



the **RARA RAG**

Published by

ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 43

OCTOBER 1990

NO. 2

OCTOBER 5th MEETING TO FEATURE A TALK AND DEMONSTRATION ON RADIO CONTROLLED MODEL AIRPLANES

The Friday October 5th meeting for RaRa will feature a presentation by Bob O'Neil, KA2NBK and Alex Antonelli, KD2LZ. Bob and Alex are members of the Rochester Aero Modeler Society (RAMS). They will demonstrate another facet of Amateur Radio.

The topic will be Radio Controlled Model Airplanes. Bob and Alex will demonstrate the equipment and methods for controlling the model planes using amateur radio. Many new and interesting techniques are now used with this hobby.

The meeting will begin at 8:00 p.m. at the 40/8 Club, 933 University Avenue. Plan on getting there early to renew your membership for the year.

JUST A REMINDER — —

Your current RaRa membership expires October 31st. Renew now to keep your membership in RaRa for the coming year.

RDXA MEETING — OCTOBER 16th

A contest forum is the main topic of our next meeting Tuesday, October 16, at 111 Westfall Road, 7:30 p.m.

A round table of highly experienced contesters will explain their special techniques to help beginners and old time contesters improve their effectiveness. Everyone interested in contesting is invited, even if you have never worked a contest, this one will be too good to miss.

Bring your list of DX worked to address from our 1990 International Callbook.

For more information, call Bob, WE2T, Secty/Treasurer at 334-1103.

NEW USER FEES TO SUPPORT DXCC

The ARRL DX Century Club will institute a new fee schedule October 1. DXCC, while affecting a relatively small percentage of its members, is a substantial financial burden on the League. User fees, approved by the League's board of directors, will go toward better service (quicker turnaround time).

The fee structure is intended to encourage participants to send less frequent individual submissions to DXCC. Here is the basic outline:

1) After October 1, every first-time applicant for DXCC will be charged \$10.00, in addition to the usual charge for return postage. DXCC members as of October 1, 1990 are exempt from this registration fee.

2) ARRL and CRRL members will be allowed free of charge one submission per calendar year; this annual submission may include any number of QSLs, any number of DXCC awards, and any combination of new and endorsement applications. It does not include a person's all-time first submission.

3) Non-League members outside the US and Canada will be charged \$10.00 for their first DXCC submission of any kind each calendar year.

4) US and Canadian DXCC participants who submit more than once in a calendar year will be charged \$10.00 for each submission after the first one. Foreign non-members will be charged \$20.00 for their additional submissions.

Tnx ARRL Letter

SILENT KEY

RALPH (BUD) YOUNG

WA2UGE

September 20, 1990

the *RaRa Rag*

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Amateur Radio News Service

PACKETCLUSTER — HOT DX STUFF!

Almost one year ago something new was added to the Rochester Area radio scene. It came in quietly and has hardly been noticed since. In fact it is so unknown that an article appeared in the *RaRa Rag* about Packetcluster last year and the author didn't know there was a local node. The Rochester DX Association and its members funded the start of this unique tool as an alternative to a DX spotting repeater. If you have a packet capabilities and enjoy working DX we have just what you are looking for.

The Cluster is on 144.91 and its call is W2HPF. Logging in is the usual procedure, but then the experience becomes new. The commands are unique but the common ones are easy to remember. Here are a few, some contain a sample callsign to show the procedure:

SH/DX - list the last 5 DX spots

SH/DX/10 - the last 10 DX spots

SH/DX 10 - the last 5 spots on 10 meters

SH/DX HZ - the last 5 spots with HZ prefix

Special commands are:

SH/HEADING HZ - lists the beam heading to HZ (Saudi Arabia)

SH/MUF HX - the max. usable frequency to HZ

SH/SUN - sunrise and sunset at your QTH

SH/SUN HZ - sunrise and set at DX prefix chosen

SH/QLS HZ1 AB - lists the W6GO List QSL Manager info

SH/WWV - WWV reports are listed

Logging off the cluster is the usual BYE command.

