif.; Robbins, Nebr.; Howald, Calif.; Buchanan, Mo.; Bohac, N. J.; Conway, Wash. State; Rowell, Minn., others) R. Katanga says NEW 100-kW xmtr was inaugurated Dec. 25. (Jensen, Denmark)

KENYA — Nairobi, 4.885, gud level 2015-2100 s-off when closed w-"GSTQ" in all-ENG. b-c. (Roth, Conn.) Hrd 0400 w-N-E, followed by variety of mx, man anncr; weak and unreadable AFTER 0415. (Robbins, Nebr.) Nairobi's Eng. Nat. Serv. hrd on a SUN. opening 0400 on 7.240, w-QRM frm R. Moscow, same channel. (Washington, N. Y.)

KOREA (NORTH)—R. Pyongyang, 6.250, has talk or nx commentary in Korean ending 2215; s-off MAY be arnd 2245; poor level. (Kary, Va.)

KOREA (SOUTH)—HLK5, 9.641M, Seoul, gud 1440 w-Korean mx, man in ENG. (Cox, Dela.) Has REPLACED HLK6, 11.925, for Eur. w-ENG. 2200, Fr. 2230; Korean 2255; closes 2301. (Pearce, England)

LIBERIA—ELBC, 3.255, Monrovia, hrd 0700 w-N-E. (Saylor, Va.) And w-"Rise and Shine" prgm 0715-0745. (Robbins, Nebr.) ELWA, 4.770, Monrovia, noted w-"Morning Watch" prgm to 0700, then BBC nx relay to 0709, followed by locally-produced summary of Afr. N-E to 0715; consistently gud sig w-minimum QRM. (Kary, Va.; Howard, Mo.) Hr don 15.085 at 2015-2230 to N. Afr., Fr., native and at 2200 in Pt.; ENG. ID; good level in Calif. (Balbi, Cooper) Noted on WED. 0100 w-full annmnt in WKLY beam to N. Am. on 11.825 to c-d 0345 w-Nat. Anth. "Meet the Staff" is featured 0115. (Ferguson, N.C.)

LIBYA — Benghazi, 3.304, hrd w-N-Ar. 2105. (Cox, Dela.) Gud in Ar. frm tuning 0430-0700. (Saylor, Va.) Noted in England 2030-2200 c-d. (Pearce)

LUXEMBOURG—R. Luxembourg, 6.090, hrd ENG. 2100-2400. (Bowker, N.H.)

MARTINIQUE — Port-de-France, 3.315, noted 0530 when switches to Paris for relay OR rebroadcast of N-Fr. (Kary, Saylor, Va.) Found on 2.420 at 0030-0208 s-off in Fr. w-Anth. and then IS three times. (Bowker, N.H.)

MAURETANIA — R. Mauretanie, 4.855, St. Louis, is one of strgst sigs in 60-mb. in 0715-0803 xmsn; features talks and/or nx in Ar. dialects 0730-0745, 0750-0800; both carrier level, readability excellent. (Kary, Va.) Also strg in Nebr., IDs "Ici Radio Mauritanie" at opening. (Robbins) And in N.J. (Newhart) Gud 2100 in Fr. and native. (Saylor, Va.)

MONACO—Transworld Radio, 9.705, hrd 0700-0800 w-religious prgm; strg QRM frm AFRTS 9.700. (Balbi, Calif.) Also hrd in N.H. (Bowker) Monte Carlo's 3AM3, 6.035, noted 0547-0615 w-all-Fr. session; mostly mx, Fr. style. (Robbins, Nebr.)

MOZAMBIQUE—R. Clube de Mocambique, Hrd on 7.254 w-gud sig but thru ham QRM 0400 w-regular prgm. (Schwartz, Conn.) Observed opening 0330 on 11.760A at fine level, mx and commercials in ENG. (Saylor, Va.)

NEW CALEDONIA — R. Noumea has been VARYING 6.020-6.030 lately, hrd 0700-1030 in Fr. (Balbi, Calif.) Now carries same prgm also on 3.355. (R. Australia)

NEW ZEALAND—Wellington, 6.080, 9.540, hrd 0900-1100; bird IS 0755. (Bowker, N.H.)

