



O R C

NEWS

EDITOR AA9W

JUNE 1981

Excellency Sez:

FREE LUNCH

Ask any salesman, and he will tell you that "there ain't no such thing as a Free Lunch." I used to get a chuckle out of people who proclaim their 'right' to operate an amateur radio station and in the same gasp complain about all those nets..."who needs traffic handlers - they can do that stuff on commercial mains" or "gee I would like to help on the project, but I don't like handling traffic cuz I'm not very good at it."

Well I'm here to tell ya NO GOVERNMENT HAS EVER GRANTED ANY PRIVILEGE WHICH WAS NOT DEMANDED BY THE MAJORITY OF THE GOVERNED unless IT FELT THAT IT HAD SOMETHING TO GAIN FROM DOING SO. Regardless of idealistic, democratic concepts, rights and privileges are not inherent, but are granted by those in power...or taken from them by force of revolution. When government believes that certain privileges are no longer necessary or beneficial, it is quick to withdraw or usurp them. If you doubt the truth of this consult the writings of John S. Mill or Thomas Hobbes.

The privileges accorded to Amateur Radio Service are no different from those granted by Uncle Same to any other aspect of community. It should be apparent by now that government suffers Amateur Radio to exist because of a self-seeking end. Traditionally this had been a pool of trained operators from which to draw from in time of national crisis, and I see no reason for them to have changed

MORE

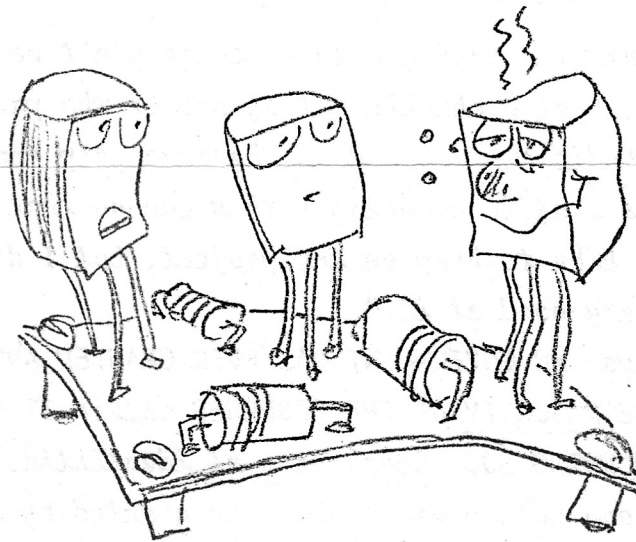
their mindset. Certain things are expected of us in return from our privileges, and it is beginning to look as though government will be reassessing its feelings to see if it is getting what it wants and needs from our efforts. If you think our popularity will tide us up through, just ask the TV watching public about HAMS, most consider us a marginal, if not detrimental lunatic fringe of society, added to the volume of calls the FCC gets for RFI etc, and our position becomes more precarious.

Uncle is not all we have to look out for, consider local tower zoning and the interference rulings in local appellate courts. In order to balance the scales community activity takes on a weighty stance...support your club activities!

Sincerely,

Terry A. Berg

(W A 9 A W O)



"Maybe I am Biased, but he looks saturated to me."

Cody McLidd we abhor
His keyer we hate even more
He sends lots and lots
Of dashes and dots
The spaces he left at the store

Visual Requirements for Working on Printed Circuit Boards

Dr. ROBERT SULLIVAN, K9SRL
410 N.E. Seventh St.
LINTON, IN. 47341

With the introduction of transistors and miniaturized circuits in the past years, most everyone dealing with these entities has probably experienced at one time or another difficulty "seeing" components and circuits due to their reduced size. Now with the recent advent of integrated circuit electronic devices which require even smaller printed circuit board layout design, the visual or "seeing" requirement is even greater. When one considers the magnitude of visual anomalies found in the general population, i.e., nearsightedness, farsightedness, astigmatism, or combinations of these, and when one includes problems of binocularly (the ability or inability of the eyes teaming together) such as one eye receiving a larger image than the other, poor eye muscle coordination, cataracts, and any ongoing or past history of ocular disease, it is no wonder many of us end up with solder bridges, improper or unsoldered connections, and components mounted improperly. The fact is that many simply cannot "see" well enough to avoid these pitfalls.

