

SHORT CIRCUIT, NEWSLETTER OF THE ARCTIC AMATEUR RADIO CLUB
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NOVEMBER 1987
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Officers for the 1987-88 club year are:
President, Hank Hove, KL7HPR
Vice-President, Jim Dixon, NL7HI
Treasurer, Jim Gilmore, KL7GW
Secretary, Lewy Overton, NOSN

Important Notice!

The November meeting will be on Friday the 13th, the second Friday of November, *not the first*, at 8:00 pm in the auditorium of the UAF Geophysical Institute. The meeting date was changed to permit Louise Stewart from the FCC to be our guest speaker. This will also be the annual club awards night, when the club recognizes people who have made special contributions to ham radio and to the Arctic Amateur Radio Club during the last year. If you need help finding the meeting place, call in on 146.28/88, 146.34/94 or 223.28/224.88. Or stand in the parking lot and "holler real loud."

Annual Solicitation for Dues

OK, folks. Just because your kid is using your stock certificates for crayon practice, oil is going for a nickel a barrel, you've been out of work for six months, and the sheriff wants to talk about your mortgage is

NO EXCUSE

for not paying your dues. If the mailing label on this issue of Short Circuit says 9/30/87 (note '87'), then this will be the last newsletter you receive until your dues are paid. If you DID pay your dues, but the date on the label doesn't look promising, please contact the club secretary ASAP. You can sometimes reach him days at 474-5295, evenings at 479-6224, on the 146.34/94 repeater, or by VAX mail/bitnet at SNALD@ALASKA. Failing all that, send a letter to the address in the masthead.

The Board of Directors of the Arctic Amateur Radio Club will meet in open session Wednesday, November 4, 1987, at 7:00 pm at KTVF on the second floor of the Northward Building.

FREQUENCIES IN USE IN CENTRAL ALASKA
 courtesy of Craig Bledsoe, K4TXK
 corrected and updated from the October newsletter

Nets/HF

28.400	USB	SSB Tanana Valley Disaster Preparedness Net	Emergency preparation & training, novices & up; 8 pm local Sunday
14.292	USB	AK/Pacific Net	Wide area coverage, mornings
3.933	USB	Motley Group	Traffic, etc. 9 pm local
3.920	USB	Snipers Net	Traffic, etc. 6 pm local
3.776	USB	Friends, Amateurs & Radiotelegraphers Society	Recreation, 8 pm, local Wednesdays
1.867	LSB	AK 160 meter DX Net	DX & AK calling freq, 7 pm local, Monday-Friday

Simplex

146.52	Voice	Calling frequency
145.07	Gnosis	Packet File transfers, chatter
145.01,03,05	Packet	Calling, KL7GNG Bulletin Board, mailbox
144.20	SSB	Weak signal. Mondays 8 pm
144.10	CW	Weak signal. DX on openings
50.110	SSB	Weak signal. DX
50.105	CW	Beacon when band active

Duplex Voice Repeaters

146.19/79	Engineer Hill EAFB	Fairbanks to Delta Junction cover- age
146.37/97	Birch Hill	Wide area coverage, autopatch
147.34/94	UAF Main Campus	West side of Fairbanks area, auto- patch
146.22/82	Moraine Ridge Delta	Wide area coverage. up soon
146.28/88	Ester Dome	Wide area coverage. can be used without special tone access
146.16/76	Portable unit	Local coverage, set up when and where needed
223.28/4.88	Ester Dome	Wide area coverage
449.1/4.1	Murphy Dome	Low power

-----Call for technical presentations-----

contributed by Jim Dixon (NL7HI) from BITNET

Next years ARRL National convention will be in the beautiful Pacific Northwest:

ARRL National Convention
Sept. 9-11, 1988
Portland, Oregon

We are beginning to solicit persons who would like to make a contribution by offering their services as speakers for technical sessions. In particular, we are looking for those that can provide an interesting talk on one or more of the following subjects:

- DXpeditions
- Antennas
- Interference
- Amateur TV
- Packet Radio
- Microwave experimentation
- DX Records
- EME
- Contesting
- Emergency services
- Public Service
- RF Direction finding
- YL activities
- Repeater systems
- Radio Fingerprinting

Or some other subject that you feel would be interesting to the attendees.

