

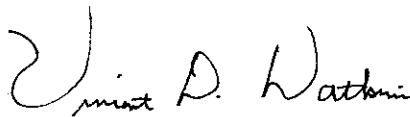
**National Aeronautics and Space Administration  
Washington, DC**

**RETURN TO FLIGHT  
TASK GROUP**

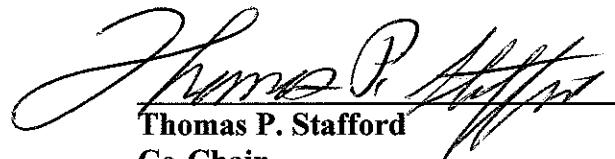
**June 8, 2005**

**Webster Civic Center  
Webster, Texas**

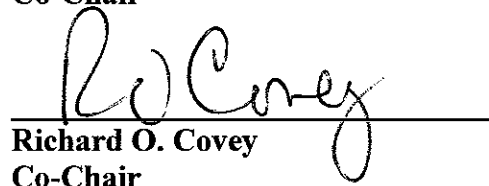
**MEETING MINUTES**

 *Vincent D. Watkins 6/22/05*

**Vincent D. Watkins  
Executive Secretary**



**Thomas P. Stafford  
Co-Chair**



**Richard O. Covey  
Co-Chair**

**RETURN TO FLIGHT (RTF) TASK GROUP**  
**Webster Civic Center**  
**June 8, 2005**

**MEETING REPORT**  
**TABLE OF CONTENTS**

Introductory Remarks	2
Management Panel Status	2
Operations Panel Status	5
Technical Panel Status	7
Action Items/Closing Remarks	8

Appendix A	Agenda
Appendix B	Task Group Membership
Appendix C	Meeting Attendees

*Meeting Report Prepared By:*  
*Paula Burnett Frankel, Consultant*  
*Infonetic*

***Return to Flight Task Group (RTF TG)***  
Webster Civic Center, Webster, Texas  
June 8, 2004

Introductory Remarks

Mr. Vincent Watkins, Executive Secretary of RTF TG, called the meeting to order, made introductory announcements, and introduced the members present at the meeting: Mr. Richard Covey (Co-Chairman), Lt. Gen. Thomas Stafford (Co-Chairman), Dr. Daniel Crippen (Lead of the Management Panel), Mr. Gary Geyer, Dr. Walter Broadnax, Ms. Susan Livingstone, Mr. Thomas Tate, Mr. Joseph Cuzzupoli (Lead of the Technical Panel), Dr. Charles Daniel, Mr. Sy Rubenstein, Mr. Benjamin Cosgrove, Mr. Richard Kohrs, Col. James Adamson (Lead of the Operations Panel), Mr. Robert Sieck, Col. Susan Helms, Dr. Kathryn Thornton, Dr. Kathryn Clark, Dr. Decatur Rogers, Mr. James Lloyd (Ex-Officio), and Mr. William Wegner (via teleconference).

Lt. Gen. Stafford (Co-Chair) and Mr. Covey (Co-Chair) welcomed attendees, public guests, and remote audiences and thanked all of the members of the Panels and the RTF TG staff for their efforts. Mr. Covey noted the RTF TG continues to participate in the activities of the Agency relative to its Charter. The limits of the Charter were to provide an assessment to the NASA Administrator on whether the actions taken by the Agency meet the intent of the Columbia Accident Review Board (CAIB) recommendations. Fifteen of the CAIB recommendations were designated "return to flight." The RTF TG expanded its activity to include a "Raising the Bar" activity on safe haven (Space Shuttle Program-3 [SSP-3], Contingency Shuttle Crew Support [CSCS]). The RTF TG has concluded most of its fact-finding on almost all of the 15 recommendations. Substantial progress has been made by the Agency and the RTF TG has reached a point where it can complete its assessments on a large number of the remaining recommendations. Mr. Covey indicated the RTF TG would discuss the three recommendations where the group has not completed its assessments and would identify milestones that must be achieved to complete the assessments. It is intended this will be the last face-to-face public meeting. Any subsequent public meetings will be virtual or telephonic in order to provide flexibility to disposition the open assessments before the Flight Readiness Review (FRR).

