

THE HAMPDEN COUNTY RADIO ASS'N. Inc.

SPRINGFIELD, MASSACHUSETTS

ZERO BEAT

31st year ARRL
Affiliated

May 1979

Winner, Certificate
of Merit, N.E. Newsletter
Competition, 1978

CLUB OFFICERS

President	Larry Soltz	WB1CJH	567-3444
Vice-president	Ron Beauchemin	WB1ETS	593-9852
Secretary	Frandy Johnson	N1FJ	584-9005
Treasurer	Steve Shore	WA1ZEV	(203)243-3030

OFFICIAL BALLOT

HAMPDEN COUNTY RADIO ASSOCIATION HAM OF THE YEAR AWARD

Directions: Check off any two (2) of the following names. Ballot must be returned by May 20th.

<input type="checkbox"/> Larry Soltz, WB1CJH	<input type="checkbox"/> Eunice Gordon, W1UKR
<input type="checkbox"/> Art Zavarella, W1KK	<input type="checkbox"/> Nelson "Bob" Julian, W1DWV
<input type="checkbox"/> Bill Lowe, W1TM	<input type="checkbox"/> Tom Barrett, W1KUE
<input type="checkbox"/> Scott Darsney, WB1CAC	<input type="checkbox"/> Chester Wisiolek, K1YQQ
<input type="checkbox"/> Percy C. Noble, W1BVR	
<input type="checkbox"/> Joe Jolley, K1ZOC	
<input type="checkbox"/> Robert Stephens, W1MM	

WRITE IN BALLOT: _____

Return by May 20th to: P.O. Box 346, Southwick, Mass 01077, or at the May Flea Market. Take the time to vote!!!

NOMINATIONS FOR CLUB OFFICERS

Nominations are now open for club officers. If you or someone else are interested in serving with a great group, contact WB1CJH Larry at 567-3444.

SCIENCE FICTION HAPPENING!

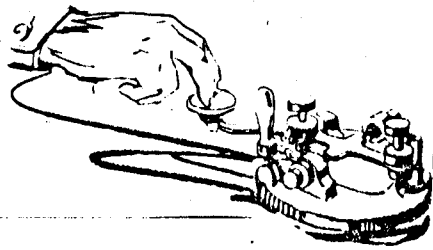
WINY OPERATING PORTABLE

What a great time! Over 4,000 people visited the show and saw ham radio in action. We passed about 150 messages including one via MARS for Japan. Most of the club members stopped by to visit, and almost seventy-five took an active part.

Slow-scan TV courtesy of the ARRL and WB1ABL were shown, and the people were impressed. Larry, WA1WFR brought in his Radio Shack TRS-80 which copied the code the kids sent on a key and the hams also sent their names. Seeing it spelled out on the CRT thrilled the kids. Electronic games, courtesy of WB1BZW and WA1PGT were a hit, some of the kids just didn't want to leave. W1KK supplied the 2 meter station and a special thanks goes to W1TM, K1NWE W1BVR, and W1UKR for taking a lot of the traffic.

There are too many contributors to list. We appreciate everyone's help, whether it was in a big or small way. An article is being prepared for QST and WORLD RADIO. Your comments would be most welcome on what you did or saw. A Special word of appreciation goes to Larry, WB1CJH for organizing the whole thing! Fine Business!!!





RETURN FROM MONTSERRAT

What's it like to be on the other end of a pile-up? Words simply can't describe the feeling of excitement, but we're getting a little ahead of ourselves.

Very early on the morning of March 10, WLJP and WBLABF drove to Monson to meet K1IJU and K1IJV to begin our journey to dx-land. All the baggage, keyers, antennas and the TS820 were carefully stowed in the trunk and off we went on our adventure. The flight left Kennedy at 8:25 as scheduled with the precious 820 under the seat. After a brief but seemingly long stop at St. Maartin, where the temperature was a balmy 80 degrees, we finally landed at Antigua to await our 10 minute LIAT flight to Montserrat. Immigration was a breeze, but customs was not. No problems with the luggage, but the TS-820 immediately caught the inspector's eye. After determining what it was, he asked us for our licenses. We had none. The fellow who was to meet us with the tickets wasn't there. It was time to close the airport and the inspector was beginning to insist that the gear be impounded! "Not so", said WBLABF, "we have schedules to meet. Impound the radio, and you'll have to impound us, too." Fortunately, Norm had contacted a courier who said he could find our license man. Surely, not 15 minutes later, the licenses were in hand and we were free to go after leaving a deposit to ensure the TS-820 would not be left in the country.

The taxis dropped us off at Doc Beverenstien's, and awaiting us there with some groceries was Rosa, the housekeeper. We were anxious to settle down after our long (15 hours door to door) trip, but Rosa wanted to stay and exchange pleasantries. We soon found out that this was the way of the island. Nobody is in a rush to come and go and we had a continuous string of visitors.

Finally, the time had come to check out the gear and antennas. Norm, VP2MBK fired up on 10 meters and broke into a roundtable in Boston. The flurry of activity on the frequency became astounding when it was discovered that tiny Montserrat was on the air. Fifteen or 20 contacts in rapid succession established that all was well and we shut down to get some much needed rest.

When we awoke early the next morning, we found three youngsters on the porch waiting to introduce themselves. After breakfast, Bill, VP2MVCV, met with previously arranged schedules on 20 meters and on the 15 meter novice frequencies. Neither band was in great shape, so we decided to establish ourselves on 28.6, 28.010 and the CW portions of 80 and 40 meters. Gosh, the pile-ups were incredible! Ten was open world-wide to all corners of the earth simultaneously until midnight or whenever they decided to turn off the power on the island. 80 and 40 were also open world-wide at night. Two of the youngsters, Kate and Lincoln, took quite an interest in operations. There wasn't much to do on Sunday except put up antennas, operate, go to the beach and operate some more.

On Monday, we decided to explore the island which is 10 miles long and six miles wide. It's best described as the peak of a mountain poking out of the Caribbean Sea. The road to Plymouth is narrow and full of hairpin turns and you had to drive on the left hand side to boot! Everyone was friendly and waved as we went by. There are very few tourists on Montserrat. When we got back home, Lincoln and Kate were waiting for us with bananas, sauersap, mangoes, breadfruit and papayas. They promised to put on a concert for us that night.

While Jean, VP2MBJ, wowed the world on CW, Norm and Bill decided to put up the 80 meter dipole fed with TV ribbon. That antenna turned out to be very efficient on all bands, including 10 meters.

