



Early CIA Radio Equipment

by Pete McCollum N0TDM

The Central Intelligence Agency was formed in July 1947, replacing the Central Intelligence Group, which in turn had taken over the assets of the wartime OSS. The Soviet Union was starting to behave more threateningly, and places like Korea were soon to become 'hot spots'. The new CIA needed agent radios to replace the remnants of the obsolete OSS equipment. So the CIA hired electrical engineers, and also contracted with certain companies to help make the new equipment. Developing radios "in house" allowed for some specialized features to be included, and they could dictate most aspects of the final product. But as the Cold War continued, the CIA appears to have gradually purchased more and more off-the-shelf radio equipment, rather than maintain a staff that could develop the increasingly complex designs.

Described below are four types of CIA equipment, which were deployed in the field by the early 1950s.

Radio Station RS-1

The RS-1 could be considered the

'flagship' of cold-war U.S. clandestine radios. It's development started in 1948 and it was introduced in about 1950. The RS-1 was used by the Agency for 12-15 years, and by the Army for several additional years, especially in Vietnam. Although smaller and lighter sets were to be developed soon after its introduction, the RS-1 was valued long afterward for being functional and reliable. Many veterans have fond memories of it.

Like most clandestine sets, the RS-1 has features that are necessary or conven-



Figure 1. An RS-1 set, configured to operate from AC mains power. Clockwise from left are: power supply, RT-3 transmitter, and RR-2B receiver. The power supply shown will also operate from 6 VDC, and has a connector to receive input from a GN-58 hand-crank generator.

ient for clandestine work. These features include ruggedness; portability; water-proof cases, panels, and connectors; operation from a variety of power sources;

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Please Note:

Due to the editors vacation plans the April 0-Beat deadline will be **March 15**. No content will be accepted after this date. Thanks for your help on this Tomas, KC0NRZ

Meetings Our monthly meetings are held on the 2nd Wednesday of each month at 7 pm, temporarily at the El Paso County Office of Emergency Management, 305 S Union Blvd. Our Annual meeting is in October. Check the web site for any changes.

Regular License Exam Sessions

Our ARRL VE test sessions are on the 2nd Saturday of even numbered month. Our ARRL VE test sessions are on the 2nd Saturday of even numbered months at 9:00 AM. Contact Erik KGØXE for details.

Examinees need to bring (1) \$12, preferably a check or money order payable to ARRL/VEC; (2) picture ID; (3) the signed original and a copy of your current amateur radio license and CSEs you have (we keep the copies); and (4) a pen, pencil, and calculator if needed. Memory calculators will be checked.

Location:

Colorado Springs Police Department
Falcon Division Community Room
7850 Goddard Street
Colorado Springs, CO 80920

Located behind the shopping center across Academy Boulevard from Chapel Hills Mall. Turn onto Kelly Johnson Blvd from Academy (either intersection), then turn onto Goddard Street (left behind Wendy's or right behind the Burger King and shopping center). Please confine parking to the street, as the parking lot is mostly limited to official police business.

PPRAA Web Page See it at <http://www.qsl.net/ppraa/>. Thanks to Lee Inman KØQED for maintaining these pages.

Get on the PPRAA E-mail Reflector Stay on top of new or short-fused developments. Subscribe at <http://mailman.qth.net/mailman/listinfo/ppraa.net>. Thanks to John Wishart KCØJFH for maintaining this list.

PPRAA Simplex Net New time and day to be announced soon.

Nonprofit Organization The PPRAA is a federal 501(c)(3) nonprofit organization and welcomes all contributions. Your contributions/ donations may be tax-deductible.

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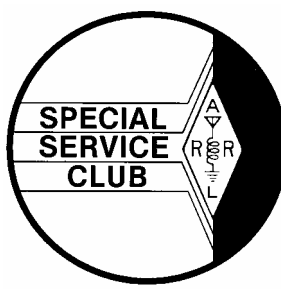
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Upcoming Club Programs

March Program: To be announced.

The Ø-Beat is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc, P.O. Box 16521, Colorado Springs, CO 80935-6521. Permission is granted to reprint articles provided credit is given to both the author and the Ø-Beat. For membership and subscriptions see the back inside cover of this publication. Monthly advertising rates: Full page \$48; Half page \$24; Quarter page \$12; Business card \$6. Rates are billed quarterly. Send advertisements and payments to Pikes Peak Radio Amateur Association, Inc, P.O. Box 16521, Colorado Springs, CO 80935-6521.



Articles for the Ø-Beat Deadline for articles or ads is the 26th of the month. Submit articles by e-mail, US Mail, telephone or in person to the editor. Editor reserves right to edit for readability, grammar, spelling, punctuation and length.

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Club and Local News

Presidents Message

March 2004

Even snowy weather couldn't keep people away from last month's meeting! While attendance was down a little, it was much better than I had anticipated. Those who braved the weather enjoyed the Home Brew night – there were several very-well done projects. Thanks to all those who brought in their latest technical marvels!

The weather was a topic of discussion at the last Board meeting. Although it doesn't happen often, there are occasions when it might make sense to cancel or postpone a regular meeting because of a winter storm. We're looking at how the decision to do so would be implemented – getting the word out on short notice would be difficult. Just remember that I would rather have no meeting than have to visit someone in the hospital because of a traffic accident. For those who must drive during snowstorms, I have 3 words for you – studded snow tires! And oh yes, slow down!

Efforts to halt Broadband over Power Line (BPL) received a setback when the FCC announced that it was going ahead with a Notice of proposed Rule Making on the subject of BPL. Amazingly, the FCC intends to put the responsibility for resolving interference issues on the licensed users of the spectrum, not the power companies! I have to wonder if that decision would stand up in court – it would appear that the FCC is announcing that it is refusing to enforce its own regulations. Looking at how enthusiastically the top brass at the FCC is jumping on the BPL bandwagon, I can't help but think that an awful lot of money is crossing hands below the table! The only other alternative is that they are completely ignorant of modern science and engineering!

On a more positive note, FCC Chairman Michael Powell (why does that name ring a bell?) has assured US representative Greg Walden (R-OR) WB7OCE that the FCC will give "thorough consideration" to all BPL studies before taking final action. We'll see...