Management Panel Status

Dr. Crippen, Lead of the Management Panel, introduced the first Management Panel Recommendation, R6.2-1, Consistency with Resources, and reviewed the CAIB recommendation and the RTF TG interpretation. The CAIB recommended NASA adopt and maintain a Shuttle flight schedule that is consistent with available resources. A number of tools and processes have been created to monitor schedule. Resource constraints were not an apparent factor in NASA's return to flight response. However, future budget constraints will put pressure on future programs. In retrospect, expanding return to flight technical challenges, coupled with aggressive scheduling, possibly precluded more appropriate and time consuming approaches to return to flight. It is important at the beginning of large efforts, a well thought out plan be put in place. Dr. Crippen noted the Management Panel continues to be concerned about workforce skill mix for the future. There will always be pressure on the schedule, and aggressive scheduling must be recognized and mitigated by senior leadership. The Panel recommended the RTF TG accept NASA's implementation of CAIB R6.2-1. Mr. Covey asked for clarification on resource constraints. He noted options were not ruled out because of resource limitations. Dr. Crippen agreed as a single unique factor, cost was not a driver. Much more common was the failure to consider options because of time constraints.

Ms. Livingstone noted there was early guidance from the SSP that solutions were not to be precluded due to cost or schedule impacts. A number of the Management Panel members have been spent time at the field Centers asking questions about resources, and no one suggested to them there were resource constraints in considering options. Based on the closure package submitted by NASA, the Management Panel assessment, and the deliberations today, the RTF TG accepted NASA's request for closure of this recommendation.

Ms. Livingstone led the discussion on R6.3-1, Mission Management Team (MMT) Improvements. This was a very collaborative effort with active involvement of many Panel members. The RTF TG recognized this particular recommendation was the primary mechanism for many other recommendations and issues to come together. Ms. Livingstone acknowledged NASA for fully responding to Management Panel suggestions. This recommendation itself was fairly straightforward. The CAIB wanted to see training involve the fully panoply of

feeder groups as well as the MMT. The intent of the CAIB was more complex. The CAIB strongly criticized the MMT during the flight of STS-107. Criticisms included inexperience, lack of rigorous analytical work, and lapses in procedures, communications, and leadership. Within the MMT, there was not rigorous discipline and assessment of knowns and unknowns, limitations, etc., of information coming into the decision-making activity. The CAIB also criticized the limitations of the safety participants in the MMT. Finally, the CAIB found there were no effective avenues for dissent. In addition to these findings, the RTF TG recognized new capabilities, especially the challenges associated with integrated imagery and risk vs. risk trades. The Management Panel made some recommendations for additional actions for the MMT, e.g., closed lessons learned loop, metrics, and continuing improvement. NASA very quickly stepped out to address the CAIB recommendations. Actions were serious and extensive. MMT membership has been expanded and roles and responsibilities defined, standardized approaches adopted, and procedures exercised (13 MMT simulations). Some of the simulations have involved over 1,000 people. The most recent member added to the MMT has been the technical warrant holder. Also, formal advisory members have been added—representatives from the NASA Engineering and Safety Center (NESC) and the Safety and Mission Assurance (SMA) organizations. Simulations and training have been expanded exponentially. The MMT has also opened up a number of channels for dissent and concerns. Support and feeder groups have revised and improved their procedures as well. Shuttle and International Space Station (ISS) MMT's have co-trained and are standardizing communications and approaches. Ms. Livingstone acknowledged Ms. Christine Fox for the Integrated Vehicle Assessment Sub-Panel (IVASP) activity. She noted there would be a report from the IVASP at the next plenary meeting. In terms of fact-finding, the RTF TG has made a number of trips and attended meetings and simulations. The MMT has made notable progress and matured greatly. When the Shuttle launch was delayed, the MMT used the delay time to continue to improve and hold additional simulations. The MMT is a very effective organization. However, this is a journey, not an end. It is important NASA continue to develop and improve the process. Between now and Shuttle launch, there will be decisions that will affect the knowledge and analytical basis of the MMT. The MMT should have the understanding and confidence in the analytical bases that are coming in to them. The feeder group changes must be well known within the MMT. As noted earlier, the MMT must have continuing training and improvement. The support documents are living documents and will continue to need to be maintained. Another area of focus for the MMT is maturity of the capability for an integrated risk versus risk assessment process. The role of NASA Headquarters leadership has changed since Columbia. The SMA has suspension authority. The Independent Technical Authority could have issues. The implication of CSCS is not an MMT decision, but they must be able to make a recommendation on it. There is an opportunity for senior leadership to be part of the MMT training and simulations. Finally, there should be an annual independent evaluation of the MMT. The MMT is a good area for senior management to assess the workings of the Program. The Panel recommended the RTF TG accept NASA's implementation of R6.3-1.

