

National Radio Astronomy Observatory
Socorro, New Mexico
VLBA Antenna Memo #69

Fort Davis, Texas VLBA Maintenance Visit May 01-08, 2007.
Team members consisted of Steve Aragon, Eric Carlowe, Ken Lakies,
Ray McFarlin, and Phillip Sanchez. VLBA Site Technicians John Smith
and John Jordon assisted in all areas of antenna maintenance.





FRM was given a thorough inspection. The flex shaft was replaced 1 year prior to the maintenance visit. Rotation axis had been previously modified to operate on the West position feedback motor only. The sub reflector was previously rebalanced. The snow tarp was removed and 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

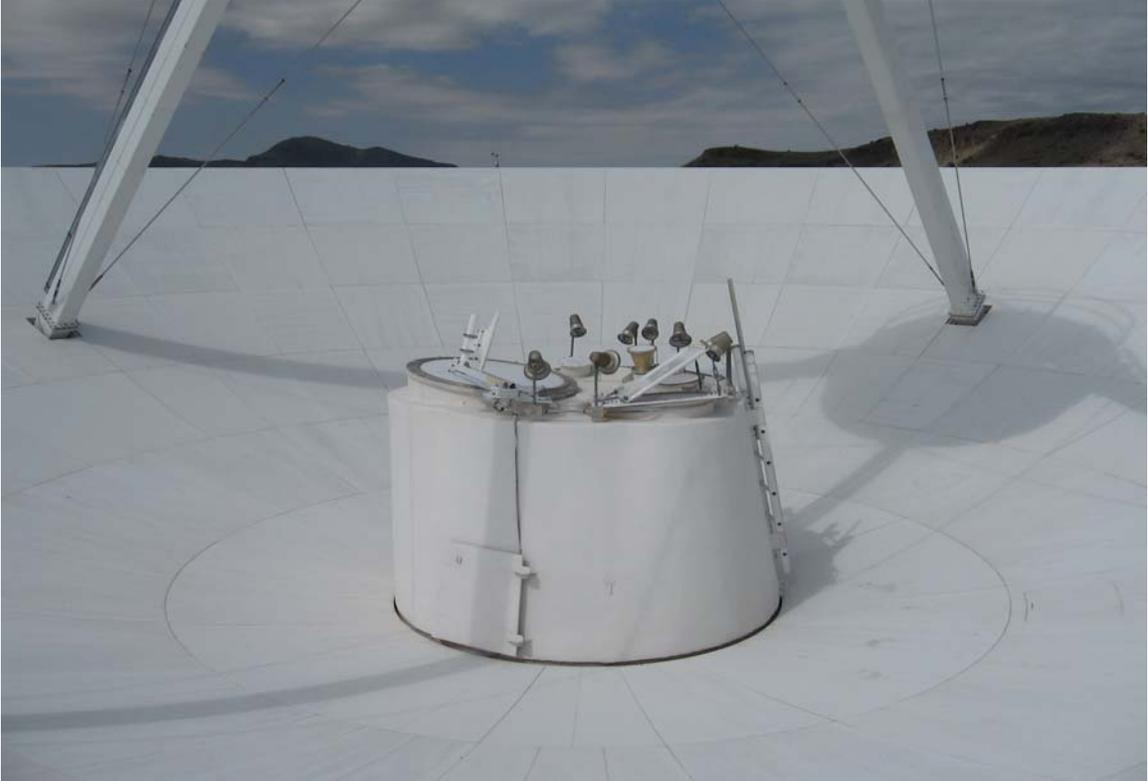
East Travel:	no time	West Travel:	no time
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FRM INA BEARING CHECK 50LBS PULL ON WEST MOTOR

East Travel:	no time	West Travel:	no time
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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 #2 Gear Box seal was replaced. Azimuth #2 and Elevation # 1 motors were both replaced. New blower motors and the new design air boxes were installed on Elevation #2 and Azimuth #1 servo motors.



An additional encoder elevation bearing grease clean out was installed. The encoder side elevation bearing **NEEDS** to be replaced ASAP. This bearings grease sample revealed lots of metal and brass particles. Site Techs will take grease samples every 2 weeks to monitor the rate of degradation.



Contempo #2 (Main Unit) compressor was replaced. Several other problems were discovered and repaired on this unit. The vertex room and ped room HVAC systems were both inspected.



Both elevation axle ground cables were replaced. All azimuth wheel bearings were inspected, none needed replacing.

