



Worldradio

WD4USA Smash at Demo National Convention

(From "Florida Skip")-- Special events station WD4USA got underway on 20 SSB for general contacts on July 10th from Baron's Slack Bar, Lincoln Road Mall, Miami Beach.

A tri-band beam and a 40-80 inverted Vee went up four days earlier by Regis Kramer, W4ILE; George Nehiley, WB4ONR; Donald Murray, K4MFA, and Andy Clark, W4IYT.

Robert Patten, W4OZF, of Hollywood, Florida nailed down the first contact with WD4USA followed by many hundreds all over the globe.

Thousands of delegates and non-delegates visited the display, and were amazed that they could send messages to the folks back home free. They were waiting in line. We had 16 visiting amateurs. Six-hundred and thirty-eight messages were originated.

Most traffic was sent to Joe Poerschke, WB4HIS via 147.0 MHz FM, where tapes were cut and sent via RTTY to Mary Burke, W3CUL, and Alfred Burke, W3VR, in Morton, Pa., for relay.

Poerschke reported all traffic moved smoothly at 60 wpm, and the three daily skeds kept the hook clear. All Florida and 4th regional traffic was released via Florida sectional nets, QFN, Tropical, Midday and others.

Due to many live demonstrations nearby, and with the hippies, yuppies, zippies and Army helicopters, most operators were under some pressure while making general contacts on 20 and 40 CW and SSB. Six-hundred and ninety-three contacts were made. All the amateurs were very polite and patient.

A total of 257 man-hours went into the project. A special QSL will be sent to all who contacted WD4USA provided a self-addressed stamped envelope is included, to Box 501, Miami Springs, FL 33166.

During the Republican National Convention WR4USA will be in operation from the same location. Dates will be August 21st through the 24th with frequencies: Daytime-7172 CW and 7273 SSB, Nighttime-14137 SSB and 14072 CW.

WD4USA and WR4USA are sponsored by the Dade County Amateur Radio Public Service Corps.

Participating in the support of WD4USA were: Saul Cohen, K4ACJ; Dana Bauer, WB4CFM; J. C. Arenburg, W4DZA; Steven Miles, WB4EIZ; Robert Denton, WB4FGL; Raymond Mc Avoy, W4GOG; Elizabeth Clark, W4GGQ; Bayard Coolidge, WA2HHO; Frank Haas, WB4HKP; Philip Vitrano, WB4INC; David Shalloway, WA4JYB; Bradley Mac Kay, WB4OYA; Scott Kenward, WB4-



Don Murray, K4FAM, (ex-ET1FMA) keeps 20 CW hot from WD4USA, Miami Beach, Florida, July 10 - 14, 1972 (Photos by "Florida Skip")



(l.-r.) David Shalloway, WA4JYB, on 2 meter FM, George Nehiley, WB4ONR, on 20 CW and Robert Denton, WB4FGL, collecting free messages from the public on Lincoln Mall.



WB4FGL helping WA4JYB passing traffic on 2 meter FM to WB4HIS who relayed on 20 RTTY to W3-CUL. WB4ONR grinding out 20 CW contacts for WPX hounds.



PTH; Rosser Pryor, WB4PWD; Charles Baer, W4ROA; Steven Kaplan, WB4SJQ; Lewis Fogel, WB4TTG; Hugh Unger, WB4UHN; Fred Schael, W4WGU; WN4ZVH; Mrs. Poerschke and Mrs. Fogel.



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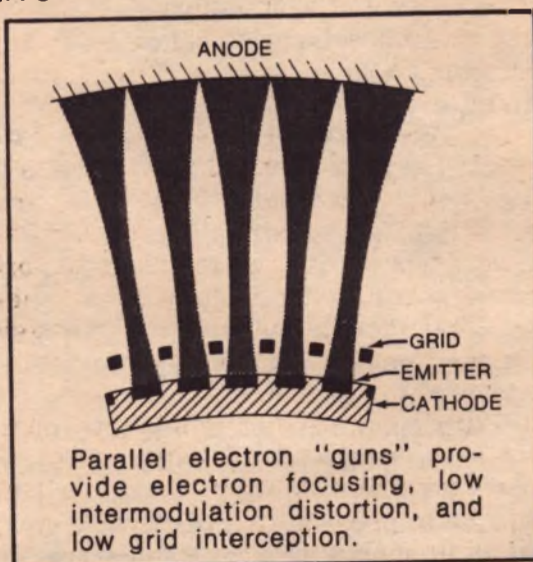
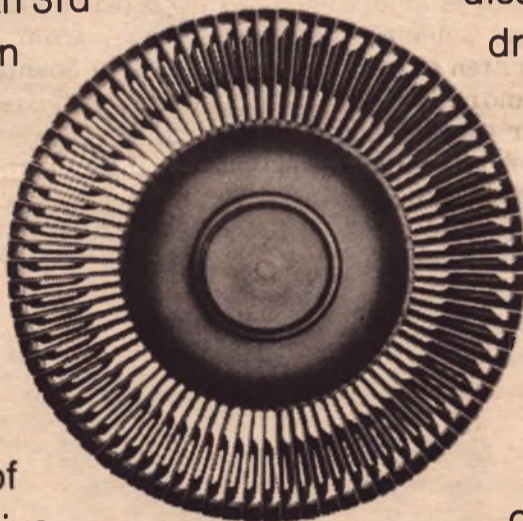
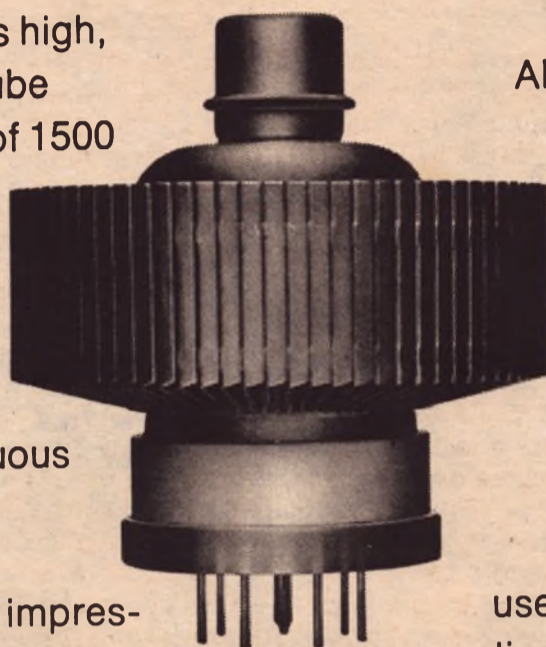
EIMAC's new 8877 high-mu triode delivers over 1500 watts output at 220 MHz. (2000 watts output at 30 MHz is easy)

On your right is the new, rugged, ceramic/metal 8877 high-mu power triode by EIMAC. Another state-of-the-art tube. Only three and one-half inches high, this low-profile, heavy-duty tube has a plate dissipation rating of 1500 watts, a maximum plate voltage rating of 4000 and a maximum plate current rating of one ampere. In the HF region, typically, the 8877 coasts along at a continuous duty level of 3500 watts PEP input. A peak drive signal of only 65 watts is required. This impressive power gain is achieved with 3rd order intermodulation distortion products — 38 decibels below one tone of a two equal-tone drive signal.

This magnificent power triode is rated at full input to 250 MHz. The low impedance grid structure is terminated in a contact ring about the base of the tube, permitting very effective intrastage isolation to be achieved up to the outer frequency limit of operation. The close tolerance grid, moreover, is composed of aligned, rectangular bars to achieve maximum grid dissipation and controlled transconductance. This aligned grid, plus the

EIMAC segmented, self-focusing cathode provide low grid interception and the low grid drive requirement; both of paramount importance in the VHF region. Although primarily designed for superlative linear amplifier service demanding low intermodulation distortion, the 8877's high efficiency permits effective operation as a class C power amplifier or oscillator, or as a plate modulated amplifier. The zero bias characteristic is useful for these services, as plate dissipation is held to a safe level if drive power fails, up to an anode potential of 3 kV.

The sophisticated circuit connoisseur will appreciate the many advantages of this newly developed power tube. Write for detailed information. And remember — the 8877 is another example of EIMAC's ability to provide tomorrow's power tube today. For additional information on this or other products, contact EIMAC, 301 Industrial Way, San Carlos, California 94070. Phone (415) 592-1221 (or call the nearest Varian/EIMAC Electron Tube and Device Group Sales Office.)



Eimac
division
varian



Newsfront



IMRA Handles Emergency At Sea

Ed Duncan, WA4KPH/HKQ, called into the IMRA Traffic Net at 0140 GMT, June 10 and reported that a 20 ft. fishing vessel with three men aboard was overdue on a 25 mile trip from San Andres Island to Southwest Key. The boat left the island on the 6th of June, carrying limited supplies and with an ETA of one hour. On the 9th of June, the vessel was still unaccounted for.

Warren Mulhall, WA2BPV, net control station at the time, decided to handle the emergency on frequency and the Coast Guard was alerted in New York and Miami. Neither Coast Guard station had a radio operator on duty at the time, but they were able to listen in on the net to verify the last known location of the missing boat and they were able to get enough information to activate the Sea Rescue Squad at Albrook Air Force Base in the Canal Zone. On June 12th, IMRA received word from Albrook AFB that the three men had been found and that all were safe.

PHIL PECTOR, W9LDX

Phil, raconteur, bon vivant, simpatico world traveler is returning to the U. S. after 15 years. He would like his many friends to know he can be reached at this address: c/o E. P. Rolek, 26 Old Yellow Springs Rd., Apt. 14, Fairborn, Ohio 45324.

SCOTT'S QSL BUREAU

The QSL Bureau has closed. A phone call from Scott Freile, WA5UHR, told that he was going in the Navy. His mother wrote that anyone having credit on their books may write for it c/o Jane Friele, 1510 Lynnview, Houston, Texas 77055. She said they are in the process of returning all money to the DX Association members. Gus, W4BPD, in the DXers magazine relayed a plea from Joe, WØEFK, that checks be returned to her as a financial hardship may be presented. Scott did make a valiant effort to be of real service to the DX fraternity and it seems now that some reciprocal action would be fair.

Thanks to CQ magazine

who in their July, 1972 issue said, in part:

"...we cannot recall ever seeing a publication do a better job of putting amateur radio's worth into proper perspective than **WORLD RADIO**... After reading it, we'd be surprised if you didn't agree that a copy belongs on the desk of every legislator in the U. S. each month, for no continuing publication tells our story to the layman better. It costs \$5 per year and is well worth the money..."

(**WORLD RADIO** would like to publicly express our appreciation for the above to Dick Ross, K2MGA, and the group at CQ.)



Official Bulletin #383 July 22, 1972

The Board of Directors of the American Radio Relay League at its second 1972 meeting in Hartford, Conn. July 20 and 21 adopted specific goals and objectives proposed by its ad hoc committee on long range planning. Detailed position responsibilities were delineated for officers and the general manager, to ensure continued efficient utilization of all skills and talents.

The standing committee structure will be revised, effective January 1973, to fit more logically the five general areas of league organization, which are international affairs, management and finance, membership affairs, and legal and regulatory.

The Board registered its opposition to any proposal which would make call sign changes compulsory. It directed the General Counsel to continue to seek from FCC written exams made available in Spanish, a more liberal exam schedule, and credit for examination elements already passed.

A technical symposium will be planned for 1973 in Washington, D. C. Funds were set aside for a professional film team to travel quickly to disaster areas and record amateur performance in emergency communications.

A QSL card competition will be held seeking an appropriate design to commemorate the 200th year of the United States, and IARU societies will be invited to participate in amateur activities and events during the anniversary year 1976. An ARRL display unit will be made available to each division for use at conventions and hamfests, augmenting the present booth exhibit.

The 1974 National Convention was affirmed for New York City, with dates of July 19-21. The Board assigned its present committees a number of study tasks, with reports and recommendations to be forthcoming prior to the January annual meeting. They include the subjects of division reapportionment, purchase of portable repeaters for field use in disasters, an advisory committee on emergency communications, minimum affiliation requirements for clubs, a simple beginner booklet, changes in presentation of minutes in QST, and an intensive membership drive. Minutes of the meeting will appear in September QST.



Washington Report:

FCC



Amateur Licensees Are Warned Against Improper Use of Their Stations in Handling Commercial Traffic--

(August 4, 1972) The Commission has received recent evidence that a number of amateur licensees are engaged in handling business communications directly and indirectly involved in commercial operations. These communications are conducted on both the High Frequency bands, and in particular, of late, the VHF bands. In the latter, manually operated phone-patch equipment usually is utilized. In the latter, repeaters using "auto-patch" equipment have been used on a widespread basis for interconnection with the commercial telephone system. There has been tremendous growth of amateur repeater stations over the past few years. This has enabled amateur VHF communication from automobiles over a large area of the country. An individual in a moving vehicle capable of accessing a repeater equipped for "auto-patch" operation, may easily communicate with practically anyone having a telephone.

Use of interconnection equipment is not prohibited in Part 97 of the Rules. Automatic "auto-patch" equipment is being used increasingly by VHF repeater stations. There is evidence that this type of operation encourages the handling of commercial communications, which are not permissible in the Amateur Service. The Commission is greatly concerned that such operation may seriously jeopardize the evolutionary development of the Amateur Service in accordance with its "charter" contained in Section 97.1 of the rules. Augmentation of the value of the Amateur Service as a "voluntary non-commercial communication service" must not be brought into question as a result of amateurs' handling commercial traffic.

(More FCC and ARRL news on page 45)

SHRINE

Joe Harrant, W9FLA, operated a station on 20 and 15 meters from the Shrine-ennial Imperial Council Session in Dallas, Texas. Joe has a special QSL card which will be mailed to all contacts during the convention.

SWAN ELECTRONICS

Second annual Swan open house in Oceanside, CA October 7-8. Plant tour and \$3,000 worth of prizes.



Worldradio

WD4USA Smash at Demo National Convention

Florida "Florida 400" - Special event stations were active in the state during the convention on July 28-30. The convention was held at the Sheraton Hotel, Miami Beach. A special event station, WD4USA, was active on 40 meters and 20 meters. The station was operated by Bob E. Smith, W6GJZ, of Houston, Texas. The station was active on 40 meters and 20 meters. The station was active on 40 meters and 20 meters.



MIAMI BEACH, FLA. MEMORIAL TO THE 400th ANNIVERSARY OF THE FOUNDING OF MIAMI BEACH, FLA. (Photo by "Florida 400")

Thousands of delegates and exhibitors attended the convention, and many reported that they had had a very successful time. The convention was held at the Sheraton Hotel, Miami Beach. A special event station, WD4USA, was active on 40 meters and 20 meters. The station was operated by Bob E. Smith, W6GJZ, of Houston, Texas. The station was active on 40 meters and 20 meters.

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Around the World

Worldradio

"the people paper"

INFORMATION

WORLD RADIO is published monthly by Armond M. Noble, WB6AUH, and friends. Subscription rates: \$5 per year, \$9 for two years, \$13 for three years, and \$50 for life. IRCs, mint stamps and local currency will be accepted from overseas readers.

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WORLD RADIO is two-way communication. Send in Amateur Radio news and information. Share your

This year why not invite your overseas friends over here?

Too expensive for them? Maybe not, this year. Because, this year, there are made-to-order bargains to lure them here. Bargains in trans-ocean sea fares, and air fares, just-for-them. And reduced bus, rail, and air rates, once they arrive. And lots more. But some of them may not be available next year. And many of them must be arranged before your friends leave the other side. So write to them. Tell them to talk to their travel agent or overseas carrier. (That way, they can get all the details.) Then add one more thing. Tell them America is not so big and bustling that no one will have time for them—and you'll be around to show them the ropes when they arrive. Now sit back and wait. With any luck, you may soon be showing them America as you see it. But better be prepared for one surprise. You may soon also be seeing America as they see it—rediscovering it through their wide and startled eyes.

knowledge and experience with your fellow amateur and "World-radio" reader. Photographs will be cared for properly and returned. We are most interested in your suggestions and comments. We would appreciate being placed on the mailing lists of club bulletins.

WORLD RADIO has a Swan 270 Cynet (220v.) transceiver, in carrying case, available for loan to medical personnel, relief agency staff, etc., going overseas on the short-term volunteer tours.

Subscriptions and advertisements, most essential to the support of this project, will be thankfully received.

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Dan Turk, WA6JRP
George Fong, WB6DTZ



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Nothing will beat a full size beam for gain. Ask the ham who has 250 or 300 countries

what type of antenna he uses.



W7CVD's 5 ELE. M520

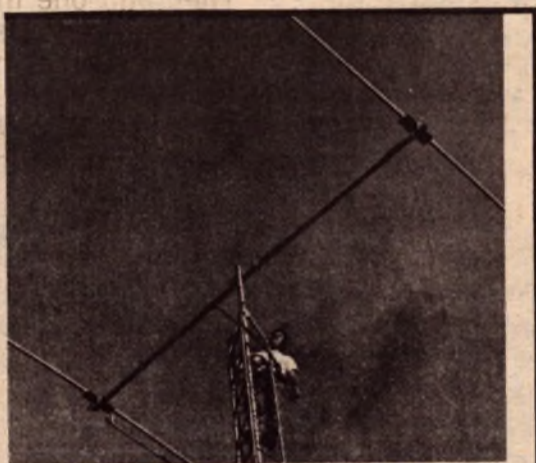
5 ELE. 20 METER BEAM		6 ELE. 20 METER BEAM	
GAIN	12DB	GAIN	13DB
FRONT TO BACK RATIO	26DB	FRONT TO BACK RATIO	26DB
BOOM LENGTH	40 FT.	BOOM LENGTH	50 FT.
3" OD .065 WALL		3" OD .250 TO .065 WALL	
MAX. ELE. LENGTH	36 FT.	MAX. ELE. LENGTH	36 FT. 1 IN.
SWR	1.1 TO 1	SWR	1.1 TO 1
WIND SURFACE AREA	10.5 SQ. FT.	WIND SURFACE AREA	12.5 SQ. FT.
WIND LOAD (80 MPH)	240 LBS.	WIND LOAD	280 LBS.
WIND SURVIVAL	100 MPH	WIND SURVIVAL	100 MPH
TURNING RADIUS	26.5 FT.	NET WEIGHT ASSEMBLED	110 LBS.
NET WEIGHT ASSEMBLED	85 LBS.	TURNING RADIUS	30 FT.

All 40, 20, 15 and 10 meter beams have 3" OD booms .050, .065 and .250 walls depending on model of antenna. Made of top grade aluminum alloys 6063-T6 and 6061-T6.



MACHINED 18" BOOM COUPLER FOR 30 TO 40 FT. .065 WALL BOOMS

3 ELE. 20 METER BEAM		4 ELE. 20 METER BEAM	
GAIN	8.5DB	GAIN	10DB
FRONT TO BACK RATIO	20DB	FRONT TO BACK RATIO	25DB
BOOM LENGTH	20 FT.	BOOM LENGTH	30 FT.
3" OD .050 WALL		3" OD .200 WALL TO .065 WALL	
MAX. ELE. LENGTH	36 FT.	MAX. ELE. LENGTH	36 FT.
SWR	1.1 TO 1	SWR	1.1 TO 1
WIND SURFACE AREA	6 SQ. FT.	WIND SURFACE AREA	8.0 SQ. FT.
WIND LOAD (80 MPH)	145 LBS.	WIND LOAD (80 MPH)	195 LBS.
WIND SURVIVAL	100 MPH	WIND SURVIVAL	100 MPH
TURNING RADIUS	21.5 FT.	TURNING RADIUS	21.5 FT.
NET WEIGHT ASSEMBLED	41 LBS.	NET WEIGHT ASSEMBLED	41 LBS.



40 METER 2 ELE. BEAM

7 ELE. 20 METER BEAM	
GAIN	14DB
FRONT TO BACK RATIO	26DB
BOOM LENGTH	58.5 FT.
3" OD .250 TO .065 WALL	
MAX. ELE. LENGTH	36 FT. 1 IN.
SWR	1.1 TO 1
WIND SURFACE AREA	13.8 SQ. FT.
WIND LOAD (80 MPH)	340 LBS.
WIND SURVIVAL	100 MPH
TURNING RADIUS	34 FT.
NET WEIGHT ASSEMBLED	135 LBS.

6 ELE. 15 METER BEAM	
GAIN	13DB
FRONT TO BACK RATIO	26DB
BOOM LENGTH	32 FT.
3" OD .065 WALL	
MAX. ELE. LENGTH	24 FT.
SWR	1.1 TO 1
WIND SURFACE AREA	7.7 SQ. FT.
WIND LOAD (80 MPH)	190 LBS.
WIND SURVIVAL	100 MPH
TURNING RADIUS	20 FT.
NET WEIGHT ASSEMBLED	65 LBS.

2 ELE. 40 METER BEAM	
GAIN	5.5DB
FRONT TO BACK RATIO	17DB
BOOM LENGTH	16 FT.
3" OD .065 WALL	
MAX. ELE. LENGTH	66.5 FT.
SWR	1.1 TO 1
WIND SURFACE AREA	10 SQ. FT.
WIND LOAD (80 MPH)	230 LBS.
TURNING RADIUS	34.5 FT.
NET WEIGHT ASSEMBLED	67 LBS.

3 ELE. 40 METER BEAM	
GAIN	8.5DB
FRONT TO BACK RATIO	20DB
BOOM LENGTH	38 1/2 FT.
3" OD .250 TO .065 WALL	
MAX. ELE. LENGTH	69 FT.
SWR	1.1 TO 1
WIND SURFACE AREA	15 SQ. FT.
WIND LOAD (80 MPH)	335 LBS.
TURNING RADIUS	40 FT.
NET WEIGHT ASSEMBLED	145 LBS.

QUALITY MONO & DUO BAND BEAMS AT LOW PRICES

Wilson Electronics offer a complete line of Mono & Duo Band Beams. With our purchasing power on large quantities of aluminum and low overhead, we can give you a rugged heavy duty top quality beam for a much lower price than any other manufacturer.

WILSON MONO BAND BEAMS

Model No.		
M340	3 ELE. 40 METER BEAM (full size)	\$375.00
	Gain 8.5 DB gain. Boom length 38.5 ft. 3" OD .200 wall to .065.	
M240	2 ELE. 40 METER BEAM (full size)	\$189.95
	Gain 5.5 DB. Boom length 16 ft. 3" OD .065 wall.	
M720	7 ELE. 20 METER BEAM	\$389.95
	Gain 14 DB. Boom length 58.5 ft. 3" OD .200 wall to .065 wall.	
M620	6 ELE. 20 METER BEAM	\$299.95
	Gain 13 DB. Boom length 50 ft. 3" OD .200 wall to .065 wall.	
M520	5 ELE. 20 METER BEAM	\$169.95
	Gain 12 DB. Boom length 40 ft. 3" OD .065 wall.	
M420	4 ELE. 20 METER BEAM	\$139.95
	Gain 10 DB. Boom length 30 ft. 3" OD .065 wall.	
M320	3 ELE. 20 METER BEAM	\$ 89.95
	Gain 8.5 DB. Boom length 20 ft. 3" OD .050 wall.	
M715	7 ELE. 15 METER BEAM	\$169.95
	Gain 14 DB. Boom length 40 ft. 3" OD .065 wall.	
M615	6 ELE. 15 METER BEAM	\$139.95
	Gain 13 DB. Boom length 32 ft. 3" OD .065 wall.	
M415	4 ELE. 15 METER BEAM	\$ 89.95
	Gain 10 DB. Boom length 20 ft. 3" OD .065 wall.	
M810	8 ELE. 10 METER BEAM	\$169.95
	Gain 14.5 DB. Boom length 40 ft. 3" .065 wall.	
M510	5 ELE. 10 METER BEAM	\$ 89.95
	Gain 12 DB. Boom length 20 ft. 3" .065 wall.	

WILSON DUO BAND BEAMS

DB62	6 ELE. 20 & 2 ELE. 40 INTERLACED BEAM	\$449.95
	Gain 13 DB—20 5.5 DB 40. Boom length 50 ft. 3" OD .200 wall to .065 wall.	
DB52	5 ELE. 20 & 2 ELE. 40 INTERLACED BEAM	\$349.00
	Gain 13 DB—20 5.5 DB 40. Boom length 40 ft. 3" OD .200 wall to .065 wall.	
DB54	5 ELE. 20 & 4 ELE. 15 INTERLACED BEAM	\$229.95
	Gain 12 DB—20 10 DB—15. Boom length 40 ft. 3" OD .065 wall.	
DB43	4 ELE. 20 & 3 ELE. 15 INTERLACED BEAM	\$179.95
	Gain 10 DB—20 8.5 DB—15. Boom length 30 ft. 3" OD .065 wall.	
DB32	3 ELE. 20 & 2 ELE. 15 INTERLACED BEAM	\$109.95
	Gain 8.5 DB—20 6 DB—15. Boom length 20 ft. 3" OD .050 wall.	
DB76	7 ELE. 15 & 6 ELE. 10 INTERLACED BEAM	\$239.95
	Gain 14 DB—15 13 DB—10. Boom length 40 ft. 3" OD .065 wall.	
DB65	6 ELE. 15 & 5 ELE. 10 INTERLACED BEAM	\$219.95
	Gain 13 DB—15 12 DB—10. Boom length 32 ft. 3" OD .065 wall.	
DB44	4 ELE. 15 & 3 ELE. 10 INTERLACED BEAM	\$109.95
	Gain 10 DB—15 8.5 DB—10. Boom length 20 ft. 3" .065 wall.	

If not available from your dealer write direct to factory for catalog or information and fast service. All prices F.O.B. factory. Wilson beams are available at the following dealers:
 HENRY RADIO STORES
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 AMRAD
 HAM RADIO OUTLET
 HARRISON RADIO
 LOS ANGELES, CALIFORNIA
 MILWAUKEE, WISCONSIN
 OAKLAND, CALIFORNIA
 BURLINGAME, CALIFORNIA
 LONG ISLAND, NEW YORK

All 20, 15 and 10 meter beam elements are constructed of the finest aluminum available, 6063-T832 a top quality alloy. All tubing is seamless extruded hard drawn.
 A 20 meter element consists of a 12 ft. section of 1 1/8" OD .058 wall center section, two six ft. pieces of 1" OD .049 wall middle section, and two six ft. pieces of 7/8" OD .049 wall end sections. Reflector has two additional 2 ft. end sections of 3/4" OD .035 wall. 15 meter elements use 1 1/8" and 1" tubing. 10 meter elements use 1" and 7/8" tubing.

Walk for Development *

by Les Cobb, W6TEE



Helen Stevens, WA6KHD, XYL of W6FRE,

The third annual Walk for Development was held in Sacramento, Calif., and for the third year, communication along the walk route was provided by Amateur Radio.

The Radio Amateur Mobile Society, Inc. whose members are known both individually and collectively as "RAMS", again worked with the walk committee to ensure that this large charity event would come off safely and efficiently. Many similar events are being organized in other communities and this article is presented in the hope that it will help other amateurs in offering their services in the public interest.

