HAM HUM

Published by
AK-SAR-BEN RADIO CLUB, INC. - Omaha, Nebr. 68101
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July 1971

Vol. XXI
No. 7

NEXT MEETING

WHEN: FRIDAY, JULY 9, 1971

TIME: 8:00 P.M.

WHERE: RED CROSS CHAPTER HOUSE
432 South 39th Street, Omaha

WHAT: Discussion of this year's Field Day as result of study of our mistakes while they are fresh in mind.

We will have films for our education and enjoyment plus Eyeball QSOs and refreshments.

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HAM HUM is the official organ of the Ak-Sar-Ben Radio Club, Inc., of Omaha, Nebraska, mailed monthly to all members and to others upon request.

Next copy deadline: July 23rd

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NEWS NOTE

We have just been informed that Club member Ervan D. Heinz, WAØEEM, has been promoted to Director of Personnel at the University of Nebraska at Omaha, effective July 1st. Congratulations, Erv!

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REPEATER CONTRIBUTIONS

Our thanks to the following for recent contributions to the repeater fund: Maurice W. Costello, KØYWY, and W. F. Mathemeier, WØVBR. All contributions of either cash or parts are most welcome!

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SAVE THIS DATE!

Mark your calendar for Sunday, September 12, 1971. This will be the date of our annual Ham Fest and Steak Fry which this year will be held at the Cooper Farm, 8705 Mormon Bridge Road, Omaha. Details later.

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3900 CLUB

Dick Pitner, WØFZO, calls our attention to the 3900 Club of the Air. This club meets each Sunday at 3905 at 1400 GMT. They have 80 members from five states and, in addition to meeting on the air, they have four eyeball meetings each year. For further information suggest you listen to this frequency or contact WØFZO at 2931 Pierce Street, Sioux City, Iowa 51104.

****

SILENT KEY

Orin W. Miller, W6EHJ
(Ex-WØSEE)
Sun City, California
June 13, 1971

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SILENT KEY

Dick H. Caldwell, WØVAU
Audubon, Iowa
June 17, 1971

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JUNE MEETING

The June meeting of the Ak-Sar-Ben Radio Club, Inc. was held at the Red Cross Chapter House, the general object being the completion of plans for Field Day. In listening to these plans one should conclude that not only are we pretty well organized but we can expect an interesting and enjoyable time during the Field Day week end and that we will pile up a large score in the competition. By the time you read this you will know!

The chairmen of the various tents gave a report on their "Game Plan." It should be very interesting for those in attendance to compare the plan with the results as even the best of plans are sometimes changed due to the many variables of Field Day.

Club members were very appreciative of being able to again schedule Field Day at the hilltop by the Platte, owned by Connie WAØMYF and Norval WAØNPF Bowen. This year we will be farther to the south on the highest point in the land where they expect to build their home. We will be able to tell them after Field Day how this point is for antennas!

The meeting was well attended and the discussions were quite interesting. This was followed by the usual eyeball QSO and refreshments.

As deadline for Ham Hum falls just before Field Day, we will be unable to get pictures in this issue. Field Day pictures will appear in the next issue. Could you have any shapshots you feel would be of interest to our members, please submit them prior to July 23rd. Send them to Post Office Box 291, Omaha 68101. If you wish to have them returned to you please so state as otherwise they will not be returned. We will print as many of them as we can.

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NEWS FROM FREMONT

Hi: Little info on the FM in Fremont and area.

WØAW, Bill, Fremont–34/94 64/64 94/94–fixed.

KØKQE, Sherm, Fremont–34/94 64/64 94/94–fixed.

WØWR, Doug, Kings Lake, Valley–34/94 64/64 94/94–two rigs both mobile and fixed.

WØQOU, Tony, Snyder–34/94 64/64 94/94–fixed.

WAØWFR, Emil, Dodge–34/94 64/64 94/94–fixed.

WAØUGD, Vince, West Point–34/94 64/64 94/94–fixed and mobile.

WØUVU, Roy, Fremont–34/94 64/64 94/94–fixed and mobile.

WØNVE, Harry, and WAØTTW, Pat, Fremont–34/94 64/64 94/94–fixed Clegg with tunable receiver and 40 for Omaha input along with the above. Mobile two Drake TR22.

All of us appreciate the repeater and thanks to all who keep it goin'. Anything us out this way can do – holler.

73,
WØNVE, Harry Snyder

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The man who loses his head is the last to miss it.

de FEARL News

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INDEPENDENT RECEIVER TUNING FOR TRANSCEIVER

Did you ever wish you could tune the receiver section of your transceiver without changing the transmitter frequency? Sure would be nice on CW for setting the tone of the station you are working, or for SSB roundtables where everyone never seems to be on the same frequency. It is extremely simple to do if you have an extra set of contacts on your TR relay in the transceiver, or room for another relay. Stability is not affected; however, the VFO must be recalibrated. Such a device has been in use here for about three years, and I would be lost without it.

Referring to the drawing, CR1 is a Varicap Diode, Motorola MV1642. It changes capacity as the voltage to it is varied (working like a variable capacitor). When transmitting, the diode is given a steady voltage from the voltage divider R1, R2, R3, R4. When in receive, the potentiometer R5 is supplying the voltage to the varicap. With R5 in the center of its range, the control voltage is about the same as in transmit, so there will be no offset. Moving R5 above or below center will tune the receiver plus or minus from the transmitter frequency. Switch S1 bypasses the offset control and allows normal transceiver operation.

C1, C2, RFC1, and CR1 should be mounted inside the VFO enclosure. The other components can be anywhere, including a separate box outside the transceiver. Recalibrate the VFO with the switch in the off position. As shown, the offset is about 2KC. If you want more offset control, change C2 to 10PF.