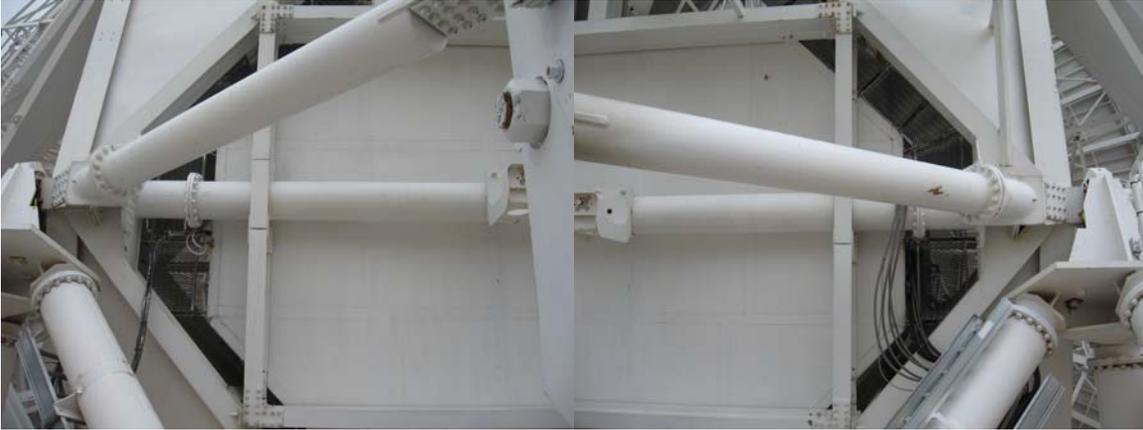
AZIMUTH BEARING GREASE INSPECTION

	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	Lots of metal-bearing needs replaced.
Synchro	Good grease with no metal flakes.
All bearings are very well lubricated.	

Pintle bearing is well lubricated with no metal flakes. The new Pintle IF cable wrap upgrade had been previously installed.



Elevation axle has no visible signs of cracks. Paint is in good condition. The encoder side cable wrap was previously upgraded. No time remained during the maintenance visit to upgrade the synchro side wrap.



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. No time remained during the maintenance visit to install a new elevation HVAC platform extension.

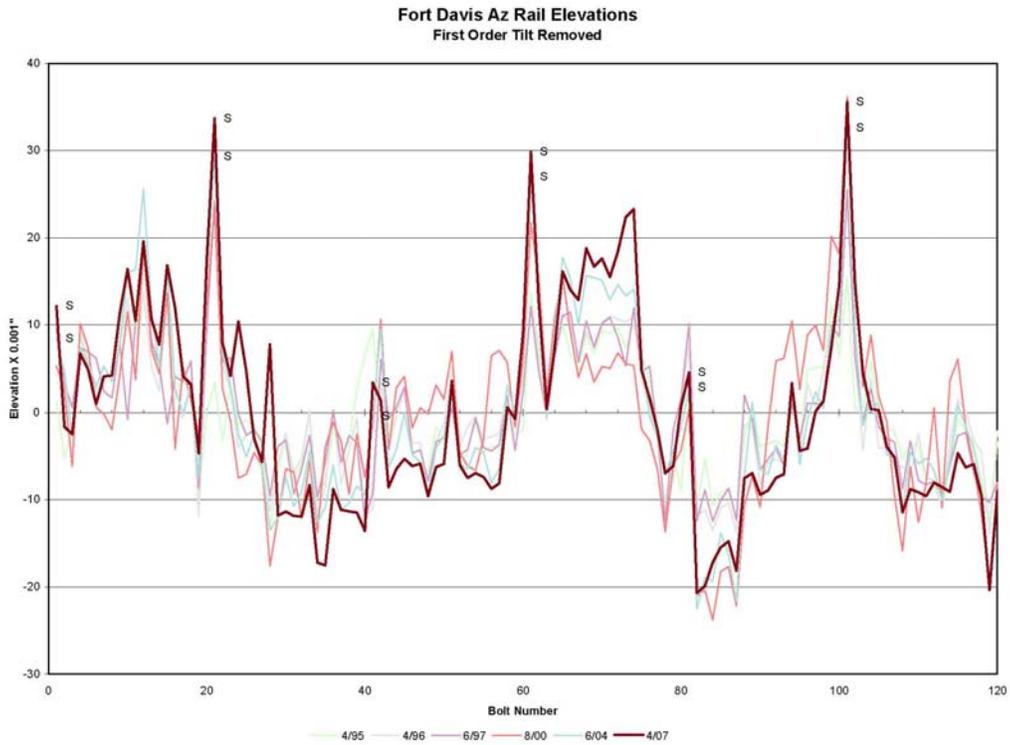


Azimuth #2 Wheel assembly was replaced. The new drive wheel assembly rotated smoothly without any popping or grinding sounds.

	MEASURED	SPECIFIED
Conic Radius	300.080	300.00 +/- .25
Coupling Runout	.001	<.005
Vertical	93.462	93.440 +/- .023
Horizontal	.005	<.023



Fort Davis's rail and grout is in good condition. Site Techs should finish removing all remaining Vulchem.



Fort Davis antenna rail elevations.