The Sacramento Walk for Development is a youth-organized event in which young participants, who have collected pledges on themselves by the mile, undertake a long distance endurance walk. The longer the walker goes, the more the pledges are worth. The money raised goes to various selected projects to combat hunger and poverty.

The walk was 29 miles long this year and had 11 check-points along the route. Some 12,000 started the walk from the State Capitol beginning at 6 a.m. The first walker (runner?) completed the circuit back to the Capitol by 9:30 a.m. and an estimated 8,000 others finished throughout the day. Many, who did not want to quit, were stopped short of their goal by the officials due to impending darkness. Still others had dropped out earlier and had been returned to the Capitol by "Poop-out-pickup" cars.

The RAMS had started working with the walk committee early in the year. During



the early planning of such an activity, the amateurs can acquaint the organizers with what ham radio can do for the event.

In most cases it should be stressed that the amateur volunteers are there to aid the walk officials with communications and are not there to augment or replace their staff. The communications group must have complete flexibility in assigning stations to various locations and areas as the walk progresses, but they cannot if operators are also assisting at check-points.

The amateurs must also have a central location for a Net Control Station where a walk official will be available at all times to answer questions and resolve problems from the field. Without someone with the authority to act, "wired in", the whole communications exercise is just so much wasted effort.

Since this was the third year of the walk, and, of RAMS assistance, much of this was already understood. NCS, W6HIR, was set up at walk headquarters at the Council of Churches building. This was sufficiently centrally located in relation to the walk route that no check-point was more than six miles away. Operating positions were set up on 75 meter SSB and 2 meter FM. In previous years both bands were used for various reasons, but this year it was not found necessary to use the 75 meter position.

RAMS members and other hams volunteering in advance were each assigned a specific four-hour period during the walk. They were free to participate for longer periods, and many did, but the assigned periods were when they had positive commitments to help out. A "fresh" station coming out to help would check in with the NCS and was then given an assignment where help was needed at the moment. Assignments were changed as the main body of walkers progressed over the route and as other operators required relief. Assignments were usually either to remain at one check-point, or to sweep a given section of the route. Both mobile and hand-held rigs were used.

Amateur communications pin-pointed the progress of the walkers and were used to open new check-points in advance of the lead walkers. Authority to close check-points was given by radio after the preceding route was swept by amateur mobiles. First-aid and refreshment supplies were dispatched to check-points running short after alerting by the ham network. Emergency "call home" messages were passed by ham radio to all check points in efforts to find walkers somewhere in the 12,000 youngsters scattered over 29 miles. Those check-points requiring large numbers of "Poop-out pickup" cars were identified and reported by the hams. Supply and poop-out were flagged down by our boys (and girls) and dispatched where headquarters wanted them.

Some of the poop-out cars this year and last year were manned by a local CB organization, but both years their radio range was limited to a mile or less by heavy "skip" interference.

It was a tired bunch of hams that went home that night, but it was a far more tired, but elated, group of young people that had participated in the Sacramento Walk for Development.

The RAMS were formally organized in Sacramento in the '50s as an outgrowth of spontaneous Sunday trips by caravanning 75 meter mobiles. These picnic and sight-seeing trips, accompanied by lots of on-the-air conversation and road directions, continue in the RAMS' busy activity schedule as "Mobile Runs".

Other popular club mobile activities include hidden transmitter hunts, road rallies, camping trips, and, of course, public service events.

The club has participated in the ARRL Field Day in the Club Aggregate Mobile Score every year since 1959 and has frequently taken top place. The RAMS have the largest club in the Sacramento Valley Section and are one of the most active mobile clubs in the country.

Activities from the very start have been family-oriented. This has not only encouraged a high level of participation, it has also resulted in a number of wives, who had no previous interest in ham radio, obtaining their licenses.

Over the years, club interest has shifted from 75 and 2 meter AM, to 75 meter SSB and 2 meter FM. It is this flexibility in using the currently popular mobile modes that has allowed the club to tap the regular influx of new hams to the area for new members. The club has weekly nets on both bands used and maintains a 2 meter repeater.

With the current wave of interest in recreational travel, the RAMS may represent an increasingly common type of ham club.



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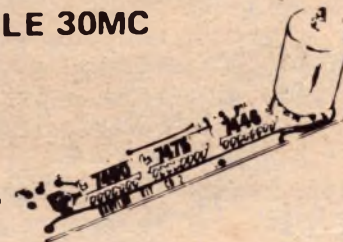
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Caribbean 160-meter DXpedition



by
Douglas
Stivison,
WA1KWJ

Al Segen, W2BP, called it "the most rewarding ham experience I've had in my 40 years in Amateur Radio." He was referring to his recently completed 160-meter DXpedition to the Caribbean. Between the fifth and twenty-seventh of April, Al got on the air from seven different countries. Two, the islands of Dominica and Martinique, were put on 160 for the very first time.

Al explained, "To most amateurs, 160 meters is just a noisy band. More than a casual monitoring, however, will reveal a small but growing number of very enthusiastic amateurs on the band. To some veteran DXers, 160 meters is a new world to conquer."

CW dominates the 160-meter DXing activity, although there are a growing number of countries on the air with single sideband. From his home location, Al has 54 countries, five continents on SSB, in less than four years of operation on "Top Band". His three-week venture in the Caribbean generated worldwide interest and reception reports came in from as far away as Czechoslovakia, Ireland, Scotland and the Falkland Islands.

A 160-meter DXpedition differs from a 20-meter venture in many ways. On kilowatt alley, DXpedition contacts are counted in the thousands. Al made a total of 241 contacts on 160 from all seven locations --and it was a tremendously successful trip. Packing and erecting an efficient and portable antenna for 20 is easy. On 160 meters, though, there are no handy small beams. Al needed an antenna that would get out well and could be easily and quickly erected by one man--himself.

A 170-foot piece of lamp cord turned the trick, being strong, flexible and lightweight. Al loaded the wire through a 365-pF variable capacitor. At all eight installations in the seven countries, the SWR was acceptably low.

Al brought two radials along with the antenna, but found that grounding everything to convenient water pipes and the grounded side of the local power lines worked well enough for him. Martinique was the only exception. As neither side of the AC line was grounded, Al had to use the two radials. The antenna schemes worked out well --Al maintained regular contact with PY1-DVG in Rio and consistently swept the bands clean.

Al's gear included a Drake T-4XB transmitter and companion R-4B receiver and a Heath HP-23A power supply. The units were modified for readily accessible switching to allow either 115 or 230 volt operation. Warned of inconsistent and improper line voltages, Al included a tapped transformer with the gear. It was used only once--in Martinique--where the line voltage was quite a bit too low.

Without any special preparation, testing or ruggedizing, the two-year-old gear went through the abuses of the trip without any

failures or malfunctions of any kind. The complete set of spare tubes for the units wasn't even touched.

Dozens of stories of lost baggage and uncooperative baggage handlers convinced Al of the necessity of protecting his most important equipment. Al refused to let the transmitter and receiver out of his hands from his arrival at the Philadelphia airport until he had made the last contact from the last island.

Through a dozen plane changes, Al carried the gear with him, overcoming strong airline objections from time to time. Personal effects and the less critical station accessories were entrusted to the airplane's baggage compartment and hotel personnel.

Customs--often the bane of the DXpeditionaire--proved little problem for Al, although firmness, tact, infinite patience, help from local resident amateurs and the foresight of securing operating licenses well in advance all helped. Only in Dominica did Al have any problems. Eight hours of discussion and waiting, help from a local amateur and a \$150 deposit were necessary before amateur operation could begin. Upon leaving the country with all the equipment he had taken in with him, Al's \$150 was returned.

All operating was done from private homes and hotels. A polite request and the presentation of the local license were all that was generally required to gain the hotel manager's permission to operate. Only at one hotel, in Grenada--Al's last operating point, was permission to operate flatly denied. Al picked up his luggage, walked down the street to another hotel and soon was handing out dozens of contacts with W2BP/VP2G.

After the last QSO from Grenada, Al sent the gear home. Needless to say, it was during that trip, with the equipment out of his hands, that the gear sustained some gougings, dents and scrapes. All the damages, however, were completely covered by the insurance which Al had thoughtfully taken out before entrusting the gear to the airlines. Nevertheless, when set up at home, the equipment worked as well as before.

During the three-week endeavor, Al operated from St. Martin (FGØADT/FS7), Montserrat (VP2MAD), Dominica (VP2-DAE), Martinique, (FMØADT), St. Lucia (VP2LH), St. Vincent (W2BP/VP2S) and Grenada (W2BP/VP2G).

Dominica, never before active on 160, proved the hardest island to activate. It took months of inquiries and correspondence with a score of people before Al contacted, at last, Philip Polydore, VP2DAE, who helped arrange the Dominica effort.

Al had already been issued the call sign FGØADT for Guadeloupe. Had the plans for Dominica fallen apart, Al would have gone on the air from Guadeloupe. As things turned out, Al operated from Dominica

rather than Guadeloupe and the FG prefix remains unheard for the last ten years.

Everybody contacted during the venture picked up at least one new country. Even Stew, W1BB, contacted two new countries while helping Al check to see that all callers had been answered and the bands had been swept clean. The expedition brought Stew's already impressive 160-meter countries total to 112.

Al, a member of the Baha'i Faith, had planned the trip primarily to teach the Faith in some of the islands and to attend the international Baha'i conference in Panama. His activities with the Faith brought him, in addition, to the Virgin Islands, Antigua, Barbados, Trinidad, Caracas and Panama; although he did not get on the air from these places. They did however, prompt Al's comment that, although he didn't know if he was going on any more DXpeditions himself, Central America seems to be the next area that could use some 160-meter activity.

Back home in Pleasantville, New Jersey, W2BP enumerated some of the highlights of the trip--two brand new countries put on the band, a boost to worldwide 160-meter interest, a few mentions in "The West Coast DX Bulletin", Gus's DX BULLETIN, many letters of support and reception reports from three continents.

Most importantly, Al hopes that he has shown that in spite of what might seem to be tremendous technical problems with antennas and grounding, inconsistent power sources and the noise and static characteristic of 160 meters, his expedition was a lot of fun. The trip, the operation and the friendships made through it have provided Al with the high point in a busy ham career.

Received at WORLD RADIO-16 August 1972

Warm thanks indeed to all who are associated with Worldradio for your most welcome and needed gift to help the Hadley School instruct potential and actual amateur radio operators who are blind. Mr. Byron Sharpe (W9BE), creator of our popular course in Amateur Radio Theory, joins me in extending personal appreciation.

Through such perceptive support as yours, we are linking modern technology with the deep human need to communicate--a need particularly keen among visually handicapped persons. Not only are you helping our students enhance their own outlets, you are also enabling them to contribute to their communities and to better understanding around the world.

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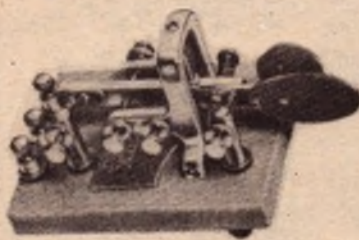
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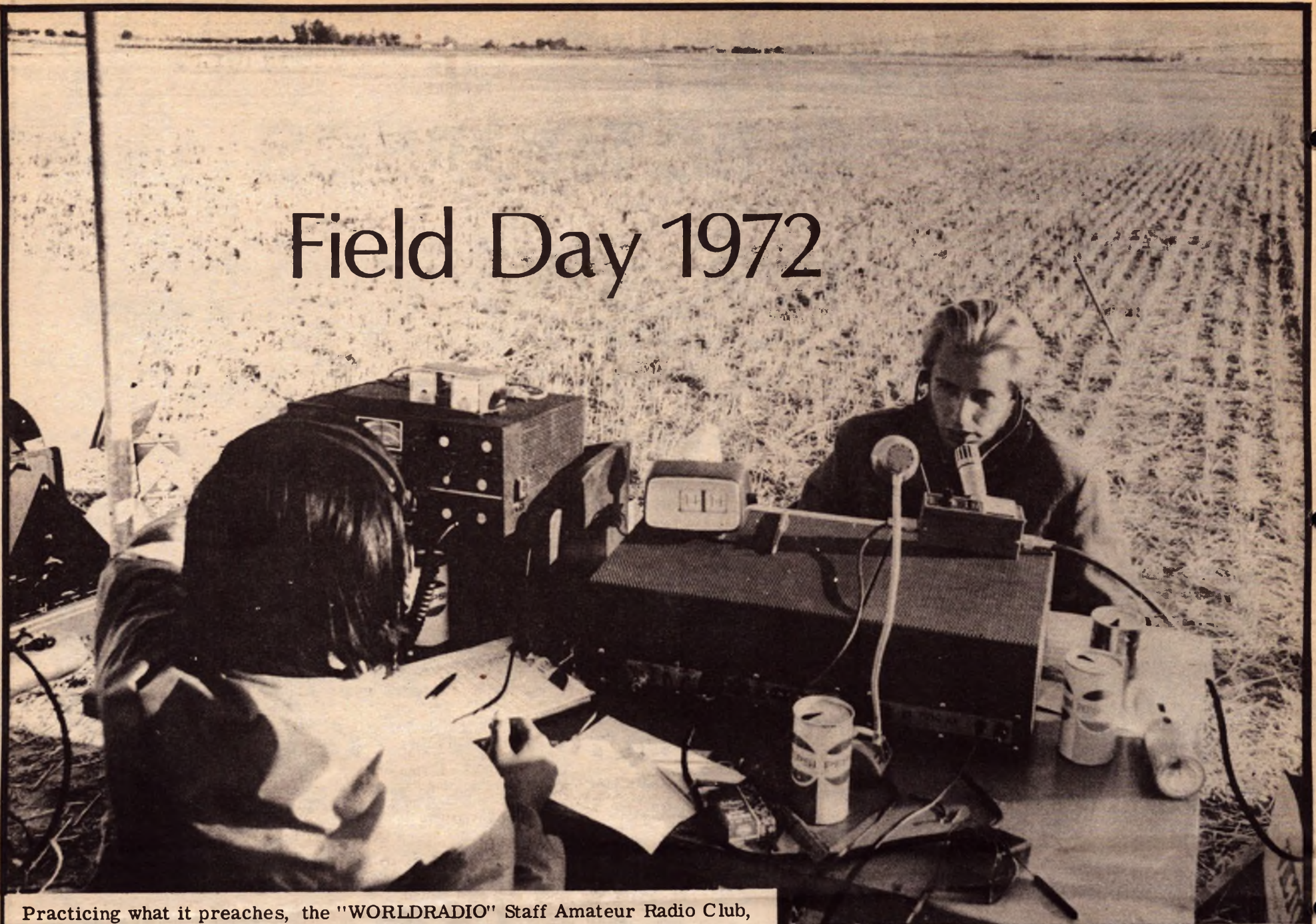
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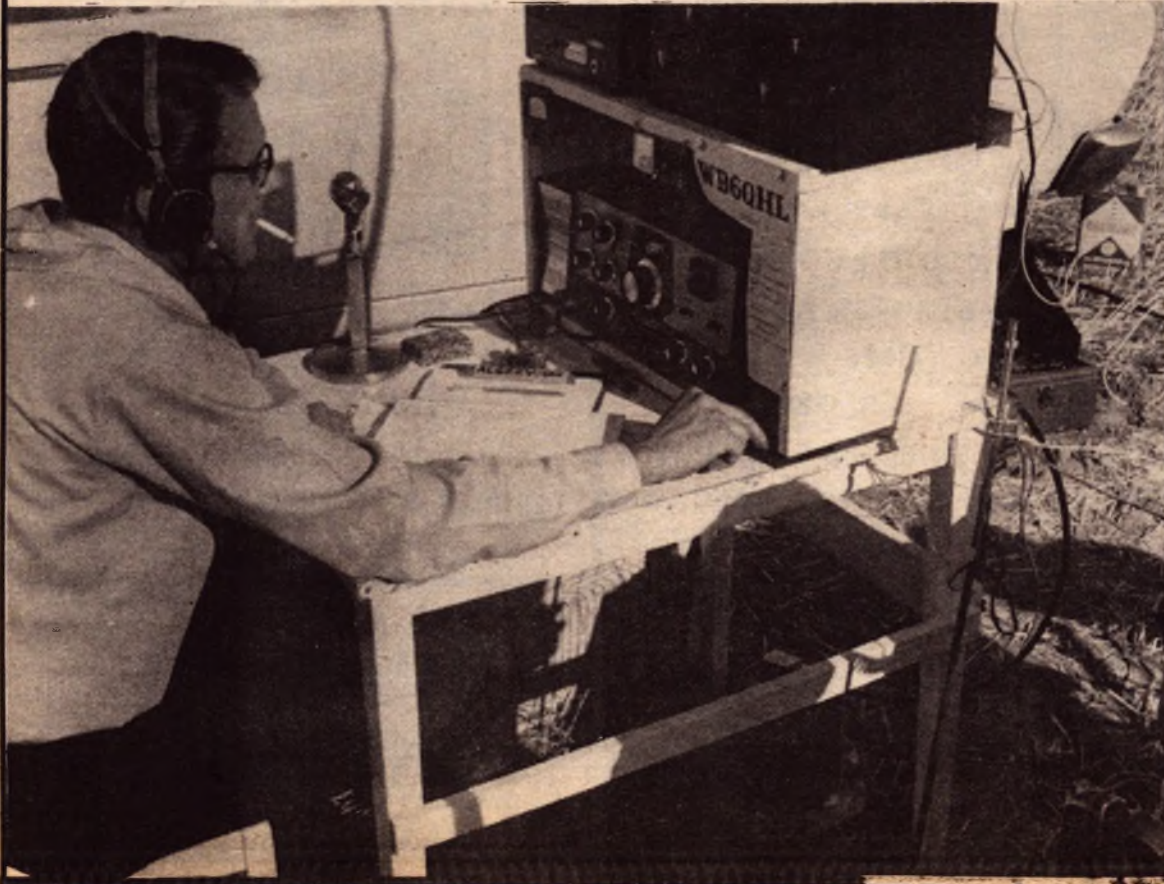
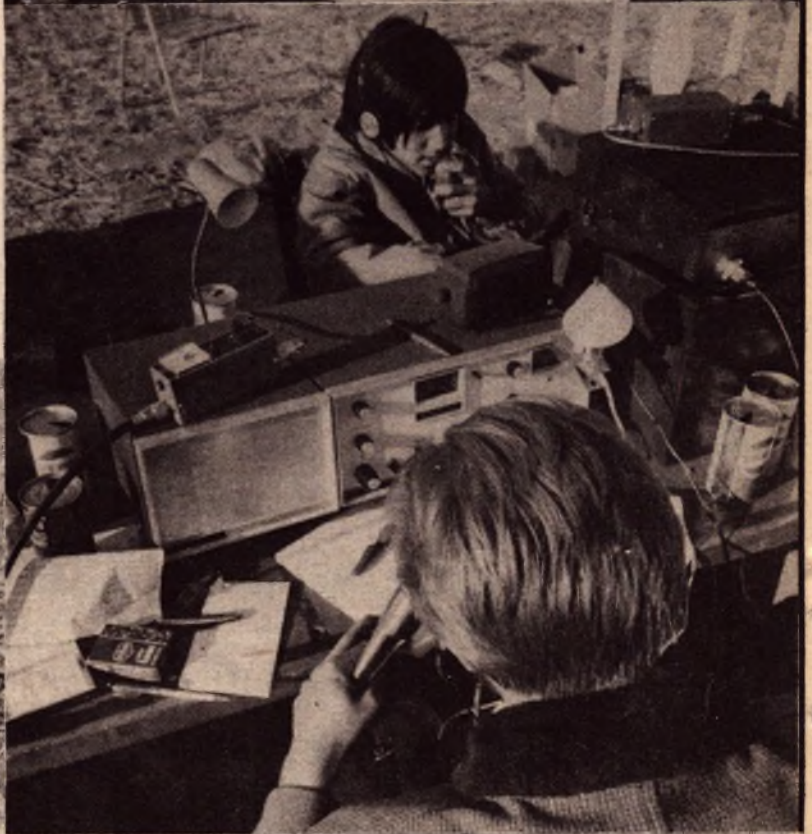
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Field Day 1972



Practicing what it preaches, the "WORLD RADIO" Staff Amateur Radio Club, WB6QHL, (an ARRL affiliated club) went on Field Day. Since the name is "field" day we decided to eschew the usual mountain location and indeed go out in a "field" which as you can see from the pictures --we found. There's no generation gap here at the paper as going out were 12-year old George Fong, WB6DTZ; 20-year old Dan Turk, WA6JRP; 33-year old Ken Welsh, WB6FKV, (below) and 37-year old Armond Noble, WB6AUH. Shortly after setting up, Ken, who had already put in several hours handling traffic on Army MARS for the Isleton flood disaster (see WORLD RADIO, page 8, July, 1972) got a call on 2 meter FM to return to the area for further duties. So while Ken did it for real, the rest of us practiced. Lotsa fun. Our 12-year old, "Iron Man Fong" showed up the old fogeys by making the most QSOs. (10)



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Power Output: 25 watts. Sensitivity: mic., 1 MV; aux., 0.4 volts. Gain: mic., 110 db; aux., 90 db. Hum and Noise: mic. -90 db (below rated output); aux. -95 db (below rated output). Inputs: 1 mic. (low impedance); 1 aux. (tuner/tape/phono). Output Impedance: 4, 8, 16 ohms. Controls: 1 mic.; 1 aux./power. Transistors: (5) 2-2N2926, 1-40234, 2-DTG-110. Power Consumption: Full Power: 2.8 amps; Quiescent: .26 amps; 6-15 VDC (6 w. output on 6 VDC). Dimen.: 4 1/2" W, 4" D, 6 1/2" H. Ship. Wt.: 4 lbs.



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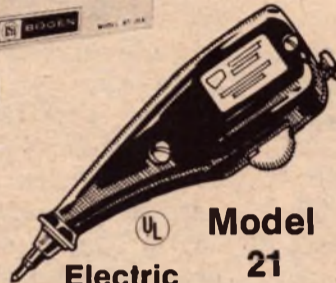
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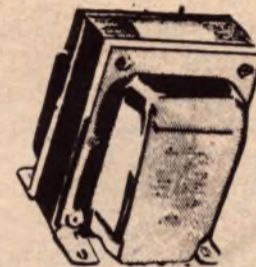
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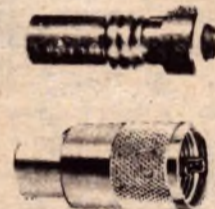


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A Frequency Plan Proposal for Six-Meter FM

Northern Berkshire (Mass.) ARC

Every repeater operates with an unwritten mandate from the amateurs in its coverage area whether or not they belong to the repeater group or operate through the repeater. If the repeater does not operate in the public interest there must be some doubt about the legitimacy of that mandate.

If there were sufficient channel capacity there would be no question as to the right of a person or group of persons to operate a repeater for their own use. Up to this point interpretations of this unwritten law on 2 meters have caused some bitter feelings, a number of frequency wars and in too many cases some unsportsmanlike behavior that is definitely not in the best traditions of ham radio. With the need for channels expanding and the capacity in most areas already full, the future appears as though it might strain the best amateur statesman.

The Northern Berkshire Amateur Radio Club operates K1FFK on Mount Greylock 3,500 feet above sea level on the highest peak in Massachusetts. The wide coverage of this repeater makes the club particularly sensitive to 2 meter amateur and repeater groups throughout the Northeast. For this reason, when contemplating changes in the Mount Greylock installation the club must consider the impact on other repeater groups throughout New England, New York and New Jersey.

When considering frequencies for the 6 meter repeater on Mount Greylock the Northern Berkshire Amateur Radio Club tried to find some set of standards that would be compatible with as many other repeaters as possible. Unfortunately, it seems there are none.

Activity on 6 meter FM at this time has been too sporadic to require an overall frequency plan. As the need for channels becomes more acute, 6 meters is the next logical band for FM repeaters to spread to, because of the availability of low cost equipment.

Continued growth without a useable frequency plan can only lead toward a worse disaster than we already have facing us in the near future on 2 meters. With these thoughts in mind NOBARC would like to propose a frequency plan for 6 meter repeaters that we feel would make the maximum use of the frequency allocation.

NOBARC offers this as a plan to be considered, possibly modified, hopefully improved on, and finally accepted as a standard for the amateur fraternity.

Most equipment presently being used on 6 FM is converted commercial equipment for use on a limited number of channels. These receivers can be broadened enough with the addition of a solid state preamplifier to allow them to cover the entire FM sub-band. The transmitters, however,

would require extensive tuning to cover much more than a half-Megahertz. The highest concentration of 6 meter FM at this time is on 52.525 MHz. In order to provide for continued use of this simplex frequency mobile and base stations frequencies should be kept as close as possible to it.

Every proposal for a 6-meter frequency plan has stressed a 40 kHz channel spacing that would split into 20 kHz channels when narrow band FM became predominant. The NOBARC plan sets aside 36-20 kHz channels assuming that initial development will be on alternate channels.

The present use of 52.525 as a national calling frequency could be extended until there is a need for the two bottom channels. Starting at 52.56 MHz keeps the maximum number of presently used frequencies within the plan.

The major stumbling block to 6-meter FM development has been its proximity to Channel Two TV. As there are many more base and mobile stations than there are repeaters and because the base stations and mobile stations will be located near television receivers, while the repeaters, in all probability be located remote; we are suggesting that the repeater inputs be low and the outputs be high. While this might present a problem where a repeater is located near a CATV head end, it is still less formidable than trying to operate 40 or 50 mobiles in a city with heavy Channel Two television use.

Mathematically, the maximum number of repeater channels possible in any given band segment occurs when the input-output spacing is equal to one-half the band width. On 6 meters the band segment available for FM repeater use is from 52.500 MHz to 54.00 MHz. Leaving a 10 kHz guard band at each end of the sub-band gives a bandwidth of 1.48 MHz. We propose that the best input-output spacing is the one that will provide the maximum number of available channels on 740 kHz.

The least used channel in the Northeast is 52.56 MHz and for this reason NOBARC has chosen it as the input for its new repeater on Mount Greylock. We have also chosen to use our plan and the output frequency will be 53.30 MHz.

