

## Minutes of Board of Director's Meeting

January 27, 1994

Time: 18:45 MST

Harry Lovering will take care of filing Annual Report with the Secretary of State. Treasurer Harold Schneider provided the \$10 filing fee from the Club funds.

Harold Schneider reimbursed Ed Mahlum \$66 for newsletter expenses.

Ed Mahlum filled out the ARRL club report form for 1994 and will be mailing it to the ARRL.

## Minutes of FVARC Meeting 1-27-1994

Time: 19:30 MST

Meeting was called to order by President Mark Skeels. Twenty-seven people were in attendance. We have 17 paid up members for 1994.

Minutes of the December 9th, 1993 meeting were read and approved.

Treasurer's Report:

Total in Club	\$ 1902.00
(Repeater portion)	\$ 475.00

Introductions. Each person in attendance gave call sign (if any), name, where from, and described interest in Amateur Radio.

Word of the Month was picked from hat. It was "RTTY". Some discussion and not much was really known by those attending. Suggestions were to get Rod W7VOS or Jack K7OIR to let us know sometime what they know. Mark Skeels said he would study up on it and give a small presentation.

Ed Mahlum gave presentation on the boot up of a computer system.

### Old Business:

Banquet is set for February 5th downstairs at the Eagles in Kalispell, MT. Time 1830 hours. Cost \$ 6.95 per person. Sign up sheet was passed around. Can still sign up on the local area net Monday night.

Amateur Radio Class for beginners: Mark Skeels passed around a sign up sheet. He will coordinate and get it started as soon as a location is found. It is tentatively scheduled to be on Saturday mornings. Would like to have it at Flathead County Justice Center, but if not possible will probably meet in Mark's home.

**Update:** Class has started. There are about 7 students and they are meeting on Tuesday nights at Mark's home. See above for his telephone number.

A training class for Generals has been dropped for now due to lack of volunteers to teach.

### Dues or don'ts :

Membership fee of \$20 is now due. This includes \$ 5 for the repeater fund. If you are out of the area and do not wish to contribute to the repeater, then the membership fee is \$ 15. New Hams get their first year membership free in our club.

A new meeting night and/or location may still be in the works. Further investigation is to be done by all members, as far as preferred times and locations. We will then vote on it at the March club meeting.

### New Business:

ARRL affiliation of our club was discussed. Members were encouraged to renew their ARRL memberships through the club. The club receives \$ 2 for each member doing so. Harold Schneider, our treasurer, will bring the required forms to each club meeting.

Ollie discussed the good qualities of World Radio and will be sending a letter to our board of directors encourageing our club to subscribe.

Presentations: Ollie volunteered to get a speaker for our club meeting February 24th.

Ron Wachsmuth from Plains told of suggested John, W7KNT from Stevensville, who did an excellent presentation for the Missoula club. He is going to check with him about doing one for our club.

Harry Lovering has been asked where he has gotten his identification badges. Carol Wyckman at the Mountain Mini-Mall in Evergreen has been making them. If you want one give her a call.

Roger Swearngen will contact the Daily Interlake to make sure the location of our meetings is correct in the Community Events section.

Tracy N7SPI noted that the Newsletter contained his PO Box as a return address, rather than the club PO of PO Box 7541, Kalispell, MT 59904. Much appologies and Newsletter committee will get it squared away.

Meeting adjourned 20:30 MST. Resepectfully submitted. Ed Mahlum Vice President.

## **Club Banquet**

The annual club banquet was held on February 5th at the Eagles in Kalispell. 37 were in attendance.

Ollie KA7LLI announced that Ted Makita will present a program at the May meeting on contesting. Ted has distinguished himself in several contests and has often been ranked high in the results printed in QST. If you are interested in some special techniques this will be your chance to find out.

