

HAM HUM

April 1962

No. 4



HATS OFF DEPARMENT

In behalf of the Ak-Sar-Ben Radio Club, Inc. and all of the people who enjoyed their pancakes, bacon, eggs, coffee, milk, etc. at the Riverview Park Pavilion the evening of March 9, we wish to extend our sincere gratitude and thanks to the "kitchen crew," helpers and servers who made this annual event a success for 1962.

Helping to mix the pancake batter, make the coffee and keep things humming in the kitchen were Mrs. Lou Cutler, Mrs. Dick Eilers, Mrs. Earle Olson, Mrs. Ed Gutmann and Mrs. Ed Donze.

Helping at the counter to dish out the coffee, milk, syrup and butter were Mr. and Mrs. Joe Berounsky and Mr. and Mrs. Lloyd Anderson. Incidentally, the Lloyd Andersons only came to our supper as guests of Joe and Mary Berounsky and before they realized what happened, in Beth and Lloyd Anderson were preching in with yeoman duty behind the serving counter.

Along the "hot plate line" we had Duane Gerry as chief "bacon put-er on-er" and John Droescher as chief "bacon fryer."

Jim Droege, who until the nite of March 9 had never "flipped a flapjack," was our head pancake flipper and did a real good job of it.

The "hot plate line" ended with our old pro Jerry Armstrong frying the eggs to everyones' satisfaction.

To the crew who in approximately one hour and fifteen minutes mixed up 23 lbs. of pancake batter, brewed and served 8 gallons of coffee, opened and served around 120 glasses of milk, put out 5 lbs. of butter patties, and served 2½ gallons of syrup, fried about 25 lbs. of bacon and 10 dozen eggs, we say "HATS OFF."

A special note of thanks to Lou Cutler and Ed Donze for securing the "portable" hot plates, setting them up, and then having to return them the following day. 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.



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PROGRAM FOR APRIL MEETING -FRIDAY, APRIL 13

We have a two-battel program on tap for our April meeting:

- (1) A talk on "Propagation of Radio Waves" by Don Brehm. Mr. Brehm is a Radio and Equipment Engineer with the Northwestern Bell Telephone Co. and in that capacity has made thorough studies on the behavior of radio waves.
- (2) The "Do's and Dont's" of installing and using phone patches will be covered by John Droescher. John will give us a practical discussion of what to do and what not to do if we ever intend to have a phone patch.

I wish you could try to find out for me the "ham" that called me Feb. 4 - early afternoon and we enjoyed a visit with our son. I want to pay him for phone call to C.B.

I hope you can find who it was.

Mrs. Joe Kern 2649 Ave. B Council Bluffs, Ia.

MOONBOUNCE

The Navy has a moonbounce system between Washington, D.C. and Hawaii. This is one of the first permanent moonbounce systems in the world. Either CW, Teletype, or facsimile are used. The power input is 100 DW feeding an 84 foot parabolic antenna at 400 megacycles. The system, of course is unaffected by magnetic storms, but is usable only when the moon is in the proper position - five to ten hours a day. The signal takes 2½ seconds to make the 480,000 mile round trip.

The program Committee would like to insert a hint to all members to keep the evening of June 8th open for what is shaping up as a great gala get-together and dance party for all, young and old (if you care to admit the latter).

Hint #2 for June 8, everybody practice their version of the TWIST.

More about June 8 in the next issue of HAM HUM.

PREXY SEZ-



By Royal Enders, KOLYO, 1962 Club President

CQ CQ DE KØLYO BT

The OM's, YL's, XYL's, and Jr. Op's attending the Club's Annual Pancake Supper, held Friday Night, March 9, at Riverview Pavilion, enjoyed many fun-filled Eye-Ball QSO's and everyone had plenty of pancakes and all the other things that are served to make such a meal more delicious and delectable. Our personal thanks to Chief Chef, Ed Gutmann, WØCQX, and his very efficient committee, for the fine food, fun and frivolity. We'll look forward to next year's Pancake Supper, Ed!

