JAMES MAXWELL W6CUF
C00588 C000
P O BOX 473
REDWOOD ESTATES CA 95044

Worldradio

November 1981 • Year 11, Issue 5 • 80¢

Beacon experiment authorized for new bands

The Federal Communications Commission has authorized the establishment of an experimental radio beacon on the bands 10.100-10.150, 18.068-18.168 and 24.890-24.990 MHz, these being the bands allocated for Amateur Radio use by the World Administrative Radio Conference in Geneva, 1979. The experiment is intended to permit amateurs to become familiar with the characteristics of these bands, simplifying the scheduled future change-over to amateur use; to improve amateur use of these new parts of the spectrum; and to provide data on sharing between different services. An important element is securing data on propagation under weak signal conditions, typical of natural disaster situations. It will be recalled that this use is one of the major reasons for these new authorizations, the first in many years.

The experiments will include two emission types, three operating modes and two time phases. Basic emission is unmodulated carrier (A0), interrupted each 10 minutes for an SSB (2.8A3J) identification and announcement, this occurring at 2, 12, 22 . . . minutes past the hour. Announcement will be of the form: "This is FCC-authorized experimental station KK2XJM, Daytona Beach, Florida. QSL via W4MB. Next operation will be repeated on _____MHz starting on _____," and will be repeated.

Initial operations will be at 3 watts ERP, on 10 MHz, commencing about the first of October. In stages, the schedule depending on results, operation will include 18 and 24 MHz. Later phases will include operation at 30 watts ERP, with sequencing from band to band — sometimes weekly, sometimes daily — as needed to make optimum use of the bands for propagation experiments, worldwide and to specific areas.

Licensee for the experiment is Robert P. Haviland, amateur call W4MB. Haviland has been an amateur for 50 years, and has participated in numerous CCIR and ITU conferences and preparatory work. He was chairman of the 28-1215 MHz allocations subcommittee of the FCC's WARC Advisory Committee for Amateur Radio, project engineer on the program which placed the first radio transmitter beyond the ionosphere, and has worked extensively on communication and broadcast satellites. He published the first known proposal for an Amateur Radio experiment on a satellite. Additionally, he has been on a number of DXpeditions, having operated from four continents.

Success of the experiment depends on participation by amateurs and SW listeners, and on their reports. Information needed is date, time and location of reception, strength of signal and of other signals on the band, and nature of the receiving installation. All reports will be acknowledged by QSL.

In addition to reception reports, proposals for special tests will be welcomed, subject to the limitations imposed by the license and by regulations for experimental stations. At this time, there is no authorization for communication with amateur stations.

Reports, requests for schedules and proposals for experiments, may be sent to R. P Haviland, W4MB, 2100 South Nova Road, Box 45, Daytona Beach, FL 32019.

Bill Bennett, W7PHO of Seattle, Washington was a contact for the BEARS delegation — the first official international Amateur Radio delegation to visit China in more than 32 years. ***(Post-Intelligencer photo)***

Historic day for Amateur Radio in China

Submitted by Philip Weaver

The Boeing Employees Amateur Radio Society (BEARS) delegation arrived in the People's Republic of China on 4 September 1981, and departed on 12 September 1981. We were the first official international Amateur Radio delegation to visit China in more than 32 years. Our host was the Chinese Institute of Electronics, a branch of the Fourth Ministry of Machine Building. The delegation members consisted of: C.P. (Pat) West, W7EA, Delegation Leader; H. (Henry) Oman, K7HO; R.W. (Bob) Hudson, K7LAY; and W.P. (Bill) Showers, KC7CF.

All the delegation members are Boeing employees from Seattle, Washington with a total of more than 110 years of Boeing service. Contributors to our expedition included the R.L. Drake Company who supplied two complete TR7 stations; Telex HyGain who supplied two tape dipole antennas and ARRL who supplied a copy of the film, "*Wide World of Amateur Radio*" and a few books.

Our delegation prepared and presented a four-hour slide presentation covering Amateur Radio in the USA. This presentation was made in each of the cities we visited.

Although we did not expect to operate, we were permitted to set up a demonstration station in Beijing and communicate with our home city, Seattle. This historic event occurred at about 10:00 p.m. Beijing time on 6 September. Our contact in Seattle, representing our two clubs, was Bill Bennett, W7PHO and our call sign in Beijing — also representing our two clubs — was K7LAY. We are very sorry that we could not speak to more stations.

The Chinese advised us that our transmissions were the first authorized

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Yasme sails again

Don Wallace, W6AM

Lloyd, W6KG and Iris Colvin, W6QL once again go forth on a Yasme DXpedition, starting 1 October 1981 and will travel continuously on the DXpedition for at least a half year.

Operation will be on all bands, 50 percent CW and 50 percent SSB. The normal frequencies will be 28.025, 28.550, 21.025, 21.285, 14.025, 14.225, 7.025, 7.185, 3.525 and 3.800.

The Colvins have applications pending for several very rare countries and, if they get approval to enter and operate in one of these countries, they will go there. In the meantime, their itinerary calls for month-long stops are 8P6, 9Y4, FY0FOL, PZ, 8R1 and PJ2.

They will be active in both the SSB and CW sections of the WW CQ Contest, and also the SSB and CW sections of the ARRL International DX Contests.

The Colvins now have the largest collection of QSLs filed alphabetically in the world, and they still want all the QSLs they can get. All QSOs go to the Yasme address, which has been the same for the last 17 years, which is: Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546.

The Colvins will especially include both SSB and CW operation on 40 and 80, so here is a chance for everyone to get some more confirmations for 5-band DXCC. □

Illegal aliens caught near border

Submitted by Pat Dugan, KA5GKO

On Saturday, 22 August, the Border Patrol apprehended 30 Mexican illegal aliens with the assistance of area Amateur Radio operators. The apprehension took place about noon near Eagle Pass Hill, south of Del Rio, Texas.

Lee Young, KC5RP and Phil Shreves, KA5IBI of Del Rio, were installing an antenna at approximately the 200-foot level on the Eagle Pass Hill tower, when they spotted a suspicious group hiding under brush nearby.

Young, while still on the tower, contacted Brackettville "ham" operator George Loos, W5LFC, with his handie-talkie. Loos contacted Bob Latham of the Brackettville Border Patrol. Latham relayed the information to the Del Rio Section Border Patrol sector.

Units were dispatched to the area but could not locate the suspects. The Del Rio Area Border Patrol agents went to the tower base and were met by Amateur Radio operators Dick Angevine, WA4HUX and Jim Lowe, W5EJQ, who were installing the ground portion of the Emergency Volunteer Communication Systems.

With their handie-talkies, Lowe and Angevine contacted Young and Schreves who were still up the tower, and found they still had the suspects in sight from the 200-foot tower level.

Angevine accompanied the Border Patrolmen, and with his handie-talkie was able to direct the Patrolmen in apprehending 26 illegal aliens from in-

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World Radio History

STAFF
Armond Noble, N6WR
Chris Wilson
Jeanette Inouye
David Tykol, WA6RVZ
Jack Schwartz, WA6TRZ
Norm Brooks, K6FO

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November 1981 Vol. 11, No. 5
Worldradio (USPS 947000) is an international conversation. You are invited to take part. Our newspaper is written by its readers.
Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio community. We publicize and support the efforts of those who bring the flame of vitality into this avocation.
Our readers are participants — an alliance of active radio amateurs who are concerned with reality, who use radio as a communications tool. We ask your cooperation in helping us develop the skill, quality and full potential of Amateur Radio.
We are positively-oriented. We print all the news of this great activity, and particularly desire an input of stories dealing with the dramatic, the personal and humanitarian uses of Amateur Radio.

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Midwest RTTY Net

For traffic handlers who are active (or who want to be) on RTTY and for RTTY operators who want to get into traffic, the Midwest RTTY Net (MRN) is for you. MRN meets daily at 0330 UTC on 3.630 MHz with 7.090 MHz as the alternative frequency. The net will accept check-ins from amateurs everywhere in the country who are interested in RTTY message handling.

For more info, contact the net manager, Bill Wright, 1758 West Gaulbert St., Louisville, KY 40310.
— *Stark RTTY Group, Massillon, OH* □

Awards Directory

The Amateur Radio Awards Directory of the World is a new gestefax publication prepared for amateurs and SWLs, and contains the rules, checklists, maps and application forms for more than 150 of the most popular, prestigious, attractive and sought-after certificates, diplomas, pins and plaques available to the Amateur Radio fraternity. All continents and more than 50 countries are represented.

The directory has an 8½-by-11 inch three-ring format for the easy removal and addition of pages. The postage paid cost of $7 is small compared to the convenience of having it all together and ready to use. You'll be able to keep track of your operating progress as you work stations, and will be able to apply for the many FB awards for your shack wall or award album.

Please send cash, cheque, money order, 30 IRCs or equivalent to author Garry V. Hammond, VE3GCO, 5 McLaren Ave., Listowel, Ontario N4W 3K1 CANADA.
— *London ARC Bulletin* □

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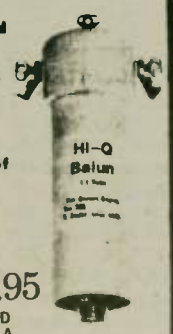

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Upgraded recently?

Attention recent upgrades. If your interim permit is nearing expiration and your new license has not yet arrived, FCC will consider requests for extensions of time. Send a photocopy of your permit along with your request to FCC, Box 441, Gettysburg, PA 17325, Attention: Cheryl Dunlap. □

VHF/UHF contest paper

Bob Heil, K9EID

Curt Roseman, K9AKS is now publishing a new VHF/UHF contest bulletin. Curt is getting help from well-known contesters such as Mike Owen, W9IP; Emil Pocock, W3EP; Jim Roseman, W9UD; and Charles Wilson III, WØOUH. Send just $1 to K9AKS, 503 E. California, Urbana, IL 61801.
— *Marissa ARC Harmonics, IL* □

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Autopatch users, take note

When your call goes through, if the party being called is not familiar with Amateur Radio autopatch, make it a point at the beginning to tell them you are calling by *radio*, and that they must wait for you to stop talking before you can hear their reply.

Too often, an emergency call to police and fire departments results in a "hang-up" by them when they can't get a response from the caller (amateur) who is still busy talking.

Simply stated: ordinary telephone conversation is "duplex" with both ends hearing each other and able to stop the other for questions, repeats, etc. They are on a telephone; they don't know you are using a radio if you don't tell them — so tell them!
— *Lake Erie ARA, Lakewood, OH* □

Extra Class husband and wife

In the August 1980 issue of Worldradio, page 14, we ran a list of Husband and Wife Extra Class teams. We were recently notified by Eric L. Zust, KMØR that he and his wife — Judy A. Zust, KMØP — can be added to that list, since they just received their Extra Class licenses. The Zusts live in Ballwin, Missouri. □

.....

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Report fishing boats to FCC

We received a letter recently from Ed Marriner, W6XM, asking that we insert a request "... for help from amateurs to get the fishing boats off the 40-meter CW band.

"They use no calls and very foul language," Ed continues. "Report times and call to the San Diego FCC Office, Attention June Alonso, Public Service Specialist, 7840 El Cajon Blvd., Rm. 405, La Mesa, CA 92041.

"Let's get in there and put a stop to these characters taking over our band. 73's, Ed Marriner, W6XM." □

Worldradio needs your help to reflect the invaluable service of Amateur Radio.

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COLUMNS

World Radio History

Blackhawk fire spreads in East Bay

Valt Halsey, WB6MFE
Submitted by Dave Tyler, N6DRT

Amateur Radio has done it again — this ime on Mt. Diablo — located near the ommunity of Danville, California, 40 iles east of San Francisco — rises nearly ,000 feet above sea level. Old "Devil Mountain" is covered with heavy dry rass and chaparral. The mountain is rowned by Mt. Diablo State Park and nyriad radio communications antennas roviding VHF/UHF coverage for the Bay Area and central California.

Early in the afternoon of 14 July 1981 Dave Tyler, N6DRT and Ron Miller, VB6JGV met in the nearby town of Orin- a to discuss further training and patrol ctivities as part of the California Depart- nent of Forestry's (CDF) new VIP Volunteers in Fire Prevention) program which uses radio amateurs to assist that lepartment with patrol and communica- ons functions during periods of high fire azard. Almost immediately after leaving hat meeting, Ron noticed smoke on Mt. Diablo. He immediately notified CDF, hen both stood by to await develop- nents.

The initial fire was small but continued o spread due to very rough terrain mak- ng access difficult for fire fighters. By 00 p.m., CDF alerted the VIP amateurs o stand by. This could become a serious ire and threaten the state park as well as he radio installations located there. This roved to be the case.

Meanwhile, the Contra Costa County Office of Emergency Services had alerted he local chapter of the American Red Cross, which in turn mobilized the Amateur Radio operators assigned to hem.

By mid-afternoon, Amateur Radio perators from Santa Clara County and eninsula clubs had been organized to nan the CDF headquarters station at Morgan Hill, and Ron WB6JGV was on cene at the Fire Camp base at the foot of Mt. Diablo, with the first contingent of IPs.

Relief teams of VIP amateurs were rganized by Dave N6DRT, and by 11:00 .m. word came they would be needed ome had already started to roll in an- icipation). By midnight the relief teams ere in place — including an HF/VHF quipped mobile home provided and anned by Walt Halsey, WB6MFE. The re was still out of control and a serious reat. At 1:00 a.m. on the 15th, CDF cved into "a major fire configuration."

Due to steep terrain and darkness, the

Amateurs from Santa Clara Valley manned the Ranger Unit Headquarters Command Center station (located in Morgan Hill) for two days, keeping in touch with the fire site two counties away.

decision was made to use the balance of the night getting men and equipment organized and let the men on the fire line get some sleep. Come dawn they would "hit it with everything they had."

Major fire camps were established at the Tassajara Fire Station, CDF/CCC's Bollinger Canyon Station and at the U.S. Army's nearby facility at Camp Parks. Amateur operators were assigned to each of these locations and established 2-meter communications with each other and the CDF Headquarters in Morgan Hill some 50 miles away, and with other relief teams of VIP amateurs still at their homes in Contra Costa County. Excellent communications during the fire were made possible by the owner/operators of N6DOD/R on 147.045 and K6POU/R on 145.330 MHz, and by the consideration and forbearance of amateurs who normally use those repeaters for other purposes. Many of the CDF-VIP radio amateurs came from their day jobs, so found themselves without sleep for 36 hours or more.

The morning of 15 July saw new relief operators arriving and the "all-out assault" began. The fire had now been named "the Blackhawk Fire."

Tassajara Fire Camp (now "Blackhawk Command") gave the impression — to this participant — of an army gearing for battle: helicopters fueling 100 yards away; Borate bombers overhead; fire trucks and pumpers too numerous to count; and truck after truck loaded with cold sleepy fire fighters, who must be fed and equipped, headed for the fire line. We had reports of more than 20 bulldozers already on the line. There were fire fighters from CDF, California CCC, and even prisoners from local detention centers; local fire department companies were joined by others from as far afield as Fairfield and Suisun City in Solano County 40 odd miles to the north. And, of course, the Red Cross was there providing food and first aid as needed.

Things were moving fast. Telephone lines to Morgan Hill CDF were soon swamped and the amateurs now stepped into the gap. VIP members from the East Bay and the Mt. Diablo Amateur Radio Clubs handled the brunt of traffic from the "field," while Livermore RACES stood by to provide phone patch facilities if needed. Amateur Radio operations at CDF Headquarters in Morgan Hill were

(please turn to page 4)

Illegal aliens

(continued from page 1)

formation supplied by Young and Shreves atop the tower. Four more aliens were apprehended a few minutes later.

The aliens were part of a large-scale smuggling operation, and were turned over to Mexican immigration authorities.

All of the Amateur Radio operators involved are members of the Border Amateur Radio Society, whose members are from the Del Rio, Eagle Pass, Peidras Negras, and Brackettville. The Society is dedicated to supplying emergency communications to such as the Red Cross, Weather Bureau, Civil Defense, and other disaster organizations, stated President Pat Dugan, KA5GKO.

"This group of volunteers started installing a new emergency radio facility for Val Verde and surrounding counties at 7:00 a.m. They assisted the Border Patrol, completed the radio installation about 6:00 p.m., and put on a demonstration of emergency communications for the Cub Scouts at 7:00 p.m. Not bad for a group of non-paid volunteers, who also donated all the equipment!" concluded Dugan.

— The Kinney Cavalryman, Brackettville, TX

Historic day

(continued from page 1)

Amateur Radio communication demonstration in more than 32 years — truly a historic event. This contact signifies the increasing friendship between our two nations.

A second historic event occurred on 9 September. With the assistance of our delegation in Shanghai, the Chinese in Beijing installed a Drake TR7 station and the Chinese in Shanghai also installed a Drake TR7 station. Successful communications were established between Beijing and Shanghai by Chinese operators for the first time in more than 32 years. The operator in Beijing was Chen Ren-Mo, and the operator in Shanghai was Hsu Y.C. Mr. Hsu was licensed many years ago as XU8CH and C1CH.

Although propagation was not good between Beijing and Shanghai, communications were established about 10:45 p.m. on 9 September. The station in Beijing used the call sign CIE and the one in Shanghai used the call sign K7LAY. Both stations were heard in many countries with strong signals. The Drake equipment performed excellently, despite much rough handling during transportation.

The Chinese asked us to tell the world that their top government leaders are solidly behind Amateur Radio and before too long, China expects to establish many friends throughout the world through the media of Amateur Radio.

Our delegation was overwhelmed by the reception we received in China, and very honored to be the first official Amateur Radio delegation to China and to demonstrate Amateur Radio. We met many old-timers in China, and our meetings with them were precious events in all our lives.

We are very appreciative to our host in China — the China Institute of Electronics — and also to the China National Radio Sport Commission and the Shanghai Institute of Electronics.

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World Radio History

Gertrude, W7KOY, and Kenneth Pond, W7MAE recently celebrated their golden wedding anniversary. They were married 1 June 1931.

Golden anniversary

Kenneth, W7MAE and Gertrude Pond, W7KOY, recently celebrated their golden wedding anniversary in Phoenix, Arizona. The Ponds were married 1 June 1931 in Orwell, Ohio. They moved to Arizona in 1934.

The couple have four children: Ralph Pond, Merill Stone and Martha Bell — all of Phoenix, and Arlyn Elmer of Tempe, Arizona.

Pond is a retired employee of Jones Battery and Electric. □

Try ARRL bureaus

Steve Deeren, K0LWF

Have you been working DX? We all like to receive QSLs and, if you have not tried it yet, the ARRL Division incoming QSL bureaus are one way most DX stations route their cards to the States. The ARRL also operates an outgoing QSL bureau which requires League membership in order to use it. If you are interested in either the incoming or outgoing bureau, check a late issue of **QST** for details.

— Mankato Area RC, MN □

Good news for Easter Island

The Radio Club of Chile is sending a new Kenwood Transceiver, tower and antenna to Easter Island for permanent duty. The club's intention is to keep Easter Island on the air continuously with no gaps due to equipment breakdowns, as has happened in the past.

Several of the club members were to be on Easter Island for an official opening of the Island's club station in September 1981, when they would activate the station for four or five days, including operation on 6 meters.

— DX Bulletin, 5/23/81 □

9N1MM in the States

Phil Frazier, K6ZM

This is a copy of a note I received from Ed Blaszczyk, N7EB of Sun City, Arizona, who was W3KVQ and has been QSL manager for 9N1MM (Father Moran) since he started hamming in Nepal:

"Had a call from John Vidas, WD0BFT yesterday. He is the guy who initiated the fund-raising drive to get Father Moran to the States. He was telling me that with what they have already sent Father, and what he will get once he gets here, amounts to better than $3,600. Also told me that while he has received some contributions from the West Coast gang, no one offered to host Father once he gets there! If you think you can come up with something, I will have Father call you when he gets here in December.

"Father's trip sked is enclosed. The Las Vegas ? is because Father is not sure how long he will stay here. Father also wanted me to get a copy of this sked to **World-radio**, but I seldom get that paper here, and have no QTH for them. Can you help? If all goes well, I will come to San Francisco with Father.

"Very best to you and Peggy.

73,

Ed"

In answer to this note, my wife and I have written to Father Moran and offered our spare bedrooms to him and to Ed during whatever time they arrive here. I also talked to Merle Parten, K6DC, who is the president of the Northern California DX Club (NCDXC), and he says the NCDXC will be very pleased for the opportunity of hosting Father in the Northern Califor area, and is also very sure the South California DX Club will be more than a ious and willing to do the same in Southern California area. I am writing WB0BFT today (10 September 19 confirming the offer of support fr Northern California.

Here is the schedule for Father Mo as set up by WD0BFT. (This sched looks very murderous even for a yo man. Thank goodness, Father is o about 77 years old!):

Proposed schedule for 9N1MM while the USA

2 October —	Houston
9 October —	Vancouver, B.C.
11 October —	Portland
15 October —	Denver
20 October —	Kansas City
22 October —	Peoria (Chicago)
30 October —	Pittsburgh
6 November —	Detroit
9 November —	NYC (Connecticut)
11 November —	Washington, D.C.
24 November —	Chicago
30 November —	San Antonio
3 December —	Dallas
6 December —	San Antonio
8 December —	Phoenix
10 December? —	Las Vegas
11 December —	San Francisco
? —	Los Angeles

On second look, this schedule is mos a series of fairly short trips, so shouldn't be too hard for Father Mo except for the time between trips!

Blackhawk

(*continued from page 3*)

conducted by VIP members of the Gabilan Amateur Radio Club, assisted by amateurs from SPECS, South County Amateur Radio Association, and the Fremont Amateur Radio Club.

The battle raged all day of the 15th with many breakthroughs forcing a retreat only to stand firm at another vantage point. The firefighters were hampered by strong winds in the afternoon that came in from the coast. But by nightfall those same winds proved a blessing, bringing with them a chilling and wetting blanket of fog which swept inland all the way to the fire scene on Mt. Diablo — a rare, but entirely welcome event.

As morning wore into afternoon on 16 July, word began to filter down that we were winning the fight and by 6:15 p.m. that day, all the amateur operators were released from fire duty. Weary fire fighters and amateurs started returning to their homes.

Fortunately, no men were lost or seriously injured and no homes were lost, though a number of ranches were dangerously threatened during the fire. The entire radio operation, according to observers, was conducted in an orderly and efficient manner. ARES officials stated that the efficiency of the Amateur Radio participation was largely due to the work in training and re-organization of the ARES/RACES program in Contra Costa County over the past two years. It may also be of interest to amateurs elsewhere to note that — contrary to reports seen too often in the Amateur Radio press — the operators participating in the field during this fire were almost exclusively those who were regular participants in SETS (Simulated Emergency Tests), emergency nets and public service events, and all were members of the Contra Costa County ARES/RACES effort. Prior training does count. Local CDF officials commended the CDF-VIP amateurs for their excellent performance during the "Blackhawk Fire." They said they had not realized how valuable Amateur Radio could be to them, and plan to make more use of Amateur Radio operators during future fires.

"Ham" members of the CDF-VIP program who gave their time and expertise to aid in this emergency were: Leo Lewis, WA6ZFV; Hugh Lewellen, WA6JSO; KA6OLK; Bill Van Voorhis, WA6ZFZ; Warren Sturgeon, WA6QAZ; Bob Graham, W6IWH; Walter Halsey, WB6MFE; N6DRT; and Ron Miller, WB6JGV.

The American Red Cross operations during the fire employed even more amateurs, including the memorial station at the Mt. Diablo Chapter Headquarters, W6LGW. These amateurs were: Doug Smith, WA6GON; Louis Brydon, WA6OCZ; Joseph Campbell, KD6DY; Jack Gott, WA6KGI; Werner Hajek, K6UGS; Steve Overacker, WA6HAM; Lauren Styles, WA6CIE; Bradley Watson, WA6AEO; KD6NK; Donald Peattie, WB6TEE; N6EIK; WD6PQM; Dwayne Eskridge, W6LKE; Richard Barber, WB6EZI; and Dick Squires, KA6JGP. Squires brought his mobile communications van to the Tassajara fire camp. Many other amateurs took part from the CDF Headquarters in Morgan Hill.

Total cost of the firefighting operation is estimated to be in excess of $1,500,000; 2,500 acres of valuable watershed were burned. CDF has determined, beyond doubt, that the fire was caused by arsonists — so far, identity unknown. □

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World Radio History

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"This is the most QSO's ever from Kingman and all were barefoot. A few times generators ran out of gas during rainstorms with rigs operating on TX... no problem with voltage drop, and no damage. No tuners were used... only your rigs and (antennas). The wind blew continuously from 20 knots to 50-60 knots and we literally had to open the tent to let the rain out, salt water and spray everywhere, watches quit, keyers and linear (other brands) quit after the first QSO – arcing due to salt spray, but the TEN-TECs never even got warm when the tent was around 100°F.

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The TEN-TEC OMNI-Cs went on to serve on Palmyra and Tokelau with equally impressive results and we thank the group for their letters—we couldn't have said it better.

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World Radio History

W6TOU now a Silent Key

Glen Muir, WA6RQW

"73's, fellas. W6TOU is clear, WB6OQS."

Hal, W6TOU and "Singin' Sam" were a landmark in Santa Clara Valley for the last six or so years.

"Singin' Sam" is a canary. Hal was a multiple sclerosis (M.S.) patient. As the M.S. got worse, the local amateurs built more gain into the mic amp; thus, "Singin' Sam" came on the scene.

Hal's voice was down to a whisper, at best, so "Sam," Toby (Hal's XYL of many years), the washing machine, the vacuum cleaner, TV, et al were common sounds on the WB6OQS repeater.

Hal had been paralyzed from the neck down for the last few years. He had a PTT (push to talk) switch on a string around his neck, and actuated it with his chin. One day, he even dozed off in his wheelchair. Everytime his head dropped, he would key the repeater and a faint snore could be heard.

But no more. Hal has QRT'd for the last time. He spent the last couple of weeks of his life at Valley Medical Clinic, in and out of the intensive care unit. There was nothing anyone could do; the disease had taken its toll on a once 6'3", 200 lb. man.

He was down to less than 100 lbs. when he passed away at 3:00 p.m. on 16 June 1981. He had been a telegraph operator for the railroad, a quality control inspector for Boeing, an engineer for Varian, but most recently, he had been a landmark in Santa Clara Valley. "Singin' Sam" is not to be heard again, although he is alive and well.

The last time he was on the air, his mind was still sharp, his voice was weak, and his spirit strong. We all knew — as Hal did — that his time was short. In his own way, every amateur in the Santa Clara Valley helped keep Hal's spirit up. Phone calls, visits, QSO's — we all tried.

Special thanks to Ian Kushner, AF6K; Doc Hudock, K6UAL; Segundo Acuna, WA6WNV; Warren Townsend, WD6ADE and everyone else in Santa Clara Valley who ever assisted Hal or Toby in any way over the last few years.

73's Hal, and gud DX2U. □

Attention!
Azden PCS-3000 users

Jerry Murphy, K8YUW

A "typo" has been found on the schematic diagram furnished with at least some of the AZDEN PCS 3000 transceivers.

In the upper left quadrant of the drawing is the microphone connector. From the bottom of the connector, five wires go to J4. At J4, only *four* wires are shown. Draw in a grey wire that goes to contact K8. While you're at J4, see the two contacts labeled K4; the lower one is really K2 and has a red wire to it.

This pair of errors was discovered while making a modification to my radio that may be of interest to others. On the microphone are several buttons and switches that control the microprocessor. Two of these buttons change the frequency displayed either up or down 5 or 10 kHz. Nice. But there is no "memory scan" feature on the mike.

Move the red wire from K2 to K4 on J4 and the "down" button is now a "memory scan" button. Pull the plug off of J4 and then use caution when pulling the red wire out of the plug; it's held in place by spring tension that must be pushed to the side in the process. This mod requires removing the bottom and rear covers from the control head.

There are six screws, four of which are painted and may require softening of the paint with fingernail polish remover or a suitable substitute.

— Lake Erie ARA, OH □

Metroplex keeps growing

Metroplex is pleased to announce the completion of yet another phase in its large and ambitious plan of having repeaters in all modes of FCC allocated operation.

The Metroplex Amateur Communications Association, Inc. has linked one of its 440 MHz repeaters to its 2-meter machine with *simultaneous* audio mixing.

Variety is the spice of Amateur Radio life, and members—as well as non-members—can now use either the 448.95 input/443.95 output or the 144.85 in/145.45 out FM machines and be heard on *both* at the same time. This allows *full-duplex* operation for stations so equipped! The idea is to stimulate UHF-FM operation.

This system is in addition to: the Metroplex worldwide computerized Autopatch for 2 meters; the link for properly licensed members to access the 10-meter FM machine, 29.54/29.64, from the 2-meter band for worldwide radio communication; stand-alone repeaters on 446.75 in/441.75 out and on 223.10/224.70; and work-in-progress machines for 2-meter RTTY and 70cm Fast Scan TV!

Membership is currently at 700-plus, of which 50 members are in countries outside the United States and communicate via the 10-meter repeater.

Interchange with other clubs and individuals is encouraged. Write to Metroplex, Box 237, Leonia, NJ 07605, or call our 24-hour numbers: 212-926-5158 in New York, or 201-592-1579 in New Jersey. □

If a foreign amateur visits your area, do a picture story for WORLDRADIO.

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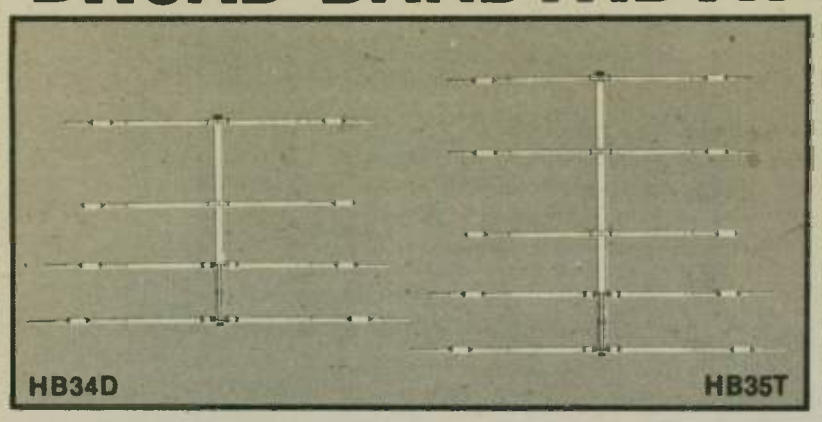

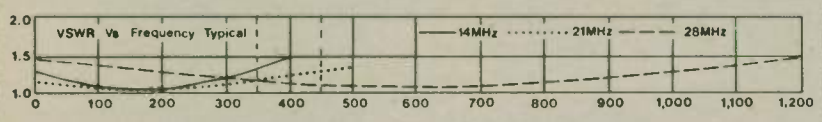

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VSWR	1.5	1.5	1.5	1.5
Impedance Ohms	50	50	50	50
Max El Length	27'	27'	27'	27'
Boom Length	24' 7"	19'8"	16'5"	13'2"
Turn Radius	18'10"	16'9"	15'10"	15'
Wind Area Ft²	7.93	6.62	6.04	4.73
Wind Load (lbs.) @ 80mph	160	132	121	102
Boom Diameter	2"	2"	2"	2"
Mast Size	1½-2"	1½-2"	1½-2"	1½-2"
Weight Lbs	50	38	34	27
Max Wind MPH	100	100	100	100
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World Radio History

IEEE and LIMARC co-sponsor net

The communications subsection of the Long Island IEEE* chapter and the Long Island Mobile Amateur Radio Club (LIMARC) will initiate, on 11 November, an experimental radio net whose mission will be to disseminate current information on "Trends in the Communications and Electronics Industry." Some of the topics planned to be covered include: "Direct Broadcast Satellites, Satellite Earth Stations, Cable Television Technology, Electronic Warfare, Com-Jamming and Countermeasures, Spread Spectrum Communications and Electro-Magnetic Interference," as well as other facets of the industry.

The transmissions will originate from a tower at Plainview, New York which is 500 feet above sea level and reception should be available throughout most parts of Long Island and southern Connecticut. Conferencing stations can input the repeater system through remote inputs at the Nassau/Queens border and on top of the highest point on Long Island at Huntington, New York. The net will operate on an output frequency of 147.375 MHz which can be picked up on portable radios (having a police and weather band) within 30 miles of the tower. The target date for startup is Wednesday evening, 11 November at 8:30 p.m. The net will thereafter operate on the second Wednesday of each month.

In function, one or more specialists separated geographically or co-located will lead and discuss the chosen topic while in direct communication with stations that may later call in from any point in the service area. At the same time, listeners can pick up the transmissions in their homes.

The net will be directed by Ed Piller, W2KPQ of Syosset, New York, who is a senior member of the technical staff of the Advanced R.F. Systems Department of Fairchild Weston Systems, Inc. He is also chairman of the Long Island Communication Sub-Section of IEEE, as well as a charter member and first president of LIMARC.

Interested Amateur Radio operators are being sought who can originate speakers and help with administrative details as well as key people in various companies who can supply speakers and subject matter of interest. Mr. Piller can be reached during the day at (516) 349-2484 and at other times at (516) 938-5661.

**IEEE — Institute of Electrical & Electronic Engineers* □

Novice assist

Steve Deeren, K0LWF

Do you find yourself getting on the air on the same band at about the same time every day? Well, there is nothing wrong with that, but you may want to try either another band and/or a completely different time for a change of pace. I often find myself waking up as early on the weekends as I have to during the week, so rather than waste that time, I see what's happening on 15 meters (my favorite band).

Remember, they can't work you if they don't hear you — so answer that CQ, or call CQ yourself.

— Mankato Area RC, MN □

U.S. QSL Service

Laryl Myers, N7BMY

Greetings again from USQS! For all you WAS, prefix, county hunters and contesters, and everyone who would like an easy inexpensive way to send QSLs to USA and/or Canadian amateurs . . . QSL via USQS!

The U.S. QSL SERVICE is an independent bureau that is designed to handle cards that are *going to amateurs in the USA/Canada.* Cards are welcome from amateurs anywhere (statewide or not), as long as they can be claimed by an SASE from a USA/Canada amateur. The QSLs are matched to a *self-addressed stamped envelope* and sent to the operator. Therefore, we ask everyone to send and keep SASEs on file with USQS so we can forward your cards to you. Many of your contacts do not have recent Callbooks and have no way to get cards to you except to send them to us.

We ask for no postage or address on cards, just the call of your contact. We appreciate it if you sort your cards by call sign area (0-9) and alphabetically by suffix. The cards you send need addresses so don't worry about the new Novice who is not in the book or that amateur who said he just moved.

This bureau is totally independent. We appreciate your spreading the word. We try very hard to provide a service which is valuable to both the sending and receiving QSLing amateurs. We hope to offer a system that saves everyone time, money and effort.

Worldradio has listed calls every month for those who need to claim cards at our bureau. Last month, the list was a very small sample of the nearly 2,000 cards we received. To print a list of calls that would notify everyone would be unreasonably long. For those of you who have enjoyed looking for your call every month, *please* send an SASE and *take note:* **Following are calls of amateurs who we have re-**

(please turn to page 9)

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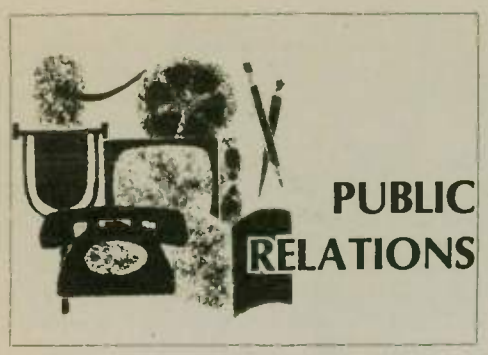
World Radio History



Italian-American net holds 13th reunion

Amilcare F. Persichetty, W2NHB

The Italian American Roundtable (AIR) known in Italian as TAVOLA ROTUNDA ITALO-AMERICANA (TRIA) organized on Easter Sunday, 1969, held their 13th reunion on 17 May 1981. This organization succeeded the Italian/American speaking ham stations which got together with John DeBlase, W2FX (organizer and first president of QCWA and now President Emeritus), who was net control from Great Neck, Long Island (New York). The latter net was on the air for at least 12 years, if my memory serves my right.

The reunion, as with the last 12, was held at the QTH of Amilcare "Percy" Persichetty, W2NHB, in Staten Island. W2NHB was the organizer and first president.

Also present were: Dr. Enrico Davilo, WB4GKN of Vienna, Virginia (president); Vincent Persico, WB2DXE, Secretary of Maspeth, Long Island; Domenico Gilitos, WB2UAQ of Bayside, Long Island; Sandro Garguilo, I8KGS of Massa Lubrense, Italy — director of the Sorrento television network and anchorman of their daily newscasts, which includes areas in the surrounding Gulf of Naples and Capri areas. In addition, about a dozen guests were in attendance — friends of the amateurs present.