In response to a question, Ms. Livingstone noted Mr. Gene Kranz had attended a MMT simulation and debriefed the MMT people on his assessment. Mr. Covey noted simulations are a part of the overall training and they have been important during this time period. Ms. Livingstone observed several simulations were paper simulations, but there have been a number of full-up simulations that have exercised the full organization in a number of areas. In addition, there have been component simulations. The MMT simulation training has provided a ripple effect in terms of keeping other groups exercised. Dr. Clark commented one beneficial outcome was the simulation necessitated having discussions that otherwise would not have been had. This was very important and gave everyone involved an understanding of what information was important. In response to a question regarding sustaining training with the increase in tempo as NASA returns to flight, Ms. Livingstone indicated the MMT has adopted a training approach that is sustainable. However, new member training and certification, plus on-going operations aspects, will be challenging and will require significant investment of time. Mr. Sieck added it is important the MMT has some process for self-assessment of performance so the discipline does not erode. Mr. Covey recognized the substantial effort Ms. Livingstone and other member of the Panel put into this recommendation. The bar was raised and the Agency responded. Based on the closure package submitted by NASA, the Management Panel assessments, and this meeting's deliberations, the RTF TG accepted NASA recommendation for closure of R6.3-1.

Dr. Crippen introduced R9.1-1, Detailed Plan for Organizational Change. This recommendation has several other recommendations embedded in it. R9.1-1 calls for a detailed plan, including the reorganizations called for in R7.5-1, Independent Technical Engineering Authority (ITEA), R7.5-2, Safety and Mission Assurance Organization, and R7.5-3, Space Shuttle Integration Office reorganization. The Management Panel felt NASA has met the intent of the CAIB on R9.1-1, as it has prepared a detailed Plan. Mr. Covey noted the embedded recommendations 7.5-1, 7.5-2, and 7.5-3 were not return to flight because the CAIB recognized time would be required to make substantial organizational changes. To date, substantial progress has been made in implementing these changes. Subsequent to the CAIB recommendation, the NASA Administrator called for the implementation of R7.5-1 prior to return to flight. Dr. Crippen showed the CAIB Recommendations on R7.5-1. The Panel has held NASA to these particular tasks. Ultimately, the ITEA has been modeled in part after a Navy Program in which there is a single authority (the Chief Engineer) for maintaining technical standards. The Chief Engineer has delegated that authority through technical warrant holders, who are experts on particular issues. The warrant holder has the authority to waive or hold the technical requirements. The CAIB was interested in trying to separate the responsibility for schedule and cost from technical requirements. They felt it was an inherent conflict of interest for the Program to manage schedule and budget and also have the authority to waive requirements. Dr. Crippen described the technical authority flow. As part of the organizational change, NASA undertook another activity—to create the NESC. This organization contains experts that respond to the Chief Engineer, the SMA organization, and the Program to help with assessments. It reports to the Chief Engineer. The NASA Administrator enunciated five principles for the ITEA, and these principles have been followed and are consistent with the CAIB recommendation. The Management Panel feels the construct is fully consistent with the CAIB's recommendation, although some details of implementation have yet to be worked out. It is expected the Chief Engineer will issue a report on the status of waivers prior to return to flight. In response to a question, Dr. Crippen indicated the report is expected at FRR and should include the status of all waivers.

