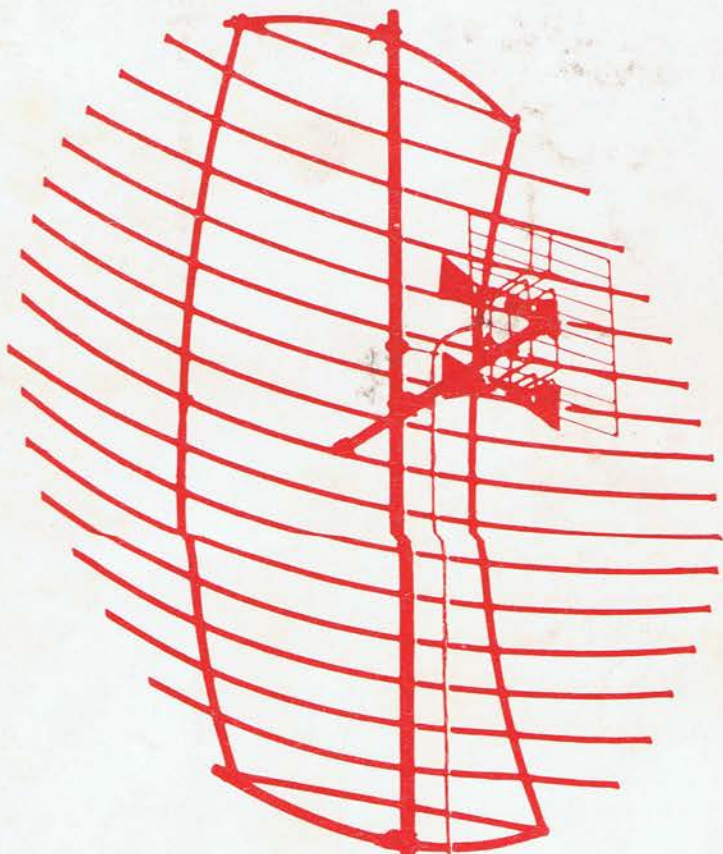


JUNE 1960

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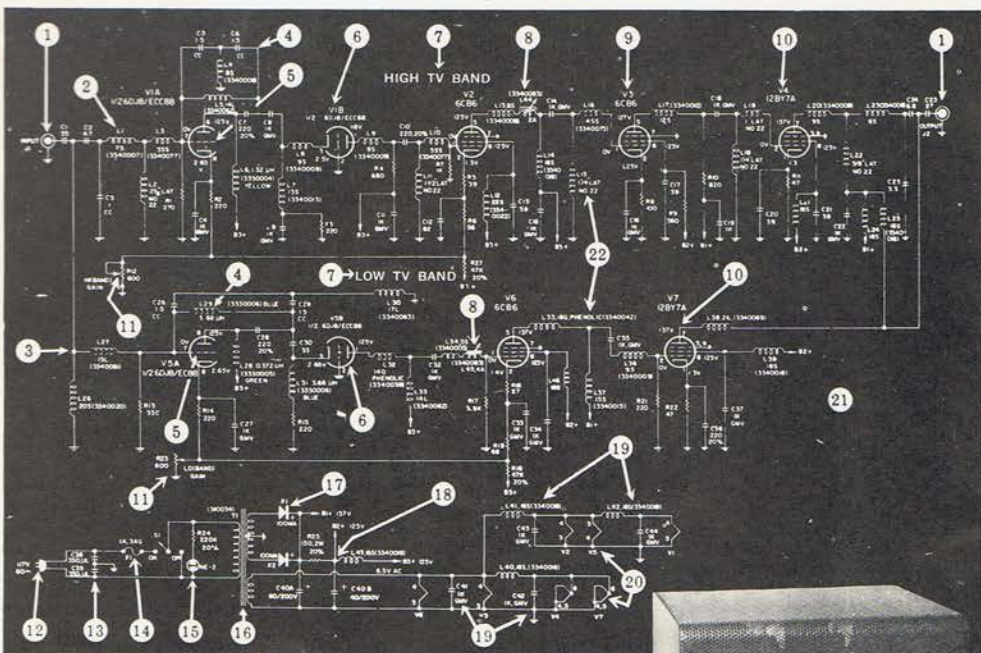


VOLUME ONE

NUMBER SIX

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At Sign Off

DXH COMES OUT FOR UHF

A meeting of the minds, between "Editorial" and "Engineering Development" at DXing Horizons, has resulted in a "forward UHF policy!" for the leader of the weak signal TV world. In this issue we are very pleased to present building details on the world's first practical UHF Booster Pre-Amplifier. In July we will present the results of an industry-wide survey taken by DXing Horizons, on the feasibility of UHF coverage. In August we will be proud to report on a new low noise UHF converter (BTU-2S) from Blonder Tongue, as well as reporting on lengthy tests of the industry's most sensitive UHF antenna, the Channel Master 425 Parascop, shown on our cover. In September a report on an experimental UHF Parametric Amplifier is planned. We think UHF can and will work . . . and we intend to show the doubting Thomases how to make it work!

JANUARY 1—SUPER POWER UHF FOR NYC

The House of Representatives has approved a 12.9 million dollar budget for the operation of the FCC in fiscal 1961. Included in the approved sum is more than two million dollars set aside to establish a pair of super power (one meg-a-watt plus) UHF stations in New York City "to test the usefulness of UHF once and for all." FCC Commissioner Robert E. Lee (see page 11) is quoted as saying, "If UHF will work in New York City, it will work anywhere." GE will supply the transmitters.

NEW IN CANADA

Applicants for Edmonton, Alberta channel 5 (CFRN-3 there now) and Calgary, Alberta channel 4 (CHCT-2 there now) were heard in mid-May, though the Canadian Board of Broadcast Governors has not announced any decisions at press time. Meanwhile CBWFT, channel 6 at St. Boniface, Manitoba (Winnipeg) went on the air with taped French programming from the CBC French Network April 24.

STATION NEWS

KPHO-5, Phoenix has received a new Turnstyle Antenna for installation on Stone Mountain. Coverage will be greatly increased over northern Arizona with the new antenna and higher power.

KFVS-12, Cape Girardeau, Mo. began construction on its world topper 1,672 foot tower May 5.

WHAS-11, Louisville, Ky. has been denied permission to erect a 1,856 foot tower. The FCC said the tower proposed would not be an air hazard, and it probably would be structurally sound. But, it would put a grade A signal into Lexington, Ky. which is now a UHF preserve. For this reason they turned down the WHAS request!

KBIQ-FM, Los Angeles has topped tower to 110 kW erp from atop 5,800 foot Mt. Wilson.

WCCV-FM, Charlottesville, Va. signed on 97.5 mc recently.

Chanell 8, Moline, Illinois has tentatively been granted to Community TV Corporation there.

Four applicants line up for channel 12, Wilmington, Dela. All apparently plan to be a fourth

station to Philadelphia, not the "first to Wilmington."

The WRBL switch from channel 4 to channel 3 has been made in Columbus. No sign of WTVM on channel 9 yet however, nor any sign of WGTV-8, new educational in Athens, Ga. which was due on in mid-April.

NO ONE WANTS CHANNEL 12!

Triangle Publications (owner of KFRE-TV, channel 12, Fresno) have begun switch of that VHF facility to UHF channel 30. Meanwhile the question of what to do with channel 12 remains. Santa Barbara apparently does not want it, and Bakersfield cannot have it. Best bet . . . it will go to Salinas region, or become educational in Fresno.

BOOSTER HEARING SCHEDULED

The House Interstate Commerce Committee announced May 24 that it plans a hearing at 10 A.M. June 6 in Washington, D.C. on HR Bill 11040 and Senate Bill S-1886. Both bills pertain to the licensing of VHF Booster Stations. A full complement of Western Booster advocates plan to make the trip to Washington to attend the hearing and push for passage of a bill licensing VHF Boosters. A full report will appear in the July DXH.

WYOMING TV REPEATER MEET

Members of the Wyoming TV Repeater Association will meet in Casper June 18-19 for a two day fete. Headquarters will be the Townsend Hotel. Industry representatives from Benco Associates of Canada (see page 11) and M.A.R.S. are expected to attend with equipment demonstrations.

ALL CHANNEL

A hearing is expected soon in the Senate Commerce Committee on Bill S3115, which seeks to require that all TV sets manufactured for interstate commerce sale be required to have VHF-UHF tuners. This bill has the hearty endorsement of the FCC, and for a change the FCC and DXH agree!

NEW PRODUCTS

Look for \$50.00 import portable TV receivers from Japan to flood the market this summer-fall. They were shown May 16-18 at the Chicago Electronics Show, amid groans of "They can't do this to us" from American set manufacturers. Remember the first Nippon transistor AM receiver?

Zenith has announced a new fully transistorized AM-FM portable, the Royal Symphony, which lists for \$189.95, and sports three antennas . . . a built-in AM, built-in FM, and "pull up dipole for FM."

WITH THE FCC

Two new "V's" have been added to Reno, Nevada. Channel 2 for commercial use, channel 5 for educational use. Four applicants are fighting for channel 4. KOLO-8 is on the air there.

NEW FM STATIONS GRANTED

Caldwell, Idaho	94.1 mc.	7.6 kW.
Waukegan, Ill.	102.3 mc.	1.0 kW.
Plymouth, Mass.	99.1 mc.	20.0 kW.
Hopkinsville, Ky.	100.3 mc.	3.7 kW.
Augusta, Maine	101.3 mc.	4.8 kW.
Cumberland, Md.	106.1 mc.	7.7 kW.
Grand Rapids, Mich.	102.9 mc.	36.0 kW.
Kansas City, Mo.	104.3 mc.	15.0 kW.
Milwaukee, Wisc.	98.1 mc.	14.1 kW.
KTOP-FM Topeka, Kansas		
Change to	100.3 mc.	3.5 kW.
Manchester, Conn.	107.9 mc.	5.0 kW.

DXing HORIZONS

"A monthly news publication devoted to active Television, Shortwave, Broadcast Band, and Frequency Modulation (FM) long range enthusiasts throughout the world. DXing Horizons is registered to Robert B. Cooper, Jr., 1960.

"DXing Horizons is compiled by and for persons interested in furthering long range—weak signal reception of Television, Frequency Modulation, and Shortwave transmissions."

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"DXing Horizons maintains a **technical advice service**, and an **Experimental laboratory** where new products are tested, and new circuits developed."

"In the shortwave and Broadcast Band reception field, DXing Horizons provides the reader with accurate, timely, and complete reports on what is being heard, where, and by whom. Special reports of major interest to shortwave reception fans are also found in the monthly DXH departments."

DXing Horizons is the only magazine reaching the entire weak signal reception field, in 50 states and more than 70 countries monthly. Readership interest and acceptance guaranteed. Advertising rates upon request.

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2. Cable System Operators
3. Translator Operators
4. Weak Signal DX Enthusiasts
5. Broadcast Engineering Personnel

TECH NOTES

Edited and prepared by DXing Horizons Technical Editor
ROBERT GRIMM
2800 Monticello Avenue, Oakland, California

A Practical UHF Preamplifier "THE 6CM4 IN A TROUGH LINE"

This article is being presented for the advanced experimenter. While it does contain sufficient information for the complete construction of an experimental UHF preamp, it is intended to be more of an idea article, rather than a constructional article.

NOISE FIGURE

The all important consideration of any r.f. amplifier for UHF television reception is its noise figure. The higher we go in frequency the more important the r.f. stage noise figure becomes, while at the same time it becomes more and more difficult to attain. Also as the operating frequency increases the available number of tubes that are useful rapidly decreases.

A triode is the obvious choice for an r.f. amplifier at these frequencies because of its inherent low noise. While there may be some pentodes that could function at UHF they would be nothing more than noise generators.

TUBES FOR UHF

The available tubes that will function at these extremely high frequencies are the following: 6AF4, 6AJ4, 6AM4, 6AN4, 6BC4, 6BY4, 6CM4, 6J4, 6T4, 416B, 417A, 5675, 6299 and 6442. The 2C40/446 "Lighthouse" triodes, while they will function up to 3 mc., leave a lot to be desired from the standpoint of noise figure. There may be a few other types which may have been omitted from this list. If so it is simply because we have not heard of them.

Gm

One of the important considerations in choosing a tube for noise figure is its transconductance or Gm, which is given in micromhos (umhos). From this standpoint alone, the 416B heads the list with a Gm in the neighborhood of 50,000 umhos, with the 417A running second at approx. 25,000 umhos. However these tubes are difficult to obtain and generally if you do manage to find them on the surplus market, they have been removed from equipment (used) and are in questionable condition. On top of that, even if you would be lucky enough to find a new



6CM4/EC 86
U.H.F. amplifier
and self-oscillating mixer

416B, they are priced out of reach. However, if you are lucky and have an "in" for obtaining these tubes in tip-top condition, then by all means, use them. For most of us poor unfortunates tho', the only tubes left were the next ones down the line which are a far cry from the aforementioned types. That was, however, until Amperex announced their recently released 6CM4 frame-grid triode. This tube fits in between the aforementioned types and fills the gap between pocketbook and practicality. It has a Gm of 14,000 umhos and its base layout is such that it lends itself ideally to grounded grid application, which is the only circuit configuration practical at UHF.

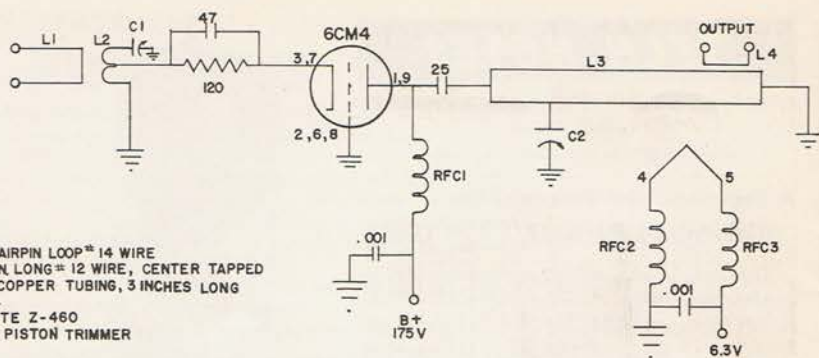
THE 6CM4 AMP

Shown in figure 1 is a practical circuit for use with the 6CM4. It is a grounded grid r.f. amplifier with tuned cathode and plate lines. The amplifier could be constructed on a copper trough and the suggested layout in figure 2 utilizes this idea for a form of cavity. This trough line measures 7 inches long and 1 1/4 inches square. A copper shield is mounted across the tube socket to isolate the input and output circuits from each other. The grid pins are soldered directly to this shield partition.

The plate is coupled to its tuned line with a small ceramic capacitor. The output is taken from a small link placed near the cold or grounded end of the line. The position of this link should be adjusted for optimum results.

The tuned circuit in the cathode may be eliminated if you desire but it does afford a slight improvement in noise figure.

The aforementioned copper trough can be made by bending copper stock to the desired shape. If one doesn't have the facilities to do this, it may be constructed from very thin



L1 - 1/2 TURN HAIRPIN LOOP¹⁴ 14 WIRE
 L2 - APPROX. 2 IN LONG¹² 12 WIRE, CENTER TAPPED
 L3 1/4 IN. DIAM. COPPER TUBING, 3 INCHES LONG
 L4 SAME AS L1
 RFC 1,2,3 - OHMITE Z-460
 C1,2 - .5-3MMF PISTON TRIMMER

FIGURE 1

SCHEMATIC OF EXPERIMENTAL AMPLIFIER

copper shim stock. This shim stock can be cut with a pair of household scissors and bent to shape with a pair of longnose pliers or even between two boards. Another alternative, if one desires, is to use copper-clad phenolic board. This material can be cut with a saw and the pieces to form the sides, etc. can be soldered together. As a finishing touch the completed trough line may be silver-plated, although this is not essential to its operation.

ADJUSTMENT

Now, what we are after in this amplifier is not maximum gain but rather, optimum noise figure. To properly adjust the amplifier for optimum noise figure a noise generator should be used. The noise generator will serve the purpose of providing an extremely weak signal for adjustment purposes. This signal is much weaker than one that could be obtained from a signal generator. Details on constructing a simple noise generator will be given at the end of this article.

Assuming that we now have a noise generator and that the amplifier is working, the following steps should be performed;

1) Connect the output of the noise generator to the input of the amplifier, being careful to use an extremely short length of transmission line. The impedance of this transmission line should be of the same impedance as the line you intend to feed the amplifier with. *Be sure the noise generator is terminated with a resistor of the same value as the impedance of this line.*

2) Disable the receiver's AGC circuit.

3) Connect an output meter, scope or some type device to measure the relative output of the receiver.

4) Turn the noise generator on and advance the output control to maximum output. At this point, if the amplifier is working and peaked up a bit, you should register a reading on the meter that is above the receiver's background noise level.

5) *Adjust the amplifier plate tuning capacitor for maximum reading on the meter.* Note the reading you have obtained. Now turn the noise generator off and note the meter reading. *The object is to increase the reading obtained with the noise generator on, as much as possible and at the same time increasing the receiver background noise level as little as possible (i.e. TRY TO MAINTAIN AS GREAT A DIFFERENCE AS YOU CAN IN THE READINGS OBTAINED WITH THE NOISE GENERATOR ON AND WITH IT OFF.)* Keep adjusting the plate tuning capacitor, always trying to improve the signal to noise ratio, until an optimum point is reached, where no more improvement is possible. Now go on to the cathode circuit and repeat this performance, adjusting the tuning capacitor, cathode tap, and the antenna coupling. All of these will effect the noise figure of the amplifier. After this circuit is adjusted go back to the plate circuit and recheck it. Repeat these steps several times until it is ascertained that no further improvement is possible.

The noise figure you have obtained will be at its maximum on the channel you happened to choose to adjust it on. It will hold over a couple channels either side of this one without serious deterioration. Heavy coupling to the output of the amplifier will broaden the range over which it may be used, to a certain extent. If any major excursions in tuning over the

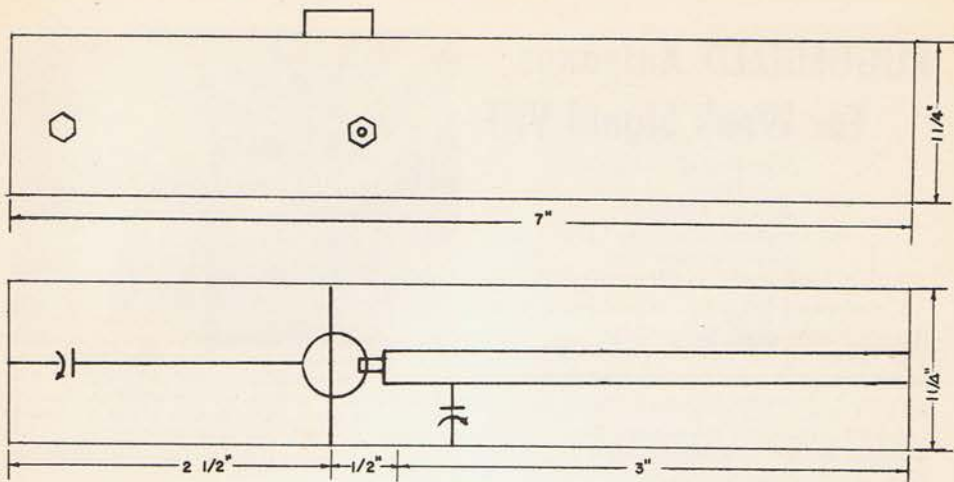


FIGURE 2

UHF spectrum are contemplated it probably would be best to disconnect the amplifier. If you desire, a second amplifier may be used for widely scattered channels.

NOISE GENERATOR

The noise generator shown in figure 3 is about the ultimate in simplicity. Although its output is not too high it should suffice for most purposes. The noise generator may be built into a minibox, if desired. The terminating resistor R2, is the only critical component. It should be mounted at the output of the noise generator with virtually no leads. *It is very important that the resistance of R2 should be equal to the impedance of the line*

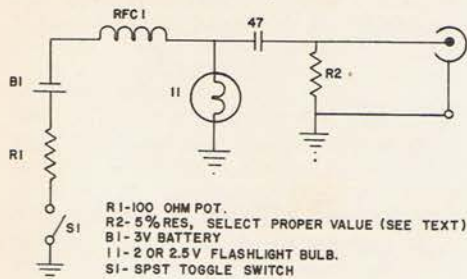


FIGURE 3
NOISE GENERATOR

that is being used to feed the amplifier. It is also very important that this line be of the same impedance as the transmission line from the antenna. *Otherwise all the work done with the noise generator is meaningless!*

Always keep the box tightly sealed when it is in use, to prevent r.f. leakage. Keep the

transmission line from the noise generator to the unit under test as short as possible.