WB2UAQ presented the Roundtable net with 100 beautiful friendship award certificates, which will be given to all members making contacts here and abroad. I8KGS presented the net with a number of certificates of his design; these will also be distributed to members who make a contact with any AIR or TRIA station. WB2DXE will distribute certificates in the United States, while Umberto Burastero, I1JOH of Loano, Italy will distribute certificates abroad.

This is a very informal net of Italian-Americans — or anyone else who wants to join in for a friendly chat in either Italian or English. The net is found just about any day on 14300 kHz ± 5 kHz, from 5:00 to 6:00 p.m. Eastern Daylight Time.

All are invited to join in. Our non-paying dues members live in all parts of the United States (about 25 members) and in all parts of Italy (about 35 members).

W2NHB of Staten Island would very much like to hear from the original members of the John DeBlase, W2FX Italian net who generally met on Saturday and Sunday mornings. We also had some great reunions at his QTH on Long Island. Please get in touch and say hello on 14300 ± 5 kHz, 5:00 to 6:00 p.m. 73's — A.F. Persichetty, W2NHB □

Washington Proclamation

WHEREAS, members of the Amateur Radio fraternity are committed to providing their services to the citizens of our state and nation; and

WHEREAS, these operators stand ready to aid and assist governmental, educational, scientific and emergency communications serving the public; and

WHEREAS, the initiative and commitment of these Amateur Radio operators have been demonstrated many times;

NOW, THEREFORE, I, John Spellman, Governor of the State of Washington, do hereby proclaim the week of September 6 through 13, 1981 as

AMATEUR RADIO WEEK

in Washington State, and urge all citizens to honor and respect the men and women who unselfishly engage in this important and essential program.

Signed this 27th day of August, 1981.

John Spellman
Governor □

Washington State governor, John Spellman, signs Amateur Radio Week proclamation. Standing from left to right are: Joe Winter, WA7RWK, Section Emergency Coordinator and Section Communications Manager elect; Reade Apgar, N7AGG, Amateur Radio Communications Officer for State Department of Emergency Services; Hugh Fowler, Director, Washington State Department of Emergency Services; Mary Lewis, W7QGP, Northwest Division American Radio Relay League (ARRL) Director; and John Brown, W7CKZ, Northwest Division ARRL Public Information Assistant.

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World Radio History

USQS

(*continued from page 7*)

ceived a batch(es) of cards *from*. If you have talked to these amateurs — some of them contesters, some DX — chances are you have cards on file. Our thanks to the following amateurs who have sent us cards. We are doing our best to forward cards from: (note, this also is a partial list)

G2DHV	WB3DNA	WA5DXI	WA7NHU
VP2MEH	KA3DOO	WD5EAE	WB7UCU
VK2NHV	WB3ELV	WB5EDO	WB7VZG
VE3IR	KA3ENX	WD5EWP	KE7W
WP4BIV	KA3EON	KA5KNX	N8BXV
VE5JQ	KA3FAS	AB5X	N8CLE
VE5XU	KA3GDF	W6AM	N8CQA
WH6ANR	W3GV	N6BK	WB8HHZ
VE6CHU	W3ICM	KB6BO	KA8IGM
KH6GI	WB3IFD	WB6BYN	KA8JJK
KH6IC	K3TKS	N6DUQ	K8KIR
KH6MD	W4DGX	W6GGV	WD8RBN
KH6NO	WD4DIE	N6GL	WD8REW
W7KEU/OA8	N4DPM	KA6HQE	WB8RJW
W7KNN/KH9	N4EDM	KA6HRK	WD8RND
W7WPR/KL7	KA4GHX	KA6JHM	W8VQV
N1ADX	K4IM	W6KJP	K8WXW
WA1FCN	WB4JKD	KA6KZX	KA9FWB
WA1PDG	KA4KJJ	WA6LVE	KA9HQY
W1YK	K4KKQ	KA6NEG	K9LSB
K2DUX	KA4LXL	KD6NL	K9MWM
KA2EGF	KA4MNS	KA6ODW	KC9U
KA2GAC	AA4NC	KA6OHT	V9VEN
KA2HUY	K4OF	KA6OQW	KE0A
KA2INN	KA4RNB	KS6Q	W0OK
WA2JTY	KJ4S	K6UD	WA0DWL
AC2P	KA4SPM	K6XP	WD0EIF
WB2UKO	N4WW	N7DF	KA0IKN
N3ASI	KC4YY	K7GN	WB0OQV
KA3B	KS5A	KA7IBN	WB0OQW
N3BBH	WD5CHB	W7IEP	
WB3CAI	KC5CW	W7LNG	

Our thanks to the thousands who have SASEs on file. It would help a great deal if, when sending SASEs, you tell us how many QSLs you would like in each SASE. Please remember to put your call, and old call if you've recently upgraded.

CLUBS: If your club members would like to send SASEs under one club address, we will gladly send cards requested by members. Just send a club roster for calls you wish forwarded to the club. Also, let us know when you upgrade and change call signs!

USQS accepts cards for DX stations that are "via a U.S. call." However, please note that if you wish us to send cards direct to managers, we must send an SASE with it to get cards back.

Also, we do keep a current Callbook on hand and will be glad to forward any postage-paid cards you may want us to look up for you. If there is anything we can do, please let us know.

Until next time, Happy Hamming and hope to see you on the air. This station, N7BMY and KB7JW, is ready for any band CW QSO. CU there, 73s from U.S. QSL Service (N7BMY), P.O. Box 814, Mulino, OR 97042-0814.

•

Following are the call signs we weren't able to run last month. If your call appears in this list, please send an SASE to Daryl Myers at the above address, to claim your cards.

KA7GSS	W7KVS	KL7RA	WA7UQV
KA7GVY	VE7LB	WB7RFC	WB7USF
KA7GWC	KL7LO	KL7RIT	WB7VDR
KA7GXK	W7LPF	W7RS	K7VNU
KD7H	W7LSI	WB7RSE	K7VWA
KA7HAI	KB7LT	WB7RUV	WB7VXX
KA7HCP	K7LYT	WB7RYB	WB7WVK
KL7HOV	AD7M	KB7SB	KG7X
W7HPI	K7NHK	K7SE	K7XA
KA7HSD	K7NU	WB7SFE	WA7YUL
KA7HWE	AL7O	WA7SHP	WA7YXZ
W7IAA	KD7O	WB7SQM	W7ZO
KL7IF	W7OAW	WB7SUQ	W7ZOI
KA7IKW	WA7OBH	WB7TAW	WA7ZSX
KL7IRK	K7OFT	WB7TAZ	KA8AJD
KA7ITX	WA7OFV	WA7TU	WD8ALG
NL7J	WB7OPT	WB7TDC	K8AMU
KL7JAI	WB7OTC	K7TFW	WD8AUZ
KB7JJ	AG7P	WB7TSH	N8ARY
KB7JR	WB7PVL	W7TY	KD8B
W7JVG	WB7PYR	WB7UAH	N8BCQ
KL7KE	WA7PZO	WB7UCV	KA8BDB
W7KSK	WB7QCW	WA7UEC	W8BKP

N8EKX	KA8HJM	W8LPS	KB8UF	N9ASC	W9DH	KA9GNW	KA9JFQ	KB9S	W9YF	N0BJN	KA0L
W8BZ	K8HMS	KB8MK	K8UM	N9AUG	KA9DQV	WD9GNX	WB9JKI	W9SE	W9ZCN	K0BLT	WD0DAI
AD8C	W8HQK	K8MNG	W8UPD	N9AW	WD9DVO	WD9GPK	K9JNB	N9TG	WA9ZWL	WD0BNC	KA0DFT
K8CFH	W8HOD	WD8MOV	W8UPH	N9AZR	AB9E	WD9HAK	N9KW	WA9TGL	AE0A	N0BQK	KA0DHV
KA8CVH	WB8IGY	WD8MRC	WB8UQB	AA9B	KD9E	K9HDE	AK9L	W9TM	AK0A	N0BRI	KA0DIL
WD8DGY	W8IHI	WD8NLQ	KC8V	KA9BDW	WB9EBO	WD9HII	WA9LFY	W9TNZ	W0AFG	N0BVL	KA0DIR
WA8DUB	WD8IJN	KD8O	W8WPC	N9BGS	WD9EJE	W9HPR	WB9LTY	KC9U	N0AFO	N0BYK	W0DJN
WA8DXB	KA8IPL	KF8O	KA8WS	W9BIQ	WA9EOD	KA9HRV	K9MAA	WB9UAO	N0ANJ	N0BYP	KA0DJR
W8ED	K8IQQ	KB8ON	WB8YEW	N9BKN	WD9EXD	KA9HSD	W9MB	WB9UNW	KA0ANR	WA0BZD	W0DLQ
KB8EH	K8IUB	WD8OWA	WA8YGR	K9BN	KA9FRX	KA9HUF	K9MFI	W9UP	N0AOP	N0BZO	WD0E
WD8EOM	KA8JAB	W8PLX	WA8YJE	KB9BR	W9FU	K9HVL	WB9MSV	W9UPG	N0ARD	N0CAB	KA0EAB
KA8FBC	WD8JDL	KB8PP	WB8ZME	N9BUZ	K9FW	KA9IBY	WB9NOV	KB9UR	N0AUI	N0CAY	W0EAN
KA8FFQ	WD8JGI	AD8R	WB8ZRL	KA9BWR	KA9FYA	WD9IIC	W9NUF	W9UX	N0AVT	N0CBH	WD0EDY
W8FGA	WD8JJM	WD8RHQ	WB8ZRV	N9BYB	K9FZV	WD9IMN	W9OA	W9VA	KE0B	WD0CCL	KA0EGE
WB8FGN	KA8JZR	WB8RNY	N9AAP	KA9CHP	WD9GCZ	WD9IRV	W9OAW	WB9VX	KA0BBW	WD0CCW	KA0EIH
KA8GBB	WD8KKF	KB85C	N9AAR	WB9CMT	WB9GGD	W9ITT	W9PL	AF9W	WD0BCE	WD0CDS	KB0EK
WA8GBB	W8LD	WB8SEN	K9AAV	KA9CNH	K9GHP	W9IVI	WB9QPJ	K9WA	N0BCN	W0CET	K0EL
W8GGF	W8LGF	WB8TGV	WD9AEU	WB9CPT	KA9GIZ	KA9IXL	K9QVB	WB9WIC	KC0BF	WB0CGJ	WD0EMY
W8GOC	KA8LJD	W8TLC	WD9AHJ	WD9CXQ	KA9GMI	KA9JAV	N9RF	W9WJ	N0BGE	W0CON	W0ETT
KA8GQM	K8LJG	N8TN	K9AHX	AJ9D	KA9GNG	WB9JBM	KA9RIZ				
KA8HJG	KA8LKG	W8TWA	KA9AKS	WD9DBQ	WA9HNU	K9JFN	N9RR				

(*please turn to page 45*)

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- KDK has also eliminated another trouble spot by completely hand wiring each radio. No internal plugs to become intermittant and no wire wraps either, just good solid wiring.
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- The transmitter uses direct VCO varicap modulation for true FM. Your transmitted audio sounds as it should; crisp, clear and natural.
- The power output stage of the 2025A MkII will not break down even with an infinite VSWR load, and uses heavy duty solid state antenna switching with a four stage low pass filter. All this gives you an exceptionally clean, spur free output.
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World Radio History

HIGHLIGHTS

Bill Grenfell, W4GF

FCC's new Private Radio Bureau Chief, James McKinney, began his new duties on 20 August. He succeeded Carlos Roberts, who resigned to join a communications company. The former Chief of FCC's Field Operations Bureau (FOB), McKinney is aptly described in *HR Report* (08/07/81) as: ". . . very highly regarded both in and out of the FCC, and it is predicted that under his direction Amateur Radio will receive a lot more attention from the . . . Bureau than it has in the past few years. In the past, McKinney has worked very closely with amateurs on a number of enforcement problems, achieving a reputation as a no-nonsense administrator with an excellent understanding of Amateur Radio."

Before becoming Chief of the FOB, McKinney was its Deputy Chief, and earlier was Chief of its Enforcement and of its Monitoring Systems Divisions. The new Deputy Chief of the Private Radio Bureau (PRB) is Robert S. Foosaner, formerly with FCC's Office of General Counsel and Chief of the Policy and Management Staff of the Commissions's Office of Science and Technology.

•

A hard look at the comments on the proposed plain language rules is promised by new PRB Chief McKinney. He said they would try their best to fix those rules troubling the amateurs, including retention in AR1 of the five principles in current Section 97.1 *as is!* He also stated that if the plain language rules were not "repairable," he would not recommend (to the Commissioners) that they be adopted. He forecast action late in November.

•

Richard Smith, WA4AMX is the new Chief of FCC's Field Operations Bureau, succeeding Jim McKinney. Dick moved up from Deputy Chief of the Bureau after having served in several District offices, as Engineer in Charge of the Philadelphia office, Chief of the Investigations Branch and Assistant Chief of the Enforcement Division of the FOB.

•

The new Deputy Chief of the FOB is Arlan Van Doorn. He is the former Deputy Chief of the Private Radio Bureau.

•

In-kind retaliation for deliberate interference can be risky as FCC has demonstrated by *proposing* suspension of the operator license of Richard Eastman, N5FX. Heard interfering with Gerard Morin, W1GM and Leonard Boucher, K4MME while they were interfering with the Maritime Mobile Service Net, N5FX was also allowed to request a hearing on the proposed suspension. The date for the hearing of W1GM and K4MME on their proposed suspensions and revocations had not been set at the time this issue of Highlights was written. In the meantime, they may continue to operate until such time as the hearing judge decides their fate.

•

Monitoring aircraft frequencies was taking FCC's full attention, for possible deliberate interference during the controller's strike. During the first two weeks of the strike, about 30 cases were investigated — most of which were apparently, or were found to be inadvertent, such as a stuck microphone push-to-talk button, etc. About a half dozen cases were deliberate, short, one-time transmissions of misdirections to aircraft — none of which fooled the aircrews.

•

The "speed of service" on amateur applications was 51 days in July. This is the average time it took from date of receipt to the date of processing of amateur license applications for those processed during July. The June figure was 38 days. Some of the increase can be accounted to the move of the Gettysburg facility of the Private Radio Bureau's Licensing Division to a different building in Gettysburg.

•

The end-of-July amateur license statistics are: Novice 78,622; Technician 69,041; General 119,650; Advanced 86,387; Extra 27,409; Operator total 381,109; Club stations 3,252; Military recreation 283; Secondary 2,851; RACES 613.

•

FCC has closed its Savannah, Georgia office. However, they expect to conduct exams there at least four times per year. Applicants may file a Form 610 with the Atlanta, Georgia FCC office (1365 Peachtree St., zip 30309) for an exam in the Savannah area.

•

The Hyattsville, Maryland FCC District Office closed in July. Exams will be given in the Washington, D.C. area on a monthly basis, by appointment only. Applications with a Form 610 should be filed at the Baltimore, Maryland 21201 office, (31 Hopkins Plaza) ". . . at least two weeks prior to the requested date."

•

Action on Senate bill S 929 and House bill HR 2203 was delayed by the usual August summer recess. S 929 was out of Committee and HR 2203 was being redrafted at the beginning of the recess.

•

Several amateur rule-making actions drafted by the Personal Radio Branch were in the FCC "pipeline" in August. Action on them by the Commissioners before the end of September could not be forecast at the time this was written. One item is the Docket 80-135 proposal for simplification of identification requirements.

•

One optional solution for TVI in an RFI report by FCC's staff would place all responsibility for a solution on the trans-

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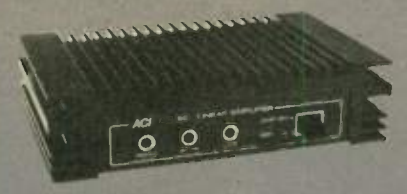

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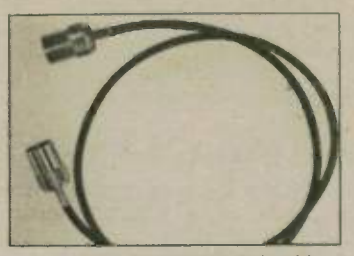

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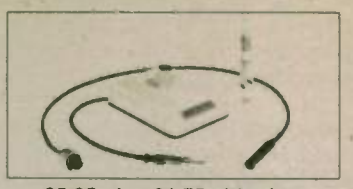

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World Radio History

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mitter operator! The report also includes several other options, such as mandatory TV receiver standards and warning labels on TV sets. However, mandatory standards would require legislative action such as adoption of Senator Goldwater's S 929 bill See July, August and October Highlights for further information on S 929. Along with the report, FCC issued a Further Notice of Inquiry on RFI, General Docket 78-369. Comments on the Notice were due 30 September, with reply comments due 6 November. (From *HR Report* 08/07/81)

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Pro baseball player Joe Rudi favors

(*please turn to page 20*)

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Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each radio district, as of 1 September 1981.

Radio District	Group A	Group B	Group C	Group D
0	KM0O	KC0GU	N0CZL	KA0MDB
1	KF1B	KA1UI	N1BSH	KA1HPY
2	KQ2D	KC2GB	N2CVF	KA2NLC
3	KE3T	KB3TU	N3CIX	KA3HZM
4	NR4H	KD4WB	N4FKG	KA4VUB
5	KT5D	KC5XA	N5DTL	KA5MFG
6	ND6N	KE6FH	N6FAT	KA6QXY
7	KM7C	KC7GC	N7DCJ	KA7LGL
8	KQ8O	KC8LL	N8DDC	KA8NWH
9	KI9T	KC9FE	N9COL	KA9LQJ
N. Mariana Is.	AH0A	AH0AA	KH0AC	WH0AAE
Guam	AH2L	AH2AL	KH2AR	WH2ACX
Johnston Is.	AH3A	AH3AA	KH3AB	WH3AAB
Midway Is.			KH4AC	WH4AAF
Hawaii	NH6L	AH6DH	KH6OT	WH6AQE
Amer. Samoa	AH8A	AH8AB	KH8AB	WH8AAL
Wake Wilkes Peale				WH9AAA
Alaska	WL7B	AL7DA	KL7QC	WL7ARN
Virgin Is.	KP2B	KP2AF	NP2AL	WP2ACQ
Puerto Rico	NP4G	KP4DS	NP4DF	WP4BYL

For more information about call sign assignment in the Amateur Radio Service, see Section 97.51 of FCC rules, or write to the FCC Consumer Assistance Office, Washington, D.C. 20554. ☐

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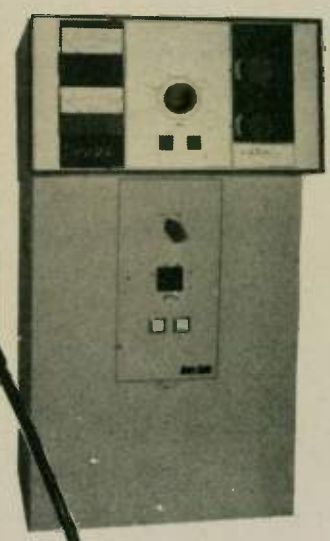

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World Radio History

AMATEUR RADIO IN PUBLIC SERVICE

Maritime Mobile Net aids sailor in distress

Arthur R. Lee, KA6MIQ

Mike Simpson, W6CRD reported that Bill Donohue, W6SYQ — on the 15-meter (21.404) Maritime Mobile Net — overheard a call for help from John Sorenson, KA7KHP/MM2.

John was single-handedly sailing at 13.30 N. Lat. and 132.54 W. Long. when he lost the rudder from his 24-foot Buccaneer sloop *Eric The Red*.

John, a Novice, had been in daily CW contact with a fellow single-hander, KB7NYK, since his departure from Dana Point, California on 2 June. When his rudder sheared off and sank, John checked in with the net on voice, stating he had an emergency. (FCC rules permit emergency communications by voice by anyone, regardless of class of license.)

The net controller cleared the net for emergency conditions. For the next nine days, the net kept John in radio contact with other boats at sea. Marvin Miller, KA6JIN and Jim Crow, WA2CPX — both sailing-cruising amateurs — changed course to assist.

The U.S. Government research vessel *Oceanographer* changed course for over 1,000 miles to help the rudderless *Eric The Red*. KA6JIN and WA2CPX were then told to discontinue their rescue efforts but to remain in contact with the net.

Daily contact was maintained with *Eric The Red* to keep the spirits of her skipper up. While the vessel was in trouble, a telephone patch to John's parents in Boulder City, Nevada was completed.

With the *Oceanographer*, WTEP enroute to intercept, John was instructed by the ship's captain to rig a sea anchor to check his 3 knot drift to the west. John jury-rigged his clothing as a sea anchor. At one point, he fell overboard but managed to get back aboard safely.

Eric The Red, in direct contact with the *Oceanographer*, was also in contact with the Pacific Maritime Net, Pacific, controlled by Larry McPherson, KH6HEO in Honolulu. (20 meters, 14.314 MHz.) The *Oceanographer* used her direction finding equipment to locate the helpless vessel. At 2300Z, 17 July, the sloop was picked up at 00.00S. and 139.43W. *Oceanographer's* crew filled John's water and gasoline tanks and helped with emergency repairs. John was in good condition and after a good hot shower and a couple of good meals, he was initiated into the Order of Neptune for crossing the equator. After the repairs were completed, the ship escorted the sloop to make sure the repairs they had made to the steering system were in good order. John then proceeded on his way to the Marquesas Islands.

Bill Donahue, W6SYQ wishes to thank all hands for their help in this emergency and the help given by all concerned in keeping the net clear, and in particular, the 20-meter Honolulu net. As the 15-meter Pacific Maritime Net does not come up on Saturdays or Sundays, the following stations came up on those days, as well as every day, to assist in getting status and position reports:

Oahu stations: Rich Richards, KH6EF; Pat, KH6OE. **Long Beach:** Mike Simpson, W5CRD; **Solano Beach:** Dick Knotts, WA6UKL (an M.D. who gave John advice on what he should and should not do in order to keep his strength and spirits up).

All were instrumental in preventing a possible tragic loss of life. □

Share your knowledge with your fellow amateur and Worldradio reader . . .

Lions parade

More than 20 Phoenix area radio amateurs participated in a radio network that covered the route of the Lions International Parade during their international convention here on Wednesday, 17 June.

The parade route ran through downtown Phoenix, Arizona, starting on Central Avenue just south of McDowell Road, south to Monroe Street, and then east to Fifth Street. Amateurs with hand-held 2-meter units were stationed at strategic control points along the route. They communicated through the Maricopa County Repeater Group's repeater on 146.22/82 MHz. Net control operated from high in the Valley Center building at the corner of Central Avenue and Van Buren Street, where the repeater is located.

Because of the hot weather — still over 100 degrees at the parade's 7:00 p.m. starting time — city and relief agencies had set up emergency care centers along the route. As the parade progressed, a number of marchers were overcome by heat, especially at the end of the parade just east of the Civic Plaza Convention Center. Some spectators also had to be treated for the heat. Much of the traffic on the net concerned the handling of stricken people and the whereabouts of their relatives. A number of bands from local schools also marched, some covering the route twice; they were bussed back to the start when they completed their first march!

The parade itself was a spectacular show, with over 10,000 participants representing over 45 countries where Lions International is active. The Japanese and Chinese delegations also had floats which depicted and dramatized their cultural scenes. Most delegations wore distinctive costumes to reflect their native style of dress. The parade lasted over three hours.

The Lions International convention committee and organizers heartily thanked the radio amateurs for their help with communications and reporting on the progress of the parade units. Bob Dreste, K7VOR organized the communications and Jim Wortham, W7GNP served as the net control operator.
— *Arizona Repeater Association* □

Toxic fumes endanger Dayton

Information furnished by Ron Moorefield, W8ILC DEC, Greene-Montgomery Counties

On 16 July, a semi-tanker at a large industrial company in the Dayton, Ohio area was leaking very toxic chemical fumes that can be fatal.

Dayton Fire Department Chief called upon Amateur Radio for communications assistance. Amateurs were stationed at the Field Day Communications Center, hospitals and the Red Cross.

An area of 1½ miles was evacuated with the possibility of five miles ready to go. The tanker was finally emptied safely.
— *The Triple States RAC BNT, OH* □

Adrift without radio

Every afternoon at 4:00 Bill Green, W6BYS calls the Maritime Mobile Net on 21,407 kHz (or on 28,810 if 10 meters is open). Many ocean-going vessels have crew members that are amateurs; often, the ship's radio operator — but sometimes someone from the engine room or the deck crew, or maybe the ship's cook — has a license. They check into the net to pass messages to family and friends of the crew and to keep in touch with what's going on at home.

During a recent net, there was a lot of excitement. The freighter *Pioneer Moon* reported spotting a small sailing vessel drifting in open sea. Bill gathered all the details. It was a 24-foot yacht, the *Drake*, registered in San Francisco, with only one person on board. It was located at 28 degrees 08 minutes North, 173 degrees 24 minutes West near Midway Island.

Peter Solon Palmer had set sail alone from Honolulu bound for San Francisco, had run out of wind, and as the calm conditions continued, had run out of fuel. He had no radio, had been drifting for three weeks in the wrong direction and was over 900 miles off course.

This information was reported by Bill to the Coast Guard office here in San Francisco, which — of course — took great interest in the find. Bill then established a phone patch between the Coast Guard and the *Pioneer Moon* to gather further information. Mr. Palmer received fuel, food and water from the freighter and sailed on to Midway Island.
— *Nuts & Volts, San Francisco, CA* □

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OFF THE AIR

He longs for QSO in HZ-land

I am in the U.S. Army, stationed in Saudi Arabia in one of the most beautiful spots in the Kingdom. I am about 100 miles north of Yemen, and 60 miles inland from the Red Sea. The city is called Khamis Mushayt and it sits about 7,000 feet in the mountains. The weather is very pleasant; the high gets up to around 85 degrees and the low around 50 at night.

This is my second tour in Saudi Arabia. The first tour I worked out of Dhahran, and also had access to HZ1AB, which is located in a U.S. military building. I had a lot of enjoyable hours running DX through the many pile-ups. I just wish we could have worked every amateur in the states, but I know that is impossible.

Upon finding out that I would be going back to Saudi Arabia, I wrote to a good friend of mine -- HZ1TC — to find out if I could obtain a Saudi amateur license. Youseff informed me there is still no reciprocal licensing in Saudi Arabia.

I brought with me a Zenith receiver, Morse Matic Keyer, and a set of Bencher paddles. I sit in the evenings listening to amateurs all over the world, wondering why U.S. amateurs living in Saudi Arabia can't be licensed here. The one thing I long for is a nice QSO.

You may ask why don't I just go to Dhahran and operate HZ1AB. Well, Khamis Mushayt is 1,200 miles from Dhahran, and I just can't jump into a car and drive or into a plane and fly. So I just sit here in the evenings, listening and wondering when U.S. amateurs will be able to operate in Saudi Arabia.

DICK WEISS, N7CXB
Khamis Mushayt,
SAUDI ARABIA

Pacemaker info from Ireland

30 June 1981

I've just been looking through the February '81 issue of **Worldradio**, received by my friend John Moloney, EI1CY. On page 53, I see you are looking for information about cardiac pacemakers and possible RFI problems.

Being an active amateur, I was quite concerned about the possibility of interference when my mother had a pacemaker installed some years ago. Happily, the problem has not arisen. I have also been assured by experts in the electronic and cardiology fields that I should not encounter any problems. However, I am always interested to learn more or to pass along any information I have managed to locate.

Accordingly, I enclose copies of various documents which may be of use to you. **Amateur Radio Action** is an Australian magazine. **Radio Communication** is the magazine of the Radio Society of Great Britain. Telectronics Pty. Ltd. are pacemaker manufacturers. I would also refer you to a comprehensive publication by the United States Air Force. It is Report SAM-TR-76-4 — "The Biological Significance of Radiofrequency Radiation Emission on Cardiac Pacemaker Performance." It is an unclassified document approved for public release, published by: USAF School of Aerospace Medicine, Aerospace Medical Division (AFSC), Brooks Air Force Base, TX 78235.

I hope the above is of some use.

73 de
SEAN CARVIN, EI2CR
Dublin, IRELAND

(Following are excerpts from the material Mr. Carvin sent us. The first is from a letter sent to EI2CR by C.N. Sutton, U.K. Manager of Telectronics Pty. Limited.)

". . . The radio frequency fields generated by your transmitter are unlikely to affect the implanted pulse generator. The titanium case surrounding the electronic circuitry provides a high degree of protection from RF interference.

"Pulsed RF fields having a pulse rate frequency of less than 5 Hz are the most likely to cause interference. Most of our tests have been carried out using 400 watt pulsed power at 450 MHz. Below this frequency, the energy coupling to the pacemaker decreases, whilst above the frequency attenuation by the body increases.

"We think that during maximum power output from your antennae RF field, effects would be reduced to a safe level at a distance of 10M from your antennae . . ."

(This excerpt is from **Amateur Radio Action**. *Vol. 2, No. 12, p. 17.)*

". . . Do Amateur Radio transmissions interfere wtih the stable operation of implanted pacemakers? In essence, the answer is NO! The chances that any radio transmission will interfere with such devices are extremely remote . . . "

WXDs get together

Recently on 15 meters, while in QSO with another station, Owen White, WA5WXD broke in on my contact. My call letters are WA6WXD, so his call was similar to mine. We had an enjoyable QSO.

Owen White, WA5WXD (left) and George Romaniskey, WA6WXD.

Several weeks after that contact, I had an opportunity to be in Louisiana on business. While I was there, Owen and I were able to have an eyeball QSO. Owen White lives in Denham Springs, Louisiana.

73's
GEORGE ROMANISKY, WA6WXD
Northridge, California

Two gripes

Excuse the stationery. I'm writing in my shack and we don't go in for frills, just quality. That's why I subscribe to **Worldradio**. My first copy came as a sample and I've been sold ever since.

The thing that finally got me started on this was this month's copy (September). There was a big write-up about amateurs aiding in emergencies, fires in this case. It's nice to read about, but the people who really should hear about it are the general public. For some reason, I can't figure out why, the general media — newspapers, TV, radio, etc. — completely ignore the service we render in time of need. Maybe because it's free. That's my number one gripe.

Number two is the use of the word "handle" in place of "name." Pots and doors have handles. Amateurs have names.

There, I've done it. I promised myself I'd write and compliment you and thank you. I can't find any criticism on the paper/mag. You always seem to be one jump ahead of me.

73s and tnx agn,
R.S. VAN WINGERDEN, KA6ISC
Saratoga, California

UFOs

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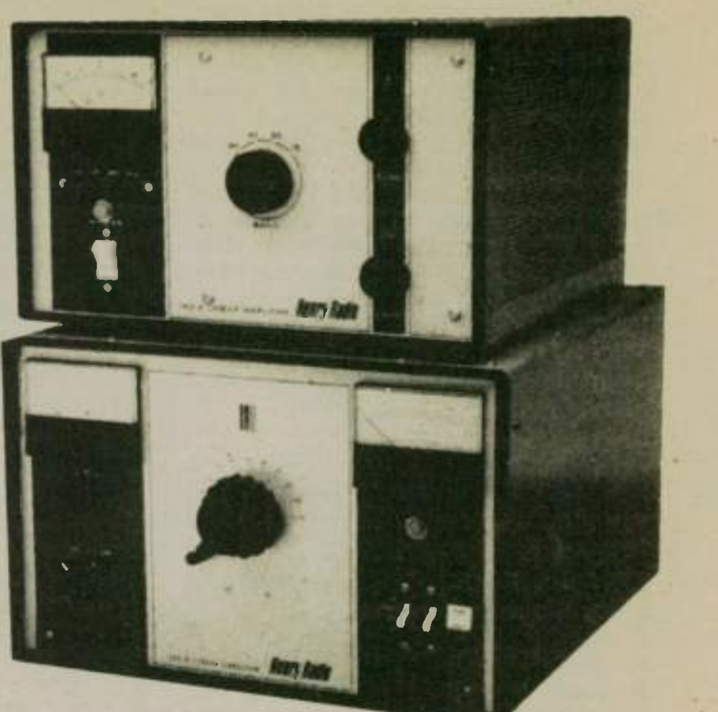

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Lenore Jensen, W6NAZ

For 36 tense, anxious hours, NBC newsman Roy Neal, K6DUE sat in Mission Control at Houston (Texas) during the desperate attempt by those on the ground to solve the life-threatening problems of three astronauts aboard Apollo 13.

He had been the ideal choice to represent all networks. It was NASA's first time to allow, inside, a correspondent "to be an instant translator of the precise technology of the Flight Director into ordinary language" for the many millions tuned in from around the world.

"It was the greatest highlight of this broadcaster's career," he recalls. "You see, I could add the personal touch. A once-in-a-lifetime opportunity!"

Fortunately, the drawn-out dramatic event had a successful conclusion, with engineers down here finally duplicating the problems in space, assisting the astronauts to a safe return. Roy's interpretations received wide acclaim. But this was to be expected, as he has extensive knowledge of space exploration along with genuine enthusiasm. "Remember," he always says, "we've never lost a man in space!"

Roy Neal has covered all of the Mercury, Gemini and Apollo flights from Cape Canaveral and/or Houston. He's well known at JPL (Jet Propulsion Lab) for covering the unmanned spacecraft voyages and at Edwards Air Force Base in the Southern California high desert where test flights of new crafts are made, including the shuttle *Columbia*. "I discovered Edwards in 1952 when I came to the NBC newsroom in Hollywood," he mentioned. "It's been a going romance ever since!"

Today, Roy has many important responsibilities in the network news department. "Basically, I am in charge of all radio operations for NBC West Coast, our fine studio and the good people under my guidance." The radio network serves about 350 stations and the newer, "The Source," also is growing rapidly and is under his control.

We also see him on various TV specials, especially those about aerospace, some of which he produces. As a general coverage correspondent, he does "updates" on the NBC Nightly News which airs three hours later in the West. Big stories frequently break during the interval.

He couldn't be happier in his work, in fact he recently signed for a "few more years."

Roy's been in commercial broadcasting since 1940 and had prepared for it very well, majoring in journalism, English and drama at the University of Pennsylvania and developing a fine voice to go with his keen mind for news.

But his ham career had started six years earlier at age 13. "My call was W3GIB ("we three girls in blue"!!!) and my first band at that time, naturally, was 160. You see, then it was a lot easier to get on that super-low band which made up for any errors in construction!" Of course, in those days most amateurs took pride in their home-brew gear.

"Then I worked up to 5 meters and eventually all the others. I've lived through *all* the changes, even fought the wars of SSB vs. AM as an early sidewinder."

But his hamming had been abruptly ended, as for all of us, when WWII came to the U.S. Forces. Roy joined the infantry and served in Germany.

"At the close of hostilities, they were checking on the backgrounds of officers and someone noted mine. I was put in charge of Special Services and found myself setting up theatres and scheduling doughnut girls for the Red Cross."

He then applied to the Armed Forces Radio Network and became station manager for what was to become the key station of the network, in Frankfurt. "Three months later they made me Program Manager for Europe," he added.

It was like stateside broadcasting, in many ways, including "remotes." "I remember the time we were covering the arrival of the first U.S. jet planes at Wiesbaden. We were recording on the only two "original" tape recorders, made by German scientists, which had surfaced." (Magnetophones)

The event was exciting and one of the group enthused, "Isn't this wonderful. For the first time we are going to see a jet aircraft!" Over on the side a little German mechanic in his accent wryly said, "Hmmm. *We've* had them for a quite awhile; we just didn't have enough of them to do any good."

About the same time, amateurs were all returning to the air. Roy acquired an old BC610 and a Hallicrafters SX 28 (then a prized possession) and became D4ACA. All German stations had the single D just

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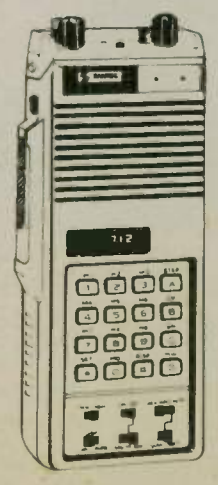

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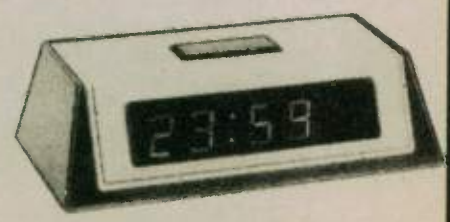

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as we were single Ws in the continental United States.

"I was lucky to find a lot of that good blue German coaxial shielded cable for an antenna and glad to be on the air," he said.

But as always — then and now — Roy kept his ham and his professional careers apart. Once home again in suburban Philadelphia, near the end of 1946, his new station helped him keep in touch with old pals in D-land.

Again, he was experimenting with antennas— always a fascination. Seeking a better signal, he dreamed up his first version of a tri-band beam, then unheard of in most radio circles.

