



the RARA RAG

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VOL. 44

MARCH 1992

NO. 7

SPRING IS AROUND THE CORNER

by Lloyd R. Caves, WB2EFU

With the first of March being here, Spring is just around the corner, at least we hope. With Spring comes the thoughts of antenna work and Field Day preparations. At the March 6 meeting of RaRa, Jim Taylor, W2OZH, will give a presentation on some different antennas, especially some alternatives for the 75/80 meter band.

Jim is a local ham, living in Webster, that has done a lot of work and experimentation with antennas. He has had over twenty articles published in different ham publications over the years. Three of these that may be of interest are:

“Resonant Feed Line Dipoles” August 1991 QST

“An 80 Meter Phased Array” March 1975 “73” Magazine

“Mobiloop” November 1968 QST

Many of Jim’s antennas can be used where space is limited and on Field Day events.

Remember that while you are working on your antennas that safety should always be the first thing on your mind. This is true whether you are on your roof, climbing a tower or tree, or just finding a location to string a dipole. Keep the antennas away from power lines and wear a safety belt!

See you on March 6 at 8:00 p.m. at the 40/8 Club on University Avenue.

MARCH 6th MEETING

8:00 P.M.

40 & 8 CLUB

University Avenue

AN UPDATE ABOUT WHAT IS GOING ON

by Pete Secrist, WB2SUN

Now that March is here we can look back and think what we were doing last year after March 4th. When were we going to have lights? How dry is the basement? What can we do to make the best of the situation, as well as help our neighbors?

Well this year, barring any major storms we have started another class session and we wish our new students well as they learn. We have started this session with a new text as well as a plan for success for the students.

Also, to the graduates of the December classes who are now starting out with their new calls, WELCOME!! We wish you well.

At the last board meeting, John, WD4RDZ, asked the board to consider being part of a local project. The project is the “Challenger Learning Center of Greater Rochester”. If you want to find out what it is all about plan on attending the March 6th meeting.

If you know any Ham that deserves nomination as “Ham of the Year” at the Rochester Hamfest contact me for details. I have the nomination forms and they must be completed and returned by April 1.

If any of you have a “burning desire” to serve as board member or officer of the club, please contact me by March 9th so I can forward your name to the nominating committee for next year.

Thanks and 73's, Pete

SILENT KEY

RICHARD I. GOODMAN

WB1HIH

February 16, 1992

the **RaRa Rag**

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4 UPGRADE AT JANUARY TESTS

by Bob, WE2T

Congratulations to Dan, KB2OAI, who upgraded to Technician + from Novice and the following who became new hams-technician: Dan Mensing, Frank Piazza Jr., and Bob Easterly.

In addition, 3 others received credit for an element: Kim Griggs - Novice written, Roy Drury - Novice written, and Herb Bresnick, KB2XM - Extra written.

Our next test is scheduled for March 15; thanks also to the following VE's: Lou, K2ANC; Barb, AA2CX; George, AA2FO; Stan, WM3D; and Jim, K2GBR.

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MY FIRST EXPOSURE

by Pete Memolo, KN400
Ham News Outlet

It was a Friday morning and I was woken by a frantic phone call from my dispatcher asking if I could please come in and take a hot load to Los Angeles. (In the trucking industry, every load is a "hot" load.) Although I halfheartedly agreed to go, I was not really looking forward to have a new co-driver for such a long trip.

(Fast Forward)

Meeting my co-driver was not as bad as I had imagined (it was worse – just kidding). Ray was an older gent, who had a lot of driving experience. While I was getting the paper work done, Ray took my gear and went to the truck and pulled it in front of the building. I walked out and almost fell over, for in front of me was a brand spanking new Peterbilt, bristling with more antennas than a large fishing boat. I knew then there was something weird about old Ray...

My suspicions were confirmed when Ray told me to take the first shift, explaining he likes driving at night, because he could get some good contacts on 80 meters. I had absolutely no idea of what he was talking about. But if *he wants* to drive all night, who was I to argue?

Climbing into the cab of that truck left a major impression on me. This Peterbilt cab looked more like a sidewalk sale at Radio Shack than a truck. Speakers, wires, radios and microphones were everywhere. Now I had seen some big CB fanatics on the road, but this guy was plum crazy!

Ray did his best to explain every radio and its unique function, while I sat mesmerized in the driver's seat, wondering if my boss would let me change my mind about this trip... Well, it was just for 2 days ... maybe I could put up with crazy 'ole Ray and his radios for 2 days... Besides, the new truck would be a whole lot more comfortable than the alternatives.