The author recently completed a project that used twenty-nine I.C.'s, three of which were L.S.I. devices, all mounted on four P.C. boards, three of which have circuit paths on both sides. Even though I have 20/20 vision at distance and near and have never had any pathological conditions causing any visual impairment, I experienced great difficulty "seeing" my work. I therefore came to the conclusion that if I were having these kinds of problems with what is generally considered "normal" vision, there must be many fellow electronic hobbyists who are having even greater problems. With this in mind, I offer the following observations to help in understanding these visual tasks and indeed allow most to "see" with better efficiency.

magnification, visual acuity generally improves. However, there are limiting factors to this. For example, as the image size on the retina gets larger, the field of view gets smaller.

If you are nearsighted (cannot see well at a distance without your glasses or contact lenses) you might do better visually at the near distances we use in electronic construction without your glasses or contacts. Since a nearsighted eye without correction in place is in effect "too strong," removing the spectacles has the same effect as looking thru a magnifying lens. You will notice that near objects (within about 20 cm. of your eyes, depending upon your prescription) look larger. However, this might not work if you have astigmatism, as your vision could be distorted.

If you are farsighted (cannot see well at near without your glasses or contacts), you should wear your correction at all times for near electronic work. Since a farsighted eye is a "weak" eye without correction, wearing glasses or contacts in effect makes your eyes "stronger". Also, farsightedness involves a problem with the eye's focusing mechanism and without correction, eye fatigue and headaches are more common.

If you normally wear glasses full time and if they are the bi-focal or tri-focal type, you should wear them for near electronic work.

In conclusion, you might consider having a special pair of glasses made especially for electronic work. I made myself a pair with one lens a plus 16 Diopter power and the other lens opaque. This is to force me to use one eye only since such a large prescription for both eyes will create a condition making binocularly impossible. This is a common problem with some of the available "Optical Aids" that are recommended for near visual tasks. These devices are usually binocular in nature (both eyes are used) and in order to maintain this binocularly, weaker lenses are used and the resulting magnification is less. I put the plus 16 lens on my right eye since I am right eye dominant. With these glasses approximately 4X magnification is achieved and the field of view is about 7 cm. The focal point is 6.25 cm so I have to hold things close. I found that with these glasses and a handheld penlight (I use the disposable type that are so popular these days), I was able to examine P.C. boards for errors in component mounting, solder bridges, and general inspection with great ease. Just one thing, these suggestions should be implemented after you have checked with your local eye doctor.

QUICK REFERENCE DATA

HANDY REFERENCE TO CAPACITOR AND RESISTOR CODES

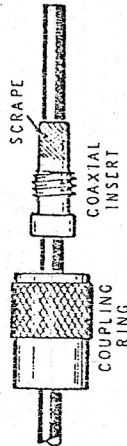
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First, one must realize that vision in man requires light. But it has to be "useful" light, i.e., not too dim (below the visual threshold) nor too bright (above the threshold) and therefore saturating the visual system, especially the retina. Second, visual acuity (how well one sees) depends upon image size on the retina. This is directly related to the object size. The conclusion is that if one has the proper lighting conditions and

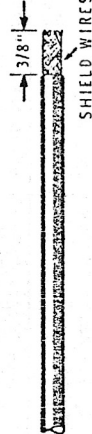
PROCEDURE FOR INSTALLING A COAXIAL PLUG ON RG-58 CABLE

Use the following procedure to install a coaxial plug and insert on the end of a length of RG-58 cable. NOTE: Always start with a cable that is a few inches longer than you need. This gives you some extra cable in the event the connector needs to be replaced at some later date.

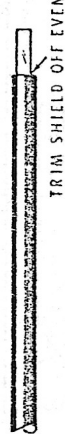
1. Lightly sand or scrape the indicated area of the coaxial insert. Then slide the coupling ring and the insert onto the cable as shown. Be sure the coupling ring and the insert are on the cable before you proceed.



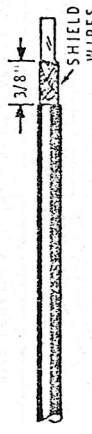
2. Cut the end of the cable off even. Then remove 3/8" of the outer insulation. Do not be concerned at this time if you also cut off some of the shield wires.