Many other features are available. The entire package is geared to DXing, with most features aimed at sharing DX info RIGHT NOW. A rare country comes on and is picked up on the east coast first; the spot goes on a Boston area cluster or node as an example. The information is then sent from node to node (as many as twenty nodes will be connected at a time) and the spot appears here a minute or two later. Armed with the frequency and call, you dive in and get the contact before the really big pile up begins. Its as good as hot, buttered popcorn if you are a DXer. For those whose interests lie in VHF, the software was recently modified to accept frequency reports for 50 and 144 MHz.

The W2HPF cluster gets much of its support by donations to the RDXA. Manuals are available from SYSOP for \$10, or are free to RDXA members (dues are \$8). If you are interested, come to our meeting on Tuesday the 16th at 7:30. Location is 111 Westfall Road in the first floor auditorium. *KB2SE*

80 METER NOVICE PLAN OFFERED

The ARRL has offered an alternative to an FCC proposal to move the 80-meter Novice/Technician band. FCC, citing interference from radio-telephone stations in the 3725-3750 kHz segment, proposed, in *PR Docket 90-100*, to move the 80-meter Novice subband from its current 3700-3750 kHz to 3675-3725 kHz.

As an alternative, the League has proposed, in comments filed June 15, that the subband be expanded to 3675-3750 kHz and, concurrently, that the 200 watt power limitation for General, Advanced and Amateur Extra class operators (in that segment of 80 meters) be changed to 1500 watts. This would provide increased flexibility for Novice and Technician operators without reducing the privileges of other licenses.

Tnx ARRL Letter

THREATS BRING AMATEUR'S ARREST

On August 2, FBI agents assisted by FCC investigators arrested Anthony V. Marcantonio, KA2ZGE, of Queens, New York, and seized 20 pieces of his radio transmitting equipment. FCC earlier had responded to complaints that Marcantonio was “*interfering with amateur radio communications by transmitting unidentified, disruptive signals on the two-meter amateur radio band*”, according to the FCC.

“On July 27, FCC investigators, using direction finding equipment, traced the signal to the Marcantonio home”, FCC said. “The investigators discussed the situation with a family member who then shut the transmitter off. The transmissions resumed that evening and continued into the next day”. It was then, according to FCC, that Marcantonio made death threats over the radio against an FCC investigator.

Marcantonio was charged with making threats by radio, a felony carrying a penalty of up to five years in prison, a \$250,000 fine, or both. A federal judge set Marcantonio's bond at \$50,000 following a hearing. (FCC public notice, August 14, 1990.)

Tnx ARRL Letter

FOR SALE: 30' Rohn 25 tower with CD 45 Rotor, Mosley TA33 triband beam and 5 element 2 meter Yagi - \$100. HRO From 1938 Excellent condition but some modifications. Make offer. 6' relay rack cabinet. Make offer. W2PYJ, 442-9036.

RaRa CALENDAR FOR OCTOBER

(All meeting times and locations tentative. Please contact your club officers for up-to-date information.)

- 5 - RaRa Meeting - 8:00 p.m.
40&8 Club, 933 University Avenue
- 8 - Columbus Day Observed
 - Thanksgiving Day (Canada)
- 9 - Squaw Island ARC Meeting - 8:00 p.m.
Sheriff's Office, 84 Ontario Street,
Canandaigua
- 11 - Packet Group Meeting - 7:30 p.m.
111 Westfall Road
- 12 - Columbus Day (traditional)
 - W1AW Qualifying Run - 10-40 wpm
starts at 10:00 p.m. EDT
 - VHF Group Meeting - 7:30 p.m.
111 Westfall Road
- 13-14 - ARRL International EME Competition
 - Pennsylvania QSO Party
- 16 - RDXA Meeting - 8:00 p.m.
111 Westfall Road
- 17 - Kodak Park ARC - 12:00 Noon
1st Floor - Building 28
 - Drumlins Meeting - 7:30 p.m.
NYS Disaster Preparedness HQ,
Route 31, Newark (across from the
State Police Barracks)
- 19 - RRRRA Meeting - 8:00 p.m.
Pittsford Town Library
- 20 - Simulated Emergency Test
 - QRP Fall QSO - CW - starts at 1200 Z
 - Jamboree on the Air (“JOTA”)
0000 EDT 10/20 to 2400 10/21
- 27-28 - CQ World-Wide DX Contest - phone
0000 Z 10/27 to 2400 Z 10/28
- 28 - Standard Time Returns at 2:00 a.m!
Turn Your Clocks BACK One Hour!
 - W1AW Qualifying Run - 10-35 wpm
starts at 7:00 p.m. EST
- 31 - Happy Halloween!!! (BOO!)
 - West Coast Qualifying Run
starts 2400 EST
 - W1AW returns from WWII QRT 1945

