AMERICAN FOREIGN POLICY COUNCIL

Strategic Implications of China Winning the Space Rescue Race

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Related Categories: Science and Technology; SPACE; NASA; China; United States

Relationships between personnel recovery and policy

Event history analysis of policy changes

Recent conflicts between the United States and China regarding multi-domain strategies are trending towards a “Grey Rhino” event. Most have heard of a “Black Swan” event where high-impact incidents occur that are nearly impossible to predict. The Grey Rhino event is also high-impact and highly probable, despite repetitive and neglected warnings.[1] The United States recognized that immediate space policy and capability development needs must be addressed to mitigate the fallout from high-impact events in the space domain. The reinstatement of the National Space Council, the United States Space Command, the Space Force, and the Artemis Accords makes it clear that America focuses on maintaining dominance and leadership in space. Despite these efforts, a space isolation event quickly escalates to a Grey Rhino event if policymakers fail to address immediate legislative and funding needs to develop an in-space rescue program.

US personnel rescue (PR) policy tends to be reactive, with shifts only after significant events that shake national leaders. Trend analysis suggests the US government has yet to prioritize space isolation as a national concern because there hasn't been a catastrophic event in recent history.

Retired Colonel Lee Pera from the Joint Personnel Recovery Agency describes the strategic importance of major PR events that led to reactive but necessary policy changes. During the Korean War, “prisoners succumbed to brainwashing and were used by the enemy as propaganda tools or for political exploitation. Debriefings and analyses determined that 192 people were chargeable with serious offenses against their fellow prisoners… President Eisenhower signed Executive Order 10631 to establish the code of conduct for prisoners of war (POW) or those who must survive, evade, resist, or escape (SERE). This led to the birth of all SERE Schools across the DoD.”[2] The DoD later established the Joint Personnel Recovery Center concept during the Vietnam War to manage the sheer volume of isolated personnel, missing in action, and POWs.

Operation Eagle Claw is the most influential PR mission in history. In 1980, a special joint task force was assembled to recover American hostages in Iran. The mission was an utter failure, eventually leading to the Goldwater Nichols Act. Congress directed a re-organization of the military, including adopting the United States Special Operations Command (USSOCOM). This new organization would oversee the joint task force responsible for executing this future mission set. Operation Desert Shield/Storm led to the development of the Defense POW/Missing Personnel Office and what would eventually become the Joint Personnel Recovery Agency. Each of these events was considered a Black Swan. The shocking revelations resulted in policy shifts after the event because the outcome was largely unpredictable.

If we intend to prevent Grey Rhino events, it is prudent to follow the most successful model based on historical precedent. Presidential Policy Directive (PPD)-30 is objectively the most proactive PR policy in practice to date. The War on Terror significantly influenced US policy, forcing the government to address an increased hostage threat abroad. National Security Policy Directive (NSPD)-12 shaped the “whole of government approach” to PR, which was replaced by PPD-30, directing the formation of a Hostage Recovery Group and Hostage Recovery Fusion Cell.[3] These elements synchronize efforts to respond rapidly to any American hostage crisis. This group characterizes the conditions and validates the event so the National Security Council can advise the President on a course of action. The directive addresses future contingencies that significantly affect the ability to execute national security strategy while refraining from dictating authorities to a particular capability, be it civil, diplomatic, or military. The Hostage Recovery Group weighs all relevant factors rapidly, minimizing arbitrary bureaucracy and red tape delays. Evolutions in policies like PPD-30 will prepare the government to address space isolation scenarios.

Predictions for future events (conclusions)

Grey Rhino events are predictable and, therefore, preventable. Black Swan event models help address future operating environments by identifying the independent variables that historically result in reactive policies. Humans rarely operate in the space domain, so data is limited to the imagination, national interests, and game theory, with decision trees branched from historical terrestrial conflicts.

National power extends into space in dramatic fashions that inspire fictional novels and media. National decisions on Earth often directly affect relations in space and vice versa. The following scenarios are a worthy thought experiment and should inform our leaders of potential catalysts that lead to reactive PR policy shifts. The following scenarios and figures provide thought provoking inspirations to predictable errors in planning that are not addressed in current U.S. policy. Military strategists predicted these scenarios to explore policy, manpower, and technology gaps that could result in loss of life and undesirable national strategic consequences.