Early in the evening, Lincoln returned with his band of kids and put on a 1 hour private concert which was just out of this world. One young fellow was using a piece of 1 1/2" PVC pipe as a very effective substitute for a tuba.

During the remainder of the week, we visited a live volcano and a 120 ft. waterfall, both of which had to be reached on foot, various beaches and snorkeling sites. We also did some operating.

Our biggest thrill was working the 30 odd stations in Western Massachusetts who called in on the frequency. Talking to old friends in this fashion was particularly enjoyable as most of you who did contact us could tell. We just appeared to have the perfect pipeline.

Reluctantly, we packed up the gear early Saturday morning and headed for the airport. We spent three days in Antigua relaxing on the beach and shopping. We almost got a license to operate there, but that's another long story

tnx MTARA INTERMOD!

Jean VP2MBJ
Norm VP2MBK
Heather VP2MCU
Bill VP2MVCV

Dear Editor,

Again your "Zero Beat" was tops! That story by Art was wonderful, can't wait for the second part. Enclosed is an article about a very active former member of the HCRA, Br. Bernard Frey, WA1FKE. Perhaps he'll be most remembered as the "Chief Cook" during field day for many years in Middlefield. I'm sure many of the old timer's would like to see this. The last QSO I had with him was on 12-22-74 when he was WA2IPM, residing in Garrison, N.Y.

Happy Easter and 73,

Fred K1FUA

BR. BERNARD FREY CAPUCHIN-FRANCISCAN BROTHER KEEPING IN CONTACT WITH OUR MISSIONARIES



Br. Bernard Frey is a BIG HAMI That's no insult. He is a HAM. That's the popular word for someone who is an amateur radio operator. But when he's on the radio Br. Bernard doesn't make idle chatter. He's contacting our missionaries around the world: bringing their requests back to us and sending news from home to them by means of a "phone patch" he can let some of our missionaries speak with their relatives and friends in the States via short wave radio.

Br. Bernard was born in Yonkers, NY, in 1915. He became a Capuchin-Franciscan in 1934. He has spent the last 45 years serving our Province well as cook, sacristan, tailor, maintenance manager AND "ham" radio operator.

Br. Bernard is a well-known member of the International Mission Radio Association. He has just concluded four years as its president.

Br. Bernard is another example of the many faithful and talented friars who serve so many people so well. Your contributions to our Scholarship Burses make it possible for us to educate the friars of the future.



BR. BERNARD CONTACTING ONE OF OUR MISSIONARIES VIA SHORT WAVE RADIO. HE'S A GOOD "HAM."

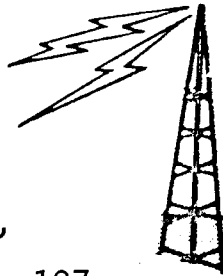
THE HAMPDEN COUNTY RADIO ASS'N.

SPRINGFIELD, MASSACHUSETTS



ANNUAL FLEA MARKET

FRIDAY MAY 4TH, 1979



FEEDING HILLS CONGREGATIONAL CHURCH,
INTERSECTION OF ROUTES 57 AND 137,
FEEDING HILLS, MASS.

AMATEUR, CB, AND ELECTRONIC EQUIPMENT!!

DOORS OPEN AT 7:00 pm

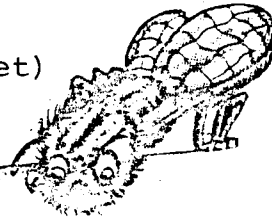
\$2.00 PER TABLE SPACE.
(Each space is about 15 square feet)

NO JUNK, PLEASE!!!

For more information:

Andy Bouchard, WB1BZW

786-2301



The way to the General "ticket" was never a primrose path

Many a weary Novice, listening to the staccato rhythm of the code or nodding over the text for Element 3, has longed for a return to the "good old days" of Amateur Radio.

Dream on, OM/YL. Even in the dawn era of spark gap transmitters, honeycomb coils and cat whisker crystal detectors, the way to an Amateur First Grade license was no primrose path. Consider the requirements established by the United States Department of Commerce for an amateur station and operator's license more than half a century ago.

First, the applicant was required to complete Form 756, "Application for Operator's License," and Form 762, "Amateur Applicant's Description of Apparatus."

Second, upon receipt of these forms, the United States Radio Inspector made a visit to conduct a thorough inspection of the "home brewed" station.

Third, the applicant then appeared at an examination point to:

A. Demonstrate the ability to transmit and receive international Morse code at a speed of at least 10 words per minute. The receiving test was given if possible by means of automatic equipment.

B. Pass a written examination covering:

Item	Maximum Point Value
1) Experience	20
2) Diagram of receiving and transmitting apparatus.	10
3) Knowledge of transmitting apparatus	20
4) Knowledge of receiving apparatus	20
5) Knowledge and care of storage batteries	10
6) Knowledge of motors and generators	10
7) Knowledge of international regulations governing radio communications and the United States radio laws and regulations	10
	total 100

QRP frequencies

Here, for your convenience, is a listing of the QRP frequencies.

CW - 1.810, 3.560, 7.060, 14.060, 21.060, 28.060 and 50.360 MHz.

Phone - 1.810, 3.985, 7.285, 14.285, 21.385, 28.885 and 50.385 MHz.

Novice - 3.710, 7.110, 21.110 and 28.110 MHz.

- QRP Amateur Radio Club International

ANNUAL BANQUET
FRIDAY JUNE 8th

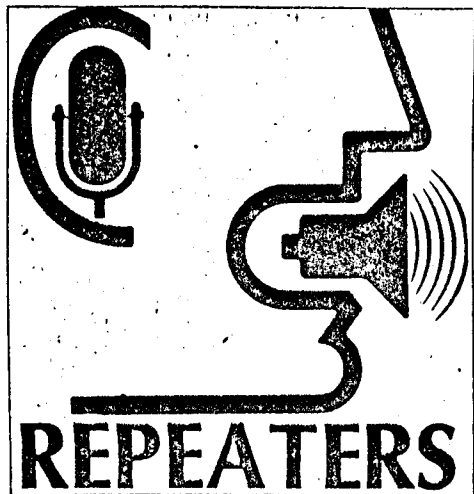
DON'T MISS OUT ON THIS!

THE MAIN DOOR PRIZE WILL
BE A NICE ITEM TO WIN!

