



S-PolKa Operators Log



06-Feb-2012 JH/RAR

This is an accurate transcription of the hand-written log maintained at SPolKa during DYNAMO. Use of the log varied, depending upon scientist/operator on duty, so all relevant events may not have been entered into the log.

Initials appearing in the first column are for the following persons:

CB	Chris Burghart
MD	Mike Dixon
SE	Scott Ellis
RAE	Rich Erickson
BG	Bryan Gales
JH	John Hubbert
AP	Alan Phinney
JVA	Joseph VanAndel
TW	Tammy Weckwerth

10/01/2011

JVA	Installed new version of Ka-drx code that disables xmit triggers, and then resets the serial port.
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10/06/2011

SE	06:00	Start Time Series recording
SE	06:09	Start Clutter Scan
SE	06:15	Start DYNAMO Sequence
	06:56	Stopped TS recording

10/10/2011

MD	0445	Changed Archive Disks on SPOL-DM
MD	1000	Solar Scans
MD	1045	Resume Scanning - DYNAMO schedule
SE	948z	Start Vertical Pointing

10/15/2011

RAE	0330	SPOL DM removed full disks #9 and 10, installed #11 and 12
MD	0345	SCI3 removed full drives #65, #67. Installed #63 & 64

10/16/2011

MD	0419	USB Drive #63 seems bad. Replaced with 62.
SE	0610	Begin Vertical Pointing
SE	0615	End Vertical Pointing

10/17/2011

MJD	0455	Solar Cals. - 2 scans
MJD	0505	ATE Cal performed

MJD 0515 Resumed scanning

10/19/2011

MJD 0900 Replaced disk #62 with disk #60 - #62 is bad

10/23/2011

CB 0432 spol-dm: Removed disks 13 & 14 @ 77% full, installed 15 and 16
CB 0443 sci3: removed disks 60 and 61 @ 77% full, installed 58 and 59
CB 0703 sci3: disk 59 bad; replaced w/disk 57 (on front left USB port)
CB 0730 sci3: swapped 57 to 59 to test if 59 is really bad
CB 1011 sci3: disk 59 still appears OK after 108 GB transferred.
Was original "failure" due to transient USB error on sci3?

10/24/2011

CB 0530 sci3 OK, disk 59 IS bad. Replaced w/disk 57 again.
AP 0850 Vertical Pointing

11/06/2011

BG ~1100 S band disabled for Ka band reinstall. Issues
starting PMAC after Ka reinstallation completed
BG ~1630 S band and Ka band placed back into service.

11/07/2011

BG 2200 NAGIOS sent out low S band power alarm.
Also noted no radar echoes. Pei and Bryan drove
to site. Found S band CW signal generator locked up.
Power cycled. Checked ops. OK
BG 2330 S band returned to service.

11/08/2011

CB 10:46 Did 3 solar scans, ending @ 11:09

11/11/2011

CB 0550 Vertical Pointing (No Ka Band time series)
CB 0609 Vertical Pointing (Still no Ka band time series)

11/14/2011

TW 0645 Vertical Pointing w/ Time Series recording
TW 0650 Stop Vertical Pointing: Stop Time Series recording

11/20/2011

BG 0630 A/C unit on transmitter container failed. Shut downh both
S and Ka band.

11/21/2011

BG ~1030 A/C unit fixed. S and Ka band restarted. All
seems OK.

12/05/2011

SE 01:20 Stopped S-band to work on Ka transmitter
03:47 restarted S-band

12/06/2011

SE 04:00 Stopped S-band to remove Ka-band transmitter
06:00 restarted S-band

12/07/2011

SE 09:18 Stopped S-band to install Ka-band transmitter
SE 10:25 restarted S-band

12/09/2011

JH 04:20 Solar Scan. S-band looks normal. Ka-band Zdr pattern was odd. It had two peaks (small sketch in log) Zdr pattern. Maybe due to Ka-band transmitter being on during solar. Ka and S patterns match well. This is first solar since Ka remounted on 7-Dec after power supply failure.

JH 04:45 Saving time series.

JH 08:00 Moving noise floor Ka-band estimate up by .8dB (-66.117 to -65.317 dB)

JH 13:01 Vertical pointing data: Zdr bias from Mike's program [0.281 dB]

12/10/2011

JH ~9:20 S-band transmitter fault: waveguide arc fault. Transmitter shut down. Lost about 1 RHI scan! Brian caught it and turned transmitter back on. The fault occurred just about exactly as Brian entered the transmitter container. Nagios was not called.

12/14/2011

JH 06:04 ATE Cal.

12/15/2011

JH,MD 03:00 RHI angles (elevation) are not correct. Mike says it's a timing problem and the recorded angles are incorrect. Beginning of incorrect angles is @ 3:00 and it is now 04:19 UTC. If you look at consecutive RHIs, the storm top goes up or down in elevation a bit. This problem has been seen before. Will do restart at ~4:30 UTC. Either S to D or RVP8 has a bad time tag.