The second piece of the CAIB recommendation was to have a SMA organization that has direct line authority over the entire SSP safety organization and is independently resourced. NASA has consciously chosen to not fully comply with the CAIB. NASA's implementation has been quite extensive. Funding now comes through the Chief of the SMA organization, and then he has more influence over who the Center representatives are. However, NASA has concluded "direct line authority" is not the appropriate line of authority. Therefore, the reporting relationship is not direct—it is through the Center Directors. NASA feels Center Directors need to be involved in the safety operation of their Centers and the programs under their purview. However, the intent of the CAIB in making the safety organization independent of the SSP has been accomplished. The Centers feel their organizations have been reinvigorated and there has been considerable morale improvement. In response to a question from Mr. Covey, Dr. Crippen noted he had two conversations with a CAIB member regarding what "direct line authority" meant. It is clear that the CAIB meant "reporting to NASA Headquarters." However, Dr. Crippin indicated he has not had the opportunity to go back and discuss implementation with any of the CAIB members. NASA strongly believed the Center Directors should be kept "on the hook" for safety. In summary, much of the intent of independence has been met, although direct line authority is not the mechanism NASA has elected to use to achieve that. Mr. Lloyd added NASA wants to make sure the safely line organization has responsibility for safety. NASA feels the arrangement it chose is the best one to keep the proper balance and healthy tension between the organizations.

The last piece of the recommendations was to reorganize the Space Shuttle Integration Office to make it capable of integrating all elements of the Program, including the Orbiter. NASA's response to this recommendation was very fast. The Program established the Space Shuttle System Engineering and Integration Office (SEIO), and this organization has taken charge of the entire review process for return to flight. It has undertaken modeling and has reorganized and revitalized the Integration Control Board. In most ways, NASA has responded to the recommendation, and the SEIO efforts have contributed greatly to return to flight. The one hesitation to full endorsement is there are areas that need continuing development and improvement, e.g., documentation. Dr. Daniel noted the SEIO has been actively involved in other on-going elements of the Shuttle besides those that have been under review by the RTF TG.

Dr. Crippen observed it will take continuing vigilance by senior management and others to ensure the changes are maintained and improvement continues. The Management Panel recommended the RTF accept NASA's implementation of CAIB R9.1-1. Mr. Covey noted the RTF TG has established a relationship with the Aerospace Safety Advisory Panel (ASAP) and has identified actions that should be transitioned to the ASAP. Dr. Crippen indicated it is anticipated that R7.5-1 and R7.5-2 are items for hand-off to ASAP. ASAP has been briefed several times on the ITEA structure and will be amenable to continuing to monitor this activity. Ms. Livingstone added the ASAP is also interested in the SEIO as a maturing model for the agency. Based on the closure package submitted by NASA, the Management Panel assessment, and deliberations at this meeting, the RTF TG accepted NASA's request for closure of R9.1-1.

The Management Panel activity is now complete. Mr. Covey commended the Panel for its diligence and approach in addressing all of the recommendations.

#### Operations Panel Status

Col. Adamson introduced the seven recommendations undertaken by the Operations Panel. Three of these recommendations have already been closed. R3.4-1, Ground-Based Imagery, was conditionally closed in December 2004 and was presented again for complete closure today, along with R3.4-3, On-Orbit Imagery. SSP-3 was not a CAIB Recommendation—it was a Raise the Bar activity initiated by NASA. Finally, the Operations Panel provided the status of R6.4-1, Thermal Protection System (TPS) Inspection and Repair, which the Operations Panel worked in conjunction with the Technical Panel.

Mr. Sieck discussed R3.4-1, Ground-Based Imagery. The CAIB found a lack of imagery hampered the Columbia investigation, and recommended the ground-based imagery system be upgraded to provide useful views of the Shuttle from lift-off to Solid Rocket Booster (SRB) separation. NASA has invested considerable resources in upgrading the capability. When the recommendation was conditionally closed, the open items related to documentation of requirements and status reporting and certification of readiness. The documentation is now complete and the launch procedure contains reporting protocol. NASA has met the intent of the CAIB recommendation, and the Operations Panel recommended the RTF TG accept NASA's response to the recommendation. Mr. Sieck made two additional observations. The approach to documenting the requirements provides launch management awareness of the status of these assets, but it does not require a Launch Commit Criteria waiver to proceed with less than three useful views. Also, the Shuttle should be treated as a development vehicle with its performance measured for all missions. In response to a question, Mr. Sieck noted the ground-based assets are planned to continue; the airborne assets are leased, and will go away after the flight. Based on the closure package submitted by NASA, the Operations Panel assessment, and the deliberations at this meeting, the RTF TG accepted NASA's request for closure of R3.4-1.

