
STS-117 MOD FRR FLIGHT DESIGN AND DYNAMICS

February 13, 2007

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Shuttle CoFR Status Summary

MOD Requirements Codes *	DM	USA FDD
CRITICAL PROC./APPL	G	G
NON-CRITICAL PROC/APPL	G	G
FD-TRAJECTORY	N/A	G
FD-ANALYST CERT	N/A	G
FD-CTF	N/A	Y
FDF	Y	G
EMCC	G	G
TRNG-MCC/POCC	G	Y
FTP-NEW OPS	G	G
FLIGHT ANOMALY RES	G	G
ANOMALY-PROCEDURE	G	G
EX/AI FROM PRIOR REVIEW	None	None
NO CONSTRAINTS	None	None
LEVEL II ACTIONS	None	None
MISSION REQUIREMENTS	G	G
CMD PROC	G	Y
FPPP REQ MET	Y	Y
CONTRACTOR PROCESS INSIGHT	G	N/A

G	Ready to support flight or standard open work
Y	Non-standard open work with expected resolution
R	Open work without expected resolution
N/A	Does not apply
None	None identified

* as defined in DA8-020 "MOD Certification of Flight Readiness Process" document

Mission Overview Summary

- **Insertion Altitude / Inclination** 122 nm / 51.6 deg
 - **First Stage Design Criteria** DOLILU II / High Q
 - **FRR Launch Window Open/Close** March 16, 2006 10:12:04/10:22:03 GMT
06:12:04/06:22:03 EDT
 - **FRR Landing Time (KSC)** March 27, 2006 05:34 GMT (01:34 EDT)
 - **Launch Window Open** March 15, 2007 10:37:48 GMT (06:37:48 EDT)
 - **FD3 rendezvous opportunities are anticipated March 15-20**
 - **I-load Design APM** 1370 lbs (APM above a 3 minute window centered at in-plane)
 - **Projected APM*** 1175 lbs (APM above a 3 minute window centered at in-plane)
 * Based on 01/23/07 APM simulation. Engine tag reductions, OMS load adjustment, and preliminary Orbiter weigh-in data have been included.
 - **Launch hold capability inside of drainback is dependent upon actual DOL performance. Abort coverage has sufficient overlap from liftoff to MECO.**
-

Significant Requirements Changes Since Design Baseline

- **Launch Date from NET 02/22/07 to NET 03/16/07 to NET 03/15/07**
 - FRR Cycle reflects the 3/16/07 launch date
 - Uplink cycle will reflect the 3/15/07 launch date

- **FRCS load to Midpoint (2175 lbm)**
 - Pending change back to minimum load (1912 lbm) to allow increase in OMS margin

- **OMS load change from 24,200 lbm to 23,960 lbm**
 - Level B requirement resulted in offload change to meet near zero margin loading direction
 - MOD and SSP requesting increase in OMS load to provide additional on-orbit propellant margins
 - Final loading will be implemented during Uplink cycle
 - Additional offload for Composite Overwrap Pressure Vessel (COPV) risk mitigation will not be implemented on this flight

Significant Requirements Changes Since Design Baseline

- **Late inspection of Orbiter TPS post-undock**
 - Attitude maneuvers/holds included in the FRR cycle propellant budget
 - Posigrade Sep2 burn to 40 nmi to allow contingency re-rendezvous after late inspection

- **Mission duration change has been approved**
 - Changed from 11+1+2 to 11+2+2
 - No impact to Flight Design

Significant Mission Firsts And Unique Items

- **Daylight Savings Time (DST) moved earlier to the 2nd Sunday in March (3/11/07)**
- **Implementation of the Multi-stage Deorbit for the Contingency Payload Return cases**
 - **Ascent Performance Margin (APM) maximized by using available RCS margins to decrease OMS requirement**
- **Fourth Flight for GPS Entry Ramp up**
 - **First use in both PASS and BFS**
- **APM quotes are based on a 3 minute launch window**