The PPRAA is trying to do its part to stop BPL. The Board is working on a resolution that can be passed by the membership and sent to the FCC and elected officials. It would indicate our deep concern with the blind rush the FCC appears to be making to pollute an invaluable natural resource – the HF and low VHF spectrum – just to implement a redundant and techni-

cally inferior way to surf the Internet. As well, we are going to take some proactive action to let Colorado Springs Utilities know that we don't want BPL around here. I'll have more about that in the future.

The CW aficionados out there will be pleased to learn that there is a new Morse character! The ITU has approved a proposal from Paul Rinaldo W4RI to use the Morse signal “.-.-.” to represent “@”. The explanation for the new character is that it is “AC” run together. In other words, “A” wrapped in “C”. It should make it a lot easier to send e-mail addresses via CW!

Here's some more good news! The Hawaii State Legislature is considering a bill that would apply PRB-1 to restrictive CC&Rs, or the Neighborhood Nazis as I prefer to call Homeowners Associations! It would require the HOAs to grant reasonable accommodation to Amateurs to erect antennas. The bill is similar to HR 1478, which is currently in Congress. Let's hope it passes!

By the time you read this, we should have had a fox-hunt. This is a really fun and practical aspect of Amateur Radio. It gets us outdoors in the fresh air, provides a little exercise (God knows we can all use that!), and allows non-Hams to participate. On top of all that, it teaches a very useful skill. Who else can track down a transmitter with an open microphone, find an Emergency Locator Transmitter in heavy bush, or determine what power pole has faulty insulators? Let's try to make foxhunting a regular club event!

Many of you know that the ARRL has proposed a new entry-level license class. There would be no CW requirement, and the written test would consist of 25 multiple-choice questions. This would permit limited access to certain HF bands (80, 40, 15 and 10 meters), as well as 6 and 2 meters, 222 MHz and 430 MHz. Modes would include CW, data, phone and image.

I know that some people are concerned that the CW requirement is gone. Without getting into that non-productive argument, we should all realize that the writing is on the wall when it comes to CW in the rest of the world. Every week more countries announce the abolishment of CW as a testing requirement.

Being a Canadian, I try to avoid controversy when it

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comes to licensing procedures in the USA. This is a terribly emotional subject for some, and I don't want to have a contract taken out on me by someone on either side of the CW debate! I will say that a 25-question exam doesn't seem like it could test all areas of knowledge necessary to operate on HF, so I do have concerns about the proposal. I also know that many people are upset that the ARRL has made this recommendation without adequately consulting the membership.

This brings me to my point. It seems that every time the ARRL does something controversial, people get pissed off, quit the League, vow never to return, and then spend the rest of their lives bashing the ARRL! I know people who are still upset over incentive licensing from 1967, even though most everyone responsible for the idea is long dead!

Tell me – do you renounce your citizenship every time the government does something you don't like? Of course not! You file the incident away in the back of your head, and wait patiently for Election Day. That's how democracies work. The ARRL isn't perfect, but it is a democratic organization. If you don't like a particular decision or action, then tell your Section Manager, Vice Director or Director. If necessary, tell Jim Haynie, President of the ARRL. His number and e-mail address are on the ARRL website, as they are for all ARRL officials. And I can assure you that he reads and answers his e-mail when in the office.

So it comes down to this. If you don't like how the ARRL is doing things, then get involved and make your position known. Stay with the organization. If you quit, your credibility and influence are nil, as they should be – do you think President Bush takes the whining of a French citizen into account when deciding what is best for the USA? The ARRL might not be perfect, but it's a whole lot better than the alternative – not having anyone to represent Amateur Radio to the government.

Enough preaching! Have a great March meeting. Unfortunately, I'll miss the meeting, as I have to go to Panama City Florida for 16 days right in the middle of Spring Break! I know – it's a tough job, but someone has to do it!

73

AI VOINO / W0

PPRAA Club Meeting Minutes 2/11/2004

President Al Penney VOINO called the February meeting to order at 7:05. There were no silent keys announced. Introductions were made around the room followed by approval of the January meeting minutes. John KØAAI gave the Treasurer's report reflecting January expenses of \$1167.31 (mostly for the June Swap Fest) and overall cash balance of \$6092.12. Committee reports followed: Tom NØNTX reported that ham satellite AO40 is down due to faulty battery and failure of switch to activate an auxiliary battery; a new Echo satellite will be launched in Russia on March 31st similar to AO27 which will accommodate PSK 10 meters. VOINO reminded us that Field Day is the fourth weekend in June and we are still hoping to get the same site as last year. KCØGMI advised that she will be in charge of the FD food this year. Bill NØNJX announced the Fox Hunt will be Sunday February 22nd meeting at Palmer Park. Rob N7LV is stepping down from Publicity and needs a replacement. Mike KØTER noted the ARES will be supporting the March of Dimes in April. Rick KØSU noted there are 10 to 12 people interested in the General Exam class. VOINO gave a Tech Talk on coax connectors. VOINO noted that the Freezoree was cancelled by the Scouts due to security concerns at the Air Force Academy. Al has made contact with the UCCS club station coordinator and we will be establishing a liaison and supporting them. Al reminded everyone of informals and coffee at IHOP after the monthly meetings. Bill NØNJX noted that the Interference committee tracked down some power line interference and got it resolved. Al noted that there will be a give-away table at future meetings. Al also advised he will be TDY next month and the meeting will be conducted by the VP Dennis NØABC. Rob N7LV announced that he now has Swap Fest tickets for sale. NØABC announced the club VE sessions will be on the 2nd Saturday of the month at the Falcon Police Substation. HAMMY award was deferred as the recipient was not present. After an intermission, the program consisted of individual presentations/discussions of home brew equipment. Meeting adjourned at 9 pm.