Parts, including the varicap, should be available from Resco in Camden. Call ahead and have them brought in from the warehouse if not in stock.

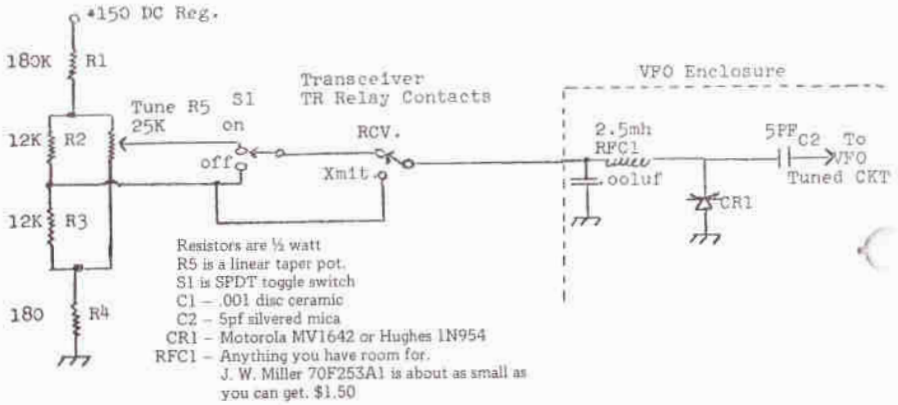
I hope receiver offset will increase your operating enjoyment as much as it has mine. Cost is $6 or $7 if all parts are new.

73

W2FBF

Ed. Note – A real worthwhile idea Ken – and well written, too!!

de GCARC, New Jersey



HANNA HINTS

The lead-acid storage battery is a very common device familiar to all of us since every automobile has one. When you have to replace one in your car, it seems like a major expense, but considering that it will last for three or four years, the cost is not so great. It can be less than 50 cents per month. Let's take a look inside and see what goes on and possibly find out how to make one last a little longer.

The storage battery (as the name battery implies) is made of several cells, six of them in the 12-volt batteries. The cell is made up of several plates with some type separator between the plates. The positive plates are made of lead peroxide on a lead frame, and the negative plate has sponge lead pressed into the lead grid. This type construction greatly increases the capacity for a given weight.

The solution in the lead-acid cell is water and sulfuric acid. As the battery is used, lead sulfate collects on the positive plate and sulfuric acid solution is diluted. When the battery is being charged, the lead sulfate is converted and goes back into solution and the sulfuric acid solution becomes stronger. By measuring the specific gravity of the solution, it is possible to measure the state of the charge on the battery. A run-down battery will show about 1,000SG and a fully charged one will show 1,280SG.

As the battery gets old, some of the lead sulfate flakes off and drops to the bottom of the case. Since this is a conductor of electricity, eventually enough will collect to short circuit the cell. This condition can be detected in several ways. The first clue, of course, is when it will not crank the engine. Once the engine has been started, either with a booster cable and another battery or by pushing, the charge quickly comes up. Modern cars without ammeters have nothing to show this, but the fact that the car can be driven just a short distance and the battery will now start the car should make you suspect something.

A voltmeter used to measure each cell* will show up the trouble. The voltmeter should be placed across a single cell and the starter turned over a few times. Remove the center lead of the distributor to keep the car from starting. Check each cell. There should be very little difference in the readings. The defective cell will be evidenced by a very low reading or even a complete reversal of the meter reading. Specific gravity readings will all be high and at this time they have no meaning. (*Ed Note: Not possible to do on most modern batteries. JDS)

Modern automobile electric systems have excellent voltage regulators and if properly set will result in very long life for the battery. Since your car does not have an ammeter you can get an idea of how things are going by how often it is necessary to add water to the battery. Unless you have unusual loads where you leave the radio on for a long time, or if your car starts hard, you shouldn't have to add water more than once in a couple of months, even in hot weather and on long drives.

Manufacturers could make batteries that would last much longer for more dollars, but people would not buy them because they seldom keep a car long enough to wear out a replacement battery even if they bought the car new.

Ralph Hanna, W8QUR

de FEARL **News**

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A MESSAGE
from a guy named George

Dear Fellow Citizen:

My name is George. I'm an all-around handyman – and I'd like you to feel free to use my services for any and all chores, errands and duties which you may be too busy to perform. Anytime there's something that needs doing and you'd rather not get involved, you must let old George do it.

I'll write your Congressman for you – better still – I'll pick him for you. I'll also write your newspaper editor or serve on the school board in your place. In fact, I'll do anything you're too tired, too preoccupied or too afraid to do. With me around, you can be as lazy and as self-satisfied as you like. You can just have fun and let the future be hanged. The more the merrier, I always say. My services are available to you for all the tedious, time-consuming things which you'd rather duck doing.

You haven't time to vote so let George do it. And certainly you don't want to bother with all those messy precinct meetings that pick people and get out the vote. George will be glad to take over for you. There is certainly no need for you to concern yourself with attending union meetings or helping shape policy – or attending business meetings. You don't want to bother with all those committee assignments and extra responsibilities. You just let old George tend to them. And you certainly don't want to take a stand on anything controversial, it might slow down your social climbing or lose you a five cent sale. Let George do these things.

Now, you ask, why should you leave important jobs to somebody you've never met? Well, that's a reasonable question – so let me put your mind at ease. I'm no beginner. Maybe I'm not as famous as Khrushchev but if it hadn't been for me, you'd have never heard of him. That goes for Mussolini, Stalin, and Hitler, too – I made those guys. While the others were saying it couldn't happen I was busy making it happen.

