



the RARR RAG

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ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 43

FEBRUARY 1991

NO. 6

GERALD ENGLISH, KB2DVV, METEOROLOGIST FROM THE WEATHER SERVICE, TO SPEAK AT FEBRUARY 1st MEETING

Jerry English, Meteorologist from the National Weather Service in Rochester, will speak at the February meeting. The title of his presentation is: *Downbursts and Tornadoes.*

Jerry has helped coordinate good weather for the Winter Fun Fest in February and the Picnic in June. We don't know how he does it, but we are thankful that there is a ham connection with the Weather Service.

The meeting will be at 8:00 p.m. at the 40/8 Club, 933 University Avenue. Plan on getting there early for the February meeting.

FUN IN THE SNOW?

It's time to play in the snow. Saturday, February 16, 1991 is the date for the annual RaRa Winter Funfest at Mendon Ponds Park. It all starts at 12:00 noon and continues until... Hopkins Lodge has been reserved for the day.

In addition to hots, hamburgs and snacks, home made chicken soup and chili, there will be snacks (peanuts, chips, etc.) available.

The usual contest to determine the best dessert made by a YL (or OM) will be held, so gals dust off your cookbook and bring your favorite gourmet dessert. Prizes will be awarded for the tastiest entries.

Now how to get there from the west side of county, follow Clover Street (Route 65) to the center entrance to the park (first road south of Canfield Road - this entrance brings you directly to Hopkins Lodge. From the east side use Pittsford Mendon Center Road to Canfield Road, turn west and take the first road south after passing Douglas Road. If all else fails try the talk-in on 52/52 or the 88 repeater. There are signs at all park entrances directing you to the lodge.

There is a charge of \$2.00 per person with a max of \$5.00 per family. See you all there to partake of Gos's chicken soup and Dave's chili and a chance to sample the gourmet desserts entered in the contest.

RDXA MEETING — FEBRUARY 19th

Contest logging is the subject of our next meeting 7:30 p.m., 111 Westfall Road, Tuesday, February 19th.

Have you ever worked someone in a contest and within a second or so he said, "Sorry, you're a dupe"? How to keep these dupes out of your contest log and all the other secrets of contest logging will be explained by our panel of Contesters - some of these guys score in the millions of points!

Anyone interested in contesting is invited to attend; bring along your recent DX list to QSL address from our Foreign Callbook.

Bob, WE2T, 716-334-1103

SILENT KEYS

BRUCE W. TOUGAS, JR.
N2IDB
December 24, 1990

SAMUEL A. CAPUTO
W2RSL
January 4, 1991

ROBERT W. WETHERALD
W2CZT
January 9, 1991

the **RARA RAG**

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Amateur Radio News Service

HI-FI AND RFI

Whether it be fate or a matter of coincidence, my neighbor's daughter bought a brand new Pioneer HiFi set at the same time that I purchased my new Kenwood TS-440S. Since we both wanted to play with our new "toys", it was not a surprise to imagine that we would be doing so at the same time of say. It was on the second day, that I received a rather irate phone call from the lady next door telling me that I totally shut off her nice new Pioneer HiFi when I transmitted on my TS-440S. I checked all of my connections and after that began to wonder if I had a "Ravenscroft" scenario on my hands!

After calling a few hams to get ideas, it was suggested that I test my ground against the Hydro ground potential. A 2 ohm differential was noted, which indicated that I had a small problem. Since I was grounding my radio to my Antenna Ground, I decided to drive a new ground rod to provide an independent ground source for my radio. On Saturday morning, I went to the neighbor's house while another Amateur operated my station. Using FM handhelds, we tried every trick in the book to get the Pioneer to exhibit any signs of interference. EUREKA! The problem was solved for less than \$20 and a bit of heavy duty pounding to drive the 3 meter rod down into the ground.

You may be interested to know that RF interference in a HI-FI set puts the set into a hold pattern, causing a type of oscillation that makes one heck of a noise and scares the uninitiated user half to death.

Are you using your electrical system's ground or perhaps a water pipe as a ground for your radio? Perhaps you should invest in a ground rod, as I did, to eliminate the possibility of running into future problems.