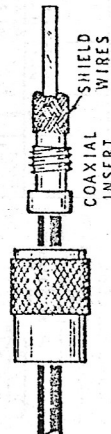
3. Trim all the shield wires off even with the end of the outer insulation.



4. Taking care not to nick the outer shield of wires, remove another 3/8" of the outer insulation.

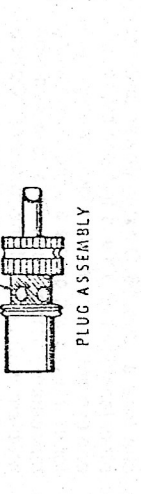
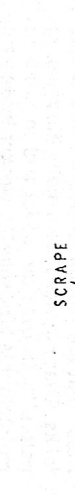


5. Position the coaxial insert even with the end of the outer insulation. Then carefully fold the shield wires back until they are neatly against the coaxial insert. It is not necessary to unbraided the shield wires.

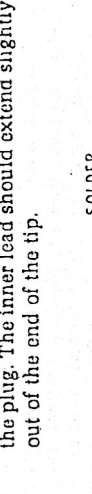


6. Taking care not to nick the inner wire (or wires) remove 5/8" of the inner insulation. NOTE: Your particular cable has more than one inner wire, twist them together tightly. Then melt a small amount of solder to their ends to braze them together.

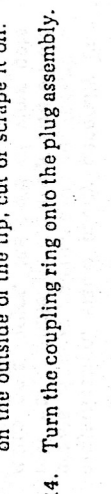
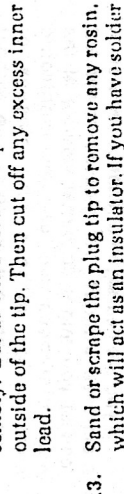
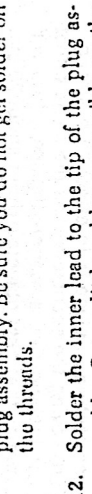
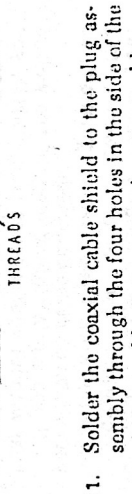
7. Lightly sand or scrape the outside of the plug assembly in the area of the four holes. Then carefully screw the plug assembly onto the coaxial insert, while holding the insert so it does not turn.



8. Solder the plug assembly to the shield wires through each of the four holes. Be sure you do not get solder on the threads. NOTE: You will need plenty of heat to do this properly. Then solder the inner wire (or wires) to the plug assembly and cut off any excess wire end.



9. When the assembly is cool, screw the coupling ring onto the assembly.

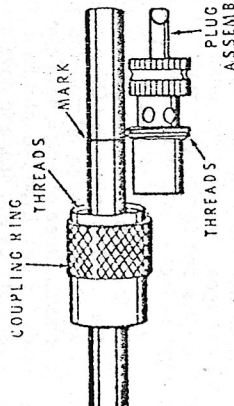


PROCEDURE FOR INSTALLING A COAXIAL PLUG ON RG-8 CABLE

Use the following procedure to install a coaxial plug and insert on the end of a length of RG-8 cable. NOTE: Always start with a cable that is a few inches longer than you need. This gives you some extra cable in the event the connector needs to be replaced at some later date.

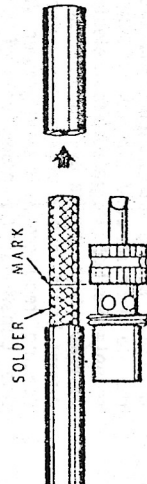
1. Slide the plug coupling over the coaxial cable so the threaded end of the ring is toward the end of the cable.

2. Position the plug assembly even with the end of the cable and mark the cable at the back of the threads.



3. Cut the outer insulation at the mark and remove it from the cable. Be very careful that you do not cut the inner shield wires.

4. Position the plug assembly even with the end of the cable again and mark the shield wires at the back of the second knurled ridge.



5. Apply a thin coat of solder to the shield wires behind the mark. Do not use too much heat or the inner insulation will be damaged. Also do not permit a build-up of solder, or installation into the plug will be difficult later.

