

What Will Happen in the First Space Hostage Crisis?

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Abstract: While the concept may seem far-fetched, there is a high probability that malicious actors will take hostages in space in the near future. The growth of space as a commercial sector and critical military area of operations makes such an incident almost inevitable. Given current US policies, capabilities, jurisdictional conflicts, and force structures, however, such an event will likely lead to sub-optimal crisis handling by the US government. This paper explores the potential for hostage-taking in space and the deficiencies of existing countermeasures and incident response processes—along with possible solutions that can avert the worst outcomes in the future.

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Introduction

Hostage taking for profit is as old as humanity. Over 2,000 years ago, Julius Caesar was kidnapped for ransom by pirates. Now, with plans for hotels in space, space tourism, and space as a corporate work environment, a reasonable person might wonder: what will happen when there is a hostage crisis in space?


It may seem far-fetched, but the problem is imminent. Each advance in space travel and commerce exposes an attack surface for kidnapping and ransom. The space sector is anticipating the deployment of private space stations from Axiom and space tourism platforms like Space Perspective's balloons. A host of large corporations are investigating the extraction of mineral wealth from asteroids and the moon. All are vulnerable to malicious actors intent on taking hostages.

This article explores how such a scenario might unfold, analyzing if and how the US government will be able to mount an effective response. Perhaps we can take inspiration from Caesar, who tracked down his kidnappers and personally killed them. The current outlook does not inspire confidence, but the reality is that no one has been tasked with solving this problem. The good news is that there is time to figure out the best ways to mitigate the risk of hostage taking in space.

Potential Threat Actors

Who might take hostages in space? One likely candidate would be criminal gangs or cartels who have extensive experience in kidnapping wealthy people in Latin America. Can criminal groups afford to get into space? While many experts say that space is too complex and expensive for criminals, our answer is "Yes." As we discussed in a previous [article](#), cartels and other malicious actors could hijack existing space assets rather than build their own. The attack might be remote in nature, too, which obviates the need for actual space travel. However, we also believe these groups are not that far away from building their own space assets if they so choose.

These groups, particularly the Sinaloa and CJNG cartels, have extensive international networks. According to Vanda Felbab-Brown of the Brookings Institution, the major cartels have [sophisticated foreign policies](#) of their own, which in some cases may be more compelling than those of sovereign nations.



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Other potential threat actors include violent nonstate actors like Hezbollah, which is backed by Iran and might pursue space piracy and hostage taking for profit or political ends. Alternatively criminal/terrorist entities may undertake a space hostage attack behalf of sovereign nation like China, North Korea, or Russia, which may be seeking a plausibly deniable method to disrupt US commercial/military space activities.

Cybercrime offers a present-day example of this mode of stealth warfare. Criminal gangs in Russia appear to be engaging in ransomware attacks on US targets at the behest of the Russian government. Clear attribution is difficult to establish, and that's the point, but expert consensus in the defense and intelligence community (IC) is that this type of relationship exists between sovereign nations and criminal organizations.


Space Hostage Scenarios

One can imagine many space hostage scenarios and comparable threats. Possibilities include:

- Space pirates taking remote control of life support systems in a space hotel or space tourism craft and threatening to kill all the passengers unless a hefty ransom is paid.
- Space pirates physically hijacking a space craft or boarding a space station and taking the crew hostage.
- Space pirates hijacking a space transport and ransoming its valuable cargo.
- Space pirates planting a bomb on a space station or space craft and threatening to detonate it if a ransom is not paid.

Likely US Government Responses

What will happen when the pirates make their demands known, possibly through world media? Consider that a space hostage crisis would be a Pearl Harbor-like event. It would be unprecedented and lacking in obvious solutions. It would be an attack against the United States, but one in which there are no relevant treaties or laws to rely upon in its resolution.



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Based on personal, insider experience with governance handling of crisis situations, we anticipate three responses to such a historic event:

1. Denial

Government agencies will likely deny the existence of the attack as they attempt to obtain as much information as they can. Concurrently, they will try to contain the story by declining to comment about it to the press. During this time, the president will demand information and solutions from the Pentagon and IC.