Any applicants who failed were required to wait at least three months from the date of the previous examination before renewing their applications. Successful applicants were granted station and Amateur First Class Operator Licenses that permitted them to use a transmitter wavelength up to 200 meters, and a transformer input not to exceed one kilowatt.

So, when you burn the midnight oil for your General "ticket," remember that generations of earlier amateurs have followed a similar exacting path to success!

THE WIRELESS WORLD



A basic primer on repeaters

Ralph Payette, KA6ALH

Some of you new people to Amateur Radio have probably wondered why some signals came through loud and clear while others are fuzzy around the edges, and others you only hear a word here or there.

Well, to begin with, you must understand that two-meters is in VHF (very high frequency) spectrum. VHF signals are basically line-of-sight type of communications, meaning if a straight line from the transmitting antenna cannot be made to the receiving antenna, communications cannot be achieved. This is illustrated in Figure 1.

Now Figure 2 illustrates repeater operation, thereby extending the range of VHF and UHF transmissions. On top of some high place, i.e. a mountain, tall building, etc., a repeater site is located and maintained.

Simply put, a repeater has a receiver on one frequency and a transmitter on a different frequency. The repeater hears an incoming signal and feeds that intelligence to the transmitter, repeating what it has heard at the same power output or higher power output, thereby greatly increasing the range.

In Figure 1 I have illustrated some of the signals bouncing off a hill, thus never reaching the intended source. Although this usually holds true, there are times when it is possible to bounce a signal, but a lot of energy is expended in this manner. It is possible to access the repeater, even if you are in a bad spot, but it causes some of those fuzzy signals and a word missed here and there.

So if you are in a gully or valley and line of sight to the repeater is not possible, you may still hear portions of the signals from time to time, but they are usually bounced signals and will be strong to weak. Many times you will hear nothing.

It has become customary that when you speak of repeater frequencies, you always mention the input frequency first and the output second. For instance, the PARC machine receives on 146.01 and retransmits on 146.61. We would therefore refer to the repeater as being on 01/61. This is a short way of passing intelligence, because the repeater is actually on 146.010 MHz input, and on 146.610 MHz output. I specify the 0 because there are times when some machines use the 5 MHz split, such as Mt. Wilson. It has an input of 146.655 and an output of 146.055, which is known as a reverse split because the input is higher than the output which is reverse of normal.

FM jargon

Duplex — simultaneous transmissions between two stations using two frequencies.

Simplex — alternating transmissions between two or more stations using one frequency.

Low band — 30 to 50 MHz. Also the six-meter amateur band.

High band — 148 to 174 MHz. Also, the two-meter amateur band.

Remote base — a remotely controlled station.

Machine — either a repeater or a remote base. Also called a box.

Vault — building that houses the machine.

CTCSS — Continuous Tone-Controlled Squelch System. A continuous sub-audible tone which is transmitted with the audio to allow actuation of a repeater or receiver only by those transmitters equipped with CTCSS. More frequently referred to by various names such as, private line (PL), channel guard and quiet channel.

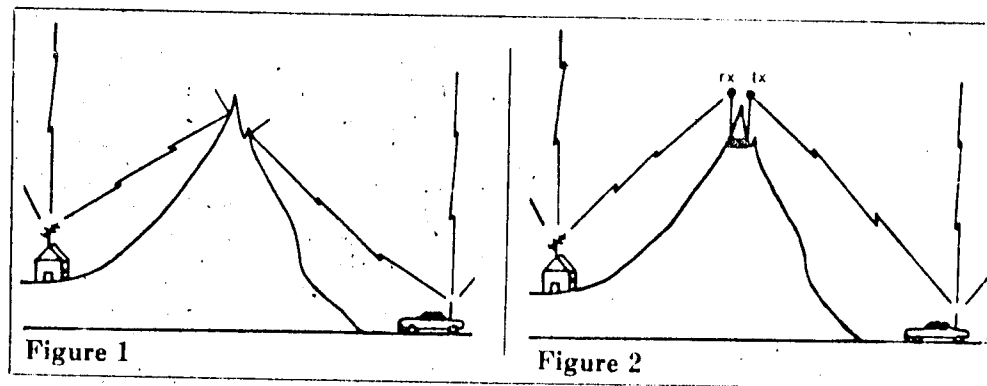
MAY 79 ZERO BEAT

TNX to WORLD RADIO

Down channel — communications circuit from the machine to the control point. Also known as downlink.

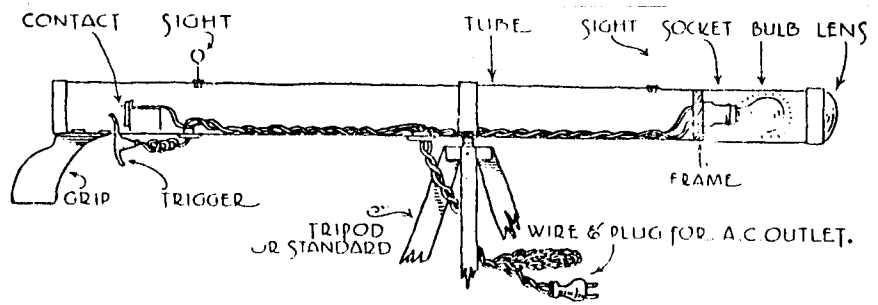
Up channel — communications and/or control circuit from the control point to the machine. Also uplink.

—PARC — Palisades ARC, Culver City, CA



MISCELLANEOUS NOTES

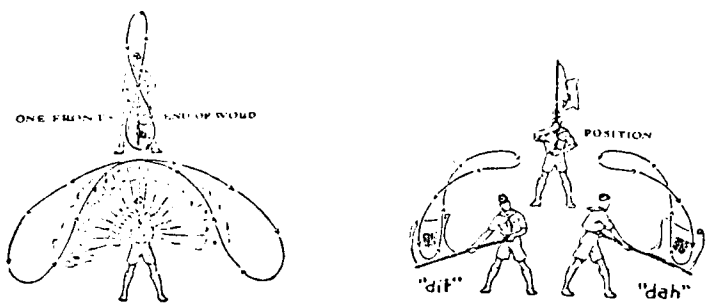
Ron KA1AVJ passed his technician. Congratulations!...Ron, KA1CHI has a new harmonic, a baby girl!...Peter, WA1SOF passed his Second Class Commercial and the amateur advanced, fine business...WINY has achieved BPL status, due to the amount of traffic passed at the science museum...



Many of us know that we can send the morse with lights or sound. How would you do it with flags or your arms? Check out the Scouts below and now you'll be able to send a message in morse by flag!