On March 30, the Board of Trustees received, and, with regret, accepted the resignation of Russ Rutherford, KOSBS, as Vice President and Member of the Board of Trustees of Ak-Sar-Ben Radio Club, Inc. Press of time, due to a new siness venture, made it impossible for Russ to continue to serve the Club Membership as an officer. Our thanks to you, Russ, for the time and service you have given the Club in the past, and we look forward to

the time when you have the business under control, and come back to work with us.

In accordance with the Club Constitution, the Board of Trustees will select a member to complete the unexpired term of Vice President, and this action will be submitted to Membership for ratification at the April meeting, which will be held in the 4-H Building at Ak-Sar-Ben Field on Friday Night, April 13.

Elsewhere in Ham Hum is the announcement of the program for the April Membership Meeting. Please do this for your Club and its Members: Use the Land Line Twisted Pair and invite at least one Ham (Club Member, or Non-Member) to be your guest at the Meeting. Why not offer to pick him (or her) up and bring him (or her) to the meeting?

The ARRL Field Day will be June 23-24, under the able leadership of Glen Swanson, KØJQX, (Swanny). We would like to have an expression from the members who would like to operate during the Field Day Program. Call Swanny at 556-8140 and let him know about your interest. Some possibilities of operation, depending on the groups which will participate:

40/75/80 Meter AM, SSB, and CW 10/15/20 Meter AM and/or SSB 2 Meter AM 160 Meter AM 6 Meter AM and/or CW 40/80 Meter Novice (CW)

Prexy advocates the use of low power transmitters, but with Antenna Systems and Transmission Lines that will deliver every possible Watt and Milliwatt to the Air.

We understand that Ed Gutmann and his Committee have a bang-up Social Program planned for the June Membership Meeting, including Air-Conditioned comfort, and another of those fun-packed evenings for Dad, Mom, and the whole family-Watch the next issue for his announcement.

The 1962 Membership Committee includes:

Gerry Armstrong	WØNKG
Larry Caccomo	WØNMN
Mac McGovern	KØMSS
Bob Downing	WØNAG
Grandma Lou Pickert	WØCCD
Joe Berounsky	KØQDB

It is the responsibility of this Committee to hustle new members for the Club, and to recommend them for election to membership. We are continuing to receive applications, and it looks as though we will have a very noticeable increase in membership during the remainder of the year 1962. If you have a prospect, call one of the Committee to secure

an application for membership. The Initiation fee is \$1.00, and the yearly dues are \$6.00. We think that any member who attends even only a few of the Membership Meetings will receive more value than the 50 cents per month dues.

The 1962 Miracle Mile Drive, sometimes known as the Easter Seal Crippled Children's Fund Raising Campaign, was held on Sunday, April 1, with the cooperation of members of the Ak-Sar-Ben Radio Club, Inc. Ten mobile operators with a base station operation on 6 meters and a 2 meter link between headquarters and the base station participated.

Our Thanks and congratulations to the following, who so generously contributed their time, services, gasoline, refreshments to this very worthy cause:

Control of the Contro	
Bill McDonald	KØYDJ
Clarence Steiniger	WØBFO
Joe Stoupa	KOIAN
Bill Dinsmore	KØUKN
Del Gibson	KOUIB
Lou Cutler	WØVLI
Cecil DeWitt	WØRMB
Jim Droege	KØYCP
Larry Caccomo	WØNMN
Royal Enders	KØLYO
Grandma Pickert	WØCCD
Hugh Tinley	KØGHK
Ed Donze	WOYEV
Clarence's XYL	
KOCVY (Name not c	onfirmed)
Ed Gutmann	WOCQY
Chuck Sudds	KØTVD
Ben Borcher	KØSCE
Mike Miller	KOHHR
John Snyder	WOWRT
Fred Kujawa	KØETA

Larry Donnelly loe Roberts

KØKCK KØKEO

Our faithful Dick Eilers, WQYZV, was called out of the state on Company business and was unable to participate. However, he assisted in setting up all the contacts with the Headquarters of the Drive, and worked in close cooperation with Prexy and with Hugh Tinley. If we have inadvertently overlooked any others, my personal apologies, and if so, please call Royal, so that we can add the name in the next issue.

