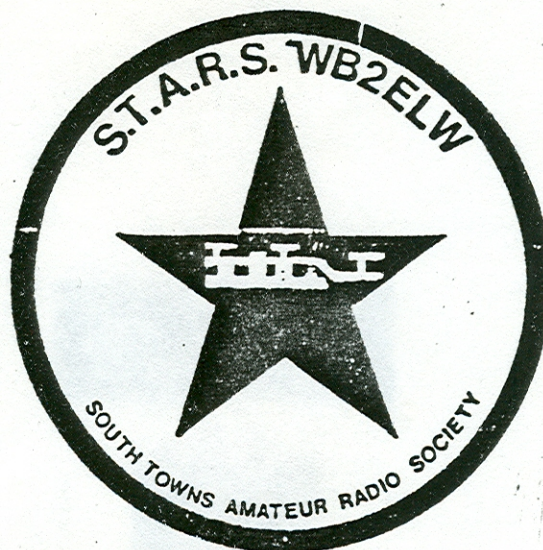


TELSTAR

KB2EQV
 STEVE YEKICH
 716-825-8049



Business Meeting = 2nd of November at the Youth Center

Board Meeting = 28th of November at the Youth Center

This month's meeting will have the FCC come down and answer some questions that we may have about the new Part 97 rules or any other questions we might have, so come down to the meeting and shoot away.

CONTINUED FROM OCTOBER TELSTAR

With respect to repeaters, the new rules deleted the requirement that operation be discontinued within five seconds after cessation of radiocommunications by the user station. Also deleted was the restriction that a repeater cannot transmit on more than one channel from the same location.

Additionally, the Commission clarified the permissible emission types to be used by amateurs, and codified or clarified many other policies concerning amateurs that have evolved over the years as interpretations of existing rules. For example, it codified the existing policy concerning state and local regulations governing the height and placement of amateur station antenna structures. The new Part 97 also will include the essential holding of the Commission's limited preemption ruling that state and local regulation of an amateur station antenna structure must not preclude amateur service communications. Rather, such regulation must reasonably accommodate those communications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose.

Action by the Commission May 31, 1989, by Report and Order (FCC 89-180). Commissioners Patrick (Chairman), Quello and Dennis.

-FCC-

News Media contact: Patricia A. Chew at (202) 632-5050.
 Private Radio Bureau contact: Maurice J. DePont at (202) 632-4964.



At this time I wish to thank the officers and members for the beautiful plaque that was presented to me at the October meeting. It sure will get a place of honor in my Ham Shack. Now one thing although I have resigned from most of the committies in the club it does not mean that I shall not participate in club activities. You know when you get past the three quarter century mark you slow down a bit. HEHEE

The STARS VE program went very smoothly at the Hamburg Jr High in October. Much to my surprise there were no club members there to take the test to upgrade. We had people from California, Lockport, Akron, N.Y. and Bombay India (he is a student at U.B) It is nice to see that the Hams of W.N.Y. take advantage of this test. Lancaster will have a Nov. 8 & Dec. 13 test. For more info see Matt NS2M at 683-1720.

Now the important business this month, November is the nomination and Election of Officers. I hope everyone will come prepared so that it can be over with in a short time. If there are two or more members for each position it will be necessary to have ballots and vote at the Dec. meeting. Remember these officers that get elected will guide the club for the next year.

Also at the October meeting a rig was donated to the Hamburg High School so they can continue with the teaching of the students to the wonderful world of Amateur Radio.

Well, the Nike Base is buttoned up until spring. I hope everyone enjoyed going there and taking advantage of all our equipment there. Too bad we don't have heat and other facilities there also.

Now that most of the hamfests are over and winter is upon us I hope everyone had his equipment in good order so as to enjoy the upcoming hamming season, and don't forget to check into the three nets run by STARS, their times and freq and published elsewhere in this issue.

