# EVN TOG Meeting 2006
## NOTO, Sicily
## Robledo Report

### 1. Hardware and Software issues.

Official return to service of DSS-63 antenna (70m) is 2007 January 2nd. Current downtime covers following maintenance works:

    a.  Elevation bearings replacement (see figure for failure details).
    b.  Hydrostatic Bearing Assembly upgrade (phase #1)
    c.  Antenna controller replacement.
    d.  Oil conditioner unit upgrade.
    e.  Azimuth path regrouting and shimming.
    f.  New 20KW wideband Klystron installation and high power TXR parts removal.
    g.  Antenna structure painting.
    h.  Testing and antenna calibration.

DSS-63 will be stopped again from June 4th until September 15th 2007 to continue with phase #2 of Hydrostatic Bearing Assembly upgrade, elevation bearings alignment and other minor maintenance works. Therefore Robledo will not be able to participate in 2007 EVN/Global session #2.
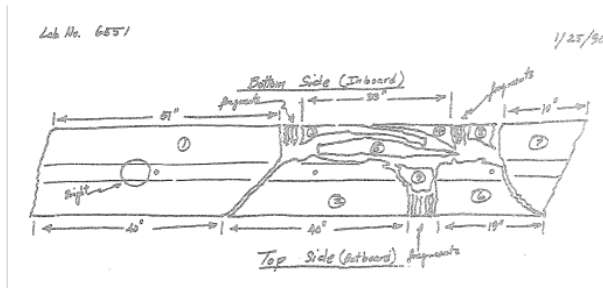


Sketch of the 1989 Bearing Failure.
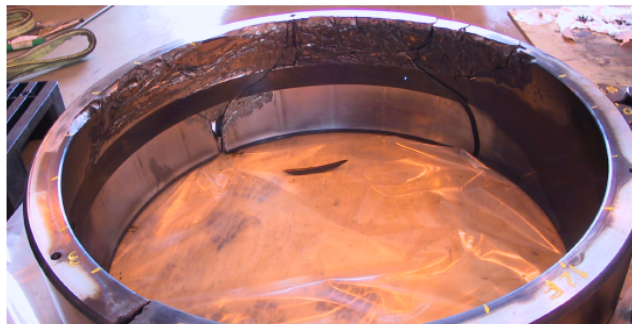


Photograph of the 2006 Bearing Failure.

Figure: details of recent elevation bearing failure (bottom) comparing with previous failure in 1989 (top).

Second transition phase to turn the Equipment Activity Controller (EAC) into a MON-2 compliant subsystem is currently being implemented to support DSS-63 antenna return to operations.

We plan to upgrade to latest Field System version (FS-9.9.1) to support incoming 2007 session #1. Currently we use FS-9.7.7 (including Station Dependent s/w version 14.2.0) and formatter firmware version 41. Mark5 s/w version is the following:

> 2006.064.02:49:04.24/mk5/!OS_rev1? 0 : "Linux version 2.4.20-8 (bhcompile@porky.devel.redhat.com) (gc" ;
> 2006.064.02:49:04.24/mk5/!OS_rev2? 0 : " version 3.2.2 20030222 (Red Hat Linux 3.2.2-5)) #1 Thu Mar 13 17:54:28 EST 2003" ;
> 2006.064.02:49:04.24/mk5/!SS_rev1? 0 : "BoardType PCI-816VXF2, SerialNum 8270, ApiVersion 5.21, ApiDateCode Apr  7 2005" ;
> 2006.064.02:49:04.24/mk5/!SS_rev2? 0 : "FirmwareVersion 10.84, FirmDateCode Apr 06 2005, MonitorVersion 6.02, XbarVersion 3.18, AtaVersion 1.05, UAtaVersion 0.00, DriverVersion 623" ;
> 2006.064.02:59:03.17/form/m,16,1:2,off,,3,pass,41,0x44,okay

## 2.  Calibration issues at DSN.

**a. Calibration signal.**  EAC software currently under implementation will be able to automatically control the calibration signal (noise diodes) during the observations in order to provide system temperature monitoring.

**b. Pointing and Efficiency.** New antenna controller is under investigation for possible pointing instabilities that could affect to K-band observations. After elevation bearings replacement, subreflector position is being optimized for all bands and pointing models are being improved. New gain curves will be provided shortly.

**c. GPS data.** Although a GPS receiver and a frequency counter were installed in the MarkIV DAT we only provide gps-fmout values at start and end of observations. A station dependent software problem (vlbisrv server communication problem with frequency counter) prevents us to provide gps-fmout data during experiments.

## 3.  Future Plans.

Q-band (7 mm) receiver will be installed at DSS-54 34m Beam Wave Guided antenna at beginning of 2008, simultaneously with the Ka-band upgrade.

Robledo e-VLBI plans: *last mile* Gbps coverage problem from Robledo to the Spanish Research and Educational Network (RedIRIS) not yet solved. Fiber already installed, but no funds available to hire broadband lines to Spanish PTT (Telefonica).

## 4.  Robledo support to EVN observations.

Robledo has not participated in past EVN/Global 2006 sessions #2 and #3.

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