PLEASE NOTE: All meeting notices and contest announcements should be submitted at least one month ahead to be included in the *RaRa Rag*. Please contact Jack, KA2PJM, at 461-8630 (work) or 424-1637 (home) with questions or corrections.

CLEAN RADIO

This is not necessarily an admonition to “*clean up our act*”, but a few remarks to remind us of our ham radio privileges and the responsibility that goes with it. There are cases of “*flagrant violation*” of the FCC rules, requiring no discussion here, because these violations are perfectly obvious to everybody hearing them take place, probably including those who indulge in them.

We not only have to be in compliance with the Part 97 Rules of the FCC, but we must also *appear* to others to be perfectly clean. If there is any doubt about the point don't indulge. For example, the Rules specifically prohibit any obscene, indecent, or profane words, language or meaning. Those words considered “*cuss words*” a few years ago, are now used in social conversations and even on commercial radio and television, and you know of the agonizing efforts by various authorities to actually define what prohibited language consists of. Let's just be careful of what we say on the air to avoid any offence to any person or group, including the FCC.

“*A soft answer turneth away wrath*”, and “*you can catch more flies with honey than vinegar*” certainly applies to the ham bands as well. We instinctively want to retaliate with a verbal index finger in the air, when somebody says “*get off the frequency*”, or “*He's working split, Moron*”. Politeness works, and retaliation just puts you in the same class as the lad who started it.

It is reasonable and expected that you advise a fellow ham if there is obviously something wrong with his signal: (clicks, chirps, frequency drift, hum, excessive splatter), but do it in the spirit of helpfulness. Be polite, not abusive. If you hear somebody transmitting out of the band, *do not* try to be a policeman and transmit on the illegal frequency.

We should avoid any appearance of using the repeaters and/or patch for business communications. Any time you dial up a number that answers “The So-and-So Company”, or “Mr. So-and-So's Office”, you are under suspicion even if you are as innocent as a child. Avoid any talk that can appear as a subterfuge to disguise the business aspect of the call.

We all know the old adage about never bringing up a controversial subject, such as religion or politics, at a social gathering. Well, that's not against the law on ham radio, but you just may retain friends longer if you avoid certain subjects until you know the other guy *real* well.

Tnx Harmonics

THE RaRa RAG 36 YEARS AGO — OCTOBER 1954

by Ed Gable, K2MP

I'm departing from my usual *20 Years Ago* format this month. Why, well simply because the October 1970 *RaRa Rag* is missing from the historical file. I'd like a copy if anyone has it... The October 1954 issue reports on, of all things, *Old Timers Night!!* Meeting at the Doud American Legion Post was a fun filled night with Ken Gardner, W2BGN, Chief Engineer at WHAM, as Master of Ceremonies. George Batterson, W2GB, opened the event by welcoming members with his working 1KW spark transmitter. Bruce Kelley, W2ICE, Chairman of the program, introduced Cy Staud, K2DQ; Commander E. B. Reddington, W2AM; Earl Peacock, W2AXR; and Fred Reynolds, W2VS; who all participated in programs. Elsewhere in these very “*newsy*” issues it was announced that RaRa purchased a code practice set and was starting Novice classes. The very first instructors were Sax Ringer, W2SAW; Linc Cundall, W2QY; and Sherwood Snyder, W2KFU. The Rochester VHF Group announced new officers for 1954: Joe Payne, W2UXP, Chairman; Chet Menges, W2VVG, Vice-Chairman; and Mac MacCowan, K2CEH, Secretary. No money, no Treasurer!!! The Rochester Mobile Club was active led by Roger Van Wuychuyse, W2CR; Ralph Amdursky, W2DFS; Jack Auer, W2SGJ and Walt Schaeffer, W2ZDW. In their advertisement, Rochester Radio Supply announced their new modern home at 600 East Main, corner of University.