OTHER USES

By changing the r.f. choke this unit may be used to adjust boosters, converters, etc. for other frequencies.

Weak Signal Tip . . . Improved Receiver Gain

In fringe areas the gain of a TV receiver may sometimes be improved by reducing the value of the resistor supplying the AGC delay voltage. This resistor is generally in the vicinity of 3.3 to 10 megohms and is connected from the AGC line to B+.

However a change greater than 50% is not advised. It would be advisable to make this resistor adjustable, i.e. a potentiometer of like value or a tap switch with several different values of resistors as the set may become prone to overload on a strong signal.

AMPEREX 6CM4 . . . AVAILABLE

DXing Horizons, wondering about the availability of the triode 6CM4 Amperex tube contacted Mr. M. Smoller at the Amperex Electronic Corporation (230 Duffy Avenue, Hicksville, L.I., New York). Mr. Smoller assures us the 6CM4 is available in "great supply for a paltry \$2.75 each"! He adds, "If any of our distributors do not have them in stock, they will be able to obtain them immediately." Incidentally, the 6CM4 has gold plated pins, attesting to the care Amperex Engineers went in designing a tube which would perform adequately even into the UHF region.

HELLO TEST!

Our cover this month depicts to a small measure how this magazine feels about UHF . . . "Let's go all out and make it work." The Channel Master Model 425 PARASCOPE Antenna is a six-foot dish with up to 19.1 DB gain in the UHF range. A complete product report will follow in July or August.

RUGGEDIZED Antennas

For Weak Signal VHF

(Part One of three)

By F. R. Voorhaar
The Technical Appliance Corp.
Sherburne, New York

Consistent day-in day-out communications is always important. But perhaps no more so than receiving off the air programs for re-broadcast. It was for this purpose that a line of fully welded "Ruggedized Antennas" for one time "life time" installation has been developed by the "TACO COMPANY." Most users of long range reception realize that a one time "off the air installation" is much more economical than high coaxial or microwave link rentals. Where an off the air signal is available, the user will almost always choose it over the more expensive systems.

SPECIAL ANTENNAS FOR A SPECIAL JOB

In the beginning, Ruggedized Antennas were developed along the lines of their more common "brothers," the high-gain single-channel yagi, designed to cover a single TV channel. In this way the user was assured the cleanest possible signal from a TV (or FM) station providing the program material over an unusual distance, and with the least possible *hash*. Hundreds of these single channel antennas are in daily use.

One very important application of these antennas involves "Satellite Stations," where a VHF signal is picked up, and subsequently rebroadcast on a different frequency, bringing TV to areas otherwise "blanked out." Another application where performance is a must, 100 percent of the time, is found in the nation's Community Antenna Systems. Here is a case where financial return to the system operator depends on providing good pictures at all times. In some instances Community Systems use broad banded designs and an "all-channel amplifier" to bolster the received signals, while in other installations, where the stations to be received lie in numerous directions from the receiving site, the "cut for channel" antenna is more generally in use.

RELIABILITY

Many of these antennas are installed in inaccessible spots where antenna failure would mean costly repair, when service is almost im-



Ten element yagi, fully welded, undergoing test to determine performance under extreme icing. This antenna covers the VHF high-band channels (7-13) and maintains performance requirements, well within specifications. Note that ice covers driven elements as well as connector and cable.

Photos: Courtesy of Technical Appliance Corporation

possible. In the far north, this would be the winter time. For that reason, tests are conducted to determine the consistency of performance under extreme icing conditions, and high wind pressures.

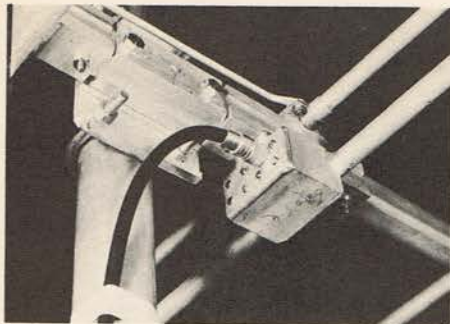
In the wind swept areas where seasonal conditions occur as hurricane winds, ice would not be a factor, but the wind pressure would. Here again, strength is important and Ruggedized Antennas are subjected to wind velocities ranging up to 150 miles per hour.

FEED LINE MATCHING

Under severe weather conditions the need for protection to a "line balun matching device," which matches the impedance of the dipole to the impedance of the coaxial line, is of primary interest. Transformers of the conventional type, or baluns of coaxial cable, cause problems when these units are mounted external to the antenna. So engineers developed a unique and very effective means of overcoming the "matching device protection" problem. The engineers now mount the balun "within one-half of the folded dipole." This novel approach permits the dipole to be matched to the coaxial connector which is housed in the antenna assembly itself. And to further protect against atmospheric conditions and moisture, the entire housing is filled with chemical foam, completely protecting the matching system from the (weather) elements.

SINGLE CHANNEL— THIN BROAD BAND

The single channel antennas were so well received that engineers have now *broad banded* some of the models to cover two or more TV channels, and in two cases, channels 2-6, or channels 7-13.



This close-up of connector and antenna termination illustrates the construction of the antenna and housing. To protect the balun and connector from moisture, the housing is foam-filled after all connections have been completed.

Other models covering various ranges in the VHF spectrum were also developed so it is now possible for the user to get "lifetime performance" at most any range in the TV and FM region.

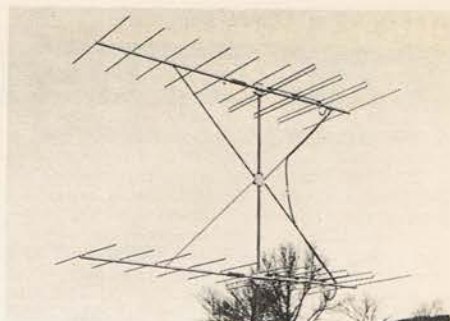
As previously mentioned, coaxial cable is used as a transmission medium between the antenna and the amplifying equipment. This eliminates all of the problems inherent in the use of conventional 300 OHM line (namely, stray pickup in the line of noise sources, re-radiation, and icing), nor is the installation subject to the many problems existing with open wire feed line.

WELDED CONSTRUCTION

As the accompanying photos clearly show, welded construction is used throughout the antenna system. Mechanical mounting of elements (bolts, flip open clamps, etc.) leave the elements and antenna pieces subject to vibration and twist during heavy wind action. Element vibration during wind storms creates antenna "noise" or static, which is transmitted to the receiving equipment over the transmission line. *This noise is "added" to the atmospheric noise picked up by the antenna, creating an additional barrier to weak signals.* For this reason, as well as the more obvious rigidity, under varying weather conditions, welded antennas are a must when "absolute performance is a must one hundred percent of the time."

NEXT MONTH...AND IN AUGUST

With this discussion of the general characteristics of rugged antennas designed for "ultimate performance," the ground work is laid for a study of antenna stacking, for gain and pattern correction.



Stacking of the ruggedized antennas is facilitated because of the use of coaxial terminations. Tuned lines terminating in coaxial connectors provide a perfect match with full weather protection. Bracing of the antennas is by means of sturdy aluminum rods fastened to antenna and mast by special brackets. Twisting of the antenna "boom" which can cause flutter is eliminated by use of rectangular tubing to which the welded elements are sturdily attached.

Proper stacking, with proper distance (electrical, not physical) between yagis, improves not only the gain of the system, but as well, is also able to produce antenna patterns of special configuration to reject strong interfering signals from varying directions, on the channel of reception.

This, then, will be the theme of the July installment of *Ruggedized Antennas*, part two.

WEAK SIGNAL NOTES

FIRST VHF BOOSTER IN THE EAST!

The popularity of the VHF Booster-Translator has spread into the mountains of New Hampshire. A VHF Booster, converting a UHF Translator signal from channel 81 (at White River Junction, Vermont) to channel 12, near Lebanon, N.H. went into operation in April.

NTRA ANSWERS JERROLD COMPANY

In a last minute flash, in May, we quoted portions of a Jerrold Company (Philadelphia, Pa. manufacturer of weak signal equipment) proposal for "solving the VHF Booster problem." The Jerrold Company proposal, in essence, stated that it believes the FCC should license existing VHF Repeater-Boosters, but not allow any new installations. The brochure was printed on a sheet of 17" by 11" paper, folded to form four pages, and was widely circulated to Jerrold customers.

In mid May the National Television Repeater Association issued an identical size (shape) and very similar layout brochure, in essence mimicking the Jerrold proposal. But further than that, it would appear that the NTRA and booster people feel the Jerrold Company is not really "on their side" in the current fight for survival. Strange indeed when 3 out of 4 boosters use Jerrold manufactured equipment of one sort or another.

DX PRODUCTS

"A 30 TUBE TV DX RECEIVER"

By

BILL ECKBERG
Walnut, Illinois

A TELEVISION RECEIVER WITH 30 TUBES! And that's not all. It has no printed circuits, which is almost unheard of in this day and age when manufacturers are building sets for price rather than quality, eliminating costly tubes, circuits, and hand wiring techniques. In recent years it has become increasingly difficult for a TV DXer to find a receiver fitting the exact needs of his demanding hobby.

THE MATTISON

The Mattison is within the price range of the better models of known brand sets. (EDS. NOTE: The last price sheet we had from Mattison listed the "Silver Rocket Chassis" considerably lower than deluxe models of "brand name receivers.") The Mattison Silver Rocket 630 chassis has been produced since the dawn of commercial television. Each year the receiver's design is "redesigned" to incorporate any new features which would add measurably to its overall performance.

MAINTENANCE

The Mattison is very easy to service as the tubes and components are readily accessible, should breakdown occur. In order to get peak performance from a TV set, which a DXer demands, it must be kept in peak operating condition at all times. I test all of the tubes in my Mattison once a year on a transconductance tube tester. Any tube which shows a substantial loss in emission or amplification **WHEN COMPARED TO A NEW TUBE IS DISCARDED.** Also, any tube which shows interelement leakage (excluding cathode heater leakage) of less than 10 megohms, and cathode heater leakage of less than one megohm is discarded. I replace the R.F. amplifier tube (6BN4 in my case) at least twice a year on "general principals." This tube is of the utmost importance to a weak signal enthusiast as it determines the noise figure for the entire receiver.

TUNER

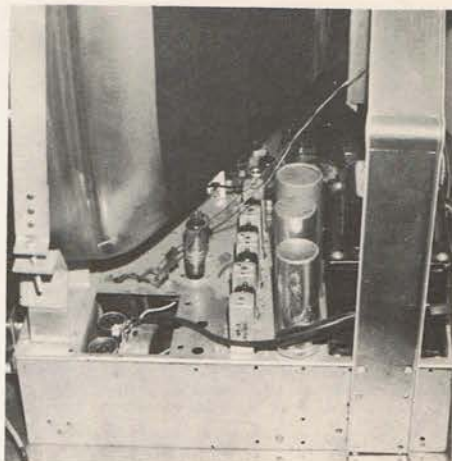
The tuner is also of great concern to the weak signal enthusiast. The 1959 version of the Mattison employs a "Neutrode Turrent Tuner" as opposed to a cascode tuner used in previous models. This tuner is manufactured by the Standard Coil Products Company, and uses a 6BN4 triode as the RF amplifier and a 6CG8 as the oscillator-mixer. It offers certain advantages to previous tuner types for DX work.

(1) It has more consistent gain and a lower noise figure than cascode tuners.

(2) "It appears" less subject to overload because of better AGC action.

(3) Due to improved shielding and filter circuits, it is more immune to electrical interference.

(4) It "does use" a printed circuit board tuner section, which results in better service and performance. Lead dress is critical in tuners due to the high frequencies involved. With printed circuits,



"Mattison receiver in service at DXH. The tuner is sub-mounted in the well, front left. Five I.F. cans and four IF tubes run in a straight line off center to the right, and at far right, the transformer power supply."

this worry is eliminated and one tuner will be just like another in overall performance. This is the only printed circuit board in the Mattison, and I believe the tuner is the only section of the receiver where printed circuits can be used to advantage.

VIDEO AMPLIFIERS — PICTURE TUBE

The Mattison employs a 6AU6 and 6AQ5 as the first and second video amplifiers. The video amplifiers must increase the video signal level from 2.5 volts peak to peak to 50-100 volts peak to peak output. There are several advantages to a two stage video amplifier.

(1) There is a greater range of contrast available. A gradually weakening picture tube will not be noticed as quickly. Plenty of contrast is essential in identifying and photographing weak signals.

(2) The SYNC signals can be taken off at the output of the first video amplifier. Thus the SYNC signals are fully independent of the brightness and contrast controls. If you increase the contrast control on some receivers employing only one video amplifier, a clipping action of the SYNC pulses may occur and the picture will roll, or tear.

The Mattison receiver will drive a 21, 24, or a 27 inch picture tube. My receiver drives a 90 degree 21CBP4A Sylvania Silver Screen 85. It is important that a DXer use an Aluminized CRT (cathode ray tube) as it will afford much more brightness and contrast than an ordinary picture tube.

DC RESTORER

The Mattison uses one-half of a 6AL5 as the DC restorer. This is important to the DXer. With the brightness control at a preset level, a weak signal will appear too bright and a strong signal will appear too dark on a receiver without a DC restorer. Thus the brightness control must be continually reset. And it is also impossible to obtain a proper background brightness for both light and dark scenes with one setting of the brightness control, without the DC restorer. The DC restorer is often called an automatic brightness control.

VIDEO IF AMPLIFIERS AND DETECTOR

The Mattison employs a four stage video I.F. strip which utilizes the 6CB6 tube. It has a full 4.5 mc. overall video bandwidth. This is important to the DXer as it is the higher frequencies of video (3.75 to 4.5 mc.) which give the picture its fine detail. This is important when taking photographs of DX. Bandwidth is inversely proportional to gain, and some receivers which employ "fewer I.F. stages" must sacrifice bandwidth for gain.

A large portion of a receiver's "selectivity" is furnished by the video I.F. stages. On channel 3, as an example, if a receiver is not sufficiently selective, you will see adjacent video carrier from channel 4, and adjacent sound carrier from channel 2. This type of interference will degrade the picture quality considerably (EDITOR'S NOTE: Adjacent channel interference can also measurably lower a channel's gain on weak signals through improper activation of the AGC circuit). The tuner bandwidth is broad enough to include these undesirable adjacent channel carriers, and they must be trapped out in the I.F. strip. The Mattison contains two absorption type traps to perform this task. They are tuned to 39.75 mc. and 47.25 mc. to trap out adjacent video and audio carriers respectively.

One-half of a 6AL5 is used as the video detector. The circuitry is conventional and resembles that which is used in almost all receivers.

AGC

The Mattison has keyed and delayed AGC (automatic gain control). It uses a 6AU6 (pentode) as the AGC keyer. At lower signal levels the AGC keyer tube will operate at cutoff allowing the receiver to operate at maximum sensitivity. There is also a local-fringe switch used in conjunction with the AGC circuit. This is, without a doubt, the best AGC system ever developed. The advantages of keyed AGC are as follows:

- (1) Light or dark scenes in the picture do not affect the AGC voltage.
- (2) Noise pulses do not affect the AGC voltage.
- (3) Receiver will operate at maximum sensitivity on weak signals.
- (4) Very quick acting type of AGC. (Editor's note: Not to contradict Bill Eckberg's findings, our own personal Mattison receiver has not proved to have an AGC "fast enough" to cope with many forms of meteor bursts . . . a problem we have not yet solved).

There are several types of AGC systems used in TV receivers but NONE of them contain all four advantages listed above, except the keyed and delayed AGC of the Mattison.

SOUND CHANNEL

The Mattison has a five tube lineup in its sound channel, as opposed to the three tube lineup in most receivers. It uses a 6AU6 tube as the first and second sound IF stages, a 6AL5 as the detector and a 6AT6 and a 6AQ5 as the audio amplifier. The Mattison uses a "giant" 12 inch speaker which produces plenty of volume, which is needed to hear those weak signals.

SYNC CLIPPERS AND AMPLIFIERS

The Mattison employs two 6C4's and a 6BF6 as the SYNC clipper and amplifier. The SYNC signal is completely independent of contrast and brightness control settings. The keyed AGC system assures constant SYNC signal amplitude for all

signal strengths. This is necessary for uniform clipping action of noise pulses.

AFC — HORIZONTAL DEFLECTION — HIGH VOLTAGE

The Mattison uses a 6AL5 and a 6AC7 as the AFC tubes, a 6K6 and a 6J5 as the horizontal oscillator, a 6CD6 as the horizontal output, a 6W4 as the damper, and a 1B5 as the high voltage rectifier. All receivers use some type of AFC system. Outside noise pulses resemble the horizontal SYNC pulses and they must be prevented from getting into the horizontal oscillator. The Mattison employs sine wave (syncrolock) AFC. This is definitely the finest method ever devised for stabilized horizontal hold, and the Mattison is the only receiver manufactured today using this system. On a very weak signal it is possible to rotate the horizontal hold control throughout the range and still have the picture hold SYNC (important on meteor burst DXing.)

POWER SUPPLY

The Mattison uses a pair of 5U4's in the low voltage power supply. The power supply is an important part of a TV receiver for all of the circuits depend on it for operation. With a pair of tubes, neither one has to work as hard, thus affecting longer life. The power transformer in the Mattison is one of the largest I have ever seen. Across the line plug Mattison uses a "line filter" which eliminates power line noise. The Mattison does not use series string tubes which is an aid to the serviceman. A transformer powered TV set is much more expensive to manufacture but it is much more dependable and will outlast transformerless sets. Many manufacturers of new receivers are now going back to the trustworthy transformer powered set.

SUMMATION

To sum up my careful review and nearly one year of test operation of the Mattison Silver Rocket 630 chassis, I believe it is one of the finest on the market today. It is one of the best investments in DXing equipment I have ever made. Anyone desiring information on the Mattison receiver may write to:

Mattison Electronics Corp.
2966 Jerome Ave.
New York 68, New York

B. E.

FROM THE EDITOR . . . to DXers

Space is at a premium in DXing Horizons Magazine. In most publications, short press releases, incidental material, and the like are used to fill in the holes. We have yet to find any such "holes" where filler can be inserted! There is so much TV-FM-SW DX news of "great importance" available that we are continually finding our editorial task one of severe editing . . . rather than one of trying to fill the available space (which incidently . . . is growing).

AIPA

The AIPA TV DX Club is planning a nationwide TV DX convention July 16 and 17 in Chicago, Illinois. Full details will appear in the July DXH.



WEAK SIGNAL INDUSTRY

CATV BILL RECOMMENDED

(WASHINGTON, D.C.—MAY 18)

By a record vote of 39 to 38 the Senate this afternoon moved for recommitment of Senate Bill 2563, a bill contemplating regulation of the CATV industry.

The vote of the motion for recommitment came at 6:10 P.M., after two days of sometimes stinging debate. Voting on the motion was called for by Senator Mike Manrony from Oklahoma.

A motion to reconsider the action for recommitment was killed by a 38-36 vote.

Sources on Capitol Hill indicate this would appear to kill the measure for this year in Washington.

NEXT YEAR—CATV

No fight is pleasant . . . and from our removed vantage point of the sun swept Central California desert, nearly 2,500 miles from Washington, even we could hear the repercussions of a battle royal being waged by those who believe CATV has a place in the American home, and by those who believe just as adamantly that it doesn't. The score should tell you how dangerously close the CATV industry came to overnight disaster. If the motion for recommitment of this bill really means the bill will stay "out of circulation" for the rest of this session, the CATV proponents can count their blessings and begin immediate work for what is sure to be an even tougher fight next year.

We had prepared an editorial for this section in June, prior to the outcome of the Senate CATV Bill fight. We should like to quote portions of it:

"...Of late we have been amazed by what certainly must be classified as apathy on the part of CATV operators to "stand up and fight" for what is by rights their own. Certainly, nowhere in existing communications legislation, can one find powers for the FCC approaching those proposed for CATV system control. Our own Federal Communications Commission (established by law to control the air waves through the licensing of transmitters, operators, assignment of operating powers and frequencies, etc.) could now control reception. In actuality the FCC, through proposed CATV control, would control the very thing broadcasters are fighting tooth and nail . . . what a viewer may see, and over what station."

(In the proposed legislation) . . . By dictating to cable system operators what they may, or may not use for "reception distribution," the FCC has executed program control. By licensing a receiving antenna and a length of cable which carries the received signal(s) from the antenna to the receiver(s), the FCC has assumed a new realm of control.

But possibly of greater concern is the very proposal to license CATV operations and select the stations it distributes. Such a proposal, in the hands of Washington personnel, could easily make second class citizens of those people not fortunate to live in regions where "off the air reception" is possible.