NIGERIA—Berg, Conn., has rcd verie-ltr and cd from Western Nigeria Radiovision Serv., Ibadan; xmsns started Nov. 19 on 6.050 and Berg's rpt was SECOND rcd from U.S.A.; as yet, the 3.380 channel had not been put into use but was sked to come into operation soon; both listed 10 kw. Cox, Dela., recently logged this one on 6.049M w-N-E 0530 after prgm of pop tunes, commercials; noted LATE as 0730, but w-QRM frm HCJB, Ecuador; Berg has hrd stn EARLY as 2015, LATE as 2245; frequently IDs simply, "This is WNBS." Kary, Va., rpts Enugu, 4.855, rather poor arnd 2100 when stn QRA was given as Eastern Nigerian Broadcasting Service, Box 350, Enugu, Nigeria; suffers strg QRM frm Mauretanie. Hrd by Newhart, N.J., 0600 w-BBC N-E. Roth, Conn., says "Eastern Prgm of R. Nigeria," LISTED Enugu, noted 0500-0515 when gave this ID in ENG., seems MOVED frm 3.965 to 3.980, gud strength.

PAKISTAN—Karachi, 11.672M, noted w-N-E by man to 1500, then went into lang; hrd on

15.145M at excellent strg 1535 w-N-E at dictation speed by man. (Cox, Dela.) Noted on 15.155 at 1405 w-native mx; 1415 ID and had talk in ENG. to 1433 when ID; 1436 had native mx w-s-off 1515. (Ferguson, N.C.) Hrd on 11.672 at 1815 in ENG. session for Turkey to 1900; vy gud recptn; annces 7.010 as parallel. (Jaar, Dom. Rep.) Hrd on 11.672 at 1455-1545, N-E at slw speed 1430. (Robbins, Nebr.)

PERU — International Service frm OAX4T, 15.152.5M, Lima, includes ENG. 2140-2155, Ger. 2125-2140 on MON., WED., FRI. (Bowker, N.H. others) Lima, 9.452M (OAX4W?), was tuned 2050 woman giving talk in ENG., 2055 commercial for Phillips and cont'd in Sp. (Ferguson, N.C.)

PHILIPPINES—DUB4, Philippines Bcdg. Serv., 3.286A, logged 1200-1215 in ENG., rather poor level but w-clear ID. (Roth, Conn.) DZI6, 17.805, found 2125 w-mx; 2130 ID for "Call of the Orient" in ENG., then cont'd in lang; 2145 ID in ENG., also at 2200. (Ferguson, N.C.)

PORTUGAL—R. Free Europe, 11.855, hrd 1930-2000 in Czech; SINPO 44444. (Newhart, N.J.) EN, 17.895, Lisbon, noted w-N-E 1730-1745, then mx to 1800. (Howald, Calif.) Hrd opening 0200 and running to 0400 to N. Am. on 6.025A parallel 9.740. (Rowell, Minn.)

RHODESIA—FBC's Afr. Serv. found on 9.577M, Lusaka, 0500-0507 w-N-E by man; pop dance mx followed; hrd PAST 0600. (Cox, Dela.) Lusaka, 4.911, noted in ENG. 0415-0430 fade-out w-dance mx; lots of QRM. (Roth, Conn.)

SAO TOME—Sao Tome, 4.807, hrd 0647-0700 s-off, drums and native instruments w-singing. (Howald, Calif.)

SAUDI ARABIA—Mecca, 11.950, hrd at gud level in Ar. 1845. (Stafford, N.Z.) Accgd to a press dispatch, King Saud plans to make the Saudi Arabian b-c stn in Mecca hrd thruout the world in "a campaign to challenge Gamel Abdel Nasser for leadership of the Arab world." (M. Gibson, Calif.)

SENEGAL—Dakar, 4.898, hrd w-N-Fr. 0705-0715A then news or talk in Ar. dialect; 4.950 outlet, which is NOT parallel. IDs "Ici Radio Senegal . . . national emission de Dakar," and opens 0630 w-N-Fr. and vernacular 0633-0645A and pure Fr. nx cast 0715 which seems to consist mainly of Afr. events. (Kary, Va.) R. Senegal, 11.895, N-E noted 2037-2043. (Combs, Mo.; Ferguson, N.C., others) QRA is Radio Senegal, B.P. 1765, Dakar, Senegal. (Bowker, N.H.)

new! 7-Band SWL/DX Dipole Kit for 11·13·16·19·25·31·49 meters

Here's a low cost 7-band receiving dipole antenna kit that will pick up those hard-to-get DX stations. Everything included . . . just attach the wires and you're on the air! Weatherproof traps enclosed in Poly-Chem for stable all-weather performance. Overall length of antenna - 40 feet.