The next Fund Drive, in which Ak-Sar-Ben Radio Club has been requested to participate is the Cerebral Palsy drive, which will be held Sunday May 6. Please call Lou Cutler, 455-7143, Grandma Lou, 556-4139, or any Club Officer and volunteer as 6 Meter Mobile, 2 or 6 Meter Operator, Dispatcher, Rider, or General Helper for this drive. This operation will be another emergency disaster drill exercise, and will be conducted under RACES regulations for training purposes, in addition to contributing to another worthy cause.

CUL 73 AR SGD Royal KØLYO

The following is a list of approved countries for patching, as of 28th of March as sent out by the FCC.

Republic of Congo Honduras Bolivia Liberia Canada Mexico Chile Nicaragua Costa Rica Panama Paraguay Cuba Ecuador Peru Haiti Venezuela

73, Bob Miller, KOZLY

Editor, HAM HUM:

I certainly enjoy receiving Ham Hum and I send the copy to a friend in Central Oregon who is an invalid and active ham also. He enjoys them very much.

I am not in agreement with the article in January Ham Hum re testing transistors with a VOM. We that work with them have always been taught that this is a quick way to ruin a transistor. I believe that either CQ or QST had an article in the past two years or so about the same thing - never check a transistor with an ohmmeter or VOM, as you say in the article. Found it! See Sept. '58 QST P. 24.

Hope to see you all at the Nat'l Cnvtn hr. Sept. 1-2-3, 1962. We're cooking up a good one....

> 73, Don Stewart, W7HBO 5511 N. Vancouver Ave. Portland 17, Oregon

OFFICIAL BULLETIN NR 837 FROM ARRL HEADQUARTERS WEST HARTFORD CONN MARCH 2 1962TO ALL RADIO AMATEURS BT

1962 TO ALL RADIO AMATEURS BT FCC has denied the League petition for an end to the dual identification requirement for amateurs using radioteletype. Dual signing is necessary, the FCC says, since amateurs are not assigned specific frequencies and mutual interference between adjacent amateur signals makes positive identification of RTTY stations difficult for its monitors. Further, mobile monitoring vehicles are not equipped for RTTY. Full text of the decision will be in April CST AR 5 *********

MUSINGS OF AN XYL

I LEAD THREE LIVES! (wife, mother, and ham!) by KØAFG

Would just like to put down a few words in behalf of the lady hams (or should that be ham-ettes??) They, too, have their problems in being able to pursue their hobby. I, for one, think the XYL's deserve a special award -- maybe an O U C H award - "Operating Under Considerable Handicap." Who else can answer the telephone, watch the potatoes, wipe noses, sweep up crumbs, bandage cuts, cook coffee, and plan tomorrow's menus -- all while participating in an 8-way QSO in which two signals are running at S2.

Who else can carry on an intelligent conversation while watching for the schoolbus, finding a lost mitten, mending a sock, and chasing the cat out of the turtle bowl?

Imagine the relaxation afforded an XYL on a quiet afternoon for hamming - then right in the middle of a FB OSO -- in come the troops -daughter practices piano arpeggios to the right of her, OM digs in the refrigerator to the left of her, #1 son practices drum lesson above her, and #2 son hollers from the living room because it is 5 o'clock, and time for TV cartoons, and Mom's got TVI.

When God created the world, He must surely have looked into the future and given XYL's the gift of gab, an understanding nature, broad shoulders, immunity to puns, plenty of patience, and the power of versatility of conversation.

Just a word to the YL's (throw in here, since it is so very important) -- if you wish really and truly to be happily married, be sure to choose an OM who is not only very loving and understanding, but also a good cook, vacuum sweeper-er, phone answer-er, heavy sleeper (for night time hamming), and really and truly loves you -- for that is very necessary if you are to continue your hobby after marriage!