6. Cut through the shield wires and the inner insulation at the mark. Be very careful that you do not cut into the inner lead. Twist the shield and insulation section off the end of the cable.



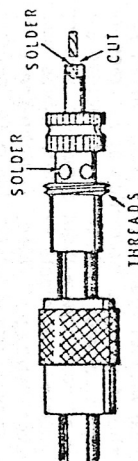
7. Carefully inspect the end of the coaxial cable. Trim off any small shield wires that could touch the inner lead.

8. Apply a light coat of solder to the inner lead.

9. Sand or scrape around the four hole area of the plug assembly to insure good solderability.



10. Insert the coaxial cable into the back of the plug. Make sure the inner lead of the cable is started through the center tip of the plug. Then grip the plug with a pair of pliers and turn the cable into the plug. The inner lead should extend slightly out of the end of the tip.



11. Solder the coaxial cable shield to the plug assembly through the four holes in the side of the plug assembly. Be sure you do not get solder on the threads.

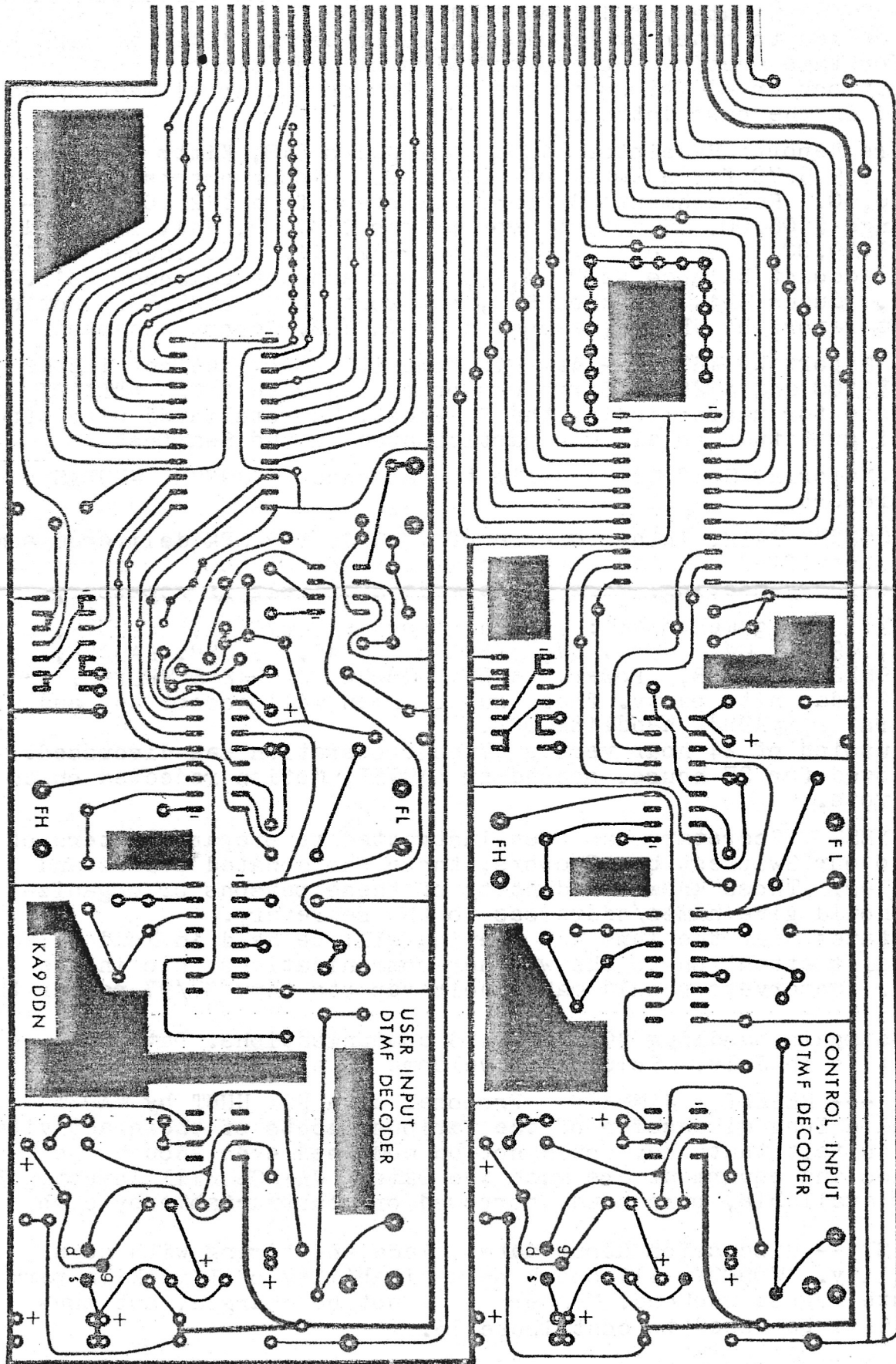
12. Solder the inner lead to the tip of the plug assembly. Get as little solder as possible on the outside of the tip. Then cut off any excess inner lead.