Respectfully submitted by Joanie KCØGMI, Secretary

Board Meeting Minutes

2/16/04

The Board of Directors met at the home of KØAAI on 2/16/04. President Al Penney called the meeting to order at 7:05 pm. Those in attendance were VP- Dennis Major NØABC, Treasurer – John Hasling KØAAI, Jerry VerDuft ADØA, Kate Muniz WB9BAH, and Tom McDaniel NØNTX. Absent were Secretary – Joanie VerDuft KCØGMI, Ben Cruise NØLNW, and Tom Dawson KCØNRZ. The financial report was reviewed without any changes. The January Board meeting minutes were approved. NØABC advised the March meeting will be presented by Pete McCollum NØTDM. A discussion ensued regarding the potential of having to cancel a club meeting due to extremely bad weather. It was resolved that this would be a decision of the President and we would use both the e-mail reflector and the .970 repeater to advise the members. The bad weather policy will be posted on the club's website. WB9BAH provided KØAAI with \$82 that she collected in ticket sales at the Brighton Swap Fest. Kate also advised that PPRAA Swap Fest flyers have been sent to other Colorado clubs. NØNTX noted that the Echo satellite launch he spoke of at the February meeting has now been delayed until late June. ADØA advised that he is preparing a PowerPoint presentation on Amateur Radio Frequency Propagation. The Board suggested he present it at the May club meeting, just before Field Day. The need for a computer projection system was discussed; it was resolved that the Board will look at this need after the June Swap Fest proceeds are reviewed. (It was noted that the Board agreed to set aside at least \$400/year from Swap Fest proceeds towards a computer projection system.) NØABC will determine what a good computer projection system will cost us. KØAAI suggested we recognize new members in Ø-Beat and provide them with a new members packet with a President's welcome letter, club information, a copy of Ø-Beat, etc. VOINO will take action to assign this to someone. Al noted that he will be serving as Field Day Chairman (again) and suggested we work towards getting a proclamation of Amateur Radio Week. Kate will assure we secure two porta-potties for FD. Al also advised that he has made contact with the UCCS Club and they are very interested in our support and cultivating a relationship. He also contacted KØDRK at the Air Force Academy Amateur Radio Club who is also interested in a liaison function. Bob Sayers WØOFA is conducting a Colorado Springs Utilities customer survey; Al suggested we respond to it with our comments on broadband over power line (in case they should consider it in the future.) Al will be TDY during the March club meeting; Dennis will officiate in his absence. Meeting adjourned at 8:30 pm.

Submitted by Jerry ADØA in the absence of the Secretary.

20 Years ago at PPRAA.....

March 1984:

March meeting was held at the Guiseppe's Restaurant in the Baggage Room. Fifty-five members present at the February meeting. A short article on building a "passive" repeater on the front page. The Aurora Hamfest is coming up on March 18. The swapfest will be at the International Polka Palace on Busch St and 21st this year. Doug WBØMHP solves an RFI case, determining the radio was within FCC specs. Education Committee purchased ham radio tapes last month which will be used in the classes at North Jr. High School. Mike KØTER elected as VP to fill the vacancy from last month. Another board member resigns due to not enough hours in a day. NØDV Dave vacates his position this month. The club is short of committee chairmen, and is in need of presentations again. PPRAA supporting the Walk for Mankind on April 14. CCARC met on March 24 at Show Biz Pizza, hosted by the PPRAA.

HAM RADIO TECHNICAL PROGRAM

Mike Anderson, WV7T

Mike Dassero NØMUD, John Roth, NØQJS, and I are working on a long-term technical educational program to help fill in technical areas not covered in licensing. For a number of months we have been collecting donations of equipment, parts, magazines (over 2300), books, all sorts of items to use for the theory and hands on topics. Since my Mother passed away last October I have moved into her house which will be the location for the classes and projects associated with the topic modules. It will be awhile before we begin offering classes as we are still inventorying materials and researching the topics to be offered. Some donations will be sold to generate funds to purchase items such as an overhead projector, technical books, technical video courses, class supplies, etc. We are still accepting donations of about everything. Topics will be derived from ARRL technical books, ham magazines; hands on with test equipment, simple circuit troubleshooting, electronic circuit analysis, and much more. We expect to offer as many as 200 topic modules, how to solder, putting connectors on coax, building antennas, and more. If you have items you wish to donate, are interested in our sale items, or would like to help design-develop instructional modules please contact me (WV7T) at 229-8610.

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and operation with a variety of antennas. Since the early transceivers were not particularly compact, it was standard practice to make the major functional parts (transmitter, receiver, power supply) into separate units. This allowed any one piece to be easily carried or hidden. Compared to the technology of the day, the RS-1 is relatively large and heavy, due to its requirement to withstand both air-drops and burial. Like many clandestine sets, the transmitter includes a very flexible matching network that allows it to load into nearly any type of antenna.

Receiver RR-2 tunes 3-24 MC in 3 bands. Tuning is by a VFO, or an FT-243 type crystal. The receiver requires 90 volts DC and 1.5 volts DC power. One type of headset commonly used with the RR-2 was the "Trimm Featherweight" model. Transmitter RT-3 tunes 3-22 MC, and has a power output of about 15 watts



Figure 2. A GN-58 hand-crank generator, commonly used to power the RS-1 in the field.

using a 2E26 tube. It requires 450 volts DC, and 6.3 volts AC or DC filament power. Power supply RP-1 or RP-2 accepts an input of 75-260 VAC, 40-1000 Hz; with switch-selectable input voltage and a meter to indicate the incoming line voltage. The RP-1 is bigger, and also allows operation from 6 VDC using a vibrator circuit. Also, the RP-1 has a connector for a hand-crank generator. The smaller RP-2 does not support DC operation. Each of the main units of the RS-1 set has a rubber-gasketed lid that is attached via 4 thumb-screws, thus protecting the front panel during transport, and when the unit was to be buried or otherwise hidden.

The flexible power supply allows the RS-1 to be operated from AC mains practically anywhere in the world. Physically, you can plug into either US-style AC outlets, or into round-pin (European-style) outlets. The round pins can be unscrewed and inverted to change the diameter of the pins, plus the rubber plug is somewhat flexible to allow changing the spacing of the pins. An adapter is included which can be used to get power from a standard light bulb socket, or from an old bayonet-style bulb socket. However, in locations such as S.E. Asia where other forms of power were rare, the hand-crank generator was the most common power source.

The RR-2 and RT-3 are also designed with flexibility in mind. Note that with the exception of the power supply connectors, everything uses simple binding posts for electrical connections. This was probably to facilitate emergency hookups for antennas, headphones, etc.; and these types of connectors allow the front panel to be made water-tight more easily.