"I figured out a marvelous monstrosity which I mounted on a big stepladder. It had eight elements on 10, six on 15 and four on 20 meters. I put in some AC-operated relays and tuned stubs. It worked fine. However, about the same time W3DZZ dreamed up the first authentic tri-band beam using *traps*. Of course, it was far better for the average manufacturer and became the standard for the industry in its various reincarnated forms." He's maintained that sort of interest in Amateur Radio and antennas ever since.

Meanwhile, back on the professional side . . . Roy Neal found a new, exciting challenge in the young and eager world of television at Philadelphia's WPTZ. In 1946 every new show was not only *live* but alive with innovation. His "*Open House*" was omnivorous of material, demanding huge gulps each day.

"To fill the void," he recalls, "I went to the great Franklin Institute where wonderful applications of science are made possible with working experiments."

"There we met a fine scientist, Dr. Roy E. Marshall. As an astronomer, he would let us look at stars through his telescope." That was probably the true beginning of the *space* in Roy Neal's aerospace. The *aero* part came from a different direction.

"Another of my contacts was with the **Saturday Evening Post**. Through that I

Roy Neal, K6DUE *(NBC photo)*

started doing aggressive reporting for TV, on airplanes such as the B-52 and B-49." His progress sounds like a well-written scenario concerning the rise of a top newsman.

His move to Hollywood, and later to the Burbank headquarters of NBC, required a change of amateur call; hence his well-known K6DUE. He's resisted changing it, calling it "comfortable by now."

His brilliant professional career has provided countless unique opportunities and some on the lighter side.

"There was the time I was covering an above-ground atom bomb test in Nevada and was on the air live by telephone to Frank Blair in New York," he remembers with a smile. "I was parroting the official countdown for the expected big blast — "five, four, three, two, one" — ready to describe a tremendous mushrooming cloud. But then silence. Nothing happened. Obviously a misfire. It was a tense moment. Suddenly in the distance some joker shouted, 'Somebody wee-ed on the wick!' At the time, with 2,000 troops hushed and waiting and with a tremendous audience also waiting, it struck me so funny I burst into laughter (off mike) and simply couldn't talk. Even the famous correspondent Bob Considine, a few feet away, was caught up in the hysteria.

"Meanwhile, I realized that Frank in New York was wondering what had happened to us on that Nevada desert, whether we'd all been pulverized. He was saying, 'Roy? . . . Roy? . . .' "

Although it seemed like 12 hours, it probably was no more than 12 seconds before Roy regained his composure to continue describing the scene.

The lightness of the moment was darkened immediately by the fact the bomb had not fired. A well-known nuclear physicist, Dr. John Clark, heroically climbed the tower to disarm the device and located the relay which had failed to close. It was a very nervous time, Roy reports, as the good doctor could have been blown to bits.

In these later years, Roy has seen news gathering gear for radio and television grow increasingly sophisticated — and small. When reporting radio news by telephone, from the field, he carries a tiny fit-in-your palm tape recorder of excellent quality. The "actualities" on the tape, as well as his own voice, are patched via another very small package. It allows a person to substitute a screw-in condenser microphone for the normal carbon in the telephone and also to use a tiny transistorized amplifier with a switch as a "mixer."

He remembers, "Twenty five years ago I did "*Wide, Wide World*" remotes with large crews and huge loads of cameras, relay transmitters and the like for those live telecasts."

When videotape came along at last, it also was in a large heavy package and used 2-inch wide tape. Editing, of course, was done with a razor blade and only by very skilled operators. It all consumed time.

"Now we have something a man can carry on his back," he continues. "EJ — Electronic Journalism as they call it at NBC — has revolutionized TV news." It makes possible very rapid editing via electrons rather than razor blades. A newsperson can choose between an enormous amount of recently recorded film or videotape as well as anything "in the files."

For his documentaries, Roy's challenge becomes one of choice, selecting from a great variety of material to fit the precise time requirements of the medium.

His latest enthusiasm is for geo-synchronous satellites. "Just think," he points out, "here in our network studio, our engineer has a button to press. He then transmits the output of our studio, via geo-synchronous satellite, to a similar button before another engineer in New York. We are communicating by a satellite of all solid-state electronics with logic circuits and all the rest built right in. No more relays going clickety-clack."

"Instead, we have electronic gates that open and feed our words to a ground station in Hollywood, uplink to the bird and then downlink to a ground station in New York, ending up at that other button!"

For those still trying to understand such things, he explains, "If a satellite is put at a set altitude above the Earth at a set orbital velocity, it will remain in an apparently fixed position above any given point down here below." From about 22,000 miles, the broadcaster's signal is received, amplified and returned to Earth on a different frequency.

"On the other hand, low-orbiting satellites zing along at something like 17,500 miles per hour. That's enough velocity to keep them up there, but they zing around the earth about every 90 minutes or so." (Like the space shuttle, too.)

Roy beams at the prospects of fixed-position satellites. "That's the sort of thing broadcasters now have latched onto. It's changing the face of the industry completely."

He switches thought immediately to his other love, Amateur Radio. "If we choose, we hams are able to put a fairly expensive antenna in our backyard, connect to a receiver and start watching and listening to those satellites. In the distant future of ham radio, when we get rid of the Messieurs Kennelly and Heavyside and their wonderful layers, we'll pierce the ionosphere.

"By going to such a satellite of our very own and setting up proper controls, we can give ourselves chunks of spectrum such that, by using repeaters here on Earth and wrist-watch radios to get into them, 1 watt of power to a proper antenna will get us anywhere in the world we want to go."

Practical dreams, insists K6DUE. But caution must go along. "One of the pitfalls would concern those of less-than-good operating habits. We all will need to

(*please turn to page 35*)

MBA READER™, A NAME YOU SHOULD KNOW

What does MBA mean? It stands for Morse-Baudot and ASCII. **What does the MBA Reader do?** The RO model (reader only) uses a 32 character alphanumeric vacuum fluorescent display and takes cw or tty audio from a receiver or tape recorder and visually presents it on the display.

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The AEA model MBA has an exclusive automatic speed tracking feature. If you are copying a signal at 3-5 wpm and tune to a new signal at 90 wpm, the MBA catches the increased speed without loss of copy.

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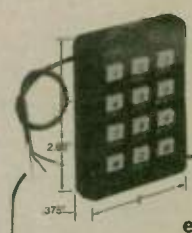

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World Radio History

STATION Appearance

How very neat! All dressed right and covered down. Harry Hyder, W7IV did hide all the wires that often give amateur stations the "Jack the Spider" look. A WAS, WAC and DXCC attest to the fact that the signal gets out and often.

Harry says:

"The unusual thing about my station is that all of the equipment is mounted in a 6-foot rack.

"This has benefits. One of them is that it keeps all the inter-unit cabling out of sight. Only AC power and RF goes to and from the rack. Yet everything is accessible for service; the rack is on casters and has a full-length door on the back. The operating desk is ample for key, paddle and logbook.

"The Signal/One CX-7 is the main rig, and although 12 years old, still gives wonderful service. It has features such as dual VFOs, digital readout and built-in keyer that only the latest rigs have. The

AUTEK filter and MFJ clock sit on top of the transceiver.

"Above this is the station control panel, with antenna selector switch, home-built directional power meter and linear in-out control switches.

"Next comes a home-built transmatch, used principally on the 1.8 and 3.5 MHz bands.

"The 5 meters above the transmatch serve no particular purpose; they were just on hand. One monitors AC line voltage and another measures linear plate voltage.

"The top unit is the home-built linear. This amplifier was described in March 1970 **Ham Radio**. It then used parallel 811A's, running 500W imput, but has since been revised for 572B's at 1 kW.

"Dummy load, power supplies, etc. are mounted on shelves in the bottom of the rack, behind blank panels.

"The antenna is a Butternut vertical, and is used on all HF bands.

"The station is used mostly for sked-keeping and ragchewing.

"I have been a ham since the mid-1930s, formerly W2LIW, W3NVL and K7HQN. W7IV dates from 1968. I hold an Extra Class license and formerly held First-Class Telegraph and Telephone Commercial licenses.

"Miscellaneous test equipment is on top of the bookshelf to the left of the rig.

Sincerely,
HARRY R. HYDER, W7TV
Tempe, Arizona"

Harry will be awarded a free year's extension of his **Worldradio** *subscription.* □

Interested in ELTs?

Paul Nelles, K9DB is working on installing an ELT receiver on the 22/82 repeater in Wausau, Wisconsin. ELT stands for Emergency Transmitter Locater. These devices are carried on board most aircraft. In the event of an aircraft crash, the transmitter is set off and broadcasts a continuous signal on 121.5 MHz, to be used for DF purposes and search and rescue. A 121.5 MHz receiver tied into your local repeater could provide a very important public service, particularly when coupled with the transmitter hunting ability of amateurs.

Contact K9DB for more details. □

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BASSETT HELIUM MOBILE ANTENNAS

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World Radio History

American Radio Relay League

J.A. "Doc" Gmelin
W6ZRJ
Past Director, Pacific Division, ARRL
Honorary Vice-President

One of the things I learned when I was first exposed to Amateur Radio years ago was the fact that interference between stations (QRM) and natural interference (QRN) are an everyday part of Amateur Radio operations.

My first exposure to actual ham operation was a visit to the shack of the late W6QLP early in 1946. Ralph worked 10-meter phone, which was very popular at the time, since most other bands were not yet available.

I enjoyed sitting in Ralph's shack, and watching and listening as he made a contact with a station in Nebraska. Right in the middle of the QSO, another station in the Midwest came on calling CQ, and wiped out the station we were talking to.

It was a little hard for me to understand what was happening, but Ralph went right on with the QSO and reported there was QRM and asked for repeats.

That's how I first learned about interference in Amateur Radio.

Over the years I have heard and have experienced a lot of interference and I'm pleased to say that most of it was not deliberate. In most cases, amateurs are polite, but since we all work the same bands and have use of the same frequency channels, we do have interference between stations.

When man-made interference becomes deliberate, Amateur Radio experiences major troubles. Such interference problems are not new, having been with us since the early days of "wireless" in the second decade of this century.

In those early days, commercial and amateur stations often worked on nearly the same wavelength. Sometimes individuals operating stations as "amateurs" would cause deliberate interference to commercial stations.

Such "sport" was called "baiting the commercials," and such actions nearly lost us our amateur frequencies before we ever really got them.

After WWI, when there was some question as to whether or not there would be any Amateur Radio in the United States, one of the concessions we amateurs gave when assigned bands and frequencies was to agree to "police ourselves."

This is difficult to do, especially since we amateurs have no legal right to discipline any amateur for any action. Such a right was given to the Federal Radio Commission (FRC) and later the Federal Communications Commission (FCC) by the U.S. Congress.

But over the years we have done pretty well, mostly because amateurs generally are dedicated to their avocation and take such self-discipline actions seriously. After all, amateurs must earn the privilege of operating on the amateur bands by passing both code and technical tests.

One of our main tools has been what might be called "public pressure," where the bulk of amateurs expect good operating practice on the part of all other amateurs and can and do put pressure on stations who do not conform.

While regulations do spell out operating practices, amateurs by agreement almost always solve interference problems. During recent years, however, one seems to hear more and more deliberate interference on the amateur bands, especially on 40-meter phone and on some 2-meter repeaters.

My own experience with this problem dates back to my first year as a League Director in 1968, when a motion was passed at the Pacific Division Director's meeting asking that ARRL try to do something about interference problems on amateur nets on the 40-meter phone band.

I made a motion at that year's Board Meeting, which was passed, asking for a full League study of the problem. Further motions and actions were taken by the Board over the years since then, but still the problem continues and seems at times to be growing worse.

More recently, the Board passed a motion setting up an "ad-hoc" committee on malicious interference charged with studying the problem and coming up with ways to combat this serious problem.

The result was a report with recommendations which came out last year from the committee, which was chaired by Vice President Carl Smith, WØBJW.

This report is available for any inter-

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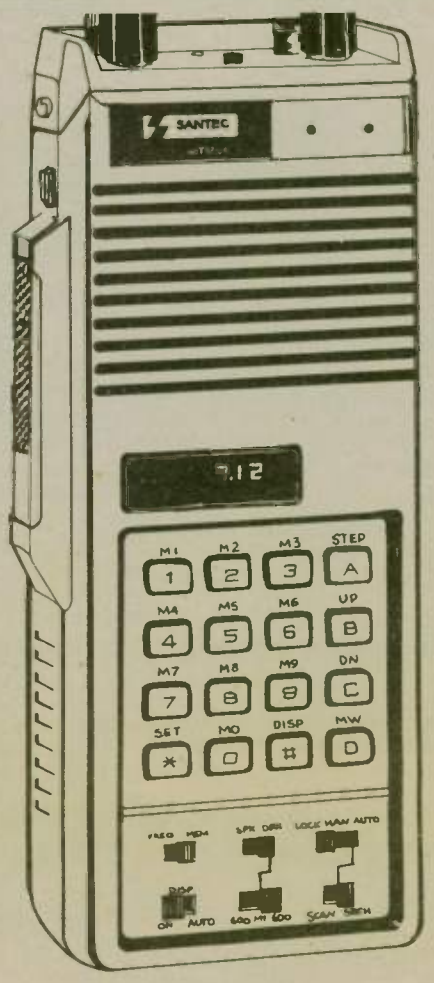
HT-1200

The Majority Leader



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10 programable memories with frequencies preloaded on cold boot	5 programable memories. All memories loaded with 144.00 on cold boot	10 programable memories. All memories loaded with 145.00 on cold boot
Up/Down variable scan steps in any multiples of 5kHz over whole band or auto-scan of 10 memories. Scan (restart) or search (lock) modes for both band and memory modes	Up/Down scan with 10kHz steps only. Misses every other 15kHz by 5kHz. Locks without restart	Scans 10 memories only. Restart only, lock mode not available. Continuous band scan/search not available
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World Radio History

ested radio amateur who makes a request to his Director. It is quite extensive, and even goes so far as to define the various kinds of interference, both unintentional and malicious.

Recommendations call for the establishment of local interference committees and articles on both technical and operational ways of combating the problem.

From my own observation, much of the deliberate interference that is of the ongoing type between parties is over petty disagreements. I view some of the actions of amateurs involved on one side or another as being pretty childish.

As a high school teacher, I see immature activity on the part of students, sometimes by those who are behind the norm in their psychological development.

There also appear to be amateurs, or perhaps even non-amateurs operating illegal radio stations, who cause interference just to get "kicks" from causing someone else a problem.

With the increasing use of cassette audio recorders, it is easy to record someone and then play back a recording from your own station as interference. Thus the original station gets the blame for something he has not done.

This is certainly a difficult problem to handle. It has been hard for the FCC to enforce regulations because by law, FCC personnel must see infractions before action can be taken. And even when action is taken, it is difficult to prove malicious interference in court, especially if both the interferer and the interferee are involved in malicious interference.

Recently, the FCC appears to be stepping up action to combat the increase in deliberate interference. Licenses of some radio amateurs have been suspended and other action has been taken to try to stop the deliberate interference on the amateur bands. Amateurs have been helping the FCC in tracking down malicious interference, and reports have been sent to the Commission giving the particulars on such interference.

What can you do to help? Well, the first way to help is to not become involved with interference "hassles" on the air. It's all too easy to react to intentional interference by causing intentional interference to those who are intentionally interfering.

That sounds kind of silly, but much of our problem comes from just such conflicts between individuals and groups over such things as "get off my frequency," or "I can work on any frequency I want and you can't tell me to move."

It's pretty hard to ignore intentional interference, but this is one way to overcome the problem. Many who cause such malicious interference want to see and hear a reaction, and when a station reacts to malicious interference, it may just cause more of the same.

Of course on the other hand, another solution taken by many and even suggested in public meetings is to go off the air, avoid certain frequencies or perhaps the band or bands where one finds such interference.

In a way, this is just what intentional jammers may want to see happen. When we react in this way, the "jammers win."

So, what we need to do is get more involved with solving malicious interference problems as a group, and this is what the League is suggesting.

Is your club or other amateur group concerned about the problem? One course of action you may take is to form a local malicious interference committee to attack the problem locally from every angle. This includes tracking down the interfering stations and working as a group to convince amateurs to practice good operating, including being polite and considerate toward others on the air.

If the members of your affiliated club or net feel there is a problem, work with your ARRL Director to find ways of solving the problem. The League can take action only if League members are willing to support such action.

Of course, one can individually try to put pressure on the FCC to take action against stations who are causing malicious interference, but remember that you can't take such action if you become personally involved and become part of the problem. □

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FCC

(continued from page 11)

Amateur Radio operators helping the FCC. "I would like to see the use of hams to help the FCC police the amateur bands." Interviewed by ARRL's **QST** and **Amateuradio** reporters, Joe revealed his interest in Amateur Radio began some seven years ago and that he is concerned about removing the jamming, foul language and illegal operating from the amateur bands. Joe is with the Boston Red Sox and takes an extra suitcase full of about 80 pounds of radio gear with him when he is on the road. (**Amateuradio,** August 1981)

•

The FCC proposes expansion of radiolocation in the 420-450 MHz band in their Further Notice of Proposed Rule Making, in General Docket 80-135. It would permit inland use of the band by non-government radiolocation services which have been operating only along the coasts of the USA. □

If your club is involved in any emergency situations, send the story and pictures to **Worldradio.**

See your group in print and help your fellow amateurs with shared experiences. Your story may help others be better prepared.

World Radio History

AWARDS

Scott R. Douglas Jr., KB7SB
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Los Angeles, Calif. 90046

8X8X8 Award

The DX Club of Puerto Rico has reorganized and is active again. They have brought the 8X8X8 Award back to life for confirmed contacts with eight KP4 stations and eight different countries in the "CQ" zone 8.

The applications fee is $1. The award measures 8½-by-11 inches and is multicolored. It is not necessary to submit QSLs. Submit a verified log extract giving full details of the contacts. Standard GCR (General Certification Rules) rule applies. GCR means a radio club official or two licensed amateurs are required for verification of the award application.

Alpine Flowers Award

Sponsored by the Dolomites Radio Club in Italy, this award is available to both licensed radio amateurs and SWLs (on a heard basis) for confirmed contact with six of the following Alpine countries: Italy (mainland), France, Switzerland, Liechtenstein, Germany (only DOK, A, C, T and U), Austria (only OE 2, 3, 5, 6, 7, 8 and 9), and Yugoslavia.

Only contacts made after 1 January 1966 are valid. The application fee is $5 or 20 IRCs. It is not necessary to submit QSLs. Submit a verified log extract giving full details of the contacts. Standard GCR rule applies.

Send applications or inquiries to; Dolomites Radio Club, 1-39031 Brunico (BZ), P.O. Box 26, ITALY.

Stark RTTY Group

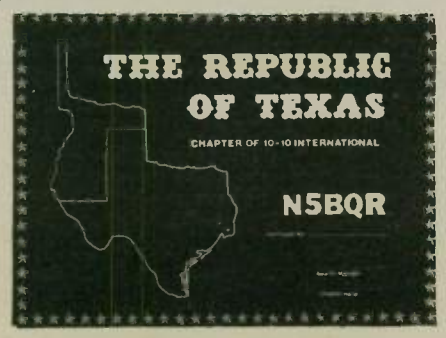
The Stark RTTY Group, WB8RVM, will be operating a special event station at the Mellet Mall Hobby Show in Canton, Ohio during 16-18 October 1981 to demonstrate Amateur Radio to the public. A special certificate will be offered to any amateur making contact with the group during this special event period.

Look for the group on SSB 28.505, 21.355, 14.280, 7.230 and 3.895. On CW, 3 540, 7.040 and 14.060. On RTTY, 14.090 and 3.620. Operating times are: 16th and 17th 1400 to 0100 GMT, and on the 18th 1400 to 2200 GMT.

To receive your certificate, send an SASE and your QSL to the Stark RTTY Group, 138 Page Street N.W., Massillon, OH 44646.

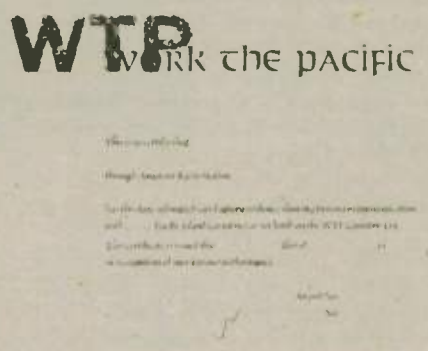
Republic of Texas Award Series

These very colorful awards offered by the Republic of Texas 10/10 chapter are available in four levels: RTX for 25 points, Seal for 100 points, Ranger for 250 points, and Guard for 500 points.



Complete details can be obtained by writing to Doug Lundstedt, W5OPZ, 317 Independence Dr., Garland, TX 75043. Include an SASE for the reply.

"Work the Pacific"



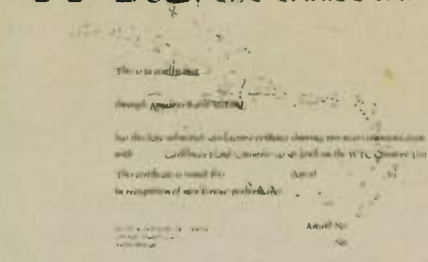
This award is available to both licensed radio amateurs and SWLs for confirmed contact with at least 30 countries in the Pacific area, as set forth by the WTP country list. The award bears a gold seal when 50 or more countries are confirmed.

The application fee is $3.50 or 12 IRCs, and endorsements for band or mode may be requested with the original application. It is not necessary to submit QSLs. Submit a log extract giving full details of the contact. Standard GRC rule applies. Contacts made after 15 November 1945 are valid.

The award measures 10-by-13 inches and is printed on a fine parchtone bond.

Complete details and the WTP country list are available from the International Certificate Hunters Club, P.O. Box 46032, Los Angeles, CA 90046. Include an SASE for the reply.

"Work the Caribbean"



This award is available to both licensed radio amateurs and SWLs for confirmed contact with at least 20 countries in the Caribbean area, as set forth by the WTC country list. The award bears a gold seal when 30 or more countries are confirmed.

The application fee is $3.50 or 12 IRCs, and endorsements for band or mode may be requested with the original application. It is not necessary to submit QSLs. Submit a log extract giving full details of the contact. Standard GCR rule applies. Contacts made after 15 November 1945 are valid.

The award measures 10-by-13 inches and is printed on a fine parchtone bond.

Complete details and the WTC country list are available from the International Certificate Hunters Club (see address above). Include as SASE for the reply.

All American Alligator Award

In an effort to restore some amateurs to a better level of operating practices, a group of Morton Amateur Radio Club operators have undertaken the sponsorship of the AAA Award.

This is probably the least coveted certificate that will ever be issued to those stations which exhibit acts inconsistent with the spirit or law of Amateur Radio. You cannot, nor would anyone desire to, apply for this one. It is sent free of charge to those amateurs who are deemed deserving. UGH!

For full details, contact Jim Jones, WD9AEU, 701 Columbus Ave., Morton, IL 61550. Include an SASE for the reply.

Well, that's all for this month. In the coming months we will start reviewing some of the various award directories that are now available. It should be interesting.

If you or your local radio club or organization have an award you would like to appear in Worldradio, send it along to the address heading this column. 73's, Scott. □

Please send news and pictures to Worldradio

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- DRAKE - TR22,22C,33C,72
- KENWOOD - TR2200,7200
- MIDLAND - 13-500.13-505,13-520
- REGENCY - HRT2,HR2,2A,2B,212,312 (No Sub Band)
- STANDARD - 146,826, C118 (No Sub Band)
- HEATHKIT - HW-2021 ONLY
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- PACE MX, PALM II (No Sub Band)

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World Radio History

Ivan Bullock, W0QE, stands with his wife Mamie, as they hold Ivan's Life Membership certificate and name plate. ***(Photo by Bob Tims, WD0AQZ.)***

W0QE awarded Life Membership

Ivan Bullock, W0QE was awarded a Life Membership in the Worthington Amateur Radio Club (Minnesota) at the Club Family Picnic held at Chautauqua Park on 6 July 1981. President Ed Nordell, WA0OUY made the presentation. Ivan received a framed certificate stating the awarding of the Life Membership and a name plate with Ivan's name and call sign. In January of this year, Ivan had completed 61 years as a licensed Amateur Radio operator, having been first licensed in 1920.

Ivan's first license was 9QE because at that time there were only nine FCC districts. Later, when the 10th district was established, his call was W0QE. Ivan's first rig was a Rotary Spark transmitter with an output of 500 watts and used 15,000 volts. Ivan said it was definitely broad-band and fortunately he did not need to be concerned about TVI.

Ivan first became interested in communications when his father built a telegraph line to a neighboring farm making use of the barbed wire on the fence line to send code. They had no telephone so the telegraph was their way of communicating with the neighbor and was used at least once for calling for help during an emergency.

Ivan's favorite net is the Christian Amateur Radio Fellowship which meets at 6:00 a.m. every morning. After Ivan works the net, he regularly goes on 2 meters to ragchew with Rodney Langseth, W0IZU and Spencer Beatty, WB0ZAC, as well as Donald Erickson, WA0LUT. Ivan regularly QSOs with his cousin, Harold Boyce, in the Twin Cities. His cousin's call is W0QF and was licensed the same year as Ivan.

Ivan graduated from the School of Engineering in Milwaukee, Wisconsin and then went to work for Northern States Power Company in Minneapolis. He worked there for 39 years and retired in 1963. In 1965, he put his Drake TR3 in the car and mobiled all over the United States. Ivan and his wife Mamie are now living in Worthington, Minnesota.

—Worthington ARC, MN □

W0QIZ and HARC recognized

Bill Boeckenhaupt, AK0A informed everyone of a scroll awarded to Pat Patterson, W0QIZ and the HARC (Heart of America Radio Club) by the Jackson County legislature for assistance during the Hyatt Regency disaster last July. (See "Sympathy extended to Kansas City victims" in **Worldradio**, October 1981, page 1.)

— HARC Newsletter, Kansas City, MO □

Winners announced

The Foundation for Amateur Radio announces the 1981 winners of the eight scholarships which it administers.

The John W. Gore Memorial Scholarship ($900): Brian D. Miller, KA0DGT, Englewood, Colorado.

The Richard G. Chichester Memorial Scholarship ($900): Theodore S. Rappaport, N9NB, West Lafayette, Indiana.

The Edwin S. Van Deusen Memorial Scholarship ($350): Allyn R. Anderson, WB7RVP, Cove, Oregon.

The QCWA Silent Key Memorial Scholarship ($500): Stephen Ketler, WA1WFA, West Bridgewater, Massachusetts.

The QCWA Silent Key Memorial Scholarship ($500): Gary Myers, WA2CUN, Skaneateles, New York.

The Radio Club of America Scholarship ($500): Carl H. Puckett, KA7BWC, Great Falls, Montana.

The Edmund B. Redington Memorial Scholarship ($500): Craig S. Young, KA5BOU, Gretna, Louisiana.

The Young Ladies Radio League Scholarship ($300): Clara L. Muller, KA2DYC, Amsterdam, New York.

These scholarships were open to all radio amateurs holding at least an FCC General Class license or equivalent. This year's applications were received from 29 states, the District of Columbia and Canada.

The Foundation is a non-profit organization representing 49 clubs in Maryland, the District of Columbia and Northern Virginia. It is devoted exclusively to promoting the interest of Amateur Radio and to the scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service. □

Hard work is rewarded

Ed Sauer, K5YYD and Louie Petit Jr., WB5BMB were recently presented with certificates of meritorious service at the

World Class Performance and Features

The FT-ONE is the culmination of an all-out design project by Yaesu's top engineering team. Working without the usual cost constraints, Yaesu's design group is proud to unveil the instrument they "always wanted to design," a revolutionary blend of computer and RF technology.

GENERAL COVERAGE, ALL SOLID STATE

The FT-ONE is a full-coverage all-mode transceiver, equipped for reception on any frequency between 150 kHz and 29 99 MHz, with transmit coverage on all nine present and proposed amateur bands In countries where permitted, the FT-ONE may be programmed to transmit throughout the 1 8-29.99 MHz range

KEYBOARD FREQUENCY ENTRY

Fully digitally synthesized, the FT-ONE uses a front panel keyboard for initial frequency entry Frequency change is then accomplished via the main tuning dial or the pushbutton scanner, with tuning in either 10 Hz or 100 Hz steps possible Truly the contester s dream, the FT-ONE permits extremely fine tuning and instantaneous band change with equal facility

DUAL VFO SYSTEM

Ten digital VFO's with memory are provided, in conjunction with an A-B selection scheme that allows instant recall of any transmit, receive, or transceive frequency desired For split-frequency operation, such as on 7 MHz SSB, the operator may select TX on VFO-A and RX on VFO-B automatically storing the calling and listening frequencies for each pile-up For net operations a non-volatile memory board is available as an option to eliminate the possibility of dumping memory

FULL CW BREAK-IN

Recent advances in solid-state technology have finally made full CW break-in reliable enough to be incorporated into a Yaesu product Now you can select traditional semi-break-in (for use with amplifiers not equipped for full break-in) or full high-speed break-in When using amplifiers so equipped, the keyer output lead may be interrupted via a rear panel jack and routed to the break-in sequencing input on your amplifier

SWITCHING REGULATOR POWER SUPPLY

Extremely compact and light in weight, the switching regulator power supply reduces substantially the space required to produce the operating voltages used in the FT-ONE Highly efficient and uniquely stable, the switching regulator supply provides superb reliability in a field of design long neglected by amateur manufacturers

ELITE CLASS PERFORMANCE FEATURES

In addition to the full break-in and superb receiver filters, Yaesu's design team packed the FT-ONE with subtle virtues that others might have overlooked Rear panel jacks allow the use of both an external receiver and an independent receive antenna, such as a 160 meter Beverage While scanning, automatic halting on a received signal may be programmed . perfect for watching a band for openings If you're a DX-peditioner, an optional Curtis 8044 keyer board is available, so you won't need an external keyer that only wastes suitcase space And if your amplifier fan is louder than it should be, there's even a microphone squelch (AMGC) to reduce background noise pickup between words and sentences!

ONE YEAR FACTORY WARRANTY

Because of the level of attention to design detail, parts selection and factory quality control, your FT-ONE is backed by a one-year *factory* warranty for the original purchaser at retail Prompt and meticulous attention to your warranty needs will be provided by our Ohio And California Service Centers In addition, all units sold in the United States will be inspected and tested after clearing Customs, and will include a Service Manual in the puchase price

GAIN/INTERCEPT OPTIMIZED RECEIVER FRONT END

Utilizing up-conversion with a first IF of 73 MHz, the FT-ONE RF amplifier stage uses push-pull power transistors configured to produce a typical output intercept of +40 dBm The first mixer utilizes a diode ring module followed by a low noise post amp, for optimum noise figure consistent with modern day intercept requirements The result is a receiver with a typical two-tone dynamic range well in excess of 95 dB (14 MHz, CW bandwidth) Additional gain tailoring is provided via a PIN diode attenuator controlled from the front panel

FILTERS READY FOR COMPETITION

Three filter bandwidths are available for CW operation (two for FSK!), using optional 600 Hz or 300 Hz crystal filters Filter insertion losses are equalized for constant IF gain Both IF Shift and Variable Bandwidth are provided, and two CW filters may be cascaded for competition-grade selectivity For SSB work, the Variable Bandwidth feature eliminates the need for costly 1 5 kHz or 1 8 kHz filters, as any intermediate bandwidth may easily be programmed using the standard, cascaded SSB filters To top it all off, a high-performance audio peak and notch filter is standard equipment

EXPANDED OPERATING DISPLAYS

Digital displays for the VFO Frequency, memory channel, and RIT offset are provided for quick frequency identification The large front panel meter provides easy viewing of transceiver operating parameters, including final transistor collector current, input DC voltage, FM discriminator center tuning, speech processor compression level, and forward/reflected relative power

NOT AVAILABLE AS OPTIONS

It s hard to believe that other manufacturers still insist on making such essential items as a noise blanker or speech processor extra-cost options We find that these are less expensive to incorporate and more reliable in operation when installed on our assembly line No AC power supply is available as an option for the FT-ONE, either, it's equipped for operation from 100/110/117/200/220/234 volts AC, or 13.5 volts DC And it goes without saying that there will not be an external VFO offered for the FT-ONE — we're confident that ten VFO's are quite enough!

Experience the FT-ONE in your Authorized Yaesu Dealer's showroom today. This may be the last Amateur transceiver you will ever own.

Warranty policy available upon request. SASE, please.

Specifications subject to change without notice or obligation.

World Radio History

TARS (Tidelands Amateur Radio Society) meeting. The presentation was made by Malcolm Waugh Jr., WD5KBK on behalf of the amateur community of Galveston County, Texas.

Ed was honored for his many years of dedicated service to the Galveston area in emergency communications. Ed has brought emergency communications from a non-existent status to a very efficient level in the past decade.

Louie has worked hard not only in Galveston County, but also in the State of Texas promulgating and stimulating the use of VHF, and in establishing repeaters in the area.

— Ham Tides, TX □

Student wins scholarship

Jane Rice, AD6Z

Cynthia Rutherford, a second year computer science major at Palomar College is the 1981-1982 recipient of the William J. Gilmore Scholarship.

After completing courses required for certification, Rutherford plans to work as a computer programmer while continuing study toward a B.A. degree in computer science. She graduated from San Dieguito High School in 1978, and before becoming interested in electronics completed a dental assistant training program.

The $200 scholarship was created in 1980 by the Palomar Amateur Radio Club in memory of "Bill" Gilmore, W6VTV and is funded by SANDARC — the San Diego County Amateur Radio Council — and individual ham donors. The award is made yearly to an outstanding student continuing studies in the fields of electrical engineering or computer science.

Last year's recipient, Van Tran, is now employed full-time at Oak Industries — a Carlsbad, California electronics firm.

Besides SANDARC, this year's contributors to the award fund are: The Mission Trail Net; Bob Gonsett, WA6QQQ for Communications General Corporation; and Silent Key Marian Peak, WB6OTP.

For further information, contact Scholarship Chairman Emily Wolfe, WA6ZKC. □

Computer science student Cynthia Rutherford, left, was recently awarded the William J. Gilmore Scholarship for the current school year. Last year's recipient, Van Tran, right, was on hand to congratulate her at the award ceremony. The memorial scholarship is funded by radio amateurs in San Diego County. *(Jane Rice photo)*

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Special Events

Visit the past

A special event station from Plymouth, Massachusetts (America's hometown) will be sponsored by the Whitman Amateur Radio Club and Plimoth Plantation on Thanksgiving Day, 26 November 1981.

An attractive certificate suitable for framing will be issued to any (foreign or domestic) amateur who makes contact with this station, which will operate from 9:00 a.m. until 3:00 p.m. Depending on weather conditions, members of the Whitman club will operate the station from a dockside location near *Mayflower II* on the Plymouth waterfront, or from an indoor site near the museum's 1726 Pilgrim Village.

To receive a certificate, send proof of contact and a large (9-by-12-inch) self-addressed stamped envelope or $1 to Whitman Amateur Radio Club, Box 48, Whitman, MA 02382. Hours for this event will be 1400 to 2000 UTC. Frequencies to be used: 1400 to 1500 UTC 21.260 (England only); 1500 to 1700 UTC 7.280 ± QRM; 1700 to 2000 UTC 21.385 ± QRM.

For additional information, contact Ed Hommel, KA1CZS, Whitman Amateur Radio Club, Box 48, Whitman, MA 02382; or Rosemary Carroll, Plimoth Plantation, Box 1620, Plymouth, MA 02360; (617) 746-1622 □

Talk to Santa

The Pike County Amateur Radio Club of Winslow, Indiana and the Old Post Amateur Radio Society of Vincennes, Indiana will operate a special event station from "Santa Claus," Indiana on 4, 5, and 6 December 1981. Operating time will be 0000Z, 4 December to 2300Z, 6 December.

The call sign will be W9CZH, and the frequencies (±QRM) will be: 21.410, 14.305, 7.270, 3.925 — all SSB; 14.090-14.100 RTTY; and 146.52 FM.

A special QSL/Christmas card postmarked from Santa Claus' post office will be sent upon receipt of an SASE. Send SASEs to: Santa Claus, P.O. Box 111, Ireland, IN 47545. □

World Radio History

DX WORLD

John F. W. Minke III, N6JM
6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

10-11 October	VK/ZL Contest (CW)
10-11 October	GARTG Contest (SSTV)
11 October	RSGB 21/28 MHz Contest (Phone)
17-18 October	East German WA-Y Contest (WADM)
18 October	RSGB 21 MHz Contest (CW)
24-25 October	CQ Magazine World-Wide DX Contest (Phone)
08 November	International OK DX Contest
14-15 November	DARC Euopean DX Contest (RTTY)
28-29 November	CQ Magazine World-Wide DX Contest (CW)

See Frank Anzalone's column in CQ Magazine or Contest Corral by Mark Wilson, AA2Z in QST for details.