13. Sand or scrape the plug tip to remove any rosin, which will act as an insulator, if you have solder on the outside of the tip, cut or scrape it off.

14. Turn the coupling ring onto the plug assembly.

This month's piece is just going to be a quickie with a plea for HELP! I need volunteers to help me lay out circuit board artwork like the example shown below. This has to be the most time consuming part of the control project.

For those of you who are wondering, the board pictured is a dual (two complete circuits) touch-tone decoder using the new Mitel chips.



THE OZAUKEE RADIO CLUB, Inc.



BOX 13

Port Washington, Wisconsin 53074

Minutes of 13 May 1981 Meeting

Meeting called to order by President, Terry Berg, WA9AWO at 7:20 PM. Agenda for this meeting was adopted with no objections. No corrections or additions to the minutes of the April meeting as presented in the news letter.

Treasurers Report: Receipts, \$103, Kuhl Ducks \$48, Kitty \$20.40, Swapfest \$1975.70 for a total of \$2174.10. Disbursements, News letter \$6.30, Refreshments \$22.85, Swapfest food \$125.00, Swapfest change \$106.00, Swapfest door prizes \$137.49, Hall rent and license \$119.00, Postage \$10.80, total \$527.44. Net income \$1619.66. Checking account balance \$209.23, Savings account balance \$2312.27, cash \$8, ducks \$24, Patches \$72, net worth of \$2625.50. Motion to accept report by WB9SFK, seconded by WA9JOB. Report accepted.

SWAPFEST Report by WB9SFK-- At this time it looks like net income between \$1100 and \$1200. Barry was presented with a ONE ATTABOY certificate for masterminding the Swapfest. He retaliated with effusive noises of gratitude to all who participated in the Swapfest.

Lombardi Memorial Golf Classic: in the absence of W9NHE, WB9PAS gave a brief report.

OZAUKEE COUNTY FAIR: In the absence of WD9GDG, WB9 SFK delivered some comments. Verified the fact that an allotment of \$60 was approved at the February meeting. More can be made available if necessary.

FIELD DAY: assignments are: WA9BMA, message handling, WA9UVK, novice position, W9LO, CW, W9WQ, CW, WB9PAS, OSCAR, LFSSB, KA9GBE, HFSSB, W9RXJ & WA9KBB, Power, AA9W, Cooks, WA9UJK & WB9PAS, and WD9JHP, Friday, nite party. These subchairmen will accept any and all volunteers. WA9UJK handling QRP.

The discussion of 24 hour versus 27 hour operation was discussed. WD9FQW moved for 27 hours, second by KA9GBE, Motion rejected on an 11 to 6 vote.

NEW BUSINESS Secretary has been instructed to prepare letters of thanks to our Swapfest benefactors, those who donated prize and lent tables. Those knowing identity of these persons or organizations should give names/addresses to the secretary.

WA9JOB states that the June WAR meeting will be held in Fond du Lac. KA9DDN calls attention to the weather communications info in the bulletin. Observers should make their reports thru 37/97 rather than 07/67.

WA9RPB is again handling HOLLAND DAYS communications. Date not known but is in July. Volunteers welcome as always.

FOX HUNT --- REPEATER JAMMERS Proposal of a FOX HUNT by WA9AWO initiated a long discussion of the various facets of these activities. It is felt that they could not be combined even though the techniques and equipment are much the same. WA9JOB will investigate equipment available, purchased, borrowed or constructable by club members.