Exceedances And Deviations

Deviations/Violations

- **Contingency Abort Black Zone Assessment was not required**
 - **Liftoff mass properties did not exceed the NSTS-07700 Vol. III criteria Weight > 259,000 lbm. And Xcg > 1115.0 in.)**
 - **FRR cycle Liftoff Weight = 270,099 lbm, Xcg = 1110.9 in.**
- **Thermal Structural Envelope Program (TSEP) version 3.6 violations were identified for EOM, AOA, ATO, and TAL trajectories**
 - **These are expected violations of the OV-104 Chin panel**
 - **Trajectories were sent to Boeing for clearance (ref OCR/D S164080BZ)**
 - **Awaiting formal closure of analysis (ECD 3/1/07)**
- **Landing weight for No-Dock PLS and No-Deploy cases exceed 233 klbs NEOM downweight limit**
 - **Formal Flight Operations Panel (FOP) action assigned to evaluate exceedances**
 - **TSEP violations were noted and trajectories for the No-Dock PLS case (worst case) were sent to Boeing for evaluation. Boeing has cleared the violations.**
 - **Flight Rule FR 13A_A4-1 has been submitted to document results of analysis (CR 8210)**

Exceedances And Deviations (continued)

Deviations/Violations (Cont)

- **SODB Vol V Alpha Violations**
 - **EOM, AOA, and TAL Monte Carlo assessments showed violations of the SODB Vol V upper alpha limit**
 - **Similar statistical violations have been identified and cleared on previous missions**
 - **Boeing has cleared the FCS assessment**

Exceedances And Deviations (concluded)

Previous Mission Anomalies

- **Previous mission (STS-116)**

- **Tracking Issues**

- **Transmission issue : Delayed data receipt (data burst) issues during low speed tracking seen again during STS-116**
 - **NASA Integrated Services Network (NISN) has implemented a software patch to resolve the issue**
 - **Low level of occurrence. No concerns for STS-117.**

- **Acquisition Data QA Procedure**

- **Noticed corrupt vectors during STS-116, preventing acquisition by WSMR**
- **Network Director assigned action (STS-116PMR-02) to GSFC, WSMR, ER to develop formal procedure prior to STS-117**
- **No concerns for STS-117**

Exceedances And Deviations (concluded)

Previous Mission Anomalies (cont)

- Previous mission (STS-116 - cont)

- Tracking Issues (cont.)

- FOV-1 work around in place since STS-121 is still in effect
 - Wallops C-band high speed refraction correction multipliers set to zero by Nav (documented in console procedure AEGNAV-5A)
 - FOV-1 correction (constant) does not match Traj Server correction (variable)
 - Filter degradation will occur using Wallops
 - Study completed to quantify the difference between FOV-1 and Traj Server (STF NAV-06-48500-029)
 - STS-116 degradation was slightly higher than predicted, but within reasonable limits

Anomalies, Exceedances And Deviations

Previous Mission Anomalies (cont)

- Previous mission (STS-116 - cont)
 - **MAGR Dwell Time Anomaly**
 - Receiver locked on a satellite for 21 min 39 sec
 - Prevented receiver from acquiring new satellites, leading to increased FOM
 - Preliminary explanation is phase interference due to Earth reflection
 - IFA in work (STS-116-V-11 GPC Receiver Failed to Change Satellites)
 - Not a constraint to STS-117 due to TACAN availability
 - **FOM Chimney During STS-116 Plasma Region**
 - Longest recorded during entry
 - Poor satellite selection and wing blockage in addition to plasma effects
 - Satellite configuration off-nominal
 - Considered low risk during STS-117 due to TACAN availability

Anomalies, Exceedances And Deviations

Previous Mission Anomalies (cont)

Previous mission (STS-116 - cont)

- **ASSC (Ascension) has experienced ongoing issues from STS-121 through STS-116**
 - A major overhaul of the site is being performed
 - Scheduled to return to operations on February 9, 2007
- **Multiple balloon issues have been experienced over the last two flights**
 - Flight rules and procedures are in place to minimize impacts of balloon data loss
 - ADFD is working with SMG and 45SW on issue and has long-term action to report updates to AEFTP

Previous flight of vehicle (OV-104)

- **STS-115 Early Termination of Post NC4 Sensor Pass using –Z Star tracker**
 - No impact to STS-117. The SSST unit was replaced with an IDT unit in the –Z slot of OV-104 for STS-117