Of course, all things considered, hamming is a pretty wonderful thing and we XYL's appreciate the OM's opening their hobby and allowing the XYL's and YL's to join them in their wonderful ragchews and round tables, and we appreciate all the technical advice given most freely (even tho a 3-way OSO may bring 3-way advice!) The above remarks made in consideration of the male ego!

But, after all, how nice can it be, when, after supper, dishes are done, kiddies all tucked into bed, and the OM finally conked out in the big chair in front of the TV, you put out a FB CQ on CW, and get an answer from somewhere, who knows where beforehand, and have some nice fella say, "FB signal, FB first, Ur first contact, Ur first XYL." Ap have him sign with "Very Best 73's and 88's" -- who could ask for more?

Must QRT this now and put on the meat, so lunch will be on time, so I can make it on net, and get dishes done, in time to meet sked at 2:30, in time to vacuum in time for dinner, so I can work in some CW before bedtime. On second tho't, think I'll just throw the big switch and take a nap -- I'm tired!!

> Genese Haugen, KØAFG (de Mismatch)

BERMUDA CONTEST

The Bermuda Amateur Radio Contest for 1962 has been announced by The Radio Society of Bermuda. Contest period is:

0001 GMT May 13th to 0200 GMT May 14th 1962, and 0001 GMT May 27th to 0200 GMT

May 28th, 1962.

The purpose of the contest is to promote contacts with Bermuda amateurs and the top score will bring a free airline ticket to Bermuda plus one week at one of Bermuda's leading hotels for two people.

The Club has a copy of the rules should you be interested.

NEW BOARD MEMBER

At the last meeting the members approved the selection of the Board for the replacement of John Orr, WOPHW. The new Board member is Larry Caccomo, WONMN. Larry is a 'ng time member of the Club and, fact, was one of the charter signers at the time we incorporated. His experience with the Club, however, does predate the incorporation by many years.

LINCOLN CODE

The Park amateur Radio Club of Lincoln conducts code classes on 145.1 mc. in the two-meter band every Thursday evening from 7:30 to 8:30 P.M. The Club call is KØRUY and is a project undertaken by KØPMR and KØBOO.

OWENSBORO, KY. -- The General Electric Company has taken steps to abandonits trademark "COMPACTRON" as applied to multi-function electronic devices developed by the company in 1960 and to dedicate the term to the public.

"The decision to abandon is in recognition of the fact that this term by its general acceptance and use by the public has lost its distinctiveness and its significance as an indication of the origin of goods," said L. Berkley Davis, vice-president and general manager of the company's electronic components division,

His statement was made in amplification of the formal notice of abandonment to the U. S. Patent Office of an application for registration of the trademark. He said he anticipates that other manufacturing companies making compactrons will continue to join General Electric in using this term as a common generic term to designate these multi-function devices which are beginning to displace conventional tubes and transistors in many types of equipment.

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Dear Friends:

Just a line or two to announce an address change. Please change mailing address to read 2704 So. 105

Ave., Omaha 24, Nebr.

For the record, I have one (1) modulation indicator, property of Ak-Sar-Ben Radio Club.

> 73's WØNRS, Gary & Shirley XYL Greenwell

> > 3-22-62

Always enjoy your Club mailings over the past several years. More and more names are new to me, but the old ones always remind me of past pleasantries with the Club.

Not active at present, but the bug may bite, who knows.

New address for mail, Bell Labs, Holmdel, N. J. Dept. 3342

> Ralph B. Peterson K2RNB (Real Nice Boy)

OFFICIAL BULLETIN NR 841 ARRL **HEADQUARTERS** FROM **WEST HARTFORD CONN MARCH 29** 1962 TO ALL RADIO AMATEURS BT The ARRL Executive Committee. at its meeting March 28, unanimously voted that the League is against the adoption by FCC of license fees for amateurs, as proposed in Dock et 14,507. Appropriate comment expressing opposition to fees for amateurs will be filed with the Commission by the League. The deadline for comments by interested parties is April 16, 1962 AR *********

Gentlemen:

We would like to thank all Omaha Hams who helped in the recent blizzard. But special thanks to the following: K6PBT/O, Chuck, who did such a fine job, also KØJXN, Larry, who never tires, WØNZ, Ma who is always ready, KØIJW, Bob, who never fails the many who have request of him. And many more fellows in the Lincoln, Fremont and Eastern Nebraska Area who helped.

