





Overview



- **Dryden Status**
 - In-work and Recent items
 - STS 133 Summary
 - Support Configuration





In-work and Recent items



In-work and Recent Items



- **Video**
 - **DR 1854 : No Video from Long Range Optics (LRO)**
 - Due to persistent unresolved tracking anomalies it was decided to remove and replace the LRO pedestal with an on-site spare pedestal.
 - **CCR 4639: Replace existing LRO pedestal with spare KTM**
 - LRO and payload were replaced on 21st of March.
 - The new system is now functional.



In-work and Recent Items (cont'd)



- **Radar:**
 - **Completed Depot Level Maintenance (DLM) on FDRRC (Radar 38) Sept 2010**

- **Communications Facility:**
 - **DR # 1926- Comm 1 High reflected Power**
 - **Replaced feed on 22 March 11. System returned to service**

 - **DR # 1904- Comm 3 Azimuth drive failure**
 - **Repaired azimuth motor expected back by 25 Mar 2011**
 - **Estimated completion 15 April 11**



In-work and Recent Items (cont'd)



- **Communications Facility continued:**
 - **CCR # 4422- Replace Comm 3 Reflector due to mesh degradation**
 - **Existing 4.57 meter mesh reflector replaced with 6 meter solid Dish week of 14 March 11.**
 - **Feed replacement and alignment still pending. ETA 15 Apr 11**
 - **Comm 1, Comm 2 & High Gain Omni's available for STS support.**





In-work and Recent Items (cont'd)



– Comm 3 Reflector replacement cont.

- Theoretical gain delta at 259.7 mHz: 2.37 dB
- Theoretical gain delta at 414 mHz: 4 dB
- Estimated completion 15 Apr 11



– Comm 3 Reflector replacement gain improvement:

- @ 414 mHz: 22.88 improved to 25.25 dBi
- @ 259.7 mHz : 18.87 improved to 21.24 dBi



STS-133 Highlights



STS-133 Highlights



- Supported 51 S-band orbits (24 in High Frequency)
 - ATF3 shadowed 12 orbits for proficiency training

- Supported 77 C-band orbits (13 ISS and 64 Shuttle)

- Provided L-1 UHF, S-band and C-band support

- Provided contingency landing support



STS-133 Issues



- DR # 1921- FRCC (Radar 34) azimuth channel error anomaly
 - Found during pre-flight ISS REV 2344 ISS, no impact, switched to FDRG (Radar 38) to support pass.
 - From the NASA/DOD Radar Network STS133 Post Test Report, 9 March 2011: 3.1.3 REV 2344 ISS, 057/0634Z, DR 1917. “FRCC was unable to support due to an azimuth channel error. Alignment of the azimuth “sample and hold” card was completed and problem closed after remaining under observation until 4 March 2011.”
 - Replaced reference channel limiting amplifier. DR closed 8 March



STS-133 Issues (cont'd)



- **DR # 1916- Radar Information Processing System (RIPS) day of year problem (crossing Zulu time playback error). No impact due to work around using DES playback**
 - **Found during ISS REV 2234, 055/2343Z**
 - **Deemed not economical to implement software upgrade due to STS program termination**



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- ***REV 173 SSO, 066/1900Z, REV 174 SSO, 066/2034Z, REV 2494 ISS, 066/1900Z and REV 2495 ISS, 066/2034Z. FRCC and FDRC were unable to support due to high winds. Winds abated and support resumed on orbits 175/2396.***
 - ***Network workaround:***
 - ***C - Band orbits supported by Wallops***
 - ***S - Band orbits supported by MILA***



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- ***REV 2340 ISS, 057/0008Z, FDRC was unable to acquire using TLE 899 which was reported as having a negative time bias of 9.seconds.***
 - ***It was later determined that ISS orbit adjustment invalidated the TLE. No DR assigned.***



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- ***Orbit 60 28/1564Z*** Echo on Cooling Net following DFRC extending loop to the SPA.
 - **Equipment reset at the SPA cleared the echo. Under observation. 03/01: Observation period concluded. Problem closed.**



Dryden Support Configuration



Support Configuration



- **ATF Site:**

- ATF-1 7m S-band Prime
- ATF-2 7m S-Band Backup
- ATF-3 4m S-band (B/U landing contingent only)



- **System Availability**

- On orbit: DFRC shall provide one S-band system and one C-band Radar system.
- Landing: DFRC shall provide two S-band systems and two C-band Radar systems.
- Normal Support Hours 7am to 4pm. Off shift support must be scheduled.