Special Topics

- **Roll Maneuver Q_Plane expansion to increase winter launch probability from 90% to 100% is pending SICB review (ECD 2/13/07)**
 - If approved at that time, expect direction to incorporate expanded Q_planes into DOLILU configuration for use on STS-117
- **High Speed Tracking Mandatory**
 - Flight specific rule established for STS-117 (13A_A3-1)
- **KPTC (Kaena Point) no longer funded, not available for future support**
 - Navigation assessing impact on Orbit tracking
 - Not anticipated to be an impact to flight
- **VDBC (Vandenburg) undergoing depot level maintenance**
 - Used for Entry tracking
 - Three other radars available at Vandenburg, no impact to flight
 - Scheduled return to operations on May 30
- **Orbit ground tracking support**
 - Navigation support of pre-launch tracking of ISS will return to nominal ops (L-24hrs)
 - Navigation will continue sending daily C-band summary report

Issues and Concerns

- **Generic SSME tag data updates have been approved**
 - Update to engine tag data presents inconsistency with current MPS inventory reports
 - Fuel Bias and FPR will be updated (via FIDP) due to mixture ratio shift
 - ADFD is evaluating impacts and changes to standard processes (ECD 03/01/07)

Exceptions and Standard Open Work

- **Exceptions**
 - None
- **Standard Open Work (complete listing in backup charts)**
 - All open work is scheduled to be completed per standard flight template
 - Dates adjusted for a 3/15/07 launch date
 - No issues have been identified

Non-Standard Open Work

No concerns identified for completing any of the open work

- **Certification - GNAV2 officers (2 positions)** 2/15/07
- **DOLILU Q - Plane Update** (details in special topics) 2/21/07
 - Possible implementation of new Q-Plane configuration
 - Pending SICB review (ECD 2/13/07)
- **Certification - DOL OPS 1 officer** 2/23/07
- **Certification - Range Safety DOL officer** 2/28/07
- **New Engine Tag assessment** (details in Issues and Concerns) 3/1/07
- **OCRD S164060BZ EOM, AOA, ATO, and TAL Thermal Clearance** (Details in Anomalies, Exceedances and Deviations) 3/1/07(Boeing)
 - Pending clearance from Boeing

STS-318 Rescue Mission Status

- **Flight Design has completed a flight-specific Ascent/Entry design cycle for the first LON build on OV-105**
 - Level A GR&C approved October 23, 2006
 - Software Production Facility (SPF) inputs provided January 17, 2007
 - I-Load patch approved on January 18, 2007
- **All pre-callup products will be delivered per the established schedule – no issues identified**
 - All facility support products will be completed prior to STS-117 launch
- **Console staffing will be defined post callup - no issues anticipated**
- **FDD Level 5 schedule includes all standard Uplink and DOL products/milestones beginning with the Uplink TDDP at L-30 days**
 - Will be implemented post-callup - if required
- **MOD-developed post-callup production schedule will be implemented - if required**
- **Launch date is currently NET 06/09/2007**

STS-117 Flight Design and Dynamics Readiness Accountability Statement

☑ Software : All software used to create mission products, and MCC software required for mission support including related ISS software and designated critical processors meets generic and mission-specific Program requirements, and is maintained under configuration control in accordance with the FDD Software Management Plan.

☑ Flight Software : All flight software Principal Functions (PFs) owned by FDD are ready for flight. All Discrepancy Reports and Program Notes and Waivers related to USA-owned PFs have been reviewed and appropriately dispositioned for this flight.

☑ Anomaly Resolution : All anomalies that could impact mission support have been closed, or have accepted and approved work-arounds in place.

☑ Production : All flight reconfiguration products and real-time console support products meet generic and mission-specific Program requirements.

☑ Operations : All mission support personnel are or will be certified and current prior to supporting mission related activities.

The FDDOC Flight Readiness Review Process Plan (USA009229) and the Flight Operations Flight Preparation and Readiness Plan (USA008977; Appendix D and E) which defines the processes and products required for a successful flight have been executed and the applicable Program CoFR requirements satisfied.

The undersigned certify that the Flight Design and Dynamics Department, upon satisfactory resolution of any noted exceptions, is ready to support flight STS-117.

