



PACK RATS'

CHEESE BITS



CLUB CALL: W3CCX

MT. AIRY V.H.F. RADIO CLUB, INC., PHILA., PA.
(50.2, 145.2, 221.4, 432.3 & 1296.3 MC)

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

MEETINGS: THIRD WEDNESDAY OF EACH MONTH AT 8:00 P.M.

VOLUME III

SEPTEMBER 1969

NUMBER 9

OUR PREZ SEZ

About Forthcoming Activities

Summer's gone, cool nights, warm days spell inversions. The fall weather is great for antenna work. How's your beam?

Club activities are excellent. The September auction at W3LHF's QTH is becoming an annual bash of bargains, laughs and refreshments. Bring something, gear, a friend with money, a chair, etc. Above all, don't miss it.

An antenna measuring party on Sunday, October 5, at K3UJD's QTH (the Ivy Look Kid) is an activity you must know about and take advantage of. Mario has graciously availed his ranch to us and set up an antenna range. This is complete with all measuring equipment and reference antennas from 50 to 1296 MC. Realize what this means. A great chance to check your beam or perhaps to research a new beam idea prior to its winter installation. Bring your antenna or just yourself to help out or observe. (Bring your lunch.)

Lots of things are going on - are you in on it?

W3KKN, Ernie Kenas

P.S. Interviews for ghost writers cheerfully given.

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

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PHILADELPHIA, PA. 19117
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DIRECTORS' MEETINGS ARE HELD ON THE SECOND WEDNESDAY OF EACH MONTH AT DESIGNATED LOCATIONS.

MONDAY NIGHT NETS:

145.2 - 7:30 P.M.
50.2 - 8:30 P.M.
221.4 - 9:30 P.M.
432.3 - 10:00 P.M.

OFFICERS - 1969-1970:

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VICE-PRES.: K3JJZ, ELLIOTT WEISMAN
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K3KTY, JOHN TATE
W3CJU, DONALD HAMPTON
W3CXU, JOHN ALLEN
K3MXM, LEE COHEN
K3CIV, RALPH HERSH
(Ex-Officio)

PACK RATS' CHEESE BITS is a publication of the Mt. Airy V.H.F. Radio Club, Inc., Philadelphia, Pa., and is published monthly.

20¢ per copy \$2.00 per year

We operate on an exchange basis with other publications and anything that is printed in CHEESE BITS may be reprinted, unless so stated, as long as the proper credit is given.

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ARRL BULLETINS

NR 233, August 7, 1969

All amateurs are invited to participate in the ARRL September 13 Frequency Measuring Test. WLAW will transmit signals for measurement at 0130 GMT September 13, which represents the evening of September 12 for most United States and Canadian amateurs, on approximately 3557 7089 and 14,068 kiloHertz. A second series of signals for measurement will be transmitted at 0430 GMT on approximately 3568 7088 and 14,091 kiloHertz. Although Official Observers only will receive individual reports, any amateur may submit his results for possible QST Honor Roll listing. In addition, the official readings will be transmitted via a special WLAW bulletin on or about September 25. Further information appears on page 100 of August QST AR

NR 334, August 14, 1969

Public service communication has been a traditional responsibility of the amateur service since the very earliest days of our hobby. The Amateur Radio Public Service Corps implements this function. ARPSC is discussed in detail in the ARRL Public Service Communications booklet, a complete manual for amateur radio emergency and traffic operation. This publication is available without charge from ARRL Headquarters, 225 Main Street, Newington, Connecticut 06111. An addressed legal size envelope with twelve cents U.S. postage will help to expedite your copy.

WE GET LETTERS

I read the rerun of WA3FOQ's article "Have We Failed?" and I began to think. What ever happened to ARPSC in this area? You know I can remember when we met each month, had a net each week, handled traffic, had an alerting system, were associated with Radio Alert, worked with the Red Cross Disaster Teams, had mobile round-ups, had a news letter and a handbook, and also had stations that were available for emergency nets around the clock. I also thought back and said to myself "Gee with all that it was fun". Most of what we were doing was for others, and then something happened - we apparently began to think more of our own interests and down it went. Remember, Hams justify their being by demonstrating their value as a public service. We can't ride on our past record for long! You know, as I think some more, we used to get some of our members names and pictures in the big papers from time to time and on the radio and TV too.