There are no financial incentives. The satisfaction comes from presenting a subject of interest to your fellow amateur and the recognition you receive.

We would like to get a few new faces in addition to the 'Ole timers' on the speakers list.

Please contact me if you're interested or need more information. It's still a long way off but this is a good time to plan that Pacific Northwest Vacation next Summer.

73's

N e i l
(2 0 6)
(503) 625-7225 Eves

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W A 7 N B F
w e e k d a y s

NOAA BBS Available

In the October issue of CQ, George Jacobs, W3ASK, has some good news for those of us who live in the northern latitudes and wonder, on some days, if the antenna(s) are connected. Knowing the solar flux and A and K indices would tell us a lot. Unfortunately, WWV is not easily received here and its counterpart, WWVH in Hawaii, doesn't give the hourly geomagnetic and solar data. Another alternative is to call Anchorage, but intrastate calls are quite expensive.

There is a better way if you have a modem: The NOAA Space Environment Services Center in Boulder, Colorado, operates a bulletin board system 24 hours a day. The bulletin board system includes a variety of information about SESC services. There are updated daily summaries of solar and geophysical activity and a daily HF propagation summary and forecast (updated every six hours).

The system is accessed by dialing 303 497-5000. Use either 300 or 1200 baud. Protocol is the normal 8-bit data word, one stop bit and no parity.

There is no charge for accessing the system. You do, of course, have to pay for the phone call. However, I have found that I can access the system at 1200 baud and by logging to disk get the HF propagation summary and forecast in about two minutes. With the night and weekend hourly phone rates available from either Alascom or GCI the Colorado call might be cheaper than one to Anchorage. Also, an added benefit of doing it this way is that you have a printout. Forecasts are for three days with the six-hour updates added at the bottom. (It is interesting to note that the updates have often contradicted the three-day predictions.)

Also, it is interesting to see why our 90 solar flux isn't working too well when we are fighting an A-index of 18 to 25 on some days.

If you have any questions, check page 118 of the October issue of CQ or you can call me at 479-4433.

George M. Winford, KL7VZ

Club Roster

Several people have asked about a club roster. We will prepare and distribute one after we get a few more responses to the annual solicitation for dues. At the moment, we have only 27 paid memberships (counting families as one membership with multiple members). Perhaps next month.

The following excerpts from a session on the NOAA BBS were contributed by George Winford. The whole session lasted only 1:31 minutes. At about \$7.50, that cost only about 20 cents. Parts of the session have been omitted, and the output has been compressed somewhat to fit in the newsletter.

Welcome to the NOAA, Space Environment Laboratory
SPACE ENVIRONMENT SERVICES CENTER
Forecast and Advisory Bulletin Board.

This is an experimental service. SESC is exploring new techniques for delivering routine text products to users of space environment information. Notes regarding access to other SESC services will appear from time to time on the bulletin board. Usage of the board and feedback received will determine whether continued operation is justified. Users are encouraged to tell us whether the board is useful to them and how it might be improved.

- x-on and x-off supported on this board -
- ctrl-c aborts most file transmissions -

The main menu includes the following options:

P)ropagation Report	O)ther SESC Products
S)olar Report	C)omments to Sysop
R)egion Report	U)ser Records
A)ctivity Summary	* H)elp Menu
Q)uick Look Data	N)ews
* D)ata Listings	I)nfomation on SESC
M)UF Predictions	B)ye (Leave System)

(* sub-menus exist)

News from Kodiak
by Joe Stevens (WL7AML)

The 146.28/88 repeater (autopatch, open) is still humming along, with pending voice link to Homer being revised. The 146.16/76 repeater is on the air. A 145.01 packet gateway is being assembled for Pillar Mountain, connecting to the 52.57 backbone to Homer (shared voice/packet link frequency). From Homer, we link to another gateway on Diamond Ridge. Gateways will be PacComm DR-200's initially. Problems are assembling six RF packages to work in mountain top sites with lots of RFI around. Ice is something of a problem. The six meter beam keeps blowing away.