Radio Station RS-6

The RS-6 is more-or-less a miniaturized version of the RS-1, and was introduced in about 1951. It has a very



Figure 3. A complete RS-6 station ready for use from AC mains power. Clockwise from left: RP-6 power supply, RA-6 power filter unit, RT-6 transmitter, and RR-6 receiver. Note the tiny fold-out CW

similar design, but uses sub-miniature tubes in the receiver and power supply regulator, and a miniature tube as the transmit oscillator. Physically, the complete radio is in four units: receiver, transmitter, power supply, and power supply filter unit (which also provides

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Satellite Operations

SO-50 is available as a FM voice repeater for most of its passes. You can work it using a dual band HT and a small hand held beam such as the Arrow Dual Band antenna. Two separate radios can also be used.

436.795 MHz (+/- Doppler) FM
Downlink

145.850 MHz (67 Hz CTCSS) FM
Uplink

These are some of the March weekend passes available: (Always make sure you hear the sat before transmitting.)

Time (Z) Azimuth Elevation Rx Doppler

SO-50 position on Saturday, March 06, 2004 (UTC)

14:12:00	330.3°	+2.3°	+10 KHz
14:15:00	334.5°	+18.0°	+5 KHz
14:18:00	3.1°	+61.6°	0
14:21:00	135.4°	+32.1°	-5 KHz
14:24:00	142.9°	+8.4°	-10 KHz

SO-50 position on Sunday, March 07, 2004 (UTC)

04:30:00	175.9°	+10.1°	+5 KHz
04:33:00	138.9°	+28.8°	0
04:36:00	70.5°	+22.8°	0
04:39:00	46.8°	+6.4°	-5 KHz
06:09:00	241.5°	+2.5°	-5 KHz
14:42:00	320.6°	+1.0°	+10 KHz
14:45:00	310.9°	+14.8°	+5 KHz
14:48:00	271.0°	+39.1°	0
14:51:00	192.7°	+27.0°	-5 KHz
14:54:00	172.9°	+7.6°	-10 KHz

SO-50 position on Monday, March 08, 2004 (UTC)

05:00:00	211.1°	+13.2°	+5 KHz
05:03:00	213.8°	+54.2°	0

Time (Z) Azimuth Elevation Rx Doppler

05:06:00	29.7°	+35.2°	-5 KHz
05:09:00	31.2°	+8.9°	-10 KHz

SO-50 position on Sunday, March 14, 2004 (UTC)

02:57:00	196.0°	+2.3°	+10 KHz
03:00:00	186.3°	+18.9°	+5 KHz
03:03:00	120.4°	+51.5°	0
03:06:00	48.4°	+20.9°	-5 KHz
03:09:00	38.3°	+3.9°	-10 KHz

04:39:00 254.8° +3.4° +5 KHz

04:42:00 280.4° +15.0° 0

04:45:00 329.2° +19.3° 0

04:48:00 5.3° +9.0° -5 KHz

SO-50 position on Monday, March 15, 2004 (UTC)

03:27:00	221.9°	+2.0°	+10 KHz
03:30:00	230.5°	+18.4°	+5 KHz
03:33:00	290.9°	+55.5°	0
03:36:00	15.5°	+23.3°	-5 KHz
03:39:00	26.1°	+5.0°	-10 KHz

SO-50 position on Sunday, March 21, 2004 (UTC)

01:27:00	207.4°	+6.9°	+10 KHz
01:30:00	205.0°	+31.4°	+5 KHz
01:33:00	42.6°	+59.9°	0
01:36:00	33.4°	+15.6°	-5 KHz
01:39:00	32.8°	+1.0°	-10 KHz

SO-50 position on Monday, March 22, 2004 (UTC)

00:18:00	166.2°	+8.8°	+5 KHz
00:21:00	129.1°	+22.3°	0
00:24:00	74.4°	+17.6°	0
00:27:00	50.2°	+4.6°	-5 KHz

Time (Z) Azimuth Elevation Rx Doppler

01:57:00	235.3°	+4.5°	+10 KHz
02:00:00	254.5°	+21.3°	+5 KHz
02:03:00	324.2°	+35.7°	0
02:06:00	11.1°	+14.9°	-5 KHz
02:09:00	24.0°	+1.4°	-10 KHz

SO-50 position on Saturday, March 27, 2004 (UTC)

23:57:00 222.5° +11.5° +5 KHz

SO-50 position on Sunday, March 28, 2004 (UTC)

00:00:00	243.4°	+43.8°	0
00:03:00	10.3°	+37.0°	0
00:06:00	25.5°	+10.1°	-5 KHz

22:45:00 187.7° +2.6° +10 KHz

22:48:00 172.3° +18.3° +5 KHz

22:51:00 109.6° +37.4° 0

22:54:00 54.6° +16.9° -5 KHz

22:57:00 41.3° +2.4° -10 KHz

SO-50 position on Monday, March 29, 2004 (UTC)

00:27:00	250.1°	+6.2°	+5 KHz
00:30:00	279.1°	+20.5°	
00:33:00	337.3°	+22.7°	
00:36:00	10.7°	+8.9°	-5 KHz

For other passes see: <http://www.heavens-above.com/> and select Saudisat 1C. Please contact me if you have any questions.

73 Tom n0ntx, 570-1465 or
n0ntx@amsat.org

UO-1 I Satellite to Mark 20 years in Space

Space Bulletin 004 ARLS004

UO-1 I--also known as UOSAT-2--turns 20 years old on March 1.

To mark the event, AMSAT-UK will issue a commemorative QSL card in exchange for listener reports from stations monitoring the satellite's signal during the entire month of March. The reports must be posted via the reporting page on the AMSAT-UK Web site, <http://www.uk.amsat.org/uo-1/default.php>, and QSL cards will be in the form of a downloadable E-QSL.

UO-1 I was the second satellite to be launched by the University of Surrey group headed by Martin Sweeting, G3YJO. Its telemetry beacon can be heard on 145.825 MHz FM using just a handheld radio. UO-1 I also has a 2401.5 MHz beacon, although hearing the 2.4 GHz signal could present a challenge. The University of Surrey Ground station staff reportedly will attempt to maximize the number of days the transmitters are active during March.

More information is available on the AMSAT-UK Web site, <http://www.uk.amsat.org/>. NNNN /EX

(Continued from page 6)

storage for some accessories). Since the unit is built as 4 pieces, rather than 3, there may have been a requirement that each piece was no larger than a certain size or weight.