CANCER CLUSTER DISCOUNTED

The state of Connecticut has told residents of the town of Guilford they have ruled out that there is a higher than expected rate of cancer in the town. The state conducted the survey after an article in *The New Yorker* last month suggested that a large number of cancers in a particular neighborhood were related to a nearby Connecticut Light and Power substation (*Letter*, July 13).

“*Given the findings*”, said Sandy Geschwind, an epidemiologist with the Connecticut Department of Health Services, “*it appears very unlikely that EMFS (electromagnetic forces) are related to the meningiomas on Meadow Street*” (in Guilford).

The state's conclusion was based in large part on the fact that abnormal numbers of cancers were not found around other electrical substations.

Tnx ARRL Letter

EXPAND YOUR METER SCALES

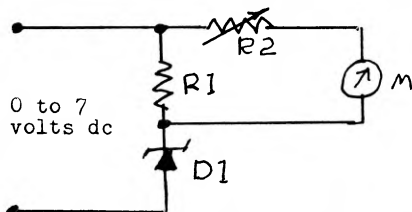
by E. O'Fox

(This is a reprint from the July 1966 HARMONICS, the 50th Anniversary year.)

Most of our voltmeters and ammeters, as commonly used, have relatively linear scales, and for many applications, this is all to the good. However, in some cases, such as monitoring the AC line voltage, we are only interested in a small portion of the scale. In the cited case, the portion of use would probably be from 90 to 130 volts, with the remainder of the scale of the commonly used 0150 V AC scale being wasted. Even worse, the part of the scale where the desired readings lie is compressed into so small an area that making an accurate reading is difficult.

A case in question is the need for a voltmeter to monitor the DC voltages in an automobile electrical system. Originally a 0-10 V DC meter was employed, but it was found that it was impossible to read it at a glance due to the compression of the portion of the scale wherein the fluctuations took place. In this case, the readings of interest varied between 4 and 7 volts DC. Note that this is 3 divisions on a 10 volt voltmeter, therefore 70% of the scale is wasted.

The circuit of Figure 1 is designed to expand the portion of the scale where the readings of interest are located. The values illustrated are for the automobile voltmeter; however, the principles can be extended for DC voltmeters in any desired operating range. This meter, as wired, spreads 4 to 7 volts across the entire scale of the 0-1 ma meter. Once the meter is calibrated, it makes an easily read unit with a relatively accurate scale. By varying the component values, it is easily changed to cover almost any desired range.



- R1 = Current limiting resistor
- R2 = Calibrating Resistor
- M = 0-1 ma. dc meter
- D1 = 4.7 volt Zener Diode

Figure 1

How does it work? An examination of the circuit will show that D1 and R1 form a simple shunt Zener voltage regulator. As soon as the voltage applied exceeds the Zener rating of the diode, it conducts and holds the potential across it at 4.7 volts. Normally, if used as a regulator, the voltage

appearing across the Zener would be used to provide power for an external circuit. It is obvious, therefore that any voltage in excess of the Zener voltage rating must appear across the limiting resistor R1. It is this voltage that is used in the metering circuit. In the illustration, if 7 volts is applied to the circuit, 2.3 volts appears across the resistor. If the applied voltage is dropped to 6 volts, 1.3 volts appears across the resistor and 5 volts gives .3 volt across the resistor. Although the Zener operates on a curve rather than linear function these values are approximately correct. It can be seen that a voltmeter connected across the resistor will read the difference between the applied voltage and the Zener voltage, thus giving an apparent scale expansion.