Regards, Joe DFJBS@ALASKA.BITNET (907)486-5047

Here is a sample NOAA forecast for Cycle 22:

PRIMARY HF RADIO PROPAGATION REPORT ISSUED AT 180600Z OCT 87.
 PART I. SUMMARY 180000Z TO 180600Z OCT 87/
 FORECAST 180600Z TO 181200Z OCT 87.

		QUADRANT			
		I	II	III	IV
		0 TO 90W	90W TO 180	180 TO 90E	90E TO 0
REGION	POLAR	N4	N4	N4	N4
	AURORAL	N4	N4	N5	N4
	MIDDLE	N6	N7/P20	N7/P20	N7
	LOW	N7	N7/P20	N7/P25	N7
	EQUATORIAL	N6	N7/P25	N7	N7

PART II. GENERAL DESCRIPTION OF HF RADIO PROPAGATION CONDITIONS OBSERVED DURING THE 24 HOUR PERIOD ENDING 17/2400Z, AND FORECAST CONDITIONS FOR THE NEXT 24 HOURS. PROPAGATING CONDITIONS HAVE IMPROVED DURING THE PAST 24 HOURS IN THE POLAR, AURORAL AND UPPER MIDDLE LATITUDES. CONDITIONS WERE GENERALLY FAIR IN THE DAY AND SUNSET SECTORS WITH SOME FADING AND MULTIPATHING. THE NIGHT AND SUNRISE SECTORS HAD POOR TO FAIR CONDITIONS WITH ABSORPTION AND FADING BEING REPORTED. SECTORS I AND II WERE MOST AFFECTED BY ABSORPTION DUE TO AURORA. THE LOWER MIDDLE, LOW AND EQUATORIAL LATITUDES ALL HAD GOOD OR BETTER PROPAGATION EXCEPT FOR THE SUNRISE SECTORS WHICH HAD TRANSITIONAL FADING PROBLEMS.

FORECAST: NO SIGNIFICANT CHANGES ARE EXPECTED DURING THE FORECAST PERIOD.

PART III. SUMMARY OF SOLAR FLARE INDUCED IONOSPHERIC DISTURBANCES WHICH MAY HAVE CAUSED SHORT WAVE FADES IN THE SUNLIT HEMISPHERE DURING THE 24 HOUR PERIOD ENDING 17/2400Z

O	C	T			B	7
START	END	CONFIRMED	FREQS	AFFECTED		
17/1219Z	17/1230Z	NO		UNKN		
17/2204Z	17/2250Z	NO		UNKN		

PROBABILITY FOR THE NEXT 24 HOURS MODERATE.

PART IV. OBSERVED/FORECAST 10.7 CM FLUX AND K/AP.
 THE OBSERVED 10.7 CM FLUX FOR 17 OCT 87 WAS 107.
 THE FORECAST 10.7 CM FLUX FOR 18, 19, AND 20 OCT 87 ARE 104, 100, AND 077.
 THE OBSERVED K/AP VALUE FOR 17 OCT 87 WAS 04/21.
 THE FORECAST K/AP VALUES FOR 18, 19, AND 20 OCT 87 ARE 03/18, 03/15, AND 03/15.

EOF

SECONDARY HF RADIO PROPAGATION REPORT ISSUED AT 181200Z OCT 87.
 PART I. SUMMARY 180600Z TO 181200Z OCT 87/
 FORECAST 181200Z TO 181800Z OCT 87.

