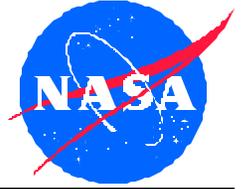




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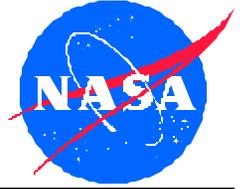
STS-113 / 11A Flight Readiness Review

**Martin E. Demaret
EVA Project Office
Johnson Space Center
October 31, 2002**



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Agenda



- **EVA Mission Overview**
- **EMU and SAFER Logistics**
- **EMU and SAFER First Flight and Open Items**
- **EVA Tools and Crew Aids Manifest Summary**
- **EVA Fit Checks and Sharp Edge Status**
- **Planned Forward Work**



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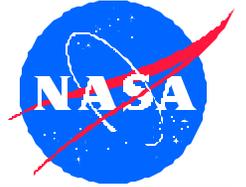
EVA Mission Overview



- **EVA Capability**
 - EVA consumables to support
 - Three scheduled EVA's
 - One unscheduled EVA for mission success tasks not completed or ISS contingencies
 - Two contingency EVA's for orbiter, Remote Manipulator System (RMS), and Orbiter Docking System (ODS) contingencies
- **EVA Training**
 - Crew is fully trained on all EVA tasks
 - All EVA1, EVA2, and EVA3 tasks can be accommodated within the scheduled 6 hours 30 minutes timeline



EVA Mission Overview (cont.)

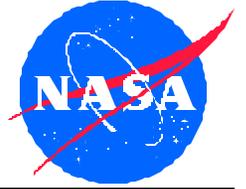


- **EVA1 (Flight Day 4) – 6 hours 30 minutes**
 - Connect the P1/S0 nadir and zenith utility trays
 - For minimum success criteria:
 - Connect S0/P1 power umbilicals (P4/J4, P5/J5, P13/J13, and P14/J14)
 - Connect one channel of the 1553 command and data buses (either P6/J6 or P15/J15)
 - Install Flex Hose Rotary Coupler (FHRC) (4 X 1½”) and Stinger (2 X 1½”) Spool Positioning Device (SPD’s)
 - Remove Drive Lock Assembly (DLA) launch pins
 - Remove Crew and Equipment Translation Aid (CETA) Cart Launch Restraints
 - Stow S0 Mobile Transporter (MT) Stop
 - Remove and Stow Drag Links
 - Install Node1 Wireless Video System External Transceiver Assembly (WETA) and Stanchion



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EVA Mission Overview (cont.)



- **EVA2 (Flight Day 6) – 6 hours 30 minutes**
 - P1/S0 Fluid Jumper Mate (4 X 1½” SPD’s)
 - Remove and Stow Keel Pins
 - Install P1 WETA and Stanchion
 - Release P1/P3 Utility Line Clamps
 - Checkout P1/P3 Segment-to-Segment Attach System (SSAS)
 - CETA Cart B relocation



EVA Mission Overview (cont.)



- **EVA3 (Flight Day 8) – 6 hours 30 minutes**
 - Install SPD's
 - Wet QD's
 - Z1/P6 (2 X 1")
 - Z1/Lab (2 X 1")
 - Lab Heat Exchanger (2 X 1")
 - Radiator Beam Valve Module (RBVM's) (18 X 1")
 - P1 Pump Module (3 X 1½", 1 X ½")
 - Ammonia Tank (1 X ½")
 - S1 FHRC (4 X 1½")
 - Main Bus Switching Unit (MBSU) Reconfiguration



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EMU and SAFER Logistics

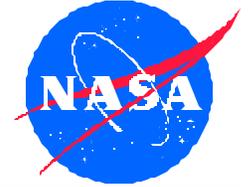


- **Three EMU's On-orbit prior to STS-113 / 11A Docking (M, L, L)**
- **Two EMU's launched on STS-113 / 11A (XL, XL)**
 - One XL (Lopez-Allegria) and one M (Herrington) used for STS-113 / 11A docked EVA's
- **Two EMU's Returned on STS-113 / 11A (XL, M)**
 - To support orbiter contingency EVA's
- **Three EMU's On-orbit Post STS-113 / 11A Undock (XL, L, L)**
 - Increment 6 EMU hardware for Bowersox, Budarin, and Pettit
- **No SAFER Manifested / Three SAFER's On-orbit**