The prime argument in the hands of a CATV opponent is that "CATV hurts small town TV." We doubt this very much. But even for the moment, assuming this charge were true, "why" . . . we ask . . . "should a small town be forced local television with but one choice of viewing fare per viewing period? Why should a local "small town" TV station be subsidized at the expense of the public's choice of programming? Subsidized, by forcing the local CATV system (which is, actually, providing the small town with a greater diversity of programs than will ever be available locally) to greatly curtail, or even eliminate its service.

SENATE BILL 3343—A SLEEPER?

We hope we are terribly wrong about the FCC's intentions with a bill recently introduced into the Senate hopper as S3343. Under pressure from various incognito members of the FCC, Senator Warren Magnuson (D—Washington) introduced a bill which would grant the FCC the powers to license and control every radio-television receiving tower over 30 feet in height, in the U.S.A.

Many have wondered about the purpose of such a bill. They were not alone.

We wondered about the real FCC motive for we are well aware that surely the FCC has no desire to undertake licensing of all antenna structures over 30 feet in height . . . merely to "give their underworked staff something to do."

Then it occurred to us that to grant the power to license the "existence of all towers above 30 feet in height" to the FCC is to place unlimited tower height restriction powers in their hands.

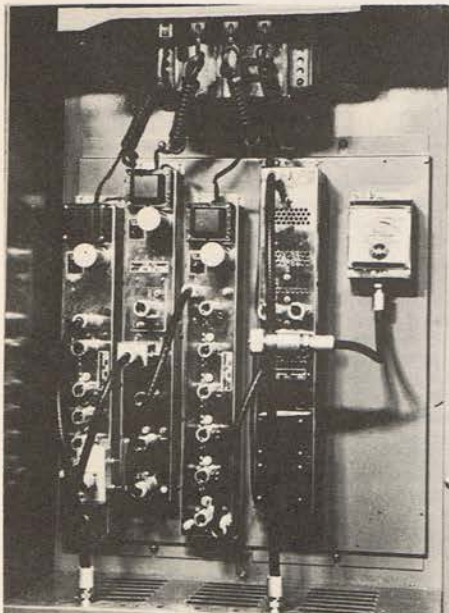
And here is one example of what they might be able to do with this new power: "Rule that all television receiving antennas in (say) Youngstown, Ohio be kept below the 30 foot mark. What would this do? Youngstown has two local UHF stations (WFMJ, WKBN). It also receives fringe service from Cleveland VHF signals (channels 3, 5, 8) and Pittsburgh VHF signals (2, 4, 11, 13). But acceptable VHF reception is only possible at the expense of 50-foot (plus) masts and large antenna arrays. To limit antenna heights to 30 feet would be quite a shot in the arm for the local UHF stations. Youngstown would become an unpenetrable UHF market . . . and UHF would really prosper.

The FCC realizes that through channel switches, station moves, etc., the long term swing to "properly isolated UHF islands" is going to be a long

one. Obviously a bill capable of working on the receivers of the signal (through receiver limitations) as well as the existing plans for creating non-intermixed markets would be a service to the FCC.

But, if the FCC is given field powers to license and control fringe area television installations . . . FCC imposed program control will have arrived.

As one engineer dryly quipped, "If the broadcaster is too big a giant to tackle, go after the poor unorganized viewer . . . tell him how sensitive his antenna can be, how high it can be, and what he can watch! Tell him . . . and then run like hell!



Benco "T-5" Satellite Transmitter, the first unit to meet Canadian D.O.T. standards for low power VHF Booster Stations.

Benco Television Associates Ltd., manufacturer of a line of pre-amplifiers, converters and 1/3 watt VHF transmitters has just announced its "T-5 unit." The "T-5," the first VHF Translator station to be sold as one complete package (pre-amplifier, variable attenuator, VHF to VHF converter, low power driver-amplifier, and 5 watt (pedestal) power amplifier, with test equipment, etc.), has received type approval 300 from the Canadian D.O.T. H. D. Gray, speaking for Benco Ltd., assures DXH that when the U.S. FCC approves VHF boosters, and establishes a set of standards for their operation, Benco will field a unit meeting the FCC criteria. For further information, write Benco Television Associates, Ltd., 27 Taber Road, Rexdale, Ontario, Canada.

FCC COMMISSIONER LEE VISITS BOOSTER SITES

While in Montana in early May, attending a broadcasters' meet, FCC Comm. Robert E. Lee had the occasion to tour several "typical Booster



Commissioner Lee in Montana.

sites," and we understand he was favorably impressed with what he saw. The commissioner was feted in Butte, Basin and Boulder, Montana May 7. On Sunday, the 8th, a 500-mile trip took the FCC Commissioner to Booster sites in Leadore, Idaho where he saw a 1/3 watt transmitter mounted (for weather protection) in an outdoor privy! Other stops included Lemhi and Salmon, Idaho and Darby, Hamilton and Missoula, Moontana.

ORGANIZATION ENGINEER

Commissioner Lee was reportedly very much impressed with the community spirit of the Boosters, and their operators. He suggested that Tri State TV Repeater Association employ a full time engineer to make circuit riding trips around the Northwest aligning and troubleshooting Boosters, so as to give all the benefit of high engineering standards. The suggestion met with much praise and a promise of serious thought by the numerous Booster advocates along the tour path.

Many of the Booster operators reportedly made personal pleas to Commissioner Lee, to the effect "please don't shut these Boosters off."

Although the Commissioner made no formal statement when he returned to Washington, he gave the impression to many that he now joins Commissioner T. A. M. Craven, previously the only FCC member favoring Booster operation.

NEW UHF CONVERTER BY BLONDER TONGUE

Currently in operation on the DXH test-bench is a new low noise UHF Converter by Blonder Tongue, the BTU-2S (supercedes the BTU-2R). Regular production of this improved model will begin in July, according to Blonder Tongue.

TRANS-COUPLER YAGIS IN TEST

Test models of the Winegard low and high band TC-Transcoupler Yagi series antennas are now 90 feet in the air at DXing Horizons undergoing long range tests. A preliminary report on gain figures and the patterns, as well as the antennas' "DX getting abilities" will appear in the July DXH.

FM Reporting

Edited and prepared by BRUCE ELVING
522 North 12½ Avenue East
Duluth 5, Minnesota

As the summer months come upon us, the quantity and quality of FM reports continue to mount. This month's reports come from FM listeners scattered from the East, South and Midwest.

THE EAST

From Fayerweather island on Long Island Sound, DXer Bradley R. Graham heard WIBG-FM 94.1 and WCAU-FM 98.1 Philadelphia, and WEST-FM 107.9 Easton, Pa. on May 8, giving him a total of 40 FM stations logged. Graham is new to FM DXing, and has to run generators to operate his electronic equipment, since his lighthouse island does not have electric power.

Dale Chote, Toronto, Ontario, uses a five-element FM yagi antenna, and has heard several stations from Michigan, Ohio, Pennsylvania and New York at distances up to 270 miles. His most distant catch, however, was of WHDH-FM 94.5 Boston, Mass., 475 miles, last Nov. 9.

Hank Holbrook, Bethesda, Md., has added several FM calls to his log lately. On April 16 he received WPTF-FM 94.7 Raleigh, N.C. Later in the month, WSOC-FM 103.5 Charlotte, N.C. and WJAC-FM 95.5 Johnstown, Pa., were heard. May's catches have included WLOA-FM 96.9 Braddock, Pa., WPRB 103.5 Princeton, N.J., and WNEW-FM 102.7 New York, N.Y. Bethesda's WUST-FM, incidentally, now operates on 94.7, 20 kW, with the new call WJMD.

FROM THE SOUTH

Another island reporter this month is Drayton Cooper, Edisto Island, South Carolina, who DXes with the help of a turnstile antenna about 60' above the island. Cooper enjoys excellent groundwave reception to Florida, with reception of WDBO-FM 92.3 Orlando and WFLA-FM 93.3 Tampa, possible virtually every night. North Carolina stations received include those in Raleigh, Fayetteville and Mt. Mitchell.

DXing from a location where the nearest FM station is 110 miles away, Louis W. Henry, Fort Myers, Fla. heard FM stations from Houston, Austin, Dallas, Beaumont and Corpus Christi, Texas, and New Orleans and Baton Rouge, La. coming in continuously from 5 p.m. EST April 7 to 1 a.m. April 8. On April 14, WHKY-FM 102.9 Hickory, WPTF-FM and WRAL-FM Raleigh, WHPE-FM 95.5 High Point, all N.C., as well as several South Carolina stations, were received. A stacked five-element yagi antenna, an FM band booster, and a Sargent-Rayment tuner are used for FM reception.

FROM THE MIDWEST

Ed McMullin, Hemlock, Mich., received his first FM skip June 29 when WFLA-FM 93.3 Tampa, Fla. came in. Equipment used for reception of stations in Detroit, Cleveland and Chicago fifty percent of the time or better includes a National Criterion tuner and a 12-element, rotatable, Apparatus Development Co. yagi.

A friend of McMullin's, James Hughes, Saginaw, Mich. got some FM DX in his car while parked under a fire lookout tower on a hill overlooking



Thomas R. Sundstrom at his Stockton, New Jersey FM Listening Post.

the Cadillac, Mich. area. Heard were WJBK-FM 93.1 Detroit, Mich. and WBKV-FM 92.5 West Bend, Wisconsin, the latter at a distance of approximately 140 air miles.

Dave Novick, Wauwatosa, Wis., reports receiving KCMO-FM 94.9 Kansas City, Mo. March 31, and WWSW-FM 94.5 Pittsburg, Pa. the morning of April 5. Novick reports that 19 FM stations are now authorized in the Milwaukee area, with the newest to be on 102.1 (WMKE) and 103.7 (WTOS Wauwatosa). WRJN-FM 100.7 Racine is back on the air after undergoing antenna repairs. WAUX-FM 106.1 Waukesha plans to be on the air in September, testing in August, reports Tom Mann, Milwaukee.

DXing from a dormitory in Iowa City, Iowa, Kent Corson has heard such FM stations as WMBD-FM Peoria, Ill., WSOY-FM Decatur, Ill., KADI 96.5 St. Louis, Mo., WJBC-FM Bloomington, Ill., WLDS-FM Jacksonville, Ill., and WHO-FM Des Moines, Iowa.

March 31 produced some excellent DX—mostly of educational FM stations not operating during the summer months—for Robert W. Boggs, Lee's Summit, Mo. School stations heard were: WWKS 91.3, a 3000-watt in Macomb, Ill.; KDPS 88.1 Des Moines, Iowa; KSLH 91.5 St. Louis, Mo. Boggs also reports the reception of commercial stations KAYL-FM 101.5 Storm Lake, Iowa and KHOL-FM 98.9 Kearney-Holdrege, Nebraska. Another Missourian, Dave Combs, Columbia, interested in becoming an FM DXer, has written to the FM department for information on receivers—a service we are always glad to provide.

WNOB 107.9 Cleveland, Ohio is a high-powered station that had some technical difficulties, but now seems to be operating normally, reports Dan Wilt, Akron, Ohio. WNOB and WSOM 105.1 Salem are full-time good music stations. Wilt is hoping for some real DX this summer, using a Heath PT-1 tuner.

WPRB 103.5 Princeton, N.J., with its new power of 17000 watts, reports occasional reception up to Massachusetts, and south as far as Virginia and West Virginia, according to Thomas Mount, Red Bank, N.J.

Address your reports for next month to DULUTH, MINNESOTA. During the summer months, this address might change again if your editor attends summer school. So check that address at the top of the column before reporting.

International DXing Horizons



CARIBBEAN REPORT

(PART TWO)

The IDX section of DXH has been devoted to reports from South and Central American DXers twice previously in the past six months. The uncommon interest in stations in this area is perhaps fostered by the almost complete lack of proper and accurate information from our neighbors to the south. We still have high hopes that eventually this lack of information exchange can be worked out through the proper channels. In the meantime DXing Horizons' readers should be pleased to learn TV DXing is growing with our neighbors to the south, as these reports would tend to show.

FROM SURINAM . . .

VHF enthusiast Otto Morroy, Paramaribo, Surinam, on the northern coast of South America notes that he has not been inactive of late. Morroy reports reception from Caracas, Venezuela stations (950 miles) through the fall and winter months with less regularity than during the summer of 1959 (see IDX News, page 13 for April), with channel 2 (YVKS) seen most frequently. Reception from Caracas on channels 2 and 4 during the winter occurred between 2030 (LST, 1.5 hours ahead of EST) and 2400 LST. Then on April 2 the "Spring-Summer skip period" began again. Quoting Morroy, "On Saturday, April 2, I received Caracas again after four weeks of no reception. It was very peculiar as it was very dry throughout our "summer" (U.S.A. winter), and I had no reception. The two good days when Caracas did come in, during January, it suddenly rained. On April 2, it started raining again. On April 2 I had reception from 1530 LST to 2000 LST. Around midnight I came home and was surprised to find Lima, Peru on channel 4 (2300 miles). The station identified as "Radio America TV." I had more reception from Caracas on April 4 (1530-1700 LST), April 5 (2000-2130 LST) and Radio America TV in Lima, Peru from 2130-2230 on the 5th. Reception from Lima was characterized by good sound but badly distorted video."

REPORT FROM YUCATAN

Daily reception to 950 miles, on both the low and high channels? Impossible many will say. But at least two DX enthusiasts on the Yucatan Peninsula of Mexico are proving otherwise. Enrique Veazey Fernandez of Ciudad Del Carmen, Campeche, and Luis Jorge Bros of Merida, Yucatan are a pair of DXers who have been observing low and high band channels, across the western Gulf of Mexico, from Texas, Louisiana, Alabama and Florida day in and day out for nearly three years. DXer Fernandez writes, "I have been receiving television reception here in Carmen for two years, and I have found a great deal of similarity between the two 'seasons.' We began in April of 1958, when reception was good (sometimes clear as a local might be) with reception from south Texas, Louisiana, almost every day, and night. After the middle of May, reception came only two or three days per week, with greater areas received (north Texas, Arkansas, Florida, Mississippi, South Carolina, Oklahoma, etc.) with

two or more stations often on the same channel. This type of reception lasts until July when we only receive television about once every ten or fifteen days. From July through November (Editor's Note: July-November is the rainy season on the Yucatan Peninsula) we have reception only about twice a month, but from November through April we again have reception about once per week, until in April it becomes daily again. Most frequently seen by the more than 30 TV 'experimenters' in the vicinity of Campeche, and Yucatan, are stations in New Orleans (640 miles, channels 4, 6, 8, 12), Lake Charles (680 miles, channel 7), Corpus Christi (700 miles, channels 6, 10), Houston 650 miles, channels 2, 8, 11 and 13), San Antonio (810 miles, channels 4, 5, 12) Weslaco-Harlingen (650 miles, channels 4, 5)." One of the best high band hauls for DX enthusiast Fernandez is WSIX-8, Nashville, Tenn., 1060 miles.

The detailed log of Luis Jorge Bros for April shows the regularity of reception, with a surprising note. WFAA-8, Fort Worth in Northern Texas, was often logged on channel 8 in Merida (April 5, 2200 CST, April 24, 2200 CST, etc.) along with stations in Galveston, Corpus Christi, and Mobile, Alabama. The distance to Fort Worth is approximately 940 miles, of which 300 miles is overland, between Fort Worth and the Gulf.

Luis Jorge Bros reports reception almost "at will," as early as 0630 CST, usually lasting straight through the day until stations signed off in the "wee hours." The best reception (snowfree) usually occurs between 2000 CST and 2400 CST, with the high band channels (7-13) providing the best snow-free, co-channel interference free, pictures.

WHY?

Most astute observers will note that the majority of the reception is over "over water" paths. The large dry air masses which brew over the plains of Central Mexico and then move northeast into the Gulf, and eventually over the central states, form one of nature's most perfect "inversions." Mid April through mid June this same—ALMOST STATIC—weather pattern exists over the western Gulf Coast region, broken only by the summer and fall "rainy season" for the Yucatan Peninsula area, south into Central America. Save for the wide region covered by the reception (stretching from Monterey, Mexico on the west to Mobile, Alabama on the east, for daily—consistent reception), we would be prone to suspect Tropospheric Ducting.

The real cause of this most unusual reception is probably wrapped up in the "BOUNDARY OF WET, MOIST AIR trapped next to the Gulf surface," by the hot, dry air 500-1,500 feet above the surface. A natural boundary which acts as a trap, bending the VHF waves beyond the horizon for hundreds of miles.

Now, the next step is to get some UHF equipment installed on the Yucatan Peninsula.

For IDX photos, check page 15 this month.

TV Reporting

Deadline for July column—
June 18 in Modesto, California.

GULF AREA TROPS

DXer Don Ruland summed it up with "This has been the best spring session ever noted here in Florida." Ruland started the ball rolling from his Holly Hill, Florida location the morning of April 7 when he logged, on ground wave, KHOU-11 (Houston—850 miles), KZTV-10 (Corpus Christi—1,000 miles) and KTBC-7 (Austin—985 miles). The evening of the 7th, early A.M. of the 8th, KZTV, KHOU, KTBC were seen again, as were KONO-12, KENS-5, WOAL-4, San Antonio, 1,035 miles, KGBT-4 Harlingen, 1,035 miles, and KTRK-13 Houston. The top ground wave haul for the period was KRGV-5, Weslaco, 1,050 miles! The excellent ground wave-trops continued across the Gulf until the late evening on the 8th, and high and low band stations in Louisiana, Alabama, and western Florida as well were logged by this central Florida DXer. Our editorial comment . . . "Too bad Don wasn't set up for UHF." This overwater opening closely parallels those reported by DXers in 1955, 1956 and 1958 in the Gulf area, and gave Don a taste of what our IDX DXers for this month experience daily (see page 13)!

ELSEWHERE IN THE SOUTH . . .

DXer John Broomall reports Cuban reception via E skip at his Augusta, Georgia location April 26, as well as unidentified E skip on May 4, 6 and 7.

DXer Don Ruland also had tropes DX to the north, along the coast, when he saw WTVD-11 (490 miles), WNCT-9 (500 miles), WRAL-5 (450 miles) and others April 25-26, and May 7. Via E skip, Ruland saw his first April 18 when TG-BOL, Guatemala City (1,180 miles, channel 3) and YSU-TV, El Salvador (1,200 miles, channel 4) were logged from 1845-2000 EST. Other E skip was seen from Texas no the 26th, and San Juan, P.R. on May 8.

In South Carolina, Franklin Brown found DX hot during April-May at his Easley logging post. Tropes stretched better than 300 miles to the north and south of his location on April 24-25 when WAVY-10 (Norfolk, Va., 372 miles) and WFGA-12 (Jacksonville, 316 miles) were seen. Brown saw E skip on April 26 from Cuba and North Platte, Nebraska, and May 6 from Montreal, Canada.

IN THE NORTHEAST

We understand DX along the northeastern seaboard has been considerably below par so far this season. Ronald Boyd, DXing from Truro, Nova Scotia, Canada saw his first E skip May 8 from 1856-2004 EST on channels 2 and 3, but no identification. Boyd continues to log Aurora signals almost at will as a very disturbed ionosphere in April and May contributed to the aurora scene. Boyd reports the April 23 aurora stretched to within ten degrees of the SOUTHERN horizon.

John Dranchak, Bridgeport, Conn. also reports DX has been slow in the NE. Dranchak caught WAVY-10 (Norfolk, Va.) on tropes the evening of April 20 for the first signs of increasing ground wave range this spring.



1,000 miles tropes—Don Ruland, Florida

ALONG THE LAKES

Bill Pagel of Glen Ellyn, Illinois did better than most at his northern Illinois location. Bill DXes with a 1952 Model Philco, using a seven element Traveling Wave antenna at 45 feet, a BTU-2R UHF converter fed with a 12 bay bowtie array at 46 feet. A booster helps out on the VHF channels, as do a pair of Jerrold "Trap Ease" antenna traps designed to cut down strong slop over from adjacent channels. Pagel identified a great deal of meteor scatter DX on May 5, as the expected Aquarids Shower (forecast for the 6th) peaked nearly 36 hours ahead of schedule! Bill saw bursts as high as channel 7, and from 0456-0500 (EST?) one burst brought through signals on channels 2-6, with several stations on each channel. Bill also reports good ground wave stretching out to 383 miles (WSTV-9, Steubenville) on April 22.

Walter Owen, Jr., Springfield, Ohio saw his first E skip of the season April 13, logging a host of stations on channel 4 (KROD—El Paso, KGNC—Amarillo, KOB—Albuquerque, KOA—Denver) and KCSJ-5, Pueblo.