(Fast Forward)

4:00 AM (California time). I woke up noticing the truck was not moving, and there were some very strange sounding voices and noises out there. I crawled out of the sleeper to see what the problem was. No problem, just good 'ole Ray ... talkin' on his radio. I sat there in the passenger seat, looking into the darkness, wondering what could possibly be so important with the radio that he had to stop the truck.

Ray finished his conversation, and noticed me sitting there with more than a puzzled look on my face. Ray explained that he had just finished talking with his wife. We were stopped at Cajun Sum-

RaRa MARCH CALENDAR

- 6 - RaRa Meeting - 8:00 p.m.
40/8 Club, 933 University Avenue
- 13 - VHF Group Meeting - 7:30 p.m.
- 15 - RaRa Licensing Testing - 8:30 a.m.
111 Westfall Road
- 20 - RRRR Meeting - 7:30 p.m.

Check with clubs to verify time and place of meeting.

mit (elevation 4,257 ft on I-15 just before San Bernardino). While I was driving, Ray had talked about his wife and his home, but that was back in 'Jersey! Ray did not strike me as the "swinger type", but a wife on both coasts!?" "Not to worry", explained Ray. That was his *only* wife, and *she* was still in New Jersey. But *we* were in California. I was impressed. Ray started explaining further when another radio crackled and Ray said he hadn't heard that area on six in a long time. Off he went. I figured it was going to be a long night there at the rest stop. While he chatted with another new found friend, I jumped out of the cab to cool a hot tire.

Yes, that trip did make an impression. It was the first and last one that Ray and I took together. That was both good and bad. It was bad, 'cause I wanted to know more about these radios that covered coast-to-coast with almost telephone quality. Good because I could sleep at night without all the noise and strange language like "CQ, QSL, 5n'9, 73", and all the other strange words Ray used. He was definitely one weird trucker.

I haven't seen Ray in about 8 years now. We've gone our separate ways. I've long forgotten the rest of his K2 call sign. Maybe I'll find Ray some day on HF. I'll keep an ear out for 'ole Ray, mobiling out there, talkin' to his XYL in 'Jersey. I'll be sure to thank him for introducing me to ham radio. Maybe he wasn't so weird after all.

73, Pete, KN400

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RACES REPRESENTED AT GENESEE RIVER FLOOD EMERGENCY EXERCISE

Ed, N2EH, and Chet, WB2MDO, attended the exercise at Mt. Morris, which was held February 5th and 6th, the meeting was chaired by the Corps of Engineers, Buffalo, NY with representation from FEMA, SEMO, Red Cross, Weather Service, State and Local Police, OEP and enough other initialed agencies to start a new alphabet. Amateur radio would play a big part in communications if the scenario of major flooding of the Genesee from Wellsville to Rochester were to take place, particular attention was given to the dam at Mt. Morris. Members of the county agencies in Allegany, Livingston, Monroe and Wyoming were thoroughly enlightened by an excellent critique. I hope more of our people will be able to attend the next one.

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MIND TWISTER

Furnished by Otto Casal, KA7VTG
Utah Amateur Radio Club, *The Microvolt*,
via ARNS

SALT LAKE CITY, TU (ARNS)— The conventional full-wave rectifier circuit of Figure 1 feeds a load that draws exactly one ampere DC. Assuming theoretical fuses that will carry their exact current rating, but will blow at any higher current, what rating would a fuse need if installed at point A? If two fuses were used, to be installed at points B and C, what rating should they be?

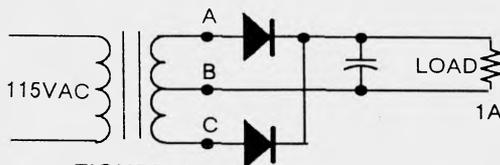


FIGURE 1

(Answer on back page.)

WANTED – FT-747 HF rig, 6 meter all mode rig, and AT-80A-230 Antenna Tuner. Dave, KA2BOK, 334-9736.

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FROM THE QUARTER CENTURY WIRELESS ASSOCIATION CHICAGO CHAPTER
QCC NEWS:

REMEMBER riding the red street cars when the fare was seven cents? Transfers were free and so well used that five million were printed for each week day. The average person rode on street cars 367 times a year. When you handed your fare to the conductor he stepped on a lever that registered the fare on a meter and rang a loud bell. When all passengers were aboard, he signalled the motor-man by pulling a cord. Two dings meant "OK to proceed", and two meant "stop". the neatest trick was alighting or "flipping" the street car while it was moving swiftly along.