Flight Design and Dynamics	A. F. Najarian Director	Original signed by A. F. Najarian <small>signature</small>	01/24/07 <small>date</small>
Flight Design and Dynamics Software	F. M. Hamilton Software Project Manager	Original signed by F. M. Hamilton <small>signature</small>	01/24/07 <small>date</small>
Ascent/Descent Flight Design	D. J. Brockway Manager	Original signed by D. J. Brockway <small>signature</small>	01/24/07 <small>date</small>
Orbit Flight Design	R. M. Hill Manager	Original signed by R. M. Hill <small>signature</small>	01/24/07 <small>date</small>
Navigation & Flight Design Integration	G. E. Schrage Manager	Original signed by G. E. Schrage <small>signature</small>	01/24/07 <small>date</small>
Trajectory Operations & Software Development	F. M. Hamilton Manager	Original signed by D. K. Mains II for <small>signature</small>	01/24/07 <small>date</small>
Management & Engineering Services	A. T. McDowell Manager	Original signed by A. T. McDowell <small>signature</small>	01/24/07 <small>date</small>

FLIGHT DESIGN AND DYNAMICS DECLARATION OF COMPLIANCE WITH CoFR ENDORSEMENT REQUIREMENTS FOR STS-117 FLIGHT READINESS

- ☑ **Software** : All software used to create mission products, and MCC software required for mission support including related ISS software and designated critical processors meets generic and mission-specific Program requirements, and is maintained under configuration control in accordance with the FDD Software Management Plan.
- ☑ **Flight Software** : All flight software Principal Functions (PF's) owned by FDD are ready for flight. All Discrepancy Reports and Program Notes and Waivers related to USA-owned PF's have been reviewed and appropriately dispositioned for this flight.
- ☑ **Anomaly Resolution** : All anomalies that could impact mission support have been closed, or have accepted and approved work-arounds in place.
- ☑ **Production** : All flight reconfiguration products and real-time console support products meet generic and mission-specific Program requirements.
- ☑ **Operations** : All mission support personnel are or will be certified and current prior to supporting mission related activities.

Requirements Compliance: All requirements defined by the documents below (as required by the FIDP Compliance Matrix) have been or will be satisfied prior to flight.

DOCUMENT	VERSION	DATE
Flight Implementation Data Pack (FIDP) - Generic	GENERIC-HW	1/30/07
Flight Implementation Data Pack (FIDP) - Flight Specific	117-BASE2 AV	2/01/07

Waivers & Exceptions:

None

The FDDOC Flight Readiness Review Process Plan (USA009229) and the Flight Operations Flight Preparation and Readiness Plan (USA008977; Appendix D and E) which defines the processes and products required for a successful flight have been executed and the applicable Program CoFR requirements satisfied. Pending completion of open work and closure of noted exceptions, if applicable, Flight Design & Dynamics Operations Center is ready to support STS-117.

Original signed by A. F. Najarian	02/07/2007
Director	Date
Flight Design & Dynamics Operations Center	

DM Flight Design and Dynamics (Trajectory Operations) Significant Mission Firsts And Unique Items

- **Second docking with outboard arrays already in place.**
- **Second flight adding outboard arrays**
- **Second flight where ISS Solar Arrays will be retracted during docked ops.**
- **Second flight with no lighting constraints for launch.**
 - **Lighting for hand-held ET photo capability available**
 - **Lighting for umbilical photos is not available but +X translation after ET separation will be performed. Lighting as a result of the jet firings may be sufficient to provide some good pictures.**
 - **ET photo pitch dependent on ET lighting**

Exceedances And Deviations

Previous Mission Anomalies

- None

Special Topics

- **ISS altitude profile being worked to increase number of flight day 3 rendezvous days in March. (“Dot” chart included in backup charts)**
 - One burn to be performed on March 2
 - TIG will be optimized to minimize shuttle deorbit costs

- **1A, 3A, and P6 Solar Array Jettison – Safe Sep**
 - TOPO/FDO/RGPO/Prox Ops worked w/ADCO, GNC, EVA, & ROBO
 - Baseline plan developed which can be modified given the actual flight situation (contingency/condition of the array)
 - FR submitted which specifies the ISS attitude and minimum reboost Delta-V required to release an array, based on a pre-approved ISS CMG momentum management attitude
 - Low probability of occurrence during STS-117

Special Topics (continued)

- **GPS OPS PLAN**
 - **Final 1-string GPS ramp-up flight**
 - **MM201 on landing minus one day**
 - **Process GPS for ~6 hours after FCS Checkout and Hot Fire Test**
 - **Landing Day**
 - **Procedurally the same as our nominal OPS plan for entry**
 - **MM301 before deorbit burn**
 - **GPS to Auto for PASS and BFS**
 - **At TIG – 46 minutes**
 - **Inhibit GPS prior to final SV uplink**
 - **MM304/305 after confirmation with high speed ground tracking**
 - **Process in both PASS and BFS NAV systems**

Special Topics (concluded)