Thanks again, and it has been a pleasure working with you.

Signed the following:

WØWSS, WØHTA, WØMJY, WØKBR,

WØBJF, WØUJI, WØUJQ, WØRAM,

WØTHF, WØWRY, KØLXS, KØBMQ,

KØBMP, WØPDH, WØEXJ, KØPZQ,

KØRDQ, WØADT, KØUWK, KØQLW,

KØYDS, WØLFJ, KØDLM, WØFCT,

WØFIG, KØDMM.

OFFICIAL BULLETIN NR 840 FROM ARRL HEADQUARTERS WEST HARTFORD CONN MARCH 23 1962 TO ALL RADIO AMATEURS BT The U. S. government has been advised that Thailand, prefix HS, has never withdrawn its objection to international communications by its amateurs. Therefore, Thailand has been put back on the banned list published by FCC of countries objecting to communications between their amateurs and those of other countries. In addition to Thailand, the banned list includes Cambodia Indonesia, and Viet Nam. Accordingly, U. S. amateurs are prohibited from working stations with the prefixes HS, FI8, PK, XU, XV, YB through YH, and 3W AR

January 16, 1962 4242 Cornhusker Hiway Lincoln, Nebraska

WØEQU Ak-Sar-Ben Radio Club, Inc. P. O. Box 626 naha, Nebraska

Fellow Amateurs:

This letter regards two subjects of interest to the Nebraska Amateur Fraternity. They are (a) The Lincoln MARS Club Hamfest and (b) The Jerry Cox Memorial Award.

The Lincoln MARS Club, Inc. is proud to report sponsoring of its second annual hamfest. The date will be chosen near the middle of July. Further details will be sent to you by letter approximately one month previous to the hamfest. We hope the members of your club and other amateurs of your area can attend and get in on the fun.

In regard to the Jerry Cox Memorial Award, it is fitting that I tell you a little about Jerry Cox, WØMAO. Jerry was one of the best operators we have known. He was an excellent example of one who had truly lived up to the Amateur's Code. He was best known for his outstanding net and traffic work. About two years ago he died in his late twenties of Muscular Dystrophy. In honor, we will present, with pride, the Memorial Award to the outstanding amateur in the state of ebraska each year. The person who is presented the award is chosen from the nominations which any of your club members may make. All Nebraska amateurs are invited to submit nominations, as many as they wish, to The Board of Trustees,

The Lincoln MARS Club, Inc., care of George N. Wilkerson, Jr., WØBRL, 4242 Cornhusker Hiway, Lincoln, Nebraska. These must be in writing and submitted by December first of each year. Necessary information is as follows: (a) Call (b) Name (c) Address (d) Reason(s). Suggested basis for nomination could be outstanding service to the amateur fraternity, The Amateur's Code, emergency operation, etc. 73,

George N. Wilkerson, Jr., WØBRL President

The Lincoln MARS Club, Inc.

3-12-62 61° sunny

Hi gang,

Just a line to let you know I have my new call, I'm now W5KTI.

I have had some very fb skeds with Doc, KØGJO. Also have worked KØABI & KØOEH/Ø. Omaha is easy copy on 40 cw from here. I sure would like to hold some skeds with the old crew. Just drop me a post card and name a time. I'm on about every evening usually around 7035 kc someplace.

The nearest ham club I have found is in Dumas, about 60 miles from here. I am planning to go to their next meeting. I hear they are very active.

Enclosed please find a buck to help with Ham Hum, and please send my copy down here.