Artemis 5 deploys astronauts to the lunar surface for a two-week mission. Astronauts service a remote lunar critical infrastructure site beyond the reach of their habitat vehicle. A distress beacon alerts NASA mission control two hours after the first transmission, immediately triggering search and rescue efforts. The command-and-control element cannot communicate directly with the astronauts and cannot geo-locate their position due to a lack of position, navigation, timing, and communications infrastructure. The remaining astronauts must initiate a search party, further exposing more personnel to the hazards that caused the crisis of the isolated personnel. The DoD is unable to support with technical capability or rescue forces. The tragic loss of life results in global embarrassment and loss of public support for space exploration and immediately triggers a congressional investigation into NASA and Space Force funding. Congress threatens to withhold upcoming appropriations pending a presidential review of in-space rescue requirements to prevent another catastrophe. The President issues a PPD-30 addendum to incorporate a space contingency action group tasked to advise the National Security Council and the President on courses of action to resolve space emergencies through the whole of government approach.

Commercial partners developing a lunar ice processing plant operate in a deep crater. US astronauts receive an alert from mission control, relayed by commercial entities. Astronauts respond to the scene expeditiously, yet they cannot access the isolated personnel due to a lack of high-angle equipment and rescue training. The DoD cannot support with trained personnel recovery forces, and NASA does not have a contingency response force to assist. Chinese delegates coordinate with the U.S. State Department to assist using organized, trained, and equipped space rescue forces. China recovers the American commercial engineers and returns them to Earth safely. The inability to support US commerce results in global embarrassment and loss of leadership in space exploration, raising the cost of lunar commerce exponentially. China establishes itself as the space rescue lead for all humanity and secures international support to ensure safe lunar commerce. Several nations secure treaties and trade deals with China, including expanding the “Belt and Road” initiative and space exploration agreements.

Country X contests territorial waters on Earth and the exploitation of lunar ice in a resource-rich region. US astronauts find their vehicle has been tampered with and become stranded in their mobile habitat. The communications system is not operational due to radio frequency jamming. Country X invokes the Outer Space Treaty of 1967 to render aid to an astronaut in distress. They tow the stranded space vehicle back to their lunar base, where astronauts are detained and subtly interrogated, pilfering the vehicle for intelligence and reverse-engineering data. Country X publishes the story to the world as saviors of isolated astronauts. Country X occupies and declares a non-interference and “safety-zone” claim over the natural resource, denying access to the region and imposing high costs on the US, which cannot continue operations without deploying more capabilities and personnel. The US intelligence community lacks the resources to attribute nefarious activities to Country X, as they cannot assign intent without space domain awareness capabilities in the region. The access to water accelerates Country X’s space program, allowing them to conduct human spaceflight on Mars ahead of NASA’s timeline. Diplomatic relations suffer between the two countries as accusations and frustrations turn violent in contested areas on Earth.

Conclusions and Recommendations

Early findings from the AFIT research project on Lunar Search and Rescue provide a framework for a realistic path toward the whole of government approach to space crisis mitigation. NASA, by extension, is acting as the US State Department representative in space. There is no embassy or sovereign territory in space or on the Moon, leaving NASA in a precarious situation.

The model for DoS-DoD coordination to conduct PR in support of Americans has matured since PPD-30. PPD-30-based Presidential-level directives to address space-related crisis response efforts fit seamlessly into the PR community of effort. Like PPD-30, the space contingency action group would prepare various civil, diplomatic, and military options to resolve the crisis. This plan should consider extending dual authorities to a space entity to employ a Coast Guard-like role in space,[4] capable of operating similarly to the terrestrial maritime domain. This policy would provide the authorities and permissions for government entities to coordinate, prepare, plan, and execute contingency responses. A policy of this scale would affect the strategic guidance documents that affect the military process and its many interactions, as described in the figure below.

Some things have already become clear, and provide opportunities for Action Officers in the White House, OSD, Joint Staff, Department of the Air Force, Space Force staff, and USSPACECOM staff. The following actions should be completed sufficiently in advance of Artemis 3 to ensure a rudimentary capability and plan, from which more mature capabilities can develop over time:

- NASA can accelerate things by establishing a requirement by requesting assistance through formal letterhead to USSPACECOM and USSF.
- Within the Executive Office of the President (OEP), any modification to the National Space Policy should formally task the DoD with in-Space PR. Presidential Policy Directive 30, Hostage Recovery Activities,[6] should be updated to reflect in-space scenarios. The Unified Command Plan (UCP) should specify PR responsibilities for USSPACECOM.
- The Cybersecurity and Infrastructure Security Agency (CISA) should classify lunar sites as critical infrastructure and coordinate with NASA and USSPACECOM to protect strategic propellant reserves for emergency use in similar capacity as the DoE managed Strategic Petroleum Reserve established in 1975.[7]
- Within OSD, the Guidance for the Employment of the Force (GEF) should specify an end state that ensures safety and the ability of the United States to rescue and recover its own personnel. An updated 5100.01 should specify in-space PR for both USSPACECOM and USSF. DoDD 3100.10 should be updated to specify PR and SAR responsibilities.