WA3HIT, the newly appointed EC for Philadelphia County, is trying to rebuild the ARPSC. He needs your help - not a lot just a little. So how about registering with the ARPSC, check into the net when you can and be ready for any emergency that may come our way. If you can come to the stated meetings it will give moral support and you can meet some of the gang for an eye-ball qso. Of course, if you have any ideas for activities these are always welcome. Finally, if you really want to pitch in there is always something you can do HI!

Now to tie back to WA3FOQ's article. If we had an up and coming ARPSC it would be a simple matter to alert a net for field day or any other activity that might need communication support. Remember, all the time we are doing this we are having fun.

In the past I have always been able to turn to the PACK RATS for support for any worthwhile project and they have come through with flying colors. How about getting behind Paul, WA3HIT, and get ARPSC back on its feet.

As WA3FOQ said "Something to think about".

W3HK SCM EPA
George S. VanDyke

Bob Fox, W3GXB, is relocating in the South. His interim QTH will be:

Gulf Pride Court
2201 Gulf Drive
Bradenton Beach, Florida

He expects to locate a Permanent QTH in several months.

The older members will recall W3GXB and W3IBH keeping two meters hot in the old 522 days.

Bob is donating a fine Lae Freq. Meter (500 to 1300 MC) to the Club. The September auction will feature other equipment that will not be taken to Florida.

W3KKN, Ernie Kenas

PICNIC REPORT

fter much consultation about the weather with members of the "Pack Rats" on 220", "6", the land line, and checking with his XYL, our Prez declared the family Day was on.

t was a real success, from a new record in the egg toss game, to every "Ham" receiving at least one door prize and in many cases two. Our ladies received gifts that I am sure are still being talked about. My hat is off to the gifts received from our supplier friends, and the great work done by the gift committee.

ven with the weather threat we had over 300 people. The fellowship and warmth radiated by this group soon chased away the black clouds.

As chairman of the event I must express my gratitude to all those who contributed their time and efforts to make a most wonderful experience. Again, many many thanks!

K3KTY, John A. Tate

ANTENNA MEASUREMENT PARTY

On October 5 the Mt. Airy V.H.F. Radio Club will sponsor the second annual "Antenna Day" at the QTH of K3UJD located at 620 W. Bristol Road, Ivyland, Pa., phone OS 5-3984. Everyone is invited, members and friends. Antennas will be measured on amateur bands 50 MC through 1296 inclusive. All antennas, home brewed or store bought should have all R.F. hardware available, such as Baluns or matching sections. Antenna polar plots and swept V.S.W.R. versus frequency measurements will be given to all participants. Starting time is 10 a.m. and will continue till? Bring your own lunch. Liquid refreshments will be available.

K3UJD, Mario Fontana
(That's in Ivyland you know!)

DID YOU KNOW

- W3A3HIT is the new EC of Philadelphia County.
- W3GOZ, Herman Klien, underwent three operations at Abington Hospital this month. Send cards to room 2E07, Abington Hospital, Abington, Pa.
- W3HSS, Charles Lustic, and XYL Betty were traveling back and forth to Roxboro Hospital. Charlie, Jr. had appendicitis.
- W3IGX, Dick Boyle, signed in on the six meter net portable from a mountain top in the Poconos.
- W3SAO, Frankie Brick, was thrown in W3MFY's pool by guess who - his Harmonic Harry who was home on leave from the Marine Corp. Not only that, this process was observed by Debbie Arnold, Harry's date.
- At any Pack Rat meeting material may be auctioned. The Club will get 10% of the auction price. Any material brought for auction must be registered with the auctioneer.
- The Book Review Net will resume operation on Tuesday, September 30, at 8 p.m. on 50.3 MHZ. Free books will be given to those who check in four consecutive weeks or any six out of eight weeks.

Continued on Page 5

DID YOU KNOW (Continued)

W2REB, George, of Chews Landing and a director of SJRA, won the Pack Rat shirt at the picnic. He was immediately presented with a membership application by W3CL, Harry Stein. We understand W2EIF, Jo Kilgore, has volunteered to be one of REB's sponsors.

WB2SZK, Randy Bynum, has set his goal for January contest. He intends to beat W2EIF. This will probably be the most exciting match of the contest.

