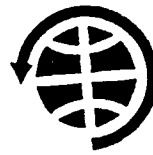




# ZERO BEAT



AMSAT

## Hampden County Radio Association

Springfield, MA

May 1985

ARRL Affiliated, 37th Year

NEXT MEETING:  
SUNDAY MAY 5th, 1985  
ANNUAL FLFA MARKET!!!

West Springfield Lodge of  
Elks, Morgan Road,  
West Springfield, Mass

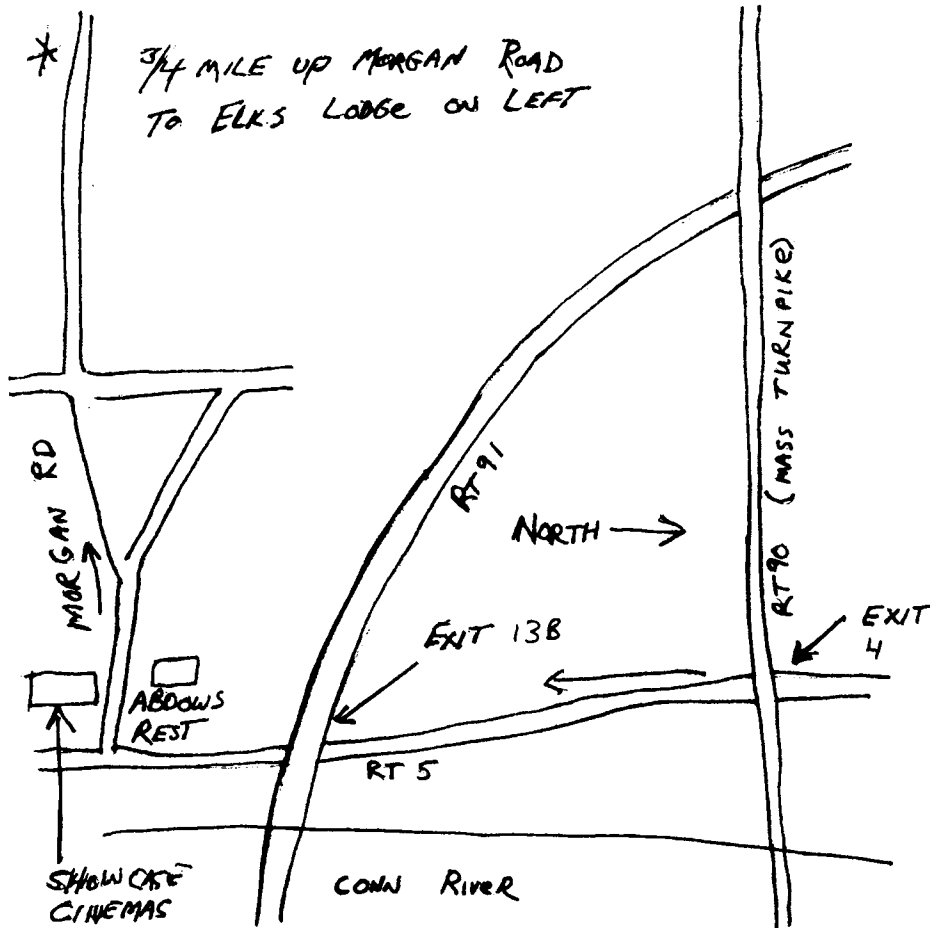
Admission \$1.00  
Tables \$3.00

Food and Refreshments  
will be available.

Talk in on 147.105 up 600

For more information:  
Steve Nelson 413-596-8216

Directions: Take Mass turnpike  
to West Springfield, exit four.  
Travel about 1/2 mile South on  
route 5. At Abdow's restaurant,  
turn right on Morgan Road. The  
Elk's Lodge is 3/4 mile up on  
the left.



**HAMPDEN COUNTY RADIO ASSOCIATION**  
Annual Meeting & Awards Night  
Friday June 7th, 1985 6:30 pm  
F.H. Congregational Church,  
Feeding Hills, Mass

**BUFFET of Roast Beef, Imported Ham,  
Meatballs, Turkey Roll, Macaroni  
Salad, Potato Salad, Coleslaw,  
Rolls, Baked Beans, Coffee, Milk,  
Butter, pickles, and Cake.**

**Door Prizes! \$4.00 per person**

Dues are \$9.00 per season, September thru June. Please mail to: NIAEH,  
Greg Stoddard, 1500 Mapleton Avenue, Suffield, CT 06078. Thank you!

## NOMINATIONS

The annual meeting of your club is at the June banquet. Nominations of members to serve on the board of directors are being solicited. To nominate someone, call Bob McCormick at 413-786-7966.

### 19 FIELD DAY 85

As you know, this very popular event is on weekend of June 22-23rd. The HCRA is hosting two sites. To sign up for FD, contact these people.