Some discussion was had on finding a new meeting night and place. If anyone has ideas, try to find a location and time, get confirmation, and be ready to present your suggestion at the March club meeting. The fourth Thursday night of November and December always falls on Thanksgiving and near Christmas, so in the past this has caused us to have to reschedule. Further it is important that we have these meetings to prepare nominations for the new year, hold elections, have a smooth transition, fill out the club paper work, and get ready for our annual club banquet. Ollie is checking on the Eagles, Mark Skeels the Promotion Health Center, other times at the Justice Center, and some Grange Halls.

Mark Skeels KB7IPH has started his Technician class. They are meeting on Tuesday nights.

Ron Wachsmuth N7VLC from Plains has been in touch with John Vugteveen is Stevensville. John W7KNT has quite a slide show and presentation on DXing. He contributed to DXpeditions in 1992 to the South Sandwiche Islands and in 1993 in the South Pacific. We will discuss bringing John up, paying for gas, motel, and expenses.

Greg Magone and Don Ross are planning to begin code practice on 2 meters. Greg is looking for a way to build a matching transformer for 8 ohms to 600 ohms.

## **All ARRL Members and Would Be Members**

At the February Club meeting Harold Schneider W7BKM will bring the forms we need to subscribe or to renew our memberships. By filling

out these forms, paying, and letting the club send them in; our club will be reimbursed 2 dollars for each. Why not do it this way. Every bit helps.

Sam Cox KA7VCU has 2 older CB rigs and a scanner to give away. They are not working but someone might have some fun trouble shooting them, or stripping them for parts. He also has some various lengths of RG8U coax from 11 to 30 feet for sale. You can reach Sam at 387-5746.

## **Feel free to bring stuff to the Club Meetings that you would like to sell or trade.**

### **Presentation Update:**

Harold Schneider W7BKM will be giving us a presentation at the February Club meeting on how he worked all counties. Most of his contacts were made while mobile. He will also help us to understand how to work HF mobile and give us some ideas on antennas, mounting, and what to watch for on newer cars.

Roger Swearngen N7EYU has volunteered to team up with the ARRL to provide a VHS tape relating to HAM Radio for each or any club meeting where there is time. The ARRL has some fifty tapes and beginning in March, Roger will make sure there is one on hand for viewing at club meetings if time allows. Thanks Roger.

### **Fillers:**

#### **No more free newsletters after March.**

It was decided that the cut off date for free Newsletters being sent out to all hams regardless of whether they are dues paying or not will be March of 1994.

We have been sending out newsletters to about 75 hams that are on one or the other of the mailing lists that are in the Valley. But beginning with the April newsletter, the newsletter will only be sent to paid up members of the FVARC.

#### **Montana Callbooks:**

Montana Callbooks were at the printers as of December 10th. Should be ready by now. Contact FVRG P O Box 808, Bigfork, MT 59911. \$8.00 includes shipping and handling.

**A Big Thankyou to Mark KA6YSC and JoAnne Miller N6SLM for folding the newsletters, stamping them, labelling them, and getting them out in the mail.**

#### **Do Amatuer Radio (and Yourself) a Favor:**

Make this your New Year's Resolution Number one: Write a letter NOW to your representative and senators asking them to sign on to a bill that would make Amateur Radio a congressionally recognized, national resource. This measure, if passed, would recognize amateurs' efforts in emergency communications, support us as "national policy" and would call for regulations that "facilitate" Amatuer Radio operation as a "public benefit." This is not a "motherhood and apple pie" motion. There is real substance here, with significant, tangible benefits for Amatuer Radio. (For the complete text of the joint resolution, see July 1993 QST, page 74, or write to ARRL HQ for a copy.) There's only one way it will happen: if we make it happen.

So far Rep. Pat Williams has signed House Joint Resolution 199 as a cosponsor. However, neither Conrad Burns or Max Baucus have put

their signatures on Senate Joint Resolution 90.

Send them each a letter. Address to The Honorable Conrad Burns, Senate Office Building, Washington, DC 20510 and The Honorable Max Baucus, Senate Office Building, Washington, DC 20510.