Ye Old Ed would like to thank those who helped me with the games at the picnic: Michael Soltoff - Harmonic K3IUV; John Tate Jr. - Harmonic K3KTY; Mark Zimmerman - Harmonic W3LHF, and my Harmonic Glen Weisman who was rope holder for the finish line. Also be it known that the winning adult couple in the egg toss threw that raw egg back and forth over an area of approximately 30 feet, 19 times before it broke. A new record!

The reason K3UJD, Mario Fontana, is in such a hurry to finish his 10 ft. dish has nothing to do with moonbounce. Mario intends to win his own antenna measuring contest to be held on October 5. Our money is on W3CJU, Don Hampton, and that crazy paint he uses.

Pack Rat shirts are available from K3KMN, George Gakoumis, for \$8.00.

Pack Rat lapel pins are available from W3ZRR, Ray Whitehead, for \$3.00.

Pack Rat membership applications are available from W3CL, Harry Stein, for free.

W3SAO, Frankie Brick, official sign putter upper and taker downer was bragging about his proficiency at getting all his signs back while on the way to the Directors' Meeting at W3HKZ. Low and behold - another sign - Frankie missed one!

WHEN I BECAME A PACK RAT

K3AA	-	August 18, 1965	W3MFY	-	September 25, 1963
K3BHK	-	February 26, 1958	K3NMN	-	November 21, 1962
WA3CAG	-	April 21, 1965	WB2OAD	-	April 21, 1965
W2DIL	-	December 20, 1967	W3PST	-	October 17, 1967
WA3EHD	-	November 17, 1965	W3QB	-	July 15, 1959
WA3FAA	-	August 16, 1967	W2RZU	-	May 15, 1956
K3GAS	-	March 16, 1960	W3SAO	-	May 15, 1956
WA3HIT	-	July 19, 1967	K3UJD	-	September 23, 1964
W3IA	-	December 15, 1965	K3VEQ	-	October 20, 1965
K3JJO	-	November 15, 1967	K3WEU	-	November 20, 1963
W3KKN	-	June 26, 1956	K3YPL	-	December 11, 1964
W3LHF	-	April 20, 1960	K3ZKO	-	June 21, 1967

Silent Key: W3CCX, Matthew Gelardi, became a member on September 25, 1956. Deceased February 4, 1958.

Should Auld Acquaintance Be Forgot?
Where Are You?

K3BHK	-	Jerry Tessler	W3QB	-	Jay Auchenbach
WA3EHD	-	Jim Antonaci	W3RZU	-	Elio Colussi
K3NMN	-	Len Pachuta	K3VEQ	-	Joe Silverman

W3SAO, Frankie Brick
Club Historian

TO BE CONTINUED

GETTING TO KNOW YOU"Me W3SAO"

When I was a kid back in 1920 I lived in Olney and heard the first radio at an Englishman's QTH. That started me in Ham Radio. I started making tapped coils wound on "Mother's Oats" boxes. The crystal was a piece of galena. You found the "Hot Spot" by moving a piece of wire called "the cat's whisker" at various spots on the crystal.

The Evening Bulletin had a radio experimenters page. Hot dogs, a new red hot crystal set circuit called the Harkness Reflex, a fixed crystal plus one tube. Having supplied the family with radios I next built them for other people for the grand sum of \$17.00. This was just what I needed to pay for two weeks at Treasure Island Boy Scout Camp. (Along the Delaware that is.)

Next came the tube sets with variometers, variocouplers and rheostats for each tube filament. It was fun drilling all those holes in rubber panels for the taps off the coils.

The 5 and 10 cent stores on Market Street all had a radio department. I mentioned this to W3CL and it brought back memories of the blue colored glass arcturus tubes and the pilot condensers made with brass plates. I will never forget the nice smell of the Bakelite parts and how nice those brass bars with a sliding contact attracted our eyes.

With the advent of the A.C. powered tubes I sort of chickened out and took up another hobby. When I went to R.C.A. in 1945 it flared up again when I worked at the same bench with W2PEN, Walt McAllister. At R.C.A. I also met my best source of building rigs, W2PAU, Miles Brown.