Western Mass Law Enforcement Academy site  
Rte 187, Feeding Hills, Ma  
WINY CALL BOB MCCORMICK 786-7966

Middlefield fairgrounds, Middlefield, MA  
WITM CALL PAUL KRESS, 568-8291

### BASKETBALL HALL OF FAME

Special Event station. Tenatively scheduled for the weekend of June 30th. No firm commitment yet! If you want to work on this, contact Jeff Duquette, at 413-569-6739 (evening between 6 and 9 pm)

### APRIL FOOL

The April issue of Zero Beat usually contains an April Fool article to catch the unwary. This year was no exception! However, we may have been too clever. The joke was the "100% QSLs", where you'd pay \$5.00 per card for rare DX QSLs. The articles about the SHACKMASTER system were entirely legit, and we would operate something like this if you gave us the funds. (No wonder we have so many problems selling state-of-the-art in Western Mass.)

### HAM OF THE YEAR

We did not receive enough nominations to have this award this year. Maybe we should drop it entirely! Many thanks to the three members who did write.

### JUNE BANQUET

Tickets for the June annual meeting and awards dinner are now available from any B/D or direct for an sase from Zero Beat. The \$4.00 is for the food, if you don't want to eat, you don't have to. While tickets will not be sold at the door, you can order them via phone, and pick them up when you arrive. We need an accurate count to order just the right amount of foodstuffs. If attendance is poor this year, there is almost a 99% chance this will be the last dinner we have. The club is only what the members make of it!



CQ DX  
by  
W1DGJ

ALBANIA is the most needed country by DX'ers ... CAMBODIA XUISS active again ... ST. BRANDON 3B7 operation by SMOAGD this month ... MIDWAY ISLAND operation by KD7P/KH4 ... NAVASSA ISLAND DXpedition by 6Y5NR/KP1 a success ... CLIPPERTON ISLAND ditto FOOXX ... SOUTH SHETLANDS 4K1F on 20 & 40 cw ... MONGOLIA JT1AO very active ... TONGA A35EA operated by ZIIAMO ... RODRIGUES 3B9CS until June ... PITCAIRN ISLAND ZL4DW/VR6AB until end of May ... GUINEA DL7AH/3X thru May ... MACQUARIE ISLAND VK0GC on 75m SSB at 10Z ... GUINEA BISSAU J5WAD still active on 20m SSB ... DJIBOUTI possible operation by KC7UU soon ... VATICAN CITY activity planned for June ... VK6HD 1.833 11 Z .. TF3KG 1.833 00Z .. KL7GKY 1.820 11Z .. 4X4NJ 1.822 04Z .. ZL2BT 1.838 10Z .. VK7BC 1.833 10Z .. T77V 1.841 05Z .. KH6XX 1.826 11Z .. LU8DPM 1.840 10Z .. 7X5AB 1.837 04Z ... VS6DO 3.505 11Z .. KD7P/NH4 3.802 10Z .. EA9IE 3.789 04Z .. D44BS 3.797 01Z .. BY4AA 3.795 11Z .. CN2AQ 3.794 23Z .. DL7AX/3X 3.502 02Z .. 4U1ITU 3.797 02Z ... JTOAPE 14.014 00Z .. Y1OAY 14.216 15Z .. 5B4JE 14.226 16Z .. BY4AA 14.194 13Z .. RFOFWW 14.194 13Z .. TR8DR 14.195 23Z .. SP9VU 14.194 14Z .. HL2SF 14.186 23Z .. JW5E 14.195 22Z .. 4S7VO 14.186 23Z .. BY5RA 14.180 13Z .. JT1AO 14.225 00Z .. 3A2TO 14.175 14Z .. HLIADH 14.153 00Z .. VK9XG 14.202 13Z .. FE5RV/TK 14.192 12Z .. UA9NS 14.153 13Z .. 4U1VIC 14.230 19Z .. T77C 14.216 19Z .. ZB2HX 14.240 19Z .. 8R1RPN 14.192 23Z .. JT1BG 14.208 01Z .. CR8CR 14.195 23Z .. UF7FWW 14.014 13Z .. 5X5BD 14.026 21Z .. AC4AN 14.201 18Z ...

DEAR CQ DX: I want to increase my DXCC total but whenever I call "CQ DX" most of the replies are either from England or Germany. ANSWER: Try being more directive with your calls; i.e. call "CQ DX E. EUROPE", "CQ DX USSR", etc. No matter how you call CQ DX you will most often be called by the most populated countries. Best technique is to listen more and you can be more selective with the countries that you call. The serious DXer spends more time listening than in QSO.

