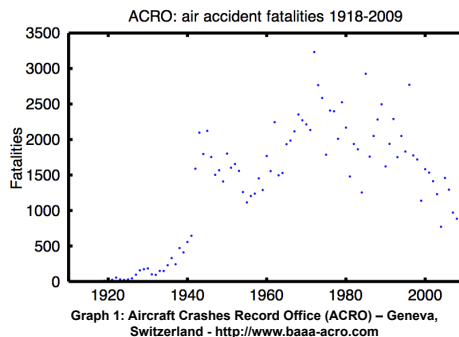


# SETTING A STANDARD FOR SPACE-RELATED NAMES, ACRONYMS, AND TECHNICAL TERMS

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## Overview

There are more than 55 agencies and corporations involved in the research and development of space flight. Although these agencies represent over 30 languages, there is no established international language protocol for space-related activities. Several language-related incidents were recorded during the Apollo-Soyuz, Shuttle-MIR, and the ISS missions. A well-developed protocol must be established before new members join space exploration, increasing space traffic and utilization. Although several languages could be selected as the basis for a standard language protocol, English is the most logical and timely choice.



## Impact

Space flight today is as innovative as flying was in 1950, and as the technology is further developed the associated costs are decreasing. Virgin Galactic offer flights for 200,000 USD compared to the 30 Million USD paid by Dennis Tito in 2001. If a standard language protocol is established for space activities before the private sector expands further, catastrophic failures, such as those that occurred over the years in civil aviation, may be avoided.

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## Key Findings

The ICAO (International Civil Aviation Organization) did not have a well established and mandatory language protocol for international flights, until 2008. As a result, several plane crashes due to a lack of proper communication, as noted on Graph 1.

In 1993 an Air China flight to Urumqi crashed on final approach, meters from the runway. The pilot and first officer, both native Chinese speakers, were unable to understand the Ground Proximity Warning issued by the aircraft. When listening to the cockpit recordings it is possible to hear the pilot asking in his native Chinese "What does 'pull up, pull up' mean?" In January 1990 an Avianca flight due to land in New York ran out of fuel while waiting for landing authorization, the pilot and first officer having failed to communicate the urgency of their need to land.

Fatal accidents such as these have decreased since the establishment of a standard English language protocol by ICAO.

## Explanation

English is already widely used in the aviation, academic, and corporate worlds. The United States plays a key role in space. Because of its position and status within space exploration, it should be one of the main contributors in the development of an appropriate language protocol. In addition, over the past half century, ICAO has perfected a language protocol on which to build a sound language standard for space flight. The AAS, alongside ICAO and NASA, could contribute immensely to the rapid development and deployment of an English protocol for space-related activities.