Hope to see you all on Nov 2nd
GUZ-WB2EZX

VE REPORT

The STARS Oct. 11 VE test session was quite successful, of the 9 candidates that were present, 7 upgraded; 1 to Tech, 4 to General, 1 to Advanced and 1 to Extra. 11 elements out of 15 were passed. The 13 WPM code test passing rate was better than most of our sessions-4 passed out of 6. The following VE's participated: NS2M, KA2RFT, WG2H, WB2EZX, N2BGJ, KC2NY and W2UJR.

The next STARS test session will be sometime in April 1990.

The Lancaster Amateur Radio Club will be holding test sessions on Nov. 8 and Dec. 13; also in Jan, Feb and Mar 1990. If you are planning to upgrade on Nov. 8 or Dec. 13 Please send your 610 form, a copy of your license and a check for \$4.75 made out to ARRL/VEC to:

Matt Gorski NS2M
6117 Broadway
Lancaster, NY 14086

Dick Haungs W2UJR
Ve Liaison

FOR SALE

Heathkit model HL-2200 linear amplifier. Two 3-500z tubes. 2000 watts pep ssb; 1000 watts cw and rtty 100watts drive; 120/240 volts ac power input; Excellent condition and well constructed. \$700.00 Call Chuck WD2AIK 937-3592

Protecting Against E. M. P.

A review by Joseph Claus of an article in ARMY COMMUNICATOR.

In this article I will summarize a report by Lt. Col. David M. Fiedler in the Summer 1987 issue of ARMY COMMUNICATOR magazine. The article describes how military radios can be protected from electromagnetic pulses caused by nuclear detonation.

While most of us don't like thinking about what life would be like after a nuclear war, hams have a reputation as survivors and a tradition of public service. Protecting our equipment and shacks from EMP damage will allow those who are still around to help restore communication.

EMP is an electromagnetic pulse. It is caused when gamma radiation from an above-ground detonation strikes an atom and knocks loose an electron. It travels at the speed of light, producing a strong electric charge in the atmosphere. The energy has a fast rise time (fig.1), very high amplitude, a wide frequency range (fig. 3) and causes high currents to be induced in conductors like phone lines, power lines and radio antennas.

Figure 2 shows how a mere 10 megaton burst 300 miles above the surface would blanket continental US in EMP. The author estimates that all unprotected equipment in the area would be destroyed!

Protective measures for military comms gear, described in FM 24-1 and FM 24-18, include the following:

- o Do not use commercial power
- o Disconnect antennas
- o Bury cables at least 1 foot
- o Unreel excess cables to avoid loops
- o Disconnect all equipment not absolutely required and store in a shelter or shielded enclosure
- o Be ready to quickly repair and patch together systems
- o Keep shelter doors, accesspanels and vents closed.
- o TIE ALL EQUIPMENT (INCLUDING SHELTERS AND POWER GENERATORS) TO A >>SINGLE POINT<< EARTH GROUND in order to prevent closed circuit loops through the ground. (Previously each piece of equipment had its own ground.)
- o Use non-metallic guy lines and antenna supports to prevent damage from coupling. (Don't most hams use rope?)
- o FABRICATE AND INSTALL PROTECTIVE DEVICES FOR AC POWER LINE, DC POWER LINE AND RF TRANSMISSION LINES.

Two types of devices are described, and they are available commercially. Metal oxide varistors (Seimens part no. S14K130, also Radio Shack) conduct EMP in AC lines and vehicle battery cables to ground. (See fig. 5 and 6.) Gas filled gaps (Seimens part no. BI-A350) protect antenna lines. (See fig. 4.)

The author urges that approved modifications be made to older military gear that has no internal surge protection. The article concludes with useful references, including some you might have on the shelf in your shack.

The modifications shown in the diagrams seem useful also in the prevention of damage to computer and home electronic gear from lightning and other surges in power lines. Take heed!

To subscribe, write the ARMY COMMUNICATOR Subscription Fund, US Army Signal Center, Fort Gordon, GA 30905-5301. Cost is \$6.00 per year.

Although CW is like poetry to some amateurs, you don't have to be a poet to understand how to use iambic keying. W9KNI takes us through iambic and non-iambic techniques with a paddle and keyer.