2. Acceptance

At this stage, the Government will understand that the problem they have is one of the most serious situations they have ever faced. They will quickly and aggressively seek solutions to have the space hostages released. The Government's choices at this time are stark, however. They can choose to pay the ransom or do nothing and let the hostages be killed.

3. Paralysis

The government's response will then likely devolve into paralysis. A space hostage crisis presents a toxic political football, a unique opportunity for "CYA" behavior which backs the President into an untenable corner. While the government has many protocols and well-trained and experienced forces for dealing with high-profile hostage incidents, they are not suited to a hostage crisis in space. Presently, there is no entity in the US Government or private sector that is capable of dealing with a space hostage situation. To highlight several deficiencies, among many others:

- The FBI hostage rescue team is unable to operate in space.
- The FBI hostage negotiation team will have no time to attempt to draw out the negotiations with the space pirates due to the constraints of the space environment, e.g., limited oxygen in life support systems may create a negotiation window of just two or three days.
- The CIA and other IC agencies have no kinetic space capabilities suited to this mission. Nor does the IC see such a scenario as being within their purview in general.



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- The United States Space Force (USSF) is not set up to handle a hostage rescue mission at this time.
- NASA lacks the capabilities to address a hostage crisis, as it is not in their mandate and budget.

Jurisdictional confusion and disputes could further exacerbate the paralysis.

Possible Remedies

In the aftermath of an unsuccessful attempt to rescue space hostages, there will likely be a scramble in Congress to address whatever deficiencies that have been revealed in the operation. With the purse strings in hand, Congress might pass laws that appear to address the problem. The UN might join in, as well, with multiple countries vying for their version of an anti-piracy treaty in space. However, without proper analysis and planning, a rush to legislate might simply drive further sub-optimal outcomes.

It is essential to begin a planning process that incorporates creative thinking and practical analysis of the issues connected with the new phenomenon of space piracy. We need to take the time to think through the interlocking issues connected with space piracy, and to establish counter-piracy policies and protocols.

Any viable solution should require the military, diplomatic entities, space industry players, and the IC to operate in unison, which seldom happens. It will also need a good amount of political, diplomatic, and financial infrastructure. This is a lot easier said than done, but stakeholders might agree that space hostage taking presents a good opportunity for private and public sectors to work in unison.

Below are a few approaches we believe will be necessary to consider when formulating a comprehensive approach to successfully countering space piracy, particularly with regard to hostage taking.

Responsibilities of space platform operators

The owners/operators of commercial and government space platforms must take responsibility for securing their operations. These include, but are not limited to space stations, tourism platforms, rockets, space craft, space cargo vehicles habitation/work



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enclaves on asteroids, lunar surfaces, and other planetary environments.

The defense of space assets should actually begin before they are even built. Industry stakeholders and government partners would be wise to agree now on secure design principles that build strong controls and countermeasures into space assets. Some of this is already in progress, such as with the National Institute of Standards (NIST) Cybersecurity Framework Profile for Hybrid Satellite Networks (HSNs). Much additional work needs to be done on this front. Current regulations affecting the design and construction of aircraft could provide a template to follow.

In deployment, just as all private businesses and organizations utilize a host of methods to secure their places of operations, space operators must take appropriate measures that will protect their human and non-human assets, which represent substantial investments.

The optimal approach would be a “defense in depth” model that defines and enforces security policies across the complete space ecosystem—from ground stations to space vehicles, and back to earth. Defense of space operations should include the use of the most advanced technologies, from AI-driven cyber detection and response systems to the establishment of state-of-the-art cryptographic codes to control access for all incoming and outgoing space craft, i.e., a space craft will not be permitted to dock if it cannot present a unique access code, comparable to the way a digital device gains permission to connect with a computer network.

The operationalization of these ideas would require the development and deployment of specially trained space security teams. As with cyber security, successful space security will be the result of a well-choreographed interplay between technology, people, and processes. Success will also depend on well-designed inter-operation between private security systems and relevant government agencies tasked with space security.

