

MULTILINGUAL ASTRONAUTICAL TERMINOLOGY SYMPOSIUM (E8)
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LANGUAGE PROTOCOLS IN INTERNATIONAL HUMAN SPACEFLIGHT: PAST EXPERIENCES
AND FUTURE PERSPECTIVES FOR SPACE MEDICINE**Abstract**

The importance and difficulty of the language barrier in international human spaceflight is often overlooked. Despite a striking lack of formal discussion on this issue, astronauts and their support teams have been remarkably vocal about what they consider a significant challenge. Yet, a historical analysis of the three most prominent multinational human spaceflight missions since the beginning of the space age—the Apollo-Soyuz Test Flight, Shuttle-Mir Program, and International Space Station—reveals that language decisions for these programs have been prone to geopolitical influences resulting in sub-optimal operational environments in terms of cost, efficiency, and safety. Looking ahead, this lack of attention paid to developing optimal language protocols is particularly problematic, as recent years have featured a growing emphasis on expanded international cooperation as the best means of enabling a sustainable future for human spaceflight. This anticipated expansion of international cooperation, in addition to lessons learned from past missions and the commercial aviation industry, suggest that the time has come for the space community to decide on a single, standardized language for human spaceflight. Indeed, as we come to terms with increasingly constrained budget environments that create pressure to show optimal use of limited resources, language protocols may be an ideal starting point for making fundamental changes. Although translators have been sufficient to date, they are a costly requirement that introduces inefficiencies and raises safety concerns; they may also become inadequate in the near future, as emerging commercial capabilities introduce new actors into the increasingly crowded aerospace environment and anticipated missions to distant and unexplored destinations emphasize the need for accurate communications on the first attempt. Because precise and timely communication will be particularly critical for crew safety, this paper features the influence and role of language protocols in aerospace medicine as a case study.