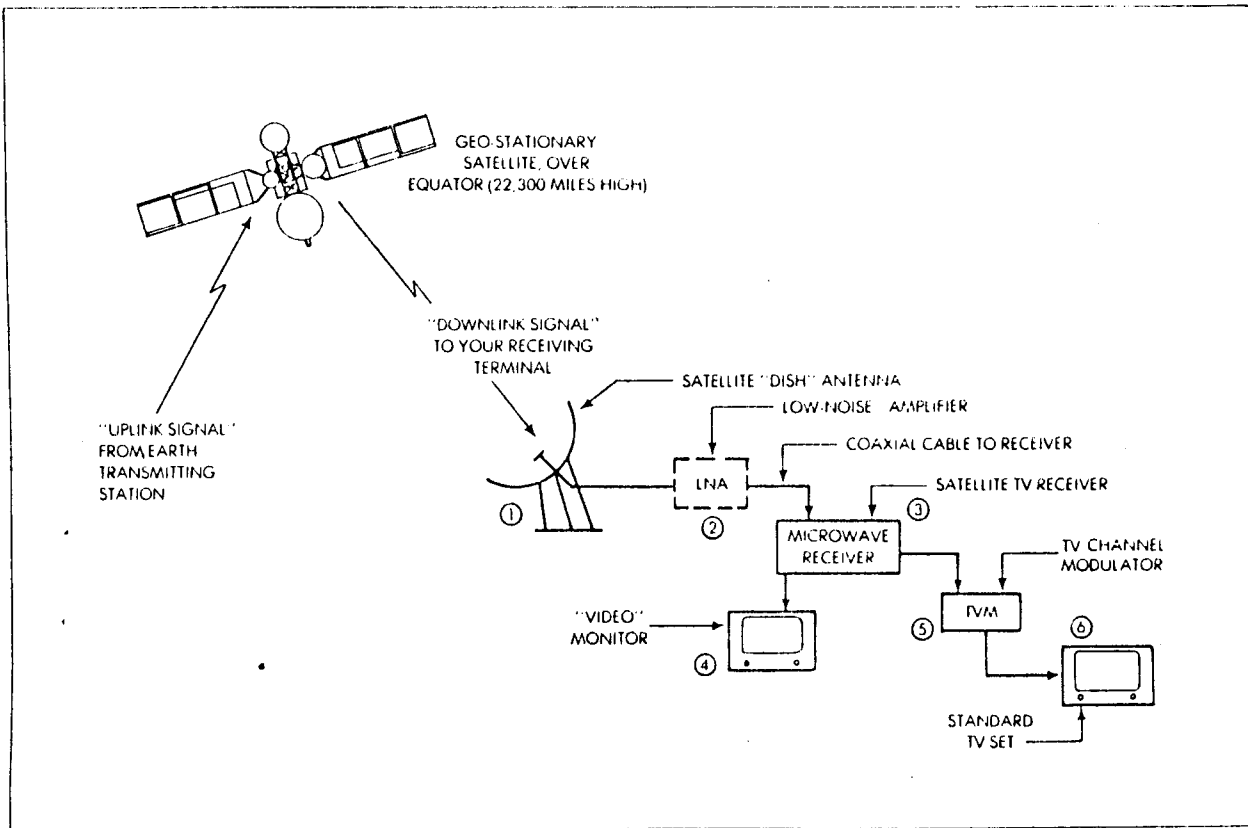
I learned the semaphore code long before I ever learned the morse. If you're an old Navy man like Bob Gravel, K1BUB, you probably could pass the extra class requirement of 20 words per minute. You never know when something like this will come in handy. Bob told me once how his flag abilities were regarded as "obsolete", and then during the Cuban Missile crisis the Navy had to observe radio silence. There he was sending with his flags from the back of a destroyer!

73, K1BE



Learn how to send morse with your arms or a flag! It might come in handy someday.

1 A	2 B	3 C	4 D	5 E
6 F	7 G	8 H	9 I	0 J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
Z	ATTENTION	INTERVAL	NUMERAL	



THE BASIC RECEIVE TERMINAL—consists of 'boxes plugged together'. Signal coming to you from the satellite is called 'downlink signals'.

RECEIVING SATELLITE TELEVISION PICTURES

We began a series on how to receive TV pictures from the many satellites orbiting the earth. Due to the unexpected complexity of the subject and the limits on my time, we can't finish the series. If you are interested in finding out how to do it, contact:

Television Publications, Inc.
 Suite 106, 4209 NW 23rd
 Oklahoma City, Ok. 73107

For \$13.00 they'll send you a complete package on "Satellite Television Reception". A station will cost you about \$4000.00. I can recommend the books, they are very good. But if you don't already have a moon-bounce station, it costs a few bucks to start!

JUNE BANQUET - FRIDAY JUNE 8TH

WESTFIELD YMCA
 67 COURT STREET
 WESTFIELD, MASS 01085

PLENTY OF FREE PARKING.
 TICKETS WILL GO ON SALE MAY 4th.

SEE A CLUB OFFICER FOR MORE INFORMATION OR TICKETS!

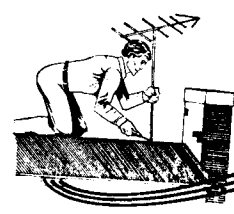
DOOR PRIZES ARE SOLICITED.

THE MAIN DOOR PRIZE WILL BE REALLY SOMETHING SPECIAL!!!!

Impress upon your children the hazards of climbing utility poles and towers or trees near power lines. When painting, installing aluminum siding, or cleaning gutters, remember that metal ladders can become energized if brought into contact with electrical wires. Always keep ladders a safe distance from power lines.



Before working on a rooftop television or citizens band radio antenna, check to be certain the area is clear of power lines. Locate antennas where they won't touch or fall on electric lines.





Criticism of NTS

A caption like this is bound to cause either of two reactions in the minds of many traffic handlers. Some dedicated National Traffic System people think the system is above criticism, that any criticism is disloyalty to Amateur Radio itself. And there are others who have no use for NTS at all.

I'll skip discussion of people who say the whole public-service aspect of Amateur Radio should be abolished, that Amateur Radio is a hobby for the enjoyment of us who have paid our dues by getting a license and buying our equipment and we should be allowed to enjoy it for ourselves and all of this do-good business is silly. For one thing, few who have that attitude will ever read Worldradio at all, let alone persevere in reading it until they reach this page.