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EMU and SAFER First Flight and Open Items

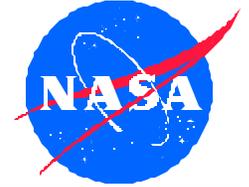


- **EMU and SAFER First Flight Hardware**
 - Moisture Barrier Earphone Diaphragm (MBED)
 - Solves problem of moisture in communications cap earphone which degrades communications
 - EMU ORU tool kit
 - Centralizes stowage of EMU ORU tools
 - -03 Disposable In suit Drink Bag (DIDB)
 - New design incorporates low pressure valve
 - Increased Capacity Battery (ICB) with new Cellophane
 - New supplier for cellophane due to loss of previous vendor
 - Modified Valsalva
 - New adhesive used to attach to helmet
- **EMU Failures, Waivers, or Certification Issues**
 - None
- **SAFER Failures, Waivers, or Certification Issues**
 - None



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EVA Tools and Crew Aids Manifest Summary



- **EVA Tools and Crew Aids First Flight Items**
 - 1” Button Depress Tool
 - Provides manual aid to depress quick disconnect button if over pressurized
 - Anti-kickback Tool
 - Aid for installation of button depress tool to prevent damage to Quick Disconnect
- **Non-GFE EVA Hardware First Flight Items**
 - None
- **EVA Tools and Crew Aids Failures, Waivers, or Certification Issues**
 - Pistol Grip Tool (PGT) – Out of calibration issue
 - STS-112 / 9A through stage STS-113 / 11A rationale presented at STS-112 / 9A FRR still applies
 - Conservative knockdown factor applied to all interfaces
 - Post STS-112 / 9A testing on three units returned from ISS showed all three within specifications
 - » Isolates problem to S/N 1007
 - STS-113 / 11A flying two recently calibrated PGT's
 - Final closure plan prior to STS-114 / ULF-1



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EVA Tools and Crew Aids Manifest Summary

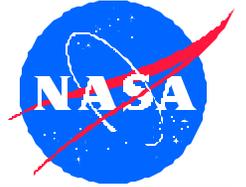


- **Standard Contingency Tools in Port Light Weight TSA**
- **Standard complement of slidewires, safety tethers, crew hook locks, and winches in payload bay**



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EVA Fit Checks and Sharp Edge Status



- **Tool-to-tool Fit Checks**
 - 100 percent complete
- **Tool-to-Interface and Interface-to-Interface Fit Checks**
 - 100 percent complete
- **Sharp Edge Inspections**
 - Sharp edge inspection complete



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STS-113 / 11A FRR Planned Forward Work



	Title	Definition	Org	Due Date	Risk
SOW	V1103 Test	EMU to orbiter interface fit check and closeout	KSC/USA	10/29/02	Low



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STS-113 / 11A FRR



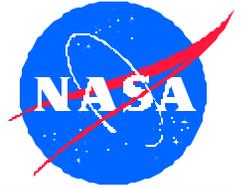
- There are no EVA exceptions for STS-113/11A
- The EVA Project Office is ready to proceed with the launch of STS-113 / 11A
- There is no open work

Original signed by

G. Allen Flynt
Manager, EVA Project Office



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Back Up



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BUTTON DEPRESS TOOL (BDT)

7/16" EVA Bolt Head Interface

Locking J-Hook EVA Knob with
7/16" EVA Bolt Drive

Status Indicator
(Both Sides)

Hard Dock
(Moves up and down to
engage the backside of the
QD button)

