

National Radio Astronomy Observatory
Socorro, New Mexico
VLBA Antenna Memo #71

Brewster, Washington VLBA Maintenance Visit July 24-31, 2007.
Team members consisted of Steve Aragon, Eric Carlowe, Ken Lakies,
Bob McGoldrick, and Phillip Sanchez. VLBA Site Technicians Bob
Sanderson and Mark Hofmann assisted in all areas of antenna maintenance.





FRM was given a thorough inspection. The focus flex shaft was replaced. The rotation axis was modified to operate on the West position feedback motor only. The sub reflector balance was checked. Three 1 inch drain holes were drilled in the center of the sub reflector for extra drainage.

FRM INA BEARING CHECK 50LBS PULL ON EAST MOTOR

East Travel: +.001	West Travel: -.001
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FRM INA BEARING CHECK 50LBS PULL ON WEST MOTOR

East Travel: -.001	West Travel: +.001
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Sub reflector paint is in good condition.



Dish panels are in good condition. The feed cone's elastomeric paint job is holding up well. The feed cone was sealed and painted during the last maintenance trip in 2004.



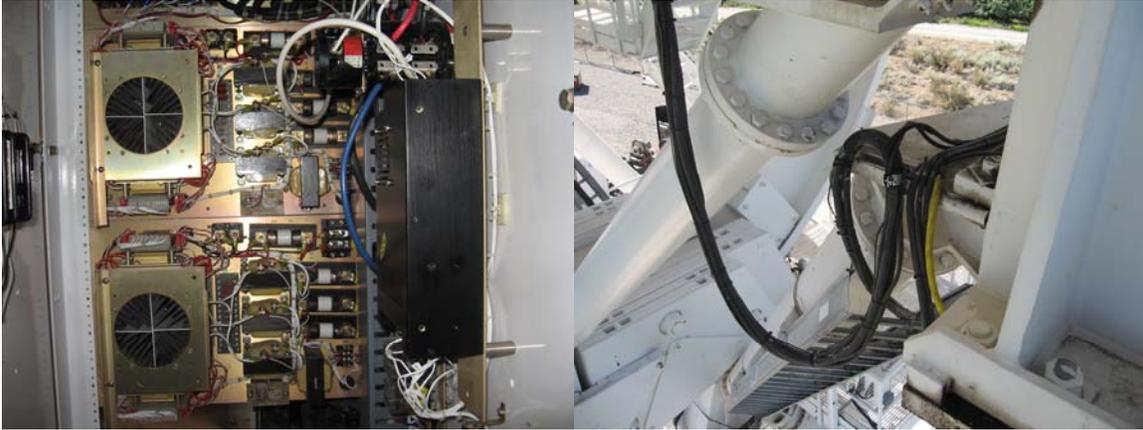
Dichroic reflector is in excellent condition. Ellipsoid reflector is in good condition. Dichroic reflector actuator operates correctly.



Azimuth #1 and Elevation # 2 motors were both replaced. New blower motors and the new design air boxes were installed on Elevation #1 and Azimuth #2 servo motors.



The new IF cable wrap was installed and tested. Two SO power cables strain relief's had to be repositioned to prevent further insulation damage.



The Servo Drive Cabinet Power Supply upgrade was completed and tested. Both Elevation bearing ground cables were replaced.



A new Elevation VTX room HVAC extension platform was installed.

AZIMUTH BEARING GREASE INSPECTION

	INNER BEARING	OUTER BEARING
D1	New Wheel.	New Wheel.
D2	New Wheel.	New Wheel.
I1	Good, no metal.	Good, no metal.
I2	Good, no metal.	Good, no metal.
All bearings are very well lubricated.		

ELEVATION BEARING GREASE INSPECTION

Encoder	Good grease with no metal flakes.
Synchro	Good grease with no metal flakes.
All bearings are very well lubricated.	

Pintle bearing is well lubricated with no metal flakes.



Elevation axle has no visible signs of cracks. Paint is in good condition.



Feed heaters and FE windows are in good condition. Apex paint is in good condition.



Antenna backup structure is in good condition. Paint is in good condition.

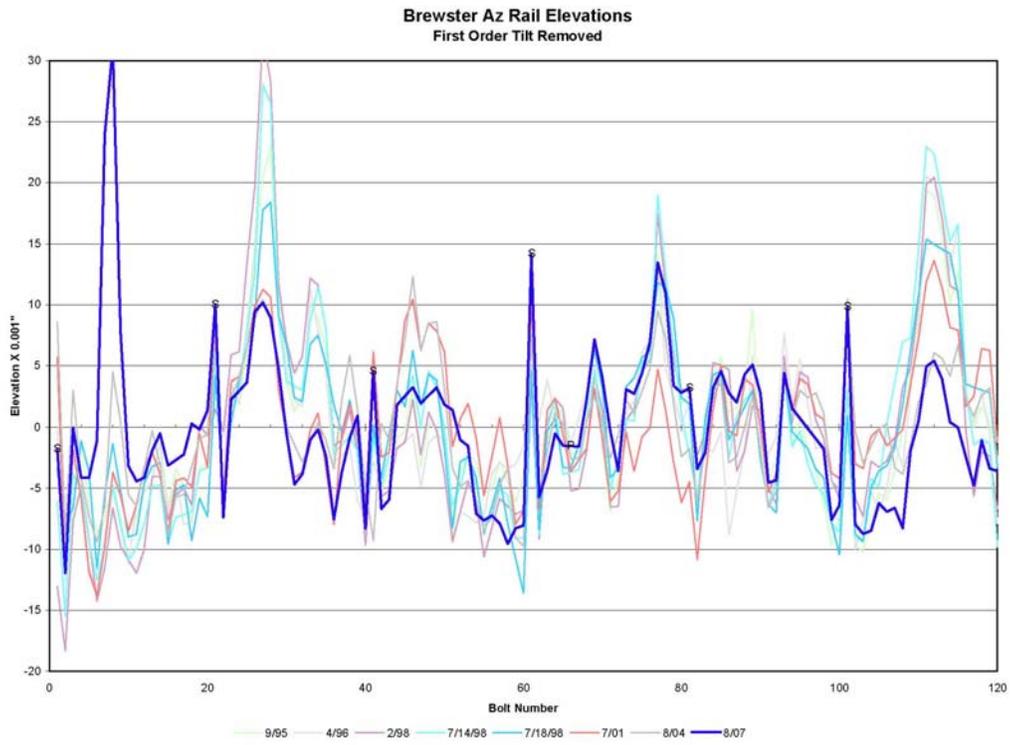


Azimuth #1 Wheel assembly was replaced. The new drive wheel assembly rotated smoothly without any popping or grinding noises.

	MEASURED	SPECIFIED
Conic Radius	299.888	300.00 +/- .25
Coupling Runout	.005	<.005
Vertical	93.458	93.440 +/- .023
Horizontal	.021	<.023



Rail grout is degrading at bolt number 3 and bolt numbers 7, 8 and 9.



Brewster's Rail Elevations. Bolt numbers 7,8 and 9 are beginning to fail.