Paddle and Keyer

Notes On Current Amateur CW Technique

BY BOB LOCHER*, W9KNI

The most widely utilized method of forming Morse CW characters on the amateur bands today is undoubtedly the combination of the paddle and the keyer. The ease, speed, and accuracy of this combination make it, for most amateurs, the ideal vehicle for hand-formed CW. Properly used, the paddle and keyer help the operator send perfect CW smoothly and at speeds not possible with any other method of hand-sent CW.

In spite of worldwide usage of the paddle-keyer combination, there is little standardization on methods of interconnection, little on hooking up the equipment, and virtually nothing in the way of literature selection or proper usage.

Although there is no absolute standard, most operators hook up a paddle so that the thumb sends dots and the fingers send dashes. The wire between the paddle and the keyer is usually a shielded, two-conductor cable, and the shield is used for the ground return, providing some shielding from transmitted RF. A quarter inch stereo plug is generally used to plug the paddle into the keyer, and the tip of the stereo plug usually carries the dot side.

Two types of paddles are used today—iambic and non-iambic. Iambic paddles are also sometimes called twin-lever or dual-lever paddles, while non-iambic paddles are referred to as single-lever paddles. Though these two types of paddles often closely resemble each other, depending on the design, usage and technique can be very different, and those op-

erators using one type often find it difficult or impossible to use the other.

In a single-lever, non-iambic paddle dots are formed by moving the paddle to one side, while dashes are formed by moving the paddle to the other side. Since the paddle is a single-lever type, it is impossible to close both the dot and dash circuit at the same time.

In the iambic style of paddles one lever or side is pressed to send dots, while the other side is pressed to send dashes. However, it is possible and practical to close both the dot and dash circuits at the same time. This feature, when used with a keyer designed to take advantage of the ability of the paddle to close both circuits simultaneously, allows the operator to form some characters with significantly less wrist and hand motion. This added feature makes iambic keying desirable for those who learn the techniques.

Thanks to the low cost of modern microcircuit components, virtually every keyer offered today is fully iambic and can be used equally with iambic and non-iambic paddles. The features of an iambic keyer are of value to both iambic and non-iambic users alike.

For the non-iambic user, the dot-memory that is a necessary component of iambic keying offers enlarged timing tolerances, making the non-iambic operator's CW more accurate. For example, the letter "K" in Morse, dah-dit-dah, is formed on a single-lever paddle by closing first the dash side, then the dot side, then the dash side. However, for the character to be properly formed by a keyer lacking dot memory, the dot must be initiated by the operator during the space following the dash, and held until the dot actually starts forming. To do this properly requires rather accurate timing, more difficult at higher speeds.

If the keyer has dot memory, the timing tolerance for closing the dot circuit is greatly enlarged. Now at any time during the actual transmission of the dash or the following space the operator can close the dot circuit momentarily. The keyer will hold a dot instruction in dot memory until the dash and the space following are completed. Then the keyer will send the dot, regardless of whether the paddle is closing the dash circuit or is at rest.

The advantage of the iambic technique, as mentioned before, is the reduced motion needed to send many characters, particularly the so-called iambic seven, which are the letters "C," "F," "K," "L," "Q," "R," and "Y."

The classic example of the advantage of iambic techniques in sending is the two letters "C" and "Q." In conventional single-lever paddle usage the operator hits the dash contact, then moves the lever to the dot side, back to the dash side and again to the dot side, pauses for the letter space, then goes to the dash side, waits for two dashes, then hits the dot side and returns to the dash side.

The iambic operator, on the other hand, squeezes the two paddles, being sure that he closes the dash side first. The keyer thus starts with a dash, and, as long as both paddles are held closed, automatically sends dashes interspersed with dots until the operator releases the paddle. Therefore, at the start of the second dot the operator releases the paddle, the "C" is completed, and the operator waits a letter space before starting the letter "Q."

The "Q" is started by holding the dash side of the iambic paddle closed, and once the second dash has started, just flicking the dot paddle closed momentarily, while continuing to keep the dash circuit closed. After the end of the second

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