Mr. Sieck also discussed R3.4-3, On-Orbit Imagery. The CAIB recommended a capability to obtain and downlink high-resolution images of the underside of the Orbiter Wing Leading Edge (WLE) and forward sections of both wings. The Program added the Orbiter Boom Sensor System (OBSS) to the Shuttle. This was a significant modification to the Orbiter. The primary purpose of the boom is to provide imaging of the WLE and underside of the Orbiter. The management of the data will be discussed in a later recommendation. In addition to the OBSS, NASA added some cameras to the SRB's to observe the External Tank (ET) area and underside of the Orbiter. This is supplemental information to help make decisions on orbit. The boom has two sensor packages that will provide high-resolution imagery—the Laser Dynamic Range Imager and the Laser Camera System. The resolution of these packages is an on-going activity. Since this is a very sophisticated system, there are a lot of operational techniques that must be refined to ensure all viewing angles. This work is on-going. The real performance of the boom will not be fully known until it is tested on orbit. There will be a significant data collection and data analysis activity. In response to a question on MMT, Ms. Livingstone indicated an operation and integration plan for data assessment is in place and the MMT is robust enough to address the analyses. Mr. Sieck noted the forward work related to on-orbit imagery. The Panel has full expectation the Program will get through the planned activities. He indicated the Panel assessment is complete and NASA has met the intent of the CAIB recommendation. There is still an unknown relative to the on-orbit resolution. The certified resolution does not meet the critical damage size criteria. Ms. Livingstone noted other payloads will not be able to be used when the boom is in use. Mr. Sieck observed there

is a plan to take the boom off downstream; however, NASA has a roadmap for a plan to provide the viewing capability when the boom is removed. Mr. Sieck stated the Panel recommends closure of this recommendation, with the provision the forward work will be completed. Based on the closure package submitted by NASA, the Operations Panel assessment, and the deliberations at this meeting, the RTF TG agreed NASA has met the intent of the CAIB recommendation and accepted NASA's request for closure of R3.4-3.

Col. Helms discussed SSP-3, CSCS. The CSCS was not required by the CAIB for return to flight, but the CAIB Report indicated safe haven would be a prudent thing for NASA to address. When NASA committed to making a rescue Shuttle available for the first two return-to-flight missions, the RTF TG decided to include this activity in its assessment. Col. Helms reviewed NASA's Implementation Plan for SSP-3. Through the process of evaluating SSP-3, the RTF TG developed five criteria and used these for assessment: (1) explanation of the role CSCS plays in NASA risk management framework; (2) a dynamic, robust analytic process for estimating available CSCS duration; (3) a viable plan for launching a rescue Shuttle, including undocking and de-orbiting a damaged Shuttle; (4) integration of CSCS into the launch process and relevant documents; and (5) appropriate consideration of CSCS in the MMT decision process. Col. Adamson noted CSCS duration capability is dynamic and will change from day to day. Col. Helms stated the ISS team did a great piece of work and the process is dynamic. She reviewed each of the assessment conditions. CSCS is a contingency plan of last resort. It is expected this option is extremely low probability and NASA did a good job in laying out the boundaries and how it was placed in overall risk. It is not a primary control for the hazard of debris shedding. Although the MMT would make a CSCS recommendation, the final CSCS decision would be made at the Agency level. As noted earlier, the analytic process for estimating available CSCS duration was extremely well done. The next formal review will be at FRR. The viable plan for launching a rescue Shuttle and undocking a damaged Shuttle has also been well done. The current processing estimate for STS-300 is about one month. In response to a question, Col. Helms noted the Program is aware of the rules that might need to be suspended, if necessary, e.g., night launch constraint. The key part is understanding the additional risk in waiving rules. In response to a question, Col. Helms indicated the one-month constraint for STS-300 processing appears to be driven by crew training. Mr. Wayne Hale has agreed to take an action to look into this. Col. Helms emphasized the CSCS is not a certified capability. It is one-fault tolerant in many areas. The MMT Simulation Number 13 included a robust discussion of CSCS and exercised the decision-making process for this option. NASA has presented a closure package that answers all of the data calls and is acceptable. The Panel assessment is complete. NASA set a raising the bar goal and exceeded it by a significant margin. Col. Helms recommended the RTF TG close this recommendation. Mr. Covey commended Col. Helms and Dr. Amy Donahue for working the assessment structure for CSCS on behalf of the RTF TG. Based on the closure data submitted by NASA, the assessments completed to date, and the deliberations at this meeting, the RTF TG accepted NASA's request to close this recommendation.