THE RaRa RAG YEARS AGO

by Ed Gable, K2MP

20 YEARS AGO – MARCH 1972: RaRa is back "home" says an article referring to the meeting hall back at the Monroe County Farm and Home Center which has been unavailable for several months. The speaker will be Joe Hood, K2YAH, on the subject of FM. It was announced that the ARRL's new president, Harry Dannels, W2TUK, will be attending the Western NY Hamfest and VHF Conference in May. John Lucas, WA2BEH, in his VHF Column announced that Chuck Oneske, K2YCO, was the local winner of the January VHF Contest with 11,872 points, 212 QSO's in 18 sections. Lee Vangrol, WA2YEK, was the YL winner with 3,528 points. Ed Gable, W2MPM, RRRR Editor, wrote that Len Gessin, WA2ZNC; and Joe Hood, K2YAH, were named as members of the Rules Committee. This article also recognized and thanked Joan Vogt, WA2YTK, for her tireless efforts as the required full time control operator for the 28/88 repeater. Cappy Capauldy, K2UXF, reported the 11th annual dinner dance was a great success. Harry's radio supply in Baldwinsville was an advertiser in this issue.

40 YEARS AGO – MARCH 1952: A young man named Bruce Kelley, W2ICE, advertised in this issue for some old radio gear and parts. It seems as though Bruce wants to display this stuff in his barn on Union Street in North Chili! What a strange idea! Next he'll probably call it a Wireless Museum or something!!! A new VHFer is in town, Bob Jeffers, WN2ALL, seems very enthusiastic. Jack Auer, W2SGJ, reporting for the Rochester Mobile Club, says that Marty, K2BS, can't get his car out of second gear due to the huge generator he's using. W2DYD and W2CR are waiting for the ice to melt so they can go marine mobile again. Rochester Radio Supply at 114 St. Paul Street offers ham gear and sound systems.

BIMINI TOPS DODGERS

VORNRAN MARINE CANVAS
at Fabric City

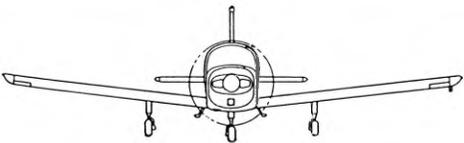


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AMPLIFIERS

by Wm. Van Horn, K3CP

The Delaware-Lehigh ARC W3OK Corral

NAZARETH, PA (ARNS) – “Someone said that one of the local FM stations was using a linear amplifier, is that right?” Ima Lidd asked Elmer.

“No”, replied Elmer. “Linear amplifiers are used on AM transmitters. That, of course, includes upper and lower sideband (USB and LSB) AM rigs. Linearity is required only when you must maintain the fidelity of the audio wave envelope. This is not necessary on FM transmitters where the audio is not in an amplitude envelope. Also, it results in very low efficiency. Linear amplifiers generally run as Class A or AB and FM amplifiers run at the much more efficient Class C”.

“Let’s see if I can understand you”, said Ima. “We Hams would use Class A or AB (linear amplifier) for the sideband modes and Class C (non-linear amplifier) on two meters or other VHF and UHF bands for the FM mode”.

“That’s right”, continued Elmer. “Also, don’t forget code transmissions (CW). There is no need for the relatively inefficient linear amplifiers there either”.

Ima asked, “We never talked about the different classes of amplifiers, Elmer. What are they and how are they used”?

“Well, there are three common classes”, continued Elmer. “They are Class A, B, and C. There are other classes (AB, D, and E), but these three are of the most interest to Amateurs. Class A amplifiers are the best for high fidelity purposes, but are low in efficiency. They have a maximum efficiency of 50 percent, but more typically run 25 to 30 percent. Class B amplifiers are biased so that they only operate on one half of the input wave. Considerable distortion take place. However, this distortion can be reduced by using them in push-pull configuration or by taking advantage of the fly-wheel effect of tuned circuits. The efficiency of Class B amplifiers is around 50 percent. Class C amplifiers are very efficient. Values in the 60 to 75 percent, but they are not linear. They are harmonic generators as well. Frequency doublers and other frequency multipliers are almost always Class C. Incidentally, this characteristic can result in severe interference to other radio and television services due to the harmonics. Because they are not linear, they would badly distort the audio envelope of a signal. Since the audio envelope (modulation) is what will eventually come out of our headphones or loudspeakers, we would hear this distortion”.