*Tnx LARC Bulletin
via the BARC Printed Circuit*

BIMINI TOPS DODGERS

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Chuck Vornran
WB2OZS
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DIGITAL RADIO

Today's radio receivers, and the over 10,000 AM and FM broadcast stations in this country, could soon become as outdated as 45 rpm records because of advancing technology. The emerging technology is called digital audio broadcasting, and is capable of providing high quality sound that is vastly superior to the standard today, including FM.

If it delivers as promised, DAB could provide virtually flawless reception by satellite, even in tunnels, and provide enormous savings in transmitter equipment and electricity costs.

In addition, more stations would be able to operate on the new frequency band that would be created. Some experts predict that DAB is only a minimum of five years away and some experts predict the superior quality of DAB could quickly conquer a new generation of radio listeners.

In the meantime, the FCC has unveiled their first proposal for usage of the new expanded AM radio band. Ten new channels, from 1610 to 1700 kHz, should eventually hold 250 to 300 stations across the country.

Each station would operate with 10 KW day and 1 KW at night and be required to transmit in stereo. 1700 kHz will be set aside nationwide as a traveler's information frequency which heretofore have been using 1610 kHz. Medium sized towns that were never assigned licenses due to their proximity to larger cities will have first shot at the new frequencies. Expect to see station on 1610 and 1620 kHz first because those frequencies can be reached by current digital radio without modification.

Tnx The Readout

INCREASED FINES

The FCC is increasing the amount of fines imposed for pirate radio stations. The usual amount of \$750 has been increased to \$1,000 for the first violation. If the violation occurs in the aviation, marine, public safety or special emergency radio services frequencies, the fine goes up to \$1,250. In addition the FCC will seize the equipment of the violator and may take revocation or suspension action against any valid FCC licenses held by the violator in any service.

The proliferation of illegal operations has prompted stricter enforcement by the Commission who are aggressive pursuing violators.

Tnx The Readout

RaRa CALENDAR FOR FEBRUARY

- 1 - RaRa Meeting, 8:00 p.m.
40/8 Club, 933 University Avenue
- 8 - VHF Group - 7:30 p.m. - 111 Westfall Rd
- 15 - RRRR Meeting - 8:00 p.m. -
Pittsford Town Hall
- 16 - RaRa Funfest - Mendon Ponds Park
See article for details
- 19 - RDXA - 7:30 p.m. - 111 Westfall Road

ALL CORDLESS FREQUENCY LIST

Want to listen to cordless phones? It is LEGAL and a lot of fun. Here is where you need to look.

46.610 - 46.990 MHz - Portable Phones

The following channels are listed as BASE/HANDSET.

46.610/49.670	Channel 1
46.630/49.845	Channel 2
46.670/49.860	Channel 3
46.710/49.770	Channel 4
46.730/49.875	Channel 5
46.770/49.830	Channel 6
(Also Baby Monitors on 49.83)	
46.830/49.890	Channel 7
(Also Baby Monitors on 49.89)	
46.870/49.930	Channel 8
46.930/49.990	Channel 9
46.970/49.970	Channel 10

For older phones like the DuoPhone 320's, here is where you look:

Channel Handset	TX Freq	Base
1A	49.83Mhz	1.69Mhz
7A	49.845Mhz	1.71 Mhz
13A	49.860Mhz	1.73Mhz
19A	49.875Mhz	1.75Mhz
25A	49.890Mhz	1.77Mhz

Keep in mind that its using 49Mhz from the handset to the base and 1 Mhz from the base to the handset.

You may also find more by scanning from 49.8 to 49.9 and 1.6 to 1.8Mhz. Scanning 46.61-46.99 may yield additional frequencies since the FCC has approved additional channels to ease congestion.

Happy Scanning!

Credit: Packet Network via The Readout

FOR SALE - 2M Transceiver, Harris 1525, 25W out, Digital mode model, with manual, makes a good radio for the RDXA DX Packet-cluster. Bob, WE2T, 716-334-1103.

SAREX

Do you remember being marched down to the school auditorium, or crowding around those black and white televisions to see and hear the first manned space flights? I'll bet you even know where you were and who you were with when the first man stepped on the moon. Did you know that on December 2nd at 1:45 a.m. the shuttle Columbia was launched and that it was carrying amateur radio equipment.

I forgot. I had been waiting since May, and I almost lost interest. That is until Jeff Wallach, N5ITU president of AMSET, called at 4:00 p.m. on Sunday to inform me that we had a listen-only slot on the tela-bridge at 16:00 zulu. On Tuesday, we could hear Ron Parise, WA4SIR, talk to several schools around the country from the shuttle Columbia. "Just have your repeater call this number, and if you have any questions just call back on Monday." We weren't even scheduled for a spot!