This method can be applied to any voltage range within reason by simply changing the Zener and series resistor. To determine the required values, the following steps can be used:

1. Determine the desired voltage range.
2. A zener with a voltage rating equal to the low value of the range is selected.
3. The series resistor is determined by the use of Ohm's Law to limit the current through the Zener at the maximum expected voltage, so as to stay within the power rating of the Zener.
4. Any small current (0-1 ma) milliammeter is connected with a series calibrating resistor to cause a full scale deflection of the meter.
5. Using an accurate voltmeter across the applied voltage, calibrate the scale of your new expanded scale voltmeter.

Example: A meter is needed to monitor a 40 volt DC supply to a transistor transmitter, with an allowable voltage variation of ± 3 v.

1. The meter is to read from 35 to 45 volts.
2. A 35 volt Zener with a 1 w. rating is selected.
3. The maximum current allowable through this Zener is 29 ma and requires:

$$\begin{aligned} \frac{P}{E} &= I = \frac{1 \text{ watt}}{35 \text{ volts}} = 29 \text{ ma} \\ E &= R = \frac{10 \text{ volts}}{0.029 \text{ a.}} = 345 \text{ ohms} \end{aligned}$$

Therefore, 345 ohms is the minimum resistor value. A good choice, allowing for a safety factor, would be 470 ohms. Remember, some current will go through the meter circuit as well as through the series limiting resistor.

4. An 0-1 ma meter and series calibrating resistor and a 45 volt potential is applied to the circuit.
5. The series calibrating resistor is adjusted to give a full scale reading of the meter.
6. A voltmeter is connected across the applied voltage and the meter is calibrated.

The advantage? -- The meter now requires a 10 volt variation above the 35 volt level for full scale deflection, rather than 50 volts, as would normally be required to monitor a 40 volt supply. This gives a scale expansion of five times and a consequent readability increase of five times. Also, the *pm* 3 volts or 6 volt permissible variation range now occupies 60% of the meter scale, as compared with the 12% it would occupy with the usual 50 volt DX meter.

Why not?? Try expanding the scale of your monitor meters.

SAVE BY RENEWING YOUR ARRL MEMBERSHIP THROUGH RaRa

Any RaRa member who wishes to join the ARRL or renew their membership can save \$2.00 by submitting their application through the RaRa membership chairman. Just bring your paperwork to any meeting and Keith will be happy to take care of you.

ADVERTISE YOUR BUSINESS OR SERVICE IN THE RaRa RAG

Rates for advertising in the RaRa Rag are available from Dick Goslee, K2VCZ, at 334-1762. The rates are very reasonable and your ad will let fellow hams know about your business or service.

As always, For Sale Ads are free of charge to RaRa members on a space available basis.

FOR SALE: Drake TR-4C sideband transceiver, w-4 wattmeter, MN-4C matching network, RC-4 Power Supply. Also included - E-TEK Frequency readout, Viking phone patch, Astatic desktop microphone. All manuals. Mint condition. Contact Lou Montante, KA2UBS, after 5:30 p.m. or leave message on tape phone number 377-5190.

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02 MODIFICATION

by Bob, WA8NT, *RF-Carrier*

Tired of having to open the squelch all the time to check the volume level? Wish you had a "Busy/Monitor" button like the newer technology rigs? It's easy to put one in the 02. There is a redundant TR switch between the Function and lower TR buttons. The European versions use this for Tone Burst, I believe. Open up your HT, lift the upper connection (ungrounded side - check with a meter) and clip it in half to avoid its touching something it should not. Run a short piece of insulated small diameter wire from the lifted tab to the right side of the squelch pot as seen from the solder side of the PWB. This grounds the squelch and opens it when you push the button.