### AO-13 OPERATIONS NET SCHEDS

HR AMSAT NEWS SERVICE BULLETIN 028.05 FROM AMSAT HQ  
SILVER SPRING, MD JANUARY 29, 1994  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-028.05

Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz.

If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
06-Feb-94	0530	B	057	W5IU	WA5ZIB
12-Feb-94	2200	B	063	W9ODI	VE2LVC
20-Feb-94	0200	B	070	WA5ZIB	W5IU
28-Feb-94	0430	B	068	WB6LLO	W9ODI

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR satelllite operations, are encouraged to join the OPS Nets. If neither of the Net Control Stations show up, any participant is invited to act as the NCS.

KO-25 BBS SERVICE BEGINS

HR AMSAT NEWS SERVICE BULLETIN 028.06 FROM AMSAT HQ  
SILVER SPRING, MD JANUARY 29, 1994  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-028.06

KITSAT-OSCAR-25 Begins Bulletin Board Operations (BBS) 01-FEB-94

KO-25 will open its BBS service beginning on 01-FEB-94. Many discussions are going on about KO-25 services. Thank you for your cooperation so far by keeping your transmitters silent on the KO-25 uplink frequencies so that we could complete our experiments with KO-25. KO-25 will operate in normal mode, 9600 baud FSK using the usual set-up for any of the 9600 baud OSCARS, e.g., KO-23, UO-22, or PoSAT. You will, therefore, not have to make any changes to your station to use KO-25.

Since not all the on board experiments are not finished yet on KO-25, there will be, at times some interruptions of service. But, SaTReC has decided to open the service because the remaining experiments will not cause any serious problems with the KO-25 BBS service.

"We hope you enjoy our new star in space," says Hyungshin Kim of the Korean Institute of Advanced Space Technology.

AO-13 ZRO TEST SCHEDULES!

HR AMSAT NEWS SERVICE BULLETIN 028.07 FROM AMSAT HQ  
SILVER SPRING, MD JANUARY 29, 1994  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-028.07

AO-13 ZRO Tests Begin For '94

## ZRO TEST SCHEDULE

FEBRUARY-MARCH 1994

The ZRO Memorial Technical Achievement Award Program, or just "ZRO Test" has a new schedule for February and March, 1994, via AMSAT-OSCAR-13. This activity is a test of operating skill and equipment performance.

During a typical ZRO run, a control station will send numeric code groups using CW at 10 words-per-minute. At the beginning of the run, uplink power from the control station is set to match the general beacon downlink strength. This is level "zero". The control operator will send and repeat a random five-digit number, then lower his uplink power by 3 dB (half power) and repeat the procedure with a new random number (level "1"). This will continue to a level 30 dB below the beacon (level "A").

A participating listener monitors the downlink signals until he or she can no longer copy the numbers. Those who can hear the beacon will qualify for the basic award by copying the code group heard at level "zero". The challenge is to improve home-station performance to a point where the lower-level downlink signals can be copied (levels 6 through A). To date, only one station, Darrel Emerson (AA7FV), has successfully copied level "A".

The following schedule of Mode "B" tests were chosen for convenient operating times and favorable squint angles. The tests can be heard on 145.840 MHz. Andy WA5ZIB will conduct all the tests. Mode "JL" tests will no longer occur due to the failure of AO-13's 70-cm transmitter.

Day	Date (UTC)	Time	Areas covered
Saturday	Feb. 12, 1994	2345 UTC	NA, SA, Europe, W. Africa
Sunday	Feb. 20, 1994	0330 UTC	NA, NW SA, Japan, Pacific
Saturday	Feb. 26, 1994	1930 UTC	NA, SA, Europe, Africa, ME
Saturday	Mar. 19, 1994	1930 UTC	NA, SA, Europe, Africa
Saturday	Mar. 26, 1994	2315 UTC	NA, SA

Note that the dates and days are shown in "UTC", thus the second test occurs at 9:30 PM CST Saturday night (the 19th). Any changes will be announced as soon as possible via the AMSAT HF and AO-13 Operations Nets.

