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Lieutenant Colonel
James Gutzman

AFJAGS Podcast: Episode 21

Space Law & the New U.S. Space Force with Lieutenant Colonel James Gutzman

HOST: MAJOR RICK HANRAHAN, USAF

GUEST: LIEUTENANT COLONEL JAMES GUTZMAN, USAF

In this episode, we interview Lt Col James Gutzman on space law and the new U.S. Space Force which became an independent military branch in December of 2019. We explore the historical development of space law, the current space legal regime, private enterprise in space, and the challenges and opportunities in this rapidly evolving space domain.

MAJOR RICK HANRAHAN:

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[upbeat intro music]

SHOW EXCERPT, LIEUTENANT COLONEL JAMES GUTZMAN:

We're challenged with the task of applying these laws to all of these new technologies that are kind of proliferating in the space domain. How are we going to defend our national security space infrastructure when these companies are putting up hundreds or thousands of satellites?

ANNOUNCER:

Welcome to The Air Force Judge Advocate General's Reporter Podcast, where we interview leaders, innovators, and influencers on the law, leadership, and best practices of the day, and now to your host from The Air Force Judge Advocate General's School.

MAJ HANRAHAN:

Welcome to another episode from The Air Force Judge Advocate General's School at Maxwell Air Force Base. I'm your host Major Rick Hanrahan. Remember, if you liked the show, please consider subscribing on an Apple podcasts and leaving a review. This helps us to grow in outreach to the JAG Corps and beyond.

Well, I'm very excited for our show today. We're going to discuss a cutting edge topic and one that most of you are very interested in learning more about, the new U.S. Space Force. Within today's discussion, we'll explore the origins and current state of space law and the law of war in space. Our guest today, Lieutenant Colonel James Gutzman, is a space law subject matter expert and currently is the Chief of Space Law, U.S. Space Command and [U.S. Space Force](#) at Peterson Air Force Base, Colorado. Sir, thank you for comin' on today to talk to us.

LT COL GUTZMAN:

Great, my pleasure. Really excited to do this.

GUEST INTRODUCTION**MAJ HANRAHAN:**

Lieutenant Colonel Gutzman enlisted in the Air Force in 1993 as a graduate of basic military training. He served nine years as a satellite and wideband maintenance craftsman in Guam, Peru, Honduras, Kuwait, and Saudi Arabia. He completed officer training school and commissioned in 2002. From there, he worked as a Space Operations Officer in the California Air National Guard for eight years.

Upon completion of law school, he transitioned back into the active duty Air Force as a direct appointee, where he's