We built a small 144 MC Xmtr and used a "Rush Box" receiver. We strung a 10 element collinear from the fifth floor window so that the 300 line would come in the window at the end of my bench. At this time there were two hams at home with heart conditions. We decided to have a "bed pan net" and called them at noon each day. Both W3KBB, Bill Canham, and W2ADV, Chris Davis, have since become "silent keys". Bill could not get out of bed so he used a yardstick with a hole in the end to flip the rig on and off. One night while listening as an SWL I heard Bill complain of not being able to tune in the high end of 144 MC so he could hear W3NXT, Buck Harvey, who operated at 147.8 MC. I loaned Bill my receiver and through this when he regained his health he gave me code lessons. In 1952 in July I went down and passed my novice license and became WN3SAO (sassy and onery). The day my ticket arrived, Mother Rat called Bill on the land line. He told her I should listen at 7 p.m. that night. Of all things, he called me on CW and I was really floored when I heard my call for the first time it was ever sent.

My greatest thrill was getting on the air the first night with my power house 6J6 final Xmtr complete with a 144 MC Xtal, heising modulation and a carbon mike. Between QSO's I had to keep putting in a new filter condenser in the power supply.

I did manage to work Rosedale, L.I. with the 6J6 final and a 5 element collinear. Another buddy of mine W3AQ, Doc Kline, gave me a 522 Xmtr. Plenty of TV1 until modified. My next move was to drive a 829B final with the 522. My new converter was a bit better than the cavity job I had before.

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GETTING TO KNOW YOU (Continued)

About this time W2PAU came out with his article "Getting on 2 the Easy Way" so we built the little monster on a 5" x 7" chassis. 2-6AG7's and a 2E26 for a final. I am still using this as a driver for a 5894, 100 watt final on 144 MC. The latest thing in beams was a 10 over 10 Brownie Beam. Due to the fact that no one could figure whether horizontal or vertical polarization was best you had to flip from one to the other. This was accomplished by means of a "Kopper's Coke" regulator motor. For the benefit of the younger generation, it was a motor with an arm on each end. These were connected by chains to the lamper and draft doors. You set the control upstairs and in this way controlled the heat of the furnace.

Many a car coming up 9th Street stopped to see a silly beam turning and flipping at the same time. P.S. Due to TV1 we finally went horizontal.

From that time on we gradually built more rigs and mounted them in a 6 ft. rack cabinet. At this point I must pay tribute to my best friend who was the father of the Pack Rats, W3IBH, Charlie Clements. When I was home with a broken leg he stopped in every day to shoot the breeze. He called up a buddy in North Jersey to come down and help him put up my first tower and a rotator for the beam.

One of these days I will write the story of how Charlie and I started the Pack Rats and how it got its name and who were the eleven charter members.

As trustee of the club call W3CCX I have made sure of the fullest band use by passing the advance class ticket. I shall continue to perform my duties as corresponding secretary for what I consider the finest radio club and a fine bunch of fellows.

In closing: A "click" makes a noise. Instead of complaining about the noise join the "click" and make more noise for the club.

73, W3SAO, Frankie

FROM THE BOOK RACK

Paul R. Behrmann, K3WEU/AREA*

WORKING WITH SEMICONDUCTORS (Tab Book No. 501) by Al Saunders
124 Pages - over 185 illustrations, 15 chapters
\$7.95 hardbound; \$4.95 paperbound

A brand new and practical guide to semiconductor circuit operation and application - of value to technicians and others who work with solid-state equipment. The wonderful aspect of this book is that the reader - be he technician, hobbyist or engineer - can really develop a thorough understanding of semiconductors - and actually enjoy doing it! In striking contrast to the usual textbook approach, this brand new volume avoids the dry, theoretical mathematical explanation - it simply tells how and why things work, backed up by large, clear illustrations. Under the expert guidance of veteran technician and instructor Al Saunders, any facets of semiconductors are exposed in a different light. With several all-transistor TV's on the market, it is more urgent than ever that service technicians understand semiconductor circuits.

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FROM THE BOOK RACK (Continued)

The author begins with a clear-cut explanation of simple junction diodes, N- and P-type semiconductors, and PNP and NPN transistors. The next chapter outlines simple but reliable tests and operating parameters. Chapter 3 describes basic circuit configurations and compares them to vacuum tubes equivalents. The effects of temperature and biasing are treated in Chapter 4, along with basic feedback techniques and curve tracing.