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SWL-7 \$14.75

SIERRA LEONE — Freestown, 3.316, gud sig 0654-0703; relays BBC N-E 0700, after "local" N-E by man. (Robbins, Nebr.; Saylor, Va.) Vy strg in N.J. when s-on 0639 w-"The Rain is Coming"; xmsn in ENG. continues to 0800, but begins to fade rapidly arnd 0730. (Bohac)

SINGAPORE — R. Singapore, 7.200, hrd w-ENG. 1100-1130, ham QRM. (Roth, Conn.) BBCFES, Hrd on 9.690 strg at 1650 c-d. (Kippel, Colo.)

SOMALILAND (FR.) — R. Djibouti, 4.780, noted 0534-0610 w-native chanting; ID in Fr. 0600; "our" by 0610 in Mo. (Buchanan)

SOUDAN — Bamako, 4.835, audible thru strg RTTQRM w-N-Fr. 0700-0720A. (Kary, Va.)

SPAIN — RNE, Strg on 7.100A w-ENG. 2020-2050. (Pearce, England)

SUDAN — R. Omdurman, 5.039, logged frm 1915 w-man in Ar. (Cox, Dela.) Hrd on 11.855 w-all-Ar. prgm 0440-0504 when ID for "Huna Omdurman." (Robbins, Nebr.)

SURINAM — PZC, 4.849, Paramaribo, gud frm 2115 w-woman in Dutch; mx arnd 2200. (Cox, Dela.) Noted on 15.460V at 2300-0100 in Dutch; some phone QRM. (Rowell, Minn.)

SWEDEN — R. Sweden, 9.725, usually gud level in ENG. arnd 0315. (Niblack, Ind.) Hrd on 11.705 at 1945-2015 in ENG. to Afr. (Bowker, N.H.)

SYRIA (UAR) — R. Damascus, 15.165, noted 2000 w-commentary in ENG., 2015 N-E. (Bowker, N.H.)

TAHITI — R. Tahiti, 6.135, Papeete, noted in Fr. and native w-native-type mx 0430-0530. (Rowell, Minn.)

TAIWAN (FORMOSA) — Taipei has REPLACED 15.345 w-11.920, parallel 6.095, 17.780, for ENG. to Asia 1050; 11.920 also noted in Russian 0700-0800, parallel "R. Liberation, 11.860. (Balbi, Calif.) BED64, 6.095, hrd 1140 in ENG. talk on "Life Behind the Iron Curtain" and ending ENG. 1150, then in Chinese, gud level in Nebr. (Robbins) The religious stn BEC36, "Voice of Righteousness," has MOVED frm 7.300 to 7.335; hrd w-ENG. religious prgm 1000-1030 "over" CHU, Canada, same fq. (Stafford, N.Z.)

TANGANYIKA — Dar-es-Salaam, 5.050, noted 0330-0445; in lang 0330-0430, N-E now 0415-0420; was 20 dbs over S9 AFTER Columbian s-off 0332; plays African and some Am. pop mx. (Bowker, N.H.)

TCHAD REP. — R. Tchad, 4.905, Ft. Lamy, hrd w-Ar. mx when tuned 2130, fair. (Saylor, Va.)

THAILAND — R. Thailand, Bangkok, is using H. Serv. xmtr, 7.300, arnd 0930-1535 c-d; carries ENG. 1030-1130 parallel HSK9, 11.910 but latter INAUDIBLE in Calif. (Balbi)

TOGO — R. Lome, 5.045A, hrd 0619-0634 in Fr. w-mx prgm; ID 0633. (Robbins, Nebr.) Hrd in N.J. s-on 0555, gud sig but sometimes suffers frm severe CW or RTTYQRM. (Bohac)

TUNIS — R. Tunis, 11.925, noted opening at strg level 1600 w-all-Ar. session. (Balbi, Calif.) Observed well in Ar. 1800-1900 s-off. (Roth, Conn.)

TURKEY — TAT, 9.515, excellent to N. Am. 2315-2400. (Bromley, Ont., Canada; Bowker, N.H., others) Starts w-N-E to 2323A, then commentary

to 2325, followed by mx. (Cooper, Calif.) R. Ankara, 17.820, noted w-classical mx frm tune-in 1407 to 1415 when anned in ENG., followed by IS, then pop mx to 1420 tune-out; heavy QRM, S5-6. (Dary, Va.)