And the big-time racketeers in the United States – those who pull the strings behind the scenes to make things work the way they want them to work; you name 'em and without me, those guys would be nothin'.

Why do I want to run errands for you when I'm the guy who is really behind all these big wheels? Don't you see, I just get a kick out of picking presidents, school boards, running unions, establishments, counties and countries. All these things you used to do before you took up chasing dollars, total security, gold balls and things.

Don't feel like you're imposing – because I'm really helping myself, you see. How do you think I was able to take and run a third of the world already? Because nobody else wanted to bother. Oh, perhaps a few did, of course, but it was easy to name-call them back to oblivion and get the leaders to listen to me instead. After all, who picked the leaders? Since you didn't want to bother and said "Let George do it!" – I did. Now I'm taking over a lot more cities and counties in the United States and I figure it's just a matter of time until I'll have the whole country in my pocket.

I want to thank you for making this

possible. Remember now, if there is ever any way in which I can be of help, I'm at your service. You have fun and don't worry about a thing – for I'll even do your worrying too!

Sincerely,

George

Author unknown

P.S. I'll bill you later.

Submitted by Ted Michalshi, W8TQY, taken from "OK Tooling Talks"

(from: "Ham Shack Gossip," Toledo, Oh.)

de FEARL News

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REPEATER

HAM HUM received two comments this month about the repeater – one "for," and one "against."

From Fremont – an appreciation of the repeater and its power which permits its use in Fremont. From Des Moines – a complaint that the Omaha repeater was blocking all direct communication in Des Moines on 146.94.

A repeater is not without problems and to solve these many problems we have a Repeater Committee. These comments are being turned over to that committee for study. I was aware of being able to converse with Des Moines stations through our repeater on occasion but did not realize it could get that far on a regular basis and particularly would not have believed it would be strong enough to override local signals. We hope the Committee will be able to solve the problem!

****

LO DOWN ON THE BANDS
160 M

By KØWZX – Mark Morris

Down below the raucous sounds of the 2MC operation of shrimp boats lie frequencies relatively unexplored since bygone days. The 160 meter band, split in the middle, in areas where LORAN is used for navigation, has little occupation. Once this band was the real area of amateur experiments. All information as a result of these experiments is duly recorded. It was so long ago that rediscovery seems to be in order, just as the cycle of rediscovery for VHF, SSB and FM has come and gone and come again, to stay?

The Farmer's NET on the east coast has used 160 M for nightly rag chews up to 500 miles for years. The propagation pattern for ground wave is extended solidly for a couple of hundred miles. Surface bending on this band is extremely effected by terrain which causes odd effects on distances above a few hundred miles. The ground wave and sky wave arrive at the receiving station at the same time and often 180° out of phase. The resultant QSB is severe.

Antennas designed to give low angle of radiation result in extremely strong ground waves. This is the method used to get up to 600 miles with strong signals even with QRP. Of course, the lowest angle of radiation can be arrived at by use of vertical. A 160 M 1/4 wave vertical is only 100 feet and a 5/8 wave vertical only 330 feet. Since in some cases this presents a problem, antenna length cheating is the accepted principle. Shortened verticals and combinations of vertical

and top-hat must be used. Tuners are employed to fool the transmitter into seeing the proper load impedance. Even loading coil, vertical and top-hat combinations are used and in fact are most effective.

As with any other band some skip can be worked. An Oregon station friend is being heard in Alaska and two-way contacts are expected. There appears to be room in Anchorage, Alaska for the 530 ft. full wave antenna and the friend in Oregon had them all enthused a few months ago.

Most transceivers nowadays have no 160 M, so obsolete AM is predominant for the time being. A lot of Xtal control is used because of the narrow band frequencies and the *four* band edges. Power limits which allow greater daytime than nighttime power and a max of 200 W at night complicate the use of this band. The FCC regulations are quite complicated and you must determine which of the 26 US areas you operate in and figure the frequency and power allowed in your area. 160 M is approaching its best conditions and will be most exciting for the next few days.

For simple operation, minimum investment in equipment and lots of fun 160 M is often overlooked as a reliable means of comunication. There is a recent upsurge so may CU there too.

For Colorado the four band edges and applicable power limits are:

Frequency	Day	Night
1925–1975 kc	200 w	50 w
1975–2000 kc	1000 w	200 w

You can see that these frequencies are not far above the BC band. With 200 W RMS you may only be 3.3 "S" units below the 10 KW commercials and you know how they get out.

de Pueblo Ham Club

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FM ON TEN TOO

By Jerry Green, K4UBR

Hidden high up on the seldom used end of the Ten Meter Band is one of the most interesting and potentially useful types of hamming on the bands today. It has been the mode of communications for a few hardy souls, like WØZWN of St. Louis and W1BKI of Middletown, Conn. for many years but now after all these years of talking it up to their fellow hams, the advantages, the fun and the versatility of Ten Meters FM is starting to take hold as many new Hams (like yours truly) find a rig that covers the frequency and have joined in the activity on 29.6 Mhz FM.

From Maine to Seattle and to the sunny shores of the Gulf, FM stations put forth daily on 29.6 Mhz, always monitoring and waiting for a band opening. In about two weeks of occasional operating, I have QSO'd 17 states and heard many more I could not work. I use a Motorola 41 B (Base station, if you will pardon the CB type comment) modified to take a 6146B in the final amp, which gives about 25 Watts out (was 10W before) to a Happy Accident ground plane vertical (¼ wave) at 55 feet above ground. My signal reports have been consistently "full quieting." (That's FM talk for 5x5) and many QSO's over seve[illegible] hours have been enjoyed while the lo[illegible] end of the band had no activity whatsoever. I was quite surprised to find that band openings on ten occur almost daily and I have attributed this

to the fact that all stations are on the same channel with squelched receivers on continuously. Short skip occurs often enough to depend on for schedules and traffic handling. Many local emergency nets operate on this channel (29.6 Mhz) but there are no regional or national nets or activities established as yet.