In Chapter 5 the author begins to put things together - interstage coupling, impedance matching, temperature compensation - and continues in Chapter 6 with actual, practical circuits - Class A and B amplifiers, complementary PNP-NPN circuits, phase inverters, etc. Chapter 7 goes into RF and IF amplifiers, detectors, automatic volume control and differential amplifiers. More advanced circuits are covered in Chapter 8, preceded by an introduction to transistor oscillators, and then multivibrators, Eccles-Jordan and Schmitt trigger circuits, and crystal controlled generators, concluding with a thorough explanation of counting by "flip-flop" and binary arithmetic.

Succeeding chapters deal with power supplies, high-frequency circuits, field-effect transistors, unijunction transistors, tunnel diodes, SCR's, plus a dozen or so special purpose circuits designed for a variety of applications from audio amplifiers to zener dioded functions (accompanied by component values for construction-minded readers).

* Amateur Radio Editors Association

NOTES ON THE USE OF ELECTRICAL INDICATING INSTRUMENTS

By W3CPT, Kenneth Harrison (Deceased)

Submitted By W3SAO, Frankie Brick

1. Electrical Indicating Instruments, commonly called meters, may be divided into three basic types:
 - a. Permanent-Magnet-Moving Coil (D'Arsonval)
 - b. Moving Iron (Iron Vane)
 - c. Electro-Dynamometer
2. Permanent-Magnet-Moving coil are essentially d-c instruments but may be used for a-c measurements by use of auxiliary rectifiers or thermocouples. They are delicate, highly sensitive and may be used for a wide range of voltages, currents and frequencies. They impose a very low burden on the circuit being measured and give very accurate indications.
3. The moving iron instrument is a rugged device of medium accuracy and is suitable for use on low frequency a-c only. They impose a medium burden on the circuit being measured.
4. The dynamometer type may be used for d-c or low frequency a-c. They have medium accuracy and impose a relatively heavy burden on the circuit being measured.
5. Voltmeters are essentially high-resistance low current devices. Their sensitivities vary from below 10 ohms/volt to above 20000 ohms/volt, i.e. the current drain on the circuit varies from about 0.1 ampere to 50 micro-amperes for full scale reading.

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NOTES ON THE USE OF ELECTRICAL INDICATING INSTRUMENTS (Continued)

The loading effect on the circuit should be taken into consideration when selecting a meter for a particular purpose.

Ammeters are essentially low resistance devices but in low voltage, high current circuits their resistance should be carefully considered; especially when using multirange, self-contained instruments as the internal resistance may cause changes in the total circuit current when changing from one instrument range to another. Most of the ammeters used are actually 50 millivolt meters with the actuating potential derived from the IR drop across an external shunt.

Wattmeters are usually dynamometer type instruments and may be used on either a-c or d-c. Most of the wattmeters used are high-power-factor instruments with a low current rating so that care must be taken not to overload their current coils on low-power-factor circuits as the meter may burn out with only a relatively low scale reading.

Thermocouples are used to convert a-c to d-c and are very delicate due to the very fine wires used in the element. Care should be taken not to overload them as a 41% current overload represents a 100% heat overload. Even though a slight overload may not burn out the thermocouple, its accuracy may be seriously affected. The serial numbers of the thermocouple and the meter with which it is used should coincide as each thermocouple has an integral calibrating resistor designed for use with one meter only.

Thermocouple type meters have a very slow response and several seconds are required for the meter to reach the correct indication so that they should not be used in rapidly varying circuits.

The following precautions are applicable to most types of meters:

VOLTMETERS: Make certain that the external resistors (multipliers) are placed in series with the instrument whenever indicated. Multiplier and meter serial numbers should coincide. Voltmeters should be open circuited by use of the integral switch or by opening connections when making changes in the circuit. Multirange instruments should be placed on their highest range until it is determined that the applied potential is less than the full scale of a lower range.

AMMETERS: Almost exclusively used with external shunts on d-c and current transformers on a-c. They should be short circuited when making changes in the circuit or when starting motors. It should always be realized that the starting current of a motor may reach eight (8) times the normal running current.

The proper calibrated leads should always be used between the shunt and the instrument.