But there are also criticisms of the system that are made by amateurs who are convinced of the importance of public service and who handle a respectable amount of traffic themselves, often on NTS nets. Some of the criticisms are not justified in that they criticize NTS for not doing what it was not intended to do. But others may have some validity, either because they question the purpose of NTS itself or suggest ways it can be improved.

Such criticism should be encouraged. Nothing is perfect, and nothing would ever be improved unless someone suggested an improvement.

The National Traffic System has three area staffs, consisting of net managers and other amateurs active in traffic handling in each of the three NTS areas, whose job is to monitor operations, discuss and suggest to ARRL headquarters possible improvements. Suggestions can be submitted to your area staff through any region or area net manager or TCC director; or drop a line to your section communications manager or division director.

One problem that NTS staffers constantly encounter, however, is the amateur who comes with a brilliant idea that has been tried several times in the past and has proved uniformly unsuccessful. So be prepared to meet with some skepticism.

NTS organization

Patterned after the organization of MARS nets, the National Traffic System has become in the years since World War II the largest organization of traffic handlers in Amateur Radio. Its ways of doing things in the minds of many amateurs are taken as the norm by which all traffic handling activities are to be judged.

Actually, it is not an organization of individual amateurs so much as an organization of nets, by which there is an established routing for traffic from anywhere in the system to anywhere else. Local nets feed to section nets, which in turn feed to region nets, to area nets and to the Transcontinental Corps (TCC). When a message reaches its destination region or area, it is fed down the system until it reaches a station that can deliver it.

Any amateur active in the system who takes a piece of traffic knows immediately to whom it should next be given. One has only to look at the routing guide in the ARRL Net Directory to see who gets it. This makes it possible to handle larger amounts of traffic with less confusion, even if at times it does make for extra handling when one follows the system instead of taking an available shortcut.

Therein lies some of the criticism. Amateurs complain that following NTS routings delays traffic, that a more efficient system could have been devised. The observation is correct, but forming the most efficient system for moving traffic was not the primary aim in establishing the National Traffic System.

In the days before World War II ARRL sponsored the "trunk lines." They were probably more efficient in terms of speed of handling than the NTS is today. But trunk liners were crack operators and formed an exclusive club. You had to be able to be on every evening and to be a top CW operator to get in.

It was precisely to encourage more participation by more amateurs at all levels that the NTS was started after World War II. Giving all the traffic to the crack operators would get it moved faster and more reliably, but how would the others learn? And if there was no provision for training new operators, who would replace the old-timers when they go?

Put it in the Destination Net?

I've heard amateurs ask, "Why should I give this message to my own section net and have it relayed up to New York and Missouri in order to get it to Alabama, when I could just as well check into the Alabama net myself?"

The NTS policy of discouraging such shortcuts is a sore spot for many amateurs. These amateurs have a valid complaint whenever NTS officials go to the extreme of refusing to handle any traffic outside NTS routings, but that is unusual. Such traffic is discouraged, but should not be prohibited, for an amateur may have very good reasons for bypassing the regular routes because of the urgency of the message or because the proper section net meets at an inconvenient time.

Here are the reasons behind the NTS policy:

If too many cut across NTS lines like that, the region and area nets will have nothing to do. At this time, however, there seems to be little danger of this.

More important, stations checking in from outside the section can be responsible for delaying net operations. It always takes longer for an outsider with an unfamiliar call to check into a net than one of the regulars.

And if the net is too far away and your signal is weak, you can ruin a net's performance. Trying to copy a weak signal through noise and interference is a slow and painful process, requiring many repetitions and involving a high possibility of errors. Your one message may get through sooner than if you had sent it through the regular routes, but meanwhile you tie up the whole net and delay the handling of everyone else's traffic. Furthermore, your weak signal won't be heard by amateurs in the net area looking for a vacant spot to call CQ, and so the net risks losing its frequency to interference.

Occupying frequencies

One criticism that may have some validity is that traffic handling, and NTS traffic handling in particular, ties up frequencies other amateurs could use. To some extent this is true.

However traffic handlers have just as much right to use our frequencies as any other amateurs, and having routine QSOs, looking for DX or participating in contests by the amateurs now handling traffic would probably result in more congestion than their traffic activities cause. On a net there may be a dozen or so amateurs who at a given time are transmitting nothing; if they were engaged in any other type of Amateur Radio activity they would be putting out signals and adding to the congestion.

There is some validity to the complaint that the additional relays caused by following NTS routings increase frequency congestion, for it is obvious that to transmit the same message three times results in more spectrum use than to send it only once. The criticism is valid to the extent that revision of the system is possible to give equivalent service and training with fewer relays.

The NTS staffs have recommended changes, and the ARRL has adopted them, which actually do reduce frequency occupancy and improve service. For example, the initial organization of both the daytime and evening cycles provided for a continent-wide traffic net to handle traffic between the three area nets, but it was found better performance and less frequency congestion resulted with the formation of the Transcontinental Corps to do it on the basis of individual schedules between stations.

The subject merits further study and is getting it, particularly with the influx of many new amateurs into our ranks in the past two years. We don't want to discourage them by making the bands so congested there's no room to operate.

Bottlenecks

Another criticism with some validity is that in times of heavy traffic loads the higher NTS nets tend to become bottlenecks, with more traffic than they can handle in the time allotted.

One solution that should be encouraged in such cases is for stations to volunteer to take the overflow by non-NTS routings. The independent nets could handle a good deal of it and would be glad to have it.

Some may feel that to give it to the independents would be disloyalty to NTS. The contrary is true. Nothing will hurt NTS more than not being able to do its job, getting itself bogged down by a traffic load too heavy for it to handle. Amateurs will become discouraged and take their traffic elsewhere, while rapid movement of traffic will encourage more use of the system. Most amateurs are not too concerned about how their message is routed, but do want it to be delivered reasonably soon and without error.

A new approach — ARTS

A group of CW-oriented amateurs has devised a different approach to handling formal message traffic, and the statistics seem to indicate it is working. The Amateur Radio Telegraph Society conducts a traffic session (it is not a directed net) daily every morning, from 1330Z to 1530Z on 7060 kHz, and from 0130Z to 0330Z on 3560 kHz. If increased participation warrants, the times will be extended. The ultimate aim is to have a continuous watch on one or both frequencies.

