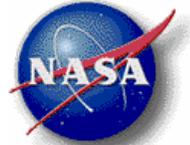




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### Upcoming Events:

- CAB Thermal Design Review – May 30-31 – Madrid, Spain
- Flight Vacuum Case Delivery (on dock at STADCO) – May 25, 2005 (at JSC by May 30)
- Technical Electronics Meeting (TEM) @ CSIST – June 7-10 – Taiwan
- STA Vacuum Case Delivery (on dock at STADCO) – June 14, 2005
- AMS General Technical Interchange Meeting (TIM) – July 25-29, 2005 – Geneva (CERN)
- AMS-02 Phase II Safety Review – Date TBD (Schedule under review) – JSC

### Upcoming Tests:

- High Rate Data Link (HRDL) Tests @ ISS Systems Integration Lab – July 2005 – JSC
- Interface Plate Static Test – Date TBD – Location TBD
- Lower Joint Static Test – Date TBD – Location TBD
- STA Acoustic Test – Date TBD – ESTEC, Noordwijk, Netherlands (Schedule under review)
- STA Sine Sweep Test – Date TBD – INFN, Terni, Italy (Schedule under review)
- Full Assembly Modal & Static Tests – Date TBD – IABG, Munich, Germany

### Status:

- Members of the ESCG AMS-02 Team hosted (and supported) the AMS Crew Operations Post (ACOP) Phase 0/I Payload Safety Review (PSR). The PSR was conducted in Training Room in ESCG Building 2.
- A materials derating list for the AMS-02 Payload Integration Hardware (PIH) cables was delivered to the JSC EEE (electrical, electronic, and electromechanical) parts organization for review.
- The analysis of the Payload Attach System/Ring Imaging Cherenkov Counter (PAS/RICH) Bracket Assembly was updated submitted for checking. The aluminum rivets attaching the PAS/RICH bracket to the Lower Centerbody were changed to monel rivets to increase the overall loads capacity at the joint.
- Work is continuing on the updates to the AMS bolt analysis to meet the requirements of NSTS 08307. ESCG personnel have provided the experimenters with the current bolt templates that satisfy NSTS 08307. The metric thread data file was completed and preliminarily tested with the bolt template. Nut, tap and insert templates will be incorporated into the metric thread file. In conjunction with the updates, ESCG personnel



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are working to answer questions from the experimenters on the bolt template. It is recommended that we begin working on Rev D of the template to incorporate several changes (including the metric thread data).

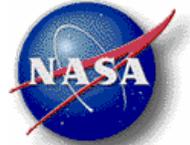
- Work continued on AMS-02 Power Distribution System (PDS) Critical Design Review (CDR) action items. Work was initiated on a presentation to detail the problems with, and proposed solutions for, the current delivery schedule for the PDS. Also, a top level AMS-02 schematic detailing bonding and grounding is in work.
- Match drilling operations are progressing on the Flight Vacuum Case (VC) and are scheduled for completion early in the week of May 9<sup>th</sup>. The Flight VC set up better than the Structural Test Article (STA), but the interface locations should be identical on both VCs. Once the Flight VC completes match drilling, the Interface Plates will be completed per the drawings and the VC will be disassembled and cleaned. The mating surfaces of the Outer Cylinder will be stripped of the bad Alodine and reworked.
- Updates to the VC weld fixture are in work. Design changes were incorporated into the fixture to facilitate assembly and provide additional protection for the VC and components during installation into the weld fixture.
- Helium leak testing of the STA VC was completed last on April 28. All seals passed the leak requirement. Documentation for the test was received from STADCO.
- The Rate-of-Rise Test for the STA VC was completed prior to the helium tests. The test report from STADCO is expected soon. Preliminary results are reported here: Prior to isolation of the STA VC, the vacuum level was approximately  $4 \times 10^{-6}$  torr. Two minutes after isolation, the level had risen to approximately  $5 \times 10^{-4}$  torr. At the end of 24 hours it had risen to approximately  $7 \times 10^{-3}$ . These results do not indicate a leak, but are indicative of more out-gassing. When the pump valves were opened and pump down commenced for the leak checks, the vacuum level decreased to approximately  $6 \times 10^{-7}$ . Due to this condition, the procedures for the Rate-of-Rise Test will be modified to add two isolations steps to allow the VC to out-gas prior to proceeding with the pump down. The STA VC will undergo another Rate-of-Rise Test after welding at STADCO. It will also undergo a leak check of the welds.
- Work was initiated on preparation of the test plans for the Modal and Static Tests for the AMS-02 Payload. Draft sections include introductions, objectives, test requirements, instrumentation, instrumentation requirements, and test support.
- Ceramaseal (AKA CeramTec) was contacted for information on high vacuum connectors for connecting the cryogenic accelerometers inside the Vacuum Case to the data collection system outside the VC.
- A preliminary assembly plan for the VC to Vacuum Case Test Fixture (VCTF) and a preliminary design for a guide/scuff plate for the installation of the VC into the VCTF were prepared and submitted for review.
- Four Discrepancy Reports (DRs) written against the Assembly Fixture were closed.
- Two Discrepancy Reports for the Centerbody Joints were dispositioned to add key locked inserts.



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- The design for the mass simulator required for the “dummy” Sine Sweep Test was updated and provided to drafting to incorporate into the models and drawings.
- Drawings released through the Engineering Drawing Control Center (EDCC):
  - Bushing Tool Assembly
- The Worksite Interface Fixture (WIF) adapter plate drawings and layouts were sent to the Stress Group for analysis.
- The Keel Block drawing and the Alignment Tool drawing, were submitted to the Electronic Drawing Release System (EDRS) for review, approval and release through the Engineering Drawing Control Center (EDCC).
- The USS-02 configuration drawing was revised as more testing and shipping arrangements were identified.
- The base blocks for securing screw jacks that will be used for USS-02 buildup were fit-checked. Since the jackscrew has irregular surfaces, the bolt length needs to be increased. A sketch was developed for the shop to modify existing bolts.