Just a few words to help make the opening of your HT a bit easier. Pull out the two knobs on top - be sure the two buttons are up - take out all four screws that hold the battery plate on the bottom - do not forget the little black screw in the middle of the back. This assures contact between the metal back plate and the final output transistor - do not disturb the white heatsink grease - do not over-tighten that screw - be very careful of the flex circuit - to get the main boards out of the case, push up on the black oval battery terminal on the bottom - remove all four screws from the metal clamshells that hold the two halves of the main boards together as that is the only way you can get to the squelch pot solder terminals.

It might sound difficult, but it really isn't. Just don't get in a hurry and call me if you want to let me know how it went or if you need help.

ROCHESTER HAMFEST

MAY 17, 18, 19, 1991

Patrick C. Moyer, N2AIW
Attorney & Counselor-at-Law

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Advertisement

RHOMBICS & THE O.S.S.

(A True Story)

by Bob Kennedy, W2WUB

After the training in both the Enlisted Men's and Officer's School at the Signal Corps installation, - Fort Monmouth, New Jersey in October of 1943, I was sent to the Communications Branch of the O.S.S. (Office of Strategic Services) headed up by Major General William "Wild Bill" Donovan, -- and assigned to the London, England office.

Early in the months of 1944, I gave morse code training and double transposition code plan studies to two-man French Officer Parachute teams who were assigned to drop behind enemy lines, and into France for the purpose of reporting troop movements, Division names, and in general any information that might be helpful to the Allies. This material was encoded by the Observer, and transmitted back to the receiving base in Maidenhead, England, near the City of Oxford.

During the course of the training which I gave, there were several "teams" of two who were excellent in their work, and in order to track their initial success after the parachute jump into France, I would motorcycle out from the training site in St. Albans to the receiving base to take their initial transmissions and compare the "first" with the sample left prior to departure.

Several weeks of this went on, until through other channels, we received information that the agents in the field were having a difficult time getting the base station to respond to their signal transmissions. It got so bad, and indeed, serious enough to jepordize the entire missions, -- that I was sent out to the receiving site to determine any failures either in installation or equipment.

Of the various receiving rhombics set up on 105 foot steel mast, I was concerned primarily with the one oriented at 125 degrees from North, -- pointed toward France. This antenna was 490 feet by 340 feet, cut to 5.25MHZ and terminated at the far end by a 600 ohm power resistor. The other end was terminated into the secondary of a transformer, 50 ohms to 600 ohms. They didn't call them BALUNS in those days.

The fifty ohm site (primary) was fed into a patch panel for distribution to one or more of the 24 receiving positions using Hallicrafter SX-28's or RCA AR-77's.

Tracing out the initial electrical installation, and double checking the connections, we still had a very weak reception of signals from France. WHY??

Subsequent investigations showed that the secondary of the 50:600 ohm transformer was open. WHY!! because someone during the initial installation had forgot to place a center-tapped "bleeder" resistor across the 600 ohm side to "bleed off" static charge build-up on the antenna caused by nearby lightning strikes.

The two power resistors were connected in series, with the center tap grounded after a new transformer was installed, and VOILA! station Victor was back on the air with R9 signals for the rest of the SUSSEX secret operation.

Ambrose "Amby" Hardwick, W2YQ, of Hardick-Himble would have been pleased to know that his resistors were used and never had to be replaced for the balance of the mission.

MORE ON SCANNER LAWS

ARRL has submitted to FCC reply comments supporting preemption of local and state laws regulating the use of mobile radios by licensed Radio Amateurs. In its May 31 comments, the League pointed out several comments filed in the proceeding that buttressed the League's position.

The League contends that possession by licensed amateurs of radio receivers that incidentally cover public safety frequencies should not be prohibited by local or state laws. This, the League pointed out, is supported by the Associated Public Safety Communications Officers (APCO), "*the nation's oldest and largest public safety communications organization*".

Comments filed by Uniden America Corporation noted that all radio communications are interstate, and as such the state and local laws which prohibit the possession of radio receivers by licensed amateurs interfere with "*instrumentalities of interstate commerce*", which should not be permitted.