ARTS has no net control station (or maybe, as some members say, everybody is net control station). Any station with traffic or willing to take traffic merely calls CQ ARTS on the calling frequency, lists traffic or says QRU. Anyone who can take traffic listed, or has traffic for a station that has called in, calls that station, arranges a frequency and moves off.

Stations that check in are asked to send reports to the secretary, who sends the monthly totals to ARRL for inclusion in QST. And the totals are impressive. The latest month available as this is being written, December 1978, showed 238 check-ins and an unbelievable 3,239 messages handled. Compare that with the totals given for the other nets in March QST. They must be doing something right.

Anyone interested may send a self-addressed stamped envelope to the secretary, Hub Williams, W5UH, 2730 South Tabor Avenue, Silver City, NM 88061 for more details.

Hub told this columnist that several left when this system was introduced. It simply is not the NTS way of doing things and so had to be wrong. Hub was told the chaos reminded them of a Chinese fire drill.

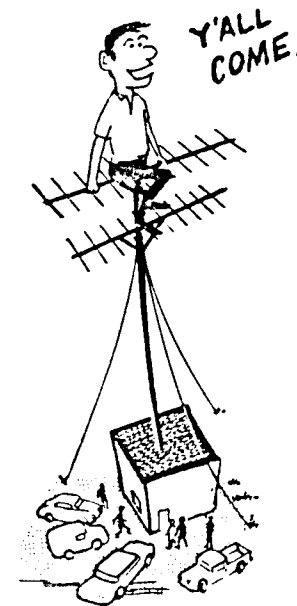
I've never participated in a Chinese fire drill myself, so I can't say, but the activity does not sound so chaotic to me. It reminds me of the procedures used on 500 kHz in the Maritime Mobile Service, procedures that have undergone little change in nearly 75 years, and seem to have proved quite satisfactory in that service.

The procedure seems well adapted for use by amateurs who want to participate in traffic work but can't meet NTS schedules on a regular and predictable basis. In ARTS you check in when you can, take any traffic you can handle, give your traffic to the station best situated to handle it when you are on the air, and leave any time you wish. It provides more rapid movement of traffic in many cases, as the message goes by the first available opening instead of having to wait for a scheduled net.

Considering the volume of traffic handled, it is adding very little to congestion on the 40-meter band. Hub says traffic totals like this seem to say that maybe a few Chinese fire drills might help some other nets improve their performances.

Because it began in the Southwest, ARTS gives its best service in that area, but is rapidly becoming nationwide in scope. More help is needed in most areas, particularly on the Eastern Seaboard, if ARTS is to realize its full potential.

But even now you can put a message into ARTS and get a reply in a matter of minutes at times, and that would be a regular thing if more amateurs check in. Seems like an excellent way to improve our public service performance. □



FIELD DAY!

Auctions / Flea Markets

April 27: Central Mass. Radio Club auction. Doors open at 6, starts at 7:30 pm. American Legion Post #341, 1024 Main Street, Worcester, Mass. Refreshments available, talk-in 37/97 and 52/52. Info via WA1LEA, 753-7481.

April 29: Bristol County A.R.A. indoor auction. Free admission, food available. Talk-in 31/91 or 52/52. V.F.W. Hall, Rt. 138 Washington and County St. Somerset, Mass. □

MISCELLANEOUS NOTES

Jack, WAlYYK, had a letter published in the April QST. I'm glad the FCC doesn't give special privileges to the oldsters, Jack. In my opinion that's like saying they are too old to learn anything, so just give it to them!...The HCRA won the "Club Awards Program" on page 48 of the April QST for the New England area. Wonder how we beat out our friends at the Wellsley Amateur Radio Society?...Larry, WB1CJH has his picture in that QST on page 75... Scott, WB1CAC promises to show the video tapes of the "Science Happening" at a future meeting. So, if you missed it on TV... Ron WB1ETS and Moe, WB1FIP suffered a catastrophic loss of their tower March 24th. Sorry to hear about it guys...KLEPI, Flori, checked into the Ten meter net. And there wasn't even an earthquake!... The next MTARA meeting is April 20th and will be on the subject of Slow-scan Television. WB1ABL, Ralph, the star at the "Science Happening", will present the program...Dayton Hamvention was a ball, with many club members present...Banquet tickets go on sale at the May Flea Market, get yours early...The raffle tickets will help pay for our bills this year. Don't neglect to buy at least one! YOU might win that F9FT and help us win the VHF SS next year...Speaking of the VHF SS, the HCRA took fifth in the country according to Larry, WB1CJH. Look for the final results in May QST...

**ARRL BULLETIN NR 16 FROM ARRL HEADQUARTERS
 NEWINGTON CT MARCH 22, 1979 TO ALL RADIO AMATEURS BT**

FCC has extended the grace period for renewals of Amateur Radio operator licenses to five years. Any person who let his Amateur license expire may regain his operator privileges without reexamination if it has been five years or less since the date of expiration. Details will appear in May 1979 QST under the Happenings column AR

ADDENDUM: IF MORE THAN A YEAR HAS ELAPSED, YOU CAN NOT GET YOUR OLD CALL BACK. YOU WILL BE RE-ISSUED A LICENSE WITHOUT RE-EXAMINATION, BUT WITH A CALL FROM THE POOL THEN BEING ASSIGNED. I.E. WXYZ RE-APPLIES AFTER TWO YEARS HAVE ELAPSED. HE IS ISSUED A NEW OPERATOR'S LICENSE WITH THE CALL SIGN "KALABC".

MAY '70 ZERO BEAT

THE END IS GETTING NEARER?

A series on "Surviving Disasters" ran from September to December in ZB. Nuclear war was covered, and more comments were received on this series than any others. Things have not gotten better and so I thought I'd prod you all once again to prepare for the worse.

The threat of being radiated is increasing. Nuclear war may be the "unthinkable horror", but the international scene doesn't seem to be becoming more stable. You still have to worry about a small country getting the bomb. Not only can every dictator get one but also every college fraternity with a physics major. The chance that a terrorist group will explode a nuclear device in one of our major cities increases daily. Nuclear generation of electricity presents another problem. A "melt down" will not cause an atomic explosion; however the area where it occurs will be lethal for over 250,000 years!

Hams will have an important role to play in a nuclear disaster. The phone system quickly becomes overloaded even in minor disasters like a blackout. Rapid and accurate communications will save lives and keep the panic down. The average person doesn't know what is truth or fiction in regards to nuclear radiation hazards. Rumors will be rampant in a disaster situation. Irrational behavior caused by fear and stupidity will cause many injuries and deaths in a forced evacuation. We hams should learn the facts now and be able to dispel the fairy tales. Your family's safety and the continued operation of your station should be planned out now. Two weeks of operation would be a minimum requirement.