We invite amateurs all over the Northeast to use this repeater, which if its brother on 2 meters is any sample for comparison, should have an extremely long range. The receiver will be on Mount Greylock with its antennas on opposite sides of the mountain down the slopes just enough to give isolation from the 100 watt transmitter which will be fed into a gain antenna 80 feet above the 3,500 foot peak. Comments on this and other activities of the Northern Berkshire Amateur Radio

Club are welcome and should be sent to:
NOBARC Secretary; Robert Dunn, W1KSD;
35 Prospect St., Lee, Mass. 01238

NOBARC 6 Meter Frequency Plan

IN	OUT	IN	OUT	IN	OUT
52.56-53.30	52.80-53.54	53.04-53.78			
52.58-53.32	52.82-53.56	53.06-53.80			
52.60-53.34	52.84-53.58	53.08-53.82			
52.62-53.36	52.86-53.60	53.10-53.84			
52.64-53.38	52.88-53.62	53.12-53.86			
52.66-53.40	52.90-53.64	53.14-53.88			
52.68-53.42	52.92-53.66	53.16-53.90			
52.70-53.44	52.94-53.68	53.18-53.92			
52.72-53.46	52.96-53.70	53.20-53.94			
52.74-53.48	52.98-53.72	53.22-53.96			
52.76-53.50	53.00-53.74	53.24-53.98			
52.78-53.52	53.02-53.76				

(de Wallace Provost, Jr., W2GFQ)

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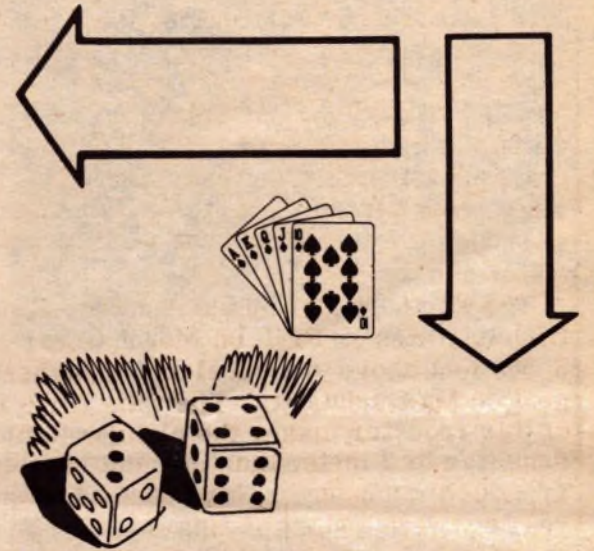
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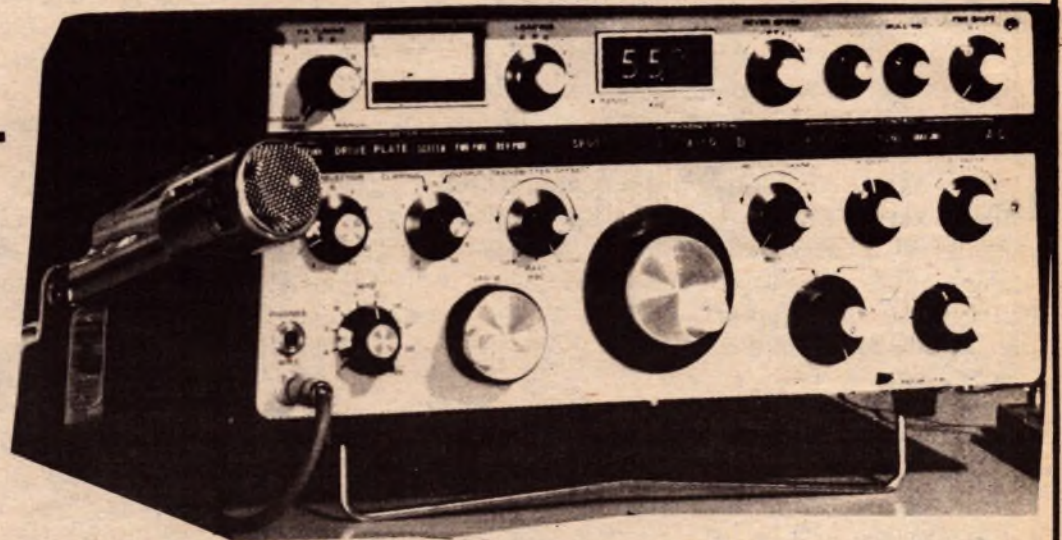
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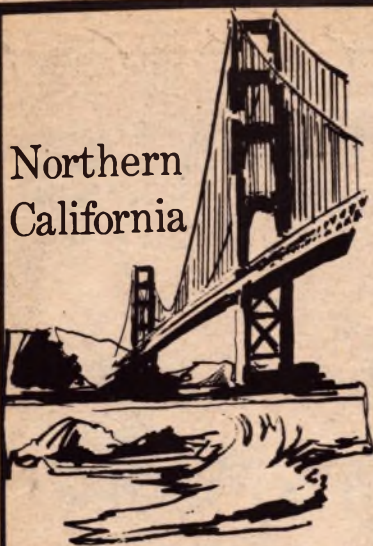
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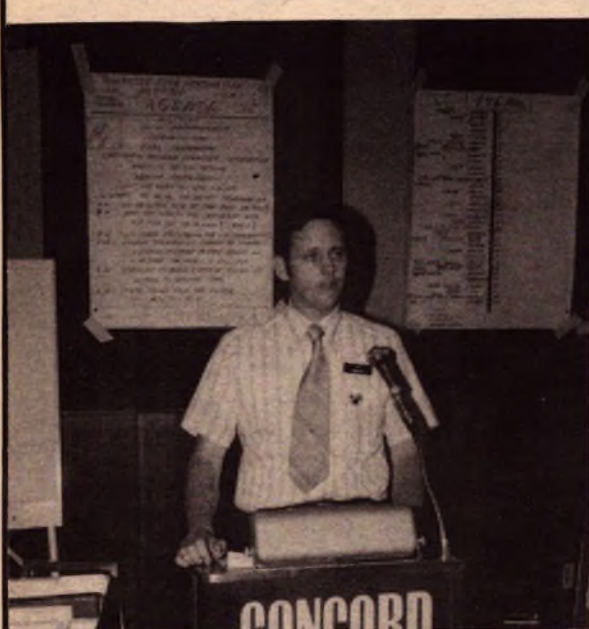
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Northern
California



Repeater Meeting Repeater Meeting Repeater Meeting Repeater Meeting

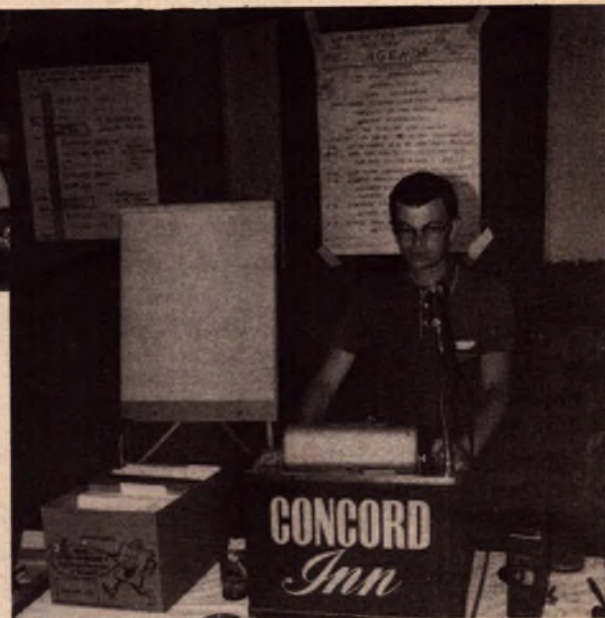
Northern
California



Jay O'Brien, W6GDO



by Jay O'Brien, W6GDO



Les Cobb, W6TEE

The California Amateur Relay Council (CARC) Northern Technical Committee hosted a coordination meeting at Concord, California, on July 29, 1972. This meeting was called to resolve frequency congestion problems caused by the rapid expansion of repeater use in Northern California. These problems were beyond Committee action alone. The meeting was concerned with two meter repeater frequency usage. Fifty-five attendees represented thirty-five repeater groups with a total estimated membership of over 1500 repeater users.

The CARC-North two meter band plan as presented to the CARC general meeting on June 3, 1972, was unanimously accepted by the group. This plan calls for 67 channels starting at 146.01 MHz and progressing to 147.99 MHz in 30 kHz increments. Twenty-seven repeater pairs of frequencies are called for, with inputs on channels 146.01 through 146.37 and 147.60 through 147.99. The output frequencies for repeaters are 600 kHz above the inputs on those pairs below 147 MHz; the output frequencies are 600 kHz below the inputs on those pairs 147.00 MHz and above.

Twelve simplex frequencies are recommended on channels 146.40 through 147.60 MHz and 147.42 through 147.57 MHz, with the channel 147.48 MHz designated as an "in band" down channel for the calling channels 146.34 and 146.94 MHz.

The band plan designates the use of simplex channels and states the policy of the Technical Committee on recommendations for simplex channel use. The Committee (14)

will not recommend channels presently used as repeater inputs or outputs for any simplex use until the present use is discontinued. The Committee will not recommend exclusive use of any simplex channel by any group or individual; rather, "uses" are recommended as follows:

146.40, 146.52, 147.51, 147.54, (146.43):
General use simplex

146.46, 147.42: Remote Base simplex

146.55, 147.45, (146.49): Mobile simplex

146.58, 147.57: Non-voice simplex

147.48: In band "down channel" for calling channels

Frequencies above shown in parenthesis () are presently used by repeaters and not presently recommended for simplex use.

The Band Plan states the calling channel use of 146.34 and 146.94 MHz as one where calls on 146.34 or 146.94 will always be answered on 146.94, either direct or through a repeater. 146.34 may be added to repeaters on any frequency pair as an auxiliary input for "calling" or "emergency" use, but answers to a station calling on 146.34 must always be on 146.94 MHz. After establishing contact on the calling channel, stations should always move to another frequency or repeater if extended communication is desired. Most of the "34/94" repeaters include a 146.94 MHz receiver connected to a 440 MHz or to a 147.48 MHz "down channel" transmitter, thus permitting the "34/94" repeater to be used as a "remote base" on 146.94. Continued use of this procedure is recommended by the plan.

Each repeater pair was individually discussed in turn by the assembled group. Unanimous agreement was reached on the recommendations for each pair. Representatives agreed to frequency changes to conform with the band plan. Recommendations for each pair are as follows:

- 146 MHz pairs: (low in, high out)
- 01/61 WA6MLA (WA6ZYH)
 - 04/64 W6CPK, WA6UFE
 - 07/67 K6HLM and W6BUR
 - 10/70 K6GWE (WA6RTM)
 - 13/73 WA6TSM, WB6PVS (W6JPU)
 - 16/76 WB6OPG, WB6OQS, K6CBP
 - 19/79 WB6FDT, WB6ZOI
 - 22/82 WB6AAE, WB6TSO, W6TO
 - 25/85 K6QFO
 - 28/88 WA6ILA, WB6NDJ, WB6OPG, WB6NOZ
 - 31/91 WA6HGH, WB6SXC
 - 34/94 K7UGT, K6SWS, WA6UGS, (WB6DGJ), and (WB6HYL)
 - 37/97 WA6ZQD, WA6RYO

- 147 MHz pairs: (high in, low out)
- 60/00 WA6UGY
 - 63/03 (W6AJU)
 - 66/06 W6CX
 - 69/09
 - 72/12
 - 75/15 WA6YCZ
 - 78/18 WA6ZQH
 - 81/21
 - 84/24
 - 87/27 W6AEX
 - '90/30
 - 93/33 WB6IMP
 - 96/36 W6WX
 - 99/39 W6ECE

Above calls in parenthesis () are repeaters not represented at the meeting. .

The frequency moves agreed to or announced by representatives or message are as follows:

- WB6AAE will move from 146.20/80 to 146.22/82
- W6AEX will move from 144.20/147.85 to 147.87/27



2

METERS



W6CPK will move from 146.04/65 to 146.04/64
 W6CX will eventually move from 147.80/06 to 147.66/06
 W6ECE will move from 146.22/82 to 147.99/39
 WB6FDT will move from 146.90/147.26 to 146.99/79
 WA6HGH will move from 146.90/147.26 to 146.31/91
 WA6ILA will move from 146.37/97 to 146.28/88
 WB6NOZ will move from 147.10/145.40 to 146.28/88
 WB6OPG will eventually move from 145.22/146.88 to 146.28/88
 K6QFO will move from 147.31/145.49 to 146.25/85
 WB6SXC will move from 145.98/146.90 to 146.31/91
 W6TO will move from 146.20/80 to 146.22/82
 WB6TSO will move from 146.20/80 to 146.22/82
 WA6UFE will move from 146.04/52 to 146.04/64
 WA6UGY will move from 146.49/147.00 to 147.60/00
 W6WX will move from 147.96/147.18 to 147.96/36
 WA6YCZ will move from 146.85/147.71 to 147.75/15
 WB6ZOI will move from 146.16/76 to 146.19/79
 WA6ZQH will move from 146.28/88 to 147.78/18
 WB6ZRR will move from 146.40/145.47 to simplex 146.40

recommended for repeater groups not represented:
 W6AJU from 146.43/147.66 to 147.63/03
 W6JPU from 146.12/147.71 to 146.13/73
 WA6RTM from 145.18/146.70 to 146.10/70
 WA6ZYH from 146.00/146.60 to 146.01/61

Many of these moves depend on other moves as follows:

ACTION OF	DEPENDS ON
K6CBP	WB6ZOI
WB6ZOI	WB6AAE
WB6FDT	WB6AAE
WA6ZQH	W6WX
WA6ILA	WA6ZQH
WB6NDZ	WA6ZQH
WB6NOZ	WA6ZQH
W6CX	W6AJU
K6QFO	WA6YCZ

The following frequencies were established for new repeater groups:
 K6CBP (Auburn) 146.16/76
 WB6IMP (RTTY) 147.93/33
 WB6NDJ (Oakland) 146.28/88
 WB6PVS (Sonoma) 146.13/73
 WA6RYO (Berryessa Peak) 146.37/97

The following actions were recommended to the Technical Committee:

1. Prepare a band plan for 145 to 146 MHz even though no channels are presently recommended. Such a plan would assist those whose local conditions dictate the use of these frequencies.
2. Recommend "split-split" channels half-way between other channels only after all adjacent systems have reduced bandwidth and consented in writing to the adjacent channel user.

3. Enlist the aid of the ARRL in making equipment manufacturers aware of the need for improving the filters in receivers sold for amateur use; the receiver should meet commercial narrow band specifications. The manufacturers should also be made aware of the need for accurate specifications, especially receive bandwidth specifications.
4. Prepare a resolution for CARC action recommending the reduction of repeater transmit power to equal receive capability and minimize poor coverage range.
5. Encourage new groups seeking repeater pairs to thoroughly investigate existing repeaters to determine if one exists that fits the need of the group; suggest 220 MHz as an alternative to new 146 MHz repeaters, and, in general, discourage additional two meter repeaters in the metropolitan areas. Recommendations should only be made after favorable assent is received from the present users on the proposed frequency pair and from nearby users on adjacent pairs. Assist applicants in contacting present users.

The meeting was considered to be very successful by all who attended; the attendees offered a vote of thanks to the Technical Committee for their efforts in planning and conducting the meeting. The members of the CARC-North Technical Committee who took part in the meeting were John Burch, WB6GHA; Doug Macheel, K6HLE; Chuck Klug, K6HLM; Bill Wiegand, K6RNO; Les Cobb, W6TEE, and Jay O'Brien, W6GDO, the Committee chairman.

The following frequency moves were

Use your teletype machine to send and receive Morse code!



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Flying Doctor Service- **AFRICA**

by
Garth
Hamilton,
5H3LV



The African Medical Foundation is a non-profit organization providing medical personnel and drugs to support and assist medical missions, operated by church and other groups, in the remote areas of East Africa.

They exist solely on donations solicited through Kiwanis, Rotarians, church groups, etc., the world over.

The Flying Doctor Service is a part of this organization and provides doctors who operate from flying mobile clinics to emergency calls for a doctor's services at a bush station staffed by medical assistants and nurses to flying ambulance service for people who must be flown into a hospital.

This service is provided free to those who can't afford it. A donation equivalent to the cost of evacuation is requested from those who can afford it and most are willing to oblige.

Tourists and safari hunting people are asked to join for their period of stay in East Africa for \$15 a month and then all services, should they be required, are supplied free.

The pilots and radio operators are not paid high salaries compared to North America but can live comfortably in Nairobi but not luxuriously. The radio engineers are supplied by Volunteer Service Overseas, (same thing as Peace Corps but from England). They have little practical experience but are interested in learning and with a bit of guidance do fairly well.

In August a G/land ham will become the new VSO volunteer and this will be a bonus. The director of the African Medical Foundation has been a ham and is interested in starting a station, 5Z4FDS (Flying Doctor Service). They have a Collins receiver but not a transmitter.

At present I am interested in financial assistance for a beam type antenna for their communications frequency of 9116 kHz and a vertical ground plane or a ground plane phase array to cover this frequency. Any simple wire antennas would not give full coverage of Tanzania, Kenya and Uganda. The stations in the bush are limited to low power due to battery power supplies as they have no electricity. The transmitter in Nairobi is 180 watts pep from PYE Electronics in G-land. We cannot increase power due to the licensing limit and even if we could that would not solve the problem as the reception of the bush stations is what needs improving.



Several projects are under study. A three-element Yagi or two-element Quad are being considered. For £250 we can build a beam type installation using aluminum tubing and dexion tower to 40 feet and a rotator from a prop-pitch motor which with a section of pipe will put the beam at 50 feet which is the limit for the airfield obstruction clearance.

What we are interested in now seems to be financial aid which will allow us to build an antenna locally as the cost is cheaper than having such shipped from the U. S. or England. The only thing which is not easy to get locally is a rotator.

Anyone interested may contact me at P. O. Box 23169, Oysterbay, Dar es Salaam, Tanzania-East Africa or the Medical Director of the African Medical and Research Foundation, Dr. H. de Glanville, (ex-G3NMU, ZD4CF-9G1CF) East African Flying Doctor Services, Wilson Airport, P. O. Box 30125, Nairobi, Kenya.



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 Power demand Approx. 120 watts.
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 Power Requirements 105 to 125 volts, 60 cycle, single phase ac.
 Paper capacity Adjustable to accommodate standard 1-3 copy roll; fanfold paper; or sprocket-fed forms 8 1/2 inches wide.

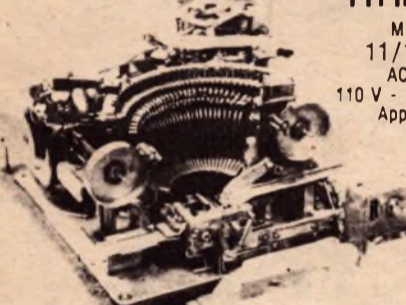
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 11/16" tape @ 75 WPM
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\$15.00 ea.



TT-16 Reperforator
 Types & punches 11/16" tape
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 Mounted in metal cabinet
 with tape spool
\$30.00 ea.
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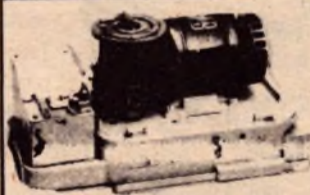
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Model TT179/FG Mfg by Kleinschmidt
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 Tape printing & punching, also transmitter-distributor. 115 volts, 60 cyc, shpg. wt. 90 lbs.
 uses 11/16" or 7/8" tape @ 60-100 wpm
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 Fixed station, receive-only typing reperforator. Receives, in typed and fully perforated tape form, any messages received from TTY equipment, DC wire, carrier, or radio converter; capable of handling 5-unit start-stop at operating speed of reperforator. Operates 60-100 wpm
 Synchronous motor; 115 v. ac 60 cyc., 120 watts.
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 Richard Jaross



When Valko first appeared on the band, it was obvious that most fellows did not realize that KV3AA was Osprey Island!

Actually, there was no reason for the average Ham to be familiar with Osprey as the last operation from this bit of Caribbean rock had occurred just before World War II when the survivors of a sunken banana boat sent distress signals via reflected sunlight and a highly polished spoon.

The initial pile-ups were fantastic. He soon learned that he could not work them without some sort of system, and he quickly fell into the pattern of taking the fellows by call area. When he finished working

W6X-- his heart was warmed by the promise that an external VFO was already in the mail to him so he could work split frequency in the future.

Not to be outdone, W9Z-- indicated that he was on his way to the post office with a small battery-powered sideband rig so that Valko could give the boys two-way SSB contacts.

It took several hours for him to reduce the pile-ups to where it sounded more like a hornets' nest than an avalanche but by 0200Z, Valko pulled the big switch for the night, secure in the knowledge that all knew KV3AA--rare Osprey Island was available.

Within several weeks, Valko acquired WA3H-- as his QSL manager. This was a virtual necessity as by this time he had a backlog of several thousand QSLs to write.

It was a pleasure to listen to Valko's QSOs. Having been a ham for only a short time, the conversations were not limited to an exchange of reports and description of gear. Valko went to great pains to describe the beauties of Osprey. The weather was exceptionally fine and the temperature seldom fell below 70 degrees or rose much above 85. The humidity was low and land was available quite cheaply. In fact, the governing body which ruled the chain of island to which Osprey belonged was encouraging immigration by offering to subsidize transportation costs for prospective residents.

Week after week, Valko would call one CQ and then spend the rest of the evening at 14.218 picking up station after station. After awhile it was apparent that his description of this idyllic island was having an effect on a large number of people.

Somebody once said that for every QSO in progress, there were at least ten people listening to it. In Valko's case, it must have been hundreds of listeners.

By the time the first KV3AA cards were arriving at the bureaus, KV3AB appeared on 15 meters. A retired electronics magazine publisher, he quickly revealed to the listening amateur world that Valko had not exaggerated the beauties of Osprey.

Boatload after boatload of new residents kept arriving. Not all of them were Hams, but an unusually large percentage were. By the end of the year the Osprey Telegraph and Postal Inspector's Office had run out of two letter calls and was close to using up three letter calls. The KV3 prefix could be heard on every band that was open.

There were no more pile-ups, and Valko found that nobody even broke into his QSOs anymore to let him know that they were waiting. As a matter of fact, he frequently called CQ now without any response at all.

In June, W6X-- asked Valko to return the external VFO as it was now needed for a DXpedition.

I was one of the first to work KV3AA and about a week ago when I heard him calling CQ without a response for five or ten minutes, I decided, just for old times sake, to let him know that he was getting out into New York State. Before I could come back to him, however, a very strong W5 came on frequency and said, "KV3AA would you please QSY; I'm trying to work my first Montana station and you're QRMing him."

I have not heard Valko on the air since.



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Worldradio is a new amateur newspaper, DEVOID OF POLITICS, believing strongly that amateur radio is only partially reaching its potential to build bridges between people — around the world or just on the other side of the local repeater.

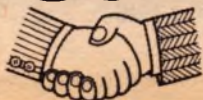
We're all interested in the technical aspects of our hobby, but WORLDRADIO is trying to complete the picture with insight into the people who are making our hobby the unique and fascinating international service which it is today.

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We would like more interplay with our readers. In order to develop a greater rapport so we may better serve you, we are asking that you drop us a letter or a card. Tell us what you like about this publication, tell us what you don't like. Tell us what you would like to see more of, what you would like to see less of.

Of interest to us is what nets or ham organizations you belong to. Would you like to see a monthly column devoted to news of ISSB-QCWA-OOTC-NSA-MARN, etc. ? Are there any regular features you would like to see? We are open to all comments-suggestions-advice.

While you are helping us to constantly improve your paper, you may wish to jot down the call of a friend. We would be pleased to send them a free copy of the paper you are a part of.

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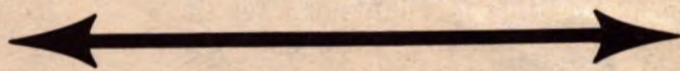
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Carl Sletten, W1YLV

An Era Has Ended

by Robert Mueller, K6ASK, and
Rosanne Vipond, WB6SNQ

Hal Garretson, K6THM, formerly of El Monte, Calif., most affectionally known by his friends as "The Hungry Man" or "The Mean Old Man on the Hill," passed away on May 16 of this year.

Hal was buried on Tuesday, June 27, in his family plot through the generous donations of his friends, many of them members of the Southern Counties Amateur Radio Traffic Net, the Channel Cities Traffic Net, and the Golden Bear Traffic Net, all operating in Southern California.

Hal was a charter member and past manager or chief net control of a local (2 meter) division of the Golden Bear Traffic Net, which operates daily from 7 to 7:30 p.m. on 146.57 MHz. He was instrumental in the founding of and held

many offices, including president, in the Southern Counties Amateur Radio Traffic Net (SOCON 2), which operates daily from 7:30 to 8:30 p.m. on 146.10 MHz. In addition, he was very active with the Channel Cities Traffic Net, operating weekdays from 7 to 8 p.m. on 145.80 MHz.

Since childhood, Hal had been progressively paralyzed from the waist down, and one of his primary pleasures was building and operating amateur radio equipment. He was on the air virtually every day delivering and relaying messages to and from American servicemen overseas and during times of disaster. He was, when necessary, the backbone of some networks and often helped keep them operating in an orderly manner.

The last few months before his death, Hal was cared for at Rancho Los Amigos Hospital in Downey, Calif. Since he had no

family, he very much enjoyed visits from people he'd met on the air.

When he died, the case was turned over to the local public administrator. It was known he owned a plot at Rose Hills Cemetery in Whittier, but there were no funds for burial. His friends had their doubts about raising sufficient funds but made the try, since otherwise his remains were to be cremated and the plot sold. The word was passed over amateur radio networks and members of the SOCON 2 and Channel Cities nets took the pledges. Other friends were contacted by phone and between Wednesday, June 21, and the following Monday enough had been raised to cover burial costs, with enough left over for flowers.

Hal Garretson, K6THM, made many contributions toward the betterment of amateur radio; his devotion and dedication will be greatly missed.

CFAR WX Net

by Larry Cotariu, WA9MZS

The Chicago FM Amateur Repeater's Weather Net got a good workout on the night of Friday, July 14, and it was the real thing.

Sponsored by the Society of Radio Operators, the CFAR activates this 2 meter FM repeater with a large group of hams whenever extremely severe weather conditions threaten the greater Chicago area. On that start-of-the-weekend evening, the net not only reported weather conditions, it also kept busy handling traffic between the scene of a tornado touchdown and Cook County officials.

The workout started at 8 a.m., when Bob Johler, W9INF, of Des Plaines, Ill., received word the Chicago area might be in for heavy weather via RTTY from the National Weather Services Severe Storm Center at Kansas City, Mo. Bob, who is active in the Des Plaines Civil Defense unit and the CFAR's resident weather nut, alerted his CD friends.

It wasn't until 9:25 p.m. that Chicago weather radar indicated a line of severe weather approaching northeastern Illinois from the northwest and W9INF put the news on the air. Not much later, public agencies began relaying sightings of funnel clouds in northwestern Cook County and Chuck Duncan, K9YLG, of Arlington Heights, Ill., another CD active, joined Bob on CFAR to get tornado activity confirmation. They waited, however, for Illinois State Police verification on tornado activity before activating the weather net.

At 10:50 p.m., the weather service issued a bulletin stating funnel clouds had been sighted over Highland Park and near Aurora, both in Illinois, but radar did not confirm this, and low-hanging clouds are often mistaken for funnel clouds. W9INF put this information over the repeater as at least one line squall closed in from the northwest.

By this time, CFAR hams were reporting severe lightning and increasing wind

velocities--Chicago's western and northwestern suburbs were now feeling the first gusts of the line squall. W9INF reported power dips at his Des Plaines QTH. At about the same time, a mobile on Chicago's far south side reported that area dry but said he could see a lot of lightning on the northern horizon; he later got hit.

Tom, WA9CIO, of Hoffman Estates, northwest of O'Hare International Airport, reported wires down within a block and that either everyone had left town or lights had gone out on the area. While he was passing on this report, a thunder boomer modulated his rig for him.