The League requested that "*the Commission determine that statutes or local ordinances which preclude the possession of radio equipment by licensed radio amateurs merely because such equipment is capable of reception of police or other public service communications conflict with Federal communications law and policy, and are therefore void*".

Tnx ARRL Letter

FOR SALE: Rotator for large beam antenna, tubes and components for high voltage power supplies. Bruce Kelley, W2ICE, 716-657-7489.

BOARD BACKS CODELESS LICENSE, STANDS FIRM FOR NOVICE, TECHS

Membership Services, WARC also addressed by League officials

A codeless Amateur Radio license, the upcoming World Administrative Radio Conference (WARC-92), and ways to streamline operations dominated the ARRL's second board of directors meeting of 1990.

At what several participants called an "*unusually quiet meeting*", the board heard President Larry Price and Executive Vice President David Sumner on the League's preparations for WARC-92. Several staff changes (see accompanying article) were announced, changes intended to aid the WARC preparations.

Sumner in particular noted the possible expansion of the high frequency broadcasting bands and its potential impact on amateur bands, and the increased demand for UHF spectrum by new land mobile and mobile satellite systems. He stressed the importance of continued amateur radio technical development in the light of future competition for spectrum.

The board reaffirmed the League's position on a codeless entry-level Amateur Radio license, paralleling a "*strawman*" recommendation made by committee in May (see July QST, p. 54). The board remains committed to the retention of both Novice and Technician classes of license, in addition to the proposed new Communicator class.

One change from the recommendation was that accredited volunteer examiners holding General class licenses should be authorized to administer Communicator and Novice examinations.

In the area of membership services, the board heard reports from several committee chairmen, including one on data processing now being implemented for the DX Century Club award.

By approving changes in several of the by-laws of the League's articles of association, the board codified some staff responsibilities. The positions of executive vice president and business manager now are officially described as reporting directly to the board, and their areas of responsibility are now more clearly delineated.

Briefly, in other matters:

- The board, after hearing a report from the Membership Services Committee on spectrum management, voted to "encourage that further member input be sought with a final report and recommendation to be brought back to the Board

at its 1991 Annual Meeting". An article on this subject will appear in October QST.

- The League's investment portfolio increased in both performance and balance in 1989 (over 1988).

- The ARRL Foundation balance increased from \$360,000 to \$422,000 in 1989.

- The business manager reported both revenues and expenses being below predictions for the first six months of 1990.

- The executive vice president was instructed, "in light of the advances made in modeling and measurement of antenna performance in recent years", to prepare a report for the next meeting of the board "on the issues involved and any recommendations for change in the current advertising policy related to antenna gain figures".

- A special code proficiency certificate honoring the bicentennial of the birth of Samuel F. B. Morse will be available from April 27, 1991 through March 31, 1992.

- Shauna Richards, N7NGT, was named the 1989 recipient of the Hiram Percy Maxim Award.

- Gerald Kasselman, KD4QA, was awarded the ARRL Professional Instructor of the Year award for 1990.

- Lyle Aufranc, AA6DJ, was selected to receive the Herb S. Brier Instructor of the Year award of 1990.

- Andre Kesteloot, N4ICK, will receive the Pewter Cup for technical excellence for his article, "*A Practical Direct-Sequence Spread-Spectrum UHF Link*", which appeared in the May 1989 issue of QST.

- The board conferred on Iris and Lloyd Colvin, W6QL and W6KG, a special award as Amateur Radio Ambassadors of the decade 1980-1990 for their tireless efforts to foster international goodwill by means of Amateur Radio.

- The board thanked Naoki Akiyama, NX1L/JH1VRQ, who recently left the headquarters staff, for his eight years of service to the League and its members in the field of international services.

- The board approved an ARRL "National Certificate of Merit" to "recognize achievements of members contributing substantially to the furtherance of the goals of Amateur Radio Service, in a manner of national significance".

The board met in Farmington, Connecticut, on July 20 and 21.

Tnx ARRL Letter