The deluge of surplus commercial FM transceivers capable of operation on Ten has been largely overlooked by the amateurs but the same units that go up on Six Meters may also (in most cases) be put down on ten. These low band FM units are not in large demand so that prices have remained relatively low with 25 to 30 dollars being the standard price for a useable 10W mobile unit in fair shape with a mike attached and a speaker built in. Just buy the correct xtals for 29.6 Mhz, retune the receiver front end, tune up the transmitter to the new frequency, hook up the antenna (vertical preferred but not the only thing that will work) and you are ready to call "CQ 10 FM."

Frank Cerny, K9VVL, of Chicago, Ill. forwarded to me a list of the recommended FM frequencies on Ten Meters when I asked about other FM frequencies to use on that band. The list serves as an excellent guide for not only ten but for six and two also. The National Calling Frequency, NCF, of 29.6 Mhz is currently the only FM frequency in use but other channels are planned on 29.68 and 29.64 Mhz as activity increases and interference reaches an impossible level on the single available channel. Since ten meters depends on skip conditions it is normally open to only a small portion of the US at any one given time, so that I have been able to have an almost quiet frequency during all QSO's to date.

Repeaters on Ten FM are in use also but they are not as widespread as on 6 and 2, nor are they needed, since space wave is generally better on this frequency with base to mobile distance possible out to many miles beyond that achieved on the high bands. Ten Meter FM repeaters are of the in band variety with input normally on 29.450 Mhz and output on NCF of 29.6 Mhz. Unless you are in an area that has an open and available repeater, it is best to plan on operation on the NCF, 29.6 and expand to other frequencies after your equipment is operational. These reported repeaters have not been heard here in NW Fla., but their presence and their potential pose a very interesting future for this fascinating mode of communications on a very fine band. See y'all on 10.

Suggested Amateur FM Operating Frequencies on Ten Meters

29.040	29.080
29.120	29.160
29.200	29.240
29.280	29.320
29.360	29.400
29.440	29.480+
29.520+	29.560+
29.600+ NCF	29.640-
29.680–	

NOTES:

\+ within RACES band for Wide Band or Narrow Band FM use

-within Races band for Narrow Band FM use only

–alternate FM channel in use in some areas

NCF National Calling Frequency

de Florida Skip

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A THUMB-NAIL "CRUISE" ON THE NEW CUNARDER H M S "QUEEN ELIZABETH 2nd"

Prepared for the O O T C Bulletin

By Earle Wohler, W6FS, Member O O T C

Everyone loves a ship! Whether large or small there is a certain fascination about an ocean-going liner. But the "Q E 2" is more than a ship. The Cunard SS Co. calls her "a pleasure island" and most of the time you do not realize you are on the high seas, unless you should happen to glance out of the large, heavy plate glass windows, (not port holes) and see the beautiful blue-green waters of "our 7 seas." She is a mighty, majestic thing of beauty. The newest and most modern of any passenger liner afloat. Now only a little over 4 years old, the newest of the "Queens," all the pictures in the world, or books written about her, do not do her justice. You have to be aboard, cruising at 28 to 30 knots to fully appreciate her hugh size and power. A two class ship, 1st class and tourist class, she is so designed that both classes have full freedom of the entire ship, different from the two former Queens, where one-way doors and barriers kept the two classes separated. On the "Queen Mary" and the "Q E 1" one could get hopelessly "lost" if you ventured as a 1st class passenger into the realms of tourist class.

Her length is 963 feet, beam 105 feet. She was designed to be able to go through the Panama Canal. The other two Queens could not. By comparison the "Queen Mary" was 1019 feet in length, beam 118 feet. The "Queen Elizabeth" was 1031 feet with a beam of 118 feet. All the 3 Queens were like huge resorts.

The first keel section was laid do on July 2nd, 1965, at the East yard of John Brown & Company shipyard on the Clydebank. Designed to keep fuel consumption to a minimum (normally 145,000 gallons of fuel oil per day). She has 3 boilers made by Foster & Wheeler Co., who also made the boilers for the other Queens. These main boilers are so far the largest built for marine installation. Her machinery, with a total power of 110,000 shaft horse power, was the largest yet built for a twin-screw vessel. Her electrical generators 3 in number (one for emergency) would be capable of supplying the needs of a town of 21,000 people. The superstructure, above the main deck, is all-welded aluminum. This meant a saving in weight of 2000 tons of steel. She is equipped with a fully automatic fresh water distillation plant producing 250,000 gallons of fresh water per day from sea water. The Q E 2 can steam at a service speed some 8000 miles without refueling. The bunkering system is carried out by one man, compared to six required on the other two Queens.

Two of the largest dining rooms in the world are aboard. One, the Columbia dining room, the other, the Britanic, plus the Grill Room, whe there is a cover charge for dining.

Nine bars, with beautifully appointed cocktail lounges are at various spots aboard. You will never die of thirst or starve aboard this ship. The theatre is beautiful, capable of holding 500

people, including a gallery, entered from the deck above. The Queen's Room, 100 ft. wide by 105 ft. long is for dancing and ball-room events. Furnished in white and buff color.