At 11:10 p.m., WA9BYR, on Parkside drive across from Des Plaines' Lutheran General Hospital came on CFAR. He asked for some one to contact county officials for evacuation of several apartment houses, one with its roof blown off, the others in bad shape. WA9BYR--whose name I did not get--was operating portable from a garage near his apartment. He stayed on the air about an hour relaying damage reports. As good news, he said there was no visible damage to the hospital and that it did not need communications assistance.

Cliff, WB9KBU, of Lombard, Ill., and W9KLB, Des Plaines, relayed traffic to government agencies and emergency equipment arrived at the hospital area shortly after. It was later reported a tornado did hit that area.

WA9BYR later reported the air conditioner had blown in through one of the windows at his QTH and he was leaving the air to check on a fellow tenant, a woman with a history of epileptic seizures. W9FSV broke in to say Illinois State Police emergency radio net was giving hams credit for their damage reports.

Harry "Doc" Hootnick, WA9KTT, stood by on CFAR in case his professional--medical--assistance was needed.

K9HDN, an engineer at WGN-TV, Chicago, broke in from his Morton Grove, Ill., home to say he was relaying the CFAR information to his station's newsroom.

Perhaps 20 minutes after the tornado hit Des Plaines, air traffic slowed and the storm's fury became more evident. W9BNZ, of far southwest Chicago, report-

ed one tree, an elm, had taken his tower and beam antennas, while another tree had come in his dining room window. By this time, many CFAR operators were on emergency power ranging from handy-talkies to their base rig on a generator.

From time to time, W9ZDK would ask, "Does anyone know when the lights will go on?" and, usually, receive the reply, "Not until later today or tonight."

There were no tornado or other injuries among the hams, but one person was killed when a tree toppled into a car.

The next day, W9BUB was looking for a generator for his neighbors.

Rapid City Flood

by Rosemarie Lewis, WA0MNL, from her column in "Zero Beat"

When the deluge of flood waters hit Rapid City, S.D., the Pike's Peak Radio Amateur Association, Inc., was hit by a deluge of another sort--the many inquiries of health and welfare of people in the affected area.

Most of the inquiries came from the Red Cross, although many were from those who had friends or relatives in the Rapid City area and thought of ham radio when they found out the commercial communications were out.

Those of us who secured a Rapid City telephone book found the street map in it invaluable.

FCC declared two frequencies on 75 meters and two on 40 meters to be emergency frequencies. They declared five kHz on each side of these frequencies to be a quiet zone--but many hams persisted in calling CQ and otherwise QRMing the emergency operations.

Nets were also established on 20 meters and even without the emergency frequency declaration for this band, thousands of messages were handled. Dale, W0LDV, handled over 300 pieces of traffic on this band.

The Rapid City amateurs were willing to help and where electric power or portable generators were available, devoted endless hours to answering inquiries and (Turn to page 45, please)



SPECIAL

FOR THE NEW HAM

"Welcome to Amateur Radio"

That has probably been the opening of many letters you have received, all leading to the introduction of some product that you just must have to make your station complete.

In a way we're a little different. We do welcome you into Amateur Radio, but we don't feel you've got to have our antenna. We know you can "get along" without it, even though it means struggling through QRM till your ears ring, pounding the key till your fist feels like it will fall off-and still miss that state you've been chasing all week. The sad news is that sometimes 75 watts is just not enough.



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A real easy way of handling this problem is to go to a better antenna. This not only helps the transmitted signal by directing more of it to the desired station, but also will knock out the QRM from the side and back of you. Now, doesn't that sound like a better way to "ham"?



We have the solution . . .

Let's take a look at the WILSON ELECTRONICS NM-215. That 5.5 db gain is the same as raising your power by about four times. On receive, 17 db front-to-back ratio means that stations behind you will drop in strength about three "S" units. And this antenna is built to be a strong one.

The boom and both elements are made of heavy wall aircraft aluminum. It is seamless and extremely durable. The boom is five feet long and two inches outside diameter. The elements (the longest is 22'-6") are 3/4" tapering to 1/2".

In addition to its strength the 6063-T832 aluminum is light weight. Completely assembled, the NM-215 weighs only 10 lbs., and its wind loading is only 38 lbs. That's light enough to be turned by the least expensive rotor you can purchase. Not only that, but you don't need a tower! A 1-1/2' TV mast will handle this antenna just fine-yet it will withstand a 90 mph gale.

The reactance tuned gamma match is so simple to install and adjust, that the name is the most difficult part of it. And speaking of things being simple, you can have the whole beam assembled and up, and on the air in less than one hour. That's due to the (if we may say so ourselves) excellent instructions and the fact that everything is cut and finished at the factory.

I'm sure you can see now that this is not a compromise beam. It has something a lot of the others are really missing -- QUALITY.

The NM-215 is normally priced at \$44.95, but to truly welcome you into Amateur Radio, and to introduce you to our quality antennas, you can receive it for \$34.95. That's \$10 off! But you must include the mailing label from this copy of "Worldradio". You do not have to pay shipping costs, if you live in the continental U. S.

Your beam will be shipped to you within 24 hours after we get your order, and will take only five days to reach the east coast.



Spotlight on Amateur Radio Operators
who - what - where - when - why - how
people • events • achievements

Worldradio

HAMS are people

KØZZR

A veteran of two world wars himself, Felton (Doc) Jenkins knows what it means for a soldier to be homesick and lonely — so he's doing something about it.

Six days a week, starting at 6 a.m., the 74-year-old retired Minneapolis, Minn., businessman and teacher devotes time and money to make it possible for wounded Vietnam veterans to talk to parents, wives and girl friends in the U.S. by means of a radio and telephone hookup called a phone patch.

Jenkins, a ham radio operator for most of his life, told The ENQUIRER: "I wanted to give these kids a boost, so when the Military Affiliate Radio System (MARS) asked me to do telephone patches to Vietnam, I felt it was some-

(from "The National Enquirer")

Enquirer Good Samaritan Helps Wounded Servicemen in Vietnam Talk to Their Families in U.S.

There are people in this world who express their love and compassion for their fellow men with deeds, not words. They are the people we seldom see or hear about, but who are there, quietly going about the business of proving that they are indeed "their brother's keeper." These are the Good Samaritans. To honor these people, The ENQUIRER has established its Good Samaritan Award.

If you know a person who has made unselfishness a keystone of his life, write to Good Samaritan, c/o The NATIONAL ENQUIRER, 600 South East Coast Ave., Lantana, Fla. 33462. If we publish the story we will award your Good Samaritan \$50.

thing I couldn't refuse to do. world war myself and will never forget what it meant to me," he said. The telephone patch system is a simple one, said Jenkins, "I make radio contact with a military hospital in Vietnam or with one of two hospital ships, Sanctuary and Repose, anchored off the Vietnamese coast.



RADIO EQUIPMENT surrounds 74-year-old Felton Jenkins in the basement of his Minneapolis, Minn., home.

"There the military radio station hooks up with the Vietnamese telephone system or the hospital ship's system and the telephone is brought to the wounded serviceman's bedside. "Once the connection is made there, I call from Minneapolis to the home of the serviceman's parents, wife or girl friend anywhere in the United States. With my radio providing the bridge between Vietnam and the U.S., they are able to talk to each other.

"It's even possible for a serviceman to have a three-way conversation with his wife and parents.

"We try to limit the conversation to 5 minutes but, of course, we never break in or anything like that. We just wait until they're finished.

"Some of the wives and parents are so shocked when they are told their son or husband is on the line that they take a couple of minutes to recover," said Jenkins.

"The authorities in Vietnam have a list of people who want to speak to their folks at home. I specialize in the men who are wounded because their families are so worried about them. But

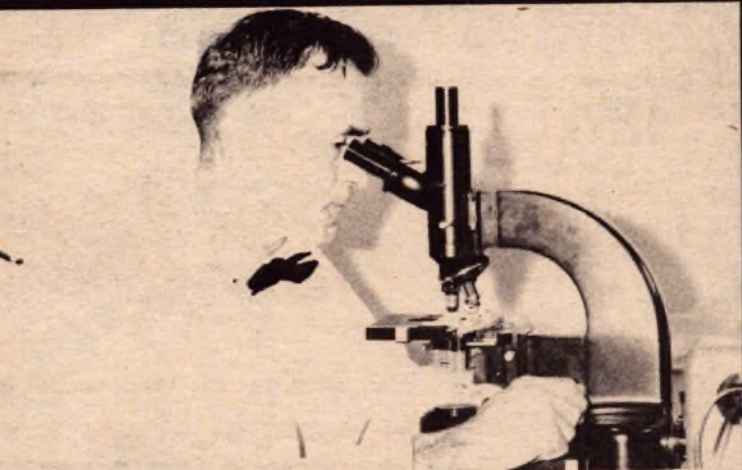


Former Movie Star Marie de Forest, WB6ZJR, widow of OOTC, Honorary member No. 5, the late Doctor de Forest, as she appeared with her display of Doc's personal exhibit of some of his vacuum tubes. Marie picked up her sixth GOLD RIBBON for this exhibit, or was it the 7th at the Riverside County (Calif.) annual fair this year.

A Memorial Station in memory of Doc will soon go on the air with Mrs. de Forest pushing the first key for de Forest-Memorial Station—WA6MFI (Many Fine Inventors) under the sponsorship of the de Forest-Inventors Amateur Radio Club. OOTC Secretary-Treasurer W6MLZ is Trustee for the station and many OOTC members serve on the Advisory Council.

On the Council are Andy Shafer, W8TE, OOTC President, 4th District Director Ray Guy, W4AZ, Hon. Barry Goldwater, K7UGA, Bert Ayers, our printer W6CL, Gus Girona, W2JE and Fred Link, Assoc. OOTC and the President of the Radio Club of America.

Other well known amateurs including Lt. General Francis O. Griswold USAF-Ret., KØDWC, Harry Gartsman, W6ATC, Vice President QCWA and John Huntoon, W1RW, ARRL's General Manager also serve on the Club Advisory Council. (from "Spark Gap Times")



Walter Thain, M. T., CT., WB4KKB

Pre-Med at Los Angeles City College 1938-41. Enlisted in U. S. Army, 115 Medical Reg., 40th Div., 1941-45. Attended University of Miami 1947-48. Awarded scholarship. Cancer Institute of Miami, 1949-69. Sent to Central University of Venezuela as Instructor of Cytology, Departamento De Patologia Y Citologia. Pilot Program. First course in Cytology in Venezuela. Training Cytotechnologists 'PaP' and Non/Gyns. Corresponding Secretary Pan American Cancer Citology Society since 1961.

others get a chance to speak as well."

Harold Norman, for nine years director of the Military Affiliate Radio System for the Minneapolis area, told an ENQUIRER reporter:

"Felton Jenkins is doing a wonderful job, and of course, he doesn't get paid for it — he's paid in the satisfaction of a job well done."

The only cost to anyone is the regular price of a long distance call from Minneapolis to wherever the serviceman's parents, wife or girl friend lives in this country.

Although those who receive the call usually pay the toll, there are times when Jenkins foots the bill himself.

"The military authorities are able to give me a pretty good idea of the family's economic circumstances," Jenkins explained. "If I think they're pretty hard up, I don't bother making the call collect but pay for it myself. And there are a lot of people who do not have a

phone, so I call someone nearby and pay for that call, too.

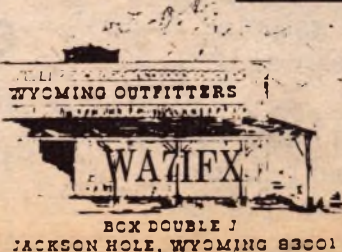
"My telephone bill averages between \$100 and \$125 a month. The other amateur radio operators in the U.S. who do telephone patches have to charge for the calls, so it is only through me that the sons of poor Americans — quite often American Indians — are able to hear the voices of their families," Jenkins said.

Even though his is the first voice families in the U.S. hear, most people are unaware it is Jenkins' time and money that has made it possible for them to talk to their wounded veterans.

"They are usually so excited that they pay no attention to me," he grinned. "I don't care. I'm sincerely interested in making people happier. I get pleasure out of doing something for someone else. And, those kids out there mean a lot to me. This is my way of saying thanks to the boys."

— ROBERT H. ABBORINO

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Paddy, 4S7PB, Net Control of Southeast Asia Net, (14. 320, 1200Z); "Big John" Van Lear, 9M2IR, XU1AA, etc, etc; and Ed Gribi, WB6IZF, 9V1QF, YB8AAP.

Remember When?



GOV. GOODWIN J. KNIGHT (seated) issued the first ham license plates bearing an amateur radio station call sign to Archie Waring of Oakland January 13, 1954.

Archie, still going strong, was at the recent Sierra Hamfest. In addition to ham radio, his interests include talking to all the pretty girls... that's what he told us...

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"When you're with them, you wish you could wave a magic wand and let them go out. You wonder why they're there. There's one older man, in his late 40's. He's been in over 20 years. I asked him why he's there. 'I don't know,' he said. 'I don't know why I'm here.' And he'll probably die there, never knowing."

You're listening to STAN KASPER, Field Development and Training, talking. He's talking about the mentally ill patients he teaches ham radio to at the Norristown State Hospital.

Listen some more: "We say we care about the mentally ill, but we don't really. It's a disgrace that so many families use hospitals for the mentally ill as a dumping ground for their troublesome members. Of 125 men in the building I teach in, 77 didn't have any visits from their families at Christmastime.

"I tell people I work in a hospital for the mentally ill, and they ask me, 'Aren't you afraid?' No, I'm not afraid, even though I do have to go through five locked doors to get to my class. And the reason I'm not afraid is that they're people just like you and me, with problems just like yours and mine, and they need outside interests and people from outside the hospital to talk to.

"When I'm with them, there are no barriers between us, we talk quite frankly. It gives them a chance to break out of their routine, something to look forward to.

"If they would only stop belittling themselves. They constantly belittle themselves because they're in a hospital. Yet most of them really know their stuff."

Stan proved his point about his students' competence when three out of his class of 11 passed the Federal Communications Commission's written exams for their novice ham radio licenses.

One of the three had been unresponsive to all efforts by the hospital staff to draw him out of himself. Now, he's planning ahead to the day when he can get his general class radio license. By then, Stan will have

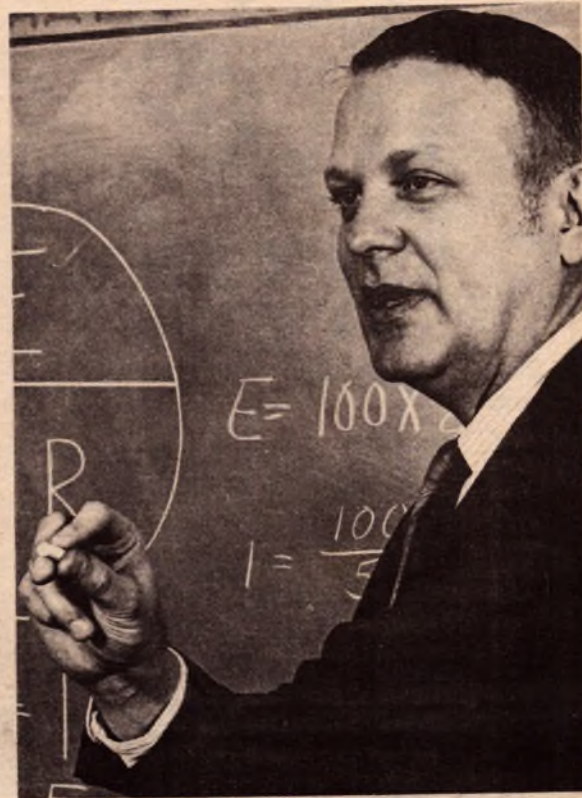
(from company publication at Merck, Sharp and Dohme)

set up a transmitter at the hospital, and the three who already have their licenses, and others who will get theirs, will be on the air.

"The patients are always telling us that we volunteers are a bright spot in the hospital because we bring them something that makes them feel better.

"There's room for a lot more volunteers to do a lot more things at the hospital."

All you have to do if you think you might like to be a volunteer is call Stan at home on 584-6453 and ask him about his experiences at the hospital.



Stan Kasper, W3ZGG

AGRICULTURE

A group of Northwest fruit growers are comparing weather, markets and ideas through Amateur Radio each Tuesday and Thursday. The orchardists get together at 6:30 a. m. Pacific local time on 3.930 MHz. They also get together on Sunday, one hour later. They invite any hams from fruit growing areas to join the group or just break in and give a report on the situation in their own area. (from "Western Fruit Grower" and sent here by Berge Bulbulian, WB6OSH.)



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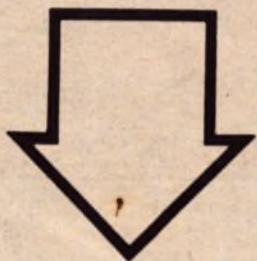
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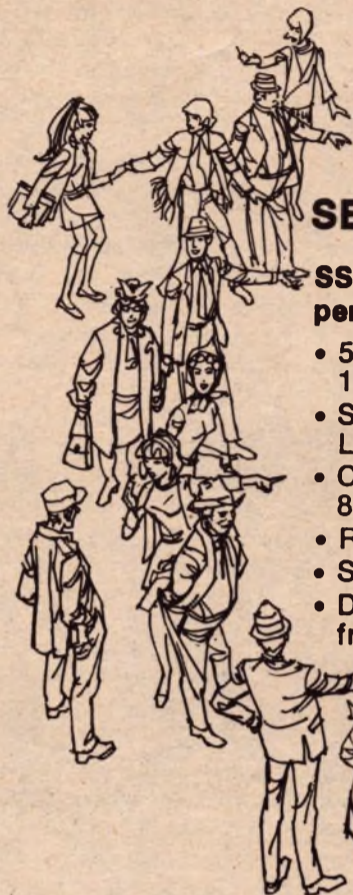
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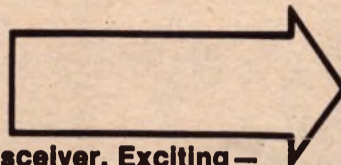
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Frequency range: 3.5 to 4.0 MHz, 7.0 to 14.0 to 14.5 MHz, 21.25 to 21.5 MHz, 28.0 to 28.5 to 29.0 MHz, 29.5 to 30.0 MHz

Tube and Semiconductor Complement:
Transmitter: 2-6KD6 RF amp. 1-6BQ5 1-6EJ7 mixer.

Receiver: 1-6BZ6 RF amp. 1-6AW8 mixer
51 transistors (6 MOSFET)
32 diodes (plus 8 in power supply)

Size: Transceiver: 6 5/8" H, 13 1/4" W, 14 1/2" D
(25.83CM, 51.67CM, 59.17CM)

AC supply: 6 3/8" H, 6" W, 12 1/4" D.
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Primary input voltage: 115/220V, 50/60Hz
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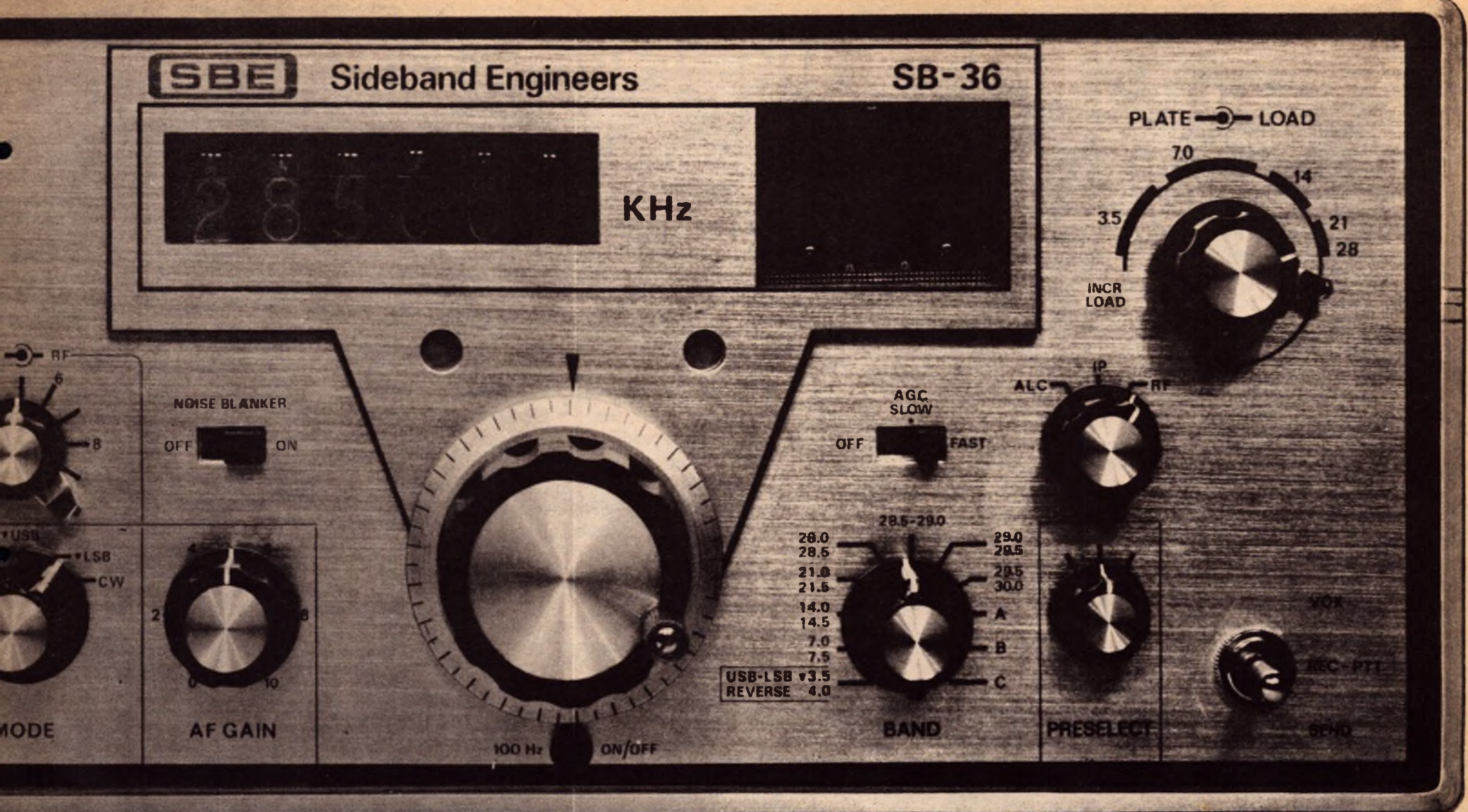
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Speaker: Built into AC power supply unit. 8 ohms. Jack provided for external speaker

Earphones: Jack on panel. 600 ohms output.
Noise blanker: I-F type, switchable from panel.
Receiver: Incremental Tuning (RIT): ±7 kHz nom. range.

Power consumption: AC operation.
Receive: 100 watts.
Transmit: 550 watts.

Meter: Transmitter: Plate current, Relative RF output, ALC. (switch selectable).
Receiver: "S" units.

Jacks on rear panel: External VFO input. CW key jack.

Connectors on rear panel: Low level RF output for use with transverters
600 ohm audio,
8 ohm audio,
ALC input,
Remote control line (provides ground in transmit mode).
Ground lug.

SHOWN ACTUAL SIZE

Controls on rear panel: Bias control, ALC, Carrier balance, VOX Sensitivity, delay, anti-VOX. Plug for external VFO.

Front panel controls:
Tuning knob
RIT on/off.
RIT freq. control.
PA tune.
PA load.
Earphone jack.
Mic. connector.
AGC mode sw: off-slow-fast.
Keying mode selector:
Send-PTT-VOX.
Preselector.

AF gain.
RF gain.
MIC gain.
Bandswitch.
Modeswitch (off-tune-USB-LSB-CW)
Counter:
100 Hz defeat sw.
Noise blanker, on/off.
Meter mode:
ALC level, Plate current, Relative RF output, "S" units (on receive).

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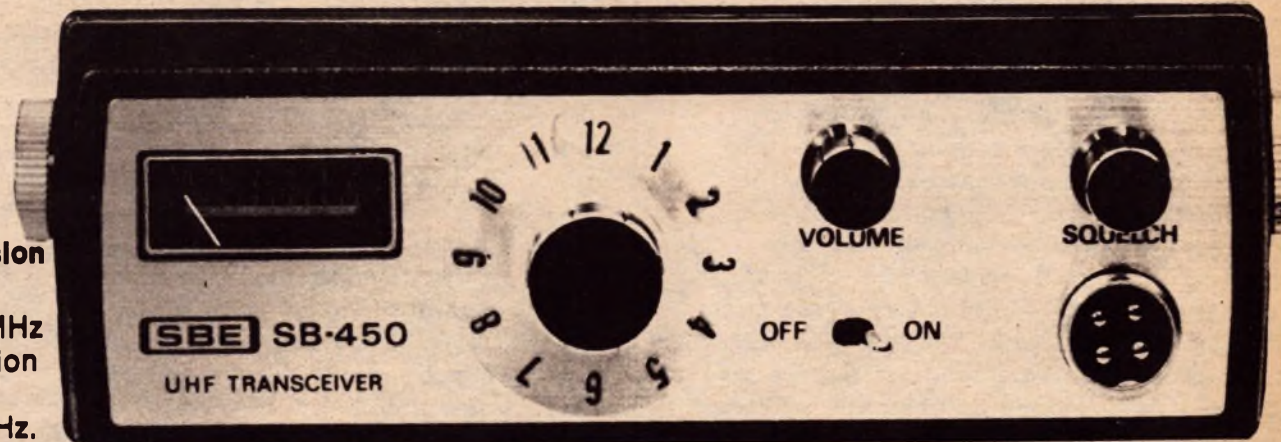
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New, all-solid-state transceiver of highly advanced design, precision built to exacting standards.

- 12 channels • Covers 420-450MHz
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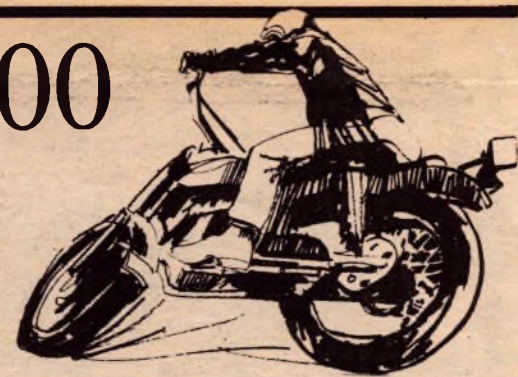
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The Baja 500

by Mike Gauthier, K6ICS



...from the travel log of K6ICS/XE2ICS, Dr. Michael K. Gauthier.

The plans had been made for months for our trip to the BAJA. We (Barrie, K6ICQ/XE2ICQ, my brother, and I) finished packing and loaded our 1972 Ford four-wheel drive pickup, checked in with WCARS on 7.255 MHz, and pulled out of the driveway heading south. It was mid-morning 3 June 1972. We arrived in San Diego for lunch and filled the three gas tanks with 46 gallons of gas. We were now ready to head into Mexico.