Support Configuration (cont.)

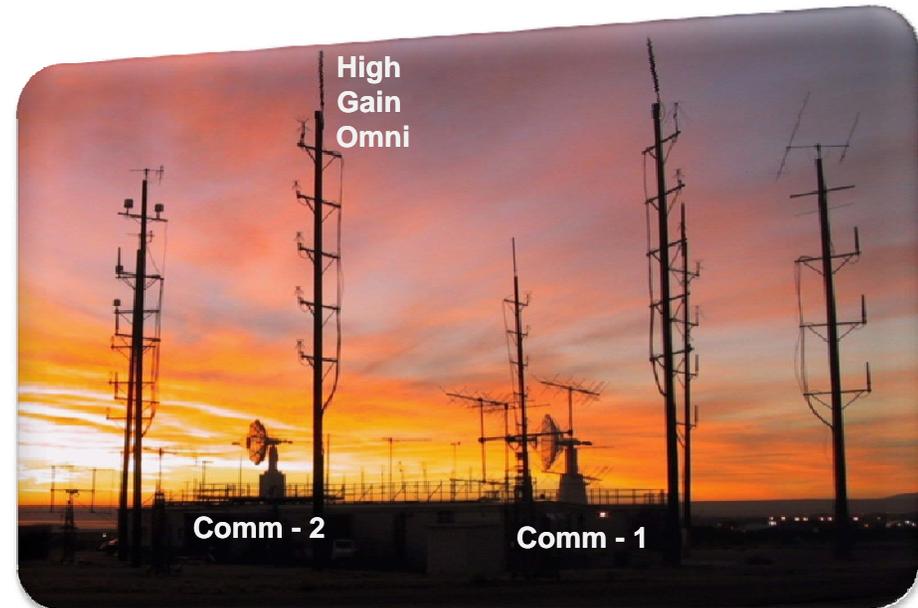


- **Communications Facility:**

- Comm 1, 2 & 3 Directional Antennas
- 7 dB gain High Gain Omni antenna
- Quad redundant Air to Ground RF Transceiver system – real time selectable
- Redundant Voice Communications system



GE Americom Earth Station
NTR Rad 1 Node 1211 Satellite uplink



- **NTR**

- Terrestrial /satellite circuit diversity
configured support

- **Video Support:**

- **Long Range Optics**

- **720p Camera with 13.5 – 2300mm lens tracking to 100nm**
 - **Infrared optics with 15x optics tracking to 40nm**





- **Video Support - continued:**

- **TV 1**

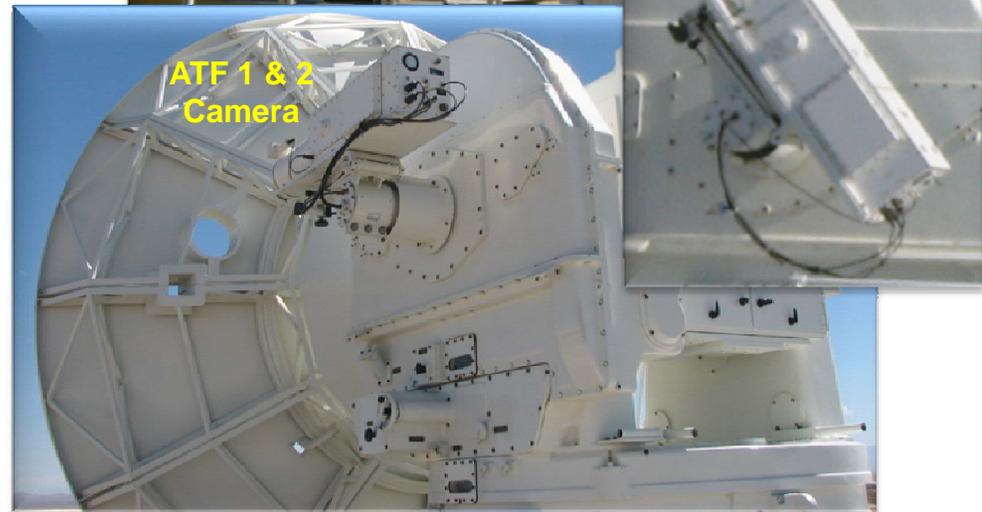
- **720p Camera with 27 – 1760 mm lens**