The garage aboard will hold 80 cars. The ship's hospital is staffed with 4 great doctors, working with very modern equipment. The officer's Ward Room, located forward below the Bridge, is a thing of beauty. A complete bar and cocktail lounge, play room, an ideal spot for visiting and relaxation. (First Radio Officer Mr. Holme, was our host in this Room where we had the grandest of cocktails.)

To all our radio friends, the Radio Room was fantastic. Located on the Boat Deck forward, you are bewildered by the array of beautiful equipment. The transmitting room was located about 250 feet aft of the radio room. All equipment was built by I.T.T., and digital tuning used throughout. The emergency transmitter was powered by a 12 volt battery source with a very high ampere hour capacity. Her radio call letters are GBTT, same as the SS "Queen Mary" had. The Radio Phone is SSB, and a separate panel transmitter console with operator maintaining a 24 hour watch is maintained. She has world-wide range. Mr. Don Butterworth is Chief Radio Officer; Mr. A. W. Holme is 1st Radio Officer; and 4 other Radio Officers, all great chaps, complete the Radio crew. In the Chart Room is the Satellite Tracking panel which takes pings from 4 satellites. Two teletype machines copy press and news and automatically punch a tape which is fed into linotype machines in the printing shop which prints the daily newspapers. The U. S. stations mostly worked are WCC and WSL.

The control of the ship is entirely by push-buttons from the Bridge. No more brass engine-room-bridge telegraph in sight. Radar, Sonar, etc. all in evidence. Mr. D. G. Wilson is Chief Engineer; and Mr. J. Wilson, Deputy Chief Engineer. On the bridge, Mr. D. H. Lee is Chief Officer. Commodore W. E. "Bil" Warwick is in command. Mr. M. F. Hehir is the Staff Captain.

This cruise we recently made left New York on October 23, 1970, to the Canary Islands; to Dakar, Luanda, Durban, and Cape Town, Africa; then across the South Atlantic to Brazil (Rio de Janeiro and Bahia,) South America; Curacao, (D.W.I.); the Virgin Isles, (St. Thomas); back to New York. A 3 Continent Cruise, 37 days on the "Q E 2."

She has a capacity of 2,025 passengers and a crew of 906.

73 from Earle Wohler, W6FS, Sebastopol, Calif.

de OOTC Bulletin

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NEWS NOTE

Dear Friends: This is to let you know my wife Ruth I. Fleming received her novice call WNØEZE on June 11, 1971. Working on receivers and transmitters to get Blair novices on the air.

73's
Alan Lee Fleming, WØBNY
1169 South Street
Blair, Nebraska 68008

P.S. Looking for 19" rack panels, 15 inches or higher aluminum. Will trade 813's and some various other types.

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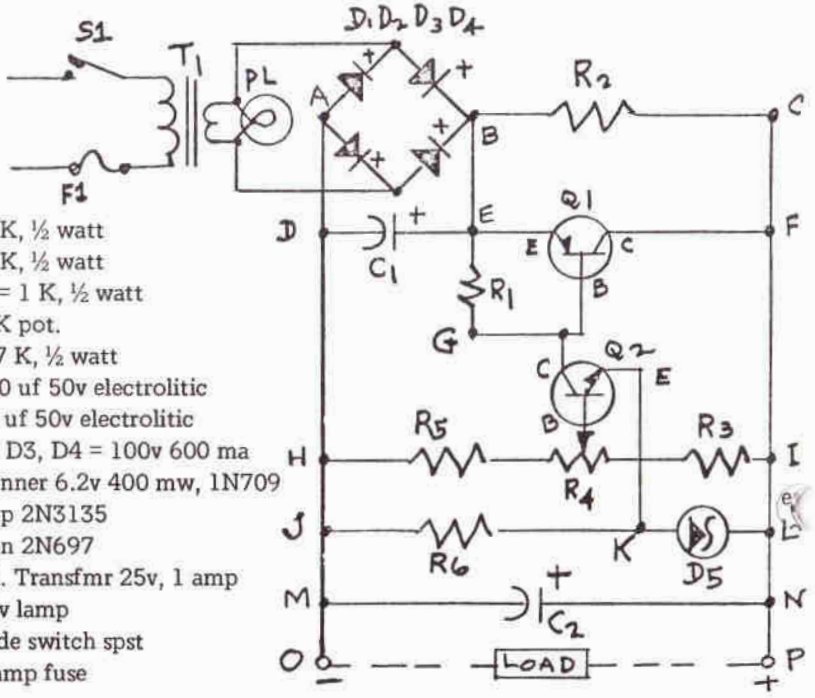
UNDERSTANDING TRANSISTORS

By Jim White, Associate Member, M.E.M.E.

FULL WAVE BRIDGE RECTIFIER VOLTAGE-REGULATED, VOLTAGE ADJUSTABLE POWER SUPPLY

The power supply is a standard one using a 25-volt filament transformer and full-wave bridge rectifier to supply DC to the regulator. The output voltage across R6 is always six volts less than the regulator output voltage. This is due to the fact that there is a constant voltage drop of 6 volts across Zener diode D5. The base emitter current in transistor Q2 depends upon the power supply output voltage and also the position of the pot R4. This base emitter current is amplified and taken through transistor Q1 which is the series regulating element, acting like a variable resistor, increasing or decreasing in resistance to hold the output voltage constant with variations in load.

The output voltage can be varied approximately from 7 to 33 volts and will regulate up to 10 ma over the range of 8 to 30 volts. If by accident, the output terminals are shorted, Q2 base emitter current will fall to zero and a transistor when its base and emitter are shorted will cease to conduct, and as the result of this, Q1 passes no current and no harm is done to the power supply. Resistor R2 which is connected across emitter collector of Q1 is required to restore the power supply to operation after the accidental short is removed. R2 also limits the minimum output voltage supplied by this power supply. Capacitor C2 must be relatively small not to exceed 25 uf so that it cannot supply excessively large currents when shorted.