As the communications coordinator for the National Off-Road Racing Association, (NORRA, 1616 Victory Blvd., Glendale, CA 91201), it was my duty to organize and supervise the radio communications for the BAJA 500 Off-Road Race. This is a race that is run each June over the Baja peninsula. The race starts in Ensenada and runs south through Camalu, El Rosario, Rancho Santa Ynez to Rancho Chapala. At Laguna Chapala (a dry lake) the race heads north to the Sea of Cortez (Gulf of California) and the small fishing village of Alfonsina's. Then it is north along the sea coast to San Felipe. At San Felipe the course heads inland through Diablo Dry Lake, Valle de Trinidad, and Ojos Negros. The finish line is only 26 miles from Ojos Negros in Ensenada. Total mileage for the trip is 557 miles. But, what a 557 miles! The first 130 miles is on paved roads, then it happens. . . Colonia Guerrero. . . Everything changes. No paved road, in fact driving cross country is smoother than the washboard that is the road. Deep ruts, pot holes, ditches, dust, and if it has just rained, look out for the deeeep mud. From this point the road (?) goes from bad to worse. The rest of the course is either deep sand and dust, rocks and boulders, or a combination of everything.

There is an old saying in the Baja, -- "When God created the Earth he took all the rock and sand left over and used it to create the Baja". Having spent a lot of time in the Baja, I believe the old saying.

Because of the distances and the nil communications in the Baja, the only way a race of this kind can be run is with Amateur Radio as its communications link. Volunteers from the states, with special permission from the Mexican government, bring their portable amateur stations into the Baja and set up operations at each of the check points.

A two or three man team assigned to each check point will operate 24-36 hours straight on 40 and 75 meters relaying official race information as well as messages for the pit crews and friends of the drivers. Each year many phone patches and written messages are relayed back to the states with the help of WCARS--7.255 MHz.

In June there were 311 entries in the race. Each entry has two drivers, this is a total of over 600 drivers plus several thousand pit crew members and thousands

of friends. You can see that this many people can generate a lot of message traffic. This is to be added to the nearly 3,000 pieces of official race traffic.

Contrary generators, poor operating conditions, bad band conditions (at times) and the traffic load gives quite a workout to those taking part.

As communications coordinator for the operation, besides doing my share of operating, I had to line up all the operators and make sure they were able to reach their operation check point. In addition, I had to check out each check point before the race to make sure every thing was ready for the event. This was the reason for leaving nearly a week early for Baja.

As Barrie and I approached the border at San Ysidro we purchased special Mexican auto insurance (not required but advisable) then crossed under the international bridge into Tijuana. A quick right turn headed us towards the new toll road to Ensenada. Advising WCARS of our position we entered the first of three toll stations, paid our toll (Total toll for the 60 miles Tijuana-Ensenada is \$2.40) as we headed south. Our call was now XE2ICS/mobile.

The new toll road was completed about five years ago. It is divided and with two lanes in each direction. Bridges and some of the fences along the road are made of natural rock and beautifully constructed.

We soon reached Ensenada. This lovely little seaport and tourist town has been designed for the American visitor. There are many nice motels, restaurants, and shops along the waterfront. The seafood is excellent. Ensenada has a large amateur population of which many speak English.

We stopped in to see Victor Garcia, XE-2PRH, at the Flamingo Motel. Victor was ready to assist as needed all the amateurs passing through Ensenada. We made our motel reservations for our return trip the following week, then headed south.

Having been in communications over the past months with "Baja Bob", Bob Rose, XE2MMK, in San Vicente, we now planned our next stop there. San Vicente is about 50 miles south of Ensenada. As we left Ensenada we gave "Baja Bob" a call on WCARS, advised him of our ETA and received final instructions on how to find his ranch. We continued to maintain contact with Bob throughout the 50 mile drive. We drove through San Vicente, as per Bob's instructions, and turned right at the top of the hill. There was a small road with a California license plate on the fence post. We drove slowly down the winding dusty road, past a cemetery, around an irrigation pipe, out buildings and up to the back door of the ranch house.

Inside we met Bob's XYL, Bobbie, and his son. As it was nearly dinner time, Bob invited us to dinner. While waiting for dinner to be served, we took a tour of his 1,400 acre ranch. This was an old ranch Bob took over about three years ago. At that time the fields were in weeds, the

buildings were falling down, and in general it needed a lot of work. Bob now has about 1,100 acres planted in brussels sprouts, peas, and a few other crops. He has his own packing plant where he packages his produce for the American markets. On a smaller scale he grows grapes, olives, apples, pears, and many other fruits. Bob employs about half of the town of San Vicente. His amateur radio station is the only means of communications for the town. Bob is very active on WCARS. He runs a lot of phone patches into the states for the villagers as well as for the Americans visiting in the area.

After a real Mexican dinner we settled back to talk radio, ranching, automobile racing (Did you know that "Baja Bob" used to drive at Indianapolis?) Bob is an Automotive Engineer as well as an agronomist. He told of his plans to someday build a machine in his shop to run in the Baja races. With his knowledge of Baja roads and his automotive background he should be able to design and build a very competitive car.

Spending the night with "Baja Bob", we headed back out the next morning for the first check point of the race, Camalu. Camalu is about 40 miles south of San Vicente and 93 miles south of Ensenada. I located the owner of the Pemex gas station. He was ready for the race. He had 3,000 gallons of gas on hand and the check point crew had already arrived. They were down camping on the beach.

The radio operator, Lloyd "Jack" Poore, WB6OAO, was headed for Ensenada. He would stay there and help Nick Hauck, K6-QPE, and Al Jones, K6DIA, get Ensenada on the air. Thursday morning, before the race, he would drive down and setup operations at the gas station. Camalu was ready. Back in the truck we headed for El Rosario and the dreaded sight...the end of the pavement 18 miles away. At the end of the pavement it was still 41 miles to El Rosario.

END OF THE ROAD

Colonia Guerrero is a small farming town famous because it is the end of the pavement. The road construction crews have been busy in the area and have almost completed another section of pavement. Six miles south of the pavement end, like a mirage, the pavement reappeared. But it was short lived. Three miles and we were back in the dirt, this time the rough ruts bounced the truck like a ping-pong ball. We slowed to a near halt and crept through what looked like the best parts of the road. Suddenly the engine died. Out of gas. Switching to the right tank we slowly bounced off in the general direction of El Rosario.

About three hours later we drove up on a large mesa. This is the site of the El Rosario airport. The original airstrip was created during World War II by the U.S. Army as a bomber base. Today it is still



Victor Garcia, XE2PRH, of Ensenada.

in use. The strip is very rough with a number of large rocks sticking up over the whole field. But, being careful, you can put down nearly any type of aircraft as the runway is very long.

Across the mesa, there is a little house. Turn left and drive over the side of a cliff ... at least that's the way it seems. There is a very narrow deeply rutted, long winding canyon that heads down into the village of El Rosario. El Rosario is the end of the telephone and mail lines. It's called the "Last Outpost" before entering the wilds of central Baja. El Rosario is also famous for its fossil beds. The National Geographic Society has discovered the remains of a hitherto unknown giant duckbill dinosaur.

As we entered the village we could see a number of off-road vehicles gathered around Anita Esponosa's. Anita has a gas pump, serves excellent food, and has the best motel in town (only motel). Check point #2 is located here. The radio is set up in the jail, located next door to the gas pump.

As we drove up, a crowd poured out of Anita's. It was the check point crew, pit crews, visitors, but no radio operators. Still it was four days to race time. Bob Gorham, W6UC, was still in the states getting ready. He would be in and set up by Wednesday. This would give him a day before race time. Bob was assisted by his XYL, daughter, and her boy friend. With all this assistance Bob did a great job, seeing he spent the race in jail.

Anita fixed us lunch, we said our 73, and left for Santa Ynez. We wanted to reach the rancho before dark and it was already 1430 hours and we had 88 miles to go. The first 25 miles were rough and slow. Then the road got better, not good -- just better.

The rock and steep mountains melted away in the afternoon heat into sandy, slowly twisting roads across the flats. We entered forests of giant cirico on gentle rolling hills. Then, the El Marmol turnoff. This road leads back into the mountains to a giant onyx mine. Stone from this mine is transported by truck to San Diego. You wonder at times, how those large trucks ever make it over the road, but they do.

Baja is a land of sudden changes. You will be driving through a cactus forest and suddenly there isn't a cactus in sight-giant

boulders, some 25 or 30 feet in diameter, thousands of them 10 feet in diameter, scattered like marbles in the street. The road snakes in and out and roundabout piles of small rocks and these giant boulders. The smooth sandy road gives a false sense of wellbeing, as one slip in the sand will send you crashing into one of these giants.

In the middle of the boulders is the "La Virgen Shrine". The shrine is located in a large boulder right along the road. The caretaker of the shrine has a little store along side. Here you can buy carved onyx, and cold pop. He speaks fair English and it is very interesting to talk to him.

Santa Ynez is still 12 miles away. Cactus now covers the countryside with some large boulders. Passing several abandoned ranch houses, we came to the turnoff for Rancho Santa Ynez. As we pulled up to the ranch, the sun was sinking fast into the western sky. The ranch seemed deserted but it was race minus four days. We were early. At the camp ground we setup camp and started cooking dinner. I fired up the old Swan 240 on 7.255-WCARS looking for XE2QPE, Nick, in Ensenada. I guess he was off for dinner also.

Moving down into the novice band I started looking for a novice to surprise. I called several stations, but no returns. Then K5ASB in San Antonio, Texas. Jim said I was his first XE and asked for a QSL. I told him that when I got back to the states, that is what I would do. Signing off with Jim I called and called novices, I guess they don't listen to SSB only CW, before hooking up with WN6NCO and WN6ODK, both in the Los Angeles area.

RANCHO SANTA YNEZ

The next morning (Monday 5 June) after breakfast we went back to the ranch house to see the grand old lady of the Baja, Josefina. She is the owner of the Rancho Santa Ynez and helps support most of the people in the area. She raises a few cattle on the ranch, but the main function of Santa Ynez is a retreat. Josefina lives part of the year in San Diego, but is always at the ranch for the races in June and November. In the last few years, Santa Ynez has become modern. There is now a hot water shower, flush toilet, and a sound-proofed generator for



Actor James Garner chats with fans before the race.

24 hour a day electricity. They have even installed a pole 20 feet above the ground with a rope and pulley for easy installation of an inverted "V" antenna. The pole is mounted on a new building with windows overlooking the check point area and pits. It is the best operating position of any check point.

Five years ago, on my first visit to Santa Ynez, the outhouse was a falling down adobe room with two holes. The shower was a few turns of copper tubing with water run through. The water was heated with an old smudge pot. The faster the water flowed the colder it became. The generator ran sometimes, the output voltage also ran... up and down... about the only thing that was safe to plug in was lights.

Barrie and I spent several hours talking with Josefina. She kept after us to stay with her for the race. We assured her that John Peak, WB6DZG, and his wife would do a good job for the communications network and that she would enjoy their stay. Josefina asked us to return soon.

As we headed back to the camping area for the truck, we checked behind the ranch house to see if the Triumph TR-3 was still there, it was. This car ran the first race down the Baja. The drivers hitched a ride out and asked Josefina to keep an eye on their car as they would be back. That was five years ago. They have never returned, but the TR-3 still stands where they left it, untouched to this day.

Pulling the truck up to the gas pump, we filled both long range tanks and took off again. Destination-Rancho Chapala, Check point 4. The road to Chapala is slow and rough. We covered the 32 miles in about two-and-a-half hours. The rancho is located in the middle of a giant dry lake. The race check point is set up near the ranch house, but there are no facilities like Rancho Santa Ynez. Everything you need must be brought in from the outside world. The radio operator, Bob Coberly, Jr., WB6TZD, was going to fly in Wednesday. The check point crew was driving in. One

DOCTORS



Nick Hauck, K6QPE/XE2QPE, operating in the communications center for the Baja 500 in Ensenada.

B A J A

get to San Felipe we had to drive the... dreaded six grades... Having never driven this road before, we had heard the stories of these grades. Steep grades, deep ruts, rough, narrow, rocky, and drop offs of hundreds of feet—should you go off the narrow road. To us this sounded like any other mountainous Baja road. We looked forward to some real rough road, something that would tax our vehicle.

The first grade was not unlike many others we had driven before in the area around El Rosario. The second grade went well. This grade is the highest and from the crest you have an excellent view of the Sea of Cortez. Grade three went slowly as we bounced up to the crest. As we looked down the far side there was a truck stuck in the middle of the road. Below it there were several pickups and dune buggies waiting for the road to clear. Being below the stalled pickup there was little they could do. Parking on the crest of the mountain, we walked down to the troubled vehicle. The truck had overheated and stalled trying to make the steep grade. Trying to get the engine started they had run down the battery. We had to get them off the road.

Barrie was able to turn his pickup around and back down the steep grade to the stalled truck. Hooking on a heavy-duty tow line, putting the truck in four-wheel drive he slowly pulled the stalled truck up the grade to the crest. Battery jumper cables got his engine restarted.

Clearing the road allowed the vehicles at the bottom of the grade to continue south. Barrie turned the truck around again on the narrow ledge and we were able to continue our journey north. The last three grades were steep, rocky, narrow, rut filled, etc. Slowly we crept over the grades and down to the flats. Puertecitos was just ahead. This fishing village is at the end of the good road south from San Felipe. Driving through the town we could see pit crews from many teams setting up the camps. As this was the end of a very bad road, crews like to make repairs now so they can make up lost time on the 50 miles of good sandy road going into San Felipe.

As we left town we passed a semi-tractor trailer of the Bill Stroppe Ford team heading for Puertecitos. Bill enters six to ten cars in every Baja race. His pit crews usually carry enough parts so they could build several vehicles on the spot, if required. Some of the Stroppe Team drivers this year were Parnelli Jones, driving a Bronco; Walker Evans and Shelby Mongeon, who placed second in a Ford pickup; Ak Miller and Ray Brock, in a Ford pickup; TV star Jim Garner and co-driver Slick Gardner, in a Ford pickup; and Larry Minor and Jack Bayer, in a Bronco.

The road was now flat, sandy, with a few rocks here and there along the way. Building up speed we hit 20...25...30 miles per hour...we seemed to be flying. At times we even hit 50 mph. But, there was always the danger of hitting a half-hidden rock in the sand. These are the rim benders. The ones you don't see until it's too late. Soon we could see San Felipe in the distance. Entering town, we turned on the main paved, yes! paved, highway and headed into town for lunch.

Arnold's Del Mar Motel & Cafe is a great place to stay and their food is excellent also. Lunch was served on the terrace

of the pit crew was bringing the generator. Of all the check points, this one is the roughest to operate.

Lake Chapala, the dry lake, consists of two main parts. First is the north end. This part is very dusty. There are deep ruts in the road. In fact, when the ruts get too deep, a new road is made around the old. This area has dozens of roads branching off. Pick one, any one, They are all horrid. As they approach the ranch house they all come back together. The dust in this area is incomprehensible, in the ruts it may be three feet deep. Some of the ruts are covered with the dust and as you drive through you may hit a large rock or rut bending a wheel or breaking the suspension on your vehicle. If you go too slow, the dust will cover you completely. Air conditioning is almost a requirement to drive the Baja. We drove by a cow laying along the road. The dust covered it and it was some minutes before we could see it again, yet it was only two or three feet from the truck. The dust is so fine and dry it flows like water and will bead up as it flows down the windows. Driving through this stuff is like driving through a large pile of cement powder.

South of the ranch house the lake bed is very flat, smooth, and hard. Here you can travel for several miles at top speed. Quite a change from the lake to north of the ranch. About 18 miles south of Ranch Chapala the road splits. South the road leads to Punta Prieta and La Paz. This is the route used in November for the MEXICAN 1000, Ensenada to La Paz race. To the east the road leads to Alfonsina's and San Felipe. Alfonsina's was to be the home for Ray Meyer, WB6RZP, and Jim Coulter, W6SHI, for the next few days. This is check point #5.

From the turnoff to Alfonsina's the road winds through several ocotillo forests and up a large canyon. There is a small stream on the canyon floor. Part of this road is up this stream bed and part along side the stream. Suddenly the road turns sharply and goes up the wall of the canyon and out on a large mesa. There is a heavy cover

of small cactus and lots of rocks. Rocks, Rocks, Rocks. We worked our way eastward and the road became less rocky and more sandy. We could see the villages along the beach. Even so, it took over an hour to drive to the coast. We had reached the Sea of Cortez (Gulf of California) and a few miles later the road to Alfonsina's. We drove past a number of homes owned by Americans along the main road, which is also the airstrip, to the restaurant.

We met Jim, W6SHI, and his party inside. They had just finished dinner. Most of the check point crew were also there. Ray, WB6RZP, would fly in Wednesday after dropping Bob Coberly, Jr., WB6TZD at Rancho Chapala.

ALONG THE SEA OF CORTEZ

Being very tired, and hungry, we drove back up the road to a camping area on the beach. Made camp, cooked dinner, and went to sleep. The next morning I walked out on to the wide, flat, white beach. The sun was still low in the sky but it was already hot and humid. Like all Mexican beaches, it was deserted except for a single dune buggy several miles away. As we left Alfonsina's we could see the mark left by the night's high tide. Part of the only road in, had been covered including the southern section of the airstrip. During high tide the road is impassible. This meant the check point had to be moved from the restaurant area out to the main highway, several miles away. Fifteen hundred gallons of gas for the race cars had to be trucked in 50 gallon drums out to the main road. Additional generators were needed to operate the lights in the check point at night as well as to power the radio communications center. Jim Coulter, W6SHI, having been involved with nearly all the Baja races was well prepared for the problems at hand. After you have been on a few Baja races, things like this are common.

Everything was under control at Alfonsina's when we pulled out at 0940 hours for check point #6, San Felipe. Before we could

overlooking the Sea of Cortez. Small fishing boats were scattered about the sheltered bay. The typical Baja wide beach ran for as far as the eye could see and not a soul to be seen. After lunch Barrie and I headed for the check point.

In San Felipe the check point is located at the Pemex station on the main road, Highway 5, as you are leaving town. As we drove up we could see the house trailer of Louis Rush, K6QXN, and Alex Halyburton, WB6TQF, already in place. We had arrived just in time to help them install the inverted V's for 40 and 75 meters. It took some time to locate the 30 foot mast as there were a number of good locations but we were looking for the best. We wanted to keep all the guy wires and antenna wires away from the telephone and electric wires, beam towards Ensenada, and try to keep away from the fluorescent lights of the gas station. I remembered a few years before, when I operated from this check point, the noise from the fluorescent lights was so bad, I had to move to the far side of the Bill Stroppe trailer and then tap into his generator for the AC power. Even then the noise on 75 meters was so bad I could just copy Ensenada in the 20 db over 9 noise.

This year the AC line (commercial power) looked clean, but what will happen after dark? As the station lights came on, the sun had nearly set. I tuned across 40 meters...it was clean. A little background noise but nothing like Los Angeles. I heard a KL7 calling CQ. A KL7 on 40 meters... and it is still daylight. The "S" meter indicated 50 db over S-9. Strange things happen down here in Mexico. I gave him a quick call, there was a pause, then "XE2-ICS San Felipe? this is KL7HIY, Sitka, Alaska"... After several minutes I told Paul that I was going down to 75 to check that band for noise. He said he would follow. I tuned up on 3948 and stood by. There was Paul, this time only 25 db over S-9. This is the kind of thing that keeps me fascinated with Amateur Radio. When you turn it on you never know what to expect. Tonight was one of those nights. I told Paul what we were doing and what the race was all about. After signing with Paul, I checked out the band for noise. Almost nil. I have more noise at home on a quiet night. It looks like everything will be OK in San Felipe.

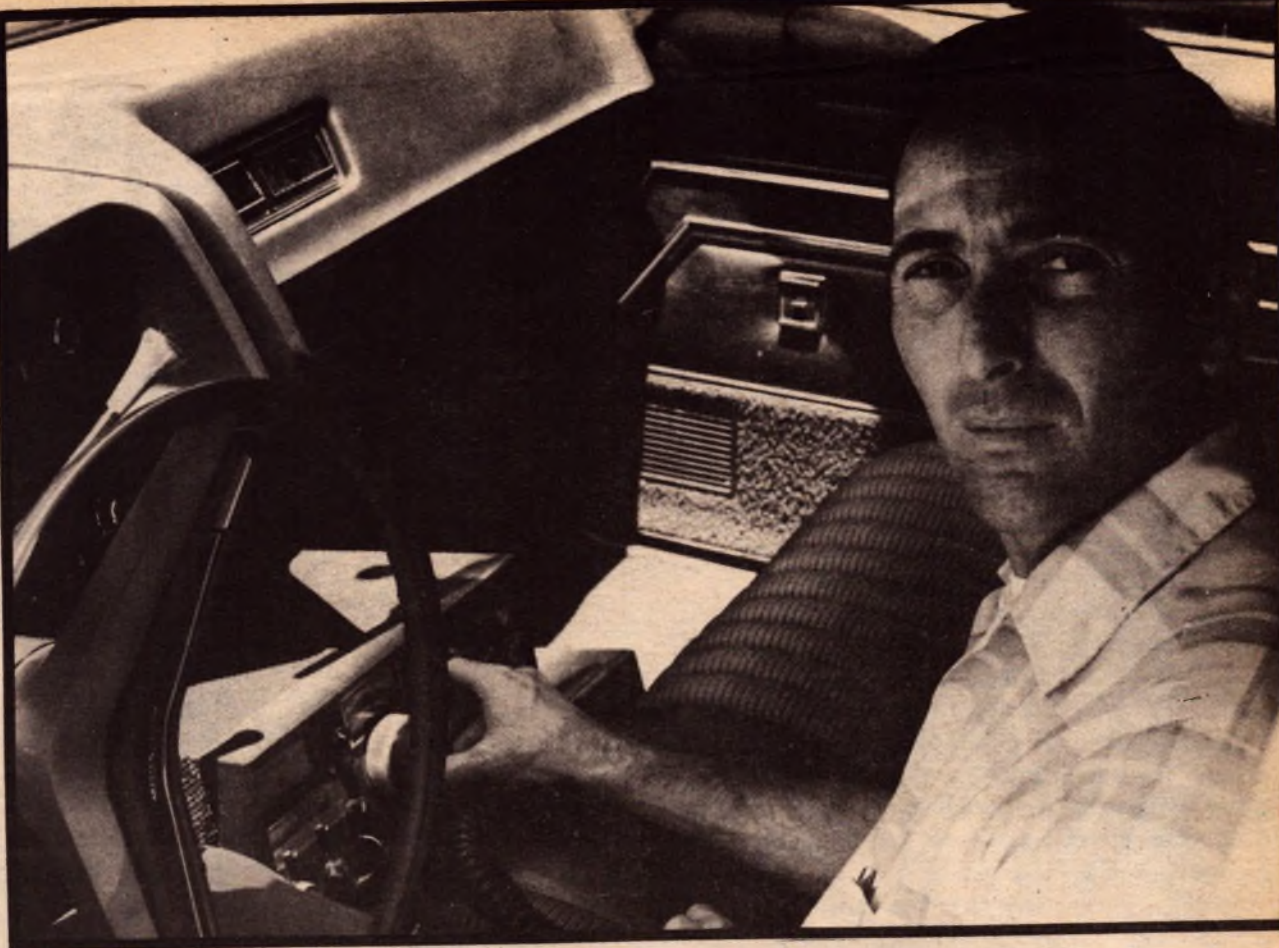
HEADING WEST

After breakfast with Louis and Alex, Barrie and I left San Felipe for check point #7, Diablo Dry Lake, 23 miles northwest. We noted with great delight that the roads in this area are much better than those to the south. It only took 55 minutes to cover the 23 miles. The check point was to be located at the south end of the dry lake, but with two days before race time there was no one there.

There is nothing, no rancho, no cattle, no anything in this area. Eric Lundstrom, WB6CVR, will be operating from this check point during the race.

From the check point area, it is 12 miles across the dry lake bed. Most of the road is very smooth, hard, and high speed. Here and there will be a rough spot, deep ruts, but no boulders and rocks of any size.

Valle de Trinidad, the next check point, was reached in 65 minutes. That is moving



Mike Gauthier, XE2ICS/K6ICS, checking into WCARS - 7.255 MHz

down there. The distance from the dry lake is 46 miles.

Check point #8, Valle de Trinidad, is located on the east side of this small farming community. This is another town where the main street is also the air strip. This could get a little sticky during race time with both cars and aircraft, traveling at high speed, trying to use the same strip to do their thing.

Jerry Drukin, WB6CUK, and John Campbell, WB6HSZ, would be operating their radios from Trinidad. As we drove into town we could see a few camps already set up. We checked in and found the pit crew from the Bill Stroppe Team. They were firemen from Long Beach who had come down to help the Stroppe Team. We checked the gas station, all OK, plenty of gas on hand.

The NORRA check point people had not arrived yet. Jerry and John were reported in Ensenada and headed for Trinidad. They would be in later today.

It was time to be on our way again. Destination--Ojos Negros, Check point #9. This is to be our point of operations during the Baja 500. Checking the maps, we found that it was 54 miles, if the roads hold out, that will mean a two hour trip. The roads in this area are good if you have a VW or pickup. I would not want to drive a standard automobile over the roads.

The area has a number of ranches and truck farms. There are a small number of local vehicles on the roads. Something you seldom see down south. About halfway to Ojos Negros we rounded a bend and there was a VW with a mobile antenna on the back. I checked the license plates--WB6HSZ--that must be Jerry and John. We stopped the truck in the middle of the narrow road and walked up to the car. Jerry and John were glad to see us. They were not sure they were still on the main road as the roads in this area are not marked and with the many ranchos and villages there are many side roads. It is very easy to get lost. I told them, if you are lost then so are we,

it's lucky we are both lost at the same place - hi hi.

We exchanged information on road conditions, travel times, and the latest in radio talk. It was off again time, and we were.

About an hour later we came upon the new highway construction just outside of Ojos Negros. We tried to follow the instructions from NORRA on how to find the check point site. With the new highway construction, the roads are torn-up, signs down, and roads indicated on our maps were gone. We had three maps with us - NORRA check point map, Auto Club of Southern California (an excellent map of Baja), and the Cliff Cross Map and Guide Book (P.O. Box 301, North Palm Springs, CA 92258; \$3.50 plus tax. Excellent book.) Each showed the area slightly different. All were wrong.

We toured the area, driving through the main part of town, out several roads to the ranches and truck farms in the valley. Heading back towards the general area of the check point we met several drivers pre-running the course. They said the check point was several miles down the road. We drove to the indicated area. A deserted field at the junction of several roads. There was no one there. We decided to head into Ensenada as it would be at least 36 hours before the first racer would arrive at the check point. We only needed a few hours to get the radio set up and the check point in operation.

The 26 miles to Ensenada is good gravel or paved roads. It sure felt good to ride on pavement after nearly 600 miles of "hit the rock". Soon we passed the sign "Ensenada City Limits" or I should say, the Spanish equivalent.