## BRIEF VISIT WITH THE OM - HIRAM PERCY MAXIM

There is so much that HPM/WIAW did for us hams, appropriately entitling him "Father of Amateur Radio", I can recount only a few highlights and personal impressions. It is, of course, well known and documented that he started the ARRL and QST with his young protege college student Tuska around 1915. It may not be so well known that, in my estimation, he and Tuska broke away from the Hartford Radio Club so that the two of them, along with Dave Moore, the 21 year old then president of the Club, could proceed on a national scale with an organization that included public service and relay concepts probably originated in an incident involving our Hampden County: an intermediate Windsor Locks Station relayed a message with his spark wireless from Maxim in Hartford to a Springfield ham who reportedly had a hard-to-come-by Audion for sale. This relay service did the trick. Maxim got the tube! The word relay, indicating use of privately owned hobby equipment for the benefit of others, was adopted in the official non-profit corporate name and has been, through the years, one of hamdom's principal survival assets, even to its present-day version of automatic relay, the 2 meter repeater.

One of the things I admired most in HPM's organizational genius was the high standards which he set for himself and fellow hams as embodied in the six requirements of the Amateur's Code: Courteous, Loyal, Progressive, Friendly, Balanced, Patriotic.

He sure was courteous and friendly to me, when as a schoolboy some 55 years ago I rang the door bell to the side entrance of his home in Hartford for an unannounced visit to WIAW. As I look back at it now, I must have had a lot of nerve to go on my bike from an immigrant's family home in the meadows of East Hartford to the home of a famous automotive pioneer off fashionable Farmington Ave in Hartford. At that time he was indeed one of the Insurance City's leading citizens, married to the daughter of a Maryland governor, but you'd never know it the way he invited me in to see "Old Betsy" his rotary spark rig which I used to hear on my crystal set and earphone

in the cellar of our house way over in East Hartford across the city and across the river, maybe 10 miles distant. Although the details are hazy now, it must have been an inspiring visit that urged me to stay on in school and pursue science, unlike most of my neighborhood chums.

When it comes to being balanced, it's hard to think of anyone more balanced than HPM toward his hobby, never letting it interfere with duties to his family, business, or community. The family movies which he also pioneered and relished show him enjoying life with the youngsters in his unique and appealing personality; kindness, sincerity and love of life abounding. He had many patents from his horseless carriage engineering career with Pope Hartford and invented noise silencers that would nowadays enshrine him as an environmentalist fighting noise pollution. As regards community and patriotism, it brings to mind my own attendance at the dedication of the municipal airport, Brainerd Field, in Hartford. The reason I went, because I read in the papers that HPM would officiate since he was Chairman of the Hartford Aviation Commission. His patriotism shone brilliantly at the outbreak of World War I. Not only did his silencer company convert wholly to munitions production, but as ARRL president he saw to it that the Navy got its first quota of 500 trained operators at once. Then 2,000 more operators were needed, and largely through HPM's efforts and organization, were immediately enlisted.

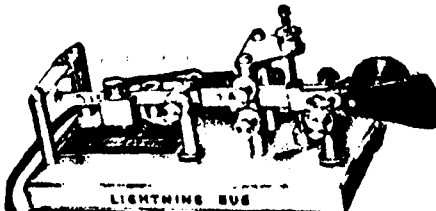
Such is the stuff of which our hobby's heritage originated. Quoting from the 50th anniversary message in 1964 of then League President W6ZH: "We must be everlastingly grateful to those old timers for handing down to us these traditions of public service, technical progress, and operating skill. Without them, ham radio would have perished long ago".

Art, W1KK - May 14, 1978

Re-printed from June 1978, Zero Beat

## HOW OUR SECTION CW TRAFFIC NET OPERATES

By Perce Noble, WIBVR



### EXPLANATION OF THE REPORT CARD:

A report card is sent in every month to the Section Manager, if you desire to be credited towards awards, etc. There are four categories to fill in, based on the traffic you handled that month.

**Originated:** A message filed at your station by a third party, either in person, by telephone or mail. You get one point for accepting the message.

**Received:** One point for each radiogram received by you via radio.

**Sent:** One point for each message sent by your station.

**Delivered:** One point for each message delivered by you, in person, by mail, or by telephone.

### A SAMPLE MESSAGE:

**(Preamble)** NR 12 R WIBVR 7 LANESBORO, MA  
AUGUST 19

**(Address)** Joe Dumais, 18 Main St,  
Springfield, Ma 303-441-5511

**(Message)** WAITING PATIENTLY FOR YOUR QSL X  
73

**(Signature)** Perce WIBVR

NR = any number you wish to assign.

R = Routine message; P = Priority message;  
Spell out "Emergency" when you pass that type!

7 = Number of words in the message

X = means "period". Note that "73" is part of the text.

### MISCELLANEOUS:

If a net did not take on new members, it would eventually pass out of existence. We welcome all newcomers! WE WILL ADJUST SPEED AS NECESSARY! Come on in and have some fun!

If you prefer, we have two section phone nets:

Western Mass Phone Net (WMPN)

3935 4:30 pm MONDAY-SATURDAY

Western Mass Emergency Net (WMEN)

3937 8:30 AM SUNDAYS

The Western Mass Net meets daily on 3562 khz at 7 pm and has been in operation since 1932!