R1 = 10K, ½ watt
R2 = 22K, ½ watt
R3, R5 = 1 K, ½ watt
R4 = 5 K pot.
R6 = 4.7 K, ½ watt
C1 = 100 uf 50v electrolitic
C2 = 20 uf 50v electrolitic
D1, D2, D3, D4 = 100v 600 ma
D5 = Zenner 6.2v 400 mw, 1N709
Q1 = pnp 2N3135
Q2 = npn 2N697
T1 = Fil. Transfmr 25v, 1 amp
PL = 28v lamp
S1 = Slide switch spst
F1 = 1 amp fuse

Transistors, other than the ones listed, can be used but certain conditions must be met. Q1 must be rated at least 40 volts collector to base and 600 mw dissipation. Q2 transistor may be almost any small signal type with a collector to emitter rating of 40 volts. This power supply is best constructed with both sides of the power supply not connected to chassis; this means that all capacitors and semi-conductors must be insulated from the chassis. The reason for this is that in future lessons we will use this power supply to run various test instruments that will require a reversal of the power supply polarity.

By far the most useful application of this power supply would be in checking experimental amplifier circuits. If, due to dud components or mis-wiring, your amplifier presented a short to the power supply, the power supply would simply stop supplying current until such times as you removed the short from its output terminals.

If trouble is experienced after assembly, a few key point checks may be made to determine the whereabouts of the trouble. The voltage across D5 is always 6 volts, thus the voltage across R6 is always 6 volts less than the output voltage across terminals O and P. By shorting the base and emitter of Q2 the voltage across terminals O and P should fall to at least 7 volts; if not, there is a likelihood that Q1 is shorted between emitter and collector. If Q2 shorts between emitter and collector the voltage output across O and P will remain at approximately 30 volts. Remember that Q1 is in series with the load and if it opens between emitter and collector the only current supplied will be through R2 and thus voltage would probably fall across terminals O and P to approximately 7 volts.

de Fresno Skip

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DISA & DATA

The Centralab Electronics Division of Globe-Union, Inc. (5757 N. Green Bay Avenue, Milwaukee, Wisconsin 53201) has published a 20-page "Conversion Factors and Formulae" booklet which is very useful. If you want one, write for it.

(from: "LERC Bulletin," Burbank, CA.)

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Food for thought is the only kind that hasn't been affected by the high cost of living.

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If more people would stop making excuses for not wearing safety belts,

there would be more people.

What's <u>your</u> excuse?

MAKING AND KEEPING

A "SKED"

One of the most important courtesies of amateur radio is making a prearranged contact, or "sked", and keeping the "sked" with your fellow amateur.

As most of us already know, a "sked" is made when amateurs wish to contact each other at a certain time and frequency and mode. Many advantages from making a sked are realized as it gives you a definite time and place to look for the one person you wish to contact. You can adjust your daily routine to make sure you are free at the time of your "sked."

For one reason or another at the other end of the contact, your friend may not be able to make it and should this happen to you there is no doubt in your mind how much time you have spent just tuning up the rig and making an attempt to be on frequency.

A "sked" should be kept without any delay and if for some reason you are unable to be on frequency it is your responsibility to immediately use the land line to find someone else to keep the "sked" for you so the other party is not left hanging on frequency just waiting for you. With all the traffic nets, and those ready to aid in most any emergency, it should not be much of a problem to get someone to fill in during your absence.

A personal experience of more than one time has been most upsetting to many of us – rearranging our time to meet a "sked" – getting the rig tuned up and ready, then find a negative reply to your call. It is even more upsetting to find out later that the other party "forgot" about your "sked." A "sked" important enough to make should also be important enough to keep.

Many regulars keeping "sked" m[illegible] have a beforehand agreement that if not heard in a certain time they are to QSY to another frequency or look for them the following day, the following week or any given prearranged time. This way both parties know exactly what to expect.

Quite often when an offense has been made of not keeping your "sked" it may be difficult to get another "sked" with this same person.

One time several months ago, I had a "sked" which meant repairing antennas from a storm quickly to be on frequency. The hot July heat did not stop the work of getting ready and also anxiously awaiting the time to arrive. What a big disappointment to call the party over and over with a negative answer. Later when I had asked "what happened," I was told "I forgot." No future "sked" was proposed, as you could well believe.

In the Amateur's Code by Paul M. Segal, we learn that the amateur is loyal, progressive, friendly and balanced.

The slogan "to have a sked, keep a sked" applies to hamming as well as any other type of verbal agreement with people.

WA2FGS
de Crosstalk, New Jerse[illegible]
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If you don't have the time to do it right, you will have to find the time to do it over.

de FEARL News
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THE HAM HANDYMAN

Now is the time to begin planning that antenna you've always dreamed of. The saying, "If it didn't blow down h the winter winds, it wasn't big enough!" isn't neccessarily true today. Building an antenna which does justice to your fine signal isn't as impossible as you may at first believe.

In this two-part article, I will offer the home constructor some ideas on antenna building. In the first part, some general thoughts; the second part will describe the construction of a practical yagi for DX work on 20, 15 or 10 meters.