I started making calls and stirred up a lot of interest. Dwight put it on the net, and it was a fact. I still hadn't called back for more pertinent information such as "what's it all about?" I got out all the literature that the ARRL sent and read it over. I talked to my neighbor, Tom Kirchhoff who is a fifth grade teacher. We had discussed the idea originally last fall. Thank God he was still interested. I got calls from WB2ELB and N2EZV who wanted to be a part of the fun. I said "OK, see you on the air on Tuesday." To myself, I said "I Hope!"

Monday morning I called the Johnson Space Center at the number I was told to call and Ray Neal K6DUE answered in a voice that was very familiar from the weekly news line reports on the net each week. He explained the procedure and said check in on Tuesday morning and be ready.

I took my 2M rig and my computer with a tracking program to the Plank Road South School. I set it up and showed the position of the shuttle as it approached the Coast of South America. At 10:45, 14:45 zulu I picked up the mike and called WB2ELB and N2EZV at their schools and looked into the faces of the 75 fifth graders in my room. I took a breath and started:

"The Shuttle Amateur Radio Experiment (SAREX) is an effort to encourage our youth to become more excited about science and technology and to familiarize large numbers of the general public with manned space flight. The American Radio Relay League (ARRL) is the customer for the SAREX project.

There have been two previous missions on which amateur equipment has been taken into space. First in 1983 on flight STS-9 and later on STS 51-f.

"Today we will hopefully hear Ron Parise, the payload specialist on the Columbia STS-35, talking to students around the country. Ron is using a handheld radio and a special antenna to communicate with the ground. At the time of the contact he will be over South America. Junior Torres de Castro amateur call sign PY2BJO, who is in Sao Paulo, Brazil, and he will receive the signal from Ron and send it by telephone to Goddard Space Center in Greenbelt, MD.

"In Rochester the N2JC repeater, today commanded by Ray Pickens will call the National Telenet Conference bridge, a device that is in Washington, D.C. It can patch together many repeaters around the country, and we will be able to hear the conversations between Ron in space and students in several schools around the country. We will only be able to listen.

"The signal from the N2JC repeater will be heard in several schools in the area. I am talking from Mr. Tom Kirchhoff fifth grade class in the Plank Road South School of the Webster School District. We are also in contact with classes in School 28 in Rochester. Classes in the Greece Schools will also be hearing these transmissions.

"WB2ELB is in Greece and N2EZV and N2IZY is at School 28. First to WB2ELB in Greece. Evan, over to you in Greece. You say a few words and pass it to Joel, N2EZV. Joel is at School 28. Make it quick, Ray is going to have to bring up the bridge."

At 10:55 Ray commanded the "green box" to call the telebridge and the faces of the students started to glow as contact was made.

After the bridge was dropped I answered questions for over an hour. During that hour I discovered the real intent of the SAREX program – not just to stimulate interest in the space program, but to inspire students to become more interested in math and sciences and show them some correlation between what they are learning and its practical importance in our future.

From the enthusiasm and questions I concluded that the experiment was a success. Twenty five of the seventy five students have submitted their names as being interested in becoming hams.

The easy part is over. The challenge is in front of us now. Now what? We need to submit a proposal to ARRL outlining our plan for the next mission. The proposal needs to outline the media coverage and number of students and schools involved. The details of the proposal plus the

documentation of events of this past mission will be reviewed by the astronauts of the STS-37 mission, and they will pick the participants.

We also need to develop a program for bringing novice class and demonstrations to the schools. I feel the time is right. We will need help, money, and equipment and to provide a good public service and get good exposure to get more people into the hobby. Russ Harris, N2IZV 872-0956 or voice mail 783-6735.

RaRa CODE AND THEORY CLASSES

by Ed Gable, K2MP

Now entering it's 35th year of continuous code and theory class operation, RaRa is pleased to announce the Spring 1991 classes. This session is offered for Novice, the new code free Technician class and General theory.

New this year is the code free Technician license. This presents an interesting challenge for your instructors. Those people entering Ham radio via this route need to pass a 55 question test consisting of 30 questions from the Novice pool and 25 questions from the Technician pool. As such, the traditional Tech theory lectures must now contain both Novice and Tech level material. RaRa will continue to offer the traditional Novice course with code instruction plus 13 wpm code practice.