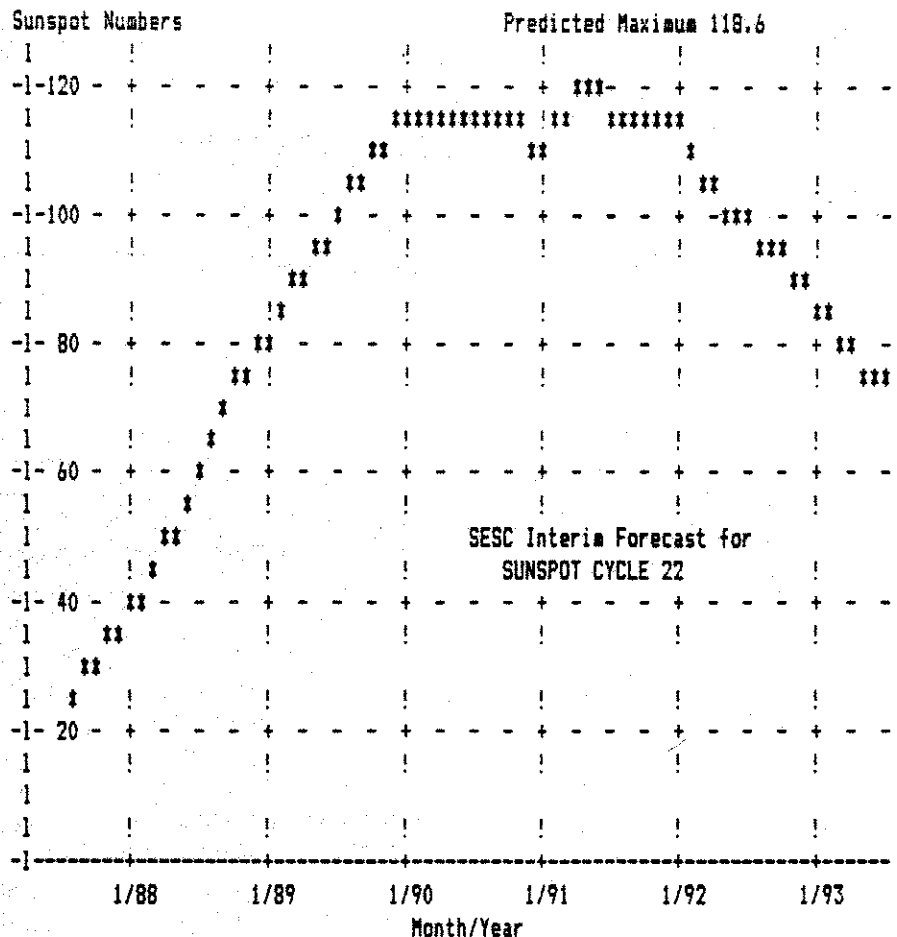
		QUADRANT			
		I	II	III	IV
		0 TO 90W	90W TO 180	180 TO 90E	90E TO 0
REGION	POLAR	N4	N4	N4	N4
	AURORAL	N4	N4	N4	N4
	MIDDLE	N7	N6	N7/P20	N7/P20
	LOW	N7	N7	N7/P25	N7/P25
	EQUATORIAL	N7	N6	N7/P20	N7

SESC Interim Sunspot Cycle Forecast for Cycle 22 - dated 7/20/87

-1- - - - - - - - - - - - - - - - - - -1-
 1 Disclaimer 1
 1 There are no clearly superior methods of predict- 1
 1 ing the size of sunspot cycles years before maxi- 1
 1 mum. However, the method used here has done as 1
 1 well as any other method. The numbers graphed 1
 1 and tabulated here should be regarded as general 1
 1 guidance, and not as exact predictions. 1
 -1- - - - - - - - - - - - - - - - - -1-

The predictions are based on the assumption that sunspot minimum occurred in September 1986. The prediction of maximum value of Sunspot Cycle 22 is based on the Ohl-method (as modified by Sargent in 1978). The profile is derived from the last six even-numbered sunspot cycles. In the vicinity of maximum, the 95 percent confidence limits are approximately plus or minus 40 points. The technique would have predicted (or did predict) the maximum value of the last 4 sunspot cycles within 7 percent.

The values charted and tabulated are predicted smoothed monthly mean sunspot numbers for the designated months.