### HOW TO CHECK IN:

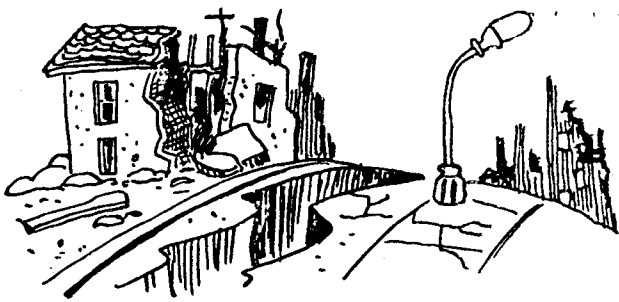
When there is a break or a pause, call the Net Control Station. (NCS) Then he'll send your call. For example, NCS is W1KK, ... "QNI, K "; You- "W1KK de KAIT, K" or send "T, K ". The 'T' is sent just to get his attention, and to let you know you can transmit, the NCS will send whatever you used back. i.e. 'T'.

If you don't have traffic send "QRU" and wait for instructions from net control. If you do have traffic, list it thusly: Any that's going to people within our section, list by call or town. Any going out of Western Mass Section list as "THRU". i.e. Suppose you have one for Connecticut, one for Maine, and two for California. You would check in with your call, and then send "QTC THRU 4". The NCS takes it from there. DO NOT LEAVE A NET UNTIL DISMISSED BY THE NCS! He will get your attention by sending what you used to get his attention at the beginning, i.e. to talk to KAIT, he'd send "T", and KAIT would reply "C" or "T". (The "C" means 'yes', or on some nets, "I'm still awake".) He'll tell you you're free to leave, maybe by sending 'QRU' or he may dismiss the entire net by sending 'QNF', the net is free.

### DURING THE NET:

In some cases the NCS may call you and another station and say: "U5" or "D3" That means go up five khz or down 3 khz to handle the traffic. The receiving station always calls the other station first. After you acknowledge the traffic, you go back on the net frequency and during a break just send your identifier. i.e. KAIT would just send "T". The NCS will acknowledge you.

Immediate break-in is desirable but not necessary. Most net controls will have it. So, if you're copying traffic and start to miss, just hold the key down for a few seconds. The NCS or other station will send a question mark. (``--``) You then send the last word you received correctly and he will resume the message.



## AMATEUR RADIO EMERGENCY SERVICE An Overview

(Excerpted from the ARRL Public Service Communications Manual, 1985 Edition,)

### Introduction:

In the early days of the Amateur Radio Service, emergency radio work for the public was largely individual, spontaneous and had little organizational effort beforehand. Although this was fine in the 1900s and 1920s, in today's complex and interrelated society, with all the various government and local agencies (each of which serves the public in a different, specific way), ham radio must have a definite organization plan for dealing with each and all agencies, as well as the public who is the ultimate beneficiary of the service. In today's ham radio, some of this organization is provided by the Amateur Radio Emergency Service (ARES), and the National Traffic System (NTS), both sponsored by the ARRL. The other major public service organization of hams is the Radio Amateur Civil Emergency Service (RACES), which is a Civil Defense agency activated only in a declared state of emergency, and is under State and Federal authority. In most areas, ARES, NTS and RACES cooperate fully and smoothly in emergency situations, complementing each other well.

### Organization:

ARES consists of about 70,000 licensed Radio Amateurs who have registered their availability for emergency operation in the public interest. Its operational leadership consists of local, district and section emergency coordinators, numbering 2000. In our neck of the woods, the Section Manager, Don Haney (KAIT) is responsible for Western Mass ARRL activities. Serving under Don as Western Mass Section Emergency Coordinator (SEC) is Dick Goodman (WB1HH). HCRA members will remember Dick for his very entertaining and informative meeting of two years past. Dick is in charge of

several county Emergency Coordinators, of which I am the EC for Hampden County. Each local EC is responsible for maintaining a pool of trained, registered amateurs who will be available for emergency service work should the need arise. At the present time, I have one Assistant EC, Dave Walker (WAIPOB), who does such a marvelous job of handling the Sunday morning ARES Emergency Net on the Mt. Tom Repeater.

### Activities, Purpose and Membership:

The most visible outward signs of ARES on a regular basis are the weekly Emergency Nets at 0845 local time on Mt. Tom (146.34/.94) and at 0900 local time on the KAIJJM (147.105/.705) repeaters in our area, the hf Western Mass Emergency Net at 0830 local on 3937 KHz all on Sunday mornings. These nets are linked on hf with all Western Mass' emergency coordinators, as well as ARRL Section and State nets. Traffic is handled via the National Traffic System, which is also represented on the nets. Each year, in October, a Simulated Emergency Test is held nationwide by all ARES groups to try out the national intercommunication networks with the local levels.