The RT-6 transmitter tunes 3-16.5 MC in two bands with up to 10 watts output. The RR-6 receiver tunes 3-15 MC in two bands, with either VFO or crystal control. The receiver also has a BFO and a crystal calibrator. The power supply operates from 70 to 270 VAC, 42-400 cycles, or from 6 volts DC.

Based on the observed serial numbers, a large number of RS-6 sets were manufactured – perhaps up to 10,000. However, a majority of them appear to have been used by Strategic Air Command. The RS-6 is known to have been on-board equipment in certain versions of the B-47 and B-52 aircraft. One story is that RS-6's were mounted on the bottom of B-47 ejection seats, and that the crew would use them to call for a pick-up after they had released nuclear weapons on a Soviet target. This would be needed because a B-47 wouldn't have enough range to hit the USSR and return, so it would have to ditch on the way back home.

Transmitter RT-I-B



Figure 4. The RT-I-B transmitter.

The RT-I-B is a transmitter/power supply combination that is somewhat portable, but considerably heavier than an "agent radio" such as the RS-1. Judging by the nomenclature and the technology used, the RT-I may be the first transmitter developed by the CIA. It was used in largely fixed installations such as embassies, but where some degree of port-

ability was required.

The transmitter covers 3 to 30 MC in five bands, and operates from 115 VAC 50-400 cycle power. Frequency control is via a single front-panel crystal, or an external VFO. Power output is about 100 watts, using a 4-65A final. The AC power supply is the second unit in the set. A third unit in the set was called the "Accessory Unit", and contained a 2000 watt variac and storage for spare parts. The variac allowed operation from AC lines in the 90-140 or 180-280 volt ranges.

Transmitter RT-4

This transmitter is basically a larger version of the RT-I-B, and was also used in embassies and other 'permanent' installations, typically mounted in a standard 19" rack. It operates from 4-25 MC in four bands, with four internal crystal sockets plus a connection for an external VFO. Power output is



Figure 5. The RT-4 transmitter and power supply, which together weigh about 340 pounds. The identification has been thoroughly scratched off of the transmitter, to help hide its origin. The power supply's large variac knob is used to adjust for the input line voltage.

about 500 watts, using a pair of 4-125A tubes in the final. The antenna output is for balanced line, using a large final-tank roller inductor with dual taps.

The RT-4 is the largest known piece of custom CIA radio

Membership “Sold-Out” by the League

An editorial by Wes Wilson, KØHBZ

January 20th, 2004 was a normal Tuesday – I was actually in a good mood – that is, until I opened my E-mail and read ARRL Bulletin 3. My good mood evaporated, my heart sank – then throughout the day, my anger grew exponentially.

[RANT MODE = ON] My initial analysis was that our ARRL leadership has spent entirely too much time diving into the deep end of the pool. They apparently forgot to read the directions, especially the part about “add water first.”

What are they thinking (drinking or smoking)??? The only explanation I can offer is that they have sold the membership down the river – favoring instead, the financial support they will get from radio and equipment manufacturers, not to mention the QST advertising they can sell once every ham in the country has HF privileges.

I'm not the only one upset, by any means. Many longtime ARRL members are discontinuing their memberships and no longer supporting special League funding projects. It doesn't pay to bite the hand that feeds you – and the League appears poised to learn that lesson the hard way!

The League is supposed to represent the membership. Do any of you recall the leadership asking your input or feedback on this dramatic proposal? Do you recall the League even hinting at a proposal this ridiculous? Funny, neither do I – and I think I might have noticed.

Many of you may remember my critical comments prior to license restructuring in April, 2000. We've seen, all too dramatically, the degenerative effects of that action. Once the door is opened and code requirements dropped, license classes consolidated, license requirements eased, tests made smaller and easier, there is no end to the downward spiral – not until every Cracker Jack box in the country includes a free Extra Class amateur radio license (kind of like those worthless plastic Dick Tracy wrist radios – remember them???). And despite ARRL President Jim (W5JBP) Haynie's passionate arguments to the contrary, this is without a doubt the “dumbing-down of amateur radio” – BIG TIME!!! Boy, the League will really make money now, won't they? \$\$\$\$ - Ker-Ching!

There was a time, before restructuring, when every amateur radio license was an achievement worthy of recognition and pride. The five-step incentive license program was what kept hams challenged and motivated to grow, advance and – most importantly – REMAIN in the hobby. Amateur Extra class operators were held in the very highest esteem. What an achievement – five written and three code exams (including 20 wpm)! It was the lifelong dream and goal of most hams to one day reach that pinnacle. Hams were constantly eyeing that next rung on the license ladder, increasing their knowledge and improving their skills so they could take that next important step up.

Adding insult to injury is the fact that the League's proposed restructuring makes no sense. I'm absolutely opposed to taking away any existing license privileges with restructuring – but I'm

equally opposed to just “granting” people unearned license class upgrades. If I were a current General Class licensee, I would be LIVID – having worked and studied hard, passed both the written and code exams, just to have every Technician Class operator in the country handed that same license class upgrade on a silver platter. They're proposing taking away the accomplishment and respect of those who earned their General Class licenses and effectively downgrading them to the Technician level! Is that equitable???

When the ITU World Radio Communication Conference eliminated the Morse code requirement for HF privileges worldwide, the decision was left in the hands of individual countries to determine whether or not CW would be required. Most of us knew right then that the U.S. code requirement was living on borrowed time. At least the League had the courage to retain the blazing 5 wpm code requirement for the Amateur Extra class license. Don't be deceived, folks, that was merely a bone thrown at the Extras of the world to bribe them into going along with all the ridiculous concessions the League is proposing.

It doesn't take a rocket surgeon or a brain scientist to see an alternative that makes infinitely more sense – one that involves much less bureaucratic Bug Spray – and is far more equitable to the amateur community.

What's the purpose of this new entry-level Novice Class anyway??? We already have an entry level license class – it's called the “Technician” – why create a new one? Grant the proposed limited HF privileges to the Technicians and Tech Pluses (or “Technicians with HF”). Let them expand their opportunities and horizons a bit, I don't have any insurmountable heartburn with that. I do, however, have considerable heartburn over dropping the entry-level written exam from the current 35 questions down to 25 – especially if HF is being added to the mix.