Month	SSN	Month	SSN	Month	SSN	Month	SSN
1/87	16.3	1/89	81.4	1/91	111.8	1/93	85.5
2/87	17.3	2/89	84.9	2/91	112.8	2/93	82.9
3/87	18.6	3/89	88.1	3/91	115.3	3/93	80.5
4/87	19.9	4/89	91.2	4/91	118.0	4/93	78.5
5/87	21.5	5/89	94.2	5/91	118.6 †	5/93	76.9
6/87	23.0	6/89	97.3	6/91	118.0	6/93	75.5
7/87	24.4	7/89	100.3	7/91	117.3	7/93	74.2
8/87	26.3	8/89	102.9	8/91	116.1	8/93	72.5
9/87	28.5	9/89	105.2	9/91	114.2	9/93	69.7
10/87	30.4	10/89	107.7	10/91	113.0	10/93	67.4
11/87	32.6	11/89	110.7	11/91	112.7	11/93	66.8
12/87	35.9	12/89	113.5	12/91	113.3	12/93	66.2
1/88	39.5	1/90	114.6	1/92	112.8	1/94	65.5
2/88	42.0	2/90	115.4	2/92	110.4	2/94	64.5
3/88	44.6	3/90	115.5	3/92	107.1	3/94	63.3
4/88	47.8	4/90	114.8	4/92	103.7	4/94	61.8
5/88	51.1	5/90	114.8	5/92	101.5	5/94	59.4
6/88	55.1	6/90	114.4	6/92	100.2	6/94	56.5
7/88	59.8	7/90	113.9	7/92	98.7	7/94	53.5
8/88	64.3	8/90	113.9	8/92	97.3	8/94	51.2
9/88	68.6	9/90	114.3	9/92	96.4	9/94	49.9
10/88	72.6	10/90	114.8	10/92	94.9	10/94	48.6
11/88	75.7	11/90	114.3	11/92	91.8	11/94	46.8
12/88	77.9	12/90	112.4	12/92	88.6	12/94	44.7

† denotes maximum

Flashlight (Alkaline) Battery Hazard

Recently, an individual replaced the 1.5 volt, D-size batteries in a flashlight. The batteries were of two different brands and types (one general purpose and one alkaline battery). The flashlight was checked for operation and issued for use. Ten minutes later a worker returned the flashlight as inoperable. The inoperable flashlight was placed aside and a new flashlight issued. Twenty minutes later, the inoperable flashlight was checked for condition. The handle was too hot to hold and nearly burned the individual handling the flashlight. The individual then used a cloth to empty the batteries into a metal container so as not to damage the counter top. The plastic covering of the alkaline battery began to melt and was too hot to handle for 1.5 hours.

Investigation of the incident found a warning on the alkaline battery which read: "Do not dispose in fire, recharge, put in backwards, mix with used or other battery types. May explode, leak or cause personal injury." The incident was caused by the mixing of two different types of batteries. Alkaline and rechargable batteries (nickel-cadium) should always be used by themselves.

The alkaline battery is an extremely powerful battery and should be handled carefully following the manufacturer's instructions for the battery and the equipment being powered by the battery. If the spring in the battery compartment should tear the protective coating of the battery, it could cause the battery to short out and overheat. An alkaline battery that overheats can reach a temperature of 200 degrees Fahrenheit which could cause burns when handling. For this reason, alkaline and rechargable batteries should be handled carefully.

NOVEMBER MEETING DATE CHANGED TO 2ND FRIDAY

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PLEASE MAIL YOUR FORM TO ASSURE THE CLUB OF YOUR SUPPORT

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Short Circuit is published monthly by the Arctic Amateur Radio Club of Fairbanks, Alaska. Opinions expressed in the newsletter are those of the authors and do not necessarily reflect those of the club, its officers or members. Permission is granted to reprint or quote from Short Circuit, provided, credit is given to the newsletter and to the individual authors. Contributions to the newsletter are welcome from any source, but we reserve the right to edit articles as appropriate.

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9/30/87

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