Part 97 of the FCC rules and Regulations mention as the first principle under "Basis and Purpose" the following: "(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications." ARES and NTS exist as the ARRL's implementation of this principle for the basis and purpose of our hobby.

Usually emergency operation is initiated at the local level and is then the responsibility of the ARES Emergency Coordinator. Communications concerning the emergency situation and the public welfare are generated by local civic and welfare officials, or at their behest, and resulting problems handed to the ARES organization for solution or resolution. ARES works carefully and closely with local officials, always conscious of the territorial nature of many organizations, and usually being careful not to step on too many toes.



There are many other amateur public service groups operating under different sponsorship which are a vital part of the amateur radio public service function, and the ARES group always tries to work effectively with them whenever possible. One example of this other group is the Mt. Tom Emergency Response Team, which, although under private sponsorship and unaffiliated with the ARES or ARRL, has as its head Larry (WB1CJH), who happens at this time to be the Area 4 Civil Defense Radio Officer and therefore in charge of RACES. Even though RACES is not activated except in the event of a declared state of emergency by state or federal officials, the MTARA team would probably be the primary response group in time of crisis. Once the emergency needed additional operators for the long haul, or in the event the emergency transcended local proportions, ARES would serve as a pool of personnel upon which any group or organization could rely.

Every licensed amateur, whether or not a member of ARRL or any other local or national organization, is eligible for membership in the Amateur Radio Emergency Service. The only qualification other than holding a license is a sincere desire to help. Since ARES is an amateur service, only licensed amateurs are eligible for membership. The possession of emergency powered equipment is desirable, but is not a requirement for membership.

#### RACES and ARES:

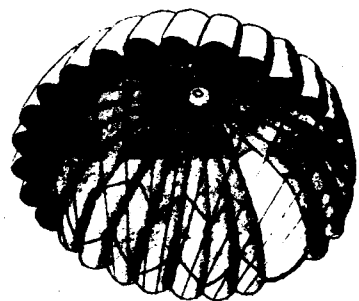
Although RACES and ARES are separate entities, we advocate dual membership and cooperative efforts between both groups whenever possible. The RACES regulations now make it simple and possible for an ARES group whose members are all enrolled in and certified by RACES to operate in an emergency with great flexibility. Using the same operators and frequencies, an ARES group also enrolled as RACES can switch hats from ARES to RACES or vice versa to meet any situation as it develops. For example, during a non-declared emergency, the group can operate as ARES, but, when an emergency or disaster is officially declared by state or federal authorities, the same group can become RACES with no change in personnel or frequencies. In most areas, this is exactly what happens; in fact, most RACES officials also function as ARES officials. In our area, for various

reasons, mainly personality conflicts within both organizations, RACES and ARES have remained separated by a wide gulf, even though the same people are members of both groups. ARES has offered its membership rolls to the local RACES officer (WB1CJH) in the event of an emergency, and proposed joint appointments for both ARES and RACES, but without positive response. Until recently, I carried a MTARA emergency pager as a volunteer emergency team member, but it was withdrawn. Presumably, in a real emergency, the petty political and organizational difficulties which seem to beset the local groups would be set aside and both ARES and RACES would cooperate to the benefit of the public. ARES members stand ready to provide any help to any group in any emergency as the need arises.

#### Joining ARES:

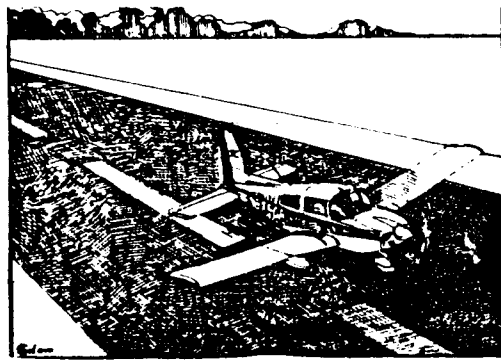
Joining ARES is very simple; the prospective member fills out a form listing his name, call, license class and work and home phone numbers, then lists the bands and modes his station are capable of operating, and noting any emergency power capabilities. This is returned to the EC (WB1GLX in Hampden County), and membership rapidly follows. Although membership is usually for an indefinite period, usually the EC will contact members after 2-3 years to make sure the contact information is current. The info is not made available beyond the ARES organization, and is reasonably confidential. Unlisted numbers will be handled discreetly. Should you have any unusual emergency capabilities, please mention them on the application. A copy of the application/enrollment form is included with this article for your use.

JUMP  
RIGHT  
IN!  
JOIN THE  
ARES!



