

UNITED STATES FEDERAL AVIATION ADMINISTRATION

+ + + + +

COMMERCIAL SPACE TRANSPORTATION ADVISORY COMMITTEE

+ + + + +

MEETING MINUTES

+ + + + +

**WEDNESDAY
APRIL 1, 2015**

+ + + + +

The Advisory Committee met in the National Transportation Safety Board Conference Center, 429 L'Enfant Plaza Southwest, Washington, DC, at 1:34 p.m., Michael Gold, Chairman, presiding.

PRESENT:

MIKE GOLD, Chairman
MICHAEL LOPEZ-ALEGRIA, Vice Chairman
BRETTON S. ALEXANDER
CHRISTINE ANDERSON
MARK CAMPBELL
PATRICIA COOPER
OSCAR GARCIA
JEFFREY K. GREASON
MICHAEL D. GRIFFIN
DANIEL B. HENDRICKSON
LIVINGSTON L. HOLDER, JR.
TIMOTHY HUGHES
RAY F. JOHNSON
JANET C. KARIKA
BILL N. KHOURIE
CHRISTOPHER KUNSTADTER

SAMANTHA MARQUART
WILLIAM POMERANTZ
CARL D. RISING
MARK SUNDAHL

ALSO PRESENT:

LARRY SCOTT, FAA, Designated Federal Officer
LtCol ROBERT JERTBERG, U.S. Air Force Space Command
TOM HAMMOND, United States House of Representatives Committee on Science,
Space and Technology
DR. GEORGE C. NIELD, FAA

Welcome/Opening Remarks by the Chairman:

COMSTAC Chairman Mike Gold welcomed those assembled to the afternoon session at 1:34 p.m., and reminded everyone that the session was being webcast. He introduced Oscar Garcia, Chair of the Standards Working Group.

Standards Working Group Report:

Oscar Garcia, Chair of the Working Group, provided the report. The Working Group was formed at the last COMSTAC meeting in September 2014. Since then the Working Group met by teleconference in December and February. Mr. Garcia also moderated an industry standards panel at the FAA Commercial Space Transportation Panel in February, which the Working Group found was helpful and valuable to industry stakeholders. The Working Group has collaborated with the International Policy Working Group, but the focus over the past six months has been on US industry consensus standards. The Working Group was established to share industry's prioritization rationale in making standards, and the process by which they are developed with the Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST). The current leader in developing standards is the Commercial Spaceflight Federation (CSF), their top prioritization rationale is human spaceflight occupancy safety. The Working Group found the industry benefits from the rigorous prioritization and subsequent selection and adoption of consensus standards. COMSTAC agreed with this finding.

The Working Group recommended that COMSTAC meet from time to time with FAA/AST to discuss the standards making process. The Working Group further recommended that FAA/AST should reach out to industry in helping develop a breathable atmosphere standard, and start to create a hub where the two groups can jointly work together to catalog, prioritize and adopt new standards. Member Greason said that developing standards is inherently difficult because of the amount of work necessary and the need for consensus, not because of the process. Member Griffin said that most current standards have an historical precedent, and that if commercial spaceflight needs a standard not covered by the existing body of knowledge, it is an unusual situation. Chair Gold said that while the push for new standards will be industry-led, FAA/AST should join in the discussion on what is important. COMSTAC agreed with the proposed findings and recommendations.

Congressional Perspective on Commercial Space Launch Amendments Act Update:

Chair Gold introduced Tom Hammond, staff member on the House Committee on Science, Space and Technology, and the Staff Director of the Space Subcommittee. Mr. Hammond presented the "lay of the land" regarding the Commercial Space Launch Amendment Act (CSLA) as he sees it, and not from the House Committee's perspective. Over the past two years, the Committee reached out to stakeholders for revisions to the CLSA, and held hearings on commercial space, space traffic management, and the ASTEROIDS Act among other topics. The main issues facing the CSLA concern

indemnification and regulations/standards. The Committee has been working to produce a bipartisan consensus bill to put forward in the near term.

Chair Gold asked whether the House plans to follow the Senate in adding legislation after the CSLA. Mr. Hammond said that Chairman Smith is focused on finishing the CSLA bill in the near term before addressing new topics. The Committee's main regulatory issue in CSLA is how to address FAA's approach to regulating spaceflight. The FAA is authorized to regulate spaceflight whether or not there is a pressing need, and the question is whether to regulate it as a mode of transportation or a research and development activity. While regulation can limit the liberty of actors in some regards, it also can provide market stability. Congress will need to decide how they will let FAA regulate this matter. Mr. Hammond said another issue facing the Committee is whether to impose standards alongside industry consensus, and how to address any conflicts between the two sets if they arise.

Operations Working Group Report:

Janet Karika, Chair of the Operations Working Group, introduced Lieutenant Colonel Robert Jertberg, the Chief of the Launch and Range Branch at Air Force Space Command (AFSPC) Headquarters. Lt. Col. Jertberg said AFSPC is committed to maintaining the Eastern and Western ranges of the U.S. civil and national space lift, and to continue to provide the instrumentation to support test and space lift users. Due to recent sequestration, AFSPC had to put many instrumentation assets into standby status, which, along with aging infrastructure, meant that several launches were scrubbed. Recently, though, AFSPC has begun to restore these assets. AFSPC is also in the process of rewriting requirement documents for range assets. The Working Group recommended that FAA/AST should continue to advocate for commercial user range requirements in the 30SW and 45SW forums, as well as advocate for AFSPC to continue open communications with stakeholders concerning major changes to the ranges before decisions are finalized. COMSTAC agreed with these recommendations.