Col. Adamson noted there was one other Operations Panel recommendation for statusing at this meeting—R6.4-1, TPS On-Orbit Inspection and Repair. Dr. Thornton reviewed the CAIB recommendations and the RTF TG interpretation. She stated each of the repair options in the suite of options that constitutes the repair capability must be sufficiently tested and vetted so NASA would implement it in an emergency situation with confidence that it would behave as expected. Dr. Clark noted how to interpret the CAIB recommendation had been debated within the RTF TG. The issue is the degree to which the capability must be tested and vetted and where to draw the line. Dr. Thornton felt at a minimum, the level should be through the Critical Design Review (CDR). Col. Adamson added if not total certification, the RTF TG would like to at least to have verification and testing that NASA would implement the procedures. Dr. Thornton noted the RTF TG interpretation is somewhat divided on this issue. Dr. Daniel observed NASA has made a conscious decision not to proceed with hardening Reinforced Carbon-Carbon (RCC), and the Program is on a path where these repair techniques will be brought to an acceptable level of maturity to call it a capability. However, each of the five techniques is at a different level of testing and maturity. Mr. Covey noted the intent of the status today was to show adjustments to the RTF TG position. Fact-finding and review has not been completed. The RTF TG has set a high mark for the Program. There is a lot of subjectivity around the intent of the CAIB recommendation and the Task Group is not unanimous on this point. Mr. Covey added the majority of the RTF TG agreed to the words presented today. Dr. Clark questioned what "sufficiently tested and vetted" means. She felt it is a fair request to expect NASA to get to CDR. Col. Adamson noted there is not sufficient information to complete the discussion at this time. He opined there is no way to assess confidence at

the CDR and Dr. Clark concluded that something beyond CDR might be what the Panel feels is needed. Mr. Sieck added he would expect a "real" CDR plus informational background. Dr. Thornton stated the Panel agreed on most of the conclusions. The only point of dispute is what constitutes a capability versus an experiment. Everyone agrees NASA has put forth heroic effort towards TPS on-orbit repair. By the next plenary, the Panel will complete its assessment and bring forward its recommendation to the RTF TG. The recommendation remained open at this time.

#### Technical Panel Status

Mr. Cuzzupoli reviewed the Technical Panel recommendations. Three were closed in December 2004. As noted, R6.4-1 will remain open to be discussed at the next plenary. The final reviews related to the debris shedding recommendation will be held later in June. The Technical Panel will meet on June 25 to discuss the outcome of the reviews and bring its assessment to the RTF TG on June 27.

Mr. Kohrs discussed R3.2-1, ET Debris Shedding. He reviewed the CAIB recommendation and the RTF TG interpretation. The RTF TG included both foam and ice in critical debris. Mr. Kohrs briefly described the ET design changes for debris reduction. In the tanking test in mid-April, ice was observed and the debris assessment team determined ice coming off this area was unsatisfactory. The Program decided to add a heater to the forward bellows. This caused the launch slip from May to July. The SSP decided to swap out the ET. The new ET added heaters on the forward bellows and includes development flight and instrumentation. Monte Carlo assessments of the debris environment are on-going and will be resolved at the Design Verification Review (DVR) on June 24. The Design Certification Review on the bellows heater is June 20. The closure packages from these final reviews will determine the Technical Panel's final assessment and the Panel will bring its recommendation to the RTF TG at the next plenary. This recommendation will stay open.

Mr. Rubenstein discussed R3.3-1, Orbiter Hardening. The CAIB recommendation was to imitate a program to increase the Orbiter's ability to withstand minor debris damage. The Program to increase capability was phased. The first phase was to develop a detailed test, modeling, and analysis program to determine the actual impact resistance of current materials and the effect of likely debris strikes. The long-term phase was to pursue RCC hardening. Currently, there are no concrete plans for RCC hardening and that part of the plan is in hiatus. Mr. Rubenstein emphasized the detailed test, modeling, and analysis program was a new program. Four hardware changes were made and installed and should be certified by June 22. Mr. Rubenstein discussed the hardware changes. The tile and RCC impact test programs are complete. The Program has moved from the classical deterministic assessments used in certification to a statistical approach in order to better assess risk. Over the course of the last month, various peer reviews of the models have been conducted. Results are expected at the June 24 DVR. The Program is currently on schedule to meet the July 13 launch date. NESC has been performing extensive review. Because it is important to understand the numbers, the Technical Panel recommended keeping this recommendation open until the Panel completes its assessment of the results presented at the DVR. The Panel will present its assessment to the RTF TG at the next plenary. In response to a question, Mr. Rubenstein noted when the NASA Administrator announced the SSP would be phased out in 2010; the plan for RCC hardening was halted.