> 73 Dick Reimund W5KTI Ex WØLFM

Dear Gladys

Dear Gladys,

I've been wanting to write to you. Your column in Skip is the only phase of ham radio I enjoy. I don't want to burden you with my past experiences, but possibly some young girl could learn from this and never marry a ham.

You see, it all started about fifteen years ago when we got married. You never really know a person until after the ceremony.

I first suspected something strange on our honeymoon. We were on our way to Key West when he found the reception was terrific at that first bridge. At this time he had only a mobile rig.

He spent hours on that bridge while I swam on the lonely beach below. He worked all the way to Hawaii, 5 over 9. He will never forget it.

I have stuggled through every phase of radio. We have had five mobile rigs, at least twenty home stations, many, many antennas and towers and the ham shack has traveled from the bedroom to the living room. In between this we have managed to have three children and have acquired many strange ham friends.

Our house is always full of men which makes the neighbors stare at me. They speak to my ham though. They holler out their doors, "Get that dratted thing off the air, we're trying to watch TV." It hasn't spoiled any friendships. They come over when their TVs need repairing.

One time the neighbors saved our lives. Ham's antenna has shorted or something, anyway there was a 10 fire on his tower. Someone called our attention to it. He claims his antenna is grounded so lightning will jump over to the neighbors house. And it did! They suspected a lo but could never prove a thing.

Seems like after that when we'd get a bad storm he'd wait until it was right over the house. Then he'd call from work and say, "Darling, please take all of the antennas off my rig." I guess I make a good ground because the rig has never got it.

He has his share of ham girl friends, too. I understand they aren't as smart as he is. When the phone rings in the middle of the night and I answer it half-asleep, it's usually a lady calling. They say, "My final tube needs to be replaced," or, "Please come help me tune up," or, "Bring your tube checker and hurry," or, "I've got a short." These girls have lots of troubles. He feels good when he can run right over and straighten things out.

Now, Gladys, this is the sad part. After all of these years my ham is leaving me. I have committed the one sin he will never forgive.

Sunday afternoon at five o'clock I walked by the rig and gave him a quick kiss while he was listening to the other guy. How was I to know it was sideband roll call? Before he could get unpuckered they have marked him absent and put him on the bottom of the list. Now when he looks at me all of his tubes light up.

A divorce is very complicated. If I get the car, does he get to keep the ham tag? How can he make payments on the rig if he has to pay alimony? Where can he live and have room for his hobby? How can he take his towers with him? How will he eat? He never eats at a table, just in front of the rig.

Gladys, I'll let you know what happens next. I have a feeling that if he leaves this ham haven he'll come crawling back. The outside world is not ready for him.

Thanks for the excellent guest column. We are sending you an XYL certificate. You have earned it. Let us hear from you again.

Love, Mabel

OFFICIAL BULLETIN NR 839 FROM ARRL HEADQUARTERS WEST HARTFORD CONN MARCH 16 1962 TO ALL RADIO AMATEURS BT

ARRL Official Observers continue to send out advisory reports to amateurs for radiation of harmonics in frequency ranges outside the amateur bands. Amateurs, especially those newly licensed, are urged to make sure their transmitters and antennas are radiating at the desired output frequency rather than at some harmonic. All amateurs are are requested to guide the new licensee in this respect and urge reading of an article entitled How o Avoid Radiation of Spurious Signals to appear on page 26 of forthcoming April QST. Help keep amateurs out of difficulty with the FCC for radiation of harmonics AR *********

WHAT CAUSES LIGHTNING?

Lightning was a mystery for many years and some things are still unknown about it. We do know that lightning is caused by the earth and clouds assuming opposing electrical charges. The earth is usually positive and the clouds negative. A huge condenser is formed using the air as a dielectric. When the charge between the two "electrodes" becomes high enough, the dielectric is broken down with an arc, which is simply a flow of electrons. Voltages at the moment of breakthrough are from 1 million to 1 billion volts. Lightning is most likely to strike the highest object in an area covered by a cloud. The current in an average lightning bolt may be between 250 and 500,000 amperes.