In a few minutes we pulled up in front of the NORRA headquarters and the radio communications center. Inside we found Nick Hauck, K6QPE, and Al Jones, K6DIA, hard at work checking with the network of stations already on the air. Nearly every-

one was now on-the-air. There were no major problems, just a few small ones already under control. The net control station, XE2QPE, was using a Swan 500-CX with dipoles for 40 and 75 meters. There was a Swan 400 on the desk for a back-up. Over the past five years, we never had a major failure of a transceiver. Sometimes a relay will get dusty and stick, but that has been it. Over the years 75% of the equipment used has held the Swan brand name. I'd say Swans are "Baja proved".

Filling Nick and Al in on our just completed adventure, we went to look for Ed Pearlman, the president of NORRA, to update him for the drivers meeting later that evening. Ed was in the middle of a meeting with members of the press.

Breaking away for a few minutes, he took our report of road conditions, check point info, and messages from people along the course. Radio station KBIG (740 kHz) had several reporters covering the race. We were asked a number of questions about the course, the weather, and other things of interest for the listeners of Southern California.

Working our way through the crowds in the pit area, Barrie and I headed for the Flamingo Motel for eats and rest. Victor, XE2PRH, was waiting for us. Our room was ready. The steaks were big and good. We were soon ready to sack -out.

RACE DAY - THE BAJA 500

Thursday was race day. Everyone had been looking forward to this day since November and the MEXICAN 1000. Barrie and I arrived at the Start line early. We wanted to see some of the local action before driving out to Ojos Negros. The race started at noon. We had three hours to wander through the pits looking at the varied types of vehicles entered. You will find nearly any and every type of vehicle entered in the BAJA 500 and MEXICAN 1000. There are nine categories of entries: Production two-wheel drive passenger, Production two-wheel drive utility, Modified two-wheel drive and non-production single seat, Modified and non-production two-wheel drive with two occupants, Modified and non-production four-wheel drive, Motorcycles under 125cc, Motorcycles over 125 cc, Baja Bugs, and Mini-pickups.

There is prize money for the first five places in each category plus overall winnings. Total prize money for this race was over \$77,500. You can see, with that kind of prize money, that this is no Mickey Mouse, small time race.

At race time there were a total of 311 vehicles ready to go. This is the largest number of entries to enter an international race. The MEXICAN 1000, in November, has always been the larger of the two races each year. This November there may be as many as 400 entries.

In the pits we looked at the motorcycles. Highly polished paint jobs (they won't last long) and shiny chrome. There were Suzuki 400 cc, Yamaha 360 cc, DKW 125 cc, Harley-Davidson 125 cc, even two Vespa scooters (180 cc) to name a few. Nearly every name bike manufactured was entered.

Across the way there were dune buggies of every description. Most of them were VW powered, some home made, some commercial. Toyota, Jeep, Bronco, Blazer,



Scouts were mixed in with all types of pickups, 'home-made machines and regular cars like a 1935 Ford. (These fellows enter each year, they don't win but they complete the race each time, this is more than most entries do) Rambler Rogue, Peugeot 404, Mazda, VW busses and beatles, Plymouth Duster, Maverick, even a Corvette (he broke down) to name a few.

The first bike was to leave the start line at 1201 PDT. Each minute thereafter a bike would follow, i. e. Bike #1 at 1201, #2 at 1202, #3 at 1203. The first vehicle (#61) would leave at 1301, #62 at 1302. Vehicles would leave on the minute until #339 left at 1739 PDT.

Barrie and I stepped into the radio room. The net was in full operation. Every check point was 5x9 plus. Our frequency was 7.205 kHz. We use this frequency so that stations in the states can assist if a relay is required or if we need to get traffic back into the states. It had been noted the day before that about noontime the band went dead for about three hours. By the signs we were seeing on the signals, it looked as if it would happen again today. As 1201 approached the band suddenly dropped out. What else did you expect to happen? Copy was poor, signals were very weak. Five minutes before all signals were 10 to 30 db over S-9. Suddenly they dropped to S-5 to S-8. The weaker signals now faded out completely. Only two stations were now readable. Time? 1201 of course. We knew the network was in operation and if the signal pattern followed the previous day everyone would be readable again about time half the vehicles had left Ensenada.

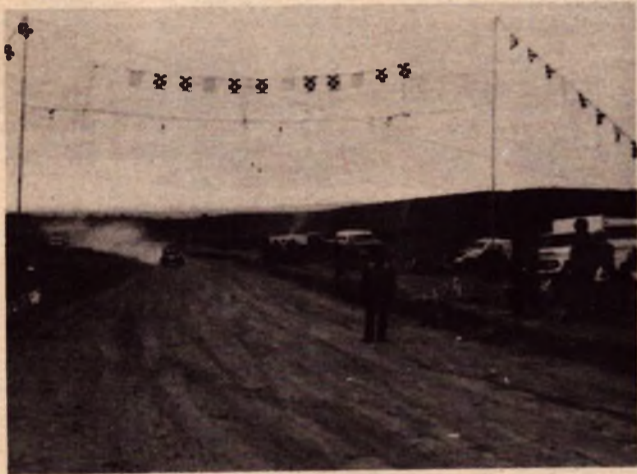


There was nothing I could do, so I got my camera and walked out the door leaving Nick and Al with an ear full of QRN. Work my way through the thousands of spectators I tried to reach the start line. I couldn't even get near. I held my camera over my head and tried to get a few photos of the start, they didn't come out.

Barrie and I walked back to the Flamingo, had lunch and went back to the communications center. The QRN level was high, signals were weak. From time to time you could read a station or two. There was no important traffic on the net, so we didn't miss anything. At 1430 Barrie and I decided to go on out to Ojos Negros. By the time we got out there the band would be back in shape. There was nothing we could do in Ensenada. The crowds were still toooo thick to approach the starting area.



OJOS NEGROS



Radio shack in a Pinto

Above four photos by Jack Poore, WB6OAO, others by the author.

Pulling out of a side street, we waited at the intersection for a Corvair to race past. We turned on to the race course and headed out of Ensenada. (Note: The roads are not closed during the race. Even in Ensenada, normal traffic uses the roads while the racers fly by.)

Soon we turned off the course and headed out the Ojos Negros road. The 26 miles back to Ojos Negros heads up into the mountains. At 2,000 feet altitude we began to run into very heavy clouds. Pilots would call it "instrument weather". There was a light drizzle which made the newly paved road very slick. The higher we went, the thicker it got and the heavier the drizzle, almost a light rain now. The pavement ended on to a graded road bed on which they were ready to lay pavement. Low spots in the road bed were filling with water...the water was making mud...the mud was sticky. Over the mountains and through the river to Ojos Negros we go. Splashing through the river washed some of the mud off the truck.

We pulled into the previously deserted field. It was now a beehive of activity. The check point captain, Don Hayne, and his crew were nearly set up. We pulled the truck into position so we could use the cab-high camper as one end of the antenna support. The other end was tied to a support pole used for the lights over the check point. I ran the AC power cord over to the generator. The antenna was up. Pulling the Swan 500-C out of the back of the camper (we used the Swan 240 in the truck while mobile, but we wanted the added power for the net). Plugged in the AC power supply. Everything was ready to go. Started the generator and checked the output voltage... A-OK. Loaded up on 7.210 MHz, SWR-about 1.8:1, not good but OK. Tuned down to 7.205.

The band had reopened and everyone was loud and clear. "XE2QPE this is check point #9 Ojos Negros, XE2ICS. How copy Nick?" "XE2ICS from XE2QPE glad to hear you on. You're S-9 plus plus"...

XE2ICS stood by monitoring the reports from Camalu, gathering messages from the check point crew and pit crews, checking on WCARS for phone patches into the states. The afternoon faded into night. San Felipe reported first vehicle, then Diablo then Trinidad. We knew it wouldn't be long. It was after midnight. Look...up on the hillside...lights...bright lights...coming over the crest of hills several miles away we could see the bright quartz-halogen lamps used to cut through the black Baja night. There were too many lights to be a bike, it must be a buggy. The roar of the engine is too much to be a buggy. But a buggy was leading at Trinidad...it must be a buggy. As it came over the last hill

and down the short dusty road into the check point we could see that it was a pickup. A Chevy pick-up. Mickey Thompson's pickup. Number 79. Mickey's co-driver was his son Danny.

I grabbed the mike. "XE2QPE this is XE2ICS--#79, Mickey Thompson, just arrived Ojos Negros. He looks close to record time, over".

Cy Pemberton, K6LE, was set up at the Finish line, just outside Ensenada. He was told to alert the crew there. Mickey would be there in 15-20 minutes. Cy rogered the information and Ojos Negros prepared for their next vehicle. We were now operating 75 meters, 3.945 MHz. Signals were clear and strong all night. Band conditions were the best we've had in several years.

Throughout the night we received reports from stations along the course and reported each vehicle as it passed through Ojos Negros. Vehicle number and time through were relayed to Ensenada where they were posted for public display. Everyone in Ensenada was kept up to date on their vehicle's progress.

At dawn we had logged nearly 50 vehicles. Shortly after dawn, cars started to pour in. Many cars get lost at night or the drivers decide to sleep for a few hours. Then at dawn they seem to pour out of the countryside into the check points. Within a few hours we had logged another 50 vehicles. Forty meters had reopened and we moved back to 7.205.

Throughout the morning there was a steady stream of vehicles checking in and going on to the finish line. Some were still in good condition, but many were limping badly. One dune buggy came in on three wheels. He had lost his left front wheel and "A" arm during the night, but by taking it easy he was able to move along.

During the night it had rained along the course between San Felipe and Ojos Negros. Many of the motorcycle drivers were covered with a thick crust of mud. Some of the engines were sick and it was everything the drivers could do just to keep them running, but no one quits now with only 26 miles to go.

By 1000 hours the number of cars dropped to a slow trickle. I decided to take a little nap. Barrie had picked up about four hours during the early morning, so he was fresh. I crawled into the camper.

I woke up just in time to see the noontime fadeout take place. Right on schedule. Like the past two days, the band folded up at noon. Our traffic had all been sent out. We were down to one car an hour. The band being out was of no real problem. This gave us a chance to turn off the generator and have some quiet for a few hours. At 1400 hours I checked the frequency. The band was starting to come back in. Signals were weak but we could copy everyone.

RETURNING TO ENSENADA

The Baja 500 Off-Road Race is a 24 hour race. Each entry is given 24 hours to complete the course. The vehicle with the lowest elapsed time is the overall winner, not the first to cross the finish line.

Because of the times involved, many of the check points down the course could start closing up and returning to Ensenada or home. Each hour another check point was



closed. Ojos Negros would not be closing till about 1730.

As the time approached, we took down the antenna, folded it up so it would be ready for November. We cleaned up our camping area and prepared to leave at 1730. We were now using the mobile rig. The signal was weaker than with the other rig and dipole antenna. Ensenada was the only station left on the air, so long as they could read us, that was all that counted. This they did OK.

Upon receiving word to close down, Barrie & I jumped in the truck and took off down the course to Ensenada. We made the 26 miles in less time than a number of the racers. But, we had only driven 26 miles not 557 like the racers. We wanted to get to Ensenada in time for a little din-din and the awards party.

The awards party, held in Ensenada, at 2000 hours, gives everyone involved in this sport the opportunity to get together for eyeball QSOs and for the NORRA officials to hand out the winnings.

THE WINNERS

There were 311 vehicles that left Ensenada Thursday. Friday saw only 144 return within the 24 hour time limit. The overall winner was Bobby Ferro in a Sandmaster buggy. His elapsed time was a blistering 10 hours and 56 minutes. This shaved 15 minutes off last year's record time also set by Bobby Ferro. The first six overall winners were as follows:

- #293, Bobby Ferro(solo), Sandmaster Buggy, 10:56 hours
- #167, Evens/Mongeon, Ford Pickup, 11:19
- #79, Thompson/Thompson, Chevy Pickup, 11:37 hours
- #98, Stephens/Brawner, Tandem VW, 11:53
- #210, Miller/Hunter, Ford Pickup, 12:19
- #18, Fetty/Silverthorn, Honda 250, 12:20

There were winners among the radio operators also. Every operator was a winner. Each had done an excellent job at his check point. Eight members of the crew had never operated a BAJA race before but

this didn't hamper their ability to adapt to the Baja and its ways. Listening to the net operation you would think they had spent years working this type of an ordeal. I think the best way to describe the operation is that it is a combination of Field Day -- DXpedition -- Civil Defense Drill -- Automotive Endurance Run.

MEXICAN 1000 - NOVEMBER 1972

The most asked question heard after the BAJA 500 from the radio operators was "When is the MEXICAN 1000. Every operator stated that he had a ball and wanted to return in November. Requests for operating positions are already coming in. The MEXICAN 1000 will start Wednesday morning, 1 November and finish in La Paz on Friday, 3 November.

The check points will be as follows: Start-Ensenada, cp #1-Camalu, cp #2-El Rosario, cp #3-Rancho Santa Ynez, cp #4-Punta Prieta, cp #5-El Arco, cp #6-San Ignacio, cp #A-Rancho Cournta (may be changed), cp #7-La Purisima, cp #8-Villa Constitucion, Finish line-La Paz.

Each vehicle will be given 36 hours to drive the course. Friday night there will be the awards party in La Paz and Sunday there will be a luau at the Hotel Cabo San Lucas, at the southern tip of the Baja.

JOIN IN THE FUN

There are a few openings for additional radio operators for this race. I would like to see two or three operators at each check point, three or four operators in Ensenada and La Paz. Stations in the Los Angeles and San Diego areas as well as other locations are always welcome to join in as relays or to handle traffic back into the states.

If after reading this story of the June race you're interested in operating in the Baja, please drop me a note and I'll be happy to send you complete details. Write to: Dr. Michael K. Gauthier, K6ICS/XE2-ICS, 9418 Florence Ave., Downey, CA 90240, or call on WCARS - 7.255 MHz.



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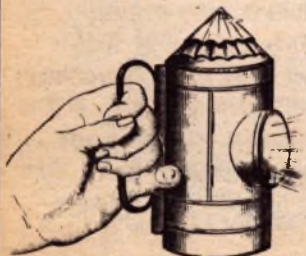
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Olympics: DL

OLYMPIC GAMES VISITOR LICENSES:

To simplify the granting procedures for German short-term licenses during the Olympic Games, visiting foreign radio amateurs may simply show their home license at the local telecommunications authorities in Munich or Kiel. Between June 1 and September 30, 1972, visitor licenses will be granted free of charge and the assigned calls are of the type W1RW/DL. The Oberpostdirektion (OPD) offices are: OPD Munchen, Dienststelle 25-1, Arnulfstrasse 60, Munchen, and OPD Kiel, Dienststelle 25/26-2, Stresemannplatz, Kiel, Federal Republic of Germany. Office hours are 0800-1200 and 1400-1600 Mondays through Fridays.

During the games, radio amateurs of the Munich VFDB will run a special event station in the building of said OPD, which will be open for operation by visiting amateurs.

(de Alfred Muller, DL1FL, International Liason Officer, Deutscher Amateur Radio Club.)



Musicians

The International Music-Hams Club (IMHC) was started several months ago by Torben Elmøe, OZ5LZ, solo trombonist with the Sjellen Symphony Orchestra (Denmark) and Jan Williams, K2PLT, Percussionist and member of the faculty of the State University of N. Y. at Buffalo.

The membership is open to any musician who is a licensed ham. At present there are 60 members. The majority are from the U. S. but several European countries, Canada and South Africa are also represented. The membership fee is \$2.00 (U. S.)

A newsletter is sent out several times a year which lists all members and tells of some of their activities as well as the IMHC activities, which include nets, and an award.

Interested hams can write to Jan Williams, K2PLT, 63 Anderson Pl., Buffalo, NY 14222 for further details. (35)



SAROC

We received a note the other day from Leonard Norman, W7PBV, telling that the 8th annual SAROC would be held on January 4-7, 1973 at the Flamingo Hotel in Las Vegas. There is a special room rate at the Flamingo for those attending. Highlights include Technical Seminars, Meetings and Exhibits. The sixth National FM Conference will be held on Friday and Saturday, with FM Hospitality room taking care of the wee-hour technical discussions. WCARS and WPSS will conduct their business meetings. Programs will cover ARRL, DX, FCC, MARS, Sergio Franchi will be on stage and much more including special ladies programs. There is a special Jet Flight package with pickup points in the East and Midwest. For full details write to: Southern Nevada Amateur Radio Club, PO Box 73, Boulder City, NV 89005. Advance registrations range from \$10 to \$21 per person depending on the desired show and dinner package. Other highlights include the SAROC-SWAN Social Hour and the SAROC-Hy-Gain/Galaxy Cocktail party. Whoopee---see you there.



ECARS

East Coast Amateur Radio Service

operations manual

7255 kHz

(presented for the interest of other nets as a model which may be adopted, adapted, changed, modified, etc., for the use by others.)

PREFACE:

The primary objective of ECARS is to provide on-the-spot, immediate, and efficient communications assistance in situations of an emergency nature. Through the discipline of a skilled and organized operation, such aid can be offered in instances covering a range of events from national disaster to reporting an accident to the local police. Priority is given to mobile stations, who are most likely to come upon such situations during their travel. Additionally, when not involved in such emergency work, we are providing an "all-day, every-day" monitored frequency which stations may use to meet and move off with other stations, to exchange and receive assistance or information. This manual has been developed with the intention and hope that it may provide the foundation for the realization of these goals.

SERVICE FREQUENCY:

ECARS holds no claim to any particular frequency. However, as determined by the Executive Committee, the Service Control Station will attempt to maintain net operation as close to 7255 kHz, or other designated frequency, as is practical.

PRIORITIES AND TRAFFIC:

The only traffic to be passed on net frequency shall be concerned with:

1. Natural disaster (earthquake, hurricane, flood, etc.)
2. Life and death emergency.
3. Highway (or other) assistance.
4. Instances when it might be impractical for mobile stations to establish contact on another frequency for passing a short message.

The decision that a particular situation falls within any of the above categories rests with Service Control, and once deciding that it does, he has the option of declaring a "NET ALERT". At such times participating stations shall refrain from transmitting unless specifically addressed by Service Control, thus assuring maximum assistance with minimum confusion. The Service Control shall announce that the "NET ALERT" has ended, and the net will resume its normal operation as soon as possible.

SERVICE CONTROL STATION:

Although not a requirement, it is preferred that the Service Control be a member of ECARS, familiar with its operation. In any case, he should be aware of the purposes of our organization and fully acquainted with the contents of this manual. It should be clear that the major contribution to the success of our efforts rests with these individuals. The ability to cope with emergency situations can be acquired only with serious intent and consistent involve-

ment. As for qualifications, Service Control must have a strong, clean signal; and his on-the-air manner should command the respect of participating stations.

Call-ups should be FIRM and BRIEF, with preference always extended to mobile stations. By limiting transmissions, chances are likely that responding stations will be equally short. All calling stations should be acknowledged immediately and asked to stand by, if necessary, until a list has been accumulated. When conditions are poor, full use should be made of relay stations; and to assure fullest coverage, it may prove expedient to pass the Service Control from one area to another. In such cases, it is understood that responsibility for the net still rests with the original Service Control Station.

DON'T ARGUE ON THE FREQUENCY !

In instances where an interpretation of the policy is required, the Net Manager, Area coordinator, or other officer, should be consulted.

When opening the net, or reopening it after it has been dropped, it is understood that courtesy will prevail when getting started. Make sure the frequency is not in use with a "QRZ" a couple of times, if necessary. If there is a QSO on frequency, do NOT attempt to ride roughshod over it, any more than you would want anyone to try to move you off a frequency that you have been using. Move the Service up or down a little (without QRMing) until the QSO is over.

Under no circumstances should rag-chewing be permitted. It is also important that when QRM appears, participating stations should be warned to refrain from addressing remarks to the interfering party, since this will usually aggravate the situation. When it is felt that the QRM is unintentional, Service Control MAY direct a particular station to move off to explain the circumstances. When the QRM is known to be intentional, the best way to frustrate the intruder is to ignore him completely, and carry on as usual. If the QRM is too severe for this, it might be necessary to switch to another Service Control or to close down the net and revert to rag-chewing with the strongest stations until the QRM subsides.

As for your log, the FCC requires only that you enter your starting and ending times and the stations you have checked in. However, it is customary to include first name, location, and traffic requested, if any.

Service Control will request check-ins, with preference given to mobile stations. At his discretion, a list of stations and areas sought by participating stations may be maintained, but unless of priority nature, this list will not be passed from one Service Control to his relief.

you, it is of utmost importance that you be in complete control of the situation as long as it exists. Be sure to obtain as much PERTINENT information as possible concerning the emergency, and make certain that ALL of it is passed to the proper people. If a message is to be delivered, advise the delivering station to report back to you as to its disposition, and then relay this information, if necessary to the originating station. Remember that ALL of the State Police offices in any one state are in communication with each other by teletype, so a phone call to one will suffice to obtain their aid. Where required, make full use of relay stations, and above all, DO NOT LOSE YOUR TEMPER ! Remember that a person's life may rest with the speed with which help may be dispatched. Maintain the "NET ALERT" as long as you believe it is necessary, and if you must leave the air for ANY reason, make sure your relief is both competent and fully aware of the full details pertaining to the emergency. When the crisis is over, announce that the "Net Alert" has been ended, and revert to normal operations. Keep a record of all the important details (nature of emergency, stations involved, etc.), and mail this information to the editor of "The ECARS Monitor" for inclusion in the "Rescue Squad" column and other public relations endeavors.

THE SERVICE CONTROL STATION IS THE HEART OF OUR OPERATION ! !

PARTICIPATING STATIONS:

It is not required that a station be a member of ECARS to participate, although it is hoped that the goals toward which we are striving might provide the necessary inducement for voting membership.

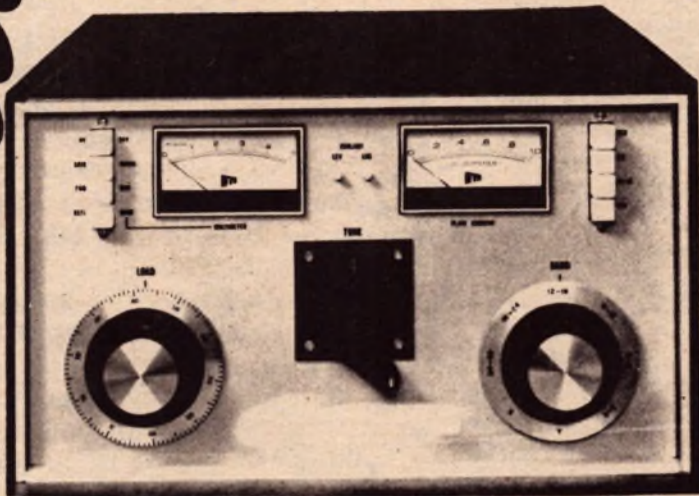
Stations responding to a call for check-in should give their call sign, ONCE ONLY, and then await recognition by the Service Control. (Failure to give your call sign is illegal) If at all possible, check-ins should be consecutive, rather than everyone trying to make himself heard at one time. When acknowledged, and called for individually, the station will respond with his name and location, followed by the nature of his business. If you are QRU, advise if you are QRV for one or two-way traffic into your area. **KEEP ALL TRANSMISSIONS SHORT.** When a "NET ALERT" is announced, it is important that no further transmissions be made unless specifically requested by Service Control. Under his direction, every effort should be sensibly extended to relieve the emergency with the greatest speed.

When moving off to another frequency to establish contact, it is only common decency to inquire about the frequency you intend to use. The greatest number of complaints about our service pertains to stations moving on to frequencies already occupied. Once it has been ascertained that the fre-

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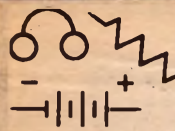
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TWO HUNDRED METERS AND DOWN

The Story of Amateur Radio-By Clinton B. DeSoto-Courtesy of ARRL

(First published in 1936, "Two Hundred Meters and Down" is reprinted here, in serial form, so we may have a better knowledge of the vast and great history of Amateur Radio. This presentation is in honor of those who went before us and, through determination and hard work, gave us what we have today.)

Continued from last issue.

Next to message-handling, and of course general conversation or "rag-chewing", the principal activity of the amateur is experimenting. His indefatigable flair for research and the discovery of something new has led him into multitudinous new paths, with many glorious and shining discoveries resulting. It is to this continual questing into the unknown that the present state of the radio art is due. It is to the exploring of rejected hinterlands that the entire invaluable field of high-frequency radio communication owes its existence.

Not only along the air lanes do radio amateurs foregather, however. The members of each A. R. R. L. division, and in a number of individual states, hold annual conventions at which the amateurs of the area congregate, meet each other, receive technical and operating instruction, have a rousing good time, and then return to their stations filled anew with the zest of amateur radio. Between fifteen and twenty of these conventions are held annually; occasionally the number goes slightly higher. Perhaps five thousand amateurs attend. In addition, several hundred "hamfests", which can best be characterized as annual club get-togethers or banquets, are held each year. The attendance at these ranges from a few dozen to well over a thousand. These conventions and hamfests epitomize, in tangible form, the intangible amateur spirit that characterizes all contacts in amateur radio.

The predominant characteristic of the amateur is his altruism. Those not familiar with amateur practices find it hard to realize that altruism of such a high order exists anywhere in the world. The amateur wants every other amateur and the public to share in and benefit by his discoveries. The only thing he guards jealously is his spot on the air, his place in the sun. The rivalry to accomplish something that has never been done before is intense, but it is rivalry of the friendliest sort, and no sooner does one make a new record than he wants to show all his brother amateurs not only how it was done, but how they also can do it. All realize that a new record in radio is not a personal accomplishment, but is an accomplishment of radio, and no one wants to be the only one to hold a record. If an amateur worked a new distant station, he telephones all his friends, and makes schedules for them. If a new hookup is evolved, or a new adjustment discovered that improves performance and efficiency, it is immediately passed on at the local radio club or in the pages of an amateur magazine. The slightest advance in technique, every individual discovery, any observation that promises

improvement, is immediately the property of all.

There is adequate reason why the amateur should have played such an important part in the development of radio communication. The word "amateur" supplies the keynote. Its base is "to love" - to work for the love of the working. A great body of people with intelligence above the average working together in one great art with no thought of financial compensation cannot help but advance the art they love.

Based on this extraordinary spirit of fellowship and altruism, bolstered by the aid of high intelligence, supported without financial gain to themselves or their associates, amateur radio has traced a story that cannot be compared with any other in existence. It has no analogy; nor can we find any synonymous class or group in contemporaneous or past civilizations. Yet it is nevertheless normal, wholesome, and steadfast.

It is necessary that an appreciation of the work of a man be had before his biography can be understood and enjoyed to the fullest. The same is no less true of a class of people. It is that background to the perpetuation in chronicle of amateur radio which is provided by the foregoing.

Amateur radio is so intensely varied, its specialities subheaded under specialities so numerous and so complex, that it has been impossible to give more of its status than a sketchy review minus all detail. But the broad outline of the picture is there; and we trust the detail will assimilate of itself in the perusal of the following chapters.

In radio's newest relative, television, the picture is etched upon a shimmering blank screen by lines of light. The screen is here set up; let now the lines of light draw in the story of amateur radio.