UNION OF SO. AFR. — SABC, 9.523, Paradys, noted w-N-E 1930. (Kary, Va.) SABC, 9.720, hrd 0530-0548 with commercial prgm, many ads; gud level but w-TTYQRM; N-E 0530. (Robbins, Nebr.) SABC, 17.855, hrd 1910-2000 in ENG., fair level to s-off. (Buchanan, Mo.; Rowell, Minn.) Hrd on 21.495 to 1630; on 17.855, 1630-2000; 15.235 at 1100-1600, and 15.300 at 1600-2000. (Pearce, England) An overseas rpt at press time indicates 21.495 may have been SUBSTITUTED for 17.855 to 2000 c-d. (KBLP)

U.S.A. — VOA, 6.075, REPLACING 11.775, Honolulu, Hawaii, noted parallel 9.650 at 0900-1630, powerful sig in Calif. (Balbi)

USSR — Khabarovsk, 9.790, Siberia, weak level 1930 w-Russian nx or talks. (Cox, Dela.) Alma Ata, 10.530A, hrd 0253-0333 w-mostly classical mx; Moscow chimes 0257, 6 clock chimes, Soviet Anth., then cont'd in lang. (Robbins, Nebr.) R. Moscow, 17.882, 15.135M, 15.205, hrd 0740-0800 in SE Asian Serv., all-ENG.; N-E 0740-0745; BEST on 15.135M. (Cooper, Calif.)

VATICAN — HVJ, 9.646, excellent sig 0030 in beam to L. Am. in Sp. (Bohac, N.J.) Fine sig on 17.820 in ENG. 1600 (may not be dly—Ed.) (Kippel, Colo.)

VENEZUELA — R. Rumbos, 11.970M, Caracas, tuned 2140 w-mx and Sp. ID 2145, followed by N-Sp.; hrd another day 0415 w-ID. (Ferguson, N.C.) Parallels "old" 4.790 outlet. (Niblack, Ind.; Robbins, Nebr., others)

VIETNAM (NORTH) — Hanoi, 9.848, hrd 1343-1430 w-all-Oriental lang prgm; sig fair but w-TTYQRM; lettr to stn returned marked "Service Suspended." (Robbins, Nebr.) Fqs. now are 9.848, 11.848. (Bohac, N.J.)

VIETNAM (SOUTH) — R. VTN, Saigon, says 9.754 fq has been DROPPED and now uses 11.950, 9.620, 7.265, 7.245, 6.165, 6.116, 4.808. (Schwartz, Roth, Conn.; Bohac, N.J.) Hrd on 11.950 at 1354-1437 w-all-Oriental prgm; uses one gong as sig repeatedly thruout prgm; some Am. pop songs noted. (Robbins, Nebr.)

WINDWARD IS. — WIBS, 3.365A, noted frm 0105 tune-in, woman annr; CWQRM. (Kary, Va.; Rowell, Minn.) Hrd on 11.715 to 0215. (Ferguson, N.C.) Noted on 15.370 at 2130-2200 w-"Platter Parade"; at 2200 had "The World Today" frm BBC. (Herd, Dela.)

YUGOSLAVIA — R. Belgrade, 9.505, noted 1840-1855 w-ENG. to Eur., mostly classical mx; poor level in Mo. (Buchanan)

DEADLINE — Due to space limitations, please send ONLY 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.

ATTENTION VHF BOOSTER-TRANSLATOR OPERATORS

REGISTRATION FORM
SALT LAKE CITY
WESTERN TRANSLATOR CONFERENCE
MARCH 3-4, 1961

★ *DXing Horizons'* First WESTERN TRANSLATOR CONFERENCE will be held at the Hotel Utah, and Hotel Utah Motor Lodge in Salt Lake City, Utah March 3 and 4.

★ The Conference is intended to be an "educational experience" for VHF Booster-Translator Operators.

AMONG THE FEATURED SESSIONS...