The General Class written exam is currently a joke, but the insignificant exam has always been offset by the additional code requirement. If code goes away, that written exam needs to be beefed up significantly.

As for Advanced Class operators getting a free upgrade to Extra – no way, they had their chance. Prior to restructuring they were offered a generous period to upgrade to Extra without having to take the 20 wpm code! If they didn't take advantage of that opportunity – that's their problem.

We live in a “gimmie, gimmie, gimmie – get something for nothing” society – and our League officials apparently have been spending way too much time listening to the whiners – especially since the League stands to profit handsomely by encouraging them.

Aspiring ham radio operators and our existing Technician Class operators deserve better – they deserve the opportunity to learn and grow in the hobby, to overcome the challenges, to rise to the occasion and enjoy the personal satisfaction that comes from earning their license privileges and climbing the license ladder – that is, after all, the proud and respected tradition of the amateur radio operator. [RANT MODE = OFF] 73

Hunting a Waskly Wabbit... I mean Fox!

I've just returned from the PPRAA Foxhunt today. Five of us showed up to match wits against a sly opponent - a hidden transmitter!

Bill N0NJX placed two transmitters in the woods of Palmer Park. The first operated on 3.579 MHz, and generated a nasty buzz at one second intervals. The second was supposed to operate on 146.94 MHz, on for one minute and off for 5 minutes. I say "supposed" because the cold weather shifted the transmit frequency upwards to 146.945 - or so we thought!

Dennis N0ABC, Greg WA2OOD, Jim AB0OUK and I set off to find the HF fox first. The temperature was just above freezing, but it was blowing a gale! Using a homebrew loop antennas, we had a solid signal on 80 meters. Better yet, we had a sharp but deep null - better to hunt with! We resolved for ambiguity on the signal by remembering what direction Bill had come from after hiding the fox! After a 40 minute walk we reached the point where the signal was so strong we had to be close. By tuning the loop's variable capacitor away from resonance, I was able to reduce the sensitivity to maintain a deep null. Eventually though, we reached the point where no null could be obtained - we had to be right on top of it! By backing off about 15 feet I was able to point out a tree that seemed to be radiating. Greg moved in to investigate, and sure enough, a small transmitter was found just above eye-level.

One down, but another to go. We were unable to hear the 2 meter transmitter at all, so we followed Bill to the hiding spot. From what we could tell, the fox was indeed transmitting, but nowhere near where it was supposed to! Evidently, the cold and/or a weak battery was causing the transmitter to randomly jump frequency. There was no way to hunt this one, so Bill volunteered to bicycle back up the trail and broadcast on his HT so that we could home in on him. This we did, and soon found Bill snug and warm in his car! Funny about that!

Despite the weather and malfunctioning transmitter, we had an enjoyable time. Bill has volunteered to sponsor another hunt next month, though he promised nothing about the weather! Attached is a diagram to build a simple but very effective loop for 80 meters - build it and come on out to the next hunt!

73

AI VOINO / W0

New HAM Radio Class Graduates 2004

by Linda Hedges - kb0rkw
Technical Education Liaison

Once again it is time to THANKS Frank and Barb McNally (kf0wf and n0bam) for all their hard work on getting the HAM Classes put together and taught, this is not a one (1) month endeavor, but many hours of work preparing new material to be presented and prepared for the people attending the classes - THANKS Frank and Barb ! And another big thank you to the Office Of Emergency Management for their acknowledgment of a good thing by letting the classes be held at their location once again !

On the first day of the classes there was a good attendance by quite a few members of the PPARA, and a THANKS goes out to them also, for attending and introducing themselves to the then to be new HAMs. As I said on the PPFMA net on the Sunday before the classes started, this will help the new HAMs to get on the radio and talk to people they feel they might have seen or know. I hope that next year even more will take some time out of their busy day and come to at least one class and see what is happening and introduce themselves.

This year we also had two members of the Army that came out to take the classes - congratulations and thanks for defending our country !

Here is the list of graduates with their new call signs. If you happen to hear them on the radio, take the time to welcome them to the world of HAM radio in person:

ANDZIK, Rob - kc0rqx
HOHISEL, Paul - kc0rqt
BARNES, David - kc0rqy
HULL, Randy - kc0rqs
BENNETT, Chip - kc0rqw
HULSEY, Jerry - kd3rqs
LAWSON, Jerry -
MANCILLAS, Gilbert - kc0rrc
CARMICHAEL, Jim - kc0rqp
MUGEL, Dawn - kc0rrb
GOODRUM, Donna - kc0rqu
McDONALD, Francis - kd7zpv
PAUL, Ray - kc0rqv
ODEKIRK, Craig LTC - kd7zpu
PATRICK, Juro - kc0rra

Once again CONGRATULATIONS TO ALL !! and also to the existing HAMs that upgraded and took their CW test.

The Amateur Radio Crossword Puzzle—Weigh Anchor!