WATTMETERS: Essentially combined voltmeters and ammeters indicating their vector product. The precautions applicable to the use of ammeters and voltmeters separately are applicable collectively to wattmeters.

Wattmeters should be connected into the circuit in such a manner that the power taken by either the potential or current coils causes the least error. A careful study of the circuit components will be necessary in order to determine the most desirable method of connection. The applied frequency should be within the instrument rating.

TO BE CONTINUED

SWAP SHOP

Conducted By: W3ZRR, Ray Whitehead
7329 Shelborne St.
Phila., Pa. 19111
215 - RA 2-4786

CONTACT: WA3CND, Howard W. Candy
4013 Benson Street
Philadelphia, Pa. 19136
MA 4-6812

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am or cw - crystal controlled (15
xtals incl.) or provisions for
external VFO. Will work with
suitable modulator. Rack-mounted
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133 Hogeland Road
Southampton, Pa. 18966

FOR SALE

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Model TX-62 \$100
- AMECO 50-144-220 MC VFO Model
VFO-621 35
- AMECO 2 meter converter - preamp
and power supply 35

All equipment like new condition.
Will sell entire lot on Package Deal
for \$160.

MEETING NOTICES

The next DIRECTORS MEETING will be held
on Wednesday, September 10, at the QTH
of K3UJD, Mario Fontana, 620 W. Bristol
Road. That's in Ivyland, you know.

The next REGULAR MEETING will be held
on Wednesday, September 17, at the QTH
of W3LHF, Dave Zimmerman, 520 Centennia
Road, Warminster, Pa. Topic of the
evening - AUCTION. Bring money - bring
gear. Pack Rat treasury will get 10%
of the auction price of each item.

You're only young once, but if you work
it right, once is enough.

The Ham Monitor

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Conducted By: W3ZRR, Ray

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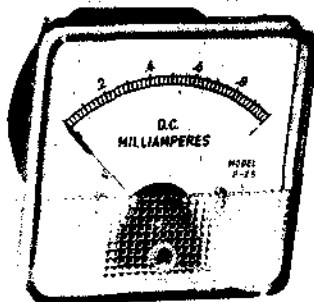
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HAM-BITS



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- 0-10 DCMA
- 0-100 DCMA
- 0-200 DCMA
- 0-300 DCMA
- 0-500 DCMA

3⁹⁰



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12⁹⁵

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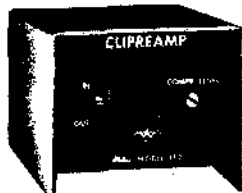


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 Passband Ripple: $\pm .5$ db
 Shape factor: 6 to 20db 1.21 to 1
 Shape factor: 6 to 50db 1.56 to 1
 Package Size: 1 1/4" x 1 1/4" x 1"
 Price: \$32.95 Each



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Functions as a regular selector switch with 5 side mounted (radial) connectors. Has the additional feature of automatically grounding the entire antenna system when the rig is not in use. Complete with knob, mounting hardware and escutcheon plate. Power handling 1000 w. VSWR less than 1.2:1 up to 150 MHz.
\$12.50



14⁹⁵

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SC-2 \$69.00
 for 2 meters



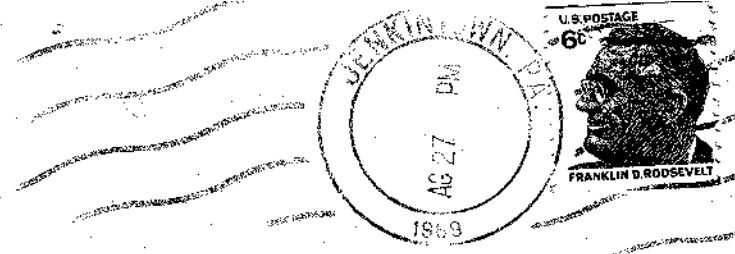
EL71400

SK75300

OPEN EVENINGS
MON. THURS. FRI.
9 AM TIL 9 PM
TUES. WED. SAT. 9 AM TIL 6 PM



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NEW

STORE HOURS

MON.	9.30	-	5.30
TUE.	9.30	-	1.30
WED.	9.30	-	9.00
THU.	9.30	-	1.30
FRI.	9.30	-	5.30
SAT.	9.30	-	5.30



TU7-7350