From Erie, Pa. Frank Wheeler notes that most DX this report period fell into two categories . . . E skip and Aurora, of which the latter was most frequent. Northern Lights April 10, 11, 12, 16, 23, 24, 27, 28, 29, 30 and May 1 made mince meat of the video range. E skip on April 21 produced KVOO-2, Tulsa, 943 miles, April 26, KCKT-2, 1,015 miles and KTVR-2, 1,292 miles.

Sidney Emmons, Galion, Ohio, found ground wave slowly stretching out to summertime range, but notes no real DX was logged all month. His detailed log is a joy to read, noting the most minute changes in ground wave reception on low and high band VHF and UHF. UHF to 230 miles (WNDU-16, South Bend) was noted on April 29th.

Mike Navarre, Detroit is going after UHF this summer. Mike plans to put his UHF antenna (Corner Reflector) up to 45 feet for the summer tropes season along the Great Lakes. On April 29 he added WKBN, WFMJ at 150 miles.

Roger Hansen of Kalamazoo, Michigan caught channel 5 meteor scatter April 19 and 20 during the Lyrids meteor shower. Identified were WKRG, Mobile at 800 miles and WMCT, Memphis at 525 miles, both during the mid-afternoon shower peak.

DX champ Bill Eckberg notes "I kept close tabs on the receiver this period but DX was virtually non-existent here. No E skip so far. This is the latest it has ever gotten under way (May 9 report),



985 mile E skip—Radio Caracas, Venez. (see IDX, page 13)

and it has rained here almost everyday . . . this has also been the wettest spring in years." WTOL-11 and WSPD-13, Toledo at 321 miles provided the best DX of the period on April 23.

Chicago DXer David Swanson caught his first E skip of the year May 15, and it was a real good opening. Swanson, using a 59 Zenith receiver and a Finco antenna 55 feet in the air, caught WJXT-4 Jacksonville, Florida, WOAI-4, KFDX-3, KRLD-4, KGNC-4, KGBT-4 WKY-4, KOB-4 and KOA-4 from 0840-1125.

MIDWEST DX REPORT

Bill Hauser, Oklahoma City, caught E skip on May 8 (KLRJ-2, Las Vegas, 1753 EST) and on the 15th. In the opening of the 15th, Hauser logged WFMY-2, Greensboro, and then at 1130 skip swung west and he caught short skippers KOTA-3 (S.D.), KDIX-2 (N.D.), KTLF-6 (Idaho) and KTWO-2 (Wyo.). Later in the evening Hauser saw KLRJ again. On the 16th he logged KBOI-2, Boise at 2110 EST.

Our Colorado DX-pert Jim Himes, had his first taste of '60 E skip April 5 when WATE-6 (Knoxville), WBTV-3, WCYB-5, WLWT-5, WAVE-3 and WLWC-4 were logged. Tropics DX on April 22 brought reception from high banders in Kansas and Nebraska.

Jim Pirch, Richmond, Missouri logged ground wave to 300 miles on April 22 also, from Oklahoma, and Pirch saw E skipper CJBR-3 from Quebec, Canada on May 6.

FAR WEST

Old time DX pro Dave Beal of Tucson, Arizona notes he now has a Finco Geo-matic fringe antenna 40 feet in the air, and he wonders about ground wave DX in the southwest. His haul of KIVA-11, Yuma, at 227 miles is about the best we have heard about.

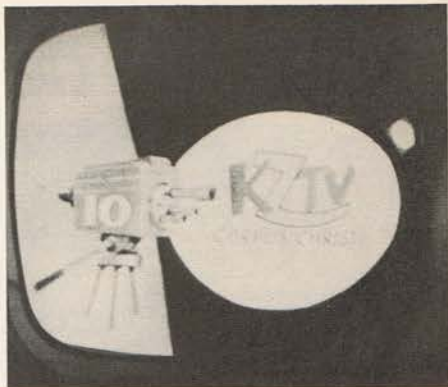
Beal also sends along a photo of channel 2 in Guadalajara, Mexico . . . another new one for DXers to shoot for.

Dave had E skip April 9, and 26, and May 4 (Mexico City), 8 (KTVI, KFEQ, KCKT, KTVO, KARD, KNOP, WLBT, WBRZ, 1603-1900 EST), 9 (CHCT), 14 (CBUT, KING) and 15 (KNOP, KOTA, KTVR).

Jimmie Price, Fall Brook, California caught KVOO and KMID on April 12 during an opening the rest of us apparently missed out on.

IN MODESTO

With monitoring equipment running at least 12 hours per day here at DXH Headquarters, we



900 miles tropics—Daily reception! (see IDX, page 13)

feel we have a pretty fair chance of catching anything unusual. E skip was noted (since the last report) on April 19th (1500 EST), 26th (2400 EST, Texas), 29th (1230 EST, Texas), May 5th 1150 EST, 1300 EST, Kansas), 11th (1340 EST-1900 EST, up to channel 5, KS., OK., Wyoming), 11th again (channel 2, 2025-2045, Montana), 12th (1400-1415 EST, Missouri), 13th (1345 EST, Missouri, 1440-1450 EST, Texas), 14th (1950-2130 EST, Montana, channels 2-3), 15th (1910-2130 EST, from the east, not identified, to channel 4), 17th (1030-1300 EST, Texas, Kansas, Wyoming, to channel 5) and 19th. The 19th was the best opening observed here to date, getting underway at 2025 EST, lasting until 2350 EST. Seen were KCMO-5, KTVR-2, KNOP-2, KMTV-3, WOW-6, KHAS-5, KHPL-6, KFBC-5 and KOOK-2. Signals were good up to channel 6 audio and FM skip signals were heard around 100.2 megs, and lower, from Nebraska and Kansas stations, from 2100-2145 EST.

We present these detailed notes to give some idea of what can be done with almost continuous monitoring during available times.

PROPAGATION FORECASTS

(May 31 to July 10)

VERY BIG ON METEOR SHOWERS

Though not generally realized as a good month for Meteor Burst DXing, June holds some of the best daytime showers of the year. High band TV DX fans should pay particular attention to the showers and peak hours started (*), as bursts on channels 7-10 should be frequent for DXers with top notch equipment, and clear channels for MS DX work. Distances on both high and low bands will be 700-1,200 miles.

*June 4-6—Perseids (best on north-south paths)

0800-1000 LST*

1300-1500 LST*

**June 8

0800-1000 LST**

1100-1300 LST*

*June 30-July 2

0700-0900 LST* north-south paths

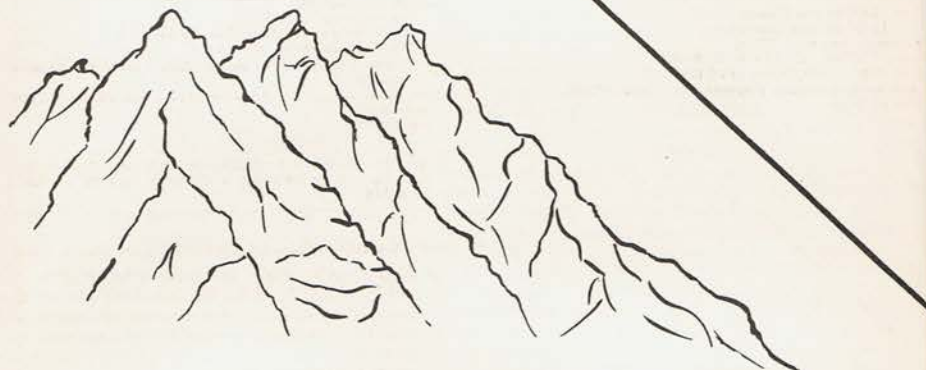
1300-1500 LST north-south paths

1030-1130 (standard time at path mid-

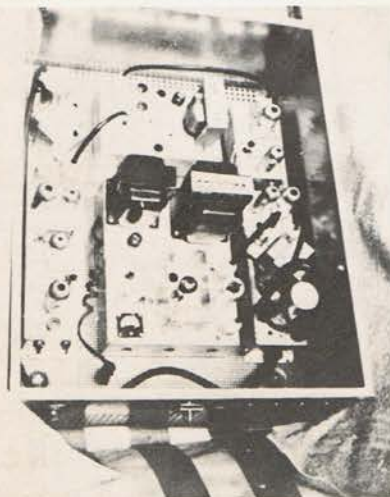
point) east-west paths

(continued on inside back cover)

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M.A.R.S. ONE WATT (Plus) AMPLIFIER SYSTEMS



Complete — aligned and assembled. Ready to install on your new system or as a replacement for older systems. A complete high output amplifying system with conversion. The RX-17 uses two BT proven quality MCS amplifiers with M.A.R.S. Converter CX-30 and Metered Final (F-17).

The system is capable of one watt PLUS output with as little as 50 microvolts input.

The unusual range of automatic gain control enables complete pre-adjustment to accommodate ANY useable signal level.

Metered output eliminates guesswork for fast — efficient operation.

AVERAGE VALUE SPECIFICATIONS:

- Gain: 110-120 DB.
- Conversion Accuracy: .005%
- AGC: 40 DB.
- Input Range: 50 Microvolts to 5000 Microvolts
- Output: One Watt Plus
- Power: 115 Volts AC 60 Cycle (140 Watts)
- Cables: Low loss input and output cables and baluns to match 300 OHM line are included.
- Installation: Can be done by anyone in a short day.
- Price: \$957.00

M.A.R.S. CRYSTAL CONTROLLED CONVERTER CX-30



RELIABILITY . . .
The world's most reliable converter-amplifier units, with 10,000 hours tube life in premium quality Amperex 6922 Tubes. The CX-30 is the heart of any amplifier system

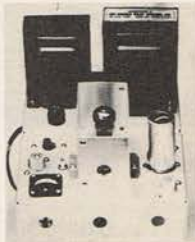
which requires the highest accuracy in conversion, and maximum reliability. Input may vary from 1,000 Mu to 100,000 Mu at 75 OHMS. One-half of the second 6922 is reserved for possible use with a coding on-off system.

AVERAGE VALUE SPECIFICATIONS:

Gain: 15 DB on Low Channels
10 DB on High Channels
Conversion Accuracy: .005%
Power: 115 VAC, 60 Cycle — 17 Watts
Input: 1000 to 100,000 Mu at 75 OHM.
Tubes: Premium Quality Amperex 10,000 Hour 6922's.
Price: \$195.00

M.A.R.S. ONE WATT FINAL TV AMP. F-17

Mountain top locations require the very best in equipment . . . and when you need 10,000 hour reliability, high output, and broadcast quality amplification . . . M.A.R.S. equipment is for you. Maintenance calls are held at the lowest rate in the industry with M.A.R.S. equipment . . . and the F-17 amplifier.



AVERAGE VALUE SPECIFICATIONS:

Gain: 26 DB over Each Input
Band Width: 6 MC (Plus-Minus) One DB.
Power Requirements: 115 VAC, 60 Cycles, 70 Watts.
Output: One Watt Plus
9 Volts at 75 OHM
18 Volts at 300 OHM (Through Balun)
80 DB above One Millivolt.

Meter: Switch and Meter to Monitor Plate Voltage and Relative RF Voltage.

Tubes: Premium quality Amperex 6922's and 6360's (10,000 Hour Rating)
Price: \$395.00

IF AND WHEN VHF BOOSTERS BECOME LICENSED, THIS F-17 UNIT WILL PROVIDE A QUALITY PICTURE UP TO 40 MILES.

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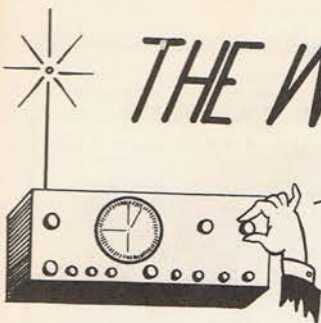


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MID AMERICA RELAY SYSTEMS, INC.
601 Main Street
Rapid City, South Dakota

THE WORLD



AT A TWIRL

Edited by DXing Horizons Shortwave Editor
Ken Boord
948 Stewartstown Road
Morgantown, West Virginia, U.S.A.

This month, DXH is pleased to present—especially for SWLs in North America—a HIGH FREQUENCY BROADCAST MONITORING SYSTEM PLAN devised by Roger Legge, a renowned SWL and an authority on shortwave radio. Anyone interested in taking up Rog's offer should WRITE DIRECT TO HIM and NOT to your SW Editor or to DXH. His QRA is: Roger Legge, 233 Springvale Avenue, McLean, Virginia. In his own words, here is Rog's plan:

There appears to me to be a need for establishment of a method of providing radio stations with periodic reception observations on their broadcasts beamed to overseas areas. Most stations appear to depend mainly on shortwave listener reports to keep them advised of reception of their broadcasts. They receive a large volume of such reports, but usually a listener will report a particular frequency only once, in order to obtain a QSL card. The stations therefore do not normally have a continuing flow of reports from the same listeners and do not receive reports on frequencies which are not being heard satisfactorily due to interference or propagation reasons.

I therefore propose to organize a system for providing stations with regular reports on their broadcasts beamed to North America, on the following basis:

1. Listeners in various parts of the country will observe reception at least twice a week of the frequencies of broadcasts beamed to North America. I will provide report forms using the SINPO code and the schedule of broadcasts on which monitoring is desired.

2. Monitors will mail their reports to me once a month.

3. I will assemble the reports for each station and mail them to the stations.

It is intended to concentrate mainly on West European stations initially. By having several monitors in each area, the monitoring could be divided among them so that no one would have to check too many stations.

I would therefore like to hear from listeners who desire to take part in this monitoring system.—ROGER LEGGE

Your SW Editor and the Publisher of DXH heartily endorse this worth-while project. And we feel certain that it will be welcomed by all broadcasters that beam their programs to North American listeners. Please give Rog your whole-hearted support, North American SW DXers! Thanks!—KEN and BOB

EFFECT OF SUN ECLIPSE ON RADIO RECEPTION

Thanks go to veteran DXer David F. Thomas, Radio W.U.M.S., Box 1613, Proctorville, Ohio, for these pertinent comments on the effect of eclipse of the sun on radio reception:

"I have been active in eclipse observations since 1930. The eclipse of the MOON has little or no effect upon radio transmissions—no more difference than in moon CHANGES or effects of the refraction of the light (if I recall rightly, the only noted effects are around 15 meters, 3 meters, and 3.75 centimeters, and this is so slight that it is never even noted EXCEPT UNDER EXTREME CONDITIONS).

"However, an eclipse of the SUN has a very definite effect on radio reception. I have been with several eclipse observations, and stations that cannot be heard at any other time often can be heard during an eclipse of the sun—

IF BOTH the receiver and the transmitter are in the PATH OF TOTALITY. Meter readings, observations, and much data have been collected on this subject.

"There was 0.7 eclipse of the sun in March in KING GEORGE V LAND, but there was nothing noticed from it since it was OUTSIDE the average areas for stations and listeners. In September, there will be another eclipse of the sun around the Far North area—Baffin Island, et cetera—but there, again, the results will be almost nil EXCEPT for expedition stations in that area; *it will not have any effect upon reception here in the USA.*

"I was with an eclipse expedition on Hudson Bay in 1955 and with others—and I hope to be with one in the Yukon in 1963.

"In sun eclipses, ALL WAVES ARE EFFECTED—long, broadcast, and shortwave. Daytime reception from Europe, Africa, and Asia has been verified during eclipses of the sun—and only during the last eclipse (1959), *Radio Tchad*, 1,538 kc, in Africa, was heard at 1100 GMT here in Ohio, following the path of the eclipse (KXEL and others on 1,540 kc were standing by for the TEST).

"That's the data from here on eclipse tests and observations. I have spent both time and money following this study. And often, where the eclipse has been in a remote area with no transmitters, I have loaned out a 'W.U.M.S.' unit for these tests—since it covers 15 kc on up the line—in fact, a series of transmitters. If any of us go into the Canadian Archipelago this year, one 'W.U.M.S.' transmitter will be there for the eclipse test on September 20 at 2100-0100 GMT. Since this will be on a *limited path*, I doubt that it will be studied except by survey stations now established there."

CLUB NOTES

NEW ZEALAND—The most recent guest shortwave editor for the DX Times, house organ of the N.Z. RADIO DX LEAGUE, was Arthur T. Cushen, Invercargill. (See PROFILE, pg. 29.—Ed.)

U.S.A.—These officers have just been chosen for the coming year by members of the NEWARK NEWS RADIO CLUB—Irving R. Potts, President; Albert J. Sauerbier, Executive Secretary; Benjamin Feinstein, Assistant Executive Secretary; Robert V. Cooper, Corresponding Secretary; Walter L. Townley, Treasurer; Matt Zahner, Tommy Kneitel, Kenneth R. Boord, Amelia Bennett, Floyd F. Backus, Miriam Stockton, Roger Legge, Grady C. Ferguson, Stephen Terry, John Beaver, Sr., Norman L. Maguire, Charles S. Sutton, Vice-Presidents, and Sam A. McLauchlan, Canadian Vice-president.

Members of the NNRC's official bulletin staff include Irving R. Potts, Editor; Carol H. Weyrich, John T. Tweedie, Broadcast Band; Henry (Hank) Bennett, Richard Labate, Chas. E. McCormick Jr., Stewart West, Shortwave; LeRoy Waite, James R.

Pickering, Don Martinez, Amateur; Carleton Lord, Special Features; James Cumbie, Statistics; Bruce Elving, FM, and John Reichert, Bulletin Manager. NNRC was organized in 1927. QRA is 215 Market St., Newark 1, New Jersey, U.S.A.

(Reports are listed in GMT—subtract 5 hours for EST, 6 hours for CST, 7 hours for MST, and 8 hours for PST.) Let's go!

ANGOLA—R. Clube de Congo Portugues, 6.135, Carmona, hrd to close 2201 w-"A. Pt."; bad QRM. (Cox, Dela.) CR6RZ, Luanda, PREVIOUSLY on 4.995 and LISTED IN CALL BOOKS ON THAT FQ, now is on 4.955, hrd in S. Af. AFTER SABC's Commercial Serv., 4.945, closes—to2230 s-off. (Ridgeway via RADX)

ANTARCTICA—C. C. Huff, Calif., flashes: "In March, I was hearing three stations from Antarctica—KC4USB, KC4USV, KC4USH on the 20-m. single-sideband; I wrote KC4USH, Cape Hallet (Adare), who was the BEST on 14.250; hrd March 20, 1020 GMT. They run phone "patches," mostly West Coast, although the QSO I reported on was with W1TPC (card returned as moved, left no address). From the conversation, I understand these are scientists, Coast Guard, Navy, and civilian workers who went to the South Pole region the first of year to make PERMANENT the stations (there for ICY last year). They said QSL cards would be long in coming since the crew now on the Base would not return to the States until October, when a new crew will be taken down there. The latter part of March, they said there soon would be 24 hours of darkness each day and that no planes would then be able to land, stopping fast mail."

ARGENTINA—R. Splendid, 11.880, B. A., made a "rare" appearance recently 2355 when XEHH, Mexico City, was "off the air"; all-Sp.; S9 in Ind. (Niblack)

AUSTRALIA—R. Australia's 10-kw-er, VLY25, 25.735, noted recently 0100-0400; another day observed 0030 w-ID and various fqs in use then were given. (Ferguson, N.C.)

AUSTRIA—Pearce, England, recently hrd this sked anncd by the Austrian Radio, Vienna—2300-2400, 6.155; 0430-2300, 7.150; 0900-1300, 7.245; 2300-2400, 0430-0900, 1700-2300, 9.505; 1000-1900, 9.615; 0500-0700, 9.665; 2300-2400, 0700-1600, 1900-2300, 11.775; 1700-1800, 11.785; 2300-2400, 0540-1700, 1800-2300, 11.935, and 0230-0500;

BRAZIL—Radio Nacional, 15.295, Rio de Janeiro, hrd 0015 and later; seems just off INACTIVE LIST; initially noted back on air several wks ago. (Niblack, Ind.)

CEYLON—Commercial Serv., R. Ceylon, 9.520, Colombo, hrd on SAT. 1545 w-"Music For Dancing" feature. (Pearce, England)

CHINA—R. Peking, 9.775, fair 2150 in ENG. by man, QRM by 4VWI, 9.773, Haiti. Logged on NEW 9.502 fq frm 2208 w-Chinese mx; woman read N-F. 2230-2241, then classical mx; final ID, s-off w-Anth. 2300 (is DAILY s-off, NOT 2200 as in WRH60). (Cox, Dela.) Hrd on 5.030 opening b-c in ENG. 2030; anncd for 19- 25-ft 31-m. bands, but made NO MENTION WHATSOEVER OF 5.030! (DXHCNE) R. Peking, 17.765, noted 2130-2225 w-E-N parallel 11.975; 9.510 logged 1700-1800 w-E-N parallel 11.740, 9.775; hrd on 15.095 at 1800-1900 w-E-N; anncd sked 1855. Under LATE SPRING sked, Peking is now noted on 17.720 w-TWO xmsns between 0100-0300 in ENG. to ECNA (s-off 0158 and s-on again 0200); and

0300-0500 in ENG. xmsns to WCNA on 17.745, parallel 15.060, 11.975; hrd on 17.765 at 0200-0500 in Chinese ONLY; noted on 15.430 at 1830 over this NEW fq when s-on w-Fr.-nx to Eu., at 2000 hrd in Ar. to Af. (Balbi, Calif.)