- (1) Seminars conducted by leading design and field engineers most familiar with the operation of VHF units.
- (2) In a general session Friday evening, March 3, FCC personnel will give their reactions to the progress being made by VHF Translator operators, and, we are told, a word about the future use of this type of service.
- (3) Special meetings will be held between the leaders of the various state Translator Associations, and representatives from the manufacturers in the field, to iron out the various state equipment purchasing plans.
- (4) The following manufacturers are planning to bring their VHF Translators and associated equipment for exhibit. These firms will answer your questions about their equipment, and this will be the only chance many operators will have to compare the merits of each line of equipment. Companies participating at this date, EMCEE, Inc., MARS, Inc., GEM, Inc., ADLER, INC., BENCO-BLONDER TONGUE, Inc., VIDEO UTILITY COMPANY, SITCO (Antennas), M. H. THOMAS ANTENNA CO., WINEGARD ANTENNA CO.

RETURN THIS REGISTRATION FORM PRIOR TO FEBRUARY 10, 1961

(After February 10, registration per participant jumps to \$10.00.)

Upon receipt of this form, *DXing Horizons* will return a written pass to each registrant. The pass must be presented at the Hotel Utah Motor Lodge Conference Hall prior to 1 p.m. Friday, March 3, where each participant will receive a Conference packet detailing the affair, meetings, exhibits, etc.

Mail Prior to February 10

Number in Party.....
Amount enclosed for Registration (\$5.00 per participant until February 10, \$10.00 each after that date)
Representing VHF Translator(s) in.....
Name
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Address(es)
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Town
.....
State

The actual meetings will be held in the Hotel Utah Motor Lodge. Admission to meetings will be to Registered participants only.

Register Before February 10

TRANSLATOR TOPICS

(Continued from page 14)

secretary of the Bloomfield, New Mexico Translator Club reports CATV does not serve the town of Bloomfield. However the Aztec Community TV head end equipment, and the VHF Translators serving Bloomfield are on the same mountain. Consequently there is reportedly some interference between the Translators and the CATV head end equipment. The Aztec Community TV System complained to the FCC the VHF Translators are interfering with the signal on the Cable system. Secretary Reager reports the interference is apparently only observed on channel 13 (KGGM-Albuquerque), which the Translator group is converting to channel 6, for reradiation. Reager admits the KOAT-7 translator rebroadcasting on channel 2 did come on after July 7, but notes "we had the equipment ordered from Benco before July 7, and were in fact ready to go on the air before that date." The FCC has scheduled a hearing in New Mexico for March 28, and the matter may be resolved at that time. The question may dissolve to one of "whether intent to build" means anything in the FCC's eyes.

OREGON

Several Oregon UHF Translator groups report to DXing Horizons they are eyeing VHF as a medium of dropping their UHF signals into shadow areas. The groups plan to file for new VHF Translators which will convert their UHF signals to an unused VHF channel, and serve outlying shadow regions.

WASHINGTON, D.C. . . . with the FCC

The Broadcast Bureau in Washington, through a representative who wishes not to be directly linked with the quote, said in effect "God Help the VHF Booster Operators who have failed to file and register with this office . . . because when we find them, and we will . . ." An estimated 400 such operations do exist, and the FCC wants it known they will not escape persecution. The FCC may field a special force to close down operations this spring, apparently feeling that VHF Booster Operators have had every conceivable chance to become legal. From here on out, the violators will be handled on a case by case basis. So spread the word around.

SELECTING A PROPER OUTPUT CHANNEL

"Prepared from material contributed by Dr. B. W. St. Clair, EMCEE, and, Owen Anderson, Video Utility Company"

The selection of a proper output channel is not a terribly difficult one under normal circumstances. Certain basic considerations are involved. Each Translator station, in effect, takes up four channels. There is the input channel, the output channel, and two adjacent channels to the output. Therefore the first consideration in selecting an output channel will be the examination of adjacent or nearby Translators, to prevent co- or adjacent channel interference. Obviously prime consideration must be given to protecting the signals from Broadcasting origination stations as the FCC regulations will not permit any interference whatsoever to their services. A strong Translator signal on an adjacent channel to a Broadcasting station could easily clobber such reception. The rules are very specific on this point, and it does not matter how weak or snowy the TV station signals are. If a

Translator causes any interference whatsoever, the Translator must leave the air or correct the interference at the receiving site.

Therefore the selection of channels for Translator operation is primarily one of stopping interference before it can start; first to primary broadcasting stations, and second to adjoining Translators.

To keep interference down, the problem of high channels versus low channels also enters the picture. Some consideration must be given to the fact that for a given amount of power output, with a single dipole transmitting antenna, there is 10 db more free space loss at channel 13 than channel 2. This is the equivalent of using a one watt transmitter on channel 2 and a ten watt transmitter on channel 13, and expecting the received signal strength to be approximately the same.