By H. Ward Silver, N0AX

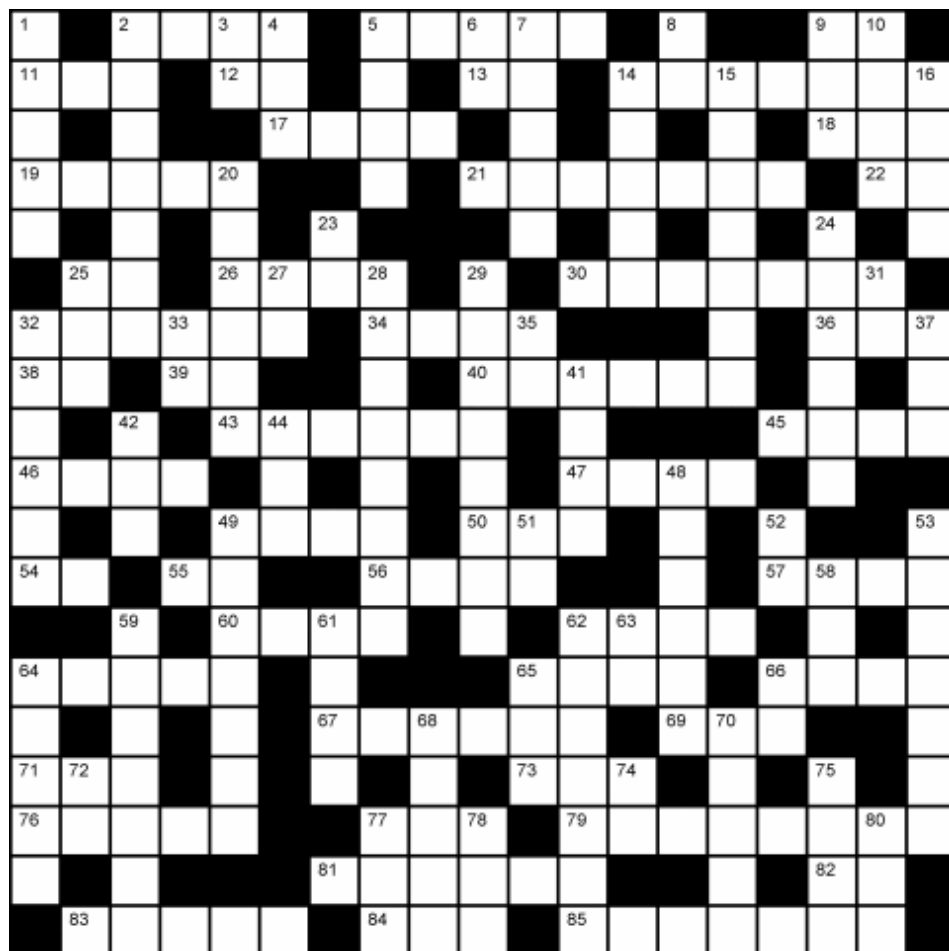
In spring, a ham's thoughts turn to ... islands, DXing and DXpeditions. Who can resist the call of the trade winds and the scents of tropical flowers, the image of palm trees swaying and unending pileups? I suppose we can't all be out there in the middle of the ocean while the world calls in, but here's a crossword that will put the salt tang in your nostrils.

Across

2. Island transporter
5. Big waves when it's up
9. Six - type of numeral
11. Rower
12. Gratitude (abbr.)
13. Key state (abbr.)
14. Big storm
17. Sleeping place aboard
18. Past tense of taking food
19. Steer by these at night
21. Place to come ashore
22. While or like
25. Iron (chemical symbol)
26. Most important DXing tool
30. Overcast or murky
32. Animals that make reefs
34. Wound wire
36. Line to control an antenna
38. Receiver (abbr.)
39. Excel (abbr.)
40. Water in the center of an island
43. Short, violent storm
45. Seven of these in a week
46. Type of water in the sea
47. Liquor popular in the Greek islands
49. Association of common purpose
50. To spear
54. A dead parrot is an ___ parrot
55. Just ___ it
56. Without fat
57. Assistant to the captain
60. Point of land
62. Over the bounding
64. Four-legged beast of burden
65. Mexican peninsula
66. One of something
67. Davy Jones has one
69. Seaman's head gear
71. Radio
73. What a pileup sounds like
76. A ship's depth below the water
77. Amateur

Down

79. Steer a vessel
81. Those who buried treasure
82. Russian (abbr.)
83. Protective barrier around islands
84. Teletype (abbr.)
85. Working lots of stations quickly
1. Poor or unsatisfactory
2. A wave that comes ashore
3. Location
4. An old, unstable vessel
5. Like a rock
6. What hams generate
7. Stay on top of water
8. Close to
9. USA shortwave broadcasting service (abbr.)
10. Award for island chasers
14. Caused by tides
15. Common occupant of Antarctic islands
16. Birds build these
20. Clams and crabs shed them
23. End of message
24. Opposite of flotsam
25. Transport gear using a flying ___
27. Standby (prosign)
28. Wild scurry
29. TV island namesake
31. District attorney (abbr.)
32. Robinson's last name
33. Chopping tool
35. State of New Orleans (abbr.)
37. Runs the generator
41. Sailor's drink
42. Wood laminate layer
44. The final courtesies
48. Inflatable boat
49. Tropical nut
51. Not out
52. Old Man (abbr.)
53. King of the sea
58. Repeat (abbr.)
59. Type of ship or bird
61. Tropical tree
62. The Ancient One
63. ___, hah!
64. Flyers
65. Resting spot
66. He's listening where?
68. Nautical map
70. Of birds
72. Infra-red (abbr.)
74. Continental abbreviation
75. Mend a sock
77. Punch
78. Permitted
80. Boat for pulling



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Public Service Communications



ARES

<http://www.qsl.net/ppares/>

VHF Net Tuesdays at 1900 on the 146.97 MHz
PPFMA repeater

Sid White K4ARM, PPARES EC

No updates this month

Treasures Report for 1/25/04 to 2/23/04

John K0AAI

There are a few people who need to renew their memberships.

I would like to welcome all the all the new members and hope to see you at all of our meetings.

INCOME

Donations Rcvd	7.00	2.54 %
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Memberships

Family Mbrshps	54.00	19.57 %
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Full Mbrshps	165.00	59.78 %
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Over 65	50.00	18.12 %
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TOTAL Memberships	269.00	7.46 %
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TOTAL INCOME	276.00	100 %
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EXPENSES

Uncategorized	0.00	0 %
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0-Beat Printing	89.00	22.51 %
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2004 SWAPFEST	256.31	64.84 %
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Donations	50.00	12.65 %
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TOTAL EXPENSES	395.31	100 %
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OVERALL TOTAL	-119.31	100 %
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RACES

<http://www.qsl.net/epcraces/>

VHF Net Tuesdays at 1930 on the 146.76 MHz
CMRG repeater

Les Borst KC0NC, RACES Officer

Our RACES group is continuing with work to upgrade our antenna feeds and radios. By the time you read this we hope to have all the new coax cables connectors finished.

Training continues on many items such as Packet, APRS and next month First Aid.

It has been decided that First Aid training for our members would be for our use and not to make us first responders. This means that we could help each other when on exercises and responding to calls for our help.

Our next meeting will be March 18, 2004 at the County OEM at 7:00 PM.