Will do solar scan to see how angles errors affect solar patterns. Solar patterns were "jagged" due to bad angles. (small sketch in log page)

5:00 Missed the restart @ 4:45 but re-did solars. The sun looks round again!! Restarted DYNAMO scans at 5:00UTC

4:45 With Solar Scan, did Zdr Bias Calculation
S1S2 = -.2638 dB
Hx/Vx = -.0223 dB (cross-polar powers)

Zdr bias = $\frac{-.0223}{.0852} = -.261$

From last VP scan: Zdr bias = -0.2811

12/16/2011

MD 04:15 Drive Spol_HD36 on spol_dm is bad - only filled to 22%.
Replaced with SPOL_HD37.

12/17/2011

JH,MD 05:15 Radar taken down to test repaired generator. Bad
wire caused generator voltage to be cut in half. Need
to test generator with different loads before driving
radar system.
06:15 Generators swapped and back on line BUT arcing is
evident now from pinging sound heard when next to pedestal.
06:18 So RF is now off.
06:45 Purged wave guide; increased pressure and now seems
OK. Back on line.

12/18/2011

MD 01:25 Nice boundaries with sea clutter 12/17 @23:00 - 24:00
Started time series recording.
02:15 ALARM - high klystron temp. Shut down High Volts on
S-band.
02:35 Started solar scan, since transmitter is down anyway.
Stopped time series recording.
03:20 Stopped solar K-band to standby.
03:47 Restarted ops scan.

12/19/2011

00:31 Relay on second AC unit failed shutting down the
radar. Techs came out and repaired it via Nagios.
01:30 Radar back on line.

12/21/2011

MD 09:000 - 10:00 Saved S-band and K-band time series -
Sea Clutter case

12/23/2011

05:30 SPol stopped for AC relay repair.
06:00 S-Pol started again. Rebooted control-1 to clear faults

12/24/2011

~05:50 Ka Band problem
06:55 Ka Band back up - Reset Ka DRX and power-cycled xmit
breaker.
12:30 Ka Band TX powered off by itself. No breaker issues,
restarted (Turned on power in TX GUI)

12/25/2011

04:40 Ka Band computer problem.
- Ka DRX disk went to read-only.
- Ran manual fsck [file system check], rebooted.
MD 05:30 - Warmup started on xmitter
06:12 Ka Band online.

12/26/2011

JH 06:00 Ka-band disk causing problems. Replaced disk on Kadrx
and replaced nitrogen bottle.
JH 06:30 back on line
JH 06:45 Ka band maintenance
JH 07:14 back on line
JH 08:00 System down for maintenance. Azimuth Belts need
tightening. Check oil.
JH 09:15 Back on line BUT arcing in waveguide.
JH 10:45 Back up. Had to put SF6 into S-band waveguide.
JH 11:15 Solar Scan/Cal
JH 11:30 back on line
13:23 Stopping scan for mitch-switch replacement.
14:45 Restart with new Mitch-Switch.

12/27/2011

JH 05:45 Down to purge SF6 from waveguide. Gas is thought
to have caused problem with "Mitch switch". It's
about 6 times heavier than air.

12/30/2011

MD 07:00 Ka band Proc Problems, Replaced "backup" SSD with non
SSD drive.
10:15 Kband back up, but Hc noisy.
17:00 K-band working properly -- after serial reset.

12/31/2011

MD 03:30 Rebooted/power cycle on pgen1, to clear OpenManage fault.

01/02/2012

MD 03:46 Solar Scan and clutter scan.
MD 04:00 Restore normal schedule.

01/06/2012

MD 08:30 ATE Cal. - cal basically unchanged from start except
for dynamic range.
MD 08:35 Clutter scans - 2.5 degrees.
MD 08:45 Restarted schedule.

01/07/2012

MD 03:45 Started clutter collection - stationary antenna
MD 04:00 Resumed normal ops.

01/08/2012

MD 11:15 Start Solar
MD 11:30 End solar

MD 13:00 K-band magnetron fault
MD 14:00 Try k-band restart - no luck
MD 14:10 Reconfigured for 1000 PRF - running

01/11/2012

MD 07:15 Stopped scanning for K-band maintenance.
Re-seat cards in rack - to try to fix errors an KaDRX.
System came up cleanly after this.
Seems good.
MD 07:45 Resumed normal ops.

01/12/2012

MD 10:45 Start solar.
MD 11:00 Restart volume.
MD 11:45 Stopped scan for maintenance/ calibration.
MD 11:50 ATE cal - did not work as usual.
Reset 34980
Then cal worked OK.
MD 12:05 Reset test pulse -
K-band Tx forward power measurement on front panel.
1000 PRF -21.40/-21/50 dbm.
MD 12:30 Resume scanning . - normal -

01/15/2012

MD 00:22 Start Vertical Pointing. ZDR bias 0.328 dB.
MD 00:30 End Vertical pointing. "
MD 07:32 Stopped scanning - need new filter on transmitter (Phinney)
MD 07:42 Started scanning again - new filter installed.

01/16/2012

MD 00:30 Stopped regular DYNAMO scanning.
00:40 ATE cal, pointing vertically. Stopped ATE 00:58
Repeat 5 times.
01:02 Start collecting SHV mode - saving time series. |DYNAMO
01:37 Stop SHV mode collection |SURVEILLANCE
01:40 Start Solars scanning.
Poor solars till 02:00
02:04 Mitch Switch running, K-band in no-afc mode
02:30 Stopped solar.

NOTE: S-band transmitter not running
Noise seems higher for some reason.
Don't trust cross correlation.