Even allowing for greater antenna gain (ERP) at channel 13 (using stacked yagis, etc.) it is almost impossible to obtain similar coverage at channel 13, as you could expect on channel 2. Obviously, the further the channel 2 signal goes (or any low band channel to a lesser degree) the further its potential interference extends.

Operators of VHF Translators thus have the dilemma of getting maximum coverage and still not causing harmful interference.

In general, then, unless a very large service area is required, it is better to stay on the high channels (7-13) for transmitting. It is easier to get adequate antenna gain at these frequencies, with less expensive yagi antennas. The same problem of antenna cost is also applied to the home receiving antennas, where high band yagis are less expensive to erect and maintain.

HARMONIC RADIATION

Another factor which must be considered, at least with composite equipment, is the converter's local oscillator frequency, and the harmonics thereof. These will vary from system to system, and each manufacturer has his own list of "channels to be avoided." In some instances the only available channel for transmitting, when all of the preceding factors have been considered, will not be available in the particular line of equipment the prospective user has in mind. EMCEE equipment converts down to an intermediate frequency, just as a conventional receiver does, and then back to the transmitting channel. EMCEE has thus worked around a problem that some equipment must still face. EMCEE equipment, will in fact, convert any channel to any other channel, even adjacent channels (i.e. 3 to 2) if proper and sufficient isolation is maintained between receiving and transmitting antennas and associated equipment.

SALT LAKE CITY CONFERENCE

The application blank, for the Salt Lake City CONFERENCE of WESTERN VHF TRANSLATOR OPERATORS, on the adjoining half page, must be returned to DXing Horizons prior to February 10. If the registration is returned after that date, individual registration climbs to \$10.00 per participant.

The space set aside at the Hotel Utah Motor Lodge for the individual meetings is limited, and "PRE-REGISTRATION" is a must in aiding the Conference Committee to allocate space, and making the proper arrangements with the Hotel Utah.

J.B.

CABLE DROP

(Continued from page 10)

although only four are in use (with the folding of KNBS-TV). Close circuit operation is possible and there is plenty of room for expansion in any number of ways.

But most of all, the system has elevated its public image to a point probably enjoyed by relatively few Cable Systems. Its operation and its operators are focal points for Pasco-Kennewick entertainment and civic activities. It is a record to bust a few buttons over, and much can be learned about successful Cable TV System operation from General Manager Courtney Kirkeeng and his crew!

NOW IT'S OFFICIAL...

"FCC Seeks Arbitration Controls Over CATV"

CATV Operators will recall reading in the December issue of DXing Horizons that "then" FCC Chairman Frederick Ford was drafting legislation to bring CATV operations under "mediation control" of the FCC, when so-called disputes arise between CATV operators and TV stations operating in the same town.

On January 9, in the Shoreham Hotel, Washington, D.C., Commissioner Ford spoke before the "Eastern Regional Management Seminar" of the NCTA, and detailed his plan which would allow the FCC to intervene in disputes, sit as a "judge and jury" and apparently decide which steps the disputing sides should take to "smooth over their differences."

The NCTA, speaking for the majority of the nation's Cable TV Operators, is on record as opposing any form of industry "reception regulation" no matter how innocent it may sound.

Thus it was not exactly a smiling audience (see photo) of 100 plus prominent CATV operators that heard Chairman Ford state "... At the present time there is no regulatory authority to which either the broadcaster or the CATV operator may turn in event they are unable to negotiate a settlement of disputes" which may arise from time to time.

"It appears, therefore, that such disputes could best be settled by providing the Commission with the authority to hear complaints, hold hearings, issue orders and prescribe such rules as may be necessary. We should be able to do this either generally or in individual instances where the continued operation of a local broadcast station appears to require it."

"... Your question to me may very well be: How will the Commission use the authority recommended to resolve these issues in given cases? There is no categorical answer to this question. As far as I am concerned, it will depend on the facts in each individual case..."

"... Legislation embodying these principles has been approved by the Commission and will be submitted to Congress shortly. I am hopeful that it will be acceptable to both the broadcasters and the CATV operators."

It should be noted that Chairman Ford did state "... it seems unnecessary to have a licensing system for the entire CATV industry."



CHAIRMAN FORD (standing, right) and his audience, Washington, D.C. January 9.

EDITORIALLY...