Christine Anderson, CEO of Spaceport America and COMSTAC Member, spoke about creating a spaceport directory. The Working Group found that creating an FAA Spaceport Directory would be a useful tool. There are currently nine spaceports in the United States and a directory would give general information and information about launch capability for each location. It would provide potential customers useful data for initial screening and establishing direct contact with a potential spaceport, and would be updated as new spaceports come online. The Working Group recommended that FAA/AST develop a spaceport directory, distribute an information template to spaceports for completion, and identify the mechanism for publication, distribution and maintenance of the directory. COMSTAC agreed with these recommendations.

Business/Legal Working Group Outbrief:

The Business/Legal Working Group met in the morning session of the COMSTAC meeting and Christopher Kunstadter, Chair of the Working Group, presented the group's deliberations and recommendations. The Working Group observed that

FAA/AST is authorized to promulgate safety regulations to promote safety of crew and spaceflight participants, and that while industry standards are a key part of producing a culture of continuous safety improvement, industry is not always willing to develop these standards. COMSTAC agreed with these observations.

The Working Group recommended that FAA/AST identify three specific recommendations for potential standards for commercial human spaceflight each year, and should continue to ensure that the safety experience of all vehicles and operators is made known publically. The Working Group also recommended that the current safety regime as described in the CSLA as amended should be extended until October 1, 2020, during which time FAA shall inform industry when it becomes aware of safety-related incidents and work with industry and COMSTAC to develop practices and/or standards to reduce the likelihood of similar future incidents. The Working Group further recommended that FAA/AST convey COMSTAC support to Congress for granting the FAA the authority to establish a process for issuing a Mission License for any space-based activity that is not under the jurisdiction of an existing government agency. Furthermore, the Executive Branch should identify an agency to maintain a registry of Mission Licenses and FAA/AST should be authorized to require any Mission License to provide updated information. COMSTAC agreed with all of these recommendations.

International Space Policy Working Group Outbrief:

The International Space Policy Working Group met in the morning session of the COMSTAC meeting and Mark Sundahl, Chair of the Working Group, presented the findings, observations and recommendations. The Working Group found that the FAA has an important role and opportunity to provide input on matters such as export control, and should advocate for modernized regulations and practices. The U.S. space industry will benefit from placing human spaceflight systems under the auspices of the Export Administration Regulations. The Working Group observed that an important concern articulated by the Department of Defense considering the transition of technologies from the United States Munitions List (USML) to the Commerce Control List (CCL) is the control of systems and technologies that could provide anti-satellite (ASAT) capabilities. As such, the Working Group recommended that the FAA/AST convene with industry to identify characteristics relevant to ASAT capabilities that can inform export control reform. COMSTAC agreed with these findings, observations, and recommendations.

The Working Group also recommended that the FAA/AST advocate for unarmed, commercial suborbital spacecraft, particularly if controlled by an onboard pilot, be transferred to the CCL if such spacecraft is covered by an FAA/AST license or permit. COMSTAC debated the merits of the recommendation, particularly concerning the use of the word “pilot”, and agreed with the recommendation by a split vote.

The Working Group further observed that past COMSTAC recommendations and Congressional report language have stressed the importance of providing non-interference for private sector activities on celestial bodies. The Working Group recommended that the FAA/AST provide more detail about the definition of “non-

interference” through a dialogue with industry and COMSTAC. COMSTAC agreed with these observations and findings.

In response to the FAA/AST request that COMSTAC clarify the specific aspects of the IAASS approach to proliferation of standards that were found objectionable the Working Group noted that there was a lack of sufficient input during the developments of the standards, and the inclusion of metrics in the standards that were not based on sufficient data from the operation of the vehicles intended to be subject to the standards. The Working Group found that the International Standards (ISO) Technical Committee 20’s business plan review, which will have an effect on Subcommittee 14 concerning Space Systems and Operations (TC20/SC14), should be monitored by FAA/AST. The ISO will seek an organization to serve as Secretariat for a new subcommittee within TC20 regarding standards for human spaceflight, and it would be beneficial for the U.S. spaceflight industry for a U.S. organization to serve in this role. COMSTAC agreed with these observations and findings.

Support of Presidential Budget Request:

Chair Gold recommended that COMSTAC support full funding of the FY2016 Presidential Budget request for the FAA/AST to ensure that the FAA/AST can meet its responsibilities in an effective and timely fashion. COMSTAC agreed with this recommendation.

Public Comments

Members of the public were invited to provide comments, none were made.

New Business:

Chair Gold asked the Members for their thoughts on the one day format. Member Karika said the meeting felt rushed, and the short time frame didn’t give the Working Groups sufficient time to dig into the issues. Member Cooper agreed that the meeting was rushed, but felt that two full days of in-person discussion was not necessary if the working groups developed their findings and recommendations in the lead up to the meeting. Member Holder said that the face-to-face aspect of the meeting is valuable, and recommended at least a half day of interaction time. Member Rising said that a one day meeting requires COMSTAC members to participate in every teleconference or risk being lost in the background. Chair Gold said that a day and a half long meeting would allow members travel time, and also provides meaningful face-to-face interaction time. Chair Gold suggested that member should submit findings and recommendations to the working groups two weeks prior to the meeting, and that one week prior the working group chairs should distribute the recommendations to the members for discussion.

Wrap-Up and Adjournment

Chair Gold said that a minimum time of a day and a half for the next meeting will

allow the members the time they need to put meaningful work into their working groups. The working group chairs, vice-chairs, alongside the COMSTAC Chair and Vice Chair will meet within the next few weeks to determine the schedule of the next meeting. Chair Gold also suggested moving the date of the next spring COMSTAC meeting to mid-March would allow the Committee a more significant impact on the conversation calendar for issues like CSLA. The next COMSTAC meeting will be October 20th and 21st, 2015.

Chair Gold adjourned the meeting at 4:54 p.m.

Signed by

Mike Gold
Chairman, COMSTAC