COLOMBIA — HJGF, 4.845, R. Bucarmanga, hrd 0300-0310 recently w-greeting in ENG.; regular or special feature (?). Roth, Conn.

CONGO REP.—R. Brazzaville, 15.190, hrd 1940 w-N-E to 1950; ID, rcdgs; closed 1959; sked to Af. 1830-2000; asked for rpts, suggestion. (Ferguson, N.C.)

CURACAO (NETHERLANDS ANTILLES)—NEW fq for R. Curom, Willemsted, is ACTUALLY 9.654M. (Niblack, Ind.) Noted in Calif. to 0330 s-off; at times has terrific QRM frm WDSI, 9.650; hrd in Dutch. (Balbi) Also has SOME ENG. (Niblack)

CZECHOSLOVAKIA—R. Prague, 15.410, hrd recently 0340 w-answers to letters in ENG., closed ENG. 0351; observed also on 9.550; hrd on NEW 11.990 at 0230 when opened w-time pips, march, Czech and ENG. annmcs; fqs were given as 9.550, 11.990, 15.410. (Ferguson, N.C., others)

DOMINICAN REP.—NEW HI2LR, 6.250AV, 1 kW, Apartado 81, Ciudad Trujillo, uses slogan "Radio Deportiva Handicap, alta fidelidad en sonido." Hrd in Sweden 0330-0805. Director is Manuel A. Jimenez H. Sent QSL-ltr, folder; xmtr is Collins; relays 860 kc; old channel was 4.876. (Odd Johansson, Sweden; Sidney Pearce, England, both via GDX-aren, Sweden) Widely reported by many DXH monitors in various parts of the world.

ECUADOR — CORRECT FQ for HCGRI, R. Nacional Espejo, Otavalo, is 3.665M (NOT 3.660 as recently rptd); hrd 0230-0300 w-nice Sp. guitar instru and frequent ID in Sp. by man. (Cox, Dela.)

EGYPT (UAR)—The 4.765 outlet relays Cairo II on 926 kc; both hrd 1915 and later w-excellent sigs in Ar. by man, woman. (DXHCNE)

ENGLAND — Ashcraft, England, informs R. Australia that while the BBC does NOT now use the 75-m. outlet in Fr. and ENG. in Eu. Serv., 3.952 IS USED for Ger. 0445-0515. (RADX)

FIJI—Suva is using NEW XMTR on 6.005; hrd in N.Z. frm arnd 0700 to 1030 s-off. (Cushen, N.Z.)

FINLAND — The DX Program of "DX-ALLIASEN," Sweden, is radiated frm Helsinki EVERY THIRD FRI. 1600 over OIX7, 6.120; DX-ALLIASEN soon will have ITS OWN QSL. QRA for rpts is Hilleby, Sweden. (WRHB)

FRANCE—RTF, 21.620, Paris, vy gud 1300-1315 w-E-N; ID in Fr. at opening, then in ENG.; annces 17.815 as DUAL. (Roth, Conn.) RTF, 11.845, gud 0600-0700 in Ar., REPLACING 11.700, parallel 7.240. (Balbi, Calif.)

GABON—CORRECT FQ for R. Libreville is 4.775 (NOT 5.040). (Cox, Dela.) Hrd in Denmark 1900-2100 c-d JUST LIKE A LOCAL! (DSWC)

GERMANY (EAST—G.D.R.) — DDR, 9.730, Leipzig, operates 0400-0555 s-off in Ar. (Palmer, Wash. State)

GREECE—R. Athens, 11.718, hrd 1900 s-on w-usual IS; gud level in language. (Niblack, Ind.)

GUATEMALA—R. Nacional, TGQA, 11.695M, Quezaltenango, hrd 0030 on this NEW FQ, noted 0030 tune-in to 0330 tune-out; strg level w-typical mx. (Niblack, Ind.) More recently seems to be



This group comprises the staff announcers of Radio Moscow. Left to right are Nikolai Sergeyev, Annette Henkina, Joe Adamov, Annabelle Bucar, Sergei Rudin, and Lucy Pravdina. The picture was furnished by Anatole Kryzhan-ski, Editor of "DX-Club," broadcast in the North American Service of Radio Moscow.

11.700M, at times gives RTF, Paris, "a hard time!" (KBLP) TGJA, 5.990, Guatemala City, hrd 0420 airing N-E when tuned on a TUE.; gud level; NEW FEATURE; said "will return tomorrow." (Niblack, Ind.) Noted "nightly" w-world sports nx in Sp. 0357-0415V, then ENG. world sports nx to 0427; anncr is Jack Richards; says will answer letters; annces as 0400-0430 feature, but DEFINITELY HRD 0357-0427. (Berg, Roth, Conn.)

GUINEA REP.—QSL rcd frm Conakry contains COMPLETE VERIE STATEMENT—name of listener, -date, time, fq varied, location of xmtr, power, and designation of prgm hrd; whole thing is OFFICIALLY STAMPED WITH STN EMBLEM AND IS SIGNED; IRC MUST BE ENCLOSED; QRA is E. A. Toure, Manager of National Broadcasting Serv., Ministry of Interior, State Dept. of Information, Box 117, Conakry, Republic of Guinea; sked was LISTED 0630-0800, 1800-2200, 4.910; 1200-1330, 7.125. (Roth, Conn.)

HAITI — R. Caribe, 6.004A, Port-au-Prince, found in Fr. 0325, only fair level in Ind. (Niblack) 4VWA, 6.155, Cap Haitien, R. Citadelle, hrd 0200-0230 w-Fr., cowboy mx. (Roth, Conn.)

HONDURAS—HRP-1, 5.993.5, San Pedro Sula, noted on a SAT. 0040 w-ENG. LESSON; resumed Sp. 0045; gong, Sp. ID by man, then classical mx 0046; gud level w-slight het via Martinique, 5.995. (Cox, Dela.)

HUNGARY—SUMMER sked of R. Budapest to N. Am. is 0000-0100, 0330-0430, 9.833, 11.910, 15.415; ENG. to Britain is 2000-2030, 2200-2230, 9.833, 11.910. (Duffy, England, via SCDXers)

INDIA—AIR, 4.820, Bhopal, gud level 1500 w-network N-E read by YL anncr. (DXHCNE) AIR, 11.800, New Delhi, hrd 1155-1200, gud w-wx rpt in ENG., ID; 17.760 outlet hrd 0240 in ENG., S9 level. (Niblack, Ind.) VUD, 21.700, observed 0030-0115 in lang, parallel 15.300; ID in ENG. at s-off 0115, fair; 21.620 channel hrd frm 0330 s-on parallel 17.810 in lang to 0415; hrd s-on 0430 w-E-N. (Balbi, Calif.)

INDONESIA—YDP3, LISTED 7.240, Medan, gud arnd 1500-1625 s-off; closes w-"Love Ambon" IS; LISTED 20 kW; suffers strg QRM EARLIER THAN 1500. (Balbi, Calif.) YDF8, 9.868M, Djakarta, noted in Fr. 1708-1717 to Eu., Middle East, Af. (Palmer, Wash. State)



This is Tore Schleuss, Box 69, Vastra Torup, Sweden, who is president of the Swedish Amateur Radio Listeners Club (SARC) and the Goinge DX-Club. Tore is also an official of the Sydsveriges DX-Forbund.

INNER MONGOLIA (CHINA) — R. Heuhot, 6.976.5, hrd in Dela. 2305 w-classical violin mx, in Chinese, weak w-CWQRM; also noted 2210 over 9.093 outlet. (Cox)

IRAN — R. Teheran is fine sig on 7.281 at 1500 in Persian; 79-m. outlet was recently MEASURED 3.802.5 (DOWN fr. previous 3.807); rpts listing 3.780 are INCORRECT, it NEVER operates anywhere near that fq. (DXHCNE)

IVORY COAST — R. Abidjan, 4.940, logged 2315 s-off w-"L. M." (Young, England)

JAPAN — FEN, 11.750, Tokyo, AFRTS, some days now is READABLE thru heavy QRM and QRN arnd 1130-1230 and later; N-E 1200. (KBLP) Sometimes is badly JAMMED! (Roth, Conn.) Hrd 1015 when anncd c-d on 15.257 and 6.160 as 1025; at 1025 hrd on 3.800, 6.160, 11.750, 15.257. NEW TIME for "LISTENER HOUR" feature fr. R. Japan in ECNA beam is SUN. 0115 on 17.855, 15.325; includes 3-4 rpts from U.S.A. listeners. (Balbi, Calif.)

RADIO JAPAN OBSERVES ITS 25TH ANNIVERSARY

This month, Radio Japan is observing the 25th Anniversary of its OVERSEAS SERVICE. There will be MANY SPECIAL BROADCASTS AND FEATURES. Japanese souvenirs will be awarded to listeners who sent in the BEST MOTTOES to describe the "character" of R. Japan.

JORDAN — HJBS, 11.812M, Amman, hrd in Dela. 2100 w-trumpet blasts, Ar. ID, then N-Ar. by man; mx and chanting to 2200 s-off; another day hrd fr. 1855 w-Ar. mx, JAMMING QRM fr. 11.815; still another day noted EARLY as 1610 w-Ar. nx by man. QRM'd then by R. Australia, 11.810 (to 1615A s-off) to WCNA; NOT ON 9.530 yet! (Cox) The 11.812 outlet also observed in Calif. 0400 s-on w!Ar.-N, weak to fair; also noted 1935 in Ar., fair; sked 0400-0700, 1100-1400, 1500-2200 accd to SBC DX b-c. (Balbi)

KENYA — The Coast Regional outlet, 4.965, Mombasa, logged fr. 0335 w-native chants; weak,

bad CW-RTT-QRM; "out" BEFORE 0400. W. Regional Serv., 4.804, Kisumu, hrd fr. 0325 w-religious prgm; ID 0330. (Cox, Dela.) ZHW2, 4.934, Nairobi, poor 2000 s-off w-"GSTQ." (DXHCNE)

LEBANON — R. Beirut is currently on EXACTLY 8.009; noted 1645 w-usual Ar. prgm. (DXHCNE)

IBRA-RADIO PLANS HIGH-POWERED STATION IN LIBERIA

FLASH!—IBRA-RADIO—FORMERLY AT Tangier, MOROCCO—will erect a "big" stn of its own in Liberia, accd to an agreement between the Rev. Lewi Petrus, founder and Director of IBRA-Radio, and President William V. S. Tubman; output is to be 100 kW, and xmsns WILL REACH ALL OF AFRICA and EUROPE. IBRA is arranging w-R. LUXEMBOURG for b-c to the BRITISH ISLES.—(SCDXers)

LIBERIA—The 13-m. fq of ELWA, Monrovia, although ANNC'D as 21.515 is now ACTUALLY 21.535. The 11.823 (NOT 11.825) outlet hrd 0800 s-off in ENG. xmsn; SUN. s-off also 0800; NO E-N ON SUN. 0700. (Balbi, Calif.) Good in W. Va. but hrd more recently s-off 0730; at times has het-QRM. (KBLP) The 4.770A outlet noted w-NEW s-on time 0630; BBC N-E RELAY 0700; hrd recently on 11.823 as EARLY as 0530-0600 in ENG. (Balbi)

LUXEMBOURG—R. Luxembourg, 6.090, hrd 0430-0600 DAILY v-devotions in German, Fr.; organ mx; some ENG. anncmts; QSA4-5 in Minn. (Rowell)

MADAGASCAR — Tananarive hrd in S. Af. REGULARLY, gud str, 7.155, parallel 3.232, 0330 s-on to 0430 s-off, and 1530-1730; Fr. hrd on 9.515 SUN. 0730; REGULAR Fr. xmsn 1500-1930 logged on 5.010, w-7.166 hrd fr. 0330. (Ridgeway via RADX)

MALAYA — R. Malaya's GREEN NETWORK outlet on 7.280 vy strg w-mx, chanting 1505. (Howald, Calif.)

MOROCCO — Rabat, 7.115, all-Ar. prgm hrd 0630-0800, fair level in Calif. (Balbi) Hrd fr. 2030 woman in Ar., fair, ID simply, "Huna Rabat." (Cox, Dela.) R. Marocaine, 7.226A, s-on 0645 in Fr., Ar. prgms. (Balbi)

MOZAMBIQUE—A regional outlet (name of location not distinct but is situated 500 miles NORTH of Lourenco Marques—Ed.) is rptd over RADX by Peter Ridgeway, S. Af., hrd w-LOCAL Pt. prgms on 9.525 at 1630-1930, SUN. 0700-0800. Peter also rpts Emissora do Aereo Clube da Beira hrd on 3.255 s-on 1600 thru 2000; from 1700 is parallel L. M. outlet on 3.250 (Pt. Network); R. Pax, Beira, owned by Franciscan Fathers, hrd frequently at vy gud level on CR7RA, 3.952, at 1625 has tuning sig, ID 1630 s-on, carries Pt. to 1930 s-off. CR7CC, 9.657, L. M., hrd fr. 0525 w-woman in Pt. and w-pop and Pt. mx; ID 0530; gud sig but QRM'd via RFE, 9.655; first time noted on this channel; no sign of 9.620 outlet, says Cox, Dela. DXHCNE reports CR7BU, 4.925, L. M., hrd 1645-1715 in Pt.; mx, commercials; ID 1715.

PAKISTAN — Accd to WRHB and other sources, R. Peshawar now operates on SW 0200-0330, 3.241; 0700-0900, 9.780; 1130-1245, 7.130; 1330-1700, 3.241; sked for R. Dacca is 0000-0200,

5.98, 15.305 (for W. Pakistan), 0530-0630, 9.614, 21.690, 1000-1215, 7.140, 21.690, 1230-1530, 5.970, 11.865. DXHCNE says R. Peshawar, 3.241, faded in arnd 1500 and is readable to 1700 c-d; another Pakistani outlet, presumably Karachi, is hrd on 7.295 at approx the same time. Rowell, Minn., notes Karachi, 11.855, at 0030-0115 to Asia; E-N 0100A. Balbi, Calif., rpts Karachi, 21.590, hrd 0345-0430 s-off in lang.

PERU—R. Nacional del Peru, 15.150A, Lima, hrd 0030 on a WED. w-ENGLISH BY RADIO feature; may be daily (?); bears further checks. (Niblack, Ind.)

PHILIPPINES—The NEW stn hrd from 0930 to 1100 on 7.240 anncs: "This is DZUP, the University of the Philippines, 1.580 on broadcast band, 7.240 on shortwave." Suffers from ham QRM and, frn 1100, also has severe interference frn an Indonesian stn. (Cushen, N.Z.) FEBC, 11.920, Manila, hrd closing 0700A when gave FEBC fqs as 3.345, 6.030, 9.730, 11.855, 11.920, 15.300, 15.385, 17.805, 21.515 (ACTUALLY now 21.535—Ed.); NOT ALL ARE USED AT SAME TIME BUT ALL ARE USED AT SOME TIME DURING DAILY SKED. (Niblack, Ind.) Hrd s-on 2100 over 21.495 w-ENG. Serv., parallel 17.805; also hrd s-on 0400 w-E-N, weak to fair. On April 22, Richard Rowland of FEBC, Manila, informed me: "Yours was the only report re the TEST on 21.495 yet received from the States; I'm not sure how many read us at that time, for the path is mostly daylight; 21 mc would naturally out-perform 17 and 15 mc; certainly, 1 1/4 kW on the 'right' frequency is better than 50 kW on a poor one!" (Balbi, Calif.)

POLAND—R. Warsaw hrd on NEW 11.803A channel (PROBABLY MOVED FRM 11.815 to escape QRM) at 0100 to N. Am. in ENG.; and on NEW 15.275 outlet 0230-0300 in ENG. to N. Am., and over parallel 11.803A at 0330-0400 check. (Sisler, W. Va.)

PORTUGAL—CSA23, 9.635, Lisbon, hrd to N. Am. 0255-0400 s-off; all-Pt. (Palmer, Wash. State) Noted on this channel in Minn. frn arnd 1845; hrd on 11.840 at 1800-0400; beams frn 0100 to U.S.A.-CANADA w-good mx, anncmts in Pt. (Rowell)

SAUDI ARABIA—Djeddah, 11.950, hrd 0442 w-IS; march 0443 and s-on in Ar.; s-on NOW IS LATER, probably due SUN TIME ON WHICH STN OPERATES. (Niblack, Ind.)

SENEGAL (MALI FED.)—R. Mali, 7.210, Dakar, hrd 2310-2330 s-off in all-Fr. session; c-d with Mali Nat. Anth. and drums. (Roth, Conn.) R. Mali, 11.897A, noted 0630-0805, strg; light QRM frn VOA-TANGIER to 0730; Fr.-nx 0715-0730; parallels 7.21, 4.955; is NEW FQ used at this time. (Balbi, Calif.)

SOLOMON ISLANDS (BRT.)—Your SW Ed. just recd this message via airltr frn R. F. Calvert, Broadcasting Office, SOLOMON ISLANDS BROADCASTING SERVICE, Box 115, G.P.O., Honiara, BRITISH SOLOMON ISLANDS—"Thank you very much for your letter of 21st March, containing your fine reception report. I am forwarding a Verification Card by surface mail (not arrived yet—Ed.) and I am very sorry that I am unable to do more. The fact is that we are broadcasting 17 hours a week with so few staff that I find it impossible to supply photographs and generally to develop our overseas publicity. At the present time, as well as my usual managerial duties, I am engineer, announcer, and operator, so

I hope you will appreciate the situation and forgive this short reply to your most interesting letter. With best wishes for your future operations, Yours sincerely."

SUDAN—R. Omdurman, 11.855A, hrd 0415A s-on in Ar., strg at 40 dbs over S9. (Niblack, Ind.)

SUDAN (FR.)—R. Bamako, 4.835A, hrd 1820 w-ID; 1830 in Fr. (Young, England)

SURINAM — AVROS, 15.407M, Paramaribo, noted recently on air 2120 tune-in w-LOCAL prgm in Dutch, classical mx 2130 AFTER ID by woman; WRH60 LISTS s-on 2130. (Cox, Dela.) Hrd recently w-"MORNING" xmsn 0945-1100, including religious service in Dutch; gud sig in Calif. And, more recently, was noted back on old channel of 15.460A at 2130-0330; strg QRM at times; s-off MON. is 0230. (Balbi)

SWITZERLAND—HBN, 5.000, Neuchatel Observatory, Neuenburg, logged 0115-0130 w-time pips, ID, when WWV's tone was OFF; sig fairly gud for abt 15 min and gave WWV "a tough time"! (Cox, Dela.) SUMMER skeds of SBC, Berne, include to W. Australia-Far East, 0900-0945, 21.520, 15.315, 11.865; to UK-Ireland, 1845-2030, 9.545, 7.210. To Eu. SUN. 0610-2240, MON.-SAT. 0515-0700, 17000-1300, 1500-2240, all on 6.165, 9.535, and to Af. (RELAY of Eu. prgms) 0515-0700, 1000-1230, 1630-1745, 21.520, 6.165, 9.535, 1800-2240, 17.784, 6.165, 9.535. This SUMMER SBC has a NEW SAT. FEATURE, "YOUTH FORUM," when four young Swiss discuss topics of interest to young people; a small prize will be sent to all listeners who send in topics WHICH ARE USED in these sessions. (SBC)

SYRIA (UAR) — R. Damascus, 5.677, logged on this NSW FQ arnd 2200. (Young, England)

TAHITI—R. Tahiti, 6.135, Papeete, hrd 0430-0530 DAILY w-Fr. anncmts; Fr. and native mx; QSA4-5 in Minn. (Rowell)

TAIWAN (FORMOSA) — "Voice of Free China," Taipei, hrd on NEW 17.786A at 0130-0145 to N. Am. in ENG. (Niblack, Ind., others) BED57, 15.345, hrd 1700-1800 in Chinese, QRM'd AFTER 1800. BEC, 9.630, noted 1000-1745 in Home Serv.; often has QRM. BED35, 15.480A, noted 0900 s-on to 1740 s-off; BEST AFTER 1500; vy strg w-non-stop mx frn 1600, Latin and Western mx; 1735 Chinese chorus; anncs several stns in Chinese when s-off REGULARLY 1740; also observed 2100 s-on in Chinese, weak to fair. Has ENG. LANG LESSON 1115. (Balbi, Calif.)