## RESCUE

By K1BE



"Clouds, clouds, and more clouds!", Stu lamented, "How could I have been so dumb!". Circling the Cherokee slowly higher, no clear patch offered escape to the ground. "Well, time to go IFR," Stu said to his wife, Mary. Nervous already, she wanted to know exactly what Stu was up to. "You're the one who had to visit your sister in Holyoke, now we're stuck stuck above the clouds. I haven't made an instrument approach in over a year." Tuning his radio to Bradley Field, he barked into the mike: "Bradley approach, this is 7394 Juliet, listening on 125.8." Nothing. Once and then twice again Stu called, and began trying other channels. "The thing is on the fritz! Stop crying, Mary, that won't fix it". Stu's clammy hands tightened on the wheel. He knew the remaining fuel would soon be gone. A blind descent through the clouds could end up smashing into a mountain. Flying two minute legs on a triangle, he waited for Flight Service to send up a shepard to guide him in. The transponder was set to 7700. "Hope that's working", thought Stu, "My guts are wrenching themselves inside out". The fuel guage crept down, and Stu knew he'd have to try a descent soon. What to do next?

"The handi-talkie!", Stu shouted, "dig it out of my jacket, Mary". Turning to .105/.705, Stu heard the crisp cw ID: KALJJM/RPT followed by station WIHGJ chatting, and passing it on. Breaking in, Stu fought his rising panic and called: "MAYDAY, MAYDAY, MAYDAY, this is K8SJ, trapped above the clouds with all radios out. My fuel is running low and I require an immediate instrument approach to the nearest airport. Can someone contact flight service?" Through the garbled doubled and tripled replies, one call was understood. "K8SJ this is K1YQQ, calling them now." Chet got Bradley FSS on the landline and advised them of the problem. "K8SJ this is K1YQQ, they've got you on radar, your transponder is out. They want to know your altitude and remaining fuel?"...KERCHUNK..."7,000 and 45 minutes--request immediate vector to nearest airport, I repeat"...Chet relayed this and replied: "Turn left to 230 degrees, begin slow descent, approach control at Westover

is being notified"...KERCHUNK... Stu began his descent and tried to calm himself as clouds wrapped his plane in mists. "K8SJ, K1YQQ turn right 330 degrees, Westover has you on its' scope"... "Roger, K8SJ". Chet wondered how this pilot felt, bringing his plane in by instructions slowly passed by unknown friends.

"K8SJ, this is K1YQQ, a corridor has been cleared for your Westover approach. Ceiling of 800 feet, visibility two miles in rain. You're doing fine, just keep taking it nice and slow"... Misty hands seemed to be grabbing at Stu outside the windshield, and winds buffeted him from side to side... "Turn to 320 degrees, descend to 1200 feet" ...KERCHUNK... "K8SJ K1YQQ, I say again, turn to 320 degrees, descend to 1200 feet" ... "THE PLANE'S DIVING TO THE RIGHT, NO THE LEFT, I CAN'T KEEP IT LEVEL!" ...Trust your instruments, Stu, trust the instruments, you're disoriented--K8SJ, K1YQQ, come in please".....Where had he gone????

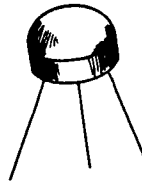
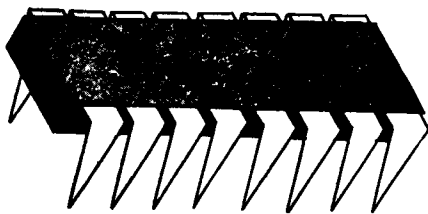
"Chet, we've lost him on the radar about three miles out," Flight Service quietly said. Chet wanted to know it he'd crashed. "Most likely", they replied, "we're sending the teams out now". Chet hung up the phone and cleared the repeater. He just didn't want to talk to anyone.

The following was written on a thank you card received by K1YQQ:

*Dear Chet,*

*Thank you for your help when I ran into trouble. We came out of the clouds in a right turning dive. I flared, leveled out, cut the engine, and rolled out. I never saw the farmer's fence and ruined my Cherokee. My broken leg and ribs are healing fast. Many thanks to all who sent cards.*

*73,  
Stu K8SJ*



## TECHNICAL HANDLING OF SEMICONDUCTORS

By Ed White WINPL

## Basic Rules to Observe When Repairing Circuit Boards:

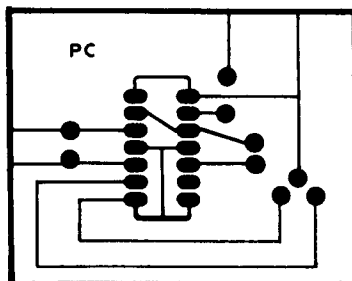
Although diodes and transistors have unlimited life expectancy in a normal and properly protected circuit, they can be quickly destroyed by misuse. Improperly using test gear or procedures damages what can be a preventable expense. Follow these simple precautions.