It would appear to this editor the powers the ex-chairman seeks for the FCC over CATV-Broadcaster disputes are, on the surface, very innocent sounding. However, careful scrutiny of the "suggested powers" must certainly indicate they constitute a CARTE BLANCHE check to the Commission to "do with, as it pleases."

Should Congress give such power to the Commission, it is entirely possible that pressure from "die-hard" broadcasters would force the Commission's foot "further and further" into the door of CATV regulation.

Certainly, such a proposal, coming as it does at a time when the nation's CATV operators and broadcasters have never known more congenial and friendly working relations, can do considerably more harm than good.

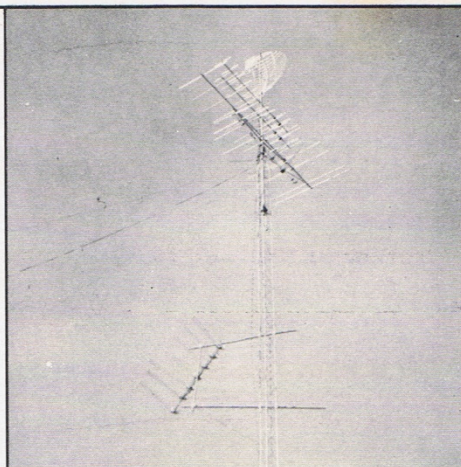
The great majority of CATV operators have labored long hard hours to prove to broadcasters "they can be a valuable ally in the field." From our point of view, the good Commissioner's proposal can only set CATV operators back a matter of years by stirring up mud which long ago settled to the bottom to form the foundation for the friendly partnership broadcasters and CATV operators now enjoy.

MEDIUM WAVE HORIZONS

(Continued from page 34)

- 970 Virgin Is.—WIVI logged at s-on 0425. (Epton, Quebec)
- 980 Colombo—HJES, Cali, hrd 2340 w-ID "R. el Sol de Cali—la frecuencia mas brillante de su receptor." (Tavares, Brazil) Listed as 990. (Ed.)
- 1000 Venezuela—YVOA, San Cristobal, s-on 0530, 12-26; rough copy. (Millar, Wash.)
- 1090 Colombia — HJDC, "Ecos de la Montana" Medellin, poor aat 1833 on 1-1. (Hauser, Okla.)
- 1100 Venezuela—YVKE, Caracas, hrd 1839-1933, 12-24, SINPO 44454. (Hauser, Okla.)
- 1110 Venezuela — YVNN, Ciudad Bolivar, hrd 1901-2003, 12-24, SINPO 54544. (Hauser, Okla.)
- 1210 JAPAN—JOOR Osaka Station belongs to NAB of Japan, independent bcsting stations. Programs from "third net," good sig 1-23 0420-0440. (Cooper, Calif.)
- 1295 PANAMA — HOS-23 is probably the AN here. (Roys, Indiana)
- 1370 Puerto Rico—WIVV, Vieques, logged 0430. (Wheeler, Pa.)
- 1500 MARTINIQUE—"R. Diffusion el Television Francaise" hrd 1700 in French. (Jaar, D.R.)
- 1540 Bahamas—ZNS, Nasau, hrd daily around 1700-1800. (Combs, Mo.)

from MODESTO to KOKOMO at DXing HORIZONS



KOKOMO, INDIANA — DXing Horizons Eastern Laboratory Antenna Tower One.

"Expanding the Horizons is Our Most Important Project"

We at DXing Horizons are thought of as "Reporters of Weak Signal TV-FM-SW News." The truth of the matter is that we make much of the news we report! That's why, at DXing Horizons, "Expanding the Horizons is Our Most Important Project."



MODESTO, CALIFORNIA — DXing Horizons Western Laboratory Antenna Tower Two.

- The first Super Sensitive Frame Grid Television Receiver (July-August, 1960 issues).
- The first UHF-TV Tube Pre-amplifier (June, 1960 issue).
- Low Noise 417A VHF Pre-Amps (April, 1960 issue).
- 6922 Modifications for TV Front Ends (March, July, December, 1960 issues).
- Channel Two Ionospheric Scatter Circuit, 1050 miles to KMID—Midland, Texas (now in development stage).
- Early pre-product release reports on units of interest to the Weak Signal Reception World.

Throughout 1961, DXing Horizons will continue to lead the way in fringe-weak signal reception experimentation, and news Reporting.

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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 four 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)