PART I -Pioneers- Chapter One...THE DAWN OF THE ART

The history of amateur radio begins with the twentieth century. Preceding its active development were centuries of evolution. Mankind labored through eons of time to develop the massive natural intelligence that underlies our understanding of even the simplest principles employed in science and industry and art. In that sense, the amateur radio of today is the consequence of the entire development of civilization-an inevitable, inescapable product of natural law.

Thales, in 600 B. C., discovered the peculiar properties of amber, from which Greek root was to be derived the word "electricity." Pliny, Pliny the Younger, and others unwittingly utilized the properties of electric current in the days of Imperial Rome; but the term itself was not to be invented until fifteen hundred years later, when Dr. William Gilbert took the word "electrum", or "amber", and derived "electrica", referring to substances which attract. The actual word "electricity" first appeared 43 years after Gilbert's death, in Sir Richard Browne's "Pseudodoxio Epidemica" of 1646.

The spectacular science of electricity

did not fail to attract experimenters to its pursuit, and the next three centuries were to see the building up of an amazingly diversified theory and practice containing the most far-reaching ramifications. In the early decades of the nineteenth century an Englishman, Michael Faraday, discovered that a relationship existed between electro-magnetism and light; he it was who first defined the laws of induction. In turn, in 1873 a Scotsman, James Clerk Maxwell, published a book on electricity and magnetism in which he promulgated the theory that all electric and magnetic phenomena could be reduced to motion in the form of waves in a mysterious substance which he called the "aether"; the term was adopted from the German philosopher Encke who used the word "ether" in 1829 while studying Pons' comet, referring to a transparent and extremely sparse fluid supposed to fill celestial space. In 1886 a German, Heinrich Hertz, achieved the experimental verification of Maxwell's theories by discovering that a spark could be caused to jump across an air gap between two wire ends, when another spark was caused in a circuit containing an induction coil and spark gap.

There are earlier dates than these, of course, and other names. As early as 1867 Maxwell, in his chair at the University of Edinburgh, had outlined certain of the basic elements of his theory. But of even more immediate importance to the history of amateur radio is a scene that occurred on a mountain in West Virginia one summer day in 1865. Shades of Benjamin Franklin! — a group of mature bearded men were there engaged in the questionable activity of sending aloft a kite, bearing on it a large square of fine copper gauze. Toward the earth trailed a slender copper strand. On another mountain, eighteen miles away, another kite, similarly laden, flew at the same elevation. At the base of one, Dr. Mahlon Loomis, a Washington, D. C. dentist, opened the copper strand that connected, through a galvanometer, to a coil of wire buried in the earth—and the other galvanometer, similarly connected eighteen miles away, quivered!

While the acceptance of this feat was never unanimous, it is now generally construed as the first signal transmission through space, the first "aerial telegraph", utilizing only "natural static" for operating power. Loomis labored until his death in 1886 to achieve popular recognition of his work; he experienced a staggering succession of set-backs but never lost faith. The needed public recognition was never achieved. Yet he made one contribution for which, if for no other, he deserves to be recorded, the only part of his system which lives today—the "aerial", which he himself named, and in the use of which he was first by twenty years.

(Continued next month)

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M A R N

MOSAIC AMATEUR RADIO NET

The Mosaic Amateur Radio Net is an international, non-profit, non-commercial association dedicated to serving mankind and fostering international good will. It is an association of Masonic amateur radio brethren and members of the appendant Orders. Membership in the Mosaic Amateur Radio Net - better known by its acronym MARN - is open to all members of the Masonic order and those of the appendant Orders who possess any class of amateur radio operator license. There are no dues and the nominal membership fee is perpetual. You are invited to write for information.

The Nobility Net

The Nobility Net of North America is a non-profit gathering of Shriners and members of the Masonic Order who have dedicated their services in behalf of the world's most rewarding philanthropy.... the cost-free care and rehabilitation of crippled and seriously burned children in our 22 Shriner's Hospitals, throughout Canada, Hawaii, Mexico and the U. S. A.

Among our many aims - to make available to parents of crippled children, who are unable to afford the high cost of medical aid, knowl-

edge of how to secure these surgical services free of charge; aid in providing transportation for patients; setting up of blood-banks and creating good relationships between Shrinedom and the public who are not aware of this great philanthropy.

There is no initiation fee nor are there any dues. All that a Noble or Mason need do is check into the Nobility Net which meets each Saturday at 1700 GMT, on 14.310 MHz.

(de International Coordinator, W3FQT)



The International Mission Radio Association is a group of Amateur Radio Operators and associates dedicated to providing communication facilities and to help in providing equipment, to those engaged in Missionary or volunteer services. It is a non-denominational, non-profit organization with a rapidly expanding membership of men and women from all walks of life throughout the world.

People Helping People

by Sister Mary, WA5VBM



Father Leonard Bose, W6BSO

Father Len was born in San Francisco in 1917 and has lived in the Bay Area all his life. When he was just six years old, his father promised to buy him a crystal set for his birthday if "he was a good boy." In Father Len's words, "Boy, did I shape up!" He got the crystal set and from there his interest and enthusiasm for radio began to grow by leaps and bounds. Came oatmeal boxes and miles of door-bell wire, etc.

Then someone presented him with a one-tube receiver... he had it made. Of course he knew nothing about Amateur Radio at that time, but one fine day, after getting a library card, he discovered that there were books in the library on radio. They were old books, and nobody told him that "spark" transmitters were outmoded and illegal at that time, so he tried lots of things... Eventually he discovered a copy of QST and was set straight. That was in 1929.

Shortly after discovering Amateur Radio, Father Len built a two-tube receiver which worked only after much trouble. He began to listen... it was the 40 meter band; all CW then. He studied the code and radio theory and finally after getting up enough nerve, he took the examination and received the call sign, W6BSO.

That was in 1931, the same year that Father Len graduated from grammar school and entered St. Joseph's Prep Seminary for the Archdiocese of San Francisco. The faculty graciously allowed him to set up an amateur station at the seminary. It consisted of a crystal controlled rig with a 47 oscillator, a 53 buffer and a 210 final and was limited to 80 meter CW. The receiver was a two-tube TRF.

In the major seminary, Father Len had to curtail his operating to the summer months and then shut down altogether during World War II. But soon after his ordination to the priesthood in 1943, Fr. Len got back on the air, participating in the Civil Defense nets. As soon as the war-



14.280
MHz

time restriction was lifted, he bought an HQ-129 and started building an 800 watt rig using 813's. He did a little narrow-band FM work on 10 meters, but most of his operating was 20 and 40 meter CW.

After ordination, Fr. Len was assigned to St. Catherine's Church in Burlingame. In 1954, he was transferred to St. Brigid's Church in San Francisco and then was appointed administrator of the parish in Vacaville. In 1959, he was assigned as pastor of St. Athanasius Church in Mountain View and in 1969, he was transferred to St. Lucy's Church in Campbell, Calif. (adjacent to San Jose) where he is now pastor.

In his almost 20 years as a priest, Fr. Len has run the gamut of activities, serving as Assistant Pastor, Theology Professor, Building Construction Supervisor in two parishes, Parish Administrator, State Prison Chaplain, and pastor of two parishes.

Father Len is of German-Polish parentage. He says of himself, "I weigh about 180 pounds, have blue eyes and wear trifocal glasses (alas!) I am 5'9" tall. The little hair that I have is gray... and I do mean little. My second language is German, which I know fairly well. This I learned from my mother, who seldom scolded me except in German... did it penetrate! 'Du Lausbubb' was more effective than 'you rascal!'"

The W6BSO station has grown out of its "spark" days and can now boast the Collins S-line(75S-3, 32S-3 and 30L-1). The antenna is a Hy-Gain tri-bander beam and a 5-band Hy-Gain vertical. The tower is a crank-up, tilt-over with 60 foot capability. The rest of the station consists of the goodies you can see in the accompanying picture, plus an RTTY receiver and a 32V-3 (in the building stages) for transmitting RTTY. Father Len says, "I find RTTY a fascinating mode of communication, and of possible value in IMRA."

Father Len first became interested in the IMRA when it was still CMRA (Catholic Mission Radio Association). He happened across a message that WA8LEI would be on the air at 5 p. m. PST to contact anyone interested. He jumped to this. On the other end, at WA8LEI, was that gracious person, Marie Sutter. They set up weekly schedules and soon the late Bishop Escalante, XE1MJ, joined them for some unforgettable QSOs. In their schedules, Marie told Father Len about CMRA and soon he became a member, too.

In Father Len's words, "Marie kept urging me to come to the IMRA Convention in Charleston. Who could resist Marie's insistence? So I came and met the nicest and most dedicated people I have ever known. From then on, I was all for IMRA. This was a dream and hope that I had cher-

ished since seminary days... that my hobby could be of service to God, Church, and people. I have attended every IMRA convention since then, and please God, will be able to do so for many years to come. I served as Chairman of IMRA up until 1970 when the members of IMRA decided to elect me their president... a position which I, in all humility, feel honored to hold. My hope is that I shall be able to be an IMRA member for the rest of my days here... and why not hereafter? There, we will not need tubes or transistors to communicate."

IMRA News

By the time you read this, the IMRA will have a new slate of officers and the International Convention in Rochester will be history. We are looking forward to writing the report on the election of officers.

K7SML: It is with regret that we report the death of Chuck Grout, K7SML. Chuck had massive heart attack on June 16th. He was taken to the V. A. hospital where he died on Sunday, June 18, 1972. May he rest in peace.

WB4JOB: Joe Lanno, Miami, Florida, is in Larkin General Hospital. Joe entered the hospital in South Miami for some tests and a check-up on July 9. Hope to have him back on the net soon.

WB4KKB: Walt Thain has been trying to take care of all the Miami phone-patch traffic in the afternoon. When he heard that WB4JOB was not on the net, Walt re-installed his phone-patch and began running patches on the spot.

K3CVY: Earl Pinkston (Pinky), got his feet wet as Net Control Station for the first time on July 10, at the 0100 GMT Traffic Net session. Pinky will be filling this position until WB4JOB is released from the hospital.

HR2AJS: Tony Saybe, took his turn as Net Control Station on July 12, replacing HR1-MM, Ernie Hinojosa, who was out of town. Tony and Ernie are extremely helpful members of the IMRA because of their command of the Spanish language. Gentlemen, we appreciate your help.

WA1FKE: Brother Bernard, once "Vocal-Mobile", now rides along in silence. The power supply to his mobile rig "gave up".

K1VWL: John Tomasaitis, visited Brother Bernard recently in Providence.

W4DAV: Jim Wilson, Jacksonville, Fla., received a letter of commendation for his work in providing communication for Mrs. Joseph Beaver, Jr., and her husband who is in Tegucigalpa, Honduras. Mrs. Beaver is with their small daughter who is critically ill in Washington, D. C. Jim not only gave the Beavers a chance to discuss the serious situation, but he also gave a very sick little girl the pleasure of talking to her "Daddy".

People Helping People: Thanks go to Ted Champagne, WA4FLW; Dan Healy, K1-HKZ; Tom Kelley, WA4YML; Parker Latta, WB4RZS; Fred Lemka, W4SFD; Dick Wood, K9KFJ/4; Elmer Lunt, WB4SFG; Al Champagne, SWL; John McNamara and Jim Mason. All these people pitched in to help Pat Healy, WA4VWJ, get his station back on the air. Like a family of busy ants, these gentlemen erected a tower, assembled and mounted a quad, checked schematics to hook up a console for transmitter, linear, receiver, phone patch, and rotor. Thanks to all.

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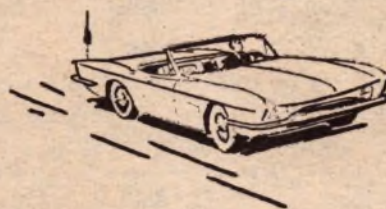
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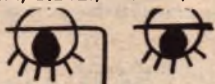


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Public Service Of Radio Hams Warmly Lauded By Lawmaker

Radio hams received the attention of Congress the other day at Washington, when Rep. Charles Thone, of Nebraska, inserted in the Record a statement warmly commending them and telling of some of their deeds.

The text of Rep. Thone's remarks follows:

"Mr. Speaker, radio amateurs, licensed by the Federal Communications Commission to operate broadcasting stations on a non-commercial basis, call themselves hams. They form one of the most valuable groups in the United States in giving public service, particularly in times of emergency.

"There are more than 270,000 hams licensed by the FCC and more than 100,000 are members of the American Radio Relay League, the ham's association. Hams have provided advances in radio techniques, bouncing signals off the moon, and developing the single-sideband system, since adopted by the military as their means of communication.

"Hams provide the only link for the outside world in remote areas, such as Pitcairn Island. Hams were the means by which Thor Heyerdahl's RA expeditions remained in touch as they crossed the ocean.

"Whenever there is a disaster, such as the flood at Rapid City, S. Dak., in 1972, or the Alaska tidal wave of 1964, the hams are on the air 24 hours a day providing communication. They serve in little publicized ways also. For example, a fire on railroad property in Nebraska was quickly extinguished earlier this year because it was reported by a radio amateur.

"One of the greatest public service ventures involved with the war in Viet Nam was organized by a Nebraska ham, Hugh Tinley. Back in 1967, he arranged with the Pentagon for establishment of an amateur radio station in Viet Nam, operated by hams in service. Through this station and the hams in America, about 30,000 mothers, wives, and children have talked to their servicemen in Viet Nam in a project called Operation Hello.

"A man who had just escaped from the Viet Cong was able to inform his mother personally of his safety through Operation Hello. A mother who had just been informed that her son had been wounded was reassured by a personal call from him. A wife and mother of a Marine captain talked to him shortly before he was killed in battle in Viet Nam. They wrote... "You can understand how precious that call was."

Rep. Thone, in closing his remarks, spoke of the fact that "radio amateurs are organized to work with both the American Red Cross and Civil Defense. "He told of the Amateur Radio Week observance in June and the 58th birthday of the American Radio Relay League, adding a reference to the annual Field Day "for thousands of hams who will travel to unpopulated areas to test their abilities to operate under emergency conditions. With their own power supplies, they will be operating portable equipment so that they will know they are ready to function in event of disasters."

The Nebraska lawmaker closed his remarks to Congress with the statement, "America is grateful for the hams that serve us."

(From "Radio Trade-Around" and sent to WORLD RADIO by Ken Leiser, W9DOR.)

ECARS

quency you have in mind is not occupied (a simple QRZ should do that) that frequency is then yours. Until then, be careful.

PROCEDURAL SIGNALS:

It is important to remember that when making an initial transmission, the calling station must identify with his call sign. Therefore, when using any of the following procedural signals, follow them with your call sign ONCE, and then await recognition by Service Control.

1. BREAK-BREAK-BREAK Highest priority, involving life and death situations.
2. BREAK-BREAK Urgent type traffic, such as property damage, etc.
3. CONTACT Used to notify Service Control that the caller wishes to contact a station KNOWN to be ON FREQUENCY. If unsure, caller should check in normally and ask if the desired station is on frequency.
4. INFORMATION or INFO Indicates to Service Control that the calling station has information pertinent to business at hand.
5. QUERY Indicates to Service Control the calling station has an inquiry pertaining to the business at hand.
6. RECHECK Indicates that the caller has failed to establish contact with a station previously moved off the net frequency.
7. RELAY Serves to advise Service Control that a station not copied by the latter is attempting to check in. When recognized by Service Control, the calling station should then act in his behalf, picking up the check-in, obtaining, and then passing along all pertinent information.

(for further information on ECARS, contact Dave Flinn, W2C FP.)

participants *Worldradio subscribers*

Communicate



This listing is provided to facilitate your acquaintance with others of similar interests.

(Continued from last month's issue)

Ralph Saroyan, W6JPU, Fresno, California
 Claude Owens, WB6MDN, Modesto, California
 Alfred Roach, W6JUK, Fresno, California
 Veikko West, K6ORP, San Mateo, California
 Parker Lester, W6LHQ, N. Hollywood, California
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 Nell Devitt, WB6ERT, Oceanside, California
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 Don and Dorothy Morris, W8JM-WN8 LAI, Fairmont, W. VA
 Ken Millar, ZE7JV, Cranborne, Rhodesia
 Tom Walmsley, W0DRB/HK6, Manizales, Colombia
 Bill Sievers, W0OID, Bloomington, Minnesota
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 Charles Wolfmeyer, W0KH, Omaha, Nebraska
 W. Clark-Robinson, WA6PCI, Crescent City, California
 Frank Farris, W4DYV, Colonial Heights, Virginia
 Chet Golding, K0ORC, Overland Park, Kansas
 Elliot Jackson, K6QL, Granada Hills, California

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ARRL Pacific Division Convention

October 14-15, 1972

A Fraction of the Program

How to Predict Radio Propagation
Vic Frank, WB6KAP

Amateur Antennas and DXing
Jerry Hall, K1PLP, ARRL Tech. Staff

EIMAC Tube Linears
Merle Parten, K6DC

Towers, Zoning, and the Law
Ed Peck, K6AN

Solid State R. F. Amplifiers
Steve Snell, WB6LRI, SBE

Exotic Repeaters
Lance Ginner, K6GSJ

Hi-Power Solid State VHF-UHF Amplifiers
Tom Litty, K6RAD, TPL Communications

Phase Lock Loops
Art Fury, WA6JIJ, Signetics

State Disaster Plans, Office of Emergency
Services--Marion Hensen, W6NKR

WORLD RADIO
will be at the
hamfest, we
look forward
to meeting our
friends.



A. Prose Walker, W4BW,
Chief of the Amateur and
Citizens Division, FCC

Convention Banquet Key-
note Speaker-12:30 p. m.
October 15.

Many Exhibitors

Prizes awarded
after banquet

Army MARS, Navy MARS, Air Force MARS,

AREC, RACES, WCARS, AMSAT-OSCAR,

Swap Tables, Home Brew Contest, Code

Practice and Speed Tests, Amateur TV

Hidden Transmitter Hunt on 146.65, Mobile

Judging, Continuous Movies, NCDX Forum,

ARRL Forum with President Harry Dannals,

W4TUK,and much, much more....

Tickets \$10.00--After Oct. 8, \$12.00

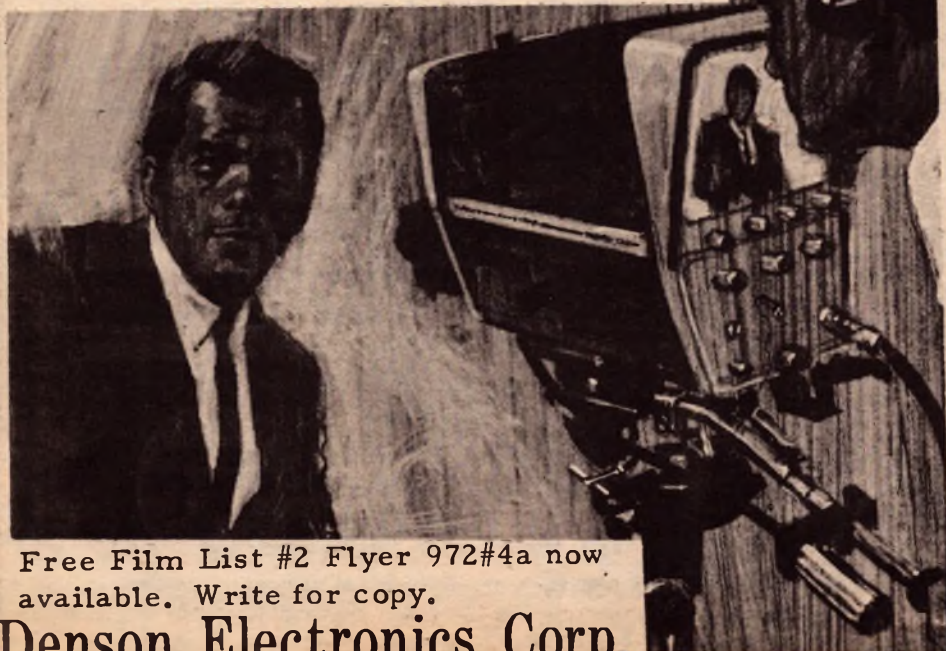
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The September issue will have a major picture story about Fred Hargesheimer, WØEBG-VK9FH. Photographed in New Guinea by WORLD RADIO, the story tells about the gratitude that Fred displayed towards the primitive natives who saved his life in 1943. Fred, now on leave of absence from UNIVAC is teaching at the area's first school, which he was instrumental in having built. --Bruce Barnard, ZL-1AJU, International Winner of the Brasilia Contest has written an account of his travels in South America in which he has high praise for the friendliness of the PY amateurs. --College students, feeling concern for Novices who, it seems, can never hear a Vermont station, mounted a DX-pedition to the Green Mountain State and operated in the Novice bands. --More on the travels of Darleen, WA6FSC, now HC2YL. --A Plan for Emergency Communications by Arthur Smith, W6INI, Assistant Director, SW Division. --The amateur's role during Hurricane Agnes--A report on the activities of the "Worldradio Foundation" and more.

Letters

I have just read the June-July issue of **WORLD RADIO** and at this moment have the feeling you get when someone puts the crystal clear light of truth and reason onto a murky and obscure idea that has been lurking in the back of your mind for a lifetime.

Like so many of my fellow amateurs, I have often felt we were letting the opportunity to learn about our neighbors around the world slip through our hands. What better way is there to meet a person from another land than to come right into his home via radio? To say nothing of the possibilities of slow scan TV!

It seems to me that if mankind is to survive, we need to start by making use of every possible channel of communication between the peoples of the world. Only by knowing each other can we trust each other. We cannot know each other if we do not communicate... Warren Bergmann, **W0TDR** (Note-Warren is lifetime subscriber #4)

I agree completely with your comments regarding keeping the license requirements. You said it all. It is unfortunate that we cannot get the apathetic hams in the fraternity to take a stand like that.

I also appreciated the articles on how hams helped out in the South Dakota, Washington and other floods. This shows hams performing true public service, which is the name of the game. All hams should be geared up for emergency operation. The DXing, rag chewing and contests are all great aspects of the hobby but the real reason is public service. The time to learn emergency procedures is NOW rather than after the emergency has occurred and it's too late. This is why I encourage **AREC** membership and participation in local nets as well as participation in the National Traffic System... D. Paul Gagnon, **WA6DEI**, **SCM** Santa Barbara

Good luck in your endeavors... Cy Fellerman, **K3FEC**

Congratulations on that editorial in the June-July issue! It should be read and digested by not only every amateur of radio but also by every person who has an interest in non-commercial radio communication... Carl Drumeller, **W5JJ**

Very impressed with fb publication-the best I have read concerning ham radio... Craig Rutledge, **WB6NUM**

Your editorial in the July issue took the words out of my mouth. I was born in Colombia, South America, came to this country in 1962, became a citizen by naturalization in 1967 and have a hard time with the English language every day, Hi! Last year I decided to become a ham operator, so I went to school and took radio and code; in April I took my tests and received my Novice License; by the end of the semester I knew I could go for the General, and after more studying went to the FCC office and got my license in August; but I didn't stop; I put a lot of hours of more study and practice on the air and took my test for the Advanced Class which I passed on December 8. This I know, if a foreigner like me can get three classes of licenses within nine months, anybody with a little will power can, also. It wasn't easy, but it wasn't impossible... Diego Garces, **WA6IPX**

The week of July 3rd the **XYL** and I spent a week on the windy island of Aruba.

Never having worked a station from Aruba (I had worked Curaçao) I picked **PJ3AH**, Chester, at random from the Callbook and telephoned him.

He invited me over to see his shack and we spent a few pleasant hours on his rig.

The **XYL** and I enjoyed meeting Chester, Elsie and their family. We went back to visit and ham it up on two other days.

"The beauty of Aruba lies in the friendliness of its people."

... Ed Comeau, **W1JWA**



Next to the hobby of ham radio itself, **WORLD RADIO** is always one of my most enjoyable experiences. Your publication tells the world that Hams are still human beings and very much aware of other people... Fr. Aidan Schaefer, **W8BPQ**

A very fine, informative publication... Cathy Soehl, **W4BAV**

FB-you are filling a void-we need the news of our fraternity... E. J. Packmore, **WA7QWV**

I must say that I have been quite impressed with this publication. I am especially impressed with your interest in the Public Service aspect of our hobby and the amount of space actually devoted to the work of Amateurs during some of our recent emergency situations. The "social" aspects of **WORLD RADIO** magazine, such as the feature write-ups on certain individuals and mention throughout about **ARRL** conventions, major hamfests, etc. also deserve to be commended. And finally, the existence of the Worldradio Foundation... Steve Fink, **VE4FQ**, **SCM** Manitoba

My family and I did get an amateur station installed at the mission/orphanage near Monterrey, and subsequently obtained permission to operate it as **XE2PWW**.

We had an exciting time touring rural Mexico by camper van for 17 days. After

returning home, I have been able to complete a number of phone patches between the missionaries at **XE2PWW** and their headquarters in Dallas.

An unexpected result of the Mexican adventure was that my family discovered how well we liked traveling in the rented 1966 camper van. So we became the proud owners of a 1972 Dodge camper van, which is much better equipped. Although I have not operated mobile since 1955, suddenly the mobile bug has bitten hard again, and I'm looking forward to outfitting the camper with a rig. It's a pretty rugged vehicle, capable of taking us practically anywhere in the western hemisphere that can be reached over land.

We have come to know Larry Walrod, **VE7BRK**, who, with his wife Marg, are full-time faith missionaries with Wycliffe Bible Translators. Larry is in the Jungle and Aviation Radio Service division of Wycliffe, and the Walrods spent a number of years stationed in the Philippines. They are currently in Dallas on a project, developing a 20-watt SSB transceiver which is powered from flashlight batteries that will provide their missionaries medium-range communications under all sorts of primitive conditions. Flashlight batteries were the chosen form of power because of their universal availability. Larry's story might make an interesting feature for one of your future issues... Dick Sisson, Jr., **W5ONL**



LEARN A LANGUAGE

44

You have 24 hours to live.

Today, that is. So what are you doing with your time? Are you helping another human being toward the dignity you want for yourself? Are you doing anything to overcome the hate in this world—with love? These 24 hours can be a great time to be alive. If you live right.

Break the hate habit: love your neighbor.



↑ understanding

Worldradio NEWS



RAPID CITY FLOOD - from page 20

Federal Communications Commission

Aug. 11--Denied a petition by George Puzzuole for a rule making to amend Part 97 of the Rules to change the name of the Amateur license to "Radioman" license. Mr. Puzzuole asserted that because of incentive licensing the name "amateur" was no longer appropriate and that most people not associated with radio and electronics believe that the Amateur Service and the Citizens Radio Service are the same. The bureau said the petitioner had not shown that a problem existed.

Aug. 9--Dismissed a petition by William A. Tynan, Silver Spring, Md., proposing amendment to Section 97.7(a) to restrict operation on frequencies 50.00-50.05 MHz and frequencies 50.10-50.15 MHz to holders of either the Amateur Extra Class or Advanced Class licenses to provide two sub-bands restricted to higher class licenses, one for radio telephone and one for radiotelegraphy operation. The current rules restrict operation on frequencies 50.00 to 50.10 MHz to Amateur Extra Class and Advanced Class licensees but the remainder of the band (50.10-54.0 MHz) is available to all except Novice Class licensees. Tynan argued that his proposed modification to the rules would increase incentive for holders of the General and Technician Class licenses to upgrade the higher class licenses. The Safety and Special Radio Services Bureau concluded, however, that the amount of license upgrading activity would not be significant and that further expansion of the sub-band allocations of the 6 meter band (50.0-54.0 MHz) would not further the principles of the incentive licensing program.