Materials should not be a problem. For the boom, use irrigation tubing, or aluminum TV mast pop-riveted together, or visit a metals distributor, such as Ohio Metals or Meir Brass and Copper for the size of aluminum tubing you want. Element stock can be aluminum tubing, rod, or TV masting. Boom-to-element clamps can be made from "U-bolts" used for TV antennas, muffler clamps, commercial hardware, such as Doc Self's "oxen-yoke" clamps, or mount elements through the boom, fastened with ordinary nuts and bolts. For light weight construction, try fiber glass. This can be used for the boom or for a supporting framework for stacked VHF beams. Fiber glass tubing is available from several manufactures around the country or Kirk Electronics distributes some materials in , area. Use 6061-T6 aluminum for all-metal yagis – it's the most durable. Be sure to spray-paint all exposed aluminum with clear acrylic spray for protection from corrosion. Use GE silicone rubber RTV 102 to seal connections and enclosures from water seepage. Seal co-ax connectors with two or three layers of electrical tape – spraying each layer with acrylic spray. Use stainless, corrosion resistent fasteners wherever possible. Use "Contax" contact paste,* made by Blackburn and sold at Martin Electric, at all joints where two pieces of tubing telescope together (if you ever want to take them apart again!). Also, to telescope tubing together, slit the end of the largerpiece and clamp down to the smaller by using radiator hose clamps. Plug the ends of tubing to eliminate noise, but drill a hole in the tubing to allow condensed water to leak out. Also, see the various antenna construction handbooks for more ideas.

Next issue I'll describe how to build a mono-band, high gain yagi.

K8REG – Dayton A.R. Assoc.

*Perhaps Norv Bowen, WAØNPF could advise where this could be obtained locally – JDS

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"I thought you paid it."

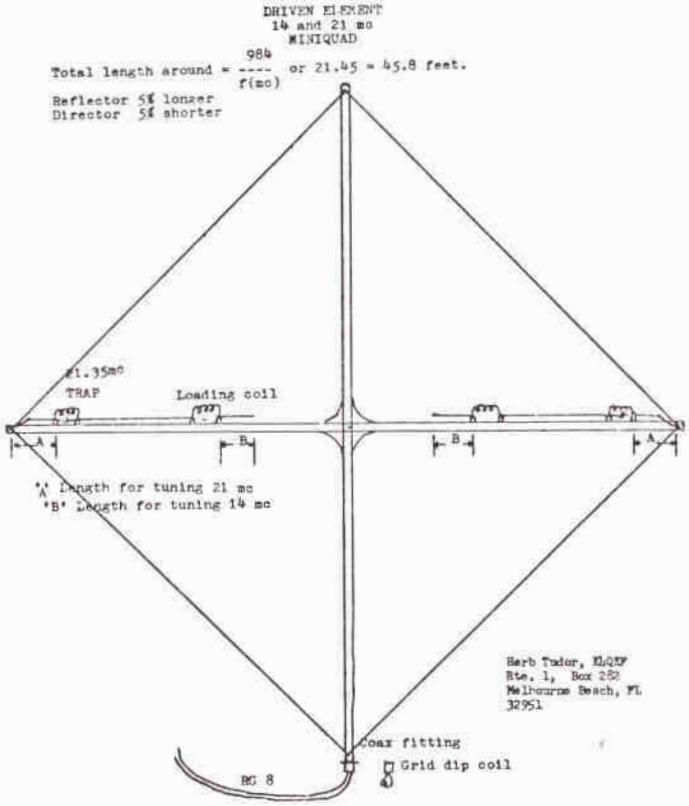
NEW MINIQUAD

This Miniquad antenna is the up-to-date developement resulting from my experiments with Quads since around 1936, so it does have a history. The main discovery over an ordinary orthodox Quad is when I discovered it would be kept electrically symmetrical as well as mechanically symmetrical by making it slightly under size then load it by adding the 'A' sections at the voltage nodes as shown in the drawing.

As you can see a Quad is two half waves out of phase, so they will alternately use the added 'A' sections which can also be used to tune it to the 21 mc band frequency desired.

This discovery only aroused my curiosity as to how far the idea could be utilized. Therefore after tuning into the 21 mc band I added the 21 mc traps and proceeded to load it to the 14 mc band as shown. Space was limited here so it had to be loaded again with coils as shown. Actually the added 14 mc section following the traps are a pretty good copy of a war whip antenna, section 'B' being it's tuning section.

The 21 mc traps were made by winding 7 turns of No. 12 enameled antenna wire around some surplus Hi voltage Cornell-Dubelier molded mica capacitors (56 pf) found in the junk box, and grid dipped to 21.35 mc. The loading coils were made by winding 26



turns of No. 26 nylon covered wire over 2½ x ½ inch Johnson porcelain stand off insulators. (threaded on each end 8x32). The mica capacitors have threaded brass inserts for terminals.

The antenna wire used is No. 16 copper clad steel obtained only from Montgomery-Ward farm catalog, known as fence charter wire. Don't let the small size worry you as it will carry over 3 amps, besides the smaller the wire you use in an antenna the higher the 'Q' – (surprised?) ask any antenna expert.

As to results, the field strength meter and stations worked show the same power output as the full sized Quads. I have worked all continents with this antenna, driving it with only a TR 3 and have since abandoned the full sized Quads.

Hubert G. Tudor K4QKF
Rte. 1, Box 282
Melbourne, Fla.
de Florida Skip

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RAMBLINGS BY A GHOST WRITER

No doubt many of you have had DX QSO's on phone with a foreign ham who has a very strong accent. He may understand English, but his ability to make himself understood leaves a lot to be desired. What does one do in a case like this? You don't want to say any thing to offend him, neither do you want him to know the extent of the difficulty you are having. After all, he is also a ham like you and I and gets the same kicks as we do. These fellows have two strikes against them because they not only must know electronics but also the English language. So you see, it is much harder for them to get their kicks than it is for us. Most of them have another obstruction – money! Of course, there are some who are wealthier than the majority, but these fellows are few and far between. I still ask the question, "What do you do under these circumstances?" I find some countries more troublesome than others – France, South America, and the Italians seem to be the hardest to understand. When they use phonetics, this helps a lot, but one can't make a whole transmission using this technique!

