

National Aeronautics and Space Administration

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

March 12, 1999
NASA Headquarters
Washington, D.C.

MEETING REPORT



Original Signed by

Philip Cleary
Executive Secretary

Original Signed by

Thomas P. Stafford
Chairman

NASA ADVISORY COUNCIL TASK FORCE ON INTERNATIONAL SPACE STATION
OPERATIONAL READINESS

March 12, 1999
NASA Headquarters
Washington, D.C.

MEETING REPORT
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Meeting Report

Assembly and Identification of Participants

Mr. Philip Cleary, Task Force (TF) Executive Secretary, identified the participants who were attending the meeting in person or via teleconference.

Opening Remarks

Lt. General Thomas P. Stafford, USAF (Ret.), Chairman of the TF, thanked everyone for taking part in the open meeting. He stated that the purpose of this meeting is to review the results of the NASA-Russian Space Agency (RSA) assessment of the capability and feasibility of transferring equipment from the Mir to the ISS.

Background

General Stafford explained that during the TF/Advisory Expert Council (AEC) meeting held on December 2, 1998, NASA Administrator Daniel Goldin and RSA Director Yuri Koptev requested that the TF-AEC review the NASA-RSA joint assessment of the capability and feasibility of using the Shuttle to transfer equipment from the Mir to the ISS.

On February 24, 1999, in Moscow, Russia, Mr. Keith Reiley/NASA and Dr. Leonid Gorschkov/RSA briefed the TF-AEC Working Groups on the assessment by NASA-RSA. Included in the discussion, and in full agreement with the assessment, were representatives from Energia, TsNIIMash, and the Science & Technology Coordination Council for the RSA/Russia Academy of Science.

NASA-RSA Finding

The joint NASA-RSA assessment and recommendation stated that the scientific yield and economics do not justify another Shuttle flight to Mir for the purpose of delivering equipment to ISS.

According to the NASA-RSA evaluation teams, an assessment of the cost effectiveness showed that Energia's estimated value of returnable hardware on Mir (with sufficient life and easily disassembled to pass through the vehicles hatches) is approximately \$60 million; the cost of a Shuttle flight is approximately \$420 million.

Adding a Shuttle flight to Mir would have required very aggressive schedules that would detract from important preparations for upcoming ISS launches. It would also require vehicle configuration changes, which would then necessitate significant engineering and flight production modifications by the ISS and Shuttle teams.

TF-AEC Efforts

General Stafford stated that the TF-AEC monitored the NASA/RSA assessment as it was conducted. Additionally, TF members Dr. Craig Fischer and Dr. Ronald Merrell held independent fact-finding assessments. General Stafford requested that Dr. Fischer and Dr. Merrell review their findings.

Review by Dr. Craig Fischer and Dr. Ronald Merrell

Craig Fischer, M.D., stated that he reviewed the equipment that is currently on Mir to determine if any items necessitated the cost of transfer to ISS. In order to assist him in his evaluation, Dr. Fischer talked to NASA experts and crewmembers who had participated in missions to Mir; reviewed the manifest of equipment currently onboard Mir; reviewed what equipment would be required for ISS; assessed the amount of storage space available on ISS; and was present in Moscow for the review by Mr. Keith Reiley on this issue.

Dr. Fischer concluded that from a biomedical standpoint, considering the redundancy, the unusable equipment as well as the operational factors, it is not feasible to recover the Mir equipment.

Ronald Merrell, M.D., added that while it was worthwhile to consider salvaging equipment from the Mir, there is no value added to the ISS program and the cost associated with the transfer is not justified.

Open Discussion/Deliberations

General Stafford thanked Drs. Fischer and Merrell for their efforts in studying this issue and opened the floor for discussion and deliberation among the TF members.

Mr. Benjamin Cosgrove asked if the items considered for transfer were equipment only or if there were salvageable on-going experiments as well. Dr. Merrell said that only equipment was included, and he was not aware of any on-going experiments that could be moved and continued on the ISS. Dr. Andy Thomas, an astronaut and former crewmember on Mir, agreed that the equipment on Mir was not worth the expenditure to retrieve it.

Task Force Assessment

General Stafford then polled the voting TF members who were present (or on teleconference) as to their concurrence or non-concurrence with the assessment and recommendation provided by NASA-RSA that the scientific yield and economics do not justify another Shuttle flight to the Mir for the purpose of transferring equipment to the ISS.

Responses from voting TF members:

James Adamson - Concur

Benjamin Cosgrove - Concur

Joseph Cuzzupoli - Concur

John Fabian - Concur

Craig Fischer - Concur

Michael Greenfield - Concur

Daniel Heimerdinger - Concur

Ronald Merrell - Concur

Andrew Thomas - Concur (concurred via proxy for Astronaut Office Representative Michael Lopez-Alegria)

Conclusion

General Stafford noted that all members present were polled and that everyone concurred with the NASA-RSA assessment. He stated that he and Academician Vladimir Utkin, Chairman of the AEC, would jointly sign a memorandum to Mr. Goldin and Mr. Koptev reviewing the TF-AEC findings and closing this action.

AGENDA FOR TASK FORCE TELECON

12 MARCH 1999

1:00 pm EST

12:00 noon CST

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|--|----------------------------|
| 1. Assembly and Identification of Participants | Phil Cleary |
| 2. Opening Remarks | Gen. Stafford |
| 3. Purpose and Objective of Telecon | Gen. Stafford |
| 4. Background | Gen. Stafford |
| 5. NASA/RSA Finding | Gen. Stafford |
| 6. TF Efforts | Dr. Fischer
Dr. Merrell |
| 7. Open Discussion/Deliberations | |
| 8. Task Force Assessment | Gen. Stafford |
| 9. Conclusion | Gen. Stafford |

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

March 12, 1999
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Task Force Membership

Chairman

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

Members

Col. James Adamson, U.S. Army (Ret.)
Mr. Benjamin Cosgrove
Mr. Joseph Cuzzupoli
Dr. Charles Daniel
Dr. John Fabian
Dr. Craig Fischer
Dr. Michael Greenfield
Mr. J. Milt Heflin
Dr. Daniel Heimerdinger
Maj. Gen. Ralph Jacobson, USAF (Ret.)
Cdr. Michael Lopez-Alegria, USN
Dr. Ronald Merrell
Captain John Young, USN (Ret.)

Technical Advisors

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

Executive Secretary

Mr. Philip Cleary

Asst. Executive Secretary

Ms. Holly Stevens

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Meeting Attendees

Stafford Task Force Representatives

Lt. Gen. Thomas Stafford, USAF (Ret.) - via teleconference
Col. James Adamson, U.S. Army (Ret.) - via teleconference
Mr. Benjamin Cosgrove - via teleconference
Mr. Joseph Cuzzupoli - via teleconference
Dr. Charles Daniel - via teleconference
Dr. John Fabian - via teleconference
Dr. Craig Fischer - via teleconference
Dr. Michael Greenfield
Mr. J. Milt Heflin - via teleconference
Dr. Daniel Heimerdinger - via teleconference
Dr. Ronald Merrell - via teleconference

Stafford Task Force Technical Advisors

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

Task Force Executive Secretary

Mr. Philip Cleary

Task Force Asst. Executive Secretary

Ms. Holly Stevens via teleconference

NASA HQ

Ms. Susan Minor, Office of the Inspector General

NASA JSC

Dr. Andrew Thomas, Astronaut Office – via teleconference

Others

Mr. Ian Pryke, European Space Agency