CORN ROAST -- discussion about date, place and timing with corn availability. WD9FQW will check on availability of Lime Kiln park for a late August weekend. Members will not be charged, but non-members will be asked to contribute \$5.

THE OZAUKEE RADIO CLUB, Inc.

13 May '81 meeting minutes (2)



BOX 13

Port Washington, Wisconsin 53074

ADVANCEMENT CLASSES WA9UVK reports that the last use of the Grafton High School for this purpose will be 3 June.

UNCLAIMED door prizes from the Swapfest will be raffled at the close of future meetings.

W9VQD issued an invitation to the Milwaukee Ham club meeting on the 14th. Wa9JOB mentioned the 31/91 meeting at the Miller Brewery on June 3. Meeting adjourned at 8:23 PM.

E. J. Bauer W9WQ
E. J. Bauer, Secretary

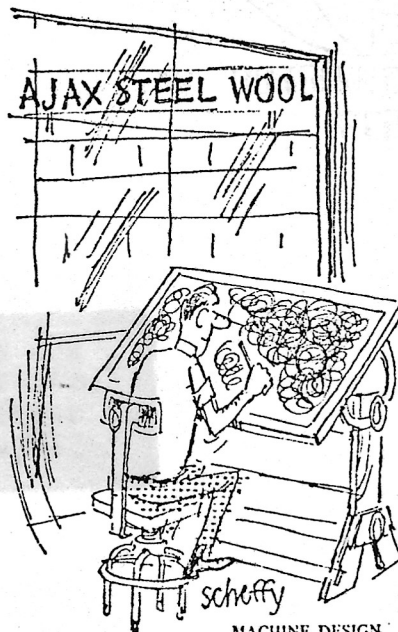
NEW ANTENNA IDEA

One of the neatest tricks to come out of the WA4PYQ Mountain Laboratory in recent years is the nifty, new, invisible Dummy Antenna. Consisting essentially of a 100-foot length of number 36 monofilament polyester fishing line, this innovative antenna has many useful characteristics. First of all, it may be mounted either vertically or horizontally at any height above the ground, and it requires no radials or traps. Impedance matching is not critical, and there is no radiated TVI. Because of its unique design, it may be attached directly to metallic masts without insulators. As one might expect, the Dummy Antenna has a nondirectional pattern and is virtually invisible when erected. Working with the Dummy is simplicity itself. No solder is used: the antenna is simply glued to the connectors (be sure to use epoxy for outdoor locations). It is easily repaired with a simple square knot. The Dummy Antenna is immune to strong-signal overload and electrical interference yet responds equally to skip and ground wave and strong and weak signals. Finally, the antenna may be connected to full legal power without saturation or overheating. According to WA4PYQ, the Dummy will be on the market sometime later this year after a few minor technical problems are ironed out (signals are down somewhat and VSWR has to be reduced).

COURTESY GEARFAKf

FCC TO INSTALL SPRINKLERS ON 20 METER BAND

To preclude a repetition of the near disastrous fire which struck the 20 meter band last year, the FCC plans to install a sprinkler system on the band sometime in the fall. According to an announcement made last week by FCC Special Frequency Safety Engineer, Marvin Larpsnogg, the new sprinkler system will "sense the buildup of excess thermofrequency heating (TFH) and cool down the band before a conflagration can break out." Mr. Larpsnogg added that successful operation of the system could lead to the sprinkling of all ham bands by 1985, "provided water damage doesn't get to be a big problem."



MACHINE DESIGN

JUNE 10, 1981 7:30 PM AGENDA

- X INTRODUCTION
- X ADOPTION OF AGENDA
- X SECRETARY'S REPORT
- X TREASURER'S REPORT
- X OLD BUSINESS
 - X WD9GDG - COUNTY FAIR
 - X NOVICE CLASSES & ADVANCEMENT CLASSES CLOSED-OUT
 - X FOX HUNTING
 - X F I E L D D A Y
- X NEW BUSINESS
 - X AA9W - FILM STRIPS
 - X OPEN TO FLOOR
- X ADJOURNMENT AT 9:00 PM
- X REFRESHMENTS COURTESY W9DQS, BOB WILLIAMS