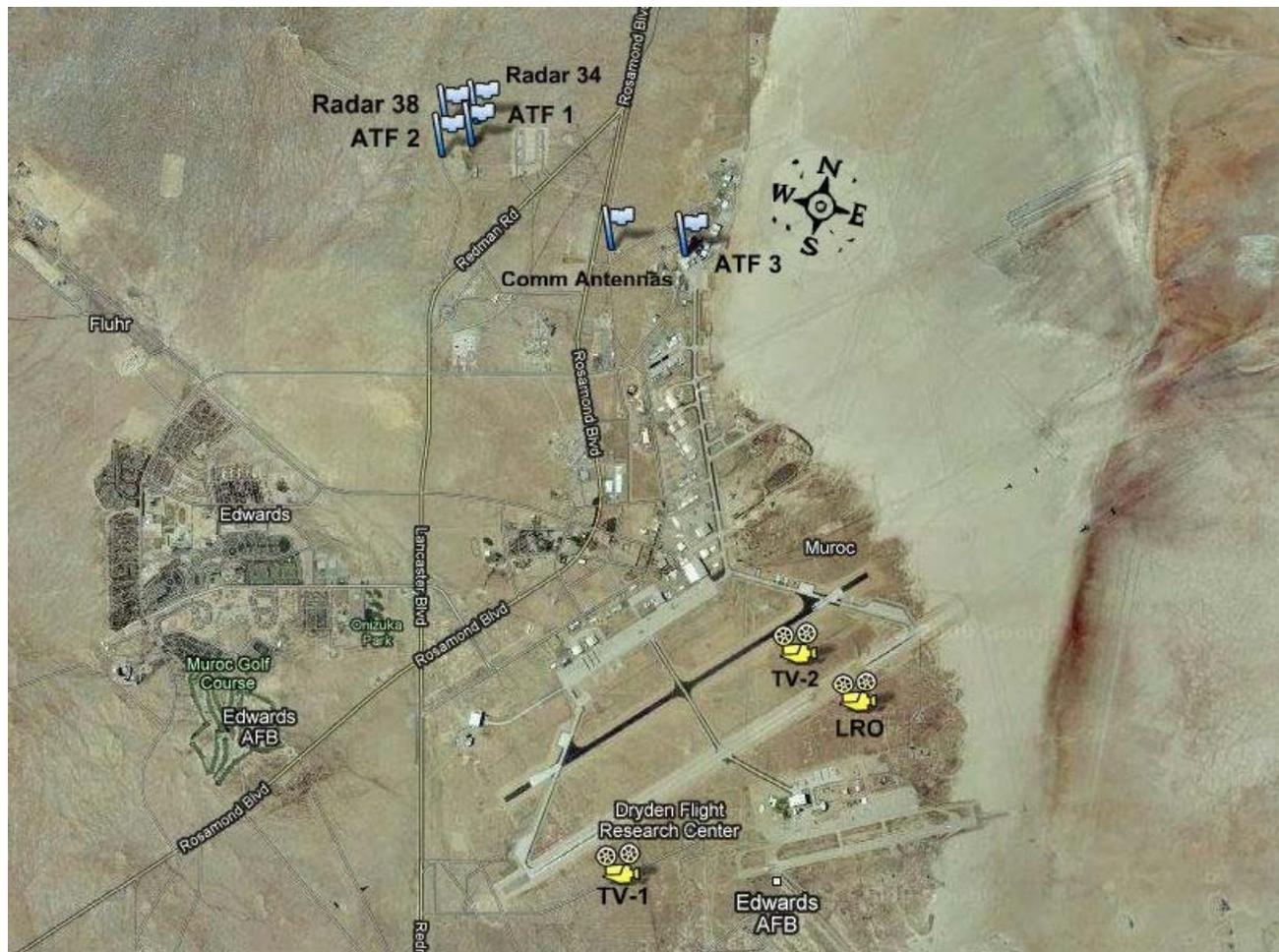
- **TV 2**

- **720p Camera with 15.2 – 260 mm lens**
 - **HD transmit capability now operational**

- **Video Support** continued:
 - ATF 1 & 2
 - 520 NTSC with 2200 mm lens
 - ATF 3
 - 520 NTSC with 503 mm lens
 - Radar 34
 - 520 NTSC with 3050 mm lens
 - Radar 38
 - 520 NTSC with 503 mm lens
3050 mm lens is at Davro inc. undergoing repair. ETA 8 weeks



DFRC Video Asset Locations





Support Configuration (cont.)



- **Video transport Facility:**
 - **Transponder 5 support (through-put configured 24/7 during mission support)**
 - **Technicians on 2 hour response notice for off-hours technical problems**





Questions?