All listener reports with date of test and numbers copied should be sent to Andy MacAllister WA5ZIB, AMSAT V.P. User Operations, 14714 Knights Way Drive, Houston, TX 77083-5640. A report will be returned verifying the level of accurate reception. An S.A.S.E. is appreciated but not required.

Information about the AMSAT Awards Program can be found on page 197 of the "Proceedings of the AMSAT-NA Tenth Space Symposium" (1992).

This paper, covering all the AMSAT-NA awards including specifics on the ZRO Test, was reprinted on page 10 in the March/April 1993 issue of "The AMSAT Journal". The ZRO Test information provided in the article covers test procedures, means for obtaining certificates and gives some historical background about the program.

AO-21 HAS 3RD BIRTHDAY

HR AMSAT NEWS SERVICE BULLETIN 028.08 FROM AMSAT HQ  
SILVER SPRING, MD JANUARY 29, 1994  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-028.08

Happy Birthday AMSAT-OSCAR-21!

On 29-JAN-91 the first international Orbiting Satellite Carrying Amateur Radio (OSCAR) in which radio amateurs from the former Soviet

Union (CIS) worked together with radio amateurs from Germany was successfully launched.

The official name of the project was RM1, which stands for "RADIO M-1". The digital transponder RUDAK-2 is part of RM1.

After the launch from the Northern Cosmodrome in Plesetsk, Russia, the satellite was named as AMSAT-OSCAR-21, to emphasize that the spacecraft was built by, and for, Radio Amateurs around the world.

AMSAT OSCAR-21 was attached as a secondary payload (Piggy-back) aboard the CIS geological research satellite "INFORMATOR-1".

AMSAT-OSCAR-21 (also known as RS-14) is a joint project between AMSAT-U in Russia and AMSAT-DL in Germany.

#### WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 028.09 FROM AMSAT HQ  
SILVER SPRING, MD JANUARY 29, 1994  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-028.09

Weekly OSCAR Status Reports: 29-JAN-94

AO-13: Current Transponder Operating Schedule:  
L QST \*\*\* AO-13 TRANSPONDER SCHEDULE \*\*\* 1994 Jan 31-Apr 04  
Mode-B : MA 0 to MA 90  
Mode-BS : MA 90 to MA 120  
Mode-S : MA 120 to MA 145 <- S transponder; B trsp. is OFF  
Mode-S : MA 145 to MA 150 <- S beacon only  
Mode-BS : MA 150 to MA 180 Blon/Blat 180/0  
Mode-B : MA 180 to MA 256  
Omnis : MA 230 to MA 30 Move to attitude 240/0, Apr 04  
Poor Sun angle and battery testing need maximum OFF time.  
[G3RUH/DB2OS/VK5AGR]

FO-20: The following is the current FO-20 operating schedule:  
From January '94 thru March '94, the analog mode and the digital mode will be on alternately for a week at a time.  
ANALOG MODE:  
09-FEB-94 7:15 -TO- 16-FEB-94 7:40 UTC  
23-FEB-94 8:05 -TO- 02-MAR-94 6:40 UTC  
09-MAR-94 7:05 -TO- 16-MAR-94 7:30 UTC  
23-MAR-94 7:52 -TO- 30-MAR-94 8:15 UTC  
DIGITAL MODE: Unless otherwise noted above.  
[Kazu Sakamoto (JJ1WTK) qga02014@niftyserve.or.jp]

AO-21: ZL3VTV works AO-21 with great success from his QTH in Christchurch, New Zealand. He regularly works stations in Australia with ease using a fixed 10 element beam pointed 30 deg above the horizon on the uplink and using a collinear antenna for the downlink. ZL3VTV is looking for to work more ZL's and would entertain schedules. [ZL3VTV @ZL3AC]

\* SpaceNews 31-Jan-94 \*

BID: \$SPC0131

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SpaceNews  
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MONDAY JANUARY 31, 1994

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is published every week and is made available for unlimited distribution.