### Testing Procedure and Precautions:

1. Always disconnect power from equipment before removing circuit board connectors, plugs and cables.
2. Use a soldering iron of the lowest wattage that'll do the job.
3. Never use a soldering gun on solid state devices! The magnetic field generated can instantly destroy semiconductors. To observe this, turn the gun on, and stick the end into a box of tacks.
4. Do not use the "rx1" scale on your ohmmeter as the resultant forward current may be too high (up to 130 mls) for the diodes and semiconductors.
5. Do not use flashlight lamp type continuity checkers.
6. When it is necessary to remove a solid state component from a circuit, clip wires as close to the board as possible, apply heat from the iron to lead, (opposite foil side of the board, if possible) until wire is free and withdraw the lead with a minimum of twisting.

### Circuit Board Precautions:

It is inadvisable to write on circuit boards, particularly with lead pencils, as shunt paths, or worse, short circuits, may result. Avoid excessive bending of circuit boards, as this can create hairline cracks, or breaks in the continuity which are very hard to find. Skillful use of soldering irons is necessary when repairing circuit boards. If excessive heat is applied, the printed circuit foil may be melted loose from the board.



1. When installing a new component, scrape the leads to insure a good connection, then cut to the desired length.
2. Avoid excessive wiggling or twisting of the leads. Holes should be cleaned out prior to wire insertion.
3. Apply iron heat to wire (not the foil!) and let the solder run into the hole.
4. Do not leave fingerprints on the board.

### Repair of Broken Circuit Board Foil:

1. Clip any raised portion of the board.
2. Using tinned copper, approximately 20 guage, cut a length 1/2" longer than the break.
3. On foils 3/16" or wider, drill an approximate size hole through the foil, 1/32" each side of the break to install the wire. Should the foil be less than 3/16", drill a proper size hole beside the foil, enough to bond the foil with the solder.
4. Bend the wire in a U shape to span the break, with 1/8" to insert into the drilled holes and solder. Do Not Overheat!

The ultimate goal in any test and repair is to ascertain that the units are functioning efficiently. In tube circuitry, quick and direct replacement is possible. This isn't true with solid state gear. Therefore a more efficient or sophisticated test procedure is a must. The possible damage and expense can be reduced by adhering to the aforementioned precautions.

tnx, VARC from the September, 1967 issue of THE OSCILLATOR

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**Conclusion:**

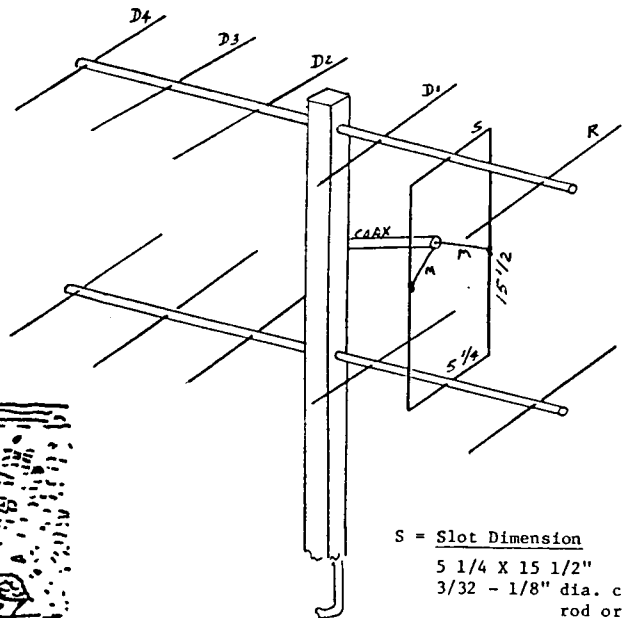
ARES members are available to help in any emergency requiring communication on behalf of local, state or other official agencies or groups. ARES members have registered their capabilities with an Emergency Coordinator, who organizes and maintains contact with the members. He can contact each member in the event of need, and serves as a contact person for any emergency organization. The ARES organization covers local, regional, section, state and national levels, each interrelated. Weekly nets on both HF and local repeaters keep the contact lines current and open, and provide personal contact between ARES personnel. All licensed amateurs are eligible for ARES membership regardless of license class or ARRL membership. We welcome any questions, comments or suggestions on how we can make ARES more useful to the community.

Build this Low Cost slot antenna. It's broadband \_\_\_\_\_ will cover the entire 420-450 MHz. Amateur band with gain and low SWR.

Shown below in the horizontal mode it may be rotated 90° and used in the vertical plane for FM and ATV repeater operation.

Connect it to the ATV down converter described in the April issue and start receiving video.

The ATV monitoring frequency is 147.705/.105 (KA1JJM 2 mtr repeater).



**S = Slot Dimension**  
5 1/4 X 15 1/2"  
3/32 - 1/8" dia. copper rod or #10 copper wire  
Locate matching bars at center of slot.