#### Closing Remarks

Mr. Covey acknowledged support of the RTF TG staff over the duration of its activity: Mr. David Drachlis, Ms. Sharon Martin, Ms. Tamara West, Ms. Shannon Bach, Ms. Paula Frankel, Ms. Kitty Rogers, Ms. Susan Stone, Ms. Lillian Hudson, Mr. Dennis Jenkins, Ms. Malise Fletcher, Ms. Barbara Teague, Mr. George Mueller, Mr. Thomas Diegelman, Ms. Susan Mauzy, Maj. Gen. Joe Engle, Ms. Jennifer Lestourgeon, and Mr. Vincent Watkins. Lt. Gen. Stafford also thanked the RTF TG member and staff for their efforts. Mr. Covey added substantial progress has been made by the RTF TG and it is indicative of the progress the Program has made. The RTF TG needs to come to agreement on the final disposition of its work. It is expected that sufficient information will be available to complete its assessments before FRR.

Mr. Watkins announced the Media Press Conference would begin at 1 PM. The meeting was adjourned at 11:35 AM.



**Public Meeting Agenda**  
**June 8, 2005**  
**Webster Civic Center, Webster, Texas**

- 0800 – 0805     Administrative Remarks  
                  Mr. Vincent Watkins – Executive Secretary
- 0805 – 0810     Introductory Remarks  
                  Mr. Richard Covey – Co-Chair
- 0810 – 1010     Management Panel Fact-Finding Status  
                  Dr. Dan Crippen
- 1010 – 1120     Operations Panel Fact-Finding Status  
                  Col. James Adamson
- 1120 – 1140     Technical Panel Fact-Finding Status  
                  Mr. Joseph Cuzzupoli
- 1140 – 1150     Action Item Summary and Closing Remarks  
                  Mr. Richard Covey – Co-Chair

## **RTF Task Group Membership**

**Co-Chairs:**

Lieutenant General Thomas Stafford, USAF (Ret.), Chairman, NASA Advisory Council Task Force on International Space Station Operational Readiness (Stafford Task Force), President, Stafford, Burke & Hecker Inc., Astronaut (Gemini 6A, Gemini 9A, Apollo 10, CDR of the Apollo-Soyuz Test Project)  
Mr. Richard Covey, Vice President, Support Operations, Boeing Homeland Security and Services, Astronaut (STS-51-I, STS-26, STS-38, STS-61)

**Members:**

Colonel James Adamson, USA (Ret.), CEO, Monarch Precision, LLC, Astronaut (STS-28 & 43)  
Major General William Anders USAF (Ret.), Retired Chair and CEO of General Dynamics Corporation, Astronaut (Apollo 8)  
Dr. Walter Broadnax, President, Clark Atlanta University  
Dr. Kathryn Clark, President, Docere Company, Consultant in science and education  
Mr. Benjamin Cosgrove, Senior Vice President, Boeing Commercial Airplane Group (Retired)  
Dr. Dan Crippen, Former Director of the Congressional Budget Office  
Mr. Joseph Cuzzupoli, Vice President and K-1 Program Manager, Kistler Aerospace Corporation  
Dr. Charles Daniel, Engineering Consultant, Stafford –Anfimov Task Force  
Dr. Amy Donahue, Assistant Professor of Public Administration, University of Connecticut, Member Aerospace Safety Advisory Panel  
General Ronald Fogleman, USAF (Ret.), President and COO of Durango Aerospace Incorporated  
Ms. Christine Fox, President, Center for Naval Analyses  
Mr. Gary Geyer, USAF (Ret.), Aerospace Consultant, Served for 26 years with the NRO  
Colonel Susan Helms, USAF, Deputy Director of Operations, Technical Training, Headquarters Air Education Training Center, Randolph Air Force Base, Texas, Astronaut (STS-54, STS-64, STS-78, STS-101, ISS-2)  
Mr. Richard Kohrs, Chief Engineer, Kistler Aerospace Corporation  
Ms. Susan Livingstone, Former Under Secretary of the Navy  
Mr. James Lloyd (Ex-Officio Member), Deputy Chief Safety and Mission Assurance Officer, NASA Headquarters  
Lieutenant General Forrest McCartney, USAF (Ret.), Aerospace Consultant, Former Director of Kennedy Space Center  
Dr. Rosemary O’Leary, Distinguished Professor of Public Administration, Syracuse University  
Dr. Decatur Rogers, Dean Tennessee State University, College of Engineering, Technology and Computer Science  
Mr. Sy Rubenstein, Aerospace Consultant, Former (Ret) President Rockwell International Space Division.  
Mr. Robert Sieck, Aerospace Consultant, Former Director of Shuttle Processing, Kennedy Space Center  
Mr. Thomas M. Tate, Retired former Vice President of Legislative Affairs for Aerospace Industries Association  
Dr. Kathryn Thornton, Professor, University of Virginia School Engineering & Applied Science, Astronaut (STS-33, STS-49, STS-61)  
Mr. William Wegner, Consultant, Former Deputy Director to Admiral Rickover in Nuclear Navy Program

