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Author: Mr. Ian Christensen
Secure World Foundation, United States

THE ELEMENTS OF A COMMERCIAL HUMAN SPACEFLIGHT SAFETY REPORTING SYSTEM

Abstract

In its report on the SpaceShipTwo accident the National Transportation Safety Board (NTSB) included in its recommendations that the Federal Aviation Administration (FAA) "in collaboration with the commercial spaceflight industry, continue work to implement a database of lessons learned from commercial space mishap investigations and encourage commercial space industry members to voluntarily submit lessons learned." In its official response to the NTSB the FAA supported this recommendation and indicated it has initiated an iterative process to put into place a framework for a cooperative safety data sharing process including the sharing of lessons learned, and trends analysis.

Such a framework is an important element of an overall commercial human spaceflight safety system. As the industry matures and approaches a time of regular operational flights carrying paying commercial passengers, the time is right to consider the development of an industry-wide safety reporting system focused on operational hazards, incidents, and close calls. Mature safety reporting systems of this nature exist, both in the aerospace sector and in other industries. For example:

- The Aviation Safety Reporting System (ASRS) in the United States

- The Federal Railroad Authority Confidential Close Call Reporting System

- The NASA Safety Report Systems (NSRS)

- Aviation safety reporting systems operated by several civil aviation authorities around the globe

These successful systems offer a number of lessons learned and operational best practices that might be applied to a prospective commercial human spaceflight safety reporting system. Through a review of these programs, focusing on systems in the U.S., this this paper will describe elements of a safety reporting system that might be developed in support of the commercial human spaceflight industry. Factors to be addressed include:

- Origins and motivations for the system

- Organizational and operational approaches

- Treatment of confidentiality, both for reporters' personally identifiable information, and for proprietary or commercial sensitive information

- Relationship to lessons learned and safety data exchange programs

- Authority to act upon information received

One element these system often have in common is that they were established following a tragic incident involving the loss of multiple lives. The FAA's efforts to analyze and implement a commercial spaceflight safety lessons learned database offers a window to develop a safety reporting system, in consultation with industry, prior to similar tragic incidents involving commercial spaceflight participants.