- Within the Joint Staff, the Joint Strategic Capabilities Plan (JSCP) should direct USSPACECOM to develop a Concept Plan (CONPLAN) for PR. JP3-14 should be updated to consider in-space PR & SAR. The Chairman Joint Chief of Staff Instruction 3440.01E directs an architecture that serves the terrestrial demands but leaves little room for authorities to expand into in-space rescue. The DoD tasked to support NASA with land, maritime, and air assets, 3440.01E requires the inclusion of space capability if the DoD maintains intragovernmental primacy over human spaceflight recovery.
- Within USSPACECOM, the J5 should initiate an initial capabilities document (ICD) so that in-space PR can be reflected in the Joint Capabilities Integration and Development System (JCIDS) and formally recognized by the JROC at least a year in advance of Artemis-3. USSPACECOM should task USSF to develop Concepts of Operations, supporting technologies, and begin developing capabilities.

The final recommendation stems from PR lessons learned. Special Operations Command was established to accomplish the most challenging missions. The command is uniquely capable of supporting “boots on ground” missions for space-related contingencies of the future. The command organizes, trains, and equips forces to perform “SOF Peculiar” tasks supporting geographic combatant commanders and national missions. AFIT research revealed that a space rescue force requires skill sets such as military planning, parachuting, dive operations, emergency medicine, high angle rescue, technical extrication/extraction, confined space rescue, and SERE/Reintegration.

SOCOM is well suited to provide command and control of a crisis response force, deployable to any region of the world as well as XGEO, cislunar, lunar, or beyond, at the pace of technology and human exploration. SOCOM could exercise close relationships with the proposed space contingency action group to expedite crisis response to any location requiring human-based kinetic interdiction, including terrestrial and in-space rescue. Space Command would require a Theater of Special Operations Command component (see figure below) or representative liaison staff to coordinate rapid deployment and disposition of forces for this concept to operate smoothly.

Summary

The US National Space Strategy establishes America’s intent to lead in the space domain, mirroring its role on Earth. America responds to crises around the world without faltering. Space rescue investment mitigates space isolation risk and provides opportunities to lead Artemis nations and commercial partners. A well-trained and equipped rescue force sustains the US commitment to ensuring safe navigation in space, accelerating commercial investment, and ultimately strengthening US national instruments of power. While Black Swan events are relatively difficult to identify, Grey Rhino events result from neglect. This policy analysis provides approaches to prevent such catastrophes, shaping governing documents to address space isolation as a national priority. American personnel recovery policy is traditionally reactive, yet they are often due to Black Swan events. Space isolation is a genuine threat that policymakers have an opportunity to mitigate by endorsing proactive decisions before national risk assumption in cislunar space. Proactivity is the key to avoiding earth-shattering dilemmas that negatively affect our nation's ability to project power, liberate the oppressed, and proliferate peaceful societal development through ethical and economic growth.

References

1. Singleton, J. (2020). Squadron Officer School Study on Space Rescue.
2. Pera, C. L., Miller, P. D., & Whitcomb, D. (2012). “Personnel Recovery Strategic Importance and Impact,” *Air & Space Power Journal* | (Vol. 83), November-December 2012.
3. White House, “Presidential Policy Directive (PPD-30) -- Hostage Recovery Activities,” Obama White House Archives, June 24, 2015.
4. Michael R. Sinclair, “To Fight to Save * … in Space: A Legal Argument that a Space “Coast Guard” Is Increasingly Necessary for Effective Twenty-First Century Space Governance,” *Air & Space Law* 43, no 465, 2018.
5. Department of Defense, “CJCSI 5123.01I Charter Of The Joint Requirements Oversight Council And Implementation Of The Joint Capabilities Integration And Development System,” Joint Staff Portal, October 30, 2021.
6. White House, “Presidential Policy Directive (PPD-30) -- Hostage Recovery Activities,” Obama White House Archives, June 24, 2015.
7. Tory Bruno, Erica Otto, Will Clifton, Austin Schmitt, Erin Lococo, John Sanders, John Reed, Bernard Kutter, “Creation of a U.S. Strategic Propellant Reserve,” United Launch Alliance, September 7, 2022.