Look over the accompanying article by Admiral Zumwalt, and the diagrams. Take this quiz and then decide whether you should study up on this subject for your own survival.

NUCLEAR DISASTER QUIZ:

1. A major threat to every person in the United States would come from:
 - a. A nuclear attack by the U.S.S.R.
 - b. Melt down of a nuclear reactor
 - c. Detonation of a nuclear device by a terrorist group
 - e. All of the above

2. Fruits, Canned foods, or people that have been exposed to radioactive fallout:
 - a. Pose a threat to life because they are "radioactive"
 - b. Can be washed and then are safe
 - c. Should be avoided due to radioactivity
 - d. Should be buried.

ADMIRAL ELMO R. ZUMWALT, JR. WAS CHIEF OF NAVAL OPERATIONS DURING THE NIXON ADMINISTRATION.

3. A home-made nuclear device detonated by a terrorist group:

- a. Could be as powerful as the bomb that destroyed Hiroshima
- b. Would be much more "dirty" than bombs used by the military
- c. Would threaten large areas of the U.S. with fallout
- d. All of the above

4. Which creature will survive the largest dose of radiation?

- a. human beings
- b. Rats
- c. Dogs
- d. All are equal

ANSWERS:

1. a- Major threat could only come from a nuclear attack by the U.S.S.R. China's arsenal is very limited. All other answers would be more of a threat to the areas around the disaster.

2. b- Wash the fallout off and then it is safe. Nothing can become radioactive, it can only have the particles clinging to it and these must be removed.

3. d- All of the above. Zero Beat could print the design for a bomb if we wanted to. The only thing difficult to procure would be the fissionable material. This is shipped by truck and a determined group could steal it.

4. b- RATS! They can survive over 600 roetgens! Humans about 300 r, dogs the least at 25. Radiation sickness is not contagious and many will recover from it.



Q: Dr. Philip Handler, the president of the National Academy of Sciences, does not exclude the possibility of a nuclear war.

A: Nor do I. Most Americans do not consider nuclear confrontation a possibility. They seem to have faith in the common sense of the leaders in the Kremlin. In my opinion, this miscalculation constitutes a serious danger to our foreign policy.

Q: In *Playboy* magazine you said that Leonid Brezhnev looked upon *détente* as a way of pacifying the West and that a Soviet attack would follow later.

A: That's right.

Q: But Mr. Brezhnev's close adviser, Professor Arbatov, vehemently denied this story and seemed to challenge you on the source.

A: The report was that Mr. Brezhnev made a speech to this effect when addressing, in secret, his East European comrades.

Q: In denying this story, Mr. Arbatov had clearance from the highest levels in the Kremlin.

A: We had the information from various sources, including a British publication.

Q: Does this mean that *détente* is dangerous?

A: What Henry Kissinger called a policy of lessening of tensions *vis à vis* the Soviet Union has become a very costly affair for our country. While we were negotiating endlessly to this end, the Soviets quietly and pragmatically continued to spread their influence to all corners of the world. The Soviets were constantly very active during the Yom Kippur War in October 1973. We forget too often that the USSR can protect its most important client states or attack all but one of its most likely enemies without going to sea. The political interests and commitments of the U.S. require that it be capable of having large military influence overseas.

Q: In your book, Henry Kissinger does not figure as a particular friend of yours.

A: During the Yom Kippur crisis, Mr.

Kissinger deliberately and repeatedly understated the significance of the Soviet role there. At press conferences he presented a picture of the situation which was untrue and a violation of the facts. He tried to salvage the image of his *détente* policy.

Q: What makes you so sure the Soviets are preparing for war or want war?

A: Soviet interventions all over the globe point in this direction. It is impossible to explain why the Kremlin continues to increase its conventional nuclear and strategic nuclear arsenals. What truly worries me is that Moscow does not only reckon with a nuclear war, it reckons it can *win* such a conflict. The military strategy of the Soviet Union aims in all respects at total superiority.

Q: I still am not convinced they want war. No nation in the world ever lost 20 million people as did the Soviets during World War II.

A: Not so long ago, the Soviet magazine for the Armed Forces put it this way: "The premise of Marxism-Leninism on war as a continuation of policy by military means remains true in an atmosphere of fundamental changes in military matters. Certain *bourgeois* ideologists have attempted to prove that nuclear missile weapons leave war outside the framework of policy—that nuclear war moves beyond the control of policy, ceases to be an instrument of policy, and does not constitute its continuation. This is theoretically incorrect and politically reactionary."

Q: And next they stationed the SS-20 missile on the borders of Western Europe.

A: Precisely. The deployment of this missile cannot reasonably be justified on grounds of defense.

Q: The West has thousands of nuclear bombs stationed along the Soviet frontier as well.

A: But what the West ignores is civil defense. The Soviets have an impressive civil defense program. They will shelter, in case of nuclear war, substan-

tial numbers of their urban population, as well as most of their industries. This further illustrates the Soviet military thinking. They calculate to fight and survive a nuclear battle. I am afraid that U.S. choices in response to a Soviet threat will be either to back down from or to lose a nuclear war. The Soviet Union cannot be permitted to obtain a strategic nuclear power superior to such an extent that we will lose either way.

Q: It seems the U.S. has lost its superiority since the so-called Cuban missile crisis. After that confrontation the Soviets doubled their efforts.