The classes begin Monday evening, February 18th, at 7:00 p.m., in the auditorium of the Monroe County Social Services building, 111 Westfall Road. The classes will meet each Monday night for approximately 13 weeks depending on which course you're taking. The instructor will have details. No advanced registration is required, just show up! Please call Ed Gable, K2MP, RaRa Licensing Course Director, at 621-6692, (also K2MP & WB2PSI) if you have any questions. ARRL Text materials will be used.

The total cost for the entire 13 week program, including membership dues, registration and all material is \$25 for Tech and \$20 for Novice. Subtract the cost of dues if already a member of RaRa. Checks made out to RaRa with identification are acceptable.

Sorry, but due to a decided lack of attendance and interest, no Advanced or Amateur Extra classes are planned for the Spring session.

ROCHESTER HAMFEST

MAY 17, 18, 19, 1991

THE RaRa RAG 20 YEARS AGO — FEBRUARY 1971

by Ed Gable, K2MP

These pages revealed a sad day in RaRa history with the announcement of the passing of Ray Springett, WA2AIL. Ray had been instrumental in RaRa's Code and Theory classes for some 11 years and moved many a new ham into our ranks. Ray was stricken with a heart attack while conducting a class at the old McCurdy's location downtown. On the technical side, RaRa was pleased to have Richard Abrahams, K2YRZ, an Engineer at RF Communications, Inc., speak at the club meeting on a new component, the SCR. RaRa's Hamfest Committee announced a new location for the Rochester Hamfest at the Monroe County Fairgrounds in Henrietta. The Hamfest Headquarters remained at the Trenholm Motor Lodge. In his "Up and Up on VHF" column, VHF Editor W2MPM, revealed the high scorers for the January VHF contest; W2UTH, K2YCO, WA2GCF, K2WW and WB2JFL, in that order. It was reported by W2MPM, the RRRR Editor, that Harold Hay, WA2ABQ; Charlie Mills, K2LDU and Ted Marston, WA2RPI, put on a video taped show of typical repeater operation at the last meeting. A special election was required by RRRR to replace Vice-Chairman Bob Jeffers, W2ALL, who moved to another city. Jerry Vogt, WA2GCF, was elected. A S85 receiver could be had from an ad by Marv Vinkey, K2DPW.

BRIEFS

- The League's latest move against the reallocation of part of the 220 MHz band to commercial interests was played out in court November 16, when oral arguments were presented by the ARRL as plaintiff and the FCC as defendant, to the U.S. Court of Appeals, D.C. circuit. A panel of three judges heard the arguments and questioned both sides in the request for judicial review. The Court's decision is expected in a few weeks.

- The preliminary position on the 40-meter band contained in the FCC's Second Notice of Inquiry in Docket 89-554 generally was supported at the final 1990 meeting of the FCC WARC-92 Advisory Committee's Informal Working Group No. 1, held in Washington November 8, according to EVP K1ZZ, who attended as a member of the working group. Background on this can be found in the October 5 issue of *The ARRL Letter* and in November *QST*.

Tnx ARRL Letter

WATERPROOFING

The January 1989 issue of Radio Communications, journal of the Radio Society of Great Britain, recommended the use of "self-amalgamating" electrical tape wrapped around the coax connectors to seal them from water. The tape should be wrapped with 50 percent overlap and stretched very tightly; wrapping from the small to large end.

Wrap a barrel junction from both ends to center. The tape will fuse into a custom made waterproof boot for the connector. **IT MUST BE COMPLETELY OVERWRAPPED WITH ORDINARY PVC TAPE (SCOTCH 33+ OR EQUIVALENT) OR THE FUSING TAPE WILL BREAK DOWN UNDER UV LIGHT (red sunlight).**

In the USA, "self-amalgamating" tape is better known as scotch 23 Rubber Splicing tape and is available at your favorite electrical supply house at about \$8/roll. When you remove this tape, plan on using a NEW Stanley utility knife blade; it gets tough! (If you are still using Coax-Seal to seal connectors, old fashioned LIGHTER FLUID does a pretty fair job of removing the sticky black residue from that stuff. No, don't light it; just use it as a solvent!)