\* STS-60 KEPLERIAN DATA \*

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The following is pre-launch Keplerian orbital data for Shuttle mission STS-60 which has an expected launch date of 03-Feb-94 at 12:10 UTC:

STS-60

1 00060U 94034.56756353 .00033600 00000-0 25200-3 0 47  
2 00060 57.0033 215.8607 0010675 264.1500 95.8328 15.72291901 26

Satellite: STS-60

Catalog number: 00060

Epoch time: 94034.56756353 (03-FEB-94 13:37:17.49 UTC)

Element set: 004

Inclination: 57.0033 deg

RA of node: 215.8607 deg Space Shuttle Flight STS-60

Eccentricity: .0010675 Prelaunch Element set JSC-004

Arg of perigee: 264.1500 deg Launch: 03-FEB-94 12:10 UTC

Mean anomaly: 95.8328 deg

Mean motion: 15.72291901 rev/day Gil Carman, WA5NOM

Decay rate: 3.3600e-04 rev/day\*2 NASA Johnson Space Center

Epoch rev: 2

Checksum: 254

[Info via N6JLS]

\* NEWS FROM JAPAN \*

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The first H-II launch will take place between 7:00 - 9:00 AM (JST=UTC+9h) on 01-Feb-94.

[Info via Yoshiro Yamada]

\* TUBSAT-B AND METEOR-3 LAUNCHED \*

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TUBSAT-B is the second scientific Microsatellite build by the Technical University of Berlin (TUB), Germany.

It was launched 25-Jan-94 from Plesetsk, Russia at 00:25 UTC together with the new Russian meteorological satellite METEOR-3. TUBSAT-B successfully separated from METEOR-3 at 09:42:50 UTC.

TUBSAT-B Downlink is on 143.075 MHz with FFSK Modulation. The beacon is transmitting a 2 second burst every 2 minutes. The satellite has not yet been heard by it's command station. Although it is not a ham radio satellite, any report is most welcome. Reports can be sent via packet radio to DL4OAD @ DK0MAV.DEU.EU

METEOR-3 Keplerian elements:

Reference Epoch	94 025.23119078
Inclination	82.5637 deg
RAAN	157.1120 deg
Eccentricity	0.0014635
Argument of Perigee	262.7207 deg
Mean Anomaly	97.2234 deg
Mean Motion	13.16729004 rev/day
Decay Rate	5.0e-8 rev/day/day
Revolution Number At Epoch	3

[Info via Peter Guelzow, DB2OS]

\* OSCAR-13 NEWS \*

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Magnetorquing from attitude 246/-3 to 180/0 commenced on Jan 28 [Fri] 00:02 UTC, orbit 4306/224, and will continue for 8 perigees.

Estimated interim attitudes are: Orbit Alon/Alat: 4307 236/-5: 4308 227/-7: 4309 217/-10: 4310 209/-13: 4313 200/-10: 4314 192/-8: 4315 184/-5: 4316 178/-3. For command purposes during this 3-day period, the mode-S beacon will be ON from MA 145-150, i.e. mode-B OFF for 13 mins. The new schedule will start orbit 4314 at MA 145 Jan 31 [Mon] 16:03 UTC.

[Info via James, G3RUH]

\* KITSAT-OSCAR-25 NEWS \*

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KO-25 will open its BBS service on 01-Feb-94. Some discussion is going on about KO-25 services. The satellite controllers are thankful for the cooperation and patience of all amateurs worldwide who anxiously await the opening of the KO-25 BBS. KO-25 will operate in normal mode, 9600 bps FSK using the FTL0 communications protocol (same as Pacsats, UO-22, and KO-23).