**Mast**  
1" X 1" (wood) or 1/2" dia. PVC pipe

**Booms**  
1/2" dia. X 30" lg. wood or PVC pipe

Use good grade 50Ω coax such as:  
Saxton 8285  
Belden 9913  
Belden 8214

**Element Spacing**

R-S 3 3/4"  
S-D1 3 1/16"  
D1-D2 7"  
D2-D3 6 3/4"  
D3-D4 6 3/4"

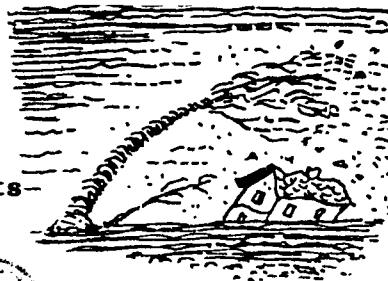
**Element Lengths**

R 13 5/16"  
D1 12"  
D2 11 13/16"  
D3 11 5/8"  
D4 11 3/8" 1/8" dia alum.

**M = Matching Bars**

3 3/16" in each  
3/32 - 1/8" dia. copper rod or #10 copper wire

Thanks, and '73  
Ray Burk, WB1GLX  
(413)596-6403  
ARES Emergency Coordinator  
Hampden County, Massachusetts  
April 1985



Name: \_\_\_\_\_ Call: \_\_\_\_\_

**AMATEUR RADIO EMERGENCY SERVICE**  
REGISTRATION FORM



Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/PC: \_\_\_\_\_

Bus. phone: \_\_\_\_\_ Home phone: \_\_\_\_\_ County: \_\_\_\_\_

License Class: \_\_\_\_\_ Primary radio interest: \_\_\_\_\_

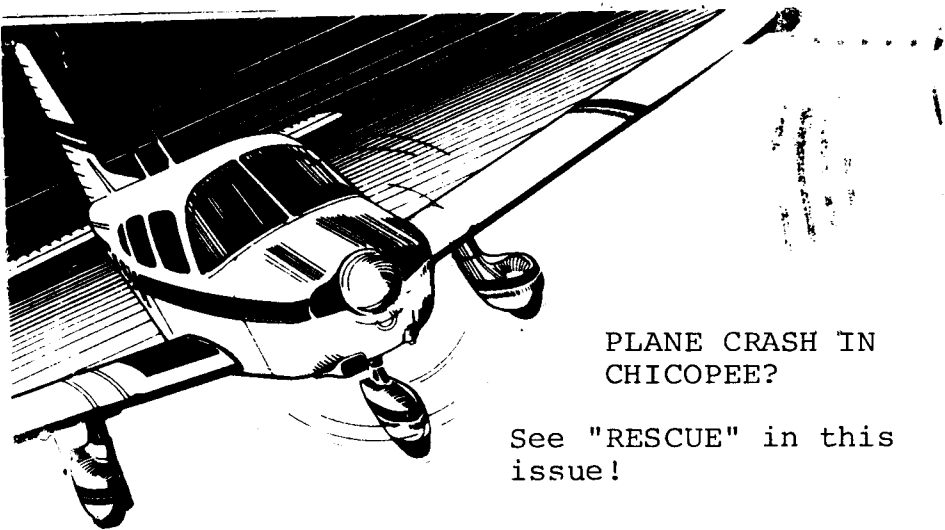
Check (✓) bands/modes you can operate:

	160	80	40	20	15	10	6	2
CW								
FM								
RTTY								
SSB								
MOBILE								

Can your home station operate without commercial power? [ ] YES [ ] NO

If yes, what bands? \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



PLANE CRASH IN  
CHICOPEE?

See "RESCUE" in this  
issue!

## CALENDAR OF EVENTS

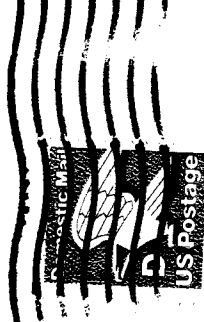
Next Meeting: Sunday May 5th 9am-3 pm  
HCRA SPRING FLEA MARKET, West Springfield Lodge  
of Elks, West Springfield, Mass Admission \$1.00  
Tables \$3.00 For more information, call Steve  
Nelson at 413-596-8216

Flea Market Saturday May 11th  
Deerfield New Hampshire Flea Market  
The biggest & the best in New England  
Admission \$1.00 benefits the Shriner's  
Hospital for Children.

MTARA Meeting Friday May 17th  
Meets at the campus of Holyoke Community  
College, Routes 10&202, Holyoke, Mass  
K1KPH will speak on PACKET RADIO.  
7:30 pm

VEC EXAMS Saturday May 18th  
HCRA is hosting exams for all license  
classes, 9 am, at the high school,  
Main Street, Wilbraham, Mass  
Contact Yorke Phillips, K1BXE  
at 413-566-3010

ANNUAL MEETING Friday June 7th  
Annual meeting and awards banquet for  
the HCRA at 6:30 pm at the FH Congregational  
Church. See Board members for tickets. (\$4.00)



Hampden County Radio Association  
c/o Jeffrey J. Duquette K1BE  
P.O. Box 346  
Southwick, MA 01077

~~ACIT E Y~~ 10/85

FIRST CLASS