GREASES AND SEALANTS

The RSGB article mentioned two other interesting substances which also belong in your tool kit if you use antennas or coax. Let's say you want to waterproof the terminal block on the bottom of a rotator or the driven element connections of a beam which uses nuts and bolts. Here, Dow Corning MS4 is an alternative. This is silicone grease which comes in a five ounce tube (like a large toothpaste) for about \$9.50. It has good dielectric strength; 21.7kV/mm, and is also a handy lubricant for feeding wire through tight grommets.

A good silicone grease just sits there and protects; and doesn't react. If you want a sealant which sets up to a semi-solid, **DON'T USE COMMON RTV** or any common caulking or bathtub sealant. These emit a strong vinegar smell when curing and will corrode and destroy electrical connections to nonconductivity within a year.

Dow Corning Silastic 738 is designed for corrosion sensitive electrical or electronic equipment/connections. Its disadvantage is a long-slow curing time; about two or three days to tacky and one to three weeks to dry. A small 5 oz. tube costs about \$9; a 10.3 ounce tube (which fits a caulking gun) is about \$13.50.

If you have an especially critical application (i.e. EME or satellite), you want to use Dow 3145 Hi-Tech RTV. A good application of either is sealing the PL-259/SO239 junction on a Hy-Gain balun. Wrap the coax as far as you can with Scotch 23, then pot the connection with the Dow 738.

Both 738 and 3145 have a 500+V/mil dielectric strength. The applications notes for both 738 and 3145 recommend cleaning the surface to be sealed (except plastics) with acetone and then, always priming the surfaces with primer - Dow 1200 for 738 and Dow 1204 for 3145. Rubber surfaces should be lightly sanded and acetone wiped.

WHY BOTHER?

All of these great tapes and sealants sound like a lot of bother and are expensive, too. You might ask, "do you really need any of this stuff?" Let me quote a line or two from the RADCOM article: "The PL-259 ... is about as waterproof as a fishing net. If you put a PL-259 on the end of a run of RG8 and there's a light shower 30 miles away, the coax (conductor and braid) will turn green in 10 seconds flat!"

Perhaps a slight exaggeration, but with good coax costing fifty cents per foot, it seems to make sense to spend a few dollars to protect the dollar and time invested in a coax run. **WATER IN YOUR COAX WILL CAUSE CORROSION AND A CHANGE IN THE ELECTRICAL PROPERTIES OF THE COAX.**

Do you want a conductor or a semi-conductor in your feedline?

Blair Bates, K3YD

As seen in Worldradio Oct. 1990

via Harmonics



Burglar Alarm Systems

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MORSE CODE NOSTALGIA

Relayed by N2IXL from BITNET (INFO-HAMS DIGEST, V90N470) and thence to the Marcogram, the publication of The Montreal Amateur Radio Club.

Morse code certainly does have the potential for poetic rhythms. For example, iambic, as in iambic keyers, is from poetry meaning di dah di dah di dah ... rhythm. This is exactly what electronic keyers generate if you squeeze both paddles!

On a similar vein, many years ago I read in an old *QST* from the 30's how one could generate poetic CW rhythms by sending certain phrases. The only phrase that I remember (why, I don't know) is to send the phrase "best bent wire" at about 13 wpm. It has a certain rhythm for sure.

Until electronic keyers took over the bands, there were certainly lots of different 'fists' on the air. There were the 'Lake Erie' swing rhythms which had the dahs stretched out longer than normal. Then there were the standard bug fists, whereby the dits were at a fixed speed around 20 WPM, and the dahs were adjusted to slow down the overall rate. This made a lot of sense if you didn't like to always be adjusting your bug weight up and down the length of the bug; likewise, if you lost one of the two weights on your Vibroplex.

The strangest fists were from the operators who had developed glass arms, i.e., repetitive motion injured arms, who would switch from straight keys and bugs to the strange sideswiper keys. These had no spring action for automatically generating dits, but required you to waggle the key to and from, making your own dits and dahs. I only worked a few operators using this style of key. It seemed to be used mainly in France, for some reason.

I still have my Vibroplex Blue Racer Original, in its own leather strapped carrying box, and with an extra set of silver contacts. I got it in 1972 at the Dayton hamfest, and used it regularly until

about 1980 when I switched to an electronic keyer.

CW may not be of interest to newcomers to ham radio but for sheer nostalgia there is certainly a mystique that modern modes often don't have. (Although I must admit, my biggest thrill in ham radio in the last few years was working the robot on the RS10/11 satellite - this was cw to a satellite!)