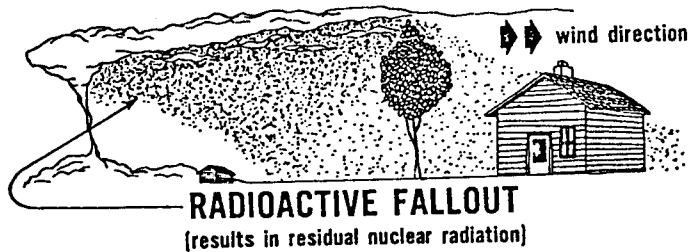
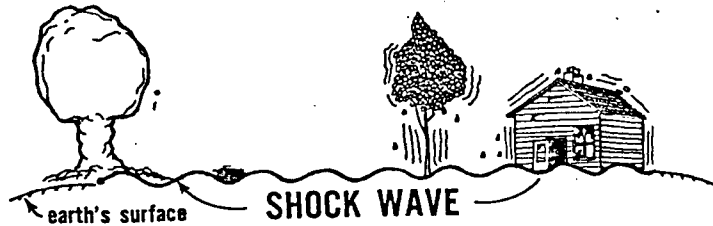
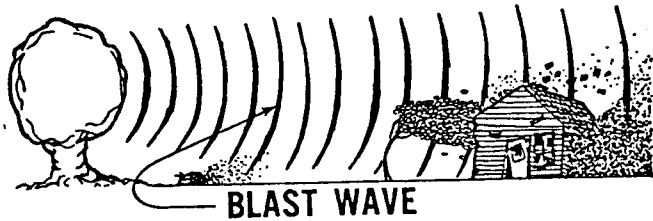
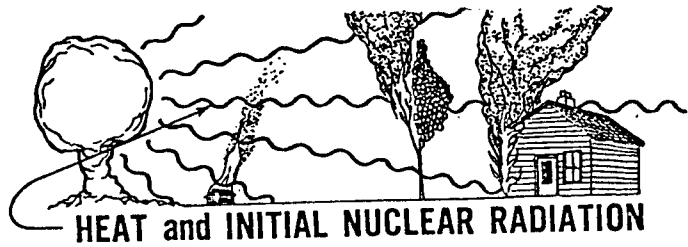
A: It is a fact that the leadership of Admiral Gorshkov resulted in the present dangerous development. They are making optimal use of their assets, as often is routine in the USSR. The Soviet Navy has control of even the land-based, long-range aircraft that can attack naval platforms with bombs and cruise missiles. Every Soviet merchant ship serves as a surveillance and intelligence-collection platform for the navy. Many of these ships can be used in case of war as part of a battle force. These are all parts of the shift in balance of power.

Americans have always accepted, as a matter of course, that our fleet is inferior to none. We have always looked upon our position as a fortress among the oceans. The fleet has always been our first line of defense. The Soviets are building twelve nuclear submarines a year. It all means that the shift in arms definitely places the USSR in a position that, even if it does not start a nuclear war, it can threaten one. We have to prevent a situation in which the leaders in the Kremlin would be capable of intimidating the United States through military power.

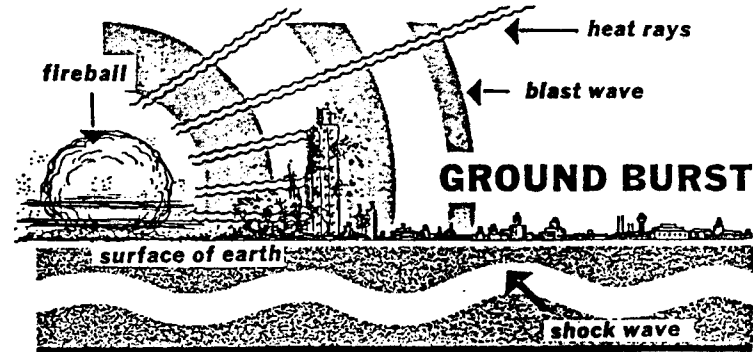
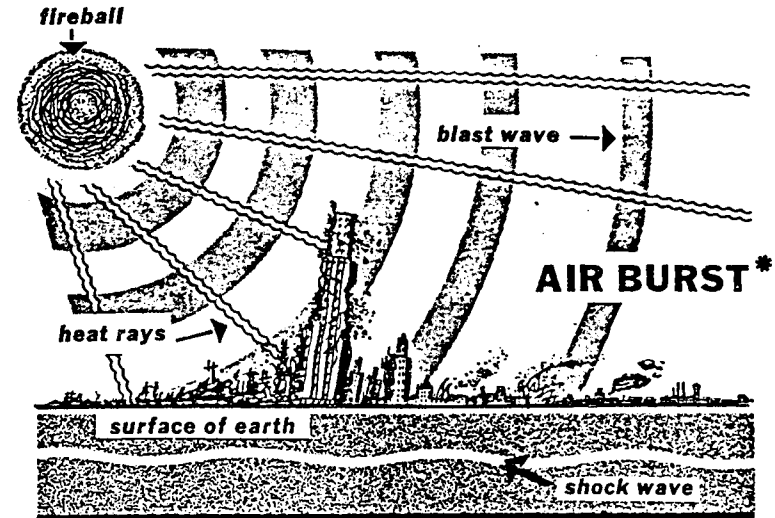
Q: Is democracy at a disadvantage?

A: In times when there are no military crises, there is a reluctance on the part of democratically governed states to focus attention on military possibilities and contingencies. The Soviet dictatorship is here at an advantage.

MAJOR EFFECTS OF A NUCLEAR EXPLOSION



THE TWO TYPES OF NUCLEAR EXPLOSIONS AND A COMPARISON OF THEIR EFFECTS



*The effects of an air burst depend upon the power and altitude of the burst. The most destructive height for a 20 KT weapon is about 2,000 feet; for a 1 MT weapon, it would be about 6,500 feet, etc.

IN THE NEXT ISSUE OF ZERO BEAT:

WKKK's biography concluded!

HCRA WAS contest results!

APRIL MEETING REPORT

If you said you'd write an article for ZB this season, please get it in early so we can include it. All contributors will be listed in this issue.

Dear Editor,

My compliments on the content of ZB of late. There appears to be a lot of club spirit! I enjoy receiving it every month. I'm slated to become the next engineer at WJUL in Boston, taking over the position that Brian Smith, WA1RLP, a former HCRA member, has held. Just thought I'd keep the club posted on what I've been doing because I haven't been able to make the meetings.

73,

Pete WA1SOF



ACIT



NOV 79 E ARL

J.J. DUQUETTE KIBE
P.O. BOX 34C
SOUTHWICK, MASS 01077

FIRST CLASS MAIL

MAY ZERO BEAT



OF, BY AND FOR THE RADIO AMATEUR

QST
FROM APRIL

CERTIFICATE OF MERIT

Awarded to

Hampton County RA

in recognition of outstanding service
to amateur radio

Ronald White W1LSTO
ARRL Official

Manager, Club Training Dept
Title

This England Division of Western New Section Winner
p. 48 Section or Division April '79 QST

April 2, 1979
Date

THE AMERICAN RADIO RELAY LEAGUE, INC.
ADMINISTRATIVE HEADQUARTERS NEWINGTON, CONNECTICUT, U.S.A. 06111

We won this for our efforts in getting the word out about amateur radio and our excellent programs in 1978! Let's take it again in 1979. See page 48 of the April QST for more information.