Soft Dock Lever 2X

Fixed Position
Lower Saddle

Aft Edge of Lower
Saddle seats
against QD

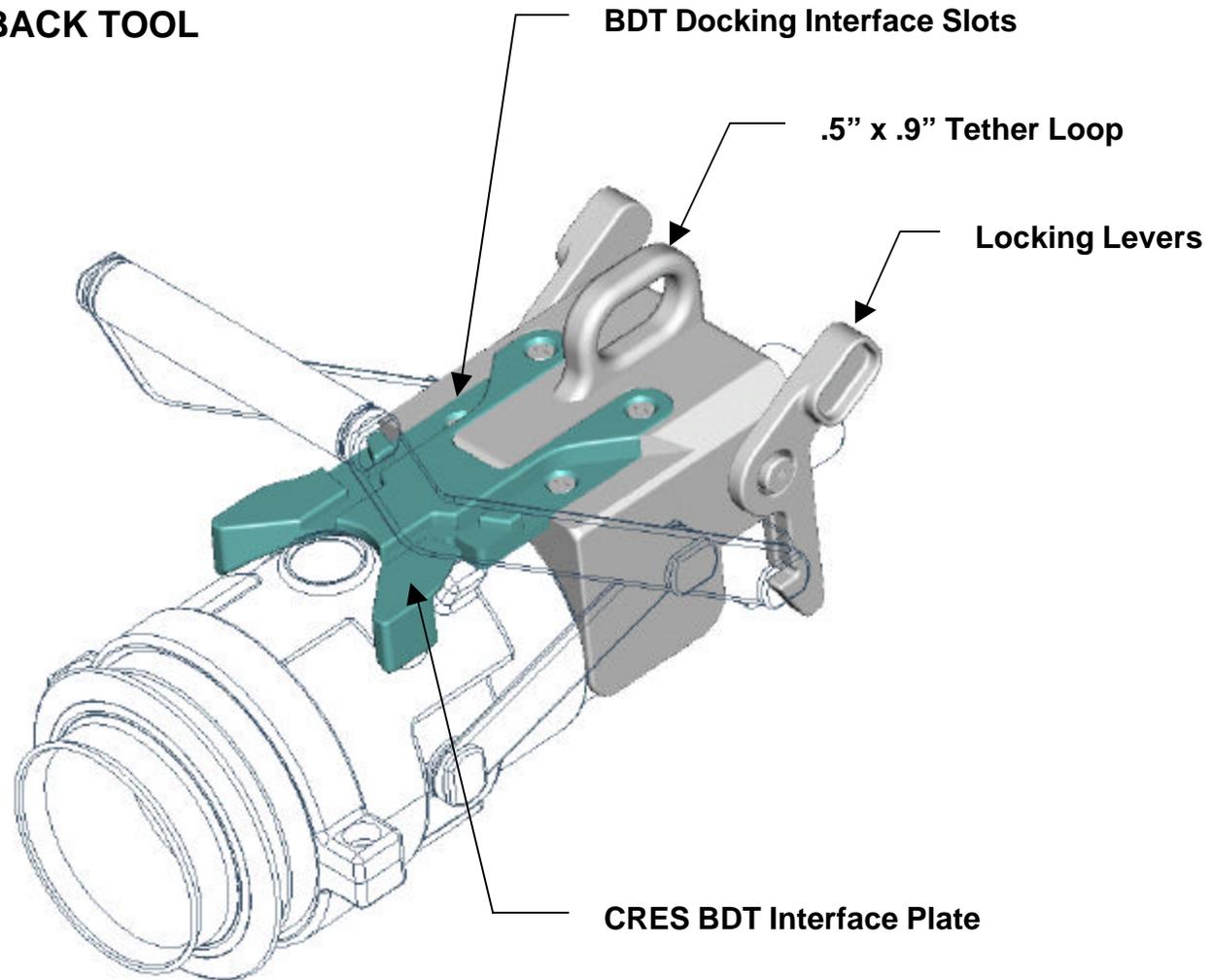
Hole for Equipment
Hook Lanyard

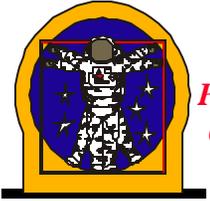
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M.E. Demaret
October 31, 2002