But, in spite of my previous comments, I do feel that a no-code license does have a place in present day ham radio in order to attract newcomers. (No flames, please; each of us has the right to our own opinions on this point. If our numbers begin to fall as the median age of hams rises year for year above the present 47 or so, then in about 23 years, when the median age is about 70, ham radio may die out, literally!)

CW Forever! (and No-code too!)

Gary Bastin via The Groundwave

FOR SALE - Heath HW-2XL Deluxe 2-meter HT with nicad battery pack, wall charger, and mobile charger. Cost \$375.00 new in 1989 - now \$200.00 takes it all. Jim - KA2FFE - 266-6494.

Patrick C. Moyer, N2AIW
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ELECTRONIC TELEPHONE HOLD CIRCUIT

The following circuit shows an interesting "HOLD" circuit that can be added to a telephone to put into a "hold" condition. The "hold" automatically cancels when any phone is lifted.

Credit: Halton Amateur Radio Club Bulletin via the Readout

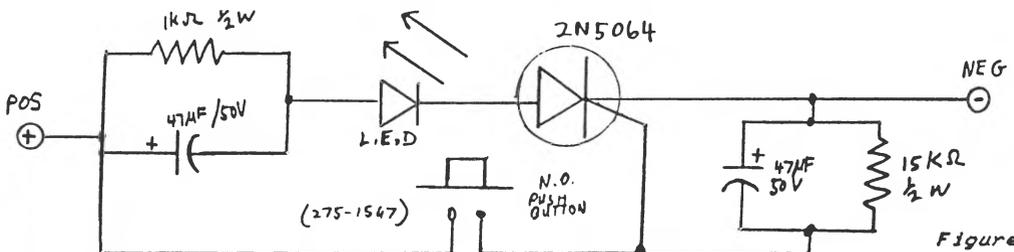


Figure 1

KENWOOD REVIEW

TS-520 is an HF classic five band SSB rig that became six bands in the "S" and "SE" versions. With tube finals and the ability to pi match antennas that exhibit a little SWR it is a versatile transceiver whose VFO has beautiful smooth operation. Although it is normally operated on the internal AC power supply on 2 BDC the receiver draws ... 550mA.

TS-130 is the WARC replacement for the 120. (WARC - when we gained 3 HF bands totaling about 250kc and lost 25Mc in the 1200 range. Let's see 25/0.25 is a ratio of 100 to one.) Neither one has 160M like the 520 but the 130 has all eight other WARC bands. In a small package with nice features such as digital display and "IF shift", the 130 was the last Kenwood to have a "real" VFO. (No steps - analog.) On receiver it draws ... 750 mA.

TS-430 is just an inch wider than the 130. This is one of those computerized rigs with two digitally controlled VFO's that step at 10 cycle intervals and 8 memories all of which remember when the power is removed. Neat features include squelch on all modes and general coverage receiver from 150kc to 30Mc. It transmits on all bands including 160M. Die hard 520 owners will point out that you need an antenna tuner and mention something about a little "phase noise" on your signal. They're just jealous. Do not run this one on solar power. It draws ... 1.2 Amps.

de Ollietech, Omaha, via Ham Hum

Microwave Data Systems, an expanding manufacturer of 900 MHz telemetry radio equipment, has openings in our Rochester, NY headquarters for the following positions:

TEST TECHNICIAN - Involves testing and trouble-shooting of RF, analog and digital circuits in a manufacturing environment. High school plus two year electronic training or equivalent experience required. Knowledge of radio circuits helpful.

ENGINEERING AID/TECHNICIAN - Job involves support to product development engineers. Two year technical degree plus 3-5 years related experience and knowledge of analog/digital/RF circuits required.

TEST DEPARTMENT SUPERVISOR - Minimum 5 years experience as supervisor of electronics test operations. Technical degree or equivalent on-job training required. Radio communications equipment experience required.

RF AND DIGITAL PRODUCT DEVELOPMENT ENGINEERS - BSEE plus degree, minimum of 3 years experience in the design of receiver and transmitter circuitry at frequencies up to 1 GHz or strong digital design background with some radio experience. Advanced degree with communications/modulation theory desirable. Experience must include product design from concept through production.

Send resume to:

Personnel Department
Microwave Data Systems
300 Main Street
East Rochester, NY 14445