Have you ever struck up a friendship with someone in a foreign country? You would be surprised the pleasure you can obtain by exchanging articles such as stamps. literature, flower bulbs, trinkets, and travel brochures. Frequently, these articles contain pictures and information concerning the locale you are talking to and are most interesting.

Have you ever been in QSO with a ham and, while talking to him, tried to picture what he looks like? If it is possible to get a picture of him or even meet him in person, your visions usually go up in smoke because he probably isn't the same person you had previously visualized. I wonder why this is? I know that I have never been able to visualize a ham exactly. Often a person's personality can be detected by the way he talks and the words he uses. But even here you are usually unable to get a true picture of the person.

One thing we often overlook in ham radio is the fact that there are no color barriers, no separation of rich and poor, no age limits, no boundaries, and no political aspirations. Thus, one

might say Hamming is the most democratic way of life, for here we have a group of individuals working for the same ideals and progress. Other organizations who are running into problems they are unable to solve could certainly use the ideals of ham radio as a guideline. Although we are not perfect by far, you have never heard of a riot started by hams; you have never heard of hams refusing to help those in need; yes, I could go on and on touting the virtues of the good guys – the hams.

I don't think that a true ham wants to be entertained all of the time. I think that sooner or later he wants to participate and do his part. By belonging to a radio club, his interest must be there; all you have to do is to ask him if he will take a part. Some members are slow responding, but – I say BUT – you must come forward, keep the spark alive, and soon you will have the fire of desire!!

73's and CUL . . . Ghost Writer
de Gloucester ARC, New Jersey

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NEW MEMBERS ADDITIONS TO ROSTER

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6818 Hartman Avenue
Omaha, Neberaska 68104
Phone: 451-6818

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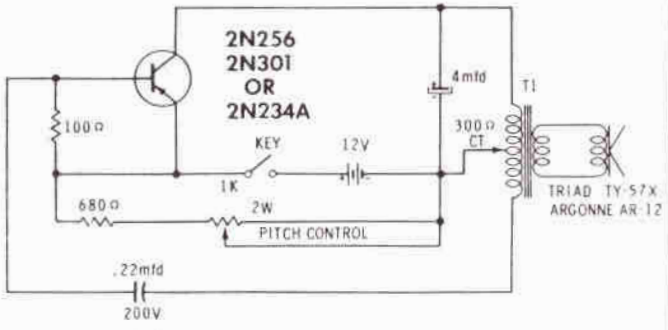

Code-practice oscillator capable of driving a speaker.

de Florida Skip

NEW PRODUCTS OF INTEREST TO HAMS

1. VHF UHF Solid State Equipment – Spectrum International, P.O. Box 87, Topsfield, Massachusetts 01983

Braun of West Germany is importing a line of interesting products for use by U.S. hams. A short rundown follows:

A. 432 Converter – DGTC 1702 – $69.00 – IF-144-148 Mc.

B. 144/432 Varactor Tripler – LVV 270 – $75.00 – Input 30W Output 15W

C. 144/452 Transverter – TTV 1270 – $47.50 – This item may be used with a 144 Mc. Trans. Rec. unit for operation on 432.12 VDC used on Rec. only, varactor tripler used for transmitting. A compact cheap way to do the job of getting on 432 Mc.

Write to address above for more information.

2. 12 V Rechargeable Battery – Globe Battery Div. Globe Union Inc., 5757 N. Green Bay Avenue, Milwaukee, Wis. 53201

A line of Gel/Cell batteries have been introduced by Globe, which should find application in portable ham gear. The most interesting items are of course the 6 and 12 V units listed below.

GC 620 6V 1.8A 1 Lb
GC 626 6V 2.6A 1.3 Lb
GC 1215-1 12V 1.5A 1.5 Lb
GC 1245 12V 4.5A 4.5 Lb

The advantages of this new line are many, but the most important is the gelled electrolyte, rather than the use of a liquid, that could be subject to splashing and spilling. The batteries are completely sealed, and can be considered maintenance-free. It can be used or charged in any position and can even be installed upside down if necessary. Each unit is equipped with one way relief valves which release in case of a pressure build up, but automatically reseal. There is no corrosive fume or gas problem, and no possibility of an explosion.

Write for more information to the above address.

de Pack Rats, Phila., Pa.

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The newest and most amazing diet food comes in a huge can. You open it – and its empty.

de FEARL News

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Secretary, handing letter to boss: "This one is marked 'Personal' but it isn't, really.

de FEARL News

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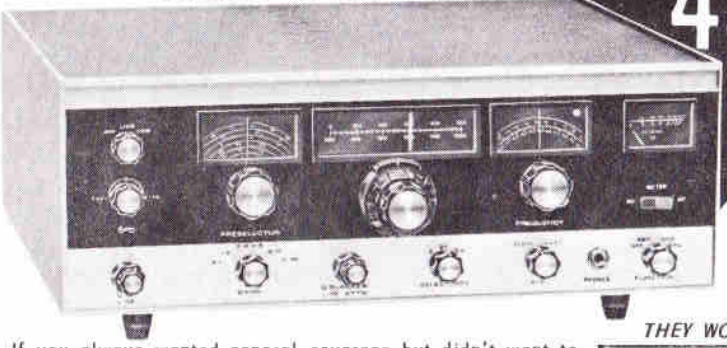

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(B) RV550—REMOTE VFO. Plug-in for a GT550 to give dual-split frequency control.
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