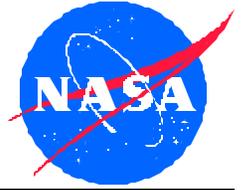


ANTI-KICKBACK TOOL

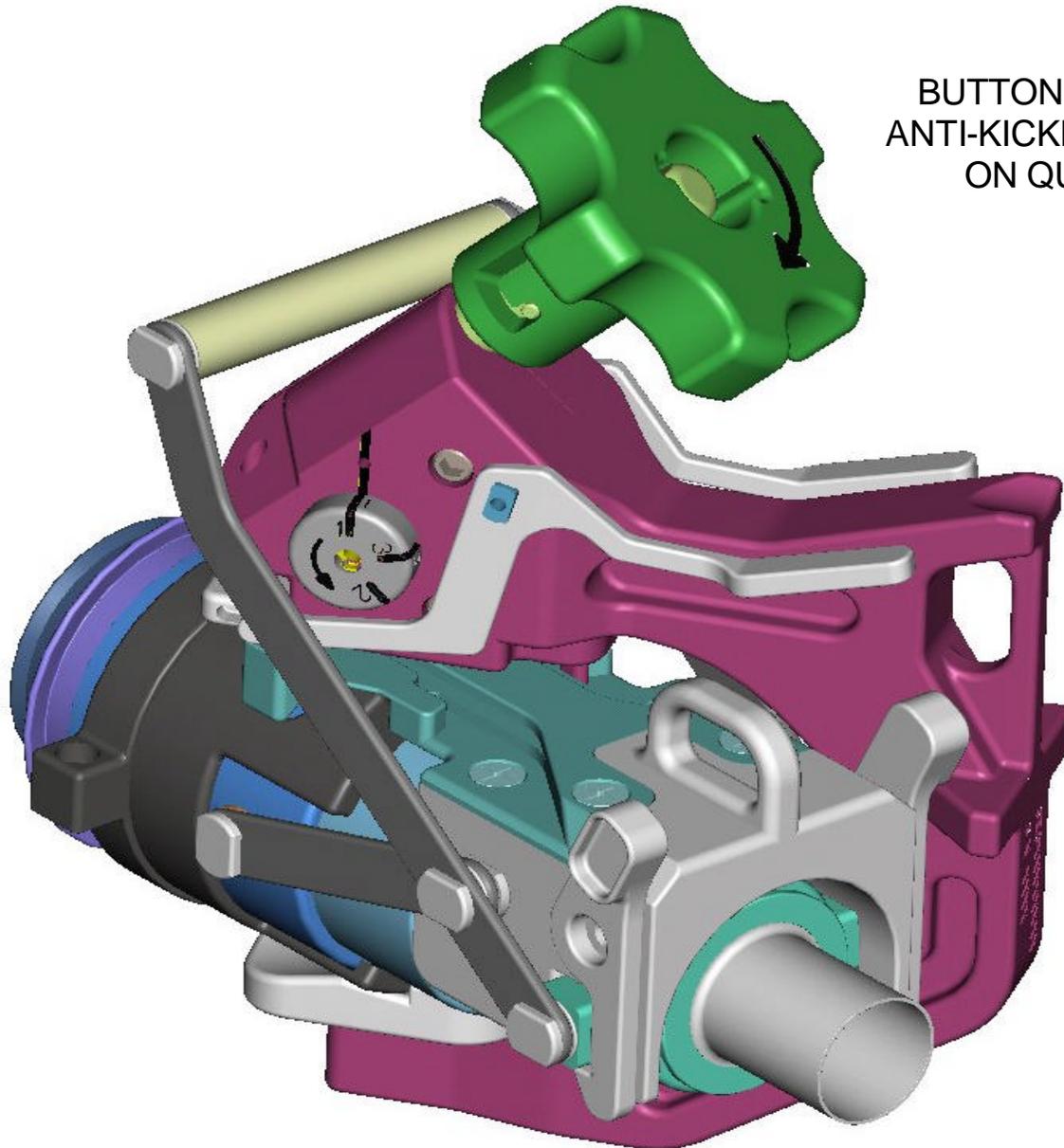




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BUTTON DEPRESS TOOL AND
ANTI-KICKBACK TOOL INSTALLED
ON QUICK DISCONNECT



EVA-17

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