TANGANYIKA—A few wks ago, Dar-es-Salaam, 5.050, was excellent 0350 w-Kiswahili vocals, frequent chimes and ID. (Cox, Dela.) Now hrd on 4.785 at 1805-1830. (DSWC)

THAILAND—Bangkok, 15.387, hrd 1315-1400 on a WED. w-native-type mx; vy strg sig; YL anncr in ENG. at s-off. (Rowell, Minn.)

TUNIS — R. Tunis, 6.108A, s-on 0500. Ar. anncmt, then chant; later has Ar. mx; NOT on 9.630 then. (Rowell, Minn.; Cox, Dela.)

TURKEY—The Technical School of Istanbul xmtr made one of its INFREQUENT APPEARANCES RECENTLY when was "found" on 6.285 at 1930 tune-in w-fair level; classical mx; ID in Turkish 2000, gave prgm preview for next bc; s-off 2012; WHY operates so IRREG IS UNKNOWN; is "supposed" to adhere to REGULAR sked! Recently, an UNID TURKISH STN was tuned on 7.650 w-Elvis Presley rcds; anncmt 1400 sounded like "Radio Musaran"; Ankara was



This is perhaps the youngest shortwave DX-Editor in the world. Only 19, Kouji Yamada of Tokyo is DX-Editor for both Radio Japan/NHK and the Japanese Short Wave Club. The JSWC's house organ, "SW DX Guide," is one of the finest publications of its kind; it is entirely in ENGLISH. Headquarters QRA for the JSWC is Box 29, Sendai, Japan.

mentioned several times; prgms featured American and Turkish mx to 1800, when left air AFTER played "Colonel Bogey March"; excellent sig at all times. WHO? (DXCHNE)

UNION OF S. AF.—SABC, 9.523, hrd on a SAT. 0600 w-E-N; 0615 stock market quotations; 0630 mx; all-ENG. (Saylor, Va.)

U.S.A.—SUMMER skeds of WRUL, New York, in addition to those listed last month, include Pt. Brazil (DAILY) 0000-0030, 17.755, 17.845, 11.830, and Sp. (DAILY) 0030-0200, 17.755, 17.845, 15.380, 11.830.

USSR—R. Tashkent, 11.690, w-ENG. 1200-1230, 1400-1430 DAILY, now ANNCD PARALLEL in 31-m. band of 9.600 (there IS a het noted in W. Va. on 9.600 VOA "powerhouse" 1200-1230—KBLP); must have "dropped" the 7.100 outlet. (Roth, Conn.; Ferguson, N.C.; KBLP) RELAY of Moscow on 9.500 to N. Am. frn 2300 onwards is NOT via Petropavlovsk OR Magadan as some report; IS MUCH TOO STRONG FOR EITHER; more likely is Vilnius, LITHUANIA. (Cox, Dela.) Moscow's Eu. Serv. hrd on 9.810 at 1631-1730 Danish, 1739-1800 Dutch. Magadan, 9.500M, hrd frn "suspected" s-on 1800 (ACTUALLY HRD FRM 1803) to fade-out 2058 in Russian; 1930 ANNCD Khabarovsk but is NOT REALLY, but DOES RELAY Khabarovsk frn abt an hr after s-on and later goes into Moscow RELAYS. Khabarovsk, 9.750M, hrd frn 2100-2140 fade-out in Russian; believe was RELAYING Moscow frn 2130. (Palmer, Wash. State)

VATICAN—HVJ, 15.120, hrd 1500-1510A w-N-E. (Roth, Conn.)

YUGOSLAVIA—R. Beograd, 6.100, noted 2115 in native. (Rowell, Minn.) Hrd on 7.200, fair in Ar. 0515. (Howald, Calif.) Recently observed on

9.505 at 2338 w-ENG. excerpts frn recent speech by Pres. Tito; strg, but QRM'd by Brazilian on 9.504.5. (Cox, Dela.)

PLEASE SEND ANY QUESTIONS ON SW EQUIPMENT DIRECT TO DXH's SWBC TECHNICAL CONSULTANT—A. R. Niblack, 420 Shelby St., Vincennes, Indiana, U.S.A. Thanks!—K. B.

WT PRESS TIME FLASHES!—BRAZIL—A NEW SW stn of Radio Nacional now operates frn Brazilia, the new capital inaugurated recently; offers a pennant to listeners accdg to ltr from R. Nacional de Brasilia. (Jan Tuner, Nassjo, Sweden, via SCDXers) FQ may be 11.720. (Skoog, R. Sweden) The Gov't prgm "Agencia Nacional," at 2230, is now b-c frn Brasilia instead of Rio de Janeiro; the 7.935, 10.220, and 14.680 fqs HAVE NOT BEEN HRD OF LATE. (Jones, England, via SCDXers) . . . CHINA—R. Peking now b-c in Ger. 1800-1830, 2000-2030 on 9.457, 11.650, 15.060. (SCDXers) Prgms are hrd in ENG. 1200-1230 on 11.705A (Wilt, Ohio); DAILY xmsns in ENG. to India-SE Asia 1400-1500 are now on 11.965, 15.410, 17.810, at 1600-1700 on 12.010, 15.060, 17.810, 21.010; to Australasia 0730-0830, 0930-1030, 15.060, 17.825. (Duffy, England, via SCDXers) Peking's 17.685A channel noted with what sounds like setting-up exercises 2345-0015 by woman in Chinese; also noted on this channel in ENG. xmsn 1600-1700, parallel 15.060, 12.010, and also hrd there arnd 1030 in Chinese. (Balbi, Calif.) . . . CONGO REP.—Brazzaville, 9.625, noted parallel 11.725 w-E-N 0115-0130. (Balbi, Calif.) Has no E-N now 2245, but HAS BEEN HRD 1715-1730 in ENG. on 11.725; has "Africa Day by Day" feature 1930, 9.545. (SCDXers) . . . FIJI—VRH6, 5.980, Suva, hrd 0730-0845; faded-in arnd 0730; ID as "Radio Suva"; E-N and commentary 0745-0800; sig weak to fair, hard to read; 250 watts; strg QRM AFTER 0830, NOT READABLE. (Balbi, Calif.) Ltr frn P. L. Littin, Supervising Technician, Fiji Broadcasting Commission, Suva, says NEW xmtr started a series of TESTS w-fqs and aerial designs on April 1; VRH6, 6.005, runs 250 watts and is being fed into a dipole antenna; in late April, VRH5, 5.980, was brought into operation also w-250 watts; at first was using a dipole antenna on this one, but shortly should be using an 8-element vertical-incidence array to TEST high-angle radiation xmsn. BOTH VRH5, VRH6 are on during NORMAL B-C HOURS—but TEST xmsns are subject to c-d without notice. "These TESTS forshadow the FBC's ultimate expansion into the use of high-powered transmitters in the 49-m. band. Further reports from you will continue to be appreciated," Mr. Littin told Cushen. The latter says Suva has BBC news 0700, ABC news 0900 . . . HOLLAND—Direct via airltr frn E. van Eldik, Engineering Services, R. Nederland, Hilversum, comes word that sked for "DX-REPORT" feature as frn June 1 is TUE. 1043 to Australia, 21.480, 17.775; 1443 to Af., S. Asia, 25.610, 21.565; 2158 to Eu., N. Am., 15.220, 11.730; WED. 0213 to N. Am., 11.755, 6.025; is now extended to a half-hour show called "DX-JUKEBOX." . . . INDONESIA—Although not listed in WRH60, R. Angkatan Udara, Jjakarta, is still on 11.943; noted w-Indonesian melodies, man in native, fair level, but w-QSB. (Cox, Dela.) This

(continued on inside back cover)

An Open Letter to SW Stations

from your DXH Shortwave Editor

DEAR BROADCASTER:

Interest in SWL'g is increasing DAILY. This is evidenced particularly in recent weeks by the tremendous response to DXH and by the heavy mail received by your DXH Shortwave Editor.

YOUR COOPERATION IS GREATLY APPRECIATED! As requested in DXH, many of you have added my name to your mailing lists TO RECEIVE SCHEDULES (Via airmail, please!), CHANGES, FUTURE PLANS, et cetera. Some of you have already sent me feature materials concerning your station. Please continue to send me such information and I, in turn, shall be happy to include notices of changes in your activities not only in DXH but also in the DXH FLASH SHEET which goes out TWICE A MONTH TO (1) DX Radio Editors and (2) Radio Club Editors THROUGHOUT THE WORLD.

And, if you haven't already done so, please send me FEATURE MATERIALS concerning your station (history, present operations, future plans) along with GLOSSY PRINT PHOTOS OF YOUR INSTALLATIONS (transmitters, studios, antennas) and of LEADING PERSONALITIES. I NEED THIS INFORMATION for my files and for POSSIBLE USE IN DXH! The DXH SW address: Ken Boord, 948 Stewartstown Road, Morgantown, West Virginia, U.S.A.

Yes, indeed, most of you are to be commended highly for the fine job you are doing! However, I have received certain "COMPLAINTS" from SWLs concerning a few "LAXITIES" on the part of some SW broadcasters that I feel are of sufficient importance to YOU as well as the SWL to call them to your attention:

1. IDENTIFICATION.

Some of you SELDOM IDENTIFY (especially in ENGLISH), and some that do give an INCOMPLETE ID. (The increased use of ENGLISH for ID purposes is noted from some stations and this is indeed WELCOMED BY THE WORLD SW FRATERNITY, believe me!) PLEASE IF FULLY AND MORE OFTEN—especially in the ENGLISH LANGUAGE!

Some ISWBC stations are STILL LAX IN ANNOUNCING THE SPECIFIC FREQUENCY/S on which they operate. (Unfortunately, some of the WORST OFFENDERS in this respect are among the world's LARGEST BROADCAST ORGANIZATIONS!)

The mere "mention" of a METER BAND is nothing short of ABSOLUTELY FRUSTRATING to most SWLs! SPECIFIC FREQUENCY/S should be stated BY EVERY SW STATION WHEN IT IDENTIFIES!

As cited by my good friend, Ans Boice of Connecticut, among those stations that DO GIVE FULL ID and FREQUENCIES (preferably in megacycles) are SBC, SWITZERLAND; RADIO AUSTRALIA; RADIO SWEDEN; RADIO NORWAY; LRA, ARGENTINA; RADIO JAPAN; RADIO TASHKENT, USSR; RADIO WARSAW; RADIO BUDAPEST; ALL INDIA RADIO;

DEUTSCHE WELLE, GERMANY; RADIO NEDERLAND; RADIO PAKISTAN; RADIO NATIONALE BELGE, BRUSSELS; "THE VOICE OF ISRAEL"; HCJB; "THE VOICE OF INDONESIA"; "THE VOICE OF FREE CHINA," TAIWAN (FORMOSA), and others. Congratulations to ALL OF YOU WHO DO!

SW DXers consider it IMPERATIVE that when a station LEAVES THE AIR that it ID COMPLETELY—and that it state when it WILL RETURN TO THE AIR (in GMT—NOT in local time), and on what SPECIFIC FREQUENCY/S.

To those stations that DO NOT NOW GIVE FULL ID and/or SPECIFIC FREQUENCY/S, we plead: "Please, go thou and do likewise!"

2. SCHEDULES SHOULD BE KEPT UP TO DATE.

ONLY CORRECT, UP-TO-THE-MINUTE schedules should ever be sent out by SW broadcasters. "Stale," out-of-date schedules are WORSE THAN NONE!

3. VERIFICATIONS.

Some so-called QSLs sent out by SW broadcasters are NOT "verifications" at all—but are merely "acknowledgements." Just as EVERY SWL should INVARIABLY send ONLY A DETAILED RECEPTION REPORT (covering at least 15 minutes of broadcasting time, PREFERABLY MORE—listing FREQUENCY—MC—HEARD, DATE OF RECEPTION, TIME OF RECEPTION in GMT, never just in "local" time!—PLUS PROGRAM CONTENT, SIGNAL CHARACTERISTICS SUCH AS STRENGTH, QSB, QRM, QRN, AND SO ON), on the other hand, the SW BROADCASTER SHOULD DEFINITELY "CONFIRM" or "VERIFY" SPECIFICALLY FOR THE EXACT FREQUENCY REPORTED AND BEING VERIFIED—set forth the DATE OF RECEPTION, the TIME OF RECEPTION (in GMT)—and EACH QSL—whether card or letter—should be PROPERLY SIGNED by a duly-authorized official of the station.

As a fine example of a WELL-WORDED, COMPLETE, "TRUE VERIFICATION," let me quote this DEFINITE "CONFIRMATION"—as received by my good SWL-neighbor, Joe B. Sisler of Morgantown just recently from "The Voice of Israel," Israel Broadcasting Service, P. O. Box 1082, Jerusalem, Israel:

"Thank you for your report on the reception of The Voice of Israel's shortwave station 4XB31 on frequency 9009 kc, 33.3 meters, from 2030 GMT to 2102 GMT on 5-3-60. Your report has been checked with our records and is correct in every detail. We, therefore, are very pleased to verify your report of reception. Best wishes from Israel." For good measure, on the face of the attractive QSL card, this additional message had been TYPED: "Thank you. We would be glad to receive further reports."

Information LISTED ON QSL CARDS and/or LETTERS should be KEPT UP TO DATE BY THE SW BROADCASTER.

Finally, when asking for reception reports, PLEASE give the simplest QRA possible—yet PRACTICAL. And if an IRC is required as RETURN POSTAGE, this should be so stated OVER THE AIR.

Thanks again for YOUR COOPERATION . . . and the best of luck to EACH OF YOU!

KEN BOORD

SHORTWAVE STATION REPORT

DXing Horizons Salutes . . . BBC, "England's Voice"

I can think of no better way to approach this "SALUTE" to the British Broadcasting Corporation (BBC) than by trying to clear up—once and for all—the perennial question: "Does the BBC verify?"

The answer is definitely: "NO."

But that does not mean that the BBC is disinterested in reception reports. Quite to the contrary, the BBC welcomes correspondence from overseas listeners, and letters are valued both as an indication of an interest taken in the BBC and as a source of program material. Correspondence can be conducted in any language and the BBC is grateful for any comments or suggestions for programs that the listeners may like to make. Letters should be addressed to BBC Overseas Services, Bush House, London, W.C.2, England. The BBC's valuable *Overseas Services QUARTERLY FOLDER* is available free to listeners on request from the address just cited.

The BBC's engineers are always glad to receive listeners' reports on reception as they are a great help in selecting the best frequencies for YOUR particular area. A special form has been devised to assist listeners in reporting reception information in a simple and concise way, and supplies of this form are available on request. And the BBC's engineers are always glad to help in cases of difficult reception.

ALL REPORTS ARE ACKNOWLEDGED, and should include the wavelength or frequency of transmission, date, time, and, if possible, details of any interference. The BBC's engineers also like to know what sort of antenna and receiver the listener is using. Reception reports should be sent direct to Senior Superintendent Engineer, External Broadcasting, BBC, Bush House, London, W.C.2, England.

The present ACKNOWLEDGEMENT CARD being sent out by the BBC reads as follows: "Thank you for your request for verification. The appropriate finding is indicated thus (X): () Your report was in accordance with our published schedule. () You probably heard one of our transmissions but the information you give does not entirely confirm

THIS
IS
LONDON



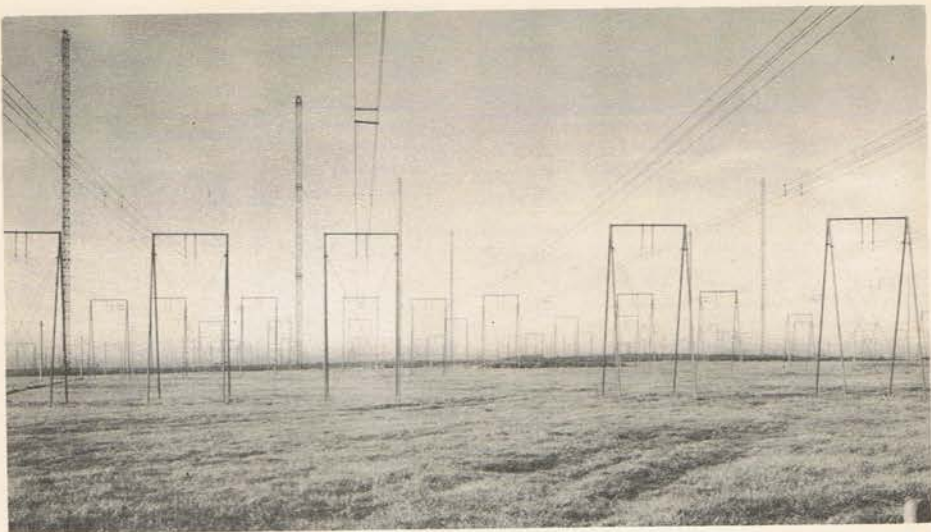
This is the ACKNOWLEDGEMENT CARD now being sent out by the BBC. It is NOT a verification card. "The BBC never has and still does not verify reception reports," says a high official of that organization.

this. () This may have been a rebroadcast of our programme by another organization.
() Your reception does not seem to agree with any of our transmissions at the time you give. We hope you will continue to enjoy our programmes. Best Wishes from Senior Superintendent Engineer, External Broadcasting." The card bears the facsimile signature of the official just referred to.

The reverse side of the card shows the wording "BBC" and "This Is London," superimposed on a fine photograph of the Parliament Clock Tower (*BIG BEN*, whose familiar tone is known around the world via the BBC, is the great hour bell attached to the "Westminster Clock"; *BIG BEN* is nine feet in diameter and weighs 13½ tons; the "voice" of *BIG BEN* is broadcast in the External Services some 80 times a day).

In a letter just received by your SW Editor, E. A. Beaumont of the BBC comments:

"You will no doubt recollect that the wording of the previous cards was to the effect that we were unable to verify that the reporter had received our transmission direct because of the widespread relaying of BBC programmes by



Antennas—antennas everywhere... as far as the eye can see. A "portion" of the BBC General Overseas Service Antenna System, seemingly stretching to the horizon. The four wire feeder systems are supported by the smaller towers. The larger towers support the actual antennas, "Sterba Curtains" mostly.

stations in other parts of the world. You will see that we limit ourselves to *confirming* that the report was *in accordance with our published schedules* and this is clearly not a 'verification' in the normally accepted sense of the term. Your impression that the BBC never has and still does not verify reception reports is correct."

Weekly publications of the BBC include "Radio Times," "The Listener," "London Calling," "Hier spricht London," and "London Calling Europe." In addition, "The BBC Handbook" is issued annually.

"This is London calling. Here is the News." These words, in English and 35 other languages, are heard in Europe (both sides of the Iron Curtain), in Asia, Africa, the Americas, Australia, New Zealand, and on the high seas. It is the External Services News Department which prepares these bulletins—about 140 of them every 24 hours—at Bush House in London. The aim of the Bush House news staff is to present a day-to-day picture of events that is factual, as accurate, and as impartial as they can make it. There is abundant evidence that this policy has won the confidence of listeners all over the world. It is not only BBC policy—it is national policy.

As a final tribute to the BBC, here are the stated aims and purposes of its External Services as defined by the Director General—aims and purposes that millions know have been and will continue to be fulfilled graciously:

SCHEDULE OF BBC PROGRAMS FOR THE WESTERN HEMISPHERE

SPECIAL PROGRAMS—For the Falkland Islands (SUN. only) — 2200-2240, 17.860, 15.435. For the West Indies—2315-2345, 17.810, 15.390, 15.070. **NORTH AMERICAN SERVICE**—For Canada, USA, Mexico, Brt. Honduras—1100-1115, 15.310; 1415-1815, 17.810; 1600-1815, 21.675. **GENERAL OVERSEAS SERVICE** — For West Indies, Central America, South America (north of Amazon, including Peru)—2000-2245, 21.550; 2115-2315, 17.810; 2215-2315, 15.070; 2300-2315, 15.390; 2345-0300, 15.070; 0015-0300, 11.750; 0200-0300, 9.525. For South Georgia—2215-0015, 0015-0045 (MON. to SAT.), 12.095. For South America (south of Amazon, excluding Peru)—2000-0015, 17.870; 2115-0300, 15.360; 2300-0300, 12.040. For Canada, USA, Mexico — 2115-2245, 17.715; 2115-0015, 15.310; 2215-0030, 11.780; 0015-0300, 9.825.

"To state the truth with as much exactitude and sincerity as it is given to human beings to achieve; to elucidate objectively the world situation and the thoughts and actions of this country, and to build a closer understanding between peoples by providing interest, information, and entertainment, each in due measure according to the needs of the many audiences."—KEN BOORD

SWL'g is a National Pastime . . .

IN THE LAND OF THE MIDNIGHT SUN

By
Sven Elfving, Solgardsgatan 15,
Ornskoldsvik, SWEDEN

With
Ken Board, DXH SW Editor

PART ONE of Three

It has long been an acknowledged fact that we Swedes are the most shortwave radio-minded folks in the whole world! That shortwave listening is one of Sweden's favorite national pastimes is, perhaps, putting it rather mildly!

Here in Sweden, we now have *about 200 organized radio clubs and thousands of active SWLs*. Most of these DXers listen to overseas stations regularly and send them reception reports. Many of our radio clubs issue their own house organs. These range from mimeographed 2-3 page papers to elaborately printed, magazine-type periodicals with attractive illustrations and valuable tables and charts.

In their club papers, Swedish radio club members list details of "rare" DX stations heard, give tips for music fans, tell about their latest verifications, and relate other interesting offtimes even amusing—matters.

Among some of the more outstanding radio clubs in Sweden are SVERIGES RADIO-KLUBB (SWEDISH RADIO CLUB), Box 5083, Stockholm 5, SWEDEN (issues "DX-RADIO"); GOTEBORGS DX-CLUB, Box 17061, Gothenburg, SWEDEN (issues "GDX-aren"); MALMO KORTVAGS KLUBB, Post-fack 7026, Malmo, SWEDEN (issues "MALMO DX-aren"); SYDSVERIGES DX-FORBUND (SWEDISH ALLROUND RADIO CLUB, Box 69, Vastra Torup, SWEDEN (issues "ETERAKTUELLT"); GAVLEBORGS DX-FORBUND, Prastgarden, Stromsbro, SWEDEN (issues "THE VOICE OF TEL-LUS"); VASTERBOTTENS DX-FORBUND, Box 19, Skelleftea, SWEDEN (issues "SUB-STANCIAL"); BERGSLAGENS RADIO-CLUB, Bondskogsvagen 39, Lindesberg, SWEDEN (issues "NIGHT OWL"), and others.

One of the principal promoters of SWL'g



Sven Elfving, Solardsgatan 15, Ornskoldsvik, SWEDEN, the author, is shown at his attractive Listening Post, looking over an issue of "DXing HORIZONS." Sven is now using a HALLICRAFTERS SX-71 (1953)—plus a 2-tube preselector. His antenna system includes a V-beam of 180 meters (approximately 590 feet, and which consists of two separate longwires—oriented in two different directions—with each leg about 180 meters (approximately 590 feet) long—which provides excellent reception for him on all bands.

in Sweden is ARNE SKOOG, who has long been DX Editor for Radio Sweden (SVERIGES RADIO, Swedish Broadcasting Corporation). His weekly DX program—"Sweden Calling DX'ers!"—goes on the air from the Stockholm studios of Radio Sweden at 1230, 1400, 1445, 1615, 1745, 1945, 2030, and 2330 GMT EVERY MON. and 0145, 0315 GMT EVERY TUE.—during the LAST PART of the ENGLISH half-hour of the respective transmissions from Radio Sweden. Mr. Skoog has contributed widely to shortwave radio and other publications both at home and abroad—and his name has long since become a by-word in SWL'g circles the world around.

Personally, I am relatively "new" at this shortwave "game"—but already I have found it truly fascinating, entertaining, AND educational! As a 20-year-old student, it is a real thrill and a challenge to me to tune to SW stations in far-away parts of the world, to hear about the life and customs of the people who live there, and to contrast these with our own way of living here in Scandinavia.

It is delightful, too, to listen to native music from distant corners of the earth.

In addition, I find this hobby is an excellent way to learn various "foreign" languages.

I began shortwave listening in 1955—and since then it has, indeed, been MY VERY "BEST" HOBBY!

I live in Ornskoldsvik, a small town of 7,000 people, located on the East Coast of Sweden, 400 miles north of our capital, Stockholm, and not far from the Arctic Circle. ("Ornskold" is the family name of the founder of our town, and "vik" means "bay.")

My home is situated on about the highest spot in this town—part of which is located on a small mountain—and, therefore, I have somewhat of a natural advantage, with regard to location, in logging signals from weak and rarely-heard shortwave broadcasters in many sections of the world. My location is relatively free of man-made QRN, and the results I have achieved to date have been most gratifying.

For example, on the shortwave amateur (ham) bands, I have logged 285 countries, with verifications from 265 of these. (I believe this is one of the three "top" scores in the world in this division of shortwave listening.)

Of the 161 countries that I have logged on the international shortwave bands, 142 countries have been verified. (The two "best" ISWBC DXers here in Sweden have around 155 countries verified.)

(In Sweden, we often "count" the number of VERIFIED COUNTRIES by including also countries verified on the medium-wave band; in this category, I have logged 164 countries, and my latest number of countries verified stands at 147.)

Medium-wave countries logged number approximately 110, but I do not know how many I have actually verified. However, I do have a very good score with regard to listening to medium-wave stations in the United States. I have verified 85 medium-wave stations in 33 States, which may be a record for a European listener (?). My medium-wave loggings include many 250-watters in the United States, and upwards of 24 verifications attest that my reports were the "first from Europe" (many "first from Sweden" ONLY).

I do not have an up-to-date count on my veries—but it is close to 2,000 on the BC bands.

I am using an American-made receiver—a HALLICRAFTERS SX-71 (1953)—plus a 2-tube preselector. I also have had an older HALLICRAFTERS S-20R receiver (1942), and an AGA-1771 receiver (which is one of

the most famous Swedish-made sets and which has 11 tubes and 5 shortwave bands; these receivers were made only during 1941-45).

The antenna system here is a V-beam of 180 meters (approximately 590 feet), and which consists of two separate longwires—oriented in two different directions—with each leg about 180 meters (approximately 590 feet) long—which provides excellent reception for me on all bands.

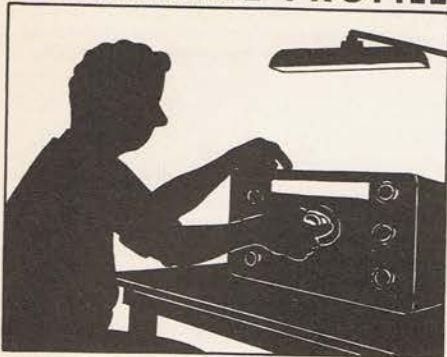
At times, Swedish DXers—although known for their thorough reporting, find it difficult to get QSLs from certain stations—just like other SWLs in the United States and in other parts of the world! At first, when a new station comes on the air, it seems to receive so many reports from listeners—all asking for QSLs—that it doesn't have time to verify all reports. Then, many of the reports are poor, or lack sufficient information—and, eventually, the station may lose its confidence in reports and, incidentally, in reporters! Then, too, there are certain stations which transmit only for their local population, and which are not at all interested in getting reports from distant SWLs. And, unfortunately, these stations are oftentimes the "rarest" ones—the truly DX "catches"! It is from such stations that QSLs are most highly prized by the serious SWL!

I sincerely believe that the greatest pleasure from this hobby is to receive the letters or cards of verification which arrive from all points of the world! Listeners are ever trying to get as many countries verified as possible—and often widespread competitions are held by radio clubs in this connection.

In general, I think, shortwave broadcasting station personnel are to be congratulated on their par excellence cooperation with the SWL. Many of them send out special colored cards (QSLs); others send out fine letters in which they confirm that the reception report received was checked with the station's log, that the details given were correct, and they often list the date that the logging was made, and give the exact frequency or frequencies reported on, along with information about the station—perhaps its history, current schedule, power, and other pertinent facts which are truly welcomed by the reporter.

This is definitely commendable and, I feel certain, is greatly appreciated by SWLs all over the world just as it is by DXers here in Sweden!
(to be continued)

SHORTWAVE PROFILE



Mr. Arthur T. Cushen
Invercargill, New Zealand

"His sight may be poor . . . BUT THERE'S NO BETTER LISTENER" . . .

That's what a reporter for the Southland DAILY NEWS (New Zealand) wrote some years ago about our good friend and long-time cooperator . . . Arthur T. (Art) Cushen of 212 Earn St., Invercargill, New Zealand.

Some people live in a little world of their own because they want to . . . others because they have to. But choice and necessity combined for Art. The little world of his own choosing was his radio. On it he has probably listened to more stations than any other man

alive. He has ranged over whole continents by merely twisting a few knobs!

Some years ago, Art's sight deteriorated badly. He faced a "new world." There was a big job of adjustment ahead. But he tackled the job determinedly and cheerfully—and he has been most successful.

Along with his wonderful wife, Ralda, the radio has been a big help. For of all the millions of people in the world who listen to radio, he is one of the acknowledged masters.

Few other men know so much about the location of stations, the call signs, or their power. Only a handful of other listeners who have also burned midnight oil know so well what frequencies give best reception, or that on the humble broadcast band tiny stations blinking out their signals in the night can be heard thousands of miles away.

Being able to identify these stations accurately is truly an art. And this "Down Under" DXer has really "got the touch."

But it can be much more than that—it can also be a public service. And so it HAS BEEN for this courageous New Zealander. For if ranging the broadcast and shortwave bands these days brings some measure of comfort to Art Cushen, not so many years ago it was the means of bringing much greater comfort to thousands of people he has never seen.

Art was in charge of the NEW ZEALAND RADIO DX LEAGUE which monitored prisoner-of-war messages in World War II—



Miss Esang Lee (left) from Taegu, Korea, and Miss Fatema Shams from Teheran, Iran, listen to tape recordings of news from home at Arthur T. Cushen's Listening Post in his home in Invercargill, New Zealand. Known the world over as one of the truly "great" radio listeners (both on BCB and SWBC), Art was awarded the "Coronation Medal" from Her Majesty the Queen (Elizabeth II) for his public service in relaying thousands of prisoner-of-war messages to loved ones throughout the world—during both World War II and the Korean War.

and later in the Korean War. To remind him of this today, he has folio after folio of letters that he received from parents, wives, and other relatives—yes, even sweethearts—of servicemen—grateful that agonizing months of doubt were over. For it was from him they they learned that their loved ones were not dead, but were alive and well in prison camps.

With other Invercargill DXers, he spent countless hours listening to those enemy broadcasts about prisoners. During the Korean war, the list of prisoners he compiled by radio was nearly as large as that of the United Nations, which had hundreds of channels through which to collect information.

Whenever he could, Art Cushen gave a "personal service" to parents and wives in Invercargill. People got to know during the war when they opened their front door to him that he had some news about their son or husband. Often it was the first time they knew he had been captured.

The climax of this work came when Art was awarded the "Coronation Medal" from Her Majesty the Queen (Elizabeth II).

Today, Art has literally thousands of verifications from stations both near and far. In fact, as of early this year, his verifications stood at 2,305 on SW, 1,410 on BCB—from 172 countries—making more than 3,700 commercial BC and SW veries in all.

Art now uses four receivers—of which the latest is an EDDYSTONE (7-tuber). He also has two tape recorders and a great deal of other gear.

But let's allow him to tell the rest of the story:

"My sight is below the world standard these days—judged to be blind or partially-sighted (one-tenth of normal sight). I am unable to read except in bright sunlight, and then only with the aid of a magnifying glass. So I tape all my reception of DX stations, then play them back and type the data directly onto report forms. Ralda dictates letters and so forth onto tape for me to answer later.

"I use braille for reference more than ever now. I do all my own typing. Since I have no sight at all in one eye, I have many writing aids — a braille machine (typewriter), and other facilities here to help me—such as braille clocks and so on.

"Ralda reads all my incoming mail to me, corrects all outgoing mail, and does a hundred and one other jobs that keep things moving here. With four newspaper and magazine columns (on radio-TV subjects) to write, we do

keep pretty busy hunting up interesting items. We have no family.

"My thrills on shortwave are numerous. I take pride in my reception of the *Danish Brigade Radio*, low-powered in Europe, along with Bechuanaland and Martinique in the early 40s as two other 'tough' catches. My 'best' verification is hard to determine—there are so many of them. CKFX, 6.080, Vancouver, British Columbia, Canada, 10 watts; CR4AA, 5.895, Cape Verde, 400 watts; CR7AA, 6.137, Mozambique, 250 watts, and CQM, 7.948, Pt. Guinea, 1 kW, are among my top catches.

"My biggest 'scoop' was hearing a report on the death of the Pope two minutes after it happened and then flashing this to a local newspaper which issued a Special Edition."

Art is Public Relations Officer of the NEW ZEALAND RADIO DX LEAGUE and handles all inquiries for his club—these run into several hundred each year—on all types of radio subjects. He writes a radio page in the NEW ZEALAND LISTENER, one for RADIO TV AND HOBBIES (Sydney, N.S.W., Australia), and one for his local newspaper—among other things.

Art has been official monitor in the Pacific Area for the BBC, London, for many years—and also monitors for other distant broadcasters.

Finally, here's a word about his latest "project." . . . To be able to listen to broadcasts from their own countries, after many months of absence, has been the unforgettable experience that Art has provided two overseas nurses who are working in Invercargill. The girls are Miss Fateme Shams, Iran, and Miss Esang Lee, Korea. Tape recordings made by Arthur Cushen now enable the girls to listen to news from home, music, and sporting features which their families would be tuned to back home.

Such is the Wonderful World of Arthur T. Cushen! . . . —KEN BOORD

FREE MAGAZINES — EVEN TO AFGHANISTAN!

DXing Horizons continues its policy of offering a free sample copy magazine to anyone—anywhere who holds an interest in things TV-FM or Shortwave. If you know of a fellow enthusiast who has not yet received a free sample copy, let us know . . . we do the rest. Send name(s), address(es) to "Attention Free Magazines, P. O. Box 3150, Modesto, California.

SHORTWAVE BROADCAST

Don't forget the DXH SW Newscast for June, on June 18 at 2100 GMT, and 2345 GMT over WRUL, the Voice of Freedom, New York City.

A PLEDGE . . . and . . . a PLEA

THIS IS A SAMPLE COPY MAGAZINE. It has been sent to you FOR your enlightenment. We believe you need this magazine . . . not just occasionally . . . but each month.

Here is our problem. The reaction of several thousand "already paid subscribers" to our format, and weak signal TV-FM coverage tells us DXing Horizons is a magazine vitally needed. We feel the general consensus is for more technical research on our part, with more experimental data covering "antennas, low noise amplifiers, receiver modifications, propagation material, and (surprisingly enough) more in the way of Product Reports." And readers are apparently pleased with our on the spot reporting from Washington, and other weak signal news sources.

A PLEDGE

To show our good intentions, and as an indication that we really do want to provide weak signal enthusiasts with a publication they can feel is vital, needed, and timely, we have shifted emphasis to a *quasi technical status*. This month's publication reflects this change. All future issues will continue to bring weak signal readers the very latest in experimental-fast breaking news.

But . . . *We must have your support to continue to publish this high quality publication.* Your paid subscription support means more advertising interest in DXH, and in turn, a bigger magazine with more information each issue. We do wish to express public thanks to the following for their support of DXH. Remember, please, when you buy products, these firms are interested enough in your business-hobby (depending on your viewpoint) to support the weak signal industry publication—DXing Horizons.

Allied Radio Corporation
Simplicity Tool Company (SITCO)
Amperex Electron Tube Corporation
Barry Electronics Corporation
Benco Television Associates (Canada)
Blonder Tongue
Channel Master Corporation

R. L. Drake Company
Eitel Electronics
The Hallicrafters Company
Mid America Relay Systems
Raytheon International
Technical Appliance Corporation (TACO)
Winegard Company

Now . . . here is what we have lined up for the July-August issues of DXing Horizons. Don't put off subscribing another day . . . be an integral part of the growth of the weak signal industry. Support its official voice . . . DXing Horizons.

IN THE JULY DXH

1. The world's first long range TV receiver . . . a complete "AMPEREX CONVERSION," construction details of the 6922-1N149 tuner, 6922, 6EJ7-6EJ7-6EJ7-6EJ7 I.F. strip.
2. PRODUCT REPORT . . . Winegard Transcoupler Yagis.
3. INDUSTRY SURVEY . . . "UHF—Who Wants It?"
4. PRODUCT REPORT . . . Gonset Mobile FM Converter and Halo Antenna.
5. PROJECT SCATTER . . . 1,000 Miles on Channel Two, Progress Report.
6. SUN SPOT LOW . . . What's Ahead at the Bottom of the Sun Spot Cycle . . . What Affects will it Have on Ionospheric DX for VHF?
7. RUGGEDIZED YAGI ARRAYS (Part Two) . . . Stacking versus Patterns.

IN THE AUGUST DXH

1. Long Range TV Receiver (Part Two).
2. Ruggedized Yagi Arrays (Part Three).
3. PRODUCT REPORT . . . Blonder Tongue (NEW) Low Noise UHF Converter, BTU-2S.
4. PRODUCT REPORT . . . Channel Master Model 425 Parabolic UHF Antenna.
5. Project Scatter (Part Two) . . . PROGRESS REPORT.
6. And several more reviews still in the planning stages.

And now under construction . . . A PARAMETRIC AMPLIFIER FOR UHF TV.

AND A PLEA

A PLEA FOR SUPPORT . . . subscription support so that we can keep our laboratory working overtime . . . to benefit you! Support to allow DXH to continue to provide you with monthly weak signal news, product reports, and technical articles.

But most of all . . . support yourself . . . a subscription brings you news—fast, first and factual. And it says "I am ready to stand behind DXH because it is a vital part of the weak signal world."

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SUBSCRIBE TODAY . . . DXing HORIZONS NEEDS YOUR SUPPORT!