Aug. 8--A request by Ray R. Dopmeyer requesting amendment of Part 97 of the Commission's Rules to prohibit the delivery of third party messages by amateur operators by means of collect telephone calls has been denied. Dopmeyer asserted that the practice is unreasonably expensive and should, therefore, be specifically prohibited by the Commission's Amateur Radio Service Rules. The Safety and Special Radio Services Bureau stated that the prohibition proposed would be beyond the scope of the Amateur Radio Service Rules and suggested that the simple solution would be to refuse to accept collect telephone calls.

Aug. 8--Richard L. Jackson, Dayton, Ohio, licensee of Amateur radio station W8UDE. Ordered the license revoked effective Sept. 12, 1972, for willful and repeated violation of Section 308(b) of the Communications Act of 1934, as amended, by failing to be responsive to specific inquiries concerning his operation on Citizens Radio Service frequencies, and repeated violation of Sections 301 and 307 of the Communications Act, by his operation and conduct.

Aug. 2--A petition by Paul T. Atkins for rule making to amend Part 97 of the rules governing the Amateur Radio Service to restrict slow scan television to the high frequency portion of certain sub-bands has been denied by the FCC (RM-1907). The frequencies below 21.350 MHz, where slow scan television operation is permitted, are available only to Amateur Extra Class licensees and, to a lesser extent, to Advanced Class licensees. The petitioner, licensee of WB2OZW, Park Ridge, N. J., asserted that slow scan television is not compatible with single sideband operations which are also carried on the same band. The Commission said that there is no prohibition in the rules preventing amateurs from operating in the manner proposed by Atkins, and that there should be no more of a compatibility problem between a radiotelephony single sideband station and a slow scan television station attempting to use the same frequency than between two radiotelephony stations or between two slow scan television stations. It is said that frequency planning and coordination by amateur operators themselves can result in the best spectrum utilization appropriate to the service. (Action Aug. 2, 1972, by order Commissioners Robert E. Lee (acting chairman), H. Rex Lee and Wiley, acting as a board.)

American Radio Relay League

OFFICIAL BULLETIN #384 AUG. 3
All amateurs are invited to participate in the ARRL Sept. 10 Frequency Measuring Test. Signals for measurement will be sent simultaneously from W1AW 0130 GMT Sept. 10 on approximately 3535, 7042, and 14,125 kHz. Complete details will appear on page 106 of the August issue of QST. With increasing needs to observe and rectify signal deficiencies to promote clean operation on amateur bands, SCMs invite experienced amateurs to apply for official observer positions.

OFFICIAL BULLETIN #385 AUG. 10
Attention of all amateurs is called to an FCC public notice dated Aug. 4, 1972, warning amateurs against using their stations for improper handling of commercial traffic. This practice is increasing on vhf, especially via repeaters using quote auto patch unquote and is also present to some extent in hf phone patching practices. Any commercial use of an amateur station or repeater involving pecuniary interest of the user is potentially in violation of sections 97.3b, 97.3f or 97.111 of the FCC regulations. Use of phone patches or other means of third party communications involving parties internationally is prohibited by international law except for waiver countries listed on page 87 of August 1972 QST. ARRL requests all amateurs to avoid practices that could result in further restrictions on our regulations.

providing other communications that are always required in a disaster.

One Rapid City ham mentioned that she was thankful that she had her own OM, dog, rig, antenna and power so that she could be of assistance in providing commo.

A group of cadets from the U. S. Air Force Academy sent in some clothing, as did church groups and private individuals in the Colorado Springs area.

A Colorado Springs embalmer offered to fly to Rapid City and to provide the services of herself and her assistant without charge.

A computer was set up in Rapid City, and as names of casualties were confirmed they were programmed into the computer. Health and welfare inquiries were routed to the computer operators, and rapid response was available.

We did a health and welfare on a 92-year-old lady living alone in Rapid City. Her response was that she was okay, glad to hear from her sister--and why was anyone worrying about her?

One man in Colorado Springs wanted a health and welfare on his two snakes at the Reptile Gardens in Rapid City. His inquiry found its way to the bottom of the pile.

We were able to get one message for a family stationed in Colorado Springs but whose home and family are in Rapid City. All was okay and they spent the better part of two days with us and their knowledge of Rapid City was a big help.

The Red Cross had to call in extra volunteers to handle the calls. The count of health and welfare reports for the Red Cross was 413, with an additional 32 from this QTH. I'm sure 500 would be a conservative number since many were submitted more than once.

We were proud to be a part of the communications and felt that the Rapid City amateurs did an outstanding job. We hope that such a disaster never hits our city--but if it should, would the radio amateurs of Colorado Springs be able to handle it?

On behalf of the Red Cross and the many people who benefitted by the PPRAA communications, I thank those of you who put forth such unselfish effort in the public service. I am afraid I might overlook giving credit to someone so I am sending a list of the PPRAA amateurs to our EC, George, WØGCH, so he can list them in his report.

(The story of the Rapid City flood was covered in detail in the July issue of WORLD RADIO.)

HAMS HELP KIDNEY VICTIM

de Dr. Michael Gauthier, K6ICS

Mrs. Louise Bates, of Albuquerque, NM, underwent surgery for the removal of both kidneys. She must have a kidney transplant in the very near future and her insurance is terminated. \$20,000 cash must be on hand before a transplant can be performed. Friends and relatives have raised \$7,000. Additional financial help is needed. Please help via the Louise Bates Kidney Fund, c/o American National Bank, Baxter Springs, Kansas.



Join the greatest club in the world. New York Chapter, National Awards Hunters Club. Free Information. Write to Joseph Schwartz, K2VGV, 43-34 Union St., Flushing, NY 11355

NEED CRYSTALS? If not, please pass along the following to those friends of yours that do. For the Novice we claim to have the largest inventory of 7 and 21 Mhz crystals on the west coast. Nearly every kHz. Also hundreds in the VHF/UHF ranges. All FT-243 types. \$2 each -3/\$5 postpaid. Golden West Crystals, 2921 E. Loyola Dr., Davis, CA 95616 - W6DOR

STEPS TO CHRIST. Free but a stamp would be appreciated. Write METHODS, P. O. Box 1263, Mountain View, CA 94040

2 Meter FM Mobile--New Mosely MM144 5/8 wave 3 db gain antenna--only \$13. 45 complete. Dycomm 10-0 100 watt amplifiers, \$170. 500D, 50 watts, \$75--all brand new. Write for your very special WORLDRADIO deal on Ten-Tec keyers and QRP transceivers, Mosely, Cushcraft, and Larsen antennas. G. SOCHOR SALES, Box 522, Arlington Heights, IL 60006

Manual for Radio Amateur Civil Emergency Service (RACES) Revised 1971-\$3. Figleaf Research Services, Box 237, Bethany, Oklahoma 73099

NO QRM-QRN: Wild horse range, deer, elk, antelope, sage hen. Ten acres near Rawlins, Wyoming, \$20 down, \$20 per month. Land is level and has access roads. Call or write owner for details. Mike Gauthier, K6ICS, 9418 Florence Ave., Downey, CA 90240. Phone (213) 923-0131

Congratulations to WORLDRADIO on your 1st Anniversary. Your paper bridges the Communications Gap--A Super-structure. SAMCO, Travel-Pak QSLs, Box 203, Wynantskill, NY 12198

FM BASE STATION--G. E. Pre-Prog. 2 meters, 60 watts, 120 V.A.C. Transmitter, receiver, metering, all rack mounted in GE 5' cabinet. With manual. \$125. K6FO 4836 Schuyler Dr., Carmichael, CA 95608, (916) 961-0449.



Bowlers wear bowling shirts
Baseball players have uniforms
Smokers have smoking jackets
Babies wear bibs when eating
Now Amateur Radio Operators can have their own operating shirts! Through arrangement with a company in Texas that does custom printing on white T-shirts and sweatshirts, amateurs can have their own call signs, special events call, club name, etc., printed. Are you one of those people who wants everyone to know about this fabulous hobby? Do you attend ham-fests or operate on Field Day? Perhaps you are going to a rare DX spot to participate in a DXpedition? There are numerous other places these shirts can be worn too. One obvious place is right in the ham shack. SSTVers--why not start your transmissions with a unique opening shot. Aim camera at the wording on your shirt! (CQ de WA9MZS) T-shirts are 50% cotton and 50% Polyester. Sweatshirts are 88% cotton and 12% Polyester. Both are top quality with fully taped seams and generously cut. White shirts are available as follows: Children's T-shirts sizes 6, 8, 10, 12, 14, 16. Adult white T-shirts sizes S, M, L, XL. Adult white short sleeve or long sleeve sweatshirt sizes S, M, L, XL. Printing colors available: Black, Blue, Red, Green, Brown, Tan, Purple. (Delivery of shirts quicker if Black, Blue or Red printing). Postage is paid by us. T-shirts \$5.29 each. Sweatshirts \$8.95 each. Larry Cotariu, WA9-MZS, 6040 N. Troy, Chicago, IL 60659

Teletype fans-Read RTTY Journal, now in 18th year. Exclusively RTTY-Technical-Operation-DX-VHF-etc. Sample 30 cents-\$3.00 a year. RTTY Journal, P.O. Box 837, Royal Oak Michigan 48068

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DRAKE R-4B, matching speaker, practically new. \$325 Firm. Sent collect upon receipt money order or certified check. Eileen Ross, WB6QVD, 2500 Gondar Ave. Long Beach, CA 90815

3rd Annual Four-Land QSO Party-1800Z Sept. 9th to 0200Z Sept. 11th. CW: 3575, 7060, 14075, 21090, 28090 - Phone: 3940, 7260, 14343, 21360, 28600 ± 5 kHz. The more participants from Four-Land the more activity for all county hunters. See details in September CQ Magazine. Send logs to W4OMW, Rt. 7, Box 187, Greenville, NC 27834 before October 31st.

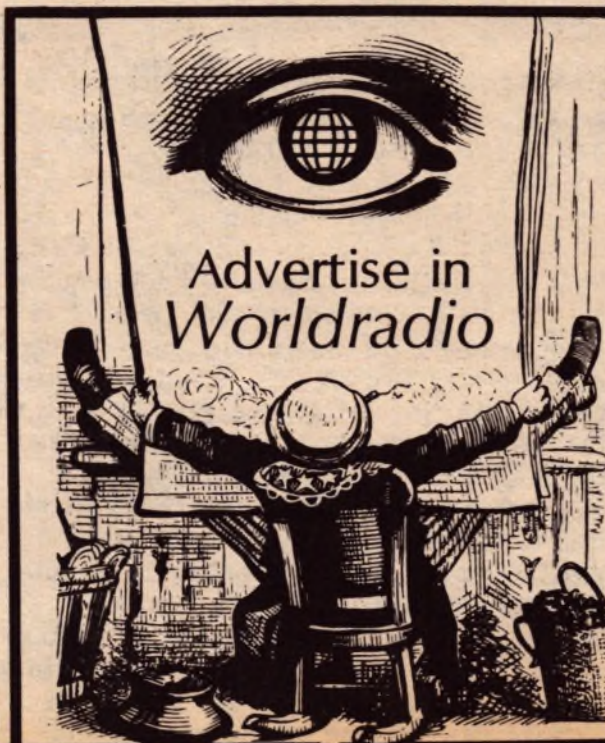
Interested in finding French teachers, students, French-speaking people willing to speak French on the ham bands with high school French students. K7SPH, Box 4099, Tucson, Arizona 85717

Components and P. C. Board material for sale, cheap, sase for list. K3KRF, Fox Valley Apt R-3, Glenmills, PA 19342

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ARMAGEDDON! Invasion from Outer Space! Written by W3ZS. Free but stamp appreciated. Write: METHODS, 416 Palo Alto Ave., Mt. View, CA 94040 K6QF

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Eighth Page-\$6.63 Sixteenth Page-\$3.64
These rates guaranteed for the next two issues. Rates increase approximately 10% every two issues due to increases in circulation. Quotes are for camera ready copy. If we make up your ad there is, naturally, a small charge for time and materials. With your advertisement in WORLDRADIO you will reach the serious Amateur Radio operator. Also, every newly licensed ham is sent a copy of this paper.

BRAND NEW BC-645 TRANSCEIVER

EASILY CONVERTED FOR 420 MC. OPERATION



FOR FIXED OR MOBILE USE

This equipment originally cost over \$1000. You get all in original factory carton. BRAND NEW, Complete with 15 tubes, less dynamotor and accessories. OUR PRICE...

\$16.95

DEPENDABLE TWO WAY COMMUNICATION MORE THAN 15 MILES!

- FREQUENCY RANGE: About 435 to 500 Megacycles
- TRANSMITTER has 4 tubes: WE-316A, 2-6F6, 7F7
- RECEIVER has 11 tubes: 2-955, 4-7H7, 2-7E8, 3-7F7
- RECEIVER I.F.: 40 Megacycles
- SIZE: 10-1/2" x 13-1/2" x 4-1/2". Shpg Wt 25 lbs.

Makes wonderful mobile or fixed rig for 420 to 500 Mc. Easily converted for phone or CW operation. Provides reliable communication for more than 15 miles!

Superb quality components and circuitry in this unit make it ideal for the technician experimenter. Many fabulous experiments can be performed. For example, you can construct a Yagi antenna for the 420 Mc band that will produce a gain of 10 db and yet fit on your operating desk!

ACCESSORIES FOR BC-645

- MOUNTING for BC-645 Transceiver..... \$1.50
- PE-101C DYNAMOTOR, 12-24 Volts, (easily converted to 6 volts)..... 7.95
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- CONTROL BOX BC-646..... 2.95
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SPECIAL "PACKAGE" OFFER:

BC-645 Transceiver, Dynamotor and all accessories above, including conversion instructions for Citizens Band BRAND NEW, while stocks last..... **\$26.95**

F.O.B. New York City or Ogden, Utah FOR SAVINGS ON FREIGHT CHARGES

BC-1206-C RECEIVER



Aircraft Beacon Receiver 200 to 400 Kc. Operates from 24V DC 1.5A, 135 Kc IF, Comp

lete with tubes: 2/14H7, 1/14J7, 1/14R7 and 1/28D7. Continuous tuning, volume control, on-off switch and phone jack. Very sensitive, 3 microvolts drives it to 10 mw output. Very compact, only 4"x4" (front panel) x 6 1/2" deep. No power supply required, works on 24 V DC for both plates and heaters. Output transformer in the unit has taps for 600 or 4000 ohms. Weight 5 lbs. NEW, With Tubes..... **\$12.95** Exc. Used, with Tubes \$9.95 Exc. Used, less Tubes \$5.95

DUAL AMPLIFIER

5.95



Has two input circuits, each feeding a single 6SN7GT twin triode amplifier. The unit is complete with 115 volt 60 cycle power supply which uses 6X5GT rectifier. Finest components. All transformers hermetically sealed. Vibrationproof chassis on 4 rubber shock-mounts. Size: 5 1/2"x2 1/4"x4 1/2". Weight 11 lbs.

C.R.T. AGEING & CHECKING TESTER



Made by Raytronic. Can be used for testing picture tubes as well as ageing. This is a quality instrument, complete with 4 harnesses. BRAND NEW in original carton... **5.95**

BC-733 RECEIVER

Satellite Receiver



Receive radio signals being transmitted by US Satellite on approx. 108 Mc. This receiver is AM and crystal controlled on six preset frequencies in the 108, 3 to 110, 3 Mc range. Provides audio and band pass filter output of 90 and 150 cycles for aircraft instrument landing for which originally used. Complete with ten tubes: 1/12AH7, 2/12SG7, 2/12SR7, 1/12SQ7, 3/717 1/12A6, Crystals and Schematic. Voltage required: 12 or 24 V DC and 220 VDC 80 Ma. Size: 13-3/8" x 5" x 7". Also can be converted to FM receiver 80 to 108 Mc. BC-733 Receiver, Exc. Used..... **\$8.95** BC-732A Control Box for above, NEW..... \$1.75

TRANSPONDER APX-6

RT82/APX-6 Radar Identification Set. Receiver-Transmitter covering range of 950-1150 Mc. (Can be converted to 1215, 1296 Mc). With 30 tubes: 6/6J6, 1/6AS6, 1/3E29, 3/6AL5, 1/5Y3, 2/3B24, 3/6AL5, 2/12AU7, 7/6AK5, 1/2C42, 1/2C46, 1/1B40, 1/1N43, 1/1N25. Digit counter on tuners for trans-rec-lo freq. controls. Voltage required: 24 and 115 V., 400/800 cycle. Size: 13"x13"x10" Weight 45 lbs. Excellent Used..... **24.50**

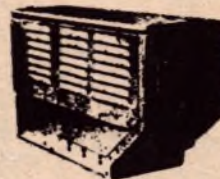


R-28/ARC-5 VHF RECEIVER

Tunes 100 to 156 Mc AM. Easy to Convert for 2-Meter Operation! Ideal for installation in vehicles. Excellent Used..... **\$24.50**

Receiver

The AN/ARC-5 VHF Radio Set consists of the following major units: Receiver, Transmitter, Modulator and Control Boxes. Covers frequency range of 100 to 156 Mc in four preset Crystal controlled frequencies. Intended for 24 VDC operation but can be modified for 12 VDC.



Transmitter

T-23/ARC-5 TRANSMITTER

Companion to the R-28, this VHF Transmitter tunes 100 to 156 Mc, has turret switching coils for all stages. Uses 1625 Osc., 1625 Tripler, 832A Tripler, 832A final. 4 channels are provided, using 4 separate coils in automatic turret manually operated or with 12V or 24V motor. Coils can be easily re-wound for 6 and 10 meters! Shpg wt 18 lbs. Complete with tubes and crystals, NEW..... **\$23.50** Used, less tubes, xtals.... \$ 5.95

MODULATOR MD-7/ARC-5

For the ARC-5 transmitter series. With tubes, 1625 for push-pull operation, plugs and outputs for both plate and screen modulation. Less Dyn. Shpg Wt 13 lbs. Exc. Used with Tubes..... **\$12.50** Set of Plugs for MD-7..... \$8.50

BC-1206-C RECEIVER



Aircraft Beacon Receiver 200 to 400 Kc. Operates from 24V DC 1.5A, 135 Kc IF, Comp

lete with tubes: 2/14H7, 1/14J7, 1/14R7 and 1/28D7. Continuous tuning, volume control, on-off switch and phone jack. Very sensitive, 3 microvolts drives it to 10 mw output. Very compact, only 4"x4" (front panel) x 6 1/2" deep. No power supply required, works on 24 V DC for both plates and heaters. Output transformer in the unit has taps for 600 or 4000 ohms. Weight 5 lbs. NEW, With Tubes..... **\$12.95** Exc. Used, with Tubes \$9.95 Exc. Used, less Tubes \$5.95

CHECK THESE

WILLARD 2-VOLT STORAGE BATTERY



Rated at 20 Ampere-Hours. Model 20-2 Compact, rechargeable, extremely sturdy, fine for models, etc. Convenient non-spill construction. Lightweight polystyrene container, extremely sturdy. Size: 3x4x5 1/2". Shipped dry, uses standard electrolyte (listing here). Shpg wt 3 lb. NEW, Each..... **\$2.79** Lots of 36 to 99 each..... \$2.45 Lots of 100 or more, each \$2.3

GOULD TYPE BB-41 STORAGE BATTERY



4 Volts 16 Amp Hrs. In metal carrying case 4 1/2"x3-7/8" x 8 1/2". Each..... **\$5.95**

PE-219 BATTERY CHARGER



Designed to charge one or two 6 V batteries at 7 amps, from a 6, 12 or 24 volt source. Charger uses one plug-in vibrator which serves as a rectifier and circuit breaker. Complete with a 10' power cord, in metal case 11x10x5 1/2" deep. Wt 40 lbs. Signal Corps Equipment, NEW. **4.95**

BATTERY ACID



Quart bottle of Willard Battery Acid, 1280 specific gravity, for use with any storage battery listed here. All mixed, ready for use. Quart Bottle, each..... **\$1.25** Lots of 6, each..... \$1.05 12 or more, each..... \$.80

AUTOMATIC BATTERY FILLER



NEW..... **69¢** Operates on principle of thermo-expansion - doubles battery life! Needs filling only twice a year. Fits all cars. Use one for 6 volt systems, two for 12 V. Instantly installed. Complete with mounting bracket and instructions.

YU-34A KEYS

BRAND NEW



\$24.50

Operates on 115 or 230 Volts 50-60 cycles AC. This is an automatic unit for reproducing audible code practice signals previously recorded in ink on paper tape. By use of self contained speaker, the unit will provide code practice signals to one or more persons, or will provide a keying oscillator for use with a hand key. Compact in portable case. Complete with tubes, photocell. Size 10-9/16" x 10 1/2" x 15-13/16". Shpg wt 45 lbs.

BB-208/AMT BATTERY PACK



Contains three BB52 - 36 V miniature lead acid type storage batteries and one BB51 - 6 V lead acid storage battery. Shipped dry charge. Uses 1280 acid for cycling service and 1350 for one shot. BB52 supplies 3 hrs thru 1200 ohms. BB51 supplies 2 1/2 hrs thru 30 ohms. Made by Willard. Pack size: 4 1/2 x 1x1-3/8". Shpg wt 2 lbs. NEW..... **\$1.45**

BC-603 FM RECEIVER

Converted for 35-50 Mhz. 10 preset pushbutton channels or manual tuning. Complete with 10 tubes, checked out, like new **\$39.50** AC Power Supply, New..... \$14.95 DM-34 12V Power Supply, New..... \$ 4.45 DM-36 24V Power Supply, Exc. Used... \$ 2.25 Technical Manual \$ 2.50 Set of 10 tubes for BC-603 Receiver... \$ 5.95

BC-604 FM TRANSMITTER 20 to 27.9 Mc. Output approx 30 watts. 10 crystal controlled channels. Complete with tubes. NEW..... **\$12.50**

ARC-R11A Modern Q-5 Receiver 190 - 550 KHz \$10.95
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R-4/ARR-2 Receiver 234-258 Mhz, 11 tubes, NEW \$8.95

BC-605 INTERPHONE AMPLIFIER, NEW \$3.45 EXC. USED... \$1.95
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CARTER MAGMOTOR



NEW... **\$2.65**

INPUT: 6 VDC 3.6 Amps
OUTPUT: 250 VDC .030 Amp.
#MA2503S.

MC-385 High to Low Impedance HEADSET ADAPTER



For use with headsets HS-33, HS-38 or other high impedance phones. Jack for PL-55 on one side of case (input), PL-55 plug on other side. (output). NEW..... **59¢**

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Makes fine Ham transmitter for 80, 40, 20 and 10 meters. Power output 100 watts on AM, CW, MCW. 10 preset channels, Complete with all tubes, crystal. Exc. Used... \$49.50 LIKE NEW. **\$59.50** Accessories Available: Prices Upon Request



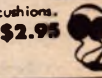
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TRANSMITTERS:	Complete with Tubes			
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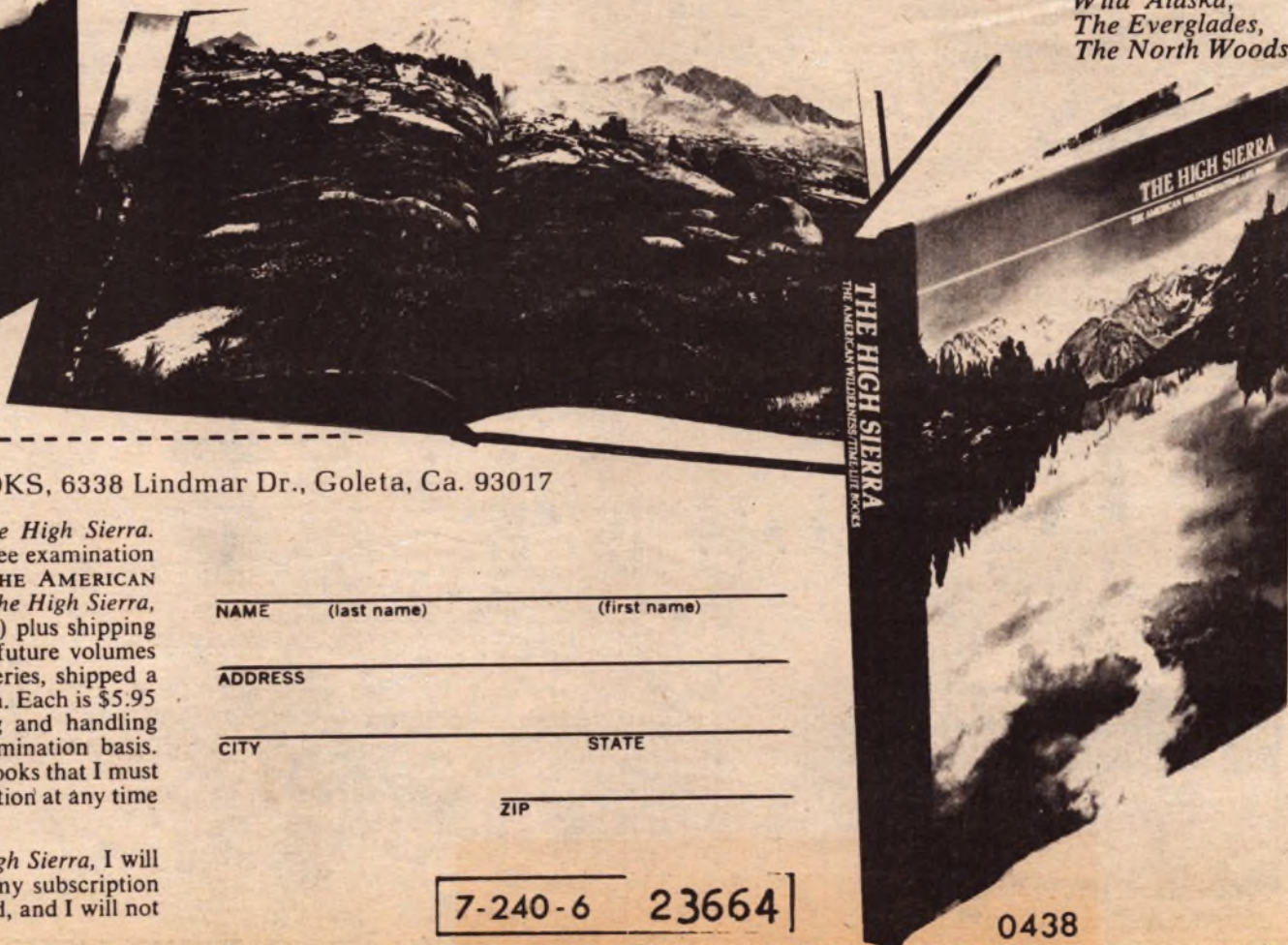
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