The role of financial institutions in mitigating risk in space

Space is already a big business, but it is on the verge of significant growth. Financial institutions like investment banks will expect to have a say in how space industry players secure the assets they are funding. Insurance companies may similarly insist on certain



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safeguards to mitigate their exposure to risk from malicious actors. Just as marine insurance carriers may require coverage for acts of piracy for certain cargoes and routes, so too will space insurers likely demand policy add-ons for piracy and hostage events.

For example, in this new space piracy environment, insurance companies that underwrite space assets will need to recalibrate how they define risk and adjust premiums to reflect the realities of space piracy. This process will almost certainly involve some trials and painful errors, which is what happened when the insurance industry first introduced cyber insurance. To protect their downsides, insurance companies will probably insist that policy holders have auditable security plans in place to protect their assets from space piracy.

Possible changes to the structure of the United States Space Force

The USSF is not currently structured to interdict a space hostage situation. The Force's operations and intelligence capabilities at present do not appear to be configured to adequately identify, respond, prevent, and mitigate space piracy and/other active threats from non-state actors in space.

This is not a criticism, but rather an observation about the USSF's structure and budget. The Force's focus has been to protect the United States from sovereign nations like China and Russia, which are interfering with the space interests of the United States, e.g., by jamming satellites and so forth.

The USSF could develop an anti-piracy capability. There are many paths to success, but the best approach may involve establishing a dedicated entity within the USSF that is designed to deal on a comprehensive basis with threats from space piracy. This new entity could be called the Space Security Agency (SSA). It could be placed in either the operational or intelligence commands of the Space Force.

The SSA could be a standalone operation with the goal of preventing:

- 1) The use of space as a platform for irregular attacks on the US, e.g., hostage-taking or acts of war perpetrated by deniable criminal organizations.
- 2) Irregular attacks from space on US allies.
- 3) Attacks on space assets, including those owned by corporations.



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Realizing these objectives would involve the SSA:

- Gathering intelligence from a broad range of sources, including open source (OSINT), human (HUMINT), and cyber, along with integrative analysis from other IC sectors.
- Having to have authority to remove irregular threat assets from space, e.g., rogue satellites that do not appear to be controlled by nation states, but which still pose a threat to the US.
- Having the authority to interdict hostile irregular forces on the ground, but which threaten US space assets, e.g., militarized criminal gangs in Africa that threaten ground stations.
- Taking the lead in developing unique space weaponry suited to mitigating irregular threats.

A further idea would be to foster the development of private space military organizations (PSMOs), which would resemble today's private military operations (PMOs). PSMOs could work under the guidance of the SSA, but not be formally part of the SSA. This will permit extreme secrecy of the PSMO's operations.

Conclusion

A space hostage crisis is a near certainty at some point in the future, but the government and space industry are not currently capable of handling such an incident. Until workable capabilities for rapid, safe rescue are developed, the only option would be to pay the ransom to the pirates and hope for the best. Possible remedies start with more unified intelligence gathering and inter-agency cooperation for incident response. Changes to existing force structures are also essential for mitigating this threat. Space hostage taking presents a technical challenge to resolve, but also one with distinct political and human dimensions. With time and focus, we can do this right.



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About the Authors

JD Cole is a former intelligence analyst. Marc Feldman and Hugh Taylor are the co-founders of The Center for the Study of Space Crime, Piracy, and Governance and co-authors of the upcoming book “Space Piracy: Preparing for a Criminal Crisis in Orbit.” (Wiley, 2025)

About The Center for the Study of Space Crime, Piracy, and Governance

The Center for Study of Space Crime, Piracy, and Governance (CSCPG) is an independent, nonpartisan think tank whose purpose is to serve as a policy resource for government officials and business executives on issues related to space governance, sovereignty, commerce, law, crime, and piracy. CSCP&G seeks to serve as an actionable resource for government officials, and space industry players. The center’s objective is to prevent and combat space crime/piracy, enhancing space governance, space sovereignty, and commerce.

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Cover photo: AI-generated rendering of a space hotel at sunset. [c04uf001.jpg]

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