KANSAS VHF-UHF SSB QSO PARTY

MARCH 27, 2004 at 1800 GMT through March 28, 2004 at 1800 GMT (Saturday noon through Sunday noon CST) Bands 6m, 2m, 220, 432, 902, 1296 NO FM - NO Satellite Digital modes allowed Basic Contest rules apply

Log Submittals will be accepted from Kansas and 4 surrounding states "Kansas - Colorado - Nebraska - Missouri - & Oklahoma 3 Categories - Rover, Single-op, Multi-op I prefer standard electronic log submittal (Cabrillo) I WILL accept PAPER logs

email address is <http://www.ourtownusa.net/-bears/index.html>

Sponsor - Dave Powers - KAOKCI email --- lookks_vhf-uhf_qso-party@att.net

All hams submitting logs will be invited to participate in the next years contest planning. This is the first in what I hope to be an annual event (hopefully the last full weekend in March) There will be Certificates to all that submit logs. There will be a s~all amateur related prize to the top submittal in Each of the 3 categories in EACH state

The prize (one per category) to the call sign of log submission is: A 10" La Crosse Technology Radio Clock

New VE Testing Location

After a long time looking for a new home for conducting the VE sessions, we have finally nailed down a location. The new location, set up for each second Saturday of even numbered months in 2004 (except June @ Swapfest), is:

Colorado Springs Police Department
Falcon Division Community Room
7850 Goddard Street
Colorado Springs, CO 80920

This is located behind the shopping center across Academy Boulevard from Chapel Hills Mall. Turn onto Kelly Johnson Blvd from Academy (either intersection), then turn onto Goddard Street (left behind Wendy's or right behind the Burger King and shopping center). Please confine parking to the street, as the parking lot is mostly limited to official police business.

The starting time is still 9:00AM. And our VE Team policies are still: Walk-ins accepted; No retests same

Zero-Beat
Articles Needed
Please email to
KC0NRZ@ARRL.NET

Jess Miley
KØTAA

719 W 7th, Florence, CO, 81226

719-784-3040

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Membership Application for the Pikes Peak Radio Amateur Association, Inc.

P.O. Box 16521, Colorado Springs, CO 80935-6521

Date: _____ ☐ New Member ☐ Renewal

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Call: _____ Class: N T + G A E Phone: _____

Mbr of ARRL? ☐ Yes ☐ No E-mail: _____

Additional Family Members to Join/Renew:

Name: _____ Call: _____ Class: _____ ARRL? _____

Name: _____ Call: _____ Class: _____ ARRL? _____

Name: _____ Call: _____ Class: _____ ARRL? _____

In which activities would you like to participate?

Field Day ☐

Demonstrations ☐

Nets or round tables ☐

Organize activities ☐

Teach ham classes ☐

Full Member \$15: ☐

Family Membership \$18: ☐

Over 65 \$10: ☐

Over 65 Family \$12: ☐

Associate \$12: ☐

Ø-Beat Only \$12: ☐

Donation to Club: \$ _____

Total Enclosed: _____

**MAKE ALL CHECKS PAYABLE
TO "PPRAA"**

Please indicate how you'd like your Ø-Beat delivered:

(Defaults to standard hard copy in the event that NO check boxes are checked)

☐ Standard hardcopy via U.S. Mail

☐ As a PDF file attachment via e-mail, to help save a few bucks

☐ I'll save the club a few bucks and download it from the Web!

Circle your interests Ø HF / V/UHF / FM / SSB / Digital / DX / Contests / Technical / Hardware / Other _____

New and renewing members must submit a completed application form along with your check to the Treasurer.

Please Type or Print Clearly!

ALL NEW MEMBERSHIPS AND RENEWALS WILL BE PRORATED TO EXPIRE IN DECEMBER!!

Membership Committee Report

Les, KCØNC

Please welcome these New Members

RUTH MAYO KC0RAW
CHRIS TAYLOR NC6T
PETE McCOLLUM N0TD
MJAMES MYERS KC0PAZ
RICHARD STUART KD8EQ
FRANK SKINNER KA4JQZ
CLIFF WRIGHT W0JCW

Number of Members not renewed: 63

Number of members on 12/31/03: 178

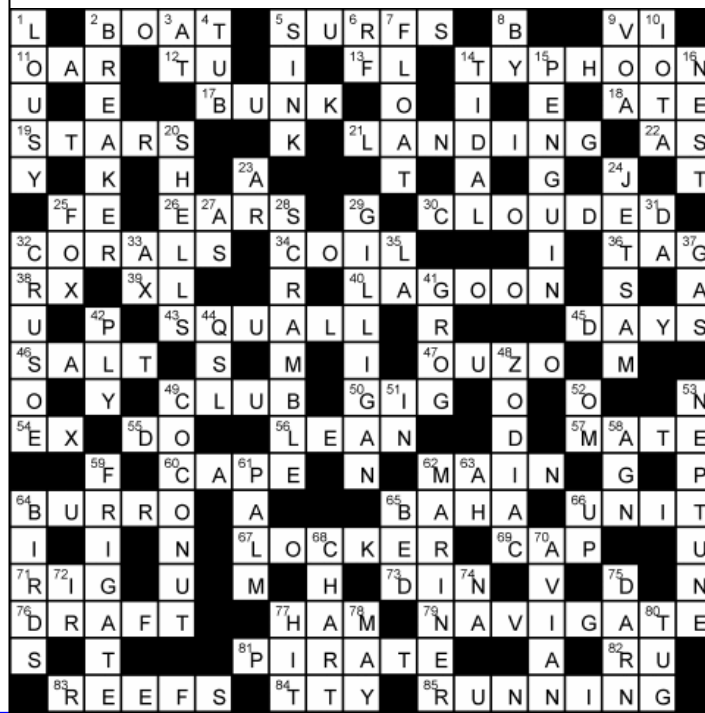
Total Number of Members Current: 122

Pikes Peak Region Ham Radio Events

Date	Event
3/10/2004	PPRAA Club meeting
3/16/2004	PPRAA Board meeting
4/10/2004	PPRAA VE Testing
3/17/2004	MARC club meeting
3/6/2004	MARC VE Testing

Classifieds

Radio Shack HTX-10, 10 meter mobile, 25 Watts NIB for \$100.00. You can email me at N0MUD@aol.com or call me at 719-597-1906 Tks Mike Dassero, N0MUD



Pikes Peak Radio Amateur Association, Inc.
P.O. Box 16521
Colorado Springs, CO 80935-6521 USA

First Class Mail

To: