

National Aeronautics and Space Administration

**NASA Advisory Council Task Force
on
International Space Station Operational Readiness**

**October 16, 2002
NASA Headquarters
Washington, DC**

MEETING REPORT



Original signed by

K. Lee Pagel
Executive Secretary

Original signed by

Thomas P. Stafford
Chairman

**NASA ADVISORY COUNCIL TASK FORCE ON INTERNATIONAL
SPACE STATION OPERATIONAL READINESS**

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Mr. Lee Pagel, Executive Secretary of the NASA Advisory Council (NAC) International Space Station Operational Readiness (IOR) Task Force, welcomed the participants to the open meeting and called roll.

Background

Task Force Chairman Lieutenant General Thomas P. Stafford, USAF (Ret.), presided and gave the following remarks:

Good afternoon and welcome. Thank you for participating in the open meeting of the NASA Advisory Council Task Force on International Space Station Operational Readiness. At the request of NASA Administrator Sean O'Keefe and Rosaviakosmos Director General Yuri Koptev, the Task Force Working Group held discussions last week with experts from the United States and Russia to assess the safety and operational readiness of the International Space Station's Expedition 6 mission. Specifically, we reviewed the safety and readiness of the International Space Station, the health and flight readiness of the Expedition 6 crew, and the readiness of flight control centers in both Houston and Moscow.

Based on this review, the Working Group found that:

- *the International Space Station is safe and operationally ready to support the continued permanent presence of humans in space;*
- *the Expedition 6 crew is medically certified for flight and fully trained to successfully perform their long-duration mission; and*
- *the American and Russian flight control teams, in the Mission Control Centers in Moscow and Houston, are focused and ready to support the flight.*

The findings of this report were discussed at meetings in Moscow from October 9 through the 11, 2002. The assessment of the Task Force included a teleconference with NASA experts from the Johnson Space Center. Our assessment also included meetings with experts from the Rocket Space Corporation-Energia, the Gagarin Cosmonaut Training Center, TsNIIMash, and Mission Control Center – Moscow. In performing our assessment of the Expedition 6 mission, we received briefings on the following subjects:

- *Crew training status*
- *Control Moment Gyro (CMG) failure*
- *Carbon Dioxide Removal Assembly (CDRA) status*
- *Metox regenerative canister status*
- *Mission Control Center (MCC) status, both Houston and Moscow*
- *Treadmill with Vibration Isolation System (TVIS)*

- *Acoustic conditions on the International Space Station*
- *Beta Gimbal Assembly (BGA)*
- *Briefing on Expedition 4 by Commander Yuri Onufrienko*
- *Space Shuttle Main Propulsion System flowliner status*
- *KSC Crawler-Transporter status*
- *Progress M1-7 docking anomaly*
- *Elektron system status*

From these briefings, the Working Group agreed on the following:

Crew Training

The Gagarin Cosmonaut Training Center reported on the status of crew training for Expedition 6. No major issues were presented, and the crew is trained and prepared for its mission. The Joint Commission is confident that the relatively late crew change-out of Don Thomas with his back-up, Don Pettit, was performed with minimum impact, and that the crew training, integrity, and capabilities are uncompromised. The respective Russian and US training personnel as well as the Expedition 6 crew are to be commended for accommodating this late change-out.

Treadmill with Vibration Isolation System (TVIS)

The status of this system was briefed to the Task Force in detail and discussed by the members. We are still concerned about the ability of TVIS to continue to provide the full range of capabilities required by the flight plan. We also received a briefing on the status of ongoing feasibility studies, with the participation of Russian specialists.

The Working Group found that progress is being made towards integrating the Russian BD-1 treadmill onto the TVIS chassis as a backup to the American TVIS. We encourage both the Russian and US specialists to continue their efforts in this area.

Acoustic Conditions

Acoustic levels on the International Space Station remain a concern to the Task Force. RSC-Energia specialists presented the current state of remediation plans for noise levels on the ISS. The Task Force agrees with the plan of RSC-Energia to reduce noise levels on the ISS. In particular, noise levels in the sleeping station of the Zvezda service module should receive the highest priority.

Metox Canister Regeneration

The Task Force reviewed progress made in understanding the cause of the strange odor from the Metox canister regeneration. Presentations were made by both the Russian and American specialists on the status of resolving this problem. We recommend that toxicology experts from both partners meet to discuss this problem in greater detail and bring it to resolution.

Mission Control Center Readiness

The Joint Commission believes that the Russian and American flight control teams are fully prepared to perform the Expedition 6 mission. Flight procedures for the mission are in place and have been thoroughly exercised. Both Mission Control Center facilities are in excellent working condition; fully staffed with certified controllers.

A handover of lead center control from MCC–Houston to MCC–Moscow occurred recently as a contingency step due to a hurricane near Houston. This effort was briefed to the Working Group. This transition went well, and control was transferred successfully. This exercise was important not only from a safety standpoint, but also demonstrated the robustness of having a backup command and control center in the ISS program. As may be expected, the transition of control was not perfect, and the procedures are being analyzed for future improvements.

Summary

The briefings provided to the Task Force Working Group on the ISS and crew preparations were comprehensive and complete. In response to questions submitted by the Working Group, open and candid discussions were achieved.

Gen. Stafford asked the participants if they had any questions or objections to the finding. As there were no questions from the participants and no objections to any of the Working Groups findings, Gen. Stafford concluded his remarks by stating:

As a result, based on the assessment of the Working Group, the Task Force believes that the Expedition 6 crew will be fully prepared to successfully perform their mission and the ISS will be ready to accommodate its newest crew by the scheduled launch date of November 10, 2002.

If the Working Group should develop any concerns as we proceed toward launch of the Expedition 6 crew, we will, of course, contact NASA and the Task Force immediately.

Thank you for your time.

The meeting adjourned at 1:20 p.m., Eastern Daylight Time.

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Task Force on International Space Station Operational Readiness
October 16, 2002
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Washington, DC

Task Force Membership

Chairman

Lt. Gen. Thomas Stafford, USAF (Ret.)

Members

Col. James Adamson, U.S. Army (Ret.)
Mr. Percy Baynes
Dr. Kathy Clark
Mr. Benjamin Cosgrove
Mr. Joseph Cuzzupoli
Dr. Charles Daniel
Dr. Craig Fischer
Dr. Michael Greenfield
Mr. J. Milt Heflin
Dr. Daniel Heimerdinger
Maj. Gen. Ralph Jacobson, USAF (Ret.)
Lt. Col. Steve Lindsey, USAF
Dr. Ronald Merrell
Mr. David Mobley
Dr. Arnauld Nicogossian
Dr. Shawn Rahmani
Capt. John Young, USN (Ret.)

Technical Advisors

Maj. Gen. Joe Engle, USAF (Ret.)
Mr. Mark Thiessen

Executive Secretary

Mr. Lee Pagel

Asst. Executive Secretary

Ms. Holly Stevens

Attachment B

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Meeting Attendees

Stafford Task Force Representatives

Chairman, Lt. Gen. Tom Stafford, USAF (Ret.), via teleconference
Colonel Jim Adamson, USA (Ret.), via teleconference
Dr. Kathy Clark – via teleconference
Mr. Joe Cuzzupoli – via teleconference
Dr. Chuck Daniel – via teleconference
Dr. Craig Fisher – via teleconference
Dr. Daniel Heimerdinger – via teleconference
Maj. Gen. Ralph Jacobson – via teleconference
Dr. Ronald Merrell – via teleconference
Mr. David Mobley – via teleconference
Dr. Arnauld Nicogossian – via teleconference
Dr. Shawn Rahmani – via teleconference
Capt. John Young, USN (Ret.) – via teleconference

Stafford Task Force Technical Advisors

Maj. Gen. Joe Engle, USAF (Ret.) – via teleconference
Mr. Mark Thiessen – via teleconference

Task Force Executive Secretary

Mr. Lee Pagel – via teleconference

Task Force Asst. Executive Secretary

Ms. Holly Stevens – via teleconference

Others

Mr. Brett Davis, Aerospace Daily – via teleconference
Ms. Jennifer Troxell, DFI International – via teleconference