- **New Software**
 - Trajectory Server version 10.1.0
 - Auto Maneuver Pad 2.0.1

- **Trajectory Server Reliability and Readiness Status**
 - MSOC will present

Issues And Concerns

- None

Exceptions and Standard Open Work

- **Exceptions**
 - **None**
- **Standard Open Work (complete listing in backup charts)**
 - **All open work is scheduled to be completed per standard flight template**
 - **No issues have been identified**

Non-Standard Open Work

- **RNDZ Checklist FINAL** **December 20, 2006**
 - **PCN-1 with small changes anticipated** **February 28, 2007**
 - **Crew Review** **March 6, 2007**
- **Mid Course Radar** **March 1, 2007**
 - **Orbit FDO's working a new procedure with DM4/M. Schottel for requesting Mid Course Radar (KSC) support for planned jettisons or in a contingency to track lost items overboard.**

STS-117 Flight Design & Dynamics Division Readiness Statement

The Flight Design and Dynamics Division has performed the reviews necessary to assess the flight readiness relating to flight design requirements definition, trajectory operations, and flight software MMU reconfiguration. We have determined all applicable responsibilities acceptable for flight pending closure of the identified open work and issues.

Original signed by Barbara Conte

01/30/07

Barbara A. Conte

Chief, Flight Design Requirements and Integration Office

Original signed by G. Oliver for M. Collins

01/30/07

Michael F. Collins

Chief, Flight Design and Dynamics Division

**As compiled by: FDM/D. Tee
FDO/R. Rojas**

Back-Up

- **Flight Readiness Open Work**
- **Launch Window “Dot” Chart**
- **Launch Window (separate file)**
- **Abort Regions Chart**
- **Nominal ET Impact Plot**
- **Ascent/Descent Flight Critical Software**

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
USA Flight Design Standard Open Work:				
DATA43 FDD FRR Data Pack	FDM	2/5/07	2/5/07	Completed
FSW Verification Test Results Review	ADFD	2/13/07		
RNDZ/FDO Phasing Plan Meeting	Orbit	2/13/07		
RNDZ02 RNDZ/Prox Ops Target Drag Characteristics	Orbit	2/13/07		
Review of ICHA Report	Orbit	2/13/07		
ONOR29B RNDZ Launch Target Data	Orbit	2/13/07		
DATA45 FDD FSW PF Sign-off	FDM	2/14/07		
L-4 week LDO Database Freeze	ADFD	2/15/07		
ASCT43 MPS Minimum Sigma Level	ADFD	2/15/07		
RNDZ08 RNDZ Phasing Limits	Orbit	2/18/07		
ONOR37B Daily Planar/Phase Windows	Orbit	2/20/07		

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
USA Flight Design Standard Open Work - Continued:				
ASCT04 Uplink APM	ADFD	2/22/07		
NAVO18B GPO/ONAV Ops Memo	Navigation	2/22/07		
NAVO16B GPO COTM Data Pack	Navigation	2/22/07		
LDO: L-3 week LDO Checkout/TCDT Sim	ADFD	2/22/07		
ONOR27 Launch and Landing Data	Orbit	2/22/07		
Orbit MPSR Flight Load Checkout	Orbit	2/28/07		
ASCT44 DOL Uplink I-loads	ADFD	2/28/07		
ONOR29C RNDZ Launch Target Data	Orbit	3/5/07		
BuCrit Execution	ADFD	3/6/07		
Dial Down Decision FIDP	FDM	3/7/07		
ONOR37C Daily Planar/Phase Windows	Orbit	3/7/07		
DSCT17 Landing Site Tables	ADFD	3/8/07		
C-Band tracking Scheduling Message	Navigation	3/8/07		
RNDZ09 Rendezvous COLA Plans	Orbit	3/8/07		
ASCT99 OMS Assist - ATO Update	ADFD	3/9/07		

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
USA Flight Design Standard Open Work – Concluded:				
ASCT42 Collision Avoidance Data	ADFD	3/12/07		
ASCT47 Final MCC Trajectory Inputs	ADFD	3/12/07		
DSCT66 Real-Time Support Files	ADFD	3/12/07		
SRB and ET RTLS Impact Point Update Memo	ADFD	3/12/07		
Range Safety Launch Window Cutout	ADFD	3/12/07		
Flight Annex Submittal	Navigation	3/12/07		
ASAB32B AME MCC Support Tables	ADFD	3/13/07		
DSCT05 Maximum Crossrange	ADFD	3/13/07		
L-2 day LDO System Test	ADFD	3/13/07		
ASAB-L25P1 ARD Bias Tables	ADFD	3/14/07		

