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ROLE OF NASA HEADQUARTERS SPACE OPERATIONS CENTER IN MISSION AWARENESS,  
CONTINGENCIES, AND EXTERNAL ENGAGEMENT

**Abstract**

The National Aeronautics and Space Administration (NASA) envisions and executes some of the most complex missions one can imagine. Since the early days of spaceflight to present, human presence in space has required incredible creativity, vision, problem solving, robust engineering, and communication. This is most evident in the ongoing operation of perhaps humankind's greatest engineering and scientific marvel, the International Space Station (ISS). Teams from around the world play important parts in this endeavor through design, analysis, planning, training, execution, funding, and program/project management. This global team must work together towards a common goal, in which an international asset and human lives are on the line. Human spaceflight is complex and unforgiving and the lack of any of the aforementioned skills can be the difference between success and failure. Effective communication is critical, particularly for a project with significant geopolitical implications.

One of the most fascinating parts of such complex missions is how far the tentacles of responsibility can reach through various roles. Both government and contractor facilities across the globe are filled with hard-working employees passionate about their contribution towards the goals and vision of the mission.

NASA Headquarters in Washington, D.C. provides overall guidance and direction to the agency through several principal organizations, known as Mission Directorates. Employees across ten field centers and a variety of facilities across the country perform the "down-and-in" tasks while Headquarters oversees those efforts and frequently manages the "up-and-out" responsibilities.

The Space Operations Center (SOC) at NASA Headquarters is a facility that offers a reliable and robust environment for monitoring real-time operations of human exploration missions. This function serves to provide valuable situational awareness to senior agency leaders and representatives from across the federal government that support mishap investigations. SOC personnel provide mission cognizance and integration among the operations, communication, international and interagency relations and legislative affairs teams at NASA Headquarters. This paper will describe the role of the SOC during nominal and contingency operations, functions performed by SOC personnel to increase situational awareness of the mission, and their role in the engagement of external stakeholders.