“I see”, said Ima. “AM is the type of modulation that varies the amplitude of the signal and therefore we wish to maintain the integrity of the wave form. FM, on the other hand, doesn’t vary the amplitude of the signal so we don’t need to worry about that”.

“Right you are, Ima”, said Elmer. “When lightning or other noise modulates an FM signal, the clipper circuit merely eliminates the AM from the signal. This is why FM is quiet, even in a thunderstorm”.

“Many years ago, Hams used to add the modulation after the carrier (RF) was amplified to its desired level. They designed their amplifiers to run Class C and didn’t worry about distortion because the audio wasn’t added until after RF amplification had taken place. Unfortunately, this required a lot of audio power, 50 percent of the RF power for 100 percent modulation”.

“Wow”, said Ima. “That means that if a station ran a kilowatt of RF power, it would need 500 watts of audio for phone operation”.

“That’s right”, Elmer said. The audio was introduced into the final plate circuit and was called *plate modulation*. There were other forms of modulation used to reduce the high cost of the audio equipment. They were called *control grid*, *screen grid*, and *suppressor grid modulation*. Instead of modulating the plate circuit, the modulation was introduced into the grids of the final amplifier tubes”.

Ima interrupted, “What class of amplifier did they use for audio amplifiers”?

“That’s a good question”, replied Elmer. “They generally used Class B to achieve higher efficiency than in the high fidelity Class A amplifiers. To reduce the distortion that Class B introduced, they designed them as push-pull circuits that I mentioned earlier”.

“Now, the next time someone says they are using linear amplifier on FM, you can tell them to switch to Class C amplifiers and get more for their equipment money. See you next time, Ima”.

“OK, Elmer. I will look forward to another interesting talk”.

73 De Van, K3CP via ARNS

FROM THE JUNK BOX...

ANTHONY’S LAW OF FORCE: Don’t force it; get a larger hammer.

SCHMIDT’S LAW: If you mess with a thing long enough, it’ll break.

WHISTLER’S LAW: You never know who’s right, but you always know who’s in charge.

WINTER FUNFEST DESSERT CONTEST



The Judges . . .

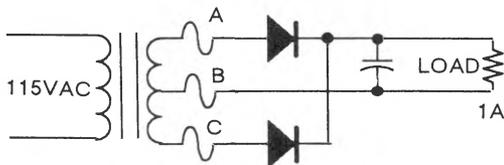


The Winners . . .

AND... HERE'S THE ANSWER TO THE MIND TWISTER

The fuse, if at point A, must carry 1.11A. If fuses are used at points B and C, they must each carry 0.785A. The waveform at point A is full-wave rectified. The effective current value at point A is .707 times peak value. The effective is the heating value, and therefore is the value that determines when the fuse blows. The average or DC value, which is the current value through the load, is equal to .637 times peak value. The ratio of effective to average is $0.707/0.637 = 1.11$. Hence, the effective current at point A is $1.11 \times 1 = 1.11A$.

The waveform at point B or at point C is a half wave. The average current is $0.5 \times$ peak. The ratio of effective to average is $0.5/0.637 = 0.785$. Hence, the effective current at point B or C is $0.785 \times 1 = 0.785A$.



FROM THE JUNK BOX:

ANSWERING MACHINE – A MANIA

The following is an actual message from an answering machine:

“Hello, you have reached the Jones household. May Jones took a short course to be a terrorist and her first assignment was to blow up a bus. She sustained serious burns on her lips from the hot tail pipe and can’t answer the telephone”.

IT’S WORTH A BEEP!

FROM THE *DATELINE HOUSTON* NEWSLETTER OF THE HOUSTON, TX, CHAPTER, SOCIETY FOR TECHNICAL COMMUNICATIONS via ARNS

HOUSTON, TX (ARNS) – The following message was discovered on someone’s answering machine:

“Hello, you have reached the home of (name left out to protect the innocent). I have some bad news and I have some worse news. The bad news is that this is an answering machine. The worse news is that, at the sound of the beep, you will be forced to condense all your thoughts into a one minute speech. I hope you work well under pressure. Have a nice day”.

GOT THE TIME?

For those of you in need of computer access to accurate time in UTC for use in setting computer clocks, a “time-by-modem” service is currently available.

National Bureau of Standards (NBS) provides this service at either 300 or 1200 baud. For information on the service just hit the question mark right after connecting. The phone number for this service is 303-494-4774.

The US Naval Observatory also provides such a service, and its number is 202-653-0351.

Tnx ARRL Letter

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Rochester HAMFEST

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