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
USA Flight Design Non-Standard Open Work:				
RONAV certification – D Monroe	Navigation	2/2/07	2/2/07	Completed
GNAV2 Certification - M Shaver	Navigation	2/15/07		
GNAV2 Certification - B Lowman	Navigation	2/15/07		
Possible implementation of new Q_Plane into DOLILU configuration	ADFD	2/21/07		
Range Safety DOL certification	ADFD	2/28/07		
DOL OPS 1 certification	ADFD	2/23/07		
New Engine Tag assessment	ADFD	3/1/07		
OCR/D S164060BZ Closure (TSEP Violations from Commit-to-Flight assessment)	ADFD/Boeing	3/1/07		
Boeing clearance of SODB Vol V upper Alpha limit violations	ADFD/Boeing	3/1/07	2/7/07	Cleared

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
Trajectory Operations Standard Open Work				
L-30 HA Server Audit	TOCSS	2/15/07		
CTL Trajectory Data	FDO	2/18/07		
TCDT Checkout in Ops Cert Mode	AE GPO	2/22/07		
Flight Load Checklist Complete	AE FDO	2/28/07		
Flight Load Checklist Complete	Orbit FDO	2/28/07		
Flight Load Checklist Complete	AE GPO	2/28/07		
Flight Load Checklist Complete	LSO	2/28/07		
Flight Load Checklist Complete	DOLILU	2/28/07		
Flight Load Checklist Complete	Entry Support	2/28/07		
Flight Load Checklist Complete	Navigation	2/28/07		
Flight Load Checklist Complete	RGPO	2/28/07		
Flight Load Checklist Complete	Orbit-RNDZ	2/28/07		
DOD Support Readiness	FDO	2/28/07		
Present new ops notes at Trench tagup	TOCSS	DM Trench tag up		

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
Trajectory Operations Standard Open Work				
Annex Rule C2-1 Shuttle Launch Window (3/16/07 launch date)	FDO	3/5/07	1/30/07	Submitted
Annex Rule A4-1 Shuttle Trajectory and Guidance Parameters	FDO	3/5/07	1/30/07	Submitted
Close-to-Launch update to Mass Properties & FDO Console Data Book	FDO	3/8/07		
FOE CM Server Audits	J. Bedford	3/8/07		
L-5 HA Server Audit	TOCSS	3/10/07		
Real Time Data Transfer Schedule	FDO	3/14/07		
Cargo Transfer Spreadsheet	FDO	3/14/07		

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
Trajectory Operations Non-Standard Work:				
TRJSVR 10.1.0 SAR	TrajSvr	1/25/07	1/25/07	Completed
TRJSVR 10.1.0 RTO	TrajSvr	1/30/07	1/30/07	Completed
RELMO 6.1.1 RTO	TOCSS	1/31/07	1/31/07	Completed
Flight Rule for NEOM landing weight exceedance (No-Deploy PLS case)	FDO	2/5/07	1/30/07	Submitted
S3/S4, P6 Flight Rule / Plan (going to JOP #25 on Feb 1)	FDO	2/6/07	2/5/07	Submitted
PADS 2.0.1	TOCSS	2/7/07	2/7/07	Released
RNDZ Checklist PCN-1	RGPO	2/28/07		
Mid course Radar (KSC) tracking Procedure	FDO	3/1/07		
TRAJ Support Manning	FDO	3/14/07	2/08/07	Plan completed

Flight Readiness Open Work

Item	Responsible	Due Date	Status	Closure Rationale
DM Standard Open Work:				
Abort Readiness Statement	FDRIB	2/23/07		
Orbiter Readiness Statement	FDRIB	2/23/07		
Range Safety Readiness Statement	FDRIB	2/27/07		

The Flight Design and Dynamics Division has performed a final review and determined all Division and USA FDD open work and/or actions for this mission are closed or acceptable rationale is provided for proceeding with the flight.

Flight Design Manager

Date_____

Chief, Flight Design Requirements and Integration Branch

Date_____

Director, Flight Design and Dynamics Department

Date_____

Chief, Flight Design and Dynamics Division

Date_____

Launch Window "Dot" Chart