AT FADE-OUT

FLASH!—HOLLAND—VRON, R. Veronica, Dutch commercial ("pirate") stn has STARTED TESTS on 1,620 kc MW on board a ship off Scheveningen; DAILY 0900-1130, 1300-1500, 1900-2330; 1 kW (later 2 kW). (GDX-aren, Sweden, others) Eventually, also will have xmsns on SW and ultra-SW. (Otte, Bussum, Holland, via SCDXers)

AFGHANISTAN—NEW fq of 9.630 is rptd for R Kabul, hrd by Henningsson 1810-1930 in Ar., Fr., ENG. (DX-RADIO, Sweden) ANDORRA—Acddg to Friberg, Andorradio is hrd on NEW fq of 7.290 to c-d 2300. (DX-RADIO, Sweden) **ARGENTINA**—LRA33, 15.345, hrd in ENG. for Eu. 2300-2400; E-N 2305A, 2356A. (Hovey, Wisc., Sundstrom, N.J.) **BECHUANALAND**—Mafeking is HRD in S. Af. on ONLY 5.900 at 1100-1200, 1700-1930. Belive does NOT operate on 8.223. (Ridgeway via RADX) **BRAZIL**—R. Rural Brasileira, ZY232, 15.105, Rio de Janeiro, noted 2145 w-ID; 2158 w-4 chimes, s-off 2159, gud level in Britain. (Young) **CAMBODIA**—R. Cambodia has ENG. 1330, Fr. 1345 on NEW FQ 9.700 in F. Serv. (DW) **CANADA**—Gud time to try for CBUX, 6.160, Vancouver, B.C., is arnd 0715-0745; LISTED 500 w. (Oestreich, Wash. State) **CHILE**—CE970, 9.700, Santiago, hrd 0020 w-mx, annmcs in Sp., during aurora display WHEN R. SOFIA, BULGARIA, WAS INAUDIBLE. CE1180, 12.00, noted 0550 w-mx, annmcs in Sp. (Rowell, Minn.) **CHINA**—Stn believed Kunming, Yunnan Province, 10.019M, hrd arnd 1545 w-Chinese drama; APPARENTLY MOVED here frm LISTED 10.002. H. Serv. of R. Peking, 11.290, 1615-1620 in Chinese; drama. (Palmer, Wash. State) R. Peking hrd on 11.820 in oriental langs to 1158 s-off; s-on again 1200 w-IS, ENG. nx, commentary. (Schrank, Wisc.) **CLANDESTINE**—"R. Liberacion de Venezuela" noted on 6.088A arnd 2330-0130, other hrs irreg; believe operates from Dominican Rep.; (Teeling, N.J.) Seems CLOSER 6.093A now and is observed PARALLEL on 9.510A. (Rowell, Minn., Stark, Texas, D. Cooper, S.C., Roth, Conn., others) **CONGO REP.**—For E-N frm R. Brazzaville, tune 15.190 at 1930 (excellent) and 11.725 at 0115. (KBLP, others) The 15.190 outlet noted to Af. 1830-2200, Fr. 2000-2200, N-Fr. 2045; 11.725 hrd 1600 s-on to 1730; opens w-N-Fr.; E-N 0115, E-N about Af. 0215 now; s-off 0230; hrd on 9.625 at 2300-0100; ANNCED 11.725, 9.625 at 2300. (Balbi, Calif.) ASKS FOR RPTS ON 15.190 OUTLET, suggestions. (Duffy, England, via SCDXers) **CUBA**—Acddg to a U.S. news wkl—the Cuban Gov't has anned the construction of a NEW HIGH-POWERED INTERNATIONAL STATION to b-c in several langs. (Riggs, Calif.) TEST xmsn of R. Corp. of Cuba anned in Sp. and ENG. hrd on 10.785 at 0610-0630. (Oestreich, Wash. State) **DAHOMY**—R. Cotonou, 4.875, MOVED here frm 4.870, hrd 2100-2200 s-off w-non-stop dance mx; c-d w-"L. M." (Jensen, Denmark, via DSWC) **DOMINICAN REP.**—R. Santiago, 6.310, now has "nitely" prgm of N. Am. rcdgs w-requests 0000-0030. (Berg, Conn.) QSL just rcd lists call H14F. (Boice, Conn.) **EL SALVADOR**—YSS, 9.555, San Salvador hrd in Sp. AND ENG. 0500 (Howald,

Calif.) **ETHIOPIA**—Acddg to "LUTHERAN STANDARD;" Lutherans in 13 countries have contributed or pledged nearly \$480,000 toward the All-African Christian Radio Station which the LUTHERAN WORLD FEDERATION plans to establish and operate in Ethiopia. (England, Ohio) **FIIJI**—NEW 250-w. VRH5, 5.980, Suva, logged 0830-0855 w-nice mx prgm, fair in Conn. UNTIL "BLOCKED" 0855 by carrier of R. Demarra, Brt. Guiana. (Roth) ALL-ENG.; noted in Calif. w-BBC nx 0700, wx 0707, shipping news, prgm review SAT., ABC nx 0900; hrd DAILY since 4-27; NO SIGN OF VRH6, 6.005, AT ANY TIME! (Balbi) **GHANA**—FOUR 100-kw SW xmters are to be installed at Tema, near Accra, by Marconi Wireless Telegraph Co. Ltd.; 22 CURTAIN-TYPE antennas will be constructed to permit WORLD-WIDE COVERAGE. (Legge, Va., via WRHB) **GUATEMALA**—TGQB, R. Nacional, 11.700M, Quezaltenango, hrd 0255 recently w-pop mx; Sp.; TBT is arnd 16 hrs or more daily; hrd early as 1330, and UNTIL 0402A. Had not been hrd for some yrs. (Rowell, Minn.) s-off w-Nat. Anth. (Ferguson, N.C.) Has gud marimba mx 2330 SUN. and at other times. (Riggs, Calif.) URGENTLY WANTS RPTS. (Wingartz, Mexico, via WRHB) QRA is TGBQ, R. Nacional, 5a Av. Norte No. 26, Quezaltenango, Guatemala. (WRHB60) **HAITI**—For info on the progress being made on NEW INSTALLATIONS at 4VEH, tune to "BULLETIN BOARD," carried now at NEW TIME SUN. 0300, REPEATED MON. 1045, 6.002, 9.773 (latter is "best bet," acddg to Saylor, Va.); acddg to annmct, the NEW 170-ft. antenna tower was erected in one day (10 hrs) on May 6; installation of the TWO NEW 2.5-kw SW and the NEW 5-kw MW xmt should begin soon. (KBLP) "DX CORNER" is now at NEW TIME of 0315 TUE. (Balbi, Calif.) **HUNGARY**—SUMMER sked in ENG. to N. Am. is 0000-0100, 0330-0430, 11.910, 9.833, 15.415. (Roth, Conn.) **INDIA**—AIR, 17.845 (ANNCED), Delhi, hrd 0030 after IS, s-on, E-N to SE Asia; N-Burmese 0040; left air abruptly 0050. (Boice, Conn.) **ISRAEL**—ENG. frm Tel Aviv (RELAYED frm Jerusalem) is now 2015-2035, 9.009. (JSWC) **IVORY COAST**—R. Abidjan, 7.215, hrd to 2300 when s-off w-"L. M." (Boice, Conn.) **JAPAN**—In connection w-Centennial of the signing of the Japan-U.S. Treaty of Commerce and Amity (May 23, 1860), R. Japan plans a SPECIAL b-c; DE-TAILS WILL BE ANNCED IN LISTENER'S HOUR as well as in ADVANCE PRGM brochure. **KOREA (SO.)**—HLK27, 17.895 REPLACING HLK8, 15.410, noted 0730-0830 to Hawaii, poor to fair; HLK41, 15.125, HLK42, 17.890, observed 0530-0630 to WCNA, REPLACING 14.410, 11.925; gud level in Calif. HLK5, 9.640, now has ENG. ONE HOUR EARLIER—0930-1000. (Balbi) **KUWAIT**—Dave Thomas, Ohio, highly prizes QSL recently rcd frm R. Kuwait and rightly so. Congrats, Dave! R. Kuwait is TRULY a "rare" DX "catch"! Incidentally, several yrs ago Dave rcd the "first verie for USA reception." Is his R. Kuwait verie another "first"?—Ed. LEWARD IS.—R. Antigua, 3.255, hrd 2258 w-IS; ID 2300, followed by pop rcdgs to 2345 when became unreadable. (NNRC) **LIBERIA**—R. Liberia, Monrovia, hrd on 3.255A in ENG. to 2345 s-off; E-N 2145. (Algeus, Sweden, Elkundh, Finland, via SCDXers) At press time, ELWA was using ONLY 21.535 (poor), 11.986 (good) for wkly beam to U.S.A. WED.

0100-0345A; however, 15.180 MIGHT BE BROUGHT INTO USE; E-N is now 0200-0215. (Balbi, Calif.) MONACO—BE ON THE ALERT FOR TRANS-WORLD RADIO (former "VOICE OF TANGIER," Morocco), scheduled to GO ON THE AIR IN JUNE over a NEW 100-kW xmtr from Monte Carlo. Fqs are NOT YET KNOWN BUT PROBABLY WILL BE THOSE FORMERLY USED BY "VT." Some dozen langs are to be used. MONGOLIA (OUTER CHINA)—R. Ulan-Bator sent QSL via airmail; fqs are 6.345, 10.335, DAILY 2300-0200, 0800-1500; 15 kW each; uses doubled rhombic aerial BEAMED WEST; a NEW STN IS PROJECTED FOR END OF 1960; ENG. SERV. IS TO START IN THE NEAR FUTURE. (Lagesjo via DSWC) MOZAMBIQUE—Emissora do Aero Clube da Beira noted on NEW 2.865 channel opening 1600 w-same prgm as on 3.255, but frn 1630 each outlet carries SEPARATE PRGMS IN PT.; 2.865 c-d 2030; 3.255 c-d NOT HRD but believed 2000. (Ridgeway, S. Af. via RADX) NICARAGUA — D. Cooper, S.C., recently noted an ANNC'D Managua stn on 1.775A arnd 2200—EVIDENTLY TESTING; played rcdgs w-ID between each; POSSIBLY HARMONIC OF A CB OUTLET? PT. GUINEA—QOM, 7.948A, Bissau, is sked DAILY 2100-2300 and SUN. 1300-1400; 500 w. (WILL BE INCREASED TO 1 KW SOON). RESERVE fqs are 3.974, 5.838, accdg to verie-folder rcd. (Jones, England, Plunkett, England, Hederstrom, Sweden, via SCDXers) RHODESIA—A NEW SW STN is Zomba radiating a THIRD PRGM (D) on 3.955, 2.5 kW, 1600-1900. (WRHB) SENEGAL—R. Senegal, 4.893, Dakar, noted 0530-0705 w-gud sig. (Holbrook, Md.) SUDAN — R. Omdurman, 5.039, recently REMAINED ON AIR TO 2400 (REGULAR C-D IS 2100); vy gud sig in S. Af. frn arnd 1600. (Ridgeway via RADX) SURINAM — AT PRESS TIME, Balbi, Calif., FLASHED THAT PZC, Paramaribo, IS AGAIN BACK ON 15.460A frn 15.405A, 2130-0330 (SUN. s-off 0230). At times features beautiful organ mx, points out White, Ont., Canada. THAILAND—Bangkok, 15.387, noted in Minn. 1315-1400 s-off (by YL in ENG.). (Rowell) TOGO — R. Lome, 5.036 (another day hrd on 5.047) noted 2126-2304 c-d w-dance mx; N-Fr. 2230; s-off w-three short kizansi-notes. (Jensen, Denmark, via DSWC) TURKEY — R. Ankara NOW HAS E-N for Eu. 1815-1830, 7.285. (Lindberg, Sweden, via WRHB, others) (If not found on 7.285, TRY 15.160 where MAY HAVE MOVED FOR SUMMER.—Ed.) UNID—"Oggi nel Mondo" ("The World Today") hrd w-vy gud str 1830-1900, followed by Greek lang on 9.715. (Monti, Italy, via SCDXers) WHO? U.S.A.—WITHIN A FEW WEEKS, THE NEW INTERNATIONAL B-C STN, KFRN, Dallas, Texas, should be TESTING on 15.180 w-50 kW, PROBABLY ARND 2200-0400; while prgms WILL BE BEAMED ON L. AM., SHOULD BE HRD ALSO IN MANY OTHER PARTS OF THE WORLD; this commercial stn will try to offer programming NOT USUALLY FOUND ON BCB—in particular SPECIAL RELIGIOUS, EDUCATIONAL, AND GOOD MUSICAL PRGMS. Is owned by GLOBAL BROADCASTING CO., 2663 Spring Vale Lane, Dallas, Texas, U.S.A. Accdg to Anatole Kryzhan-ski, Editor of DX-CLUB, his DX Prgm goes on the air now SECOND and THIRD MON. (GMT) 2350, 0250 for ECNA and 0445, 0645 to WCNA.

DXing HORIZONS SHORTWAVE NEWSCAST

With apologies all around, your Publisher wishes to assure readers and listeners that the June SW Newscast originating from our editorial offices will contain substantially fresher news, in greater detail, than the broadcast aired by WRUL May 21. Mark June 18-19 on your calendar for the DXing Horizons Shortwave Newscast, over WRUL, at 2100 GMT in the European-African beam on frequencies of 15.380, 17.750, and 21.460, to be repeated in the South American beam at 2345 GMT June 19 on frequencies of 11.830, 15.380 and 17.755. Let us know how reception is in your area!

SUNSPOT COUNT FOR APRIL '60

As heard in May from HER4, 9.535, Berne, Switzerland, here is the Sunspot Count for April—1-140; 2-143; 3-152; 4-162; 5-156; 6-143; 7-123; 8-112; 9-98; 10-103; 11-107; 12-136; 13-128; 14-133; 15-162; 16-159; 17-110; 18-116; 19-128; 20-116 21-123; 22-108; 23-99; 24-96; 25-95; 26-96; 27-86; 28-99; 29-82; 30-100. APRIL AVERAGE — 120.4. PREDICTED—MAY 110; JUNE 107; JULY 104; AUG. 101; SEPT. 98; OCT. 95.—Grady C. Ferguson, North Carolina

DEADLINE — ALL TOO MANY RPTS ARE ARRIVING TOO LATE for the "WT" Section. SPACE in "AT FADE-OUT" is quite limited (MANY FB RPTS HAD TO BE OMITTED THIS MONTH! SORRY!) PLEASE send YOUR TOP-NOTCH DX ITEMS TO REACH ME BY THE FIRST DAY OF ANY MONTH FOR "WT" SECTION. And send only "RARE CATCHES" to reach me by JULY 11 for AUGUST DXH. Thanks for your cooperation! QRA is Ken Boord, 948 Stewartstown Road, Morgantown, West Virginia, U.S.A. See YOU next month?... 73... K.B.

FLASH!—Rptd VRH5, 5.980, May 9 and verie was rcd May 16 frn P. L. Litton, Supervising Technician, Fiji Broadcasting Commission, P. O. Box 334, Suva, Fiji, who said "this is the first report on this particular transmitter from the U.S.A. since it commenced TEST transmissions on the 27th April 1960. . . This is part of a series of tests the Commission is carrying out with frequencies and aerial designs, before ultimately going onto 10 kW. Thanks once again for your report; our official confirmation card follows." (Roth, Conn.)

PROPAGATION FORECAST

The Propagation Review section will be continued in July as a special report on "Sunspots for the 60's," part one, appears.

A major solar flare, followed by disrupted SW conditions, occurred April 28th. The blackout lasted until May 2 in most areas, followed by another eruption and more blackout May 6-9. Other total or partial blackout days were May 11, 14 and 16.

SW conditions should remain unsettled through June with blackout conditions and poor reception expected May 27-31, June 2-3, 7, 10, 12 and 21-24.

THE WORLD AT A TWIRL

(continued from page 23)

is the **INDONESIAN AIR FORCE STATION**—Ed. . . **LIBERIA**—NEW SUMMER wkly sked of ELWA, Monrovia, to U.S.A. is WED. 0100-0345 A on 11.986, 15.180A, 21.535 (although MAY STILL ANNCE 21.515); using NEW IS of African "talking" drums; by now, should be TESTING 15-mc. fq to Congo; now uses 31 Af. langs, including Hausa; E-N -150. (Balbi, Calif.; Dalton, Sisler, W. Va., others) . . . **POLAND**—ENG. skeds fr R. Warsaw to N. Am. for SUMMER (to October 15) are 1130-1200, 1230-1300, 1300-1330, 17.800, 15.275, 15.120; 0030-0100, 0100-0130, 230-0300, 0300-0330, 15.275, 11.815, 9.775. (Boice, Conn.) ENG. for Eu. is now 1830-1900, 9.540; 1930-2000, 7.125, 11.905; 2030-2100, 9.775, 11.955; 2130-2200, 9.540, 11.905. R. Harcerska, operated by the Polish Pathfinders Union, b-c 1100-1800 DAILY EXCEPT MON. on 6.850, 250 watts; Polish ONLY; "Thirty Minutes of Rhythm" devoted to jazz-fans on Sun.; rpts are answered by ltr and should be sent to Rozglosnia Harcerska, Redakcja, Konepnickiej 6, Warsaw, Poland. (SCDXers) . . . **SAUDI ARABIA**—The Ar. prgm on 11.950 is hrd 1500-1540, 1600-1640, 1700A-2040 (or 2240); the Indonesia prgm is hrd on same fq arnd 1240. (Tabuchi, Japan, via WRHB) . . . **SURINAM**—Balbi, Calif., flashes that PZC, Paramaribo, is now BACK on 15.405 frm 15.460, probably due to strg QRM from Deutsche Welle, Cologne, Germany, which beams to Af. on 15.405 to 2215. . . . **TAIWAN (FORMOSA)**—ENG. xmsn 1005 s-on to 1050 s-off noted on 7.234 (although is still ANNCD 7.230), 15.345, 11.785, 17.890 now; E-N 1015 EXCEPT SUN.; the week's HIGHLIGHTS are presented 1035 SAT.; has Japanese 1050-1120; at 1130 s-on in Chinese on 7.234, 9.575, 15.345, 17.785, 17.890, all gud in Calif. EXCEPT 17.890 which is often badly QRM'd; 11.815 IS NOT IN USE AT ALL NOW! (Balbi) . . . **URUGUAY**—During the South American WINTER (SUMMER IN U.S.A.), R. Sarandi operates its SW outlets as follows—CXA60, 15.387, 1200-1800; CXA68, 11.885, 1900-2200; CXA71, 9.520, 2300-0400. (Uthoff, Germany, via WRHB) . . . **VIETNAM (NORTH)**—The Home Serv. of R. Haoi works on 4.730, 7.020, 9.765, 11.760, 15.020 at 2230-0145 (SUN. 0330), 0400-0715, 0930-1600 (times approx); OVERSEAS prgms are carried on 9.840, 11.840 w-ENG. 0800-0855 (at DICTATION SPEED), 1330-1400, and 1500-1545; Fr. 1230-1300. (Tabuchi, Japan, via WRHB) . . . **VIETNAM (SOUTH)**—The latest sked of R. VTVN, Saigon, includes 6.116, 6.165, 9.754, 2245-0115, 0115-0230, 0400-0630, 0900-1600; 7.265, 2300-0115, 0115-0230, 0430-0715, 0715-0815, 1000-1600; ENG. 0015-0045, 0615-0700, 1345-1500. A mx prgm is b-c 1530-1600; 9.620, 2300-0215, 0430-0815, 1000-1600. (Adolfsson, Sweden, via WRHB) . . . **YUGOSLAVIA**—R. Beograd, 9.505, noted on a SUN. at 1830 in native, some mx. (Rowell, Minn.)

FROM BEHIND THE "IRON CURTAIN," DXH's Correspondent in LATVIA, I. Veigner, FLASHES that the NEW 11.765 outlet of Radio Berlin-International, GERMANY (EAST—G. D.R.), is NOT located at Leipzig as has been reported, but at Nauen, 40 KM (25 miles) WEST of Berlin; complete RBI location list is 6.115, 5 kW, Konigsww; 7.300, 5 kW, Sterhausen; 9.730, 50 kW, Leipzig, and 11.765 (NEW), 50 kW, Nauen.

TV REPORTING (continued from page 15)

NOTE: Sporadic E skip occurring while these showers are in progress will possibly greatly enhance the chance for high band meteor burst reception.

SPORADIC E SKIP

E skip season is of course with us. Almost daily reception on channels 2-6 of stations 500-1,500 miles is likely at many eastern and mid-western distant locations. Es reception, characterized by its usual sudden appearance, deep fades and strong signals, is already doing a great deal for the DXer's log book. The best hours of the day continue to be as follows:

June 1-June 10	0630-1000 LST
	1130-1330 LST
	1630-2200 LST
	1830-2200 LST
June 10-June 23	0700-1300 LST
	1500-1700 LST
	1900-2300 LST
June 24-July 10	0700-0900 LST
	1000-1300 LST
	1400-1600 LST
	1800-2200 LST

TROPOSPHERIC DX

The emphasis on ground wave DX now swings to the midwest and Great Lakes states. DXers from South Dakota east into western New York and Pennsylvania should keep a wary eye on improving fringe area reception on both high and low band channels during the first week in June, and again (with special prowess) the last week in June.

DXers from Minnesota south into Oklahoma concurrently should watch the high and lows in the early morning and evening hours for signs of improving ground wave reception.

DXH RED HOT PREDICTION DAYS

Better have the camera filled with film, the pencils sharpened and log books ready for action on the following dates . . . considered by our prediction staff to be "red hot" with TV and FM potential!

June 3, 5, 8, 10, 12, 16, 19, 25-29. July 1, 4, 7-9.

LAST MINUTE FLASH REPORT

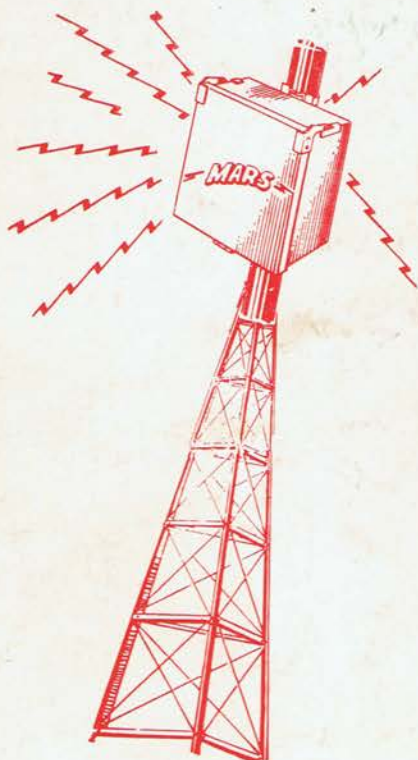
As this copy was being prepared, an excellent E skip opening broke over the western half of the nation with the M.U.F. into the FM region (90-94 megacycles) for nearly two hours the evening of May 22. First noted as weak E skip around 1900 EST on channel 2, KNOP-2 North Platt, Nebraska strengthened and remained viewable as late as 2400 EST. Other stations viewed in the interim, KMTV-3 (Omaha), WOW-6 (Omaha), KHPL-6 (Hayes Center), KOA-4 (Denver), KTVR-2 (Denver), KFBC-5 Cheyenne and others not identified.

REPORT FORMS AVAILABLE

TV DXers may report to this column either on their own report forms, or on report forms we gladly supply free of charge. Our forms are scientifically prepared, and when returned, carefully analyzed for detailed DX logging data. Send a post card with your name and address for free report forms, to "R-Forms, P. O. Box 3150, Modesto, California." Remember the deadlines for July . . . June 18 in Modesto!

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