### **Task Group Support**

Executive Secretary: Mr. Vincent Watkins, NASA Johnson Space Center  
Astronaut Representative: Col. Michael Bloomfield, NASA Johnson Space Center

**RETURN TO FLIGHT (RTF) TASK GROUP**  
**Webster Civic Center, Webster, Texas**  
**June 8, 2005**

**MEETING ATTENDEES**

*RTF Task Group Members:*

Richard Covey (Co-Chair)  
Thomas Stafford (Co-Chair)  
James Adamson  
Walter Broadnax  
William Anders  
Benjamin Cosgrove  
Kathryn Clark  
Dan Crippen  
Joseph Cuzzupoli  
Charles Daniel  
Gary Geyer  
Susan Helms  
Richard Kohrs  
Susan Livingstone  
James Lloyd (Ex-Officio)  
Decatur Rogers  
Sy Rubenstein  
Robert Sieck  
Thomas Tate  
Kathryn Thornton  
William Wegner (*attended via telecon*)

*Affiliation:*

Boeing Homeland Security and Services  
Stafford, Burke & Hecker, Inc.  
Monarch Precision, LLC  
Clark Atlanta University  
Consultant  
Boeing Company  
Docere  
Consultant  
Kistler Aerospace  
Duberstein Group  
Consultant  
Randolph Air Force Base  
Kistler Aerospace  
Consultant  
NASA Headquarters  
Tennessee State University  
Consultant  
Consultant  
Consultant  
University of Virginia  
Consultant

*NASA Attendees:*

Ronnie Lanier  
James Blair  
Roger Galpin

NASA/JSC  
NASA/JSC  
NASA/JSC

*Other Attendees:*

Vincent Watkins  
Gina Sunsari  
Mark Carreau  
Daniele Laurini  
Michael Currie  
Jason Whitely  
Lynn Roder  
Dave Einsiel  
John Marinaro  
Bruce Nichols  
Isao Kanazawa  
Traci Watson

NASA/JSC  
ABC News  
Houston Chronicle  
ESA  
USA  
KHOU TV  
KHOU TV  
Getty Images  
ASAP  
Dallas Morning News  
JAXA  
USA Today

Bill Adkins  
Ken Monroe  
Gerald Griffith  
Dennis Jenkins  
S. Yu  
Steve Ueckert  
Joe Engle  
Shannon Bach  
Barbara Teague  
Susan Mauzy  
Ned Mueller  
Susan Stone  
Kitty Rogers  
Paula Frankel  
Tom Diegelman  
Tammy West  
Frank Perez  
Conley Perry  
Shannon Runyor  
Pam Easton  
Ben Lutman  
Kevin Quinn  
Frank Hughes  
Robert Pearlman  
Yoshie Osaki  
Mark Evangelisia  
Pat Sullivan

House Science Committee  
House Science Committee  
JAI  
RTF TG support  
[not affiliated]  
Houston Chronicle  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
RTF TG support  
Perez Technologies, Inc.  
self  
KHWB 39  
Associated Press  
KTRK 13  
KTRK 13  
Tietronix  
Collectspace  
JAXA  
Clear Lake Citizen  
AP