As the KO-25 on-board experiments are not completed yet, there will be some service interruptions from time to time. SaTReC controllers decided to open the BBS since the experiments remaining will not cause any serious problem with KO-25 service later on.

[Info via Hyungshin Kim, SaTReC KAIST]

\* FO-20 OPERATION SCHEDULE \*

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The FO-20 operation schedule is follows. Analog transponder and digital transponder will be ON for a week respectively as they were since last December.

Analog mode:

26-Jan-94 08:20 UTC -to- 02-Feb-94 06:50 UTC  
09-Feb-94 07:15 UTC -to- 16-Feb-94 07:40 UTC  
23-Feb-94 08:05 UTC -to- 02-Mar-94 06:40 UTC  
09-Mar-94 07:05 UTC -to- 16-Mar-94 07:30 UTC  
23-Mar-94 07:52 UTC -to- 30-Mar-94 08:15 UTC

Digital mode:

Unless otherwise noted above.

[Info via Kazu Sakamoto, JJ1WTK]

### **BIOLOGICAL EFFECTS AND POTENTIAL HAZARDS OF RADIOFREQUENCY RADIATION...AND ITS POTENTIAL IMPACT ON AMATEUR RADIO**

The FCC is considering new rules that could require radio amateurs (and other FCC licensees) to show that they comply with guidelines for radio frequency radiation safety recommended jointly by the American National Standards Institute (ANSI) and the Institute of Electrical and Electronic Engineers (IEEE).

This FCC proposal raises extremely complex engineering and public health issues; compliance could cost broadcasters and other commercial licensees millions of dollars. But the proposal could also have a huge effect on radio amateurs.

For about 1- years the FCC has required many of its licensees (such as radio and television stations) to prove that their operations would not expose their employees or the public to RF radiation in excess of the ANSI guideline. Up to now radio amateurs have been categorically exempt from having to meet the ANSI guideline.

In the current proceeding, the FCC proposes to replace the 10-year-old guideline with the new and much stricter ANSI C95.1-1992 guideline. Second, the FCC proposes to eliminate the exemption for radio amateurs, which could result in amateurs having to prove that their transmissions do not expose anyone to RF radiation in excess of the 1992 guidelines.



The ARRL will argue for a continuation of the categorical exemption for radio amateurs, and for use of the more liberal standard for occupational exposure if amateurs are not categorically exempt.

If adopted in its most stringent form the proposal could result in enormous costs for amateurs. Accurate meters to measure RF power densities are expensive. Manufacturers such as General Microwave and Narda Microwave sell their least expensive power density meters for prices well into four figures.

Also, the proposal could force the curtailment of certain amateur radio activities. In 1990 the FCC and the Environmental Protection Agency concluded that most amateur activities do not create RF fields in excess of the old or new ANSI standard. A well-matched antenna at least 35 feet above any inhabited area, fed with a well-shielded coaxial cable, produces fields far too weak to create any health concern.

However, the FCC/EPA measurements showed that near a mobile, indoor or attic-mounted antenna, the RF fields sometimes exceed the ANSI standard. Another controversial issue concerns hand-held transceivers. All transmitters with less than seven watts of output power were exempt under the old ANSI standard, but the new standard reduced that exemption to 1.4 watts.

Much has been written in QST and elsewhere about Electromagnetic Radiation (EMR) and RF and low frequency health effects. As of to date no study has claimed a conclusive causal link. In view of the uncertainties in this field, many public health officials are now urging "prudent avoidance" that it is wise to avoid unnecessary exposure to EMR until there is a more complete understanding of its effects.

Research has shown that EMR at levels even weaker than the Earth's geomagnetic field has biological effects. How can this be? The Earth's magnetic field is a static field. All of life lives in this field. Natural electromagnetic fields are also created by the sun and thunderstorm activity; life as we know it has existed in these fields. However, in the last 100 years, man-made fields with very different intensities and spectral distributions have altered the natural electromagnetic environment in ways that have their own biological effects.