W-100-N

Worldradio's Worked 100 Nations Award is a popular award. Six applications were processed during this period with certificates awarded to the following radio amateurs:

136. N6ZL Werner H. Ruhl
137. WB3DNA Timothy R. Fanus
138. VK2HD Heather Pike
139. KB9H William E. Evans
140. AK1H George J. Stevens
141. WB3CQN Ruthanna Pearson

Notice that another application was from the leading DX country of Australia. Heather, VK2HK helped keep her country in the lead. George, AK1H is one more member of the Santa Barbara Amateur Radio Club to apply for the award. George now lives in Bryant Pond, Maine, and is presently a member of the Yankee Radio Club. Although he no longer resides on the West Coast, he still retains his membership in the Santa Barbara club.

Special recognition should go to Ruthanna, WB3CQN, who submitted 177 cards. And that is for 177 nations — not DXCC countries!

The fee for this award is still $7.50 and has not been increased.

The rules for the W-100-N in the Awards Column by Scott Douglas, KB7SB in the last issue had a few errors. All contacts after 01 January 1978 count; the year was omitted by the typesetters. G, GM, GD, GI, GJ and GU all count as *separate* countries. A list of the nations and rules are available for an SASE. The picture of the certificate left off the blue streaks transmitted from the center of the award, plus the gold seal that is added to each award. The dimensions of the award are also wrong. The award is 17 inches long — at least the present supply is. When a new supply is printed, it will be shorter so that I can use my own typewriter at home for preparing each certificate; most likely it will be the 14 inches.

Crozet Island (FB8W)

By the time you read this, there should be some Amateur Radio from Crozet Island. Georges De Marrez, F2CL and another amateur from part of the crew that will be maintaining the Weather Station there. The call that has been assigned is FB8WG, and the amount of activity will be governed by the weather duties on the island. The group will be there for about one year.

Kermadec Island (ZL/K)

Ron Wright, ZL1AMO will be making a November DXpedition to Kermadec Island. As for details as to when in November, it is not known at this time. Keep a lookout for ZL1AMO/K.

United Nations (4U1)

To celebrate the 36th anniversary of the United Nations, 4U1UN will operate for a 24-hour stint on 24 October, using the special call 4U36UN. For you newcomers to DXing, this station is located in the United Nations Building in New York City. It counts as a country for DXCC, but is is not valid for W-100-N, unless you are using it for a USA contact. For the prefix hunters, it will count as 4U3. QSL cards should go via Herman Bohning, W2MZV.

Anguilla (VP2E)

Jeff Maass, K8ND is planning for a trip to Anguilla in February and March. Jeff and others will be active in the ARRL International DX Competition and are looking for additional amateurs to come along. They are looking for both contesters and non-contesters. If interested, contact him at 4410 Norwell Drive, Columbus, OH 43220. Nice part of this deal is that all the planning will have been taken care of for you.

Norwegian Arctic DXpeditions

To help finance the Norwegian Arctic DXpeditions to Jan Mayen (JX) and Svalbard (JW), September to December, 1981, collectors may order specially-designed envelopes that will be postmarked from the Arctic bases: 8013 Jan Mayen, 9172 Isfjord and 9176 Bjornoya. You may order your copies by sending $2.50 for each envelope to M. Bjerrang, LA5NM, Ervik, Box 210, N-9401 Harstad, NORWAY. The orders should have been in by 1 October, but the information was received here after 1 September. Maybe they will take an exception for stateside applications.

Luxembourg (LX)

The Wiesbaden Amateur Radio Club plans a DXpedition to Luxembourg during the World-Wide DX Contest at the end of October. Look for DA1WA/LX on SSB during the contest, 10 through 80 meters. QSL this one with SASE to: Steve Hutchins, Box 4573, APO New York, NY 09109.

Mike Lauth, LX1ML made a visit to the Sacramento area as a member of the Luxembourg Radio Controlled Glider Team. Here Mike is shown at the station owned by Jay, W6GO and Jan O'Brien, K6HHD in Rio Linda, California, where he was able to keep in contact with his fellow amateurs back home. *(Photo courtesy of N6JM.)*

Wallis Island (FW)

I assume that the Wallis Island DXpedition will have come and gone. It was scheduled for 11 through 18 September, with FW0BE on CW, FW0BF on SSB and FW0BK on RTTY and 6 meters. If you worked any of the above stations, send your QSL via: Franz Langner, DJ9ZB; Carl Kistner Str. 19; D-7800 Freiburg; WEST GERMANY.

Donations would be very much appreciated.

San Marino (M1)

Need San Marino? Look for Antonio Ceccoli, M1C on 14.201 MHz from 0030 UTC. but watch that band edge. This station is quite active and frequents both SSB and CW. For the CW fans, he has been reported on 14.024 MHz from 0530

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ST-7/T STANDARD FEATURES — NO EXTRA COST!!
• 16 button touchtone pad • 2.5 w/1w/ mw power levels • Fully Synthesized
• 5 khz steps (2000 channels) • Thumbwheel Switch Freq. Selections
• Subtone Switch on Front Panel • Auto 446.00 Call Channel Select
• Frequency Range 440.0 - 449.995 • Digital Offset plus or minus 5 mhz
• External Speaker-Mic connector • Tx-Rx LED Indicators List Price $349.95
YOUR CHOICE Includes Rubber Duck, Wall Charge and 500 mah Nicads!
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PLUS FREE Cig. Chg. Cord $11 Value
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SANTEC'S popular HT-1200 is the incomparable 2-meter leader. This little rig is handling over quality, power and features that you'd expect from something nearer the size of a bread box. SANTEC packs a 2 meter ham shack into the palm of your hand!
You can carry scan, search, 10 memories and fully synthesized key pad control around with you and still get out with a big 3.5 watts (nominal) or 1 watt. Compare the SANTEC with any other handheld. SANTEC gives you much more for your money! Regular Price $379.00
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Mobile Chg/Power Cord (ST-MC) 10.95
Ext. Charge Adapter (ST-EC) 4.95
Synth Sub-Audible Tone Gen. (SS-32) 29.95
Remote Speaker (MS-50S) 14.95

World Radio History

UTC in August. On 15 meters he has been found on 21.025 MHz from 0900 UTC and 2000 UTC. Again, this station is an active one and requests all QSL cards be sent direct.

Qatar (A71)

The new prefix for Qatar is A71, replacing the A7X. This country is represented by Willi Rass, A71AE (formerly A7XE) on 14.023 MHz from 2030 UTC, and Shaikh Hamed Bin Jassim Al-Thani, A71AH (formerly A7XH) on 14.250 MHz from 0530 UTC. If you find C.G. Mike Smedal, A7XD on the bands, most likely he is using up his A7XD QSL cards prior to converting to A71AD. You can find him at the low end of 20 meters on SSB after 0300 UTC. He visits the Arabian Nights Net on 14.250 MHz at 0500 UTC on Fridays. Another report has Mike using his new call, A71AD, as he was reported on 21.305 MHz at 1900 UTC.

Andaman Islands (VU7)

The group signing VU7AN in August was operated by Japanese nationals stationed in India. The two nationals (Akihiro Aoki and Hiroshi Yamada) had Indian calls of VU2JPN and VU2WTR, and it is reported that the Japanese gentlemen did not have proper authorization for operation from the Andaman Islands.

Albania (ZA)

If your receiver blew up in your face, most likely it was due to the enormous pileup created by a Spanish group that includes EA2FZ; Arseli Echeguren, EA2JG; and Fernando Fernandez Martin, EA8AK. They had high hopes of obtaining a license for an operation in early October. The skeptics will be there for sure. Frankly, I'm not convinced one bit.

San Felix (CE0X)

The DXpedition to San Felix has been postponed until early October. The operation is co-sponsored by the Radio Club of Chile with the team chief Robert Read, WB1GDQ.

The group will have several transceivers for the operation. There is a possibility the operation will be a short one, and it might even be an all CW affair. The group may also include Juan Fernandez.

Islands on the Air

Geoff Watts, editor of the *DX News Sheet* (published weekly by the Radio Society of Great Britain), sponsors the Islands on the Air Award (IOTA). In addition to the many islands in the world that count as DXCC countries, there are many other islands or island groups that count toward the various IOTA awards. You may obtain the 15-page Directory of Islands by sending $2 or six IRCs to Geoff Watts, 62 Belmore Road, Norwich NR7 OPU, ENGLAND.

As I do receive the *DX News Sheet*, I can give you some of the latest action on the various islands that are active and count towards IOTA. The following were active in August:

AN-01 Adelaide Island	VP8AHS	14.301 MHz	2025 UTC
AN-07 South Georgia Islands	VP8AEN	14.229	2045
AN-11 Ross Island	KC4USV	14.314	0730
AS-18 Sakhalin Island	UA0FCL	14.260	2035
EU-06 Aran Island	EJ8AES	21.275	1830
EU-32 Oleron (group)	F6BMP	14.195	1945
EU-47 East Frisian Islands	DL1RBE	14.235	1745
EU-51 Ustica Island	IE4UDB	14.215	0030
	IE4UZA	14.208	0930
EU-54 Egadi Island (IF8)	F8OEP	14.125	1245
EU-67 Cyclades Island	SV1CQ	14.198	0600
EU-77	EI4ESI	14.196	1330
EU-78 Medas Islands	AC4PDX	(September DXpedition)	
NA-06 North West Passage	VE5YQ	14.341	2200
NA-58 Sea Islands	N4BAA	14.210	0525
NA-63 Sable Island	VE1AWS/1	14.020	2030
SA-20 Serrade Mar Islands	PY1ZAR	21.187	1945

The frequencies and times reported here are most likely contacts made with

Propagation

Maximum Usable Frequency from Burbank, CA
(courtesy of W6LS)

The numbers listed in each column are the Maximum Usable Frequency (in MegaHertz) for contacting five major areas of the world (Nairobi, Tokyo, Melbourne, Frankfurt, Rio de Janeiro) for low fire angle antennas.

You can get a free *complete* set of these predictions for both high and low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (28¢) envelope at least 9″ × 11½″.

DECEMBER 1981

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	24.6	35.0	35.7	12.4	25.0
0200	20.6	29.1	31.6	12.8	22.1
0300	17.6	23.8	27.6	12.9	19.7
0400	14.4	19.9	24.3	11.9	17.8
0500	12.3	16.7	21.5	10.0	16.0
0600	12.0	14.0	19.4	8.9	14.7
0700	12.7	12.2	18.1	11.1	14.4
0800	13.3	11.3	16.6	13.4	15.1
0900	13.2	11.4	14.9	13.5	15.6
1000	12.3	12.3	14.0	13.6	14.4
1100	10.8	13.2	14.3	12.3	12.2
1200	9.8	11.3	13.8	11.1	11.9
1300	11.0	10.5	12.1	10.8	15.7
1400	15.7	9.5	12.0	13.7	23.0
1500	22.4	12.7	17.0	20.7	30.3
1600	28.7	13.0	26.2	27.3	34.6
1700	32.6	11.5	25.7	22.6	35.3
1800	32.0	10.9	25.8	17.6	35.0
1900	31.8	12.6	26.8	13.4	34.7
2000	32.1	17.0	28.5	11.6	34.7
2100	32.1	23.9	30.2	10.6	34.6
2200	31.0	31.0	31.2	10.8	33.6
2300	28.9	36.1	32.2	11.3	31.5
2400	27.0	38.8	34.1	11.9	28.4

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World Radio History

British stations, as the *DX News Sheet* is an RSGB publication.

Net time

The following nets were tabulated courtesy of the Western Washington DX Club and may be of interest to you.

Also, check 14.332 MHz for the YL International SSBers (ISSB). DX stations have been known to check into the system often. The frequency is under system control; please wait for calling instructions. You do not have to be a member of ISSB to check in.

UTC	Day	Net	Freq. (MHz)	Comments
0000	Daily	W7PHO Family Hour	21.345	QNI 30 minutes early
0000	Daily	W7PHO Family Hour	28.575	Winter months
0100	Weekdays	Brown Sugar Net	14.310	
0200	Sunday	40M DX Net	7.080	
0200	Daily	CHDX Net	14.298	
0300	Weekends	Brown Sugar Net	14.310	Winter months
0500	Friday	Arabian Nights	14.250	JY3ZH NCS
0600	Tue/Fri	Pacific DX Net	14.265	VK3PA NCS
0630	Sat/Sun	80M DX Net	3.795	
0630	Daily	P29JS Net	14.220	VK9NS, VK5MQ, VK2BKD
1500	Daily	W7PHO Family Hour	14.225	
1500	Sunday	Foreign Service	21.416	W1YY
1600	Sunday	Arabian Nights	28.616	
1600	Sunday	VE DX Info Net	14.173	VE3EUP, QSX 14.273
1800	Daily	Afrikaaner Net	21.355	Winter months
1900	Daily	Safari Net	21.292	
2300	Daily	W7PHO Family Hour	14.225	

DX competition DQs

There were several stations that were disqualified from the ARRL International DX Competition last March. The stations included John Battin, K9DX; Richard Norton, AJ7S; Richard Ferry, AB1A; Gary Elliott, K7OX; Hans-J Carlsson, SM6ADW; Vladimir Sladek, OK1FCW; Radio Club Osijek, YU2BOP; and 4Z4RG. The disqualifications were due to excessive duplicate contacts and/or call sign and logging errors. We don't know if the owners of the above stations were the operators or not. Often a "big gun" station has a guest operator during a contest, usually a youngster with a lot of stamina. After all the time spent during the contest, it is a shame the operator doesn't take the time to weed out the duplicate contacts.

Contest season is approaching, so perhaps the above information will be an insight to those of you preparing for the contest — both DX and domestic.

Prefixes

Those funny calls always seem to show up on the band and often followed by the query, "What country are you, OM?" Take a look in the back of your logbook where you will discover a listing of International Prefixes.

During the month of August, several unusual prefixes appeared on the bands. That RK9XAN was to celebrate the 50th anniversary of Komi Autonomous Republic in the Soviet Union. R2PR was an operation from an Amateur Radio Summer Camp in Klaipeda, Lithuania. In Romania, YO0WUG was a Special Events Station at the World University Games in Bucharest. The RK9X/1 was in there handing out contacts from rare Oblast 114 in European Russia.

HF0POL, a Polish Research team station in the Antarctica, is still very busy giving out contacts to the deserving. He says to QSL via Boguslaw Radzimski, SP5EKZ. Another Polish station is SN0WPC who requests QSL cards be sent via Juliusz Schmidt, SP3AUZ.

Amsterdam DX Certificate (ADXC)

This certificate issued by the Amsterdam DX Club to any amateur who can submit proof of contact with at least 10 members of the club and whose QSL cards have been received by the members concerned. All contacts must have been made since 01 January 1957. All modes count.

To apply for this award, prepare a list of contacts signed by yourself and two licensed radio amateurs, include a fee of six IRCs or $3 U.S., and send it to: Amsterdam DX Club, P.O. Box 9, 1000 AA Amsterdam, NETHERLANDS.

Following is the list of Amsterdam DX Club members as of 01 April 1981:

PA2: JSL, MAX, RPC, SWL.
PA3: AAI, AAR, ACC, ADI, AJW, ASD, ASF, ASI, AUB, AWX, BAC, BAV, BFX, BGD, BHY, BKW.
PA0: ANH, ASD, AWJ, BEA, CHN, CLO, DOG, ELD, END, FCM, FMK, GAR, GPA, HAL, HIL, HPO, IF, IWO, JAC, JEL, JPC, JVB, JWA, KHR, KJH, KST, LGJ, LGR, LRK, MFC, MIR, MJA, NIC, NLC, NMN, OI, PAN, PAU, PER, PJE, PRY, RCA, RHA, TAP, TKS, VDW, WFB, WIK, WIL, WS.
PD0: AJQ, BAK, DFW, DLL, FFB, GDZ, HAV, HHW, HKM, HXZ, IIP, JAI, JBL, JKU, JMG, JMH, JOI, JOM, JOV.
PE1: AMT, BIH, BMS, BVI, CDK, CRT, DGZ, DHN, DTY, EXR, FHS, FIF, FKF, FLJ, GAY, GDH, GFI.
PI1: ASD.
PI4: ASD.

QSL cards from former members of the Amsterdam DX Club also count, provided they were members of the club during the time of contact.

Antique QSL Department

The following two cards are 30 years old. Notice that the one for MF2AA in Trieste is made out to "SWL." That SWL is none other than Fred Laun, prior to becoming a radio amateur in 1952. MF2AA was the call used by the British military in Trieste back in 1951. Trieste Free State no longer exists and is part of Italy.

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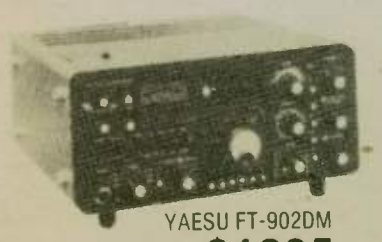

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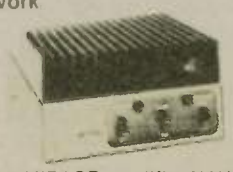

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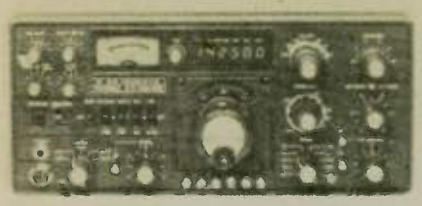

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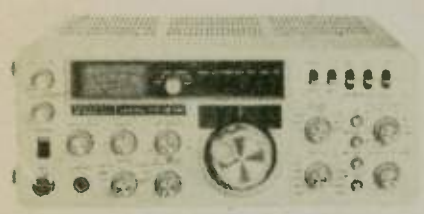
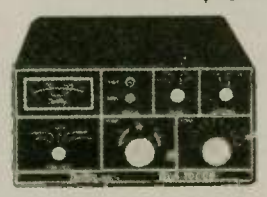


FT-107M/DMS (WARC) 9-band Dig. xcvr
$949



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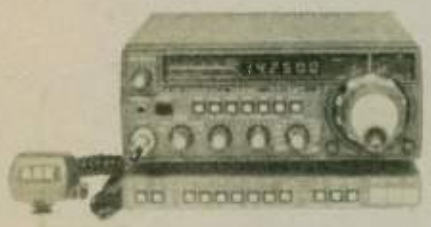

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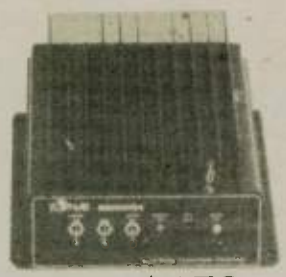

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World Radio History

MEET YOUR FAVORITE ZS. This group of South Africans was taken during the annual meeting of the South African Radio League (SARL) at Capetown in 1981. Front row (l to r): Paul Johnson, ZS1BR; Mike Howell, ZS1PE; Dave Perry, ZS1SG; Len de Klerk, S83T; Wally Cameron-White, S83W; Mike du Plessis, ZS1MO; Julian Sacke, S8AAM; Chris White, ZS3-013; Garth Laaks, S8AAA; George Easton, ZS6BVY; J.S. Marais, ZS5TS; Robert Boulanger, ZS6ARC.

Second row (l to r): Geoff Tinker, ZS1LM; Koos van der Merwe, ZS1AW; Ferdie Nielsen, ZR1EE; Mike Wolfe, ZS1CO; Ailie Tronson, ZS1CZ; George Young, ZS1Y; Dan de Vries, ZS1DF; Ulli Dehning, ZS1UD; Willie van Niekerk, ZS1RI; Dick Stradford, ZS1RO; Derek Siegel, ZS1DP; James T. Clegg, ZS1JJ; Peter Strauss, ZR6MI.

Third row (l to r): Aubrey Berk, ZS1ZZ; Dennis Brown, ZS1R; Bennie Burger, ZS1B; Eddie Farr, ZS1FN; Willie Wilson, ZS1BF; Jimmy Bishop, ZS6TQ; Basil Lanyon-Paul, ZS5IF; Lincoln King, ZS2BZ; Al Akers, ZS2U; Charles Scott, ZS2CL; Howard Keanly, ZS6XK; Pieter Scholtz, ZS6LC; Bobby Steytler, ZS6ATM; Dick Schonborn, ZS2RS; Reno Faber, ZS6OF; Les Keanly; Paul Sterling, ZS6BMF; Johann DeBeer, ZS6YV.

Back row (l to r): Ian McQueen, ZR1AZ; John V. Schalkwyk, ZS1-024; Tom Hughes, ZS1TH; Frans O. Kennedy, ZS1DO; Dennis Wells, ZS1AU; Al Dibb, ZS6BMP; Vic Hugo, ZS1LY; Louis De Bruin. ZS5LP; Dick Andrews, ZS5FB; Phil Unterhorst, ZS5RJ; Gerrit Erasmus, ZS6PA; Chris de Jager, ZS6BRV; Hans van de Groenendal, ZS6AKV; Kobie Furstenburg, ZS6ALE; Chris Pelser, ZS6EX; Tom Nelson, ZS6MT; Bob Opperman, ZS1-263; Rudy van der Walt, ZS3TL; Hennie Greyling, ZS4HG; Mike Smuts, ZS4XE; Dave Smeda, ZR1FR; Dwight West, ZS6NT. That's the SARL president in the second row — ZS1DF, with ZS1UD, the vice president on his left. (Photo courtesy of "Radio ZS" (SARL) May 1981)

CS3AA is another one of Fred's SWL cards and was the call used by the American military in the Azores.

Fred, an amateur now for 29 years, is signing K3ZO/HK3, and has held calls such as HS1ABD, HS5ABD, HI8XAL, LU5HFI and W9SZR. Fred made the headlines a few years ago while operating as LU5HFI due to a misunderstanding with some rebels in Argentina.

As Burma is back in the limelight, Stu Cowan, W2LX submitted a copy of a QSL card from XZ2SY, operated by U Zaw Yee in Rangoon in 1958. The contact was made with Stu while he was operating in Old Greenwich in Connecticut as W1RST.

QSL information

As had been stated in the past, all QSL cards for stations in the USSR go via P.O. Box 88 in Moscow. With some of those listed in the following routes a manager is given, and unless another address is given, the card must go through Moscow.

If you ever work Willy Bonblet, LX2BQ, you must QSL to him direct with IRC. He does not answer cards via the bureau. Willy gives his address as: Willy Bonblet, Box 22 - 9, rue Tudor, 6582 Rosport, Gr. D. Luxembourg.

QSL routes

A22YV	—JA2KLT	LZ3JC	—LZ1KAF
A22ZM	—ZS6CU	N6YK/VP2A	—N6NK
A71AA	—DJ9ZB	NP4BN	—KP4EQC
A71AE	—DF4NW	OH0XX	—OH2BBM
AP2ZA	—W6NLG	OK5CSR	—OK1KRQ
C31GW	—F5EQ	OX3BX	—OZ8KW
C31HD	—F6BII	PA0SIM/3A	—PA3ARM
C31LM	—EA3BDW	R2PR	—UP2BEB
C31QD	—PA0GIN	RK9X/1	—UA9XWU
C31RV	—OE2GBB	S9VCT	—K3VT
C31TI	—F6DLO	SN0WPC	—SP5AUZ
CN8CU	—WA3HUP	SV2JL/5	—SV2JL
CR9JA	—JA1UT	T30DB	—G3LGB
CS0CJC	—CT4FU	TI1VVR	—TI2VVR
CT2BV	—AG1K	UA1PAM	—UK3SAB
DF9FM/ST3	—DF9FM	UK1PGO	—UK3SAB
DJ0UN/SV5	—DJ9NX	UPOL-22	—UA1ADQ
DK6NJ/ST2	—DK6NJ	VE1AWS/1	—W3HNK
ED1ISI	—EA1ANC	VE3NFR/4U	—VE3IDW
ED5EIP	—EA5BW	VK0HW	—VK7HW
ED5T	—EA5APB	VP2KAX	—9Y4NP
EE1EMV	—EA1AGB	VP2KAY	—WA2IFZ
EK0AB	—UA3DEA	VP2M1X	—W0IJN
EL5G	—K3RB	VP2VGR	—GW4EJK
EL9C	—KA8BXA	VP8AEI	—GM3ITN
F0GEA/FC	—DL7HZ	VP8AIC	—WA4TWS
FC0GQQ	—DJ6ZM	VQ9AN	—K4QX
FK8CE	—K2ROR	VQ9NZ	—W1NZZ
FO8HH	—KA3A	VQ9PD	—WA1COH
FO0FB	—WB6GFJ	VQ9QA	—N3QA
FO0KW	—WB6RFI		*(1981 CBA)*
FO0TL	—KB6TL	VU2VNB/7	—VU2WTR
FW0BE	—DJ9ZB		*(See Note 4)*
FW0BF	—DJ9ZB	VU7AN	—VU2WTR
FW0BK	—DJ9ZB		*(See Note 4)*
G3MUV/CE0	—KA4MGH	VY3CPX	—VE3GCO
G5DDD/9L1	—DJ0GN	WB2REM	
GB2WED	—G4IVJ	HC8	—WB2REM
GJ3OQR	—GI3OQR	XE2GDD	—KN5H
HC1MD	—K8LJG	XE3RT	—VP1MT
HC7CM	—N5BET	XF4S	—WD6DRM
HC8GI	—W3HNK	XT2AW	—KN1DPS
HC8KA	—HC5KA	YB2BJM	—WA9AVN
HH2PR	—WB4OSN	YB0ACP/3	—K6DLV
HL9FR	—WB9RGA	YO0WUG	—YO3AC
HL9YL	—WB9RGA	YU7QCC/HB0	—YU7GMN
HM1PW	—W3GNM	ZF2AV	—WB0ISW
HS1BV	—N2BQL	ZF2DZ	—WB3GPR
HS5AID	—AG6D	ZF2FF	—WB3JWJ
HZ1AB	—K8PYD	3B8DB	—K5BDX
I2DMK/ID9	—I2DMK	3X1Z	—W4FRU
I2QEN/5N3	—I6DZB	4N1R	—YU1DZ
I1E9UDB	—I8UDB	4S7MX	—SM3CXS
I1E9UZA	—I8UDB	4U1UN	—W2MZV
IT9HLO/IF9	—I2YBC	4U36UN	—W2MZV
J3ANP	—9Y4NP	4X6FY	—WB2IXS
J6LCV	—WD4NBX	5B4KU	—SM5ASE
J6LOV	—K2QIE	5R8AL	—JA2KLT
J87BK	—N8BNF		*(See Note 1)*
J87RS	—N8BKF	5T5ZZ	—W4FRU
JW6MY	—LA6MY	5V7HL	—DK9KD
JW7XB	—LA7XB	5X5FS	—EI9G
JX6BAA	—LA7JO	5Z4CL	—W5BCB
JX7FD	—LA5NM	6W8HL/TZ	—WA4VDE
JY8ML	—ZL1BMU	7P8CF	—JA2KLT
K5VRX/SV5	—W3YY	8J5SUN	—JA5ICQ
KA3BUJ/8R1	—WB4ABK	9G1DJ	—WD5GXB
KC4AAC	—W6MAB	9J2JN	—KB2ZP
KH6LW/KH7	—KH6JEB	9N1BMK	—JH3LPT
KM6KC	—KA6ERF	9Q5L	—WN4DXL
KX6ZY	—K7TI	9Y4VU	—W3EVW

A35RX —P.O. Box 48, Nuku' Alofa, Tonga

CR9UT —P.O. Box 798, Macau

GJ3VLX —Bob Treacher, BRS-32525, 79 Grandby Road, London, ENGLAND SE9 1EH *(See Note 2)*

KA7HRK/KH8 —Victor Rivera, Private Bag 15, Rarotonga, Cook Islands *(See Note 3)*

(please turn to page 32)

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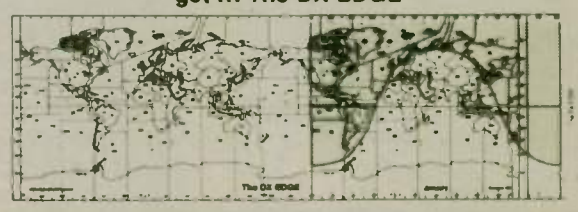

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World Radio History

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The compact, all solid-state HF SSB/CW mobile or fixed station TS-130 Series transceiver covers 3.5 to 29.7 MHz, including the three new bands.

TS-130 SERIES FEATURES:

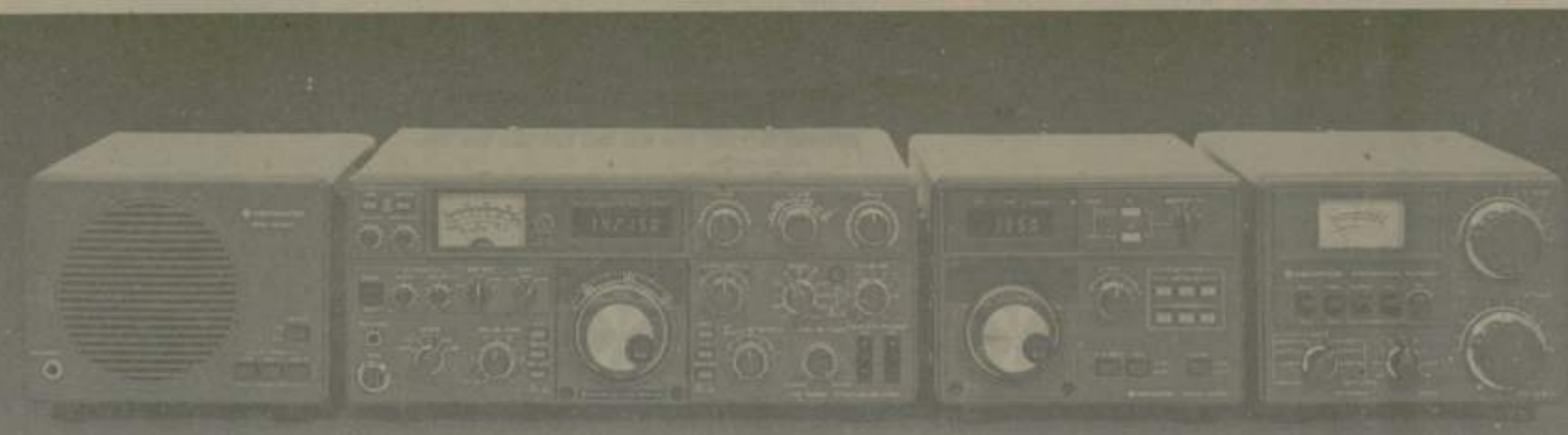
- 80-10 meters, including the new 10, 18, and 24-MHz bands. Receives WWV.
- TS-130S runs 200 W PEP/160 W DC input on 80-15 meters and 160 W PEP/140 W DC on 12 and 10 meters. TS-130V runs 25 W PEP/20 W DC input on all bands.
- Built-in speech processor.
- Narrow/wide filter selection on both CW (500 Hz or 270 Hz) and SSB (1.8 kHz) with optional filters.
- Automatic selection of sideband mode (LSB on 40 meters and below, and USB on 30 meters and above). SSB REVERSE switch provided.
- Built-in digital display.
- Built-in RF attenuator.
- IF shift (passband tuning).
- Effective noise blanker.

OPTIONAL ACCESSORIES:

- PS-30 base-station power supply.
- YK-88C (500 Hz) or YK-88CN (270 Hz) CW filter.
- YK-88SN (1.8 kHz) narrow SSB filter.
- AT-130 compact antenna tuner (80-10 meters, including three new bands).
- SP-120 external speaker.
- VFO-120 remote VFO.
- MB-100 mobile mounting bracket.
- PS-20 base-station power supply for TS-130V.

Optional DFC-230 Digital Frequency Controller
Frequency control in 20-Hz steps with UP/DOWN microphone (supplied with DFC-230). Four memories and digital display. (Also operates with TS-120S, TS-530S, and TS-830S.)

PS-30 SP-120 TS-130S VFO-120



SP-230 TS-830S VFO-230 AT-230

TS-830S

"Top-notch"...VBT, notch, IF shift, wide dynamic range

The TS-830S has every conceivable operating feature built-in for 160-10 meters (including the three new bands). It combines a high dynamic range with variable bandwidth tuning (VBT), IF shift, and an IF notch filter, as well as very sharp filters in the 455-kHz second IF. Its optional VFO-230 remote digital VFO provides five memories.

TS-830S FEATURES:

- LSB, USB, and CW on 160-10 meters, including the new 10, 18, and 24-MHz bands. Receives WWV.
- Wide receiver dynamic range. Junction FETs in the balanced mixer, MOSFET RF amplifier at low level, and dual resonator for each band.
- Variable bandwidth tuning (VBT). Varies IF filter passband width.
- Notch filter (high-Q active circuit in 455-kHz second IF.
- IF shift (passband tuning).
- Built-in digital display (six digits, fluorescent tubes), analog dial, and display hold (DH) switch.
- Noise-blanker threshold level control.
- 6146B final with RF negative feedback. Runs 220 W PEP (SSB)/180 W DC (CW) input on all bands.
- Built-in RF speech processor.
- Narrow/wide filter selection on CW.
- SSB monitor circuit to check transmitted audio quality.
- RIT (receiver incremental tuning) and XIT (transmitter incremental tuning).

OPTIONAL ACCESSORIES:

- SP-230 external speaker with selectable audio filters.
- VFO-230 external digital VFO with 20-Hz steps, five memories, digital display.
- AT-230 antenna tuner/SWR and power meter/antenna switch 160-10 meters, including three new bands.
- YG-455C (500 Hz) or YG-455CN (250 Hz) CW filter for 455 kHz IF.
- YK-88C (500 Hz) or YK-88CN (270 Hz) CW filter for 8.83 MHz IF.
- KB-1 deluxe heavyweight knob.
- (VFOs for TS-830S, TS-530S, TS-130 Series, and TS-120S are compatible with all four series of transceivers.)

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TR-2500

BIG performance, small size, smaller price!

The TR-2500 is a compact 2 meter FM handheld transceiver featuring an LCD readout, 10 channel memory, lithium battery memory back-up, memory scan, programmable automatic band-scan, Hi/Lo power switch and built-in sub-tone encoder.

TR-2500 FEATURES:

- Extremely compact size and light weight 66 (2-5/8) W x 168 (6-5/8) H x 40 (1-5/8) D, mm (inches), 540 g, (1.2 lbs) with Ni-Cd pack.
- LCD digital frequency readout, with memory channel and function indication.
- Ten channel memory, includes "M0" memory for non-standard split frequencies.
- Lithium battery memory back-up, built-in, (estimated 5 year life) saves memory when Ni-Cd pack discharged.
- Memory scan, stops on busy channels, skips channels in which no data is stored.
- UP/DOWN manual scan in 5 KHz steps.

CONVENIENT TOP CONTROLS

- 2.5 W or 300 mW RF output. (HI/LOW power switch.)
- Programmable automatic band scan allows upper and lower frequency limits and scan steps of 5 KHz and larger (5, 10, 15, 20, 30 KHz... etc) to be programmed.
- Built-in tuneable (with variable resistor) sub-tone encoder.
- Built-in 16 key autopatch encoder.
- Slide-lock battery pack.
- Repeater reverse operation.
- Keyboard frequency selection across full range.
- Extended frequency coverage: 143.900 to 148.995 MHz in 5 KHz steps.

- Optional power source, MS-1 mobile or ST-2 AC charger/ power supply allows operation while charging. (Automatic drop-in connections.)
- High impact plastic case.
- Battery status indicator.
- Two lock switches for keyboard and transmit.

STANDARD ACCESSORIES:

- Flexible rubberized antenna with BNC connector.
- 400 mAH heavy-duty Ni-Cd battery pack.
- AC charger.

OPTIONAL ACCESSORIES:

- ST-2 Base station power supply and quick charger (approx. 1 hr.).
- MS-1 13.8 VDC mobile stand/ charger/power supply.
- TU-1 Programmable "DIP switch" (CTCSS) encoder.
- SMC-25 Speaker microphone.
- LH-2 Deluxe top grain cowhide leather case.
- PB-25 Extra Ni-Cd battery pack, 400 mAH, heavy-duty.
- BH-2 Belt hook.
- WS-1 Wrist strap.
- EP-1 Earphone.
- RF power amplifier. (To be announced.)

TR-7850

40 W, 15 memories/offset recall, scan, priority, autopatch (DTMF)

Kenwood's remarkable TR-7850 2-meter FM mobile transceiver provides all the features you could desire, including a powerful 40 watts output. A 25 watt version, the TR-7800 is also available.

TR-7850 FEATURES:

- 40 watts output, with selectable high or low power operation.
- 15 multifunction memory channels easily selectable with a rotary control. M1-M13 ...memorize frequency and offset (±600 KHz or simplex).
- M14 ...memorize transmit and receive frequencies independently for non-standard offset. M0 ...priority channel, with simplex ±600 KHz or non-standard offset operation.
- Internal battery back-up for memories. Requires four AA Ni-Cd batteries, (not supplied).
- Extended frequency coverage, 143.900-148.995 MHz in 5 or 10 KHz steps.
- Priority alert. Beep alerts operator when signal appears on priority channel.
- Built-in autopatch encoder (DTMF). All 12 plus four additional DTMF signaling tones (With simultaneous push of REV switch.)
- Autoscan of memories and entire band. Scan resumes automatically.
- Front panel keyboard.
- Compact size.
- UP/DOWN manual scan of entire band and memories, using UP/DOWN microphone (supplied).
- Repeater reverse switch.
- Separate digital displays for frequency and memory channel.
- LED S/RF bar meter.
- Tone switch.

Matching accessories for fixed station operation:

- KPS-12 power supply (for TR-7850)
- KPS-7 power supply (for TR-7800)

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World Radio History

WITH THE HANDI-HAMS

Bruce L. Humphrys, KØHR

Where do I start?

It's 31 August, Monday afternoon about 3:00 p.m. The sun is incredibly warm; not a cloud in the sky, some katydids screeching in the woods just a bit off there, and I'm sitting on the ground near the dining hall at Camp Courage writing a column for **Worldradio**. I want to write about the Radio Camp session going on right now. It started last Saturday and will wind up this Friday. Amateurs from all over the country — California, Missouri, Arizona, North Dakota, South Dakota, Oklahoma — all over, have gathered here at the Courage HANDI-HAM System's popular Radio Camp. We've got 28 campers, five instructors, 11 camp counselors and a couple of "guide dogs." There's enough material here for five columns — but where do I start?

Do I start talking about Dale? (Last names will be omitted.) Dale is blind, having lost his sight recently due to diabetes. He also lost a kidney and is now fighting to offset the rejection of his transplanted kidney. Dave takes, literally, pounds of medications each day. Our camp nurse has a whole cabinet of meds especially for him. Dale's folks have been really worried about Dale coming out to camp. We are warned that Dale's diabetes is designated "very brittle," and that he can lapse into an insulin reaction very easily. Sometimes a perfectly healthy, strong individual has trouble coping with some of the stresses of heavy study and tough exams. How will Dale handle this week?

So far he's doing just fine — even to the point of forgetting about the inconveniences of having to have a blood sample drawn three times a day, or multiple insulin injections, or the heavy physical drain placed upon him by the medications. Yes, Dale remains alert and participates excitedly in the classroom. Someone not knowing his medical background wouldn't suspect for a moment that a fierce battle is raging inside his body, competing with the Morse code and theory for his attention.

Or should I start with Dr. Dave? Dave is a very busy practitioner of emergency medicine at a major metropolitan (Minneapolis) hospital. He is also an amateur, and loves working around Amateur Radio. Dr. Dave gave up vacation time to spend this week at Radio Camp, providing the around-the-clock expert medical care so vital to the well-being of all our campers. And while he has "a spare moment," he studies for his Amateur Extra Class exam — long after everyone else has hit the rack.

But maybe I should mention Wayne first. Wayne is blind, one of my instructors (for the Advanced Class). Last night we copied some of the telemetry from OSCAR-8. I was showing the Radio Campers how to run through the different formulae to decode the information. Wayne was getting the answers by doing the math in his head FASTER than I was, using a calculator. "Boy-oh-boy," I says to the crowd, "I'm gonna get him. I'll work out the next formula without saying out loud what the input number is!" I simply mentioned, for the other blind campers, that the formula was the same as the previous channel (which we had done about 20 minutes ago). I plugged in the number and worked it out — coming up with some 28 degrees Celsius as the answer. Not more than 15 seconds later, Wayne pops up with the *input* number! He had remembered the doggone formula, and *worked it backwards*!

Radio Camp Instructor Wayne Keeney, N6CCU of Los Angeles, California (left) — himself blind — helps Radio Camper Scott LaBarre from Woodbury, Minnesota get on the air at Camp Courage.

No . . . wait a minute. I really should start with Dr. Tom, our Morse code instructor. Dr. Tom (he holds a Ph.D. in psychology and works as a psychologist at a Veterans Hospital in Iowa) is severely handicapped both physically and in speech with his cerebral palsy. He has had to overcome some really steep barriers to excel not only in his chosen profession, but in Amateur Radio as well. He holds the Amateur Extra Class license and has come up with a method of teaching code which is among the best I've seen. He has approached the task from a clinical angle, producing 24 tapes which lead a person from ground zero to 24 words per minute before he realizes it. His severe speech handicap makes it difficult sometimes to understand everything Dr. Tom says. But his untiring patience with the campers and their tremendous respect for him is pushing most people well past their self-imposed plateaus. Tom, by the way, sends great code with his feet — at better than 20 wpm!

One of the people who should be talked about right at the start is Chuck. At last year's Radio Camp session, Chuck was hard pressed to concentrate on the Novice exam. His multiple sclerosis had been robbing him of the stuff from which cognitive examination of concepts is made — not to mention being able to copy code. He made it, however, and signed up for Radio Camp again this year. What a difference!

Dr. Tom gets all the campers around several times a day for a little code practice. They all yell out the characters, and Tom keeps speeding up the tape recorder. One by one the campers fall by the wayside, the code coming a little too quickly. Time after time, one voice is left — doggedly punching out the characters with great expulsion of breath and effort. Chuck's. We couldn't believe it when he was only missing about one character in five at 20 words per minute! This from a fellow who only last year was fighting just to understand what dits and dahs stood for.

Why not start with the story of Mark? Mark is one of our terrific counselors. Mark was almost wiped out six years ago in a car accident. Deep coma, complete paralysis, brain damage — the whole bit. The doctors said he'd never walk or talk again. And yet, here he is — pushing wheelchairs around Camp Courage, chatting and gabbing with our campers with hardly a sign of speech impairment, and getting a real kick out of seeing our people struggle through the studies — learning along with them.

There are so many stories that it's very hard to know where to start. Radio Camp is so much more than a mere collection of people. It's a spirit — a pervasive, all-encompassing involvement with excellence. It's people striving to be the best they possibly can — doing the impossible. It's a band of "overachievers" — many of them have been tossed out as useless by "society." Boy, what a terrific bunch of people to spend a week with!!

It's 31 August, Monday afternoon . . . about 4:00 p.m. The sun is still warm and the katydids are warming up for an early evening concert. Tonight we'll have a bonfire down by the beach. The mosquitoes will take deadly aim. The counselors will pass around S'mores and Kool Aid. We'll tell stories, sing songs, read a little from Robert Service, chuckle about Amateur Radio. We're a great family, having fun at what we do best — being with other people. Boy . . . I can't wait 'til the Second Radio Camp session — in California next January. Even if these members of "my family" aren't there, their spirit will be — and that'll make it something special!

Radio Camp supplement:

Congratulations to the following Radio Campers who passed exams:

Stephen K. Daniels, Tonawanda, NY — Novice (pending)
Rachel Gomez, Robbinsdale, MN — Novice (pending)
Mike Irons, KA5EPY, Oklahoma City, OK — Element 1B (13 wpm)
Derald S. Johnson, Brooklyn Center, MN — Advanced
Daniel Kawka, Knox, IN — Novice (pending)
Scott LaBarre, Woodbury, MN — General
Dean LeMon, NØBRC, Rush City, MN — Advanced
Kerry Nelson, NØAPV, Robbinsdale, MN — Advanced
Leonard F. Nielsen, NØAMJ, Yankton, SD — Advanced
Charles Richert, KAØJCP, Minneapolis, MN — Element 1B (13 wpm)
Dale Rindahl, North Branch, MN — Novice (pending)
Vinnie Samarco, KBØXM, Grand Marais, MN — Amateur Extra
Julette Silvers, Minneapolis, MN — Novice (pending)
Dorothy Swearngin, WBØMCK, Independence, MO — Advanced
Doris Tompkins, KC7AQ, Tucson, AZ — Amateur Extra
Franklin Tucker, Alhambra, CA — Technician
Dave Justis, NØARU, Burnsville, MN — Amateur Extra

(The Novice exams are awaiting scoring by Gettysburg.) □

Hope we can serve you. Your comments and suggestions are welcome.

Chris Wilson

again & again

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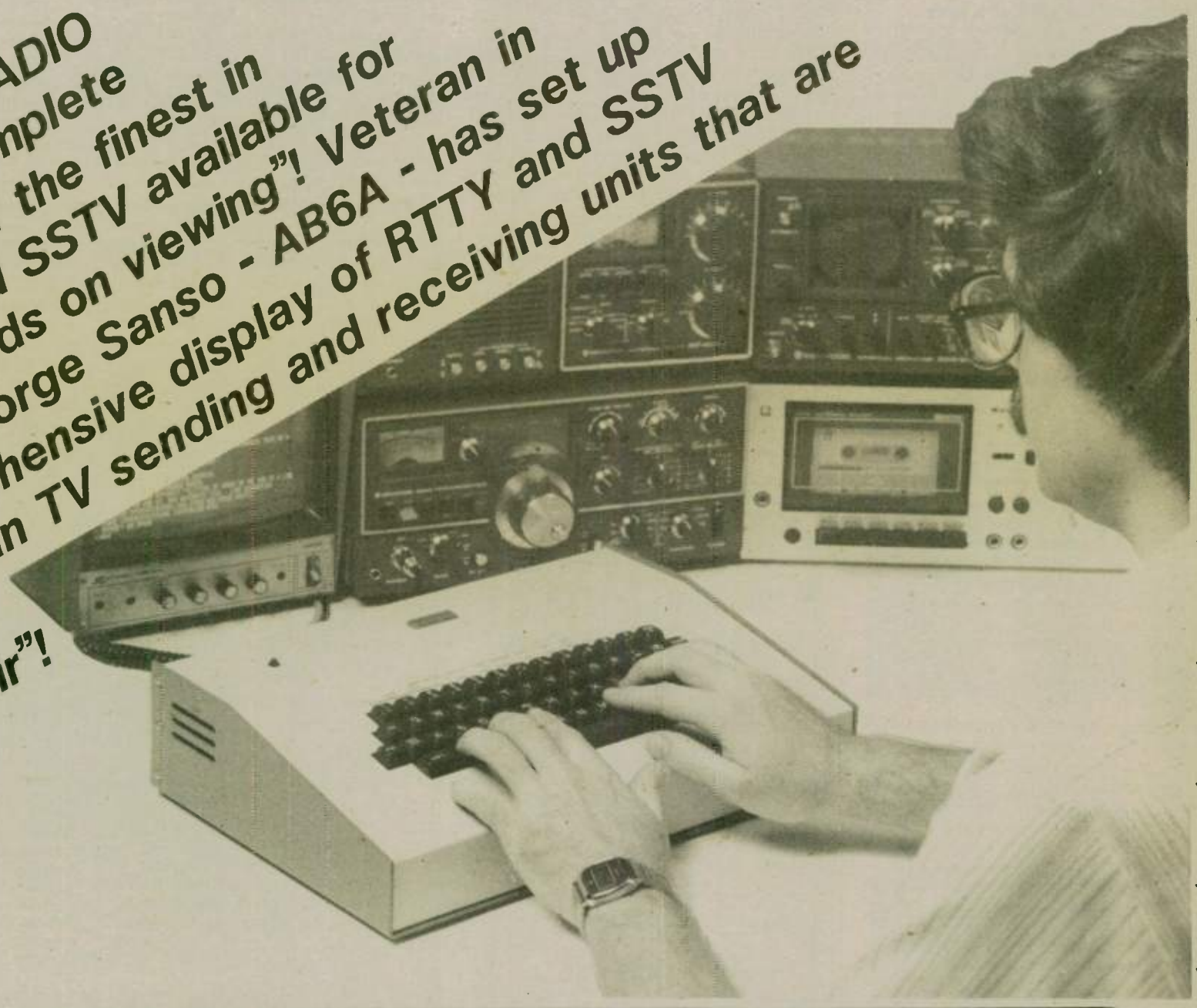

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Call or Write!

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World Radio History

Al Steinbrecher advertises his affiliation with Amateur Radio, on the rear bumper of his car.

DX World

(continued from page 27)

T30AE	—P.O. Box 276, Bikenibue, Kiribati
VK9YC	—Chris, Cocos-Keeling Island, via Perth, Australia
VP2MMR	—Dick Bash, KL7IHP, P.O. Box 2115, San Leandro, CA 94577
VP8AHS	—Rothera Base, c/o Port Stanley, Falkland Islands
VP8AJM	—Gavin, Signy, c/o Port Stanley, Falkland Islands
ZK1CG	—Victor Rivera, Private Bag 15, Rarotonga, Cook Islands *(See Note 3)*
5W1DJ	—Victor Rivera, Private Bag 15, Rarotonga, Cook Islands *(See Note 3)*
8Q7AV	—Noel, Four Winds, Male, Republic of Maldives

NOTES:
1. This applies for contacts made by Mel, 5Z4YV/JA2KLT, only.
2. That BRS-32525 is the QSL manager's SWL call.
3. Victor says it is better to QSL to him direct with 3 IRCs or green stamp. The bureau route will take six months to a year.
4. Address for VU2WTR: H. Yamada, Embassy of Japan, 50-4 Chanakyapuri, New Delhi, INDIA.

Contributors to the November issue include WB2IXS, W2LX, W2NCG, K2TV, K3ZO/HK3, DJ9ZB, LA5NM, LX2BQ, ZK1CG, W6NLG, Western Washington DX Club, *DX News Sheet, The DX Bulletin* and *The Long Island DX Bulletin*. Very 73 es GL DX, de John, N6JM. □

Contact Worldradio for hamfest prizes.

MILITARY AFFILIATE RADIO SYSTEM
MARS
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Vern Hansen, WB6UWQ/AAA9W

The following article, entitled "News from Northern California," was prepared by Norm Brooks, K6FO/AAR9NI in the September 1980 edition, Western Area MARS Bulletin.

Norm Brooks, AAR9NI/K6FO

Meet Al Steinbrecher, AAT9BC/WB6DBD. It isn't very often that Northern California writes up a MARS member from another state area. But we make an exception when a Southern California member participates in our nets in such a helpful manner that we feel he is "one of us." Geographical barriers are hereby removed as we declare Al Steinbrecher, AAT9BC/WB6DBD as an honorary Northern California Army MARS member. For lack of a better title, we call Al our official "Relay Station," because that's where he's most helpful — relaying messages when propagation will not allow our stations to communicate with each other.

Al Steinbrecher, AAT9BC/WB6DBD

In his youth, Al attended Dartmouth and MIT, where he studied chemistry, physics and math. At MIT he was exposed to the "spark" radio of those days, where a station was set up in the physics lab.

He owned and operated his own oxygen-acetylene compressed gas business in Kenosha, Wisconsin. These are gases used in welding. He then merged his business into the Compressed Industrial Gases Corp., and became vice president in charge of production for the corporation in 18 plants around the country. He remembers he took an additional duty — that of supervising the power supply equipment at each of those plants. Then came another merger with National Cylinder Gas Company and Al decided to retire — at age 39!

Al moved to Tucson, Arizona and took up Amateur Radio. He started with the Class "C" license, and upgraded to Class "A". With the recent changes, Al now holds the Advanced Class license. His call sign in Arizona was W7LVR.

In Arizona, Al had 12½ acres of property and experimented with antennas. With his welding background, he built his own 71-foot rotatable tower (the whole tower rotated!). He built his own wide-spaced 20, 15 and 10-meter beams. He tuned the elements *in place* by virtue of a separate work tower and a platform on the 71-foot tower.

Al was ARRL Section Communications Manager for Arizona for two terms. He did not run for a third term on the belief that two terms in any office is enough.

Al and his wife Helen moved to California seven years ago. They live in the beautiful city of Santa Barbara, where the weather is perfect the year 'round. Helen is not an amateur. Her interests are flowers (she raises cymbidiums), ceramics and glass (she makes her own molds.)

In his present location, Al doesn't have room for long, high antennas, but he does a very creditable job with loaded verticals. Your reporter visited Al during a recent trip to Santa Barbara. We had lunch at the Montecito Country Club, where Al denies being a golfer. However he admits he is a mean lawn bowler.

Al is intensely proud to be a MARS member. Note the picture of the back of his car! Northern California is pleased and proud to have Al participate in our nets. Thanks for all the help, Al. □

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AMSAT OSCAR

Southern California group supports AMSAT

Stuart Clayton, W6ORP

In accordance with the current SANDARC (San Diego County Amateur Radio Council) bylaws, PARS (Poway Amateur Radio Society) of California recommends that some SANDARC funds be contributed to AMSAT for its requirements in the continued development of Amateur Radio Communication through orbiting satellites (OSCAR).

AMSAT (the Radio Amateur Satellite Corporation, 850 Sligo Avenue, Silver Spring, MD 20910) works in close coordination with: a) Project OSCAR, b) the ARRL, and c) the other AMSAT groups all around the world; (AMSAT-UK — England, JAMSAT — Japan, Deutsch-AMSAT — Germany, Canada, Australia, New Zealand, etc.). AMSAT provides the central management and coordination for the design, development, construction, testing, system integration, and all other functions concerned with PHASE III-B, and other Amateur Radio satellites (OSCAR 8 and all future projects), and merits the needed financial support by the Amateur Radio community.

A SANDARC contribution to AMSAT would be used to help pay for some of the required project equipment and services not otherwise provided by direct donations. Operational AMSAT satellites represent "state-of-the-art" advanced technology of interest to, and for the use of, Amateur Radio operators within San Diego County and throughout the entire world. PARS members at the 19 May 1981 meeting voted favorably that SANDARC be requested to make a monetary contribution of $2,000 to AMSAT, from otherwise uncommitted annual earnings. This amount — or any other approved total — may be remitted in one sum or in partial amounts, as found suitable to SANDARC, within 12 months of approval.

Further information, if needed, and continuing reports on AMSAT-OSCAR progress will be made available to SANDARC and the member clubs by Herb Gordon, W6KBD, 17146 Pacato Way, San Diego, CA 92128 (tel: 714-487-0246). □

Don't be afraid of OSCAR

Gary Andary, N6UU

Many amateurs shy away at attempting to use the OSCAR satellites because they believe they will need high power, big antennas, and sophisticated tracking equipment. Not so! After many years of listening and much curiosity, I made a try at working OSCAR 7 and OSCAR 8 in Mode A (2-meter uplink and 10-meter downlink). (OSCAR 7 is no longer transmitting.) I was pleasantly surprised to find that I could make many contacts with only 10 watts and dipole antennas! My first contacts included as far as the East Coast and VE (Canada). It is simply a matter of getting familiar with the satellite operation.Both CW and SSB are used, and I have been surprised to find much of the 100 kHz band not in use, and many strong stations calling CQ without an answer.

For information, consult the OSCAR Operating Schedule in any issue of **QST**. Usable orbits for our location, with strong signals, are between about 90 and 120 degrees West Longitude (equator crossing), and can be calculated from the information in **QST**.

You can obtain a detailed monthly printout of every orbit by writing to Project OSCAR, P.O. Box 1136, Los Altos, CA 94022, enclosing an SASE. The ARRL Satellite Communication Package, available for $4.75 by mail or most ham supply dealers, provides a wealth of information for the newcomer, as well as maps to accurately track each orbit. You can key the mike of your 10 watt, 2-meter FM rig to work CW. Couple this to a 5 to 7 element beam or quad, and your signal will equal most on the band in strength. 80-100 watts to a vertical or dipole will produce similar results (100 watts ERP is the MAXIMUM power recommended).
— *Tri-County ARA, Pomona, CA* □

JPL ARC's Field Day

Submitted by Norman L. Chalfin, K6PGX

The annual Field Day operation of the JPL (Jet Propulsion Lab) Amateur Radio Club was held this year from the 6,400-foot level Mt. Disappointment in the Southern California area. HF operations were maintained with gasoline-powered generators on CW and SSB; 2-meter FM and SSB equipment was operated from storage batteries and solar arrays, as was 220 FM during the event. A Novice station was available and an OSCAR set-up was installed. The call for all activities was W6VIO — the club station call sign — and the operating category adopted was 3A. Brian Stapleton, W6LZP was Field Day chairman for the club.

Brian's Report as published in *W6VIO Calling*, the JPL Club Bulletin for July '81 follows:

Mount Disappointment certainly didn't live up to its name as far as Field Day was concerned. Living and operating conditions were much better than were expected. We started mounting the two tri-

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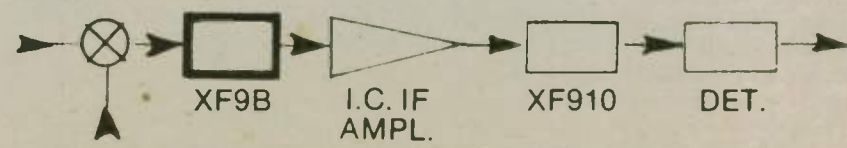

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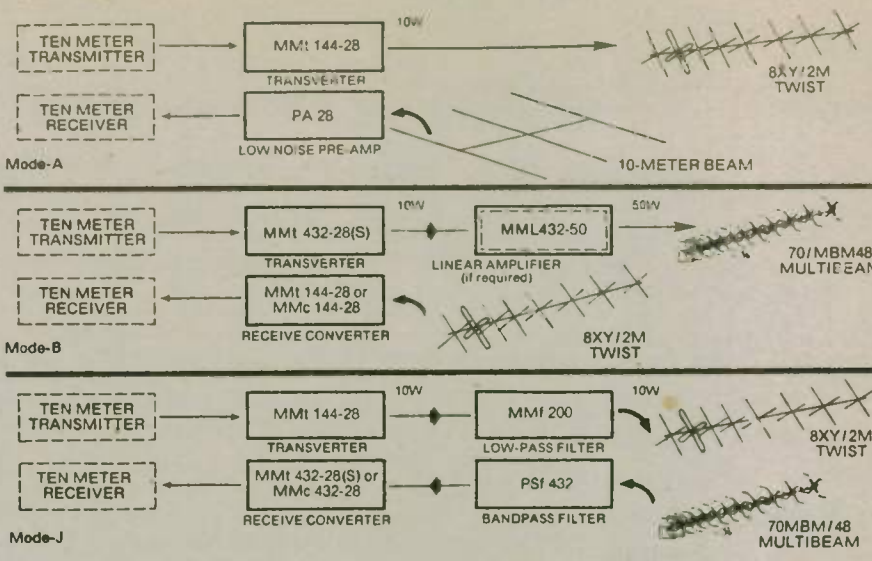
Attention: owners of the original MMt432-28 transverters — update your transverter to operate OSCAR-8 and Phase III by adding the 434 to 436 MHz range. Mod kit including full instructions $26.50 plus $1.50 shipping.



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World Radio History

band beams Friday afternoon after work. By dark, one was mounted on a 40-foot telephone pole, and by mid-morning Saturday the second was positioned on a similar pole. Both antennas were headed toward the East Coast, and they both worked exceedingly well during the entire Field Day operation.

The remaining antenna and related equipment installation took place on Saturday morning. A Yagi was put up for 220, and another for 2 meters. These were on a 15-foot pole mounted to the side of a camper parked at the highest most southerly point of Mount D. From there the San Fernando and San Gabriel Valleys, and the LA basin could be seen. The antennas for 80 and 40 meters were half-wave slopers. The 80-meter antenna was mounted from the top of an 80-foot telephone pole, and the 40-meter antenna from the top of a 25-foot tower on the side of a hill. Both antennas sloped to the northeast at 45-degree angles. By noon Saturday, all antenna installations except OSCAR were complete.

This year, we operated in the three-transmitter category, with three transmitters on the air at all times. A VHF position was assigned to be operational from 1:00 p.m. until 10:00 p.m. Saturday night, when it was replaced by an HF operation for 80 and 40 meters. The other two transmitters were assigned to the HF bands (primarily 10, 15 and 20 meters) on a full-time basis. All stations moved from band to band as conditions and activity dictated, but we had only one transmitter on any one band at a time.

At noon Saturday, a meeting was held to inform everyone about the Field Day rules, assign operating positions and times, discuss logging and answer questions. We had a maximum of 15 operators coming and going from the site. Each individual knew the time, mode and operating position at which he was to work.

Our Field Day operation lasted from 1:00 p.m. Saturday until 1:00 p.m. Sunday. During that time we managed to make a total of 1,814 contacts; 962 on phone, and 852 on CW (11 were Novice). The only major problem we had was when one of the AC generators' output voltage went from 117 up to 160 VAC, and blew the TS820 power supply. Fortunately, we had a spare transmitter and generator to put back on line. By mustering all the JPL skill available and driving back to Pasadena for parts, the 820 was "operated on" and ready for use again in just a few short, cold, windy hours!

All bands were very active while they were open. The Mount D. location was very quiet and well located for getting out our signals and receiving the weak ones. A special thanks goes to Doc Nordland, WB6MOQ, for the consideration he gave us related to his VHF repeater on Mount D. Without his help, our VHF activity would not have been as successful.

I would again like to thank all the Field Day participants for making our operation this year so successful. I had an enjoyable time and I know you did too! Let's hope that next year we will have even more participation and contacts.

Taking part in a weekend field exercise demonstrating skills in maintaining communications in disaster and emergency situations were members of the Jet Propulsion Lab Amateur Radio Club. The solar panels in the foreground were used to power 2-meter and 220 MHz gear on the table. Brian Stapleton, W6LZP, who coordinated the event, is shown standing over Jim Lumsden, WA6MYJ and Jack Patzold, WB6TXG as they check the voltages. In the background Merv Macmedan, N6NO, left, and Skip Reyman, W6PAJ survey the proceedings during the JPL participation in the communications exercise on Mt. Disappointment, 6400 feet above the Valley. *(Photo by K6PGX)*

Who's Who

(continued from page 17)

be self-disciplined *of necessity*. We can't afford to allow misguided people to mess us up as we become sophisticated enough to *really* communicate — worldwide!"

Those who've heard Roy speak at conventions remember his eloquence on the subject.

Worldwide communications, to Roy Neal, is a special, treasured privilege. Not a QSL collector, he instead prizes good friends made by Amateur Radio around the world through true conversation. "Very few take the time to get to *know* their foreign neighbors. But to me, that's what DX is all about."

One remembered friend-by-radio was a prince in Sikkim. "He was talking from the palace garden and describing how it was. He told me 'his handle was Hi.' "The prince said everyone there called him 'Your Highness' but I should call him 'Hi'."

Roy's assignments require frequent travel. Two meters (and sometimes 220 MHz) go along, making lonely hotel rooms "much more palatable." Referring to a few big city repeaters besmirched by a selfish few, he then lauded other areas where there are "delightful repeaters with delightful people . . . so find your own frequency; there almost always is somewhere else to go."

Amateur Radio has greatly benefited from Roy Neal's devotion. As the host and narrator of ARRL films, he's carried the message to countless interested persons. Currently, "*The World of Amateur Radio*" (16mm film produced by Dave Bell, W6AQ) is always in demand. Roy's smooth, dignified approach mixes with his natural friendliness and enthusiasm for a highly effective appearance.

His personal life is close to television, too. Pat, his wife, is a busy talent coordinator (arranging for celebrities for programs such as the Easter Seals Telethon) while son David is an associate producer in New York with NBC Sports. Son Mark is into the fairly new and expanding field of Post Production (the final putting-together of taped or filmed shows in a sophisticated editing process).

Thus, another Amateur Radio Operator to whom we may point with pride: Roy Neal, K6DUE.

AMSAT

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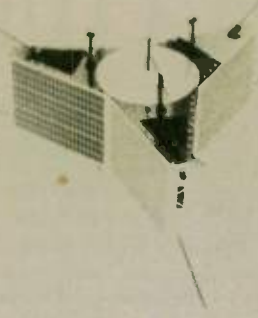

Dear Fellow Radio Amateur:

Do you know that the AMSAT Phase III Program is designed to bring you a new world wide DX/local Amateur band via communications satellite? This new band will be scarcely affected by the ionosphere, so that unlike the current hf bands or the three new bands we gained at WARC-79, propagation via this band will be 100 percent predictable. For the first time, the technology used to provide the reliability, predictability and ease of use of a two-meter repeater will be applied to provide world wide coverage. The AMSAT Phase IIIB satellite will be capable of providing repeater quality contacts to all stations within its range, be they local to you or DX up to half way around the world. There will be no skip zones in this new satellite communications band, for example, stations in New York, New Jersey, London, Paris, Tel Aviv, Moscow and Tokyo will be able to hold a round table QSO. The potential for nets, Jamboree-on-the-air, RTTY, computer, emergency, and public service communications is tremendous.

You owe it to yourself to be informed about this new band. The new band almost happened last May, but the launch vehicle malfunctioned and the Phase IIIA satellite did not achieve orbit. Our replacement Phase IIIB satellite is a million dollar undertaking. We are going full steam ahead secure in the knowledge that we can do our part to make the new band happen following the successful launch of Phase IIIB. Why don't you join the AMSAT Team and receive regular news as to the status of the Phase IIIB Program.

73,
The AMSAT Team

P.S. We still have one working communications satellite in orbit, AMSAT-OSCAR's 8, and are building a satellite for Science, UoSAT, due for launch in the Fall of 1981. It will contain scientific experiments as well as a slow-scan television (SSTV) camera. This satellite will be ideal for use in classrooms all over the world for live demonstrations of various aspects of space research.

Yes, I want to be a member of the AMSAT Team and receive ORBIT Magazine. Enclosed are my dues of $16 ($20 overseas) for 1981 ($200 for Life Membership).

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World Radio History

Ethel Smith, K4LMB
National Director

A 10-point program for the future of QCWA was outlined by incoming President Stuart Meyer, W2GHK at the Cleveland convention on 26 September. In his inauguration address at the general membership's annual meeting, Stu outlined the following philosophies and objectives:

1) QCWA should continue to emphasize the fraternal nature of the Association and the importance of the Chapter activities and the accomplishments and programs of the past.

2) QCWA should work to safeguard and guarantee the continuance of the Amateur Radio Service by *supplementing* the ARRL activities at the FCC level and other programs for the good of Amateur Radio as a whole, as well as that of QCWA members.

3) Initiate action to expand the QCWA Board to provide for a total of 10 Directors (five new Directors to be elected) and to assign each Board member definite results-oriented assignments.

4) Set up a network of QCWA Official Broadcast Stations (OBS) that will transmit reports from QCWA Headquarters on a regular basis. Apply to FCC for a special OB call sign (such as W25QCWA) to be used for this purpose.

5) Expand the QCWA publicity program to promote greater membership and attract more people who came into Amateur Radio in the 1940s and 1950s. (QCWA is not intended to be a "last man club.")

6) Embark on an educational program to expose the youth of America to Amateur Radio. ("The hand that holds a soldering iron will not be holding a switch blade.")

7) QCWA should be more member service oriented. All decisions should not be made on a strictly dollars and cents basis.

8) QCWA should make better use of the talents and abilities of its members and the thousands of man-years of knowledge and experience that are represented within the organization.

9) QCWA should explore additional sources of revenue so that future dues rates can be held to an absolute minimum.

10) A thorough review of bylaws, operating procedures, contracts, etc., should be carried out on a continuing basis.

Action to implement much of the proposed program was begun at the convention. A proposed amendment for increasing the number of Directors from five to 10 was approved and a ballot for vote of the membership will appear in the winter issue of *QCWA News*. If the proposal is approved, nominations will be published in the spring issue and the ballot for election of five additional Directors-At-Large will appear in the summer issue. The additional Directors will then assume office at the fall meeting in 1982. Thereafter, there will always be a continuity overlap of five experienced members on the Board.

A new class of "Family Membership" was approved. Effective 1 January 1982, the second or succeeding member of a family unit who is eligible for membership in QCWA may join at reduced rates. Family members will have all rights and privileges of membership, except that they will not receive the publications.

A number of committees was appointed to explore and/or carry out different phases of the proposed program.

Scholarship Chairman Leo Meyerson, WØGFQ outlined an ambitious goal of developing a $25,000 Trust Fund to make the QCWA Scholarship program self-sustaining. He reported that over $9,000 has already been donated to the Fund.

Quantity was a little low in the membership attendance at the convention, but quality was high. Those who were present represented the cream of the leadership in the Association. We were especially pleased to have Director candidate Dr. Gerhard Jacoby, DL3ME there to represent the QCWA members in Germany and the surrounding European areas.

It is obvious that QCWA has a great year ahead of it. Watch **Worldradio** for the QCWA column, and let your new Board members hear from you. □

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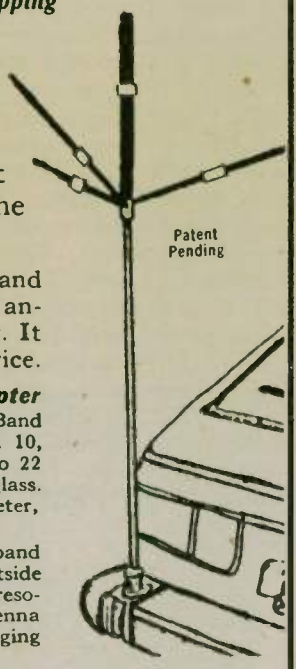

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The Spider* Adapter converts any mono-band antenna with a ½" mast into a modern four-band antenna with all the features of the regular Spider. It gives you the latest convenience at a modest price.

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- Each resonator is tuned to the desired portion of the band by a tuning sleeve which slides from end to end over the outside of the resonator. Use an SWR bridge to tune to the chosen resonant frequency, tuning for minimum SWR. If desired an antenna noise bridge may be used for tuning. Each resonator has a logging scale to provide resetability.
- SWR is approximately 1:1 at the selected resonant frequency, with generous band widths before the SWR exceeds 1.5:1. The typical band widths are about 500 kHz on 10 meters, 200 kHz on 15 and 20 meters, 60 kHz on 40 meters.
- Base impedance is approximately 50 ohms, requiring no matching network. Any reasonable length of 50 ohm coax may be used.
- Slim profile, low height and light weight offer little wind resistance and eliminate the need for a spring mount.
- Ideal for use in mobile home parks, apartments and condominiums. Also on motor homes, travel trailers, vans and campers.
- Guaranteed for 90 days against defects in workmanship and material.

The Spider* 4-Band Antenna $110.00
Four foot aluminum mast and 10, 15, 20 and 40 meter resonators. Weight 2 lbs.

The Spider* 3-Band Antenna. $85.00
Four foot aluminum mast and 10, 15 and 20 meter resonators. Weight 1¼ lbs.

The Spider* Adapter. $65.00
Mounting collar to fit ½" round mast and 10, 15 and 20 meter resonators. Wt. ¾ lb.

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LEN—W6FHU *For further information write to* FRED—K6AQI

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Norm Brooks, K6FO

CLUBS

Here at **Worldradio** we receive a lot of club bulletins, newsletters and papers. We have encouraged your sending them to us, and are very happy to receive them. As we read them, we come to a pleasant conclusion — *the state of Amateur Radio clubs in the USA is excellent!*

Your papers show enthusiasm for the projects on which your clubs are working, whether it be repeaters, DX, ATV, traffic handling or Amateur Radio in general. Your papers tell us that Amateur Radio clubs are doing their thing, are having a lot of fun doing it and are striving to do it better in the future.

Field Day

Field Day is a great catalyst. The club papers show that *most* clubs participated in Field Day. Field Day was the vehicle through which the builders put up antennas, the operators operated, the loggers logged, the spouses cooked and fed the troops, and the kids picnicked. The club papers shouted, Hooray! Look at what a great time we had, look at how we nosed out our competitors at the other end of the valley, and look at how Field Day was the one club activity that had something for everyone!

Here at **Worldradio** we make no secret of our enthusiasm for Field Day. And we're glad other clubs feel the same way. We have organized a **Worldradio** Staff Amateur Radio Club just for the purpose. Our club has had its first meeting to plan

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World Radio History

Field Day 1982. We reviewed our activity of last June and are putting together ideas to improve. We're attacking antennas first, because our analysis showed we spent a lot of valuable operating time doing antenna work. At our next meeting we're going to firm up what antenna changes we'll make. If your club's 1982 Field Day committee hasn't started yet, we urge you to get them going right away.

Public Service activities

Here's where the repeater clubs shine. The club papers tell us that thousands of man and woman hours are donated to providing communications for the various walk-a-thons, bike-a-thons, parades and other public service events. As a result, your club benefits from the camaraderie that working together in such events provides. After all, we're communicators, and who can better communicate in such events than us? CB operators? Maybe so, but remember they're limited to 5 watts of power and no repeaters. They are invaluable for close-in work, and we amateurs should willingly work with them when the strong points of each service are put to use.

For example, we are aware of a bike-a-thon where CB operators covered a short eight-mile loop in the city, while the amateur repeater club covered a much larger loop that extended into the next county. Cooperation in relaying messages was excellent. Unfortunately for the CBers, the side-by-side comparison was unfavorable to them. They were plagued with noise, skip and interference, while the full-quieting signals on the FM repeater impressed the bike-a-thon officials positively.

What's going on?

Reading the myriad of club papers brings us to another inescapable conclusion — the American radio amateur (at least, the one who reads his club paper) knows what's going on in the Amateur Radio world. The papers are currently featuring the FCC Plain Language rules proposals in Docket 80/729, and they're telling their members what's wrong with the new rules as written. Which leads us to . . .

Where do the club papers get their information?

The cycle starts with original articles written by club members. Then other club papers reprint those articles, sometimes improving on them. But you say your club members won't write articles. Don't sell your membership short. There is a lot of talent in your club membership. It's just up to you to motivate it. It's your job to get Joe Member to write an article based on his own expertise. Maybe he can't spell worth a darn, but the editor should be able to. After you run the article in your paper, both you and Joe will get a big charge when another paper reprints his article. And then, if we here at **Worldradio** feel it's worthy of an international audience, we may run it. All the way along, of course, we should remember to give the original writer and the club paper credit for the article.

In addition to printing and reprinting original articles, we find club papers reprint portions of *HR Reports*, **Worldradio**, and even local newspapers. Again, we remind you to verify if the paper permits reproduction, and if this is the case, be sure to give the source credit. If the article you like shows a copyright mark — usually a "c" within a circle — you must write to the periodical and ask permission before you reproduce the article.

Vacationing?

One item that is being heavily relayed from paper to paper is a paragraph or two reminding amateurs to *not* discuss over the air any plans that would indicate an absence from home. They point out that sophisticated burglars with scanning receivers and Callbooks are greatly helped by such information.

Keep them coming, folks

We appreciate the club papers we receive here at **Worldradio**, and sincerely thank you for them. Keep them coming. We'll have more to say about them in future columns. □

VISIT YOUR LOCAL RADIO CLUB

ARIZONA

Metropolitan Amateur Radio Club
J.C. Penny Restaurant, El Con
Tucson, AZ 85726
Call in on 34/94 K7CC/R
Every Saturday morning — 8:00 a.m.

Tucson Repeater Association
P.O. Box 40371, Tucson, AZ 85719
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

East Bay Amateur Radio Club
P.O. Box 6017, Albany CA 94706
Salvation Army Bldg., 36th & Rheem,
Richmond (415) 525-6200
2nd Friday/monthly — 7:30 p.m.

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets 2nd Friday/monthly — 8:00 p.m.
Wawona Middle School 4524 N.
Thorne, Fresno W6TO/R 146.34/94

Lake Elsinore Valley Radio Club
Wildomar Elem. Sch. (corner Palomar Rd. & Central)
Take Baxter Rd. turn off 71 Freeway
Monitor 146.55 simplex
3rd Thursday/monthly — 7:30 p.m.

Marin Amateur Radio Club (Founded 1933)
Coop Meeting Room
71 Tamal Vista Blvd.
Corte Madera, CA 94925
1st Friday/monthly — 8:00 p.m.

North Hills Radio Club
P.O. Box 41635, Sacramento, CA 95841
Meets: Gethsemane Lutheran Church
4706 Arden Way, Carmichael, CA 95608
3rd Tuesday/monthly

Sonoma County Radio Amateurs, Inc.
Box 116
Santa Rosa, CA 95401
3400 Chanate Rd.
1st Wednesday/monthly — 8 p.m.

S.C.A.T.S./WB6LBU
S. CA Amateur Transmitting Society
P.O. Box 1770, Covina, CA 91722
Cortze Park Rec. Hall
1st Monday/monthly — 7:00 p.m.

Stockton Amateur Radio Club
University of the Pacific, Room 122
2nd Wednesday/monthly — 7:30 p.m.
Club repeater net roll call:
Wednesdays 8:00 p.m. — 147.165/765

Tri-County Amateur Radio Association
Pomona First Federal Savings and Loan
399 N. Garey Ave., Pomona
Talk-in 146.625/025
For info. call (714) 985-8184
2nd Monday/monthly — 7:30 p.m.

CONNECTICUT

Tri-City ARC, Inc.
P.O. Box 686, Groton, CT 06340
Meets: Groton Public Library
Rt. 117, Groton, CT
2nd Tuesday/monthly — 7:30 p.m.

FLORIDA

Indian River Amateur Radio Club
P.O. Box Five, Cocoa, FL 32922
1st National Bank, Merritt Island
Cor. SR 3 and SR 520, Merritt Island
4th Tuesday/monthly — 7:30 p.m.

GEORGIA

Atlanta Radio Club
Box 77171 Atlanta, GA 30357
1st Thursday/monthly — 7:30 p.m.
Community Rm./Perimeter Mall Shopping Center
Call (404) 971-HAMS Net Sun. 9:00 p.m. 146.22/82

Columbus Amateur Radio Club (CARC)
David Nutty, N4ATI, Secretary (404) 687-3272
The Quonset Hut next to Food Stamp Center
Buena Vista Road at the "Spider Web"
2nd and 4th Thursday/monthly 7:30 p.m.

ILLINOIS

Radio Amateur Megacycle Society
Irvingwood Acacia Church
3900 N. Plainfield
Chicago, IL 60634
3rd Friday/monthly — 8:00 p.m.

Tri-Town Radio Amateur Club
P.O. Box 302, Hazelcrest, IL 60429
Above Hazelcrest Police Station
Net every Wed. 8 p.m./146.49 MHz
1st & 3rd Friday/monthly — 8 p.m.

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
P.O. Box 10342, Ft. Wayne, IN 46851
Allen-Wells Chapter House • Amer. Red Cross
1212 E. California Rd., Ft. Wayne, IN 46825
3rd Tuesday/monthly — 7:30 p.m.

Fort Wayne Radio Club
Ron Koczor, K9TUS
2512 Glenwood Ave., Fort Wayne, IN 46805
The Salem Church
3rd Friday/monthly — 7:30 p.m.

MICHIGAN

The Eastern Mich. ARC (EMARC)
St. Clair County Comm. College
Student Center Building (Cafeteria)
Port Huron, MI (313) 364-9640
1st Tuesday/monthly — 7:30 p.m.

MISSOURI

Heart of America Radio Club
3521 Broadway
Kansas City, MO
3rd Tuesday/monthly

NEW JERSEY

Glouster County ARC, W2MMD
PO Box 370, Pitman, NJ 08071
American Legion Post
Delsea Dr., Rt. 47, Clayton, NJ
1st Wednesday/monthly — 8:00 p.m.

Old Bridge Radio Assoc. (OBRA)
Cheesequake Firehouse — Route 34
Old Bridge Township, NJ
Daily 8 p.m. Net on 147.72/.12 MHz
3rd Thursday/alternate (odd) months 8 p.m.

NEW MEXICO

Eastern New Mexico ARC
First National Bank, Clovis
Box 206 • Clovis, NM 88101
(505) 763-6960/356-5993
2nd Tuesday/monthly — 7:30 p.m.

NEW YORK

Genesee Radio Amateurs, Inc. (GRAM)
PO Box 572, Batavia, NY 14020
State Civil Defense Center, Batavia
(behind NYS School for the Blind)
3rd Friday/monthly — 7:30 p.m.

Staten Is. Amateur Radio Comm. (SIARC)
Northfield Savings Bank (side entrance)
Richmond and Castleman Avenues
Call KA2CUS (698-2006) or WA2KQN (981-0372)
3rd Thursday/monthly — 8:00 p.m.

OHIO

Ashtabula County ARC
Ken Stenback, A18S (964-7316)
County Justice Center
Jefferson, OH
3rd Tuesday/monthly — 7:30 p.m.

OREGON

Clatskanie Amateur Radio Club
Route 2, Box 553
ClatsKanie, OR 97016
ClatsKanie Grade School Library
2nd Tuesday/monthly — 7:00 p.m.

C.A.R.S. (The Clyde Amateur Radio Society)
Gary A. Kauffman, WB8MUG, Secretary
2nd Tuesday/monthly — 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 147.075/.675 MHz

Champaign-Logan Amateur Radio Club
John Wentz, W8HFK, President
2 Meter Net, 147.60/00, Tuesdays, 9 p.m.
Dinner meeting, 1st Thursday/monthly
Dajolees Restaurant, West Liberty, 7 p.m.

Findlay Radio Club
1333 W. Sandusky St./Box 587
Findlay, OH 45840
Repeater 147.75/15
1st and 3rd Thursdays/monthly — 7:30 p.m.

NOARS (Northern Ohio ARS, Inc.)
P.O. Box 354, Lorain, OH 44052
K8US (216) 988-2345/near OH T.P. Exit 8
3rd Monday/monthly — 7:30 p.m.
K8KRG/R 146.10/70 — 144.55/145.15 — 449.8/444.8

TENNESSEE

Lakeway Amateur Radio Club
Roy A. Zeigler, Activities Mgr.
Rt. 11 Box 61, Morristown, TN 37814
State Area Vocational School
Last Thursday/monthly — 7:30 p.m.

Oak Ridge Amateur Radio Club
Dick Church, N4ARO (615) 482-9054
Oak Ridge Civic Center
W4SKH/R 146.28/88
2nd and 4th Monday/monthly — 7:30 p.m.

TEXAS

Garland Amateur Radio Club (GARC)
146.775/146.175 K5QHD/R (info Net Mon. 8 p.m.)
Garland Women's Activity Building
713 Austin Street, Garland
4th Monday/monthly — 7:30 p.m.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK)
P.O. Box 9029, Hampton, VA 23670
Call Steve Silsby, WA4BRL (804) 599-6877
VEPCO Bldg. (Pembroke and G St.)
1st and 3rd Wednesday/monthly

For information on how to get your club listed in this column, plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

World Radio History

Happy Flyers
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International Vice Commander, Paul Hower, WA6GDC
Box 2323, La Mesa, California 92041 - (714) 465-5288

Mid-air collision

It was too late to have the details in last month's column relating to the sad passing of our HAPPY FLYER lost in a mid-air collision. Squadron #1 and members of the family of James Moses, WA6ZST, are still not over the shock.

Jim was returning from a visit with his father, Elbert Moses, WA3IYA (MARS call AAR3HV), who was awaiting major surgery in the Tucson, Arizona hospital. Jim was alone, flying a Cessna 172 when he was overtaken and struck from the rear by a Piper Arrow while on a long final to San Jose Municipal.

Due to the job action in progress by the air traffic controllers, the news media gave considerable coverage to the tragedy. Naturally, some tried to construe the circumstances to insinuate this would not have happened if the strike were not in progress (one of the normal non-striking controllers was on duty at the time). Others attempted to say it was the result of the high wing/low wing syndrome.

Jim was a fine pilot, but there is nothing any of us can do when we are hit from behind. The high-wing/low-wing problem mainly occurs in pattern turns. (The high-wing plane has a blind area on the inside of a turn and the low-wing plane has a blind area on the outside of a turn.) From what was made available in the media, a faster plane on the same course overtook Jim. The right seat individual in the overtaking plane was an instructor.

Jim had been an active amateur for years. He used the HF bands to communicate with his dad over the years, and he had his share of QSL cards from all over the world. He was respected and well-liked by all who knew him. He will be missed by all of us. The number of people who came to his (supposedly) private memorial services were a tribute to Jim's life of winning friends.

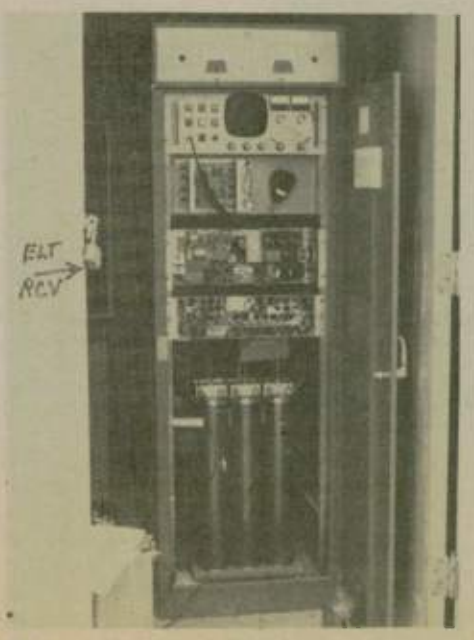
Amateur camaraderie

Jim's wife, Carolyn—even in her grief—thought of her father-in-law in the hospital, with the death of his son in addition to his pending major surgery. She asked the HAPPY FLYERS to see if some amateur in Tucson, Arizona could call or visit her father-in-law.

The first person I called was George Darwin, K7DY. In the true spirit of Amateur Radio, he was delighted to call on Elbert. As it turned out, George was a retired colonel from the Army Signal Corps, and Elbert was a retired lieutenant colonel from the Army Signal Corps. George was kind enough to phone me long-distance to let me hear a recording of their initial conversation. They had so much in common, and enjoyed their visit so much that it brought tears to my eyes. More surgery is in store for Elbert, who is not from Tucson. Many more visits are in store for these two. It makes one proud to be a part of such a great, warm-hearted fraternity.

ELT monitors at repeaters

We have another picture of an ELT (Emergency Locator Transmitter) receiver installation. Considering the large number of receivers we distributed that were donated by AIRINC, many more of you should be sending us pictures of your installations (as promised). We are interested in pictures of any and all ELT monitor installations, regardless of the source of the receiver or inspiration. We know of a few who designed and built their own receivers. Pictures of your installation should spur others to consider a receiver to listen for downed airplanes. The more receivers, the sooner one can be part of saving a life!



Here is a close-up of the ELT monitor installation at W7PT/R in Cody, Wyoming. It is a Collins and is the second rack above the cavities. They are working on a remote DF for later installation.

Ivan Christopherson, WA7NZI and Philip Barnhart, W7PT are standing outside the repeater building. The only access for them is via four-wheel drive. This installation is in a much-needed area.

Phil Barnhart, W7PT writes: "This site is approximately five miles (airline) west of Cody at an elevation of about 7,800 feet above sea level, and overlooks a considerable expanse of northwest Wyoming, including some pretty rough country. The big drawback to this site is the long rough four-wheel drive trip up there and back! I have a modified version of Ed Kimber, W7VEW's ELT monitor control on the ELT receiver, which seems to work quite well, although I have had some trouble with static buildup causing false triggering of the monitor." He adds that some of their club members are also members of the Park County Search and Rescue Squad, so they have very good relations with them.

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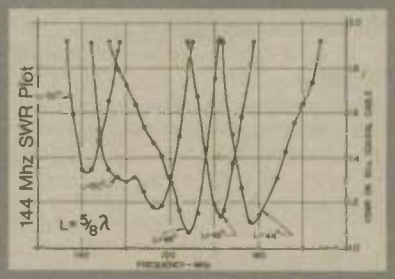
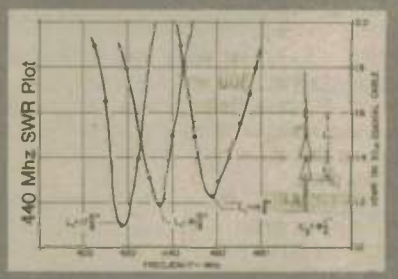
Note the typical SWR plots for the IsoPole-144 and the new IsoPole-440.





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World Radio History

The repeater antennas overlook most of Bighorn Basin, about 80 miles (airline) to Bighorn Mountains. The more ELT monitors at sites like this, the sooner someone will help save a life.

Squadron #1 annual party

Commander Dick Chillingarian and XYL Ellie put on what may be the last annual pool party at their beautiful Woodside home. They have put their home up for sale and bought property at Pine Mountain Airport (for their retirement). They will build a home that will allow them to taxi their Mooney right into their garage. We look forward to the first party at their new home.

This year's party was a great success. The picture of most of the participants in this issue will give you an idea of the fun we had. In keeping with our no dues no money concept, we each brought different dishes and our own drinks. The food hit the spot, and the drinks . . . well, they satisfied thirst as expected. Somehow, I noticed Commander Chillingarian in the pool with shirt, glasses, etc. We had a GREAT time!

We were happy for each one who was able to make it. We were especially happy to have Ed Turner, W6NVO with us. We almost lost him earlier this year. He is alive today as a result of his pilot son's CPR ability and the quick response of Medivac. Larry Reed, W6CTH was also able to make it; he, too, has had some health problems.

Our newsletter editor Flash Allen, WA6SCM and YL Adele report the Fly-in to Catalina (Avalon) Island, off the coast of Los Angeles, was a tremendous success. Catalina has preserved much of its nature and animals, so part of it is like going back in time. HAPPY FLYERS from many areas converged to enjoy the sightseeing, fishing, glass-bottom boats, swimming, and just pure fellowship.

Hart's operation

The approval for the second, and hopefully final, portion of hospitalization for my back surgery has been received. I expect to be in Long Beach Hospital in October for about three weeks. Dr. David Cook, WB6FMX—a pilot and HAPPY FLYER—estimates about four or five hours of surgery will be required to fix me up. I am grateful for the personal interest Dr. Cook has shown and his willingness to undertake this difficult operation.

All correspondence has been answered as of the second week in September. If you have written to our Belmont address and not received an answer, please write again explaining it is a second request. We were involved in a business move and had our medical mail coming to our home for a time. I apologize to those of you who waited patiently for answers. My health and business problems, coupled with my volunteer SAR work, put me way behind. Also, some of our responses were lost (?) in the postal system.

Universal DF tester

Next month's column will be devoted to sharing the schematic for a universal DF tester. The article is almost finished. We will also share instructions and hopefully some pictures. We believe that nearly all of the commercial VHF DFs are capable of rapid finds, but often fail for two main reasons: 1) Improper (not working) installations, and/or 2) forgetting the bouncing properties of VHF RF. If you have friends in Search and Rescue, be sure they get a copy of next month's **Worldradio**. I hope to talk Bud Kirsch, WB6MVE into helping non-amateur SAR workers who need a tester.

Squadron #1 held its annual pool BBQ with several members present. Somehow, Commander Chillingarian is in the pool (right), still dressed. Major Howell (CAP) is directly above him, Hart, WB6CQW on the right outside, and harmonic Hartley V is the blonde boy on the outside in the pool.

Jammer caught—stolen radio!

Received a letter from Dick McCreary, N8AER, who was recently elected president of the Capital City Repeater Association in Columbus, Ohio (about 130 members). He was writing about their ELT monitor project, but he included the following: "Caught a jammer 7 June at 7:00 p.m. (using a *stolen* ICOM 2AT) and the portable DF unit nailed him in his auto. Time to target was 28 minutes. I'm getting better, huh?" Thanks, Dick, for the report, and for your work on the ELT project.

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

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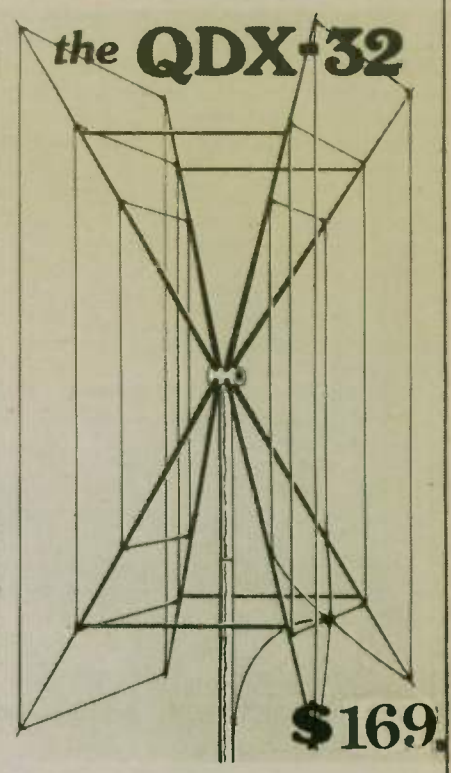

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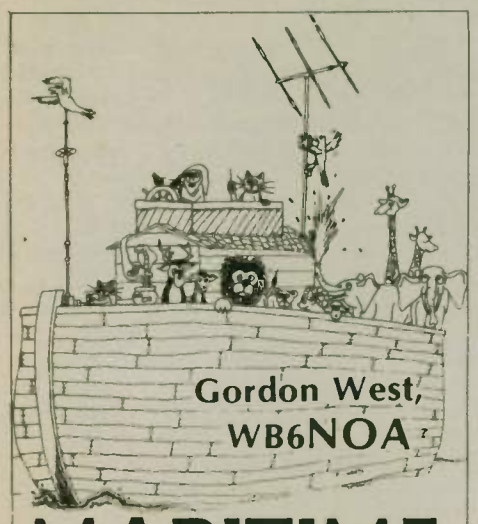
World Radio History



Gordon West, WB6NOA

MARITIME MOBILE

Ground systems

In the last few months, we have reviewed marine antenna systems for powerboats and sailboats. This month we will deal with the all-important ground consideration.

Throughout your Amateur Radio career, you have been taught that grounding your equipment is an essential safety precaution. In the event of an internal component failure, a grounded radio chassis will safely pass high voltages into the earth and, hopefully, ultimately trip your circuit breaker.

There is more to a ground system than just safety for home as well as marine installations. Almost half of your Amateur Radio antenna systems for High Frequency require a large surface-area ground.

Antenna systems that absolutely require a ground to serve as the counterpoise would include the following:

- longwire antennas
- mobile antennas
- trap vertical antennas
- windom type antennas
- tuned vertical antennas
- continuously loaded vertical antennas
- inverted "L" type antennas
- backstay antennas
- antenna tuner tuned long-wire antennas

As you can see by this list, about the only antennas that don't actually need a large surface-area ground to work off of are the basic dipole antennas, inverted vee antennas, and of course the beam Yagi antenna.

Surface area a must

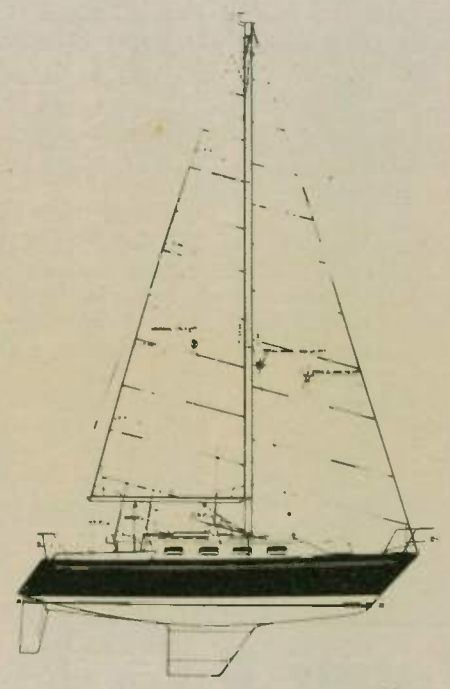
Surface-area grounds apply to marine as well as home installations when you plan to use one of the antennas listed above that all require a ground system. Just like the name implies, "surface-area" grounds require a counterpoise in excess of a quarter-wavelength from the basic frequency you will be operating. To put it bluntly, a #12 wire run to a water pipe or a through-hull fitting just won't cut it! This is a totally inadequate ground system for your proposed antenna setup.

When you key your mike for tune-up, does the metal button on the back of the mike "bite" you? Do you find that certain frequencies are unstable when you tune your set? Have you ever leaned across your set when operating it, only to be "bitten" by stray RF voltages? Do you find that your SWR meter rises or falls when you touch the chassis of your equipment when tuning up?

If you find these irregularities during tune-up, chances are your surface-area ground is inadequate.

Metal hulled vessels are perfect for HF installations. The metal hull will act as the water groundplane.

Oh, you don't have a metal-hulled vessel? Don't despair; there are still ways to ground out your antenna system and tuner.



The keel is an excellent RF groundplane.

Wood and fiberglass boats

To establish a large surface-area ground system, large ground straps will be necessary to bond metal equipment together. You will also need to create a groundplane with these metal straps. The metal straps might also connect to ground plates, either inside or outside the hull.

Although it is preferred to install ground plate outside the hull, a good capacitive ground is achieved by wide copper screen or ground plates placed inside the hull, below the waterline.

Perplexed as to what your first steps are in establishing a good ground system? Here are some steps that will help you out:

Step #1. Purchase at least 100 feet of 3-inch wide copper strap from a local plumbing supply house. The wider the better. Thickness is not important, so ultra-thin copper strap is a good way to keep costs down. If copper strap is not available, you may consider aluminum air-conditioning tape, aluminum lawn separators, copper screen, or any other good conducting metal material that contains a large surface area.

The best time to run the wide ground system is when initially installing your equipment — here, ICOM 720 and Cubic tuner.

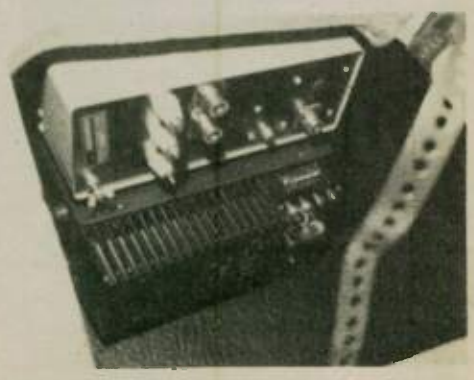
Step #2. Bond all metals together through the use of this wide strap. This would include:

- the engine block
- propellor shaft, using a wiper brush
- through hulls
- metal water tanks
- hydraulic lines
- appliances
- metal mast
- toe rails
- keel bolts (very important!)
- finally, your underwater artificial ground system.

Step #3. It is recommended by communication experts to independently route each of these grounded metals to a central common ground point close to your tuner. Since each underwater metal has been grounded separately, the chances of an open in your ground system will be minimized. Running your ground in series is only asking for a tear in the thin ground strap.

Step #4. Connect all ground strap feeders together by either soldering or bolting them securely. If possible, use your antenna tuner and transceiver as the central connection point. Insure that each and every feeder is making solid ground contact to both your tuner and transceiver.

Independent runs of copper strap allow for a solid ground connection between each ham set.



Wide strap connects each rig, hidden behind the teak trim.

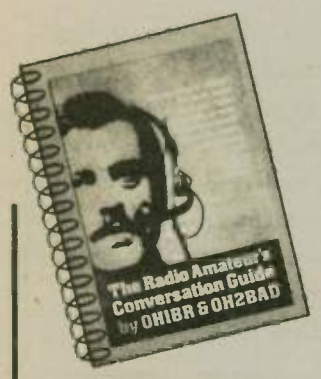
Step #5. Make sure a wide copper strap interconnects your tuner and transceiver. The use of small ground wires will not work.

Step #6. To further increase your surface area groundplane, consider tuned radials. Each radial should be one-quarter wavelength of the frequencies you plan to operate. The radials should be run using the wide copper strap in the direction of minimum vessel ground.

Testing your system

Once you have run your ground radials, doublecheck with an ohmmeter that they are, indeed, all connected. Look for low resistance ground readings between your standing rigging and the mast. Check your life lines to toe rails.

Try this interesting experiment — hook one lead of your ohmmeter to ground, and drop the other lead in the water. You should see an immediate indication of a closed circuit with only moderate amounts of resistance. If you see almost no reading on your ohmmeter, chances



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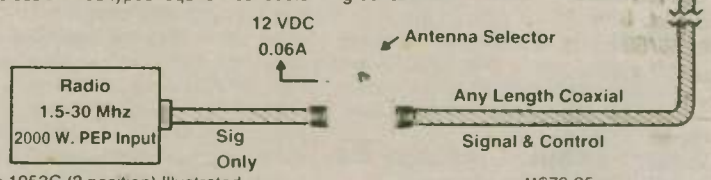

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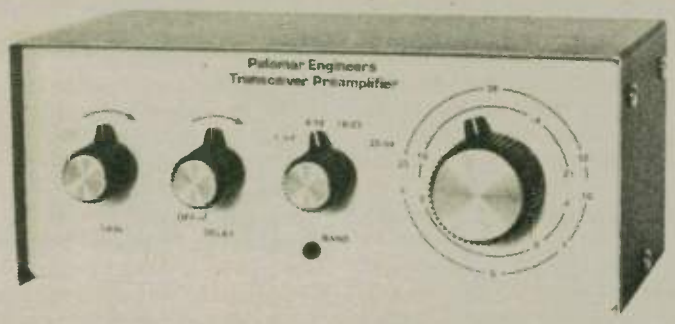
Preamplifiers



Don't wait any longer to hear those weak DX signals. Add the P-310X preamplifier to your rig.

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- Tunes 1.8 to 54 MHz.
- Covers all amateur bands 160 to 6 meters.
- Up to 20 db gain.
- Reduces image and spurious response.
- Automatic bypass switching on transmit.

The P-310X Transceiver Preamplifier connects between your transmitter and your antenna. It gives improved reception with up to 20 db gain, lower noise figure, and better selectivity and overload capability. When you transmit, a sensing circuit automatically connects your transceiver directly to the antenna. At the end of transmission it switches back to receive with a delay that is adjustable with the delay knob.

Model P-310X (115-v ac) **$129.95**
+ $3 shipping/handling

Operate mobile? Extra gain where you really need it. Same outstanding performance in a 12-v dc powered preamplifier.

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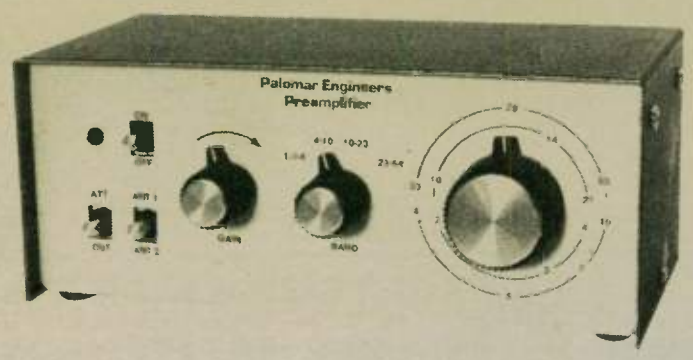
+ $3 shipping/handling

SPECIFICATIONS: Frequency Range: 1.8 - 54 MHz in four ranges 1.8-4, 4-10, 10-23, 23-54 MHz. **Controls:** Gains, On-Off-Delay, Bandswitch, Tune. LED pilot. **Gain:** 20 db nominal with 50 ohm input and output. Variable by front panel control over 15 db range. **Delay:** Variable ½ sec. to 3 sec. by front panel control. **Power:** Model P-310X 115 volts 50/60 Hz AC. Model P-312X 12 volts dc negative ground. **Connectors:** SO-239. **Size:** 8" x 5" x 3" high. **Weight:** 2½ lb. **Cabinet:** Brushed aluminum panel; black vinyl cover.



Weak signal reception for the SWL with this receiver preamplifier. This is one you read about in WORLD RADIO TV HANDBOOK!

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Model P-308 (for 115-v ac) **$109.95**
Model P-305 (for 9-v dc) **$99.95**
+ $3 shipping/handling

SPECIFICATIONS: Controls: Tune, bandswitch, gain, attenuator, antenna select, on-off. LED pilot. **Gain:** 20 db nominal with 50 ohm input and output. **Power:** Model P-308 115 volts 50/60 Hz ac. Model P-305 9-volts dc (battery clip provided). **Connectors:** SO-239. **Size:** 8" x 5" x 3" high. **Weight:** 2 lb. **Cabinet:** Brushed aluminum panel; black vinyl cover.

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are your ground system is still inadequate.

Tune up your marine installation using an antenna described in earlier **Worldradio** issues. If you are using a long-wire antenna, you will require an antenna tuner that has a long-wire output.

Simple 50 ohm "mobile tuners" may work nicely for tuning up antenna loads whose radiation resistance is between 40 and 70 ohms. You will not be able to use the coaxial cable output type mobile tuner to match a longwire run. Here the radiation resistance is only 2 or 3 ohms.

"A word of advice about your grounding wire, mate . . ."

How to use a tuner

On receive, first adjust your tuner for maximum noise. This is usually accomplished by setting your antenna and transceiver trim capacitors to midpoint and adjusting the inductance band switch. When you hear the background noise pop up dramatically, you are probably close to an optimum setting.

Check the frequency to insure it is clear. First identify with your call sign, and then inject a small amount of carrier. Using the transceiver matching and antenna matching capacitors, adjust for minimum SWR and maximum power output from your solid-state transceiver. With a tube radio, you will first need to adjust the transceiver into a 50 ohm dummy load.

Now pour on the coals and look for 100 watts output with no more than 2 watts reflected. If you find that your reflected "dip" is well defined and stable, chances are you have achieved a good ground.

However, if you find that your SWR "dip" is broad, unstable and changes when you put your hand on the tuner or set, your ground system still is inadequate.

Summary

When using any antenna system other than one that creates its own ground (such as a dipole, quad or beam), your ground system is one-half of the antenna circuit. The best long-wire antenna connected to a poor ground will give only Q-3 results.

A 20-foot backstay, insulated, but used in conjunction with a keel bolt ground may achieve signs comparable to a good two-element beam!

Kerney Nut used to connect the GTO lead-in wire to the Back Stay.

On the countless installations of amateur transceivers aboard sail and powerboats, almost every one — I have discovered — failed the basic ground test. Small wires were run instead of wide metal straps. Wire has minimum surface area. This creates a minimum groundplane.

Try redoing your ground system, and expect some fantastic changes for the better in your HF communications range.

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World Radio History

The Exchange

Armond Brattland, K6EA

Some needed repetition re NIN/National International Net

Since the printing deadline has been moved up, there has not been time to print a list of stations that habitually observe the Sunday 2300Z/21,150 kHz NIN session. Please advise so your call and name can be listed, together with your QTH. It will be helpful if you note whether you also check into NTS (National Traffic System), ARTS (Amateur Radio Telegraph Society) or other nets. Your telephone number is needed to receive radiograms.

As previously indicated, K6EA/Ø is on at such time, whenever possible, calling "NIN" and sending QST bulletins, but not assuming to act as Net Control/NCS. If you stand by waiting for a net control to take over, as we operated in NNN (National Novice Net), you may have a long wait. As announced, this time around, operations will be carried on as ARTS and other "hit and bounce" nets operate. Merely call NIN and indicate if you have traffic, "QTC" and designation. If no traffic, but willing to help, call "NIN" your call, "QRU" and give "QTH." In numerous issues you have been requested to listen to ARTS; please do!

NIN wishes to help all nets and Novices

NIN does not presume to act as "Hub" Williams, W5UH writes, but if possible we wish to aid ARTS, NTS nets and individual traffic handlers around the nation, or internationally. Being on the Novice band at 21,150 kHz, we also hope Novices will take an interest in this traffic handling opportunity. Operators on such net frequency should observe a speed limit — perhaps 10 wpm and not to exceed 13 wpm. However, there is no good reason to hamper the flow of traffic by trying to impose a speed limit on stations that make contact on the net and go elsewhere to move their traffic, at whatever operating speed they agree upon and find comfortable.

I've been criticized for this viewpoint, but can only assert that the primary business of a traffic net and traffic handlers is passing traffic. If there's too drastic a restriction placed on those having traffic, then likely they may not "play in our net." However badly the Novices need code training, there are many coming back into radio via the Novice route who would feel unduly restricted to be requested to travel at less than 10 on the net, or upon the freeway, outside the net frequency. This does not mean stations with traffic won't slow down to whatever speed you may request, to pass traffic for your area — that is as it should be, but NIN is established as a traffic net, or meeting place for traffic handlers. If the 10 wpm restriction on the net and merely making contact to go off the frequency hampers you, it would be for a very short duration. Novices can soon get up to that speed if they wish to become traffic handlers.

About slow-speed nets in general

Many NTS Section Nets maintain a second session net to afford training, and a great deal of traffic is carried by such nets. It gives those who cannot make the early session another chance to pass their traffic. In Southern California, SCN-2 meets about two hours after the earlier session. In Minnesota, MSN-2 meets about four hours after the regular session, which I believe is at too late an hour at night.

From past experiences

The NNN tried to please the Novices who were just learning code and bring them into traffic handling — the speed of operation was too slow to hold traffic handlers, or even many Novices. It was found that having to slow way down for certain operators was quite the thing to do, but to set the *net speed* — as a requirement — down below 7 to 10 wpm, drove a wedge between those who were merely learning code and those who had learned to handle code at 10 wpm and who now wished to learn to handle traffic.

Actually, because of pressure to "regulate" the code net speed downward, traffic was only handled by licensees other than Novices. To "top it off," certain Novices demanded that stations should not even be permitted to go above 6 or 7 wpm, off the net frequency. Thus hamstrung, such net failed as a traffic net. Now certain ones seek to have such error repeated. For this reason, I hope all might understand that the 10 wpm suggestion only covers instructions given on the net frequency!

Actually, when a Novice sneaks by his examination at 5 wpm, the people at fault are usually the radio club instructors. If the party seeking a Novice license is properly taught the code, he or she would be easily copying it at 7 to 10 wpm, in the same length of time. Unfortunately, the NIN cannot, except for the purpose of traffic handling, consider operating at below 10 wpm on the net frequency. That does not mean traffic cannot be transmitted at slower speeks, but please help avoid the errors that caused the downfall of NNN!

To make it, do we dare say "crystal clear?"

The following was gleaned from the Southern California January NCS guide, edited by Fred Gartzke, K6YD: **Code Speed:** NCS (Net Control Station) should maintain a code speed of 13. Faster code speeds will discourage new stations, not as proficient in the code language as some, from joining the net operation. Slower code speeds will lengthen the whole net session excessively. Since the radio frequency of net operation is in the General Class portion of the band, it is assumed all participants must, at least, have a General Class license. Stations that are sent off frequency to exchange traffic may use any code speed mutually agreeable to both parties. To determine a code speed of 13, listen and compare operating speeds to any of the many ARRL or other code practice sessions presently on the air.

It should not be necessary to say more concerning the need to operate, as ARTS operates without net controls. If you operate 15 meters at all, you know it would not be possible for all the stations to hear a net control station. Hopefully, those who have urged us to again try NCS may remember the difficulty we had on NNN, trying to operate as a directed net.

There is one other possible source of friction we should clear up — ARTS has no quarrel with the NTS or with those who advocate an NCS for all net operations. Most NTS net managers know this, but for those who may not have received *QCD* — the publication of the ARRL Communications Department — a reprint of a statement printed in such bulletin, summer edition 1979, is reprinted. Such article was by Hubert Williams, W5UH, the founder of ARTS:

ARTSist at work

I am sure you are, to some extent, familiar with the Amateur Radio Telegraph Society net, ARTS. Operation is daily on 7060 kHz from 1330Z to 1530Z. Our monthly traffic report has appeared in the Public Service column of QST for the past year, under the heading of Independent Nets.

One concept of ARTS is the idea of a nationwide emergency frequency during daylight hours. We have tried for the past five years to establish such a frequency, but have not been successful in our efforts. We do feel, however, that a daylight CW traffic net of national scope is a step which may eventually lead to a culmination of this plan.

ARTS operates on the maritime or calling frequency, undirected net system. We do not use a net control station because it would not be heard by our more remote members. This type of operation is not too well known by many amateurs, but it has worked out very well for us, as will be borne out by our traffic totals. We do, however, have problems and we plan a reorganization of the net along the following lines. An article on this proposed reorganization will appear in the May or June issue of **Worldradio**. If you favor our plan, please feel free to use any part or all of this letter in **QST**.

We hope to establish an east-west relay across the country, similar to the trunk lines of some years ago. We plan relay points about every 250 or 350 miles along this line.

We expect to have two or more relay stations at or near each relay point, and they would operate on alternate days to eliminate the need of daily duty for any operator. There would be three similar north-south relay routes crossing the east-west route at appropriate points, to provide good general coverage of the country, operating in the same manner as the east-west route.

We estimate that about 20 relay points

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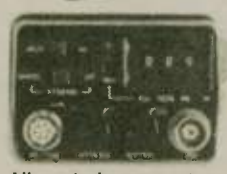

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World Radio History

would be needed for the entire system, and a minimum of 60 relay stations would be required, based on alternate duty days for each one.

All through traffic would be handled by these relay stations. Any amateur would be welcome to call a relay station in his area to put a message into the net. Relay stations would pass traffic from net to local stations in their area for delivery. It's expected that much of this traffic for delivery would be passed to NTS region and section nets and via any other outlets.

It has been difficult to find traffic men available during daylight hours. We hope some of the retired amateurs will be attracted to the ARTS net, as there would be no requirement for regular daily attendance. Most retired amateurs don't wish to become involved in activities which tie them up in daily schedules. But they would consider an occasional bit of traffic handling. Our big problem, then, will be to find enough amateurs to man the regular relay station slots. ARTS has always exchanged traffic with NTS, and in fact, this has been necessary due to the scarcity of ARTS members who can operate during the day. We therefore hope NTS will cooperate with us and provide some members who may be available during the morning hours to help man the relay station slots.

ARTS is a CW net and we do not wish to get into a bi-modal type of operation such as the present daylight regional SSB/CW nets. However, if we can induce some NTS members to work for us, I'm sure the above outlined plan will provide a very excellent daylight traffic system which would also be a very good emergency facility when needed.

There is no thought of competition between ARTS and NTS. On the contrary, a real cooperative plan such as this would provide an incentive to more amateurs to participate in traffic work, and with a little additional effort on the part of both ARTS and NTS, it's believed that third party traffic for the public would increase considerably. Certainly we should all strive to make a service available to the public which would garner more public good will for Amateur Radio. It is not unreasonable to hope that eventually we may need to extend operation to four or five hours a day to handle the available traffic.

I look forward to your reaction to the establishment of this relationship between ARTS and NTS. We don't wish to lose our identity to the extent of becoming part of NTS, and we don't wish to impose our will on NTS. Operation would be entirely independent on the part of both groups and, speaking for ARTS, I can guarantee our cooperation in a common effort to improve amateur traffic handling for the good of the public, NTS and ARTS. □

QRP

What could be more challenging than QRP? Here, one can be little David up against the Goliaths, and win too. **Worldradio** wants to chronicle the activities of the purists.

Send in reports of what you have done. (Worked 1,000 miles with an International Crystal OX Oscillator?) Such will be of interest and encouragement to others.

The space is yours to, well, brag a little? Or to instruct and possibly inspire others. To work another station with less power than a flashlight uses is indeed something to be proud of.

What we're looking for doesn't have to be anything particularly exotic. After all, one man's everyday is another man's exotic. The very fact that you can maintain a sked with QRP is noteworthy. Of course, if you should work out a way that you capture the other station's signal, rectify it and store it making use of it to power your transmitter, we'd be really interested also.

Share your QRP adventures. Draw others into the fold. After all, the more people who will listen for the peanut whistles, the more contacts will be made.

Here is a beginning story. There are thousands of others, yours is one of them.

Submitted by Jack West, W6VD

This call on 40-meter CW from an elevation of about 11,000 feet above sea level by Al Harral, WB6YNM initiated a series of nine QSOs over a 15-day period during August 1981 with Jack West, W6VD in Sacramento, California. Thus, Al and his wife Mary Ann, WA6QPU were able to keep in touch with their home folk on Bethel Island, California. Al and Mary Ann were indeed backpacking everything they needed to survive except for the golden trout Al was catching in the several lakes where they camped on the upper slopes of the mountains adjacent to Mt Whitney.

Al's pack included four pounds of radio gear: a Heathkit HW-8; 10 AA Nicad batteries; an 18-cell solar panel, and a 40-meter dipole using 32 gauge wire. The final of the HW-8 was swamped down to limit the power output to 1 watt, thus minimizing battery drain. The solar panel developed 9 volts at 125 miles, enough to recharge one-half of the battery string at a time. This operation took place above the timberline, and no antenna poles were backpacked, so the antenna was strung between whatever talier rocks were available. In lieu of a conventional hand key, two pieces of metal mounted on the HW-8 responded to the magic touch of Al's index finger.

Most of the schedules were at high noon, with others at 5:00 p.m. Al's signals were mostly S 6-7 in Sacramento. The initial QSO between WB6YNM and W6VD was monitored by Rod Engel, W6EEK/7, in Mesa, Arizona, and Al's signal with 1 watt output was stronger than Jack's at 100 watts output. The noon schedules had one slight problem. There was no shade from the sun, and the heat on the HW-8 made the transmitting frequency drift about 1 kHz in about 20 minutes. When there was cloud cover, or when the mountain peaks shadowed the sun in the late afternoon, the transmitting frequency was very stable.

Operating conditions in the physical sense were not all that thrilling! It was no thrill sitting in the direct sunlight. Some QSOs had to be quickly terminated because of raindrops falling or lightning flashing nearby, and then there was the cold. There were three consecutive days with no sunshine. The batteries almost went "flat." There was rain and hail. Everything and everybody was wet and cold! On one of these days, Al transmitted, "I have to keep telling myself that this is fun." Al and Mary have been doing this "fun" thing for the past 10 years, so there must be something to being "high in the sky." This year's trek certainly proved that Amateur Radio and CW most certainly do have a place in the sun — so to speak. □

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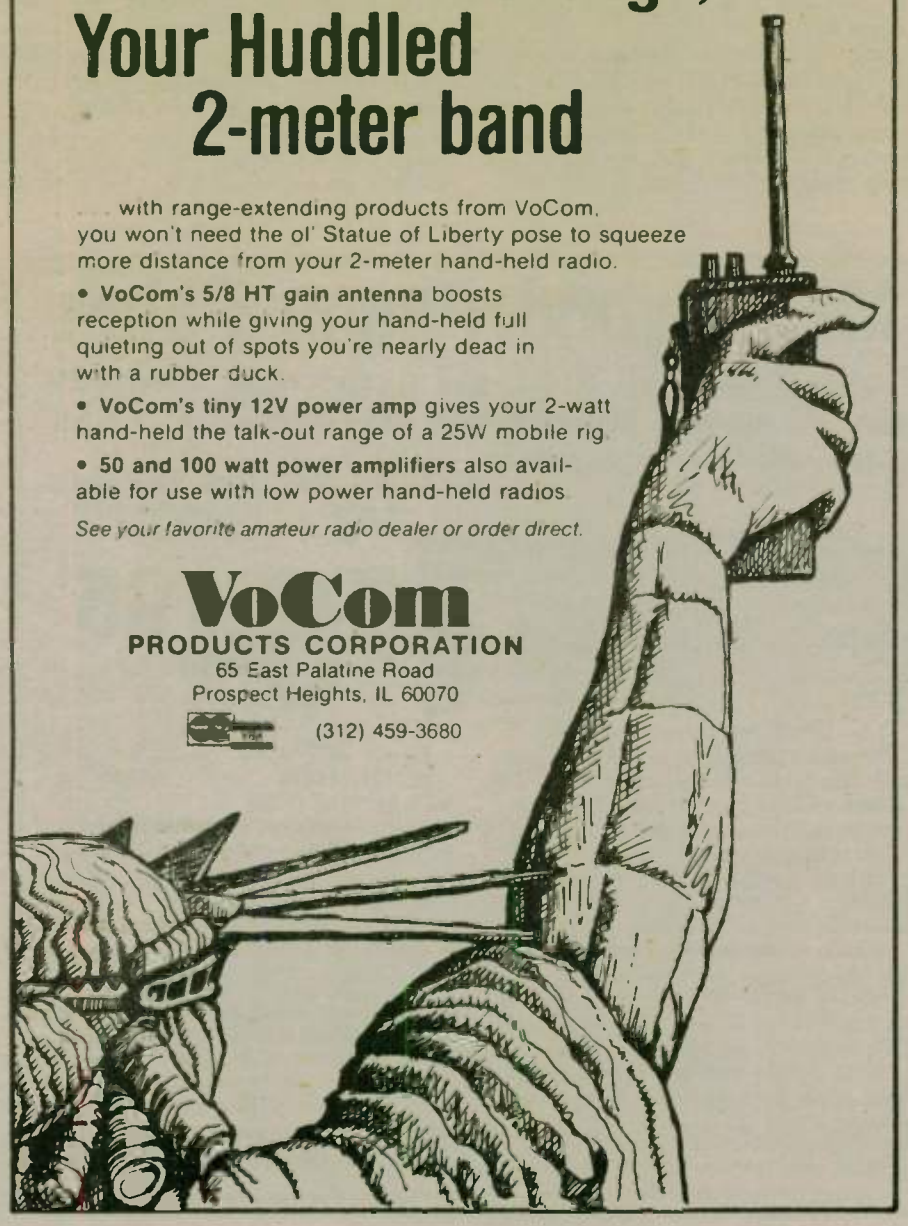

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World Radio History

TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Getting traffic to its destination

An anonymous writer in the *New Jersey Traffic Bulletin* has some suggestions on getting traffic to its destination with the least amount of hassle. Here is a condensation.

The best way to route traffic to strange places is to use the collective wisdom of the entire net. No one person — net control, net manager, nor experienced traffic handler — will know everything about every place in the area covered by the net, even with a large library of geographical references. So if there is something about the address on a piece of traffic you are holding, tell the net about it when you list it. Don't list it categorically as for Lexington, Kentucky, for example, if it has ZIP code 12452. It's probably for Lexington, New York. Sending it to Lexington, Kentucky would only delay it in that case. When you list the message, mention the discrepancy: "I have one that says Lexington, Kentucky, ZIP 12452."

Someone on the net will probably ask, "Does it have a phone number with area code?" If it does, and the area code is 518, someone on the net will probably be able to look it up and see that 518 is the area code for Lexington, New York, indicating that the message is indeed intended for that destination, and that somebody along the way wrote what he thought it should be instead of what was actually sent. It would be easy to hear KY instead of NY on CW, especially if one had never heard of Lexington, New York — a small town with a third-class post office, population 700.

Of course, if there were no area code, you couldn't be so sure, although the correct ZIP code 12452 should still be enough to show that Lexington, New York was meant. But a telephone area code of 606 (Lexington, Kentucky) would call for all the detective abilities on the net, and suggestions from all the traffic handlers as to what to do with it. I myself don't know what the answer would be. Maybe someone on the net handled one last week and so knows what is the correct address. Maybe someone can identify the correct address from the exchange in the telephone number. Or maybe the best thing to do would to be to send the message to both destinations with an operator's note that this is being done and requesting a service message to the originating station as to whether the message can be delivered.

Don't make an attractive guess as to what's wrong with an address. Pass it on as it is, but note your suspicions, unless you have clear evidence of what is wrong: in the example above, if ZIP code and area code agree and it's obvious how a mistake could be made in the state (KY instead of NY). One should always be very careful about making corrections; often, they only make things worse.

Area and ZIP codes

Often the area code of a telephone number or the ZIP code of an address can help one decide what the correct address should be. One can consult the *Directory of Post Offices* or the *National ZIP Code Directory* — both available from the U.S. Government Printing Office, and both kept at every U.S. Post Office and available to the public. You can possibly persuade someone there to give you an old copy. Both these books have alphabetical and numerical listings of post offices and ZIP codes, so it's easy to find either the number corresponding to an office or the office corresponding to a number.

Telephone directories have area code information in the front, but as the codes are randomly assigned, it takes some time to find the area corresponding to a given code. For this reason, a numerical list of telephone area codes is given here.

Traffic quiz

There is something wrong with each of the following addresses. Some of them are actual garbled addresses that have appeared on messages in the Amateur Radio Service, and some are fictitious, but typical of what can happen. See what is wrong with each of them, and what you would do with them. Your columnist's answers appear later in this column.

1) Lee K7DXN, Sun City CA tel 974-8662.

2) Rev. Henry Gelin, Detroit MI 49725, 906-297-3781.

3) Fannie Helmick, P.O. Box 625, Bristol VA 22013.

4) Frank Clark, 4012 North Wishon, Fresno GA 93704 tel 209-219-8996.

5) Dan Ostroy K2UL, Hamilton Square 08690 tel 555-803-3428.

6) Chuck Clark K4ZN, Moncks Corner NC 29461 tel 803-3428.

ARL Forty Six

Another gem from that *New Jersey Traffic Bulletin:* "A gripe I got . . . I was square dance camping in Pennsylvania recently, and like all traffic hounds, I was canvassing the group to see if anyone would like to send a message free of charge. I had gathered a dozen or so from the gang when I was told, 'Forget it, pal, I tried that tune once and it never got there. It was very important to my family, inquiring about the health of a relative and it never got there.'

"My daughter was working a summer job in Saginaw, Michigan, and of the half dozen messages I sent here only about two made it.

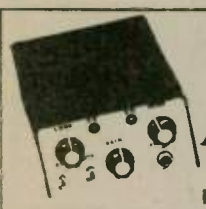
"I sent a birthday greeting to my sister-in-law: 'ARL FORTY SIX LOVE — GENE AND FAMILY,' and that's exactly the way she got it. Do you believe that? I asked her, 'Did you get my birthday greeting message?' She said, 'Oh, is that what that was? I didn't understand it at all. Something about all 46 or whatever. I couldn't imagine what this person was trying to say.'

"I asked fellow traffic handlers about it and they said the same thing, 'Well, we're just volunteers and you gotta expect some not to make it. These things happen.'

"Maybe so. Maybe we are just volunteers, but that doesn't make it right. If you and I are going to sit there and acknowledge a message, then you and I are totally responsible for delivering or relaying it. If you lose one, your system is bad. Maybe you held it so long you got embarrassed. So eat crow and deliver it. To lose a message, to dead end a message is the cardinal sin of traffic handling, and if you are guilty of doing it you should try something else. There's no question that the system works. The fault lies with the operators who are supposed to make it work, and that's where the improvement must be made. We must be conscientious enough to do it right and finish it. It sure is discouraging to have people give you a negative answer when you ask, 'Did your friends ever get that message?'"

Answers to quiz

1) There's nothing obviously wrong with this address, so it would end up in the hands of a California amateur who has a Sun City outlet. But he would find the telephone number incorrect. Next he might look up K7DXN in the Callbook and find none. Many amateurs would thereupon send a service message to the station or origin. But note the discrepancy between the call and the state. There are K7 calls in California now that many amateurs who move carry their old calls with them, but K7 calls are still rare in California. There is also a Sun City, Arizona, and one in Florida and one in Kansas too, but the K7 call makes Arizona the prime candidate. Look over the K7DX calls in the book and see — you might find some clue. Sure enough, there is a K7DX in Sun City, Arizona. Try that before you decide it's undeliverable. Still, it might be a good idea to send a service



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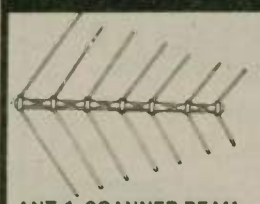

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World Radio History

message to the originator to suggest using a more complete address, making hopeless garbles less likely.

2) Detroit is a rather big city; why isn't there a street address? But wait, ZIP codes for Detroit begin with 482, and area code is 313. Area code 906 is Michigan's Upper Peninsula. And 49725 is the ZIP code for DeTour, Michigan — a small town on the extreme southeastern tip of the Upper Peninsula. Someone probably heard the DET and wrote down Detroit instead of DeTour.

3) This one could stump many a traffic handler. The problem is that the town and ZIP code do not agree. Which is correct? Most likely the message would go to Bristol (ZIP 24201), and, finding the message undeliverable there, the operator might notice the ZIP 22013 and find out it's for Bristow and send it on, hoping that a Bristow amateur can deliver it without a telephone number.

4) Two things wrong with this: Georgia's ZIP codes begin with 3, but 93704 is a correct one for Fresno, California. The second group in the phone number is an area code, not an exchange number (area codes are always groups of three figures, with the middle one either a zero or a one; exchange numbers never have zeroes or ones as the middle figure).

Look it up in the phone book, and you will probably find someone goofed along the way.

5) Two mistakes in this one too: the name of the state was omitted (the *Directory of Post Offices* will tell you quickly it should be New Jersey), and the telephone number is that of Directory Assistance.

6) And two here also: North Carolina's ZIP codes begin with 27 and 28; South Carolina's with 29. 29461 is the ZIP code for Moncks Corner, South Carolina. Second, 803 is an area code (the correct one for South Carolina) — not an exchange number, because the middle digit is zero. So you'll have to use your phone book for this one also.

It is not without reason that these examples usually contain several errors. You will find that when you discover one error, there's a good chance there will be more. Careless operators frequently make several mistakes in one message. If you discover an error, you shouldn't trust anything else in the message. But don't correct anything unless you are absolutely certain. You might change the wrong thing and in the process, cover up a clue that would have enabled the delivering station to unscramble it. Just pass it on as you receive it and add your observation in the form of an operator's note if you think it useful.

Long-distance telephone area codes

201 N New Jersey
202 Dist. of Columbia
203 Connecticut
204 Manitoba
205 Alabama
206 W Washington
207 Maine
208 Idaho
209 Fresno CA
212 New York NY
213 Los Angeles CA
214 NE Texas
215 SE Pennsylvania
216 NE Ohio
217 Springfield IL
218 N Minnesota
219 N Indiana
301 Maryland
302 Delaware
303 Colorado
304 West Virginia
305 SE Florida
306 Saskatchewan
307 Wyoming
308 W Nebraska
309 Peoria IL
312 Chicago IL
313 SE Michigan
314 E Missouri
315 N Central New York
316 S Kansas
317 Central Indiana
318 W Louisiana
319 E Iowa
401 Rhode Island
402 E Nebraska
403 Alberta
404 N Georgia
405 W Oklahoma
406 Montana
407
408 Monterey CA
409
412 SW Pennsylvania
413 W Massachusetts
414 SE Wisconsin
415 San Francisco CA
416 Toronto, Ontario
417 SW Missouri
418 E Quebec
419 NW Ohio
501 Arkansas
502 W Kentucky
503 Oregon
504 SE Louisiana
505 New Mexico
506 New Brunswick
507 S Minnesota
508
509 E Washington
512 S Texas
513 SW Ohio
514 Montreal PQ
515 Central Texas
516 Long Island NY
517 Central Michigan
518 NE New York
519 SW Ontario
601 Mississippi
602 Arizona
603 New Hampshire
604 British Columbia
605 South Dakota
606 E Kentucky
607 S Cent New York
608 SW Wisconsin
609 S New Jersey
612 Central Minnesota
613 E Ontario
614 SE Ohio
615 E Tennessee
616 W Michigan
617 E Massachusetts
618 S Illinois
619
701 North Dakota
702 Nevada
703 N & W Virginia
704 W North Carolina
705 N Central Ontario
706 Mexico
707 NW California
708
709 Newfoundland
712 W Iowa
713 SE Texas
714 S&E California
715 N Wisconsin
716 W New York
717 NE Pennsylvania
718
719
800 WATS Lines
801 Utah
802 Vermont
803 South Carolina
804 SE Virginia
805 Bakersfield CA
806 NW Texas
807 W Ontario
808 Hawaii
809 PR VI Bermuda
812 S Indiana
813 SW Florida
814 NW Pennsylvania
815 W Illinois
816 NW Missouri
817 N Central Texas
818
819 W Quebec
901 W Tennessee
902 Nova Scotia
903
904 N Florida
905
906 Upper Penins MI
907 Alaska
908
909
912 S Georgia
913 N Kansas
914 SE New York
915 W Texas
916 NE California
917
918 E Oklahoma
919 E North Carolina

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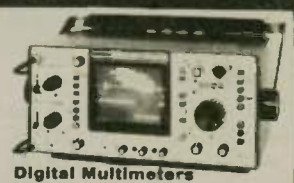

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		Net	Sale
AMB-1	Megohmmeter	$165	$130
LT8100	Recorder (Temp)	$172	$135
LAV21	Recorder (AC Volts/Amps)	$309	$245
Clamp on Amp Probe AC			
RS-1	0-6/15/40/100A 0-150/600V	$61.85	$48.24
RS-2	0-6/15/40/100A 0-150/300V	$61.85	$48.24
RS-3	0-6/15/40/300A 0-150/300/600V	$78.85	$61.50
RS-1000	0-15/40/100/300/1000 0-150/300/600V	$105	$81.78
ACD-1	(Digital) AC Amps Volts Res.	$165	$125
YO525	0-25A 0-150/600V	$40.25	$35

BECKMAN

		Net	Demo
Tech	300	$120	$99
Tech	310	$145	$119
Tech	330	$219	$179
All accessories available			

B & K

		Net	Demo
290	75 Range FET VTVM	$250	$199
820	Digital Cap Meter	165	139
830	Auto Range Cap Meter	209	169
1210	Color Bar Generator	145	119
1248	Deluxe Digital Generator	235	189
1420	Portable DC-15MHz Scope DT	825	699
1432	3" DT DC-15MHz Scope	895	709
1476P	5" DT DC-10MHz Scope	750	599
1479A	5" DT DC-30-MHz Scope	1175	949
1650	Tri-Output Power Supply	350	275
2050	100KHz-30MHz Sig. Gen.	195	149
2800	3.5 Dig. Port. DMM	100	70B
2810	3.5 Dig. Port. DMM	140	98B
2845	3.5 Dig. Auto Range DMM	175	125B
2910	RC Sub Box	73	59
3020	Sweep Function .02Hz 2MHz	365	295

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		New	Rent
43	UHF Thruline Watt Meter	$142	$105C
4431	Sampling Thruline Like 43	240	138C
82A	500 Watt Load HF-VHF-UHF Elements	275	145C
		45/55	35/45C

DATA PRECISION

		Net	Demo
175	3½ Digit Portable DMM	$219	$179
935	3½ Digit HH DMM	175	139
2480	4½ Digit Bench DMM	330	239

FLUKE

		Net	Demo
D800	(8022A) 3½ Digit DMM	$125	$100
D802	(8020A) 3½ Digit DMM	189	151
D804	(8024A) 3½ Digit DMM	249	199
D811	(8010A-01) 3½ Digit Bench DMM	309	247

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V-302	30MHz DT 1MV 5" w/Probes	945	576
V-302B	30MHz DT 1MV 5" w/Probes	995	796
V-550	50MHz DT 1MV 5" w/Probes	1695	1356
V-059B	7MHz TV Wave Form (Batt.) Port.	1200	960

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	Scopes	Net	Demo
LBO 308S	20MHz DT 3" Port AC/DC op	$995	$782
LBO 507	20MHz ST 5"	595	471
LBO 507A	20MHz ST 5"	625	495
LBO 508A	20MHz DT 5"	880	696
LBO 511	10MHz ST 5"	420	332
LBO 513	10MHz ST 5"	550	444
LBO 514	10MHz DT 5"	695	550
LBO 515B	30MHz DT Delay SWP	1580	1292
LBO 517	50MHz DT Delay SWP	1995	1595
LBO 520	30MHz DT Delay Line	1100	871

Meters, Generators, Counters

		Net	Demo
LMV-181A	AC MV 100 μV to 300V	$260	$213
LMV-182A	AC MV 30 μV to 300V	309	259
LFG-1300S	Func. Sweep Generator	495	381
LSG-16	RF Gen. 100KHz 100MHz (300 HAR)	180	138
LAG-26	AF Gen. Sine-SQ 20Hz, 200KHz	190	154
LAG-125	Sine SQ Gen 1MHz .03% Dist.	550	448
LCG-395	Video, IF, RF Pattern Gen.	395	225
LCG-397	Video, IF, RF Pattern Gen.	240	185
LDC-823S	Freq. Period Counter 250MHz	450	346
LDC-824S	Freq. Period Counter 520MHz	550	438
LFC-944B	VHF/UHF TV Field Strength Mt.	525	418

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	H.V. Probe 45KV 39-525-2	41.00	29.00
	Leather Case LM-FM 39-4-39	23.50	18.00
	Leather Case MS Scope 41-140	45.00	32.00

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ME524	3½ Dig. Buzzer 10A .8%	89.95	76.00

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MC535	3½ Dig. LED Bench/Portable Power, 4 C cells or opt. AC Adpt. same as VIZ WD760	$215.95	$133.00
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8090	3½ Dig. Ultra Thin	79.95	59.95

SCOPES — LATEST STATE OF THE ARTS (PROBES/1 YR. WARRANTY)

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6050	50MHz DT Sweep Delay	1695	1079	1025
6120	20MHz DT Built in DMM	799	765	690

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310FET	10 meg input Model	121.00	90.75
10	Clamp on AC Ammeter for 310	34.70	27.78
60	VOM Rugged, Protected 20K ohm/V	133.00	93.00
64FET	VOM Rugged, Protected	192.00	134.00
370	Sound Level Meter 40 to 140db	249.00	99.00

VIZ (RCA) (Closeout Note B)

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WV 120B	Power Line Monitor 120VAC	36.00	27.00
WV 516B	2K ohm/V Econ VOM	19.95	15.95
WV 520B	100K ohm/V Relay VOM	89.00	69.00
WV 547B	20K ohm/Tech VOM	35.50	25.00
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WA 504B	200KHz AF Generator	139.00	99.00
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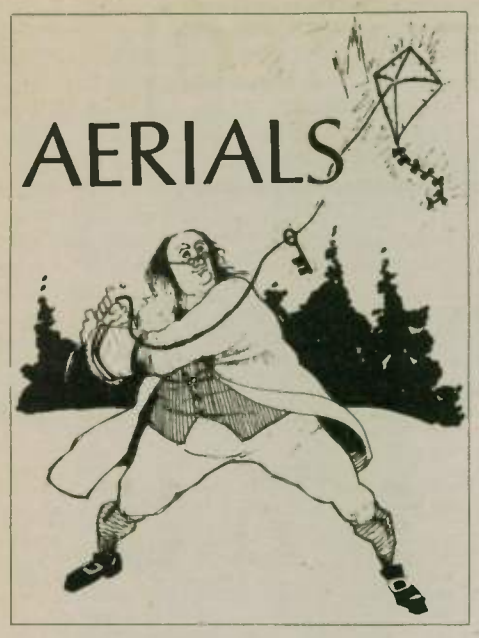
USQS

(continued from page 9)

W0EXG	KA0IKD	W0NR1	WB0UFG
KG0F	K0IPH	W0NZQ	K0UK
K0FA	K0IR	KD0O	W0UO
KA0FBZ	W0IUB	KB0OE	WB0UQN
WB0FCS	W0JIG	WB0OEE	KB0V
WD0FFX	KA0JQG	KB0ON	WA0VBW
KA0FPJ	KA0JQO	W0OOU	K0VGB
KA0FTT	KA0JSO	KB0PR	KB0VW
WD0FTV	K0JTW	KI0Q	KB0VY
W0FZO	K0JU	K0QC	WB0VYR
AK0G	KA0JUU	K0RF	WB0VYU
KA0GCN	KA0JWK	WB0RIW	K0WA
W0GN	WA0JYJ	W0ROP	K0WEX
WA0GNO	KA0KBY	KB0RR	WA0WGO
WD0GRR	KN0KCW	K0RW	W0WN
K0GU	W0KEA	KB0RW	WB0YJT
WA0GWC	KB0KX	KB0S	WB0YUC
AF0H	KA0LEN	K0SI	KF0Z
KG0H	WA0LMK	WB0SSX	N0ZA
WD0HRG	W0LOH	AF0T	WB0ZEP
W0HSC	WB0MDP	KF0T	K0ZR
WD0HWP	K0MGA	WB0TPN	W0ZRT
AB0I	WB0MSH	W0TQW	WB0ZSA
KI0I	AC0N	WB0TTL	
K0IEW	W0NH	K0UBA	

World Radio History



Kurt N. Sterba

In this month's doings we shall attempt to lead you away from some of the pi in the sky that is bandied about. Henceforth, you will be one of the great antenna authorities in your club because you will be one of the few who can prove what he's talking about.

While there are SWR meters, grid dip meters and (I take a back seat to no one in reverence for the) noise bridge, there is one other important instrument. Strangely it seems to be the least mentioned of all, while at the same time being the most "telling" instrument of all. For this is the one (and only) device that actually measures the "raisins in the rice pudding."

We address ourselves to the see-all and tell-all "field strength meter". Yes, while resonance vibrates us, lack of SWR excites us and zero reactance thrills us, what really matters is how much RF is getting to the other end, and only the field strength meter will tell you truly.

Small and inexpensive, yet considering its true value it is almost invisible in both the literature and in the shacks. Possibly, those "in the know" are trying to keep the secret to themselves. But never you mind; your friend Kurt will lead you to the land of maximum efficiency.

First, there seems to be a bit of argument as to whether different lengths of feedline will make a difference in SWR, etc. With the SWR bridge, all you see is what is happening at some given point. (Hopefully! See previous columns.) With the field strength meter, you see what is happening out there in the ether (as they used to call it).

Yes, you may be surprised at the effect of adding a 5-foot section of coax. For some readers, this will take the place of the little flashlight bulbs in your open wire line, and be much more accurate.

Is there loss in that home-brew coaxial switch of yours? The meter that measures what's in the air will tell you. Is your tuner "leaky?" Run power into a dummy load and put the FSM on top of the tuner. There's the answer!

What's your amplifier really doing for you? Run the exciter and watch the FSM. Then run the amplifier and compare the difference.

The FSM itself can be calibrated. Pick an unused spot on a band (preferably when poor propagation conditions exist), watch your power meter and the scale on the FSM. As you note power levels, first in 5-watt and then 10-watt increments, log output power and the resultant scale positions on the FSM. You will then have a plotted curve showing the relationship between power and field strength.

Translating the scale gradations into relative power levels, you can now try all manner of things with only your imagination holding the reins.

The efficiency of various pieces of coax you've had laying around since you stuffed them in your duffel bag before you came home on the *USS Missouri* can be checked.

The effect of your tuner can truly be observed. What is the effect of those corroded barrel connectors you've been using to connect up all those pieces of flea market RG/618382-1/2?

Are those JAN 1625s in your amplifier (with all the holes burned through the plates) having any effect besides warming up the room? The FSM knows all and tells all.

What happens by grounding this or that? Does whatever you do help or hinder? What is the effect of more radials? Balun? What really happens when you move up or down the band? Does this beam really have a front-to-back ratio?

Whatever manner of operation may be posed, the FSM has the answer. There are theories, there is practice, there are force lines cutting the antenna of the responsive indicator. It sees and it relates.

There are some things you may not agree with, but how can you argue? At some given point there is either more or less RF. That is it.

A cautionary note here for those who may have forgotten a point. Do not be baffled if you see different results on the two sides of resonance. You will not see bell-shaped curves because the climb up C and the fall of L produce different shaped lines relative to power.

What we've discussed here is shack and backyard monitoring. If your garden-variety FSM runs out of sensitivity, there are instruments with solid-state amplifiers inside which work on lower power levels or at greater distances.

Thus we open up the idea of true experimenting for those with access to parks or farmland. Armed with binoculars or cohorts with hand-helds, all manner of shapes, spacings, etc., may be tried and you can see how much sausage comes out of the tube.

Constant monitoring of the power being fed into the antenna, related to the effect at the other end will enable you to be the learned one in your club. You can speak from the position of one who has actually MEASURED what others merely guess at.

Going out to your uncle's farm with full-size antennas (no modeling here) will allow you to speak with authority when the question of SWR arises.

As you lengthen or shorten the antenna, measure the resultant SWR and see what happens at the field strength meter, you'll know what's what!

Spacing, matching, staggered lengths or whatever, the needle at the other end is the judge. Take the VF, T, L, PI, hats and coils, the long and the short of it. The FSM is what counts.

What truly happens? I could tell you, but then you might not go and do it for yourself, and that's the only way you can become a true believer.

(Kurt N. Sterba, as long-time readers know, is not a real name. We regret his hiding behind this O'Henry-type facade but he insists upon it. As he puts it, "Let them go and bore Lew McCoy, bending his ear with ideas for underground antennas or radiating trees. Me, when I go to a hamfest, I want to enjoy myself!") □

Dear Kurt . . .

Dear Kurt N. Sterba:

As an old ham who has experimented with antennas since I fell out of a tree putting up my first one in 1919, I enjoy reading your articles. I write antenna articles myself in **Ham Radio, Ham Radio Horizons,** and **73 Magazine.**

My main objection — a small one — to your articles is that they tend to amuse rather than inform. However, in general I agree with what you say.

There is one statement with which I take exception. That is that velocity factors are for feedlines, not antennas. Velocity factors certainly do have an effect on antennas. If you had stated that they did not have anything to do with antennas made of bare metal, I would agree with you, but insulated metal with a dielectric other than air does not fall in this category.

For example. Any CBer can tell you that a steel whip for 27 MHz is 108 inches long. If it has a fiberglass coating on it, as many do, it will be 96 inches long. This makes a velocity factor of approximately .889.

I have an antenna, a style 20 Columbia Products whip, catalog number AT-1011U, which is in 4-foot sections. I use eight sections for 40 meters, and the total length is 32 feet. I used a pair of them for many years running 40-meter phone patch traffic to Antarctica. These antennas at the base are about 1½ inches in diameter and the conductor for the first 5 sections is ¼ inch copper rod. The rest is fiberglass. The top three sections taper down to the size of a pencil with center about size 16.

I found that instead of 32 feet 6 inches for 7.2 MHz, I had to cut them to about 29 feet 6 inches. I don't remember the exact length of the trimmed top section, but I still have it. It is in a box, and I didn't feel the necessity to dig it out to prove it to you. This is a velocity factor of about .9 — not far from the .889 of the other.

If you will write to Shakespeare and ask for their circular on Style 20 antennas, they will send you a detailed table of both resistance and reactance for various lengths of this antenna.

In 1965 I paid $314 each for these 32-foot whips, so by now they are perhaps over $500 each, in case you wish to buy a pair to test my figures.

I have therefore decided that insulation of any type on any type of wire or rod would have a velocity factor, and I have always measured my antennas when made of any insulated wire by other means than a tape measure.

I agree, of course, that a velocity factor for a folded dipole is ridiculous, IF it is made of bare wire. I have a friend who

(please turn to page 49)

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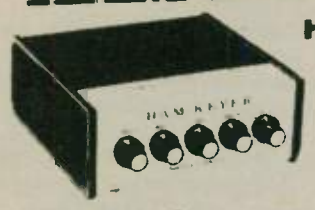

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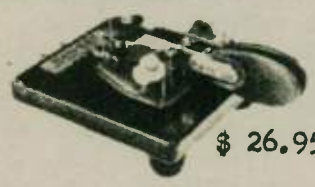

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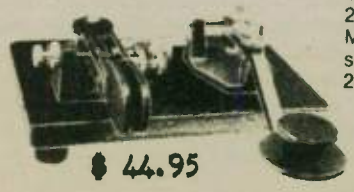

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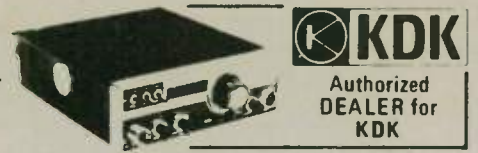

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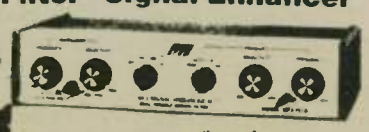

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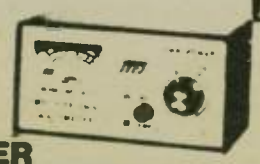

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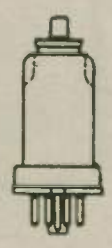

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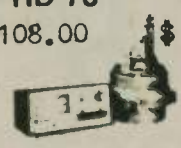

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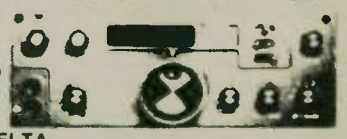

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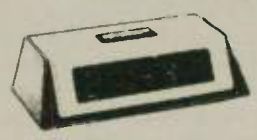

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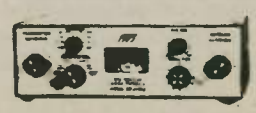

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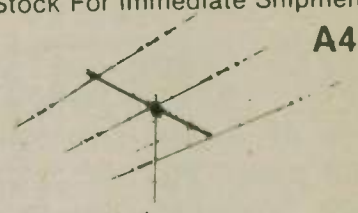

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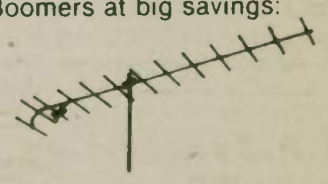

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CONSTRUCTION

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Techniques

"This circuit works on paper, but I can't make it work when I build it." Really, no circuit works on paper. You have to build it to have it work at all. And, of course, how you build it has a lot to do with how it works, even with whether it works.

Many different techniques have been developed for constructing electronic gear. Some of them are more suited to one-of-a-kind projects, such as an amateur is likely to build; others work better for something that is to be produced by the thousands. It makes little sense to spend $1,000, for example, to purchase a special machine to build something that otherwise would have cost only $100 using another technique. But it could be quite economical if it saved only 50 cents per unit on a production run of 10,000 units. This must always be borne in mind, for when one tries to do things like the manufacturers do, thinking it's the best way to do it, one may be going to needless trouble and expense, and the final result may not be as good as could be achieved by another method.

As in anything else, the first thing to do is to decide clearly what one wants to do. Is this to be a permanent part of the station? Or is it something built just to try out an idea? Do I know exactly how this will be built, or will there be much cut-and-try involved in developing the circuit? Is this to be used indoors at the regular operating position, or will it go on top of the antenna mast, or mobile, in a ship, or carried on a parachute jump or what? Will I be the only one to use it, or should I make it so anyone can use it? Is it to be a one-of-a-kind thing, or something easily duplicated? Are there any special requirements because of some of the parts? Do I want to pack it all into a small space, or is there room to spread the circuit out? And of course, how hard do I want to work and how much do I want to spend?

Here are several techniques that are or have been widely used.

Breadboard construction

Many long years ago, people baked their own bread at home, and used a large piece of wood as the working surface on which to knead and cut the dough and form it into loaves — jobs now done in bakeries by machines called dividers and rounders. In those ancient times, amateurs — and professionals engaged in development work, too — used similar pieces of wood as a base on which to construct electronic circuits. These days, breadboards are not much used either for bread or for electronic gear, but can still be used for either purpose. As I am a loafer, not a baker, I won't say more about the first and original use of breadboards, but will confine my remarks to those used for electronic construction.

The size depends on what you want to build, of course. Odd scraps of plywood or of 1-inch lumber will do. In the days when breadboard construction was common, most of the parts were built with breadboard mounting in mind. Transformers, capacitors and tube sockets all had mounting flanges. These days, we use parts of much smaller physical size, and usually mount them by their leads. Use soldering-lug terminal strips. You can buy them for 25 or 30 cents apiece from Radio Shack, or you can look in the catalogs of the bargain dealers and find them for about 2 cents each in assortments of 50 or 100. You have to take what they give you in the assortments, but you usually find you can use most of what they supply.

You'll find the spacing rather wide for transistors with short leads and for DIP integrated circuits, however. I often solder two leads to terminals on the strip, and use them to support the device, soldering to the other leads without any support, but running the wire or device lead to a nearby terminal to keep stresses down.

Another method to use with DIP devices is what is called "dead bug" wiring. The devices are glued to the breadboard with their leads sticking up, giving rise to the name — the result looks like dead flies stuck to a piece of flypaper. Leads are soldered to the integrated-circuit lugs. I often use single strands from a piece of old lamp cord. It is usually about #34, so will put little stress on the terminals; because it is so small, only a minimum of heat is needed to solder it, reducing the thermal stress on the device.

Metal chassis

In what might be called the classical period of electronics, say 1930 to 1960 or thereabouts, the standard type of construction was to use a metal chassis. Larger parts were often designed to mount through the chassis, with the part mostly or entirely above the chassis, but with electrical connections below. Tube sockets and large capacitors usually required round mounting holes, but transformers and chokes often required square or rectangular cutouts. This type of construction is well adapted to mass production, as the metal can be stamped and formed rapidly when proper dies are used. The parts almost automatically fall into the correct place and were usually riveted, since using screws takes longer and costs more.

Parts were wired point-to-point, using the terminals of the larger devices as tie points, with the addition of a few terminal strips as needed.

Sometimes manufacturers assembled the small parts, resistors and capacitors and the like, on a strip of plastic that was mounted somewhere on the underside of the chassis, and connected these parts to the appropriate points by means of cables and wire harnesses. It made a neat and clean assembly, but it could be hard to identify which component goes with which circuit without a detailed service manual.

These techniques are better suited to mass-produced gear, developed after the prototype has been built and de-bugged, when every detail of the circuit is already known beforehand. But it is widely used by amateurs too, because the metal chassis provides excellent shielding for the circuit. You'll find, however, that there will usually be extra holes drilled in a chassis for an amateur's project, unless it's an exact copy of something else — holes that represent design changes, and often holes that are left from another project for which the chassis was used previously.

Circuit boards

The advantages of punched metal chassis for mass production are achieved even more effectively by the use of circuit boards, so much so that it is now the standard way to mass produce electronic gear. In fact, the technique lends itself so well to automation that few manual operations remain in many cases. Boards are etched, punched, tinned automatically, and components are inserted by machinery, too. Finally, the foil side of the board is dipped in molten solder, making all the soldered connections at one time.

Circuit-board construction has taken over in kits, too. Any kit you buy these days is almost sure to have one or several boards to be assembled. It eliminates many possible mistakes, and also reduces the number of steps, making it more likely that the finished article will work satisfactorily — even when assembled by inexperienced hands.

For the same reason, magazine articles often give circuit-board layouts for their construction projects. But how about the amateur who wants to do something a little different? Can circuit boards be used? They can, but it involves extra work. And, although circuit boards reduce the chance of mistakes in kit-built and built-from-articles gear, they provide additional opportunities for mistakes in prototype work — mistakes that may be harder to correct than when using other techniques.

If you want to use a circuit board for a project, it's best to first use up a lot of paper making layouts and not etch the actual board until you're sure you have it right. Cross-ruled paper 10 squares to the inch is ideal for making layouts, because most devices are 0.1 inch lead spacing or some multiple of that. The pins on a DIP integrated circuit, for example, are 0.1 inch apart in each row. Try to avoid hav-

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World Radio History

ing lines cross one another. Where you can't avoid it, use a jumper wire on the device side. Often, you can so locate a resistor or capacitor that a jumper is not needed. It often takes several trials to get everything on the board, and into the most economical arrangement.

When you are satisfied with the layout, you are ready to etch the board. There are two principal ways to do this. Some boards are photo-sensitive, so all you have to do is make a drawing of the circuit, place it over the board, expose the board to light, develop and etch. This is especially convenient if you expect to make several identical boards.

If your board is coated with plain foil, you have to prepare it manually. I use black electrical tape cut into strips to cover the areas where the copper is to remain. Strips should be at least one-twentieth of an inch in width (2 millimeters). I usually make them as wide as possible, consistent with leaving enough separation to minimize short circuits from solder bridges. The etchant will last longer if it has less metal to remove.

To prepare the board, place the final layout over the foil and mark the location of the holes for leads with a center punch. Then you can use the punch marks as guides in applying the tape. Press the tape down good so that it will exclude all the etchant. Etch the circuit according to the directions given with the etchant, insert and solder the components, and you're ready to go — you hope!

Variations on the circuit board

It is possible to realize many of the printed circuits without going to all that trouble, resulting in devices as compact and much easier to modify, by building them on perforated plastic boards not coated with foil. Connections are made by wires between the various components. You can use the wire wrapping technique instead of soldering, if you have the tools. This technique is particularly valuable if you expect to do much experimentation with the circuit.

Radio Shack also offers several plug-in boards for making up circuits on a temporary basis. Devices are simply plugged into any of several hundred jacks on the face of the board. The jacks are connected in parallel in groups of five, so wires and other devices can be inserted to make connection to one another. Very handy for the experimenter.

One other technique I have found useful is to make circuit boards with a hacksaw. The foil surface of the board is cut into squares by hacksaw cuts that go through the foil without cutting the plastic base of the circuit board. You can drill holes in the boards as is standard procedure, or you can solder the components to the foil side without any wires going through the board. The latter procedure is the one I use, as it makes it easier to change things when necessary, and also easier to trace the circuit when looking for trouble or when modifying it.

Ken Hand, WB2EUF offers a variation of this technique that he has used successfully in an article which follows. These mechanical methods of cutting a board are not of much help, however, if one wishes to use integrated circuits in the DIP package.

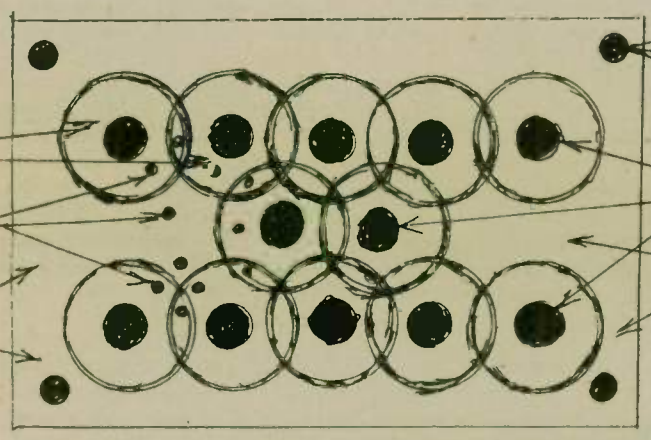
Finally, there are adhesive-backed foil materials that you can stick to a piece of plastic to put together just about any kind of circuit board you desire. I've never used this technique, however, so I can't comment on it.

There's more than one way to skin a cat, the proverb goes. And there's more than one way to assemble a piece of electronic gear. It's good to look at them all when planning to build something, and not assume it has to be done the same way as the manufacturers do it. You might save yourself time and money, and maybe save yourself problems too, if you use something else. □

A no-chemical, no-mess circuit board

Ken Hand, WB2EUF

Have you ever wanted to build something using a circuit board, but were discouraged by the need to use messy chemicals and all the rest of the procedure that goes into etching one? A few months ago, I thought of another way to do it. All that is needed is a hole cutter or hole saw and a small electric drill, which you can get in any hardware store.



Use the hole cutter or hole saw to cut a number of overlapping circles through the foil, as shown in the sketch. Just cut through the foil; cut the plastic base as little as possible.

Use a 1/16-inch drill to make holes for leads for components where you want them. This size hole will pass wire up to #14, which is as large as would usually be needed on a circuit-board project. You can also pass wires through the center holes made by the hole cutter, or you can mount transistor sockets in them.

The large pads produced by this method are stronger than the small ones usually found on etched boards, so there is less danger of pulling the foil away from the board when soldering.

This type of board allows more room for experimentation and modification, and less room for mistakes than the usual board. When it is necessary to connect two pads together, simply run a jumper between them. You can wire the board in the conventional way, with the components on the side opposite the foil, and the leads fed through holes and soldered to the foil, or you can mount the components on the foil side and simply solder the leads to the foil.

I have built an electronic keyer using tubes and a 5-watt solid-state transmitter, and this design served excellently in both cases. Try it. You don't have to wait for chemicals to react, and there's no mess to clean up either. □

Aerials

(*continued from page 46*)

made one of twin lead and the dimensions seem to indicate there is a difference from one made of bare wire with spacers. I have a piece of twin lead purchased for that exact purpose for a ZL special, but have not gotten around to putting it up yet. If and when I do, I will check it for velocity factor.

I often get carried away and make statements which later I realize are not correct, so I can understand how you can do the same. I do, however, suggest you ask some CBer how long a fiberglass whip is, and write Shakespeare and ask them how long a 7.2 MHz fiberglass whip is.

73
JERROLD A. SWANK, W8HXR
Washington Court House, Ohio □

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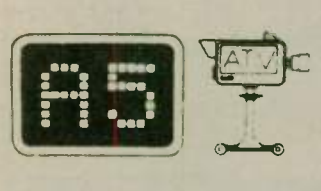

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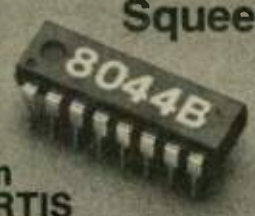

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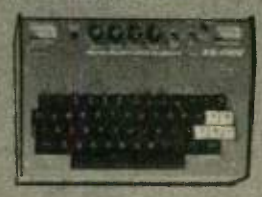

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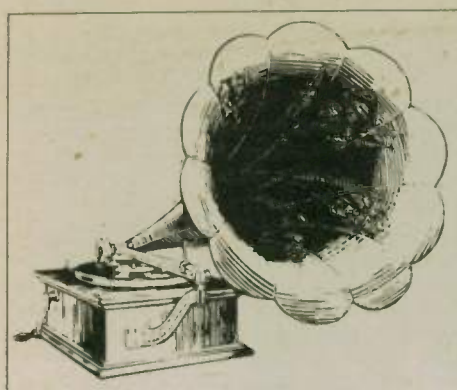


OLD-TIME RADIO

Carl C. Drumeller, W5JJ

When it was wireless

Best guessing is that a Frenchman introduced the term *radio* in about 1900. The more popular name — wireless — remained in common usage in the United States until about 1922. In England, it was predominant for several more decades.

Here is the tale of Amateur Wireless in the late summer of 1921. This writer was receiving his introduction to what was to become his central interest — first as a hobby, later as a profession.

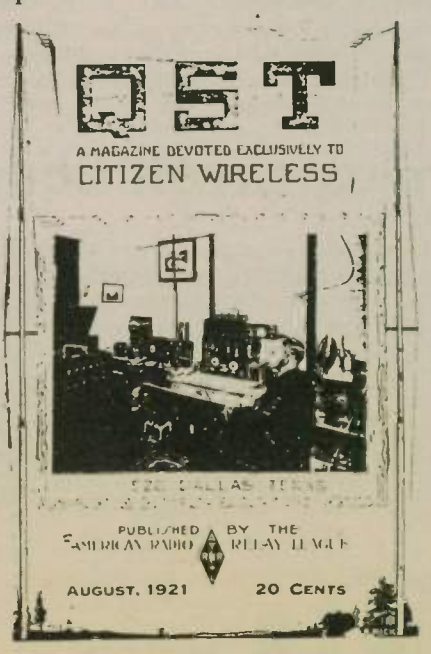
Let's start out with a reproduction of the cover page of the magazine **QST** — then, as now, the leading promoter of amateur participation in a field that was capturing an increasing amount of public interest. Note that the magazine is "Devoted Exclusively To Citizen Wireless." Citizen, not amateur, and most certainly not *ham*! In fact, I found only one use of the term *ham* in the August, 1921 issue, and that was in a humorous story.

The station illustrated, 5ZG, depicted the "state of art" for the equipment of a conservative and mature operator. You'll see more receiving gear than transmitting equipment. After all, a spark transmitter — even one running the full legal kilowatt — can be (and was) simple indeed. This one consisted of a Thordarson 1kW transformer, a six-section high-voltage capacitor for its secondary, an open non-synchronous rotary spark gap (ah, the noise and the smell of ozone!), and a home-made oscillation transformer. Tucked back into a corner, at the far end of the operating desk, removed as far as possible from the lordly oscillation transformer, you'll spot a little vacuum-tube transmitter and its motor-generator power supply. To produce its Continuous Waves, it boasted two Radiotron UV-202 5-watt tubes in parallel in the Colpitts oscillating circuit. To modulate these continuous waves for voice transmission, two more UV-202 tubes, also in parallel, were used in the Heising "constant current" modulating circuit. The oscillator also could be make-and-break modulated with a key for telegraphy.

The receiving equipment was designed to get maximum use out of the expensive (and short-lived) vacuum tubes. A Paragon RA-6 "short wave" tuner shared the detector and two-stage audio amplifier with a home-made "long-wave" tuner using honeycomb coils. It's well to remember that most wireless enthusiasts were quite interested in receiving the "long-wave" commercial and naval stations. These operated on wavelengths from 300 to 30,000 meters (1000 kHz to 10 kHz.) Note the loop receiving antenna; many amateurs used one for Medium Wave (300 to 3000 kHz) reception, but they never were very popular for "short-wave" reception.

Now, let's venture inside the **QST**, with the inside of the front cover catching one's eye immediately. It's an advertisement for the whole range of Radiotron vacuum tubes, listing the characteristics and cost of the UV-200 detector, UV-201 amplifier, UC-202 5-watt transmitter, UV-203 50-watt transmitter, and UV-204 250-watt transmitter. That UV-200 sold for five 1921 dollars, about equal to 50 1981 dollars, so you can see why they often did double-duty!

The lead-off technical article was by R.A. Heising, explaining how his famous constant current modulation system functioned, and why it is more effective than others. It was followed by Charles Kinyon telling how to receive spark signals on a set using honeycomb coils as inductors. "Amateur Quenched Gap Problems" were treated in detail by H.J. Tyzzer, although very few amateurs used quenched spark gaps. Using a loop antenna with a superheterodyne receiver rated three pages; it was years before superhets became popular with radio amateurs . . . they took too many tubes and were too complex to build, when compared with a simple detector and two-step!



New apparatus: The main item was a decremeter. A decremeter was a piece of measuring equipment that every spark station was supposed to have in order to check its emissions to ensure they were not too broad (in frequency). You might say, in mathematical terms, that it was to a spark transmitter as a spectrum analyzer is to an SSB transmitter; they performed the same needed service . . . and about one radio amateur out of 10,000 had one!

Several amateur stations were described; a section was devoted to affiliated clubs; readers took up six pages to present their views and technical tricks. "Calls Heard" received five pages, but the "Operating Department" rated eight pages in the center of the magazine. Much more space was given to each station than is possible nowadays.

Advertisers split their appeal about equally between users of spark and vacuum-tube equipment. One item has not changed at all in 60 years. The H.H. Eby binding posts! In addition to RCA tubes, AP and RAC-3 Audion (later called the Meyers) tubes were touted. Chicago Radio Laboratory advertised their Z-Nith line. Yes, that's the line you know as Zenith. It got its name from the call letters, 9ZN, of its owner. Weston, Thordarson, General Radio, Westinghouse, Magnavox, and Acme are among the advertisers whose names have survived to recent times.

Thumbing through this old issue of **QST** has brought back many memories . . . and a bit of heart-break. I just wish that I, as a 14-year-old boy, could have owned some of those lovely items! Oh well, my Ford spark coil transmitter and crystal detector receiver provided much joy and stimulated experimentation and advancement! □

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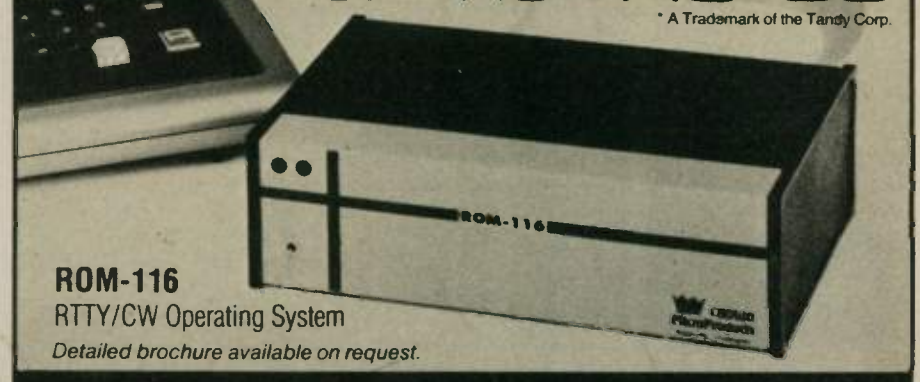

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PRODUCTS

Product Review

The Palomar preamplifier

Norm Brooks, K6FO

When I agreed to try one of Jack Althouse's Palomar preamplifiers on my transceiver, I did so with some misgivings. After all, I had one of the newer transceivers on the market, and I considered the receiver "hot."

So I took it home and put it into the coaxial line at the transceiver. I worked a lot of DX, participated in a couple of contests and reported into my weekly MARS nets. If you wanted to take the preamp away from me now, I wouldn't let you. I've found it to be a very useful addition to my station complement.

Here are some of the things I've learned from using the preamp for a few months:

1) You need it less than half of your operating time. Obviously you don't need it when you're working strong stations.

2) The preamp is most needed when you can faintly hear the DX station, and his signal hardly moves the S meter. Under these conditions, the preamp easily brings the signal up out of the noise.

3) When interference is present on one side of the signal you're trying to copy, it sometimes helps to turn the receiver gain down, and replace that gain with the preamp. Tuning the preamp to one side or the other is then sometimes helpful.

4) The preamp is very helpful when the band is "going out." Signals that fade out to zero can still be heard with the preamp switched in. I presume the same condition would exist when the band is "coming in."

5) Try the preamp when the band sounds "dead." You may find that there is a layer of signals that you can't hear without the preamp. It's amazing to find the preamp allows you to hear a signal and the S meter still reads zero.

6) In working a round table QSO or a DX net, and stations are all around you, the preamp helps save turning the beam when receiving stations to the side or back of your beam.

7) An operating note: Don't run the preamp wide open. If you do, you'll probably bring up the noise more than the signal. I found that I got the best results by using the preamp gain control sparingly.

Needless to say, I'm very happy with the Palomar P-310X Preamp. It's a technically fine instrument. It looks well in the shack. And at the price, I consider it a bargain. □

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The MFJ-401 and MFJ-405 Econo Keyer II from MFJ Enterprises is a brand new, reliable, full feature economy keyer using the Curtis 8044 IC for reliability.

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More than 20 products including antennas, filters, couplers, converters, preamplifiers and hard-to-find books and frequency lists make this catalog "must reading" for the serious communications monitor.

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The new MFJ-812 is a VHF SWR/Wattmeter/Fieldstrength meter combination. It keeps you informed about your antenna and feedline as well as your rig's output.

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The MFJ-812 measures 4¼"W × 2¼"H × 2¾"D. The all-aluminum cabinet has an eggshell-white front panel with black top and sides.

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The MFJ-810 is like the MFJ-812, less the field strength function. It is available from MFJ Enterprises, Inc. for $24.95 plus $4 shipping and handling.

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World Radio History

CONTESTS

SMIRK Party

The 1981 Fall SMIRK Party will begin at 0000 GMT, 7 November and end at 2400 GMT, 8 November. Sponsored by the Six Meter International Radio Klub. Easiest contest ever — no dupe sheets, check logs, or date-time groups! However, entries *must* be on the official *September 1981* entry blank which is available (with SASE) from KC5TK, 6821 West Avenue, San Antonio, TX 78213. No crossband, repeater or multi-operator contacts accepted.

Exchange: SMIRK number and multiplier information.

Multiplier: U.S. and Canadian stations use ARRL Section. All others use province prefecture, state or ARRL country (Washington, D.C. counts as multiplier).

Scoring: SMIRK X2, plus non-SMIRK X1, X multiplier = score.

Awards: Trophy for overall high score in two divisions: "U.S./Canada" and "Foreign." Certificates for high score in each ARRL section, province, prefecture, state or ARRL country.

Entries: Send entries to SMIRK Party, c/o KC5TK at above address. Entries must be postmarked not later than 22 November 1981 and cannot be returned.

International OK DX Contest

The participating stations work stations of other countries according to the official DXCC Countries List. Contacts between stations of the same country count only as a multiplier — but 0 points.

Contest date and period: every second Sunday in November, (8 November 1981), 0000 UTC to 2400UTC.

Frequencies: 1,8 to 28 MHz, CW and Phone may be used. Crossband as well as cross-mode contacts are not valid.

Number exchange: **Phone** — four numbers, RS report plus two figures indicating the number of the ITU zone. **CW** — five numbers, RST report plus two figures as above.

For the list and map of the ITU zones, please send three IRCs to CRC (Central Radio Club), P.O. Box 69, 113 27 Praha 1, CZECHOSLOVAKIA.

Scoring: A station may be worked once only on each band. A complete exchange of codes counts one point, but three points are earned for a complete contact with a Czechoslovak station.

Multipliers: The sum of the ITU zones worked on each band are multipliers.

Categories of participating stations: A — single operator all bands; B — single operator one band; C — multi-operator all bands.

Any station operated by a single person obtaining assistance, such as in keeping the log, monitoring other bands, tuning the transmitter, etc., is considered as a multi-operator station. Club stations may work in category "C" only.

A separate log must be kept for each band, and must contain the following data: date, time (UTC), station worked, exchange (sent/received), points, ITU zone multipliers. The log must contain in its heading the category of the station (A, B or C), name and family name, call sign, address, band (or bands). There is also a sum of contacts, QSO points and multipliers and the total score of the participating station.

Each log must be accompanied by the following declaration: "I hereby state that my station was operated in accordance with the rules of the contest as well as all regulations established for Amateur Radio in my country, and that my report is correct and true to the best of my belief."

A performance list of participates will be worked out by the contest committee for each country. A certificate will be awarded to the top scoring operators in each country and each category.

The "100 OK" Award will be issued to stations for contacts with 100 Czechoslovak stations, and the "S 6 S" Award (or endorsements for individual bands) may be issued to a station for contacts with all continents. Both awards will be issued upon a written application in the log. (No QSL cards are required.)

Logs must be sent to the Central Radio Club, P. O. Box 69, 113 27 Praha 1, Czechoslovakia, postmarked no later than 31 December of the year of the contest.

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DVRA'S QSO Party

The Delaware Valley Radio Association's Second Annual QSO Party will be held from 2300Z, 13 November until 2300Z, 15 November. Phone and CW. Minimum of five QSOs for a certificate.

Suggested frequencies: **Phone** - 1820, 3900, 7235, 14280, 21360, 28610; **CW** - 3500 from low end. **Novice** - 7135, 21105, 28105.

Send log and SASE by 15 December to: DVRA, Box 7024, Trenton, NJ 08628.

Delaware QSO Party

The annual Delaware QSO Party will start at 1700 GMT, 14 November, and end at 2300 GMT, 15 November.

Sponsored by the Delaware Amateur Radio Club, rules will be the same as last year. Stations may be worked once per band and per mode for QSO and multiplier credits.

Exchange: QSO number, RS (T) and QTH. County for DE stations, ARRL section or country for others.

Suggested Frequencies: CW-1805, 3560, 7060, 14060, 21060, 28160: SSB-1815, 3975, 7275, 14325, 21425, 28650; Novice-3710, 7120, 21120, 28120.

Scoring: Delaware stations score 1 point per QSO. Multiply total by the number of ARRL sections and DX countries worked. Others score 5 points for each Delaware station worked. Multiply total by the number of Delaware counties worked on each band and each mode (maximum of 36 multipliers possible). There are three Delaware counties — Kent, New Castle and Sussex.

Awards: Appropriate awards will be given to top scorers. In addition, a certificate will be awarded to all stations working all three Delaware counties. If you work all three counties and want the "WDEL" award, send two 18-cent stamps and an address label.

Mailing deadline for logs is 14 December; logs to be sent to: Charlie Sculley, AE3H, 103 E. Van Buren Avenue, New Castle, DE 19720.

Send an SASE for a copy of the results.

Telephone Pioneers QSO Party

The John D. Burlie Chapter No. 89 of Telephone Pioneers of America cordially invites all Telephone Pioneer Amateur Radio operators in the United States and Canada to participate in contacting as many individual members as possible and to reach members in as many different chapters as possible.

Rules: The QSO Party will start at 1900 UTC, Saturday, 5 December 1981, and will end at 0500 UTC on Monday, 7 December 1981.

Fifteen "bands" are defined for use during the QSO Party. These are:

1.8: 1.800-2.000 MHz	14.0: 14.00-14.20 MHz	29: 28.5-29.7 MHz
3.5: 3.500-3.775	14.3: 14.20-14.35	50: 50.0-54.0
3.9: 3.775-4.000	21.0: 21.00-21.25	144: 144-148
7.0: 7.000-7.150	21.3: 21.25-21.45	220: 220-225
7.2: 7.150-7.300	28.0: 28.00-28.50	UHF: Above 420

Any station representing a different chapter from the contestant may be contacted on any or all of the 15 bands for a maximum of 15 points per station, with no more than one point per band. Any station in the *same* chapter as the contestant may be contacted *once* for a maximum of one point per station; this contact may be on any band.

Phone user: Call "CQ Telephone Pioneers."

CW User: Call "CQTP." Please "spread-out" over the frequencies indicated below.

Suggested phone frequencies: (MHz) 3.955-3.975; 7.265-7.285; 14.285-14.305; 21.355-21.375; 28.665-28.885; 50.10-50.25; 144.275-145.500 and 146.52.

Suggested CW frequencies: (MHz) 3.555-3.575; 7.055-7.075; 14.055-14.075; 21.055-21.075; 28.055-28.075; (Novice/Tech): 3.725, 7.125, 21.125, 28.125.

Scoring: Total score equals contact points times chapters contacted. NOTE: Only one multiplier may be taken for each chapter worked. The maximum multiplier is 97 (TPA chapters 1-97) plus no more than five ITPA chapters.

Exchange: Contact number, chapter name and number. (ITPA chapter name only.)

Reporting: Obtain log sheets from your Amateur Radio Club Coordinator or Pioneer Administrator. Send logs showing date, time station worked, chapter name and number, contact number, and your claimed score postmarked not later than 15 January 1982 to: Ted Phelps, W8TP; John D. Burlie Chapter No. 89; Telephone Pioneers of America; c/o Western Electric, Dept. 45150; 6200 East Broad Street; Columbus, OH 43213.

SOWP Christmas Party

The Society of Wireless Pioneers (SOWP) will hold their annual Christmas CW QSO Party on Sunday, 20 December 1981. The Party will cover the full 24-hour GMT period and will be the 6th annual Christmas on-the-air party held by SOWP.

This special event gives SOWP members an opportunity to meet on the air and to exchange season's greetings and other pleasantries. There are no formal exchange requirements and no need for members to submit logs.

As in past years, the call is CQ SOWP, and all members of SOWP holding amateur licenses are urged to take part. This is another opportunity to renew old friendships, establish new ones and to continue a camaraderie developed over the years.

To provide a gathering place, it has been suggested that calls be made between 50 and 60 kHz up from the low end of each amateur band.

Suggestions or additional information about the party, as well as information on membership in SOWP, can be obtained from the Party Coordinator, Bill Willmot, K4TF, 1630 Venus Street, Merritt Island, FL 32952. An SASE would be appreciated.

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World Radio History

Iowa

The Sooland Repeater Association will hold its 6th Annual Auction at the K-D Stockyards Station in Sioux City, Iowa on 1 November. The docks open at 9:00 a.m. The auction begins at 11:00 a.m.

This is a large auction, so we need lots of buyers and lots of sellers. Auctions are fun — door prizes, too.

Talk-in on 37-97, 31-1, 31-91, and 52-52. For information, contact Roland Holder, WB0SFZ, (712)239-1749 or 239-3053.

Michigan

The 16th Annual Hazel Park Amateur Radio Club Swap and Shop will be held Sunday, 6 December 1981, at Hazel Park High School in Hazel Park, Michigan. Hazel Park High School is located on Hughes Street at 9½ Mile Road, one mile east of I-75.

Tickets are $2. Tables are 75 cents per foot. Doors open at 8:00 a.m. with main prize drawing at 2:00 p.m. There will be plenty of food and free parking, plus hourly door prizes. Grand prizes, which will be announced later, are included with admission ticket.

Talk-in on 146.52. For more information send SASE to: Jack Field, WA8UPU, 1444 E. Evelyn, Hazel Park, MI 48030.

Minnesota

The annual winter hamfest of the Courage Center HANDI-HAM System will be held on Saturday, 5 December 1981 at the Eagles Club in Faribault, Minnesota. There will be a flea market, dinner at noon, program and prizes.

For more information, contact Don Franz, W0FIT, 1114 Frank Ave., Albert Lea, MN 56007.

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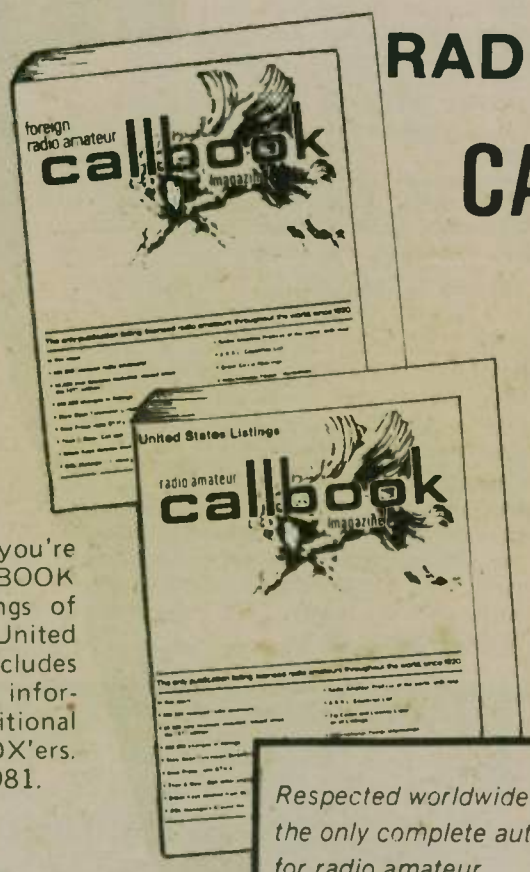

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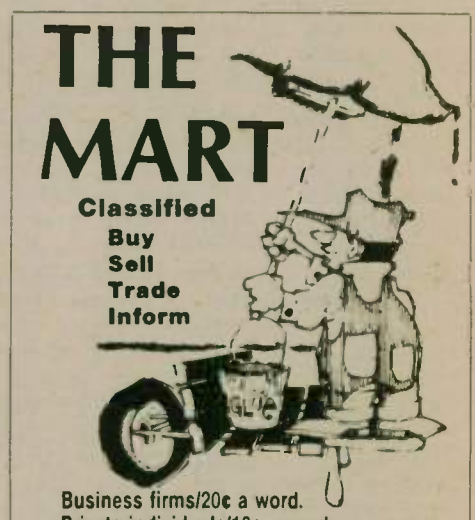

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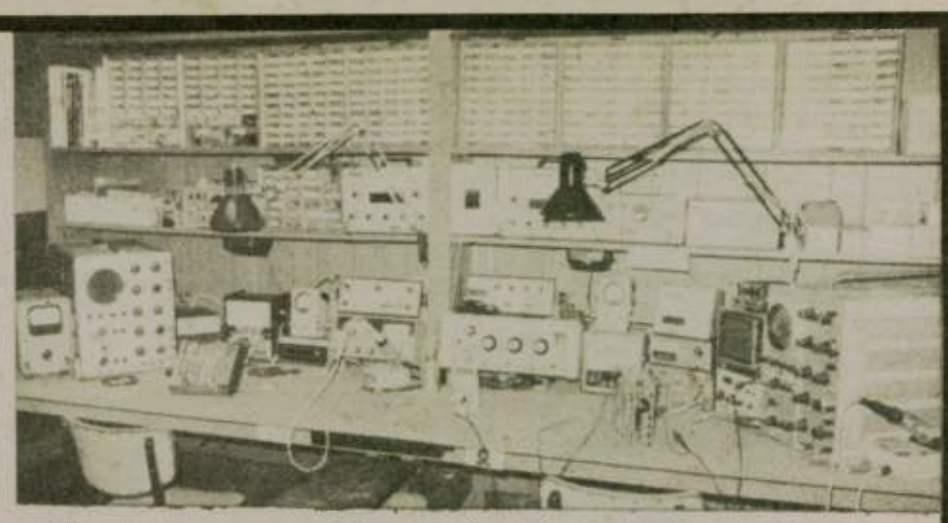

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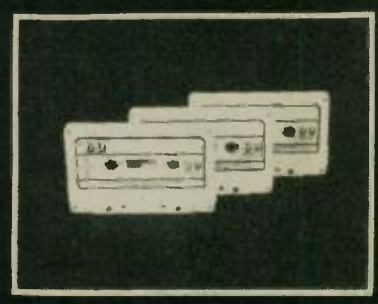

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