Current flow is between the earth and the clouds, but electron flow (the flow of the charged particles) is actually from the clouds to the earth.

You can see why adequate protection of amateur equipment is necessary. Some type of spark gap should be provided to short the electrical energy to ground instead of through the rig.

The antenna that is struck by lightning will probably be damaged if it is made of wire, but the equipment can be saved. The pinet loading capacitors in a transmitter would are across and save the rest of the equipment, but with a lightning arrestor, no expense of replacement would be encountered.

Ground against lightning for safety.....

de Florida Skip

WRL's new! exclusive! "Multi-Pak" A.C. Power Supply

PSA-63

Multi-Pak

POWER SUPPLY

- LOWEST COST!
- for Swan, Gonset, Elmac, Heath
 - 300-600V DC PLUS BIAS



The PSA-63 "MULTI-PAK" approaches the ultimate in a Low Cost Universal Power supply. Silicon rectifier circuits are used to provide high voltage DC and low voltage DC. Also provided is AC bins voltage and either 5 or 12 volt AC filament power. Usable with any transmitter, receiver, amplifier, or other electronic devices which require external power at the design voltage of the PSA-63. This includes commercial and home brew units in the 50-200 wait class, using popular tubes such as the 6146, 807, 6026, 5026, etc. High grade silicon rectifiers are used to minimize heat problems. The PSA-63 can furnish 600V DC at 200 Ma., 300V DC at 300 Ma., or both voltages at lesser current from each tap, where the combined

power drawn from both voltage taps does not exceed 210 W. Jumper connections permit filament voltage of 12V AC at 4 Amp., or 6V AC at 8 Amp. A special bias winding delivers 95V AC at 10 Ma.input 11TV AC. 60 cycles. Power consumption approx. 275 watts at full load. Output 600 and 300V DC at 210 watts. Separate toggic switches

Model PSA-63

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control primary and plate with pilot lights for each. Blue-Gray steel panel. Size: 11½x42;16°. Approx. weight, 15 pounds. 66B015. (PSA-63K, Power Supply Kit Liess cabinet & cables. . \$24.95 66B016. (PSA-63K, Power Supply Wired Liess cabinet & cables \$39.95

ADD-ON KITS (Av. wt. 3 lbs. per kit)

PSA-PSB-K. All parts to recify and filter bias voltage for 0-100V DC at 10 Ma. 663005, Net. \$4.49 PSA-PTT-K. All parts for push-to-talk. Usable with all types equipt.

66B02A Net. 55 059

PSA-5W-K. All parts to use with Swan Transceivers. Bias, PTT cahles. (Less speaker) 66B027, Net. \$7.95

PSA-MT-K. All parts, cables for the Heath MT-1 transmitter. 66B028, Net. \$1.19

951105 Net. 9110 PSA.AF-K. All parts, cables for Elmac AF67, AF68, with PTT. 655029 Net. \$9.95
PSA-G76-K. All parts, cables for the Gonset G76, with PTT (Less speaker), 66B019, Net. \$11.95

MATCHING CABINET

Basic Power Supplies, Custom Wired for Swan Transceivers, Elmac AF67 & AF65, Heath MT-1 Xmiter, Gonset O75, CAv. wt. 16 lbs. per unit) PSA-03W. Basic Power Supply. Wired (Less cables.

66B015. Net. 539.95
PSA-63W/SW. For Swan Units. Wired/With Cables. (Less Speaker).
66B017. Net. 549.95
PSA-63W/MTW. For Heath MT-1 Units. Wired/With Cables.

68B018, Net. \$42.9 PBA-63W AFW For Elmac AF67 & AF68, Wired/With Cables. 549.9

66B022, Net. \$49.95 PSA-63W 4076W. For Gonset G76. Wired/With Cables. (Less Speaker), 66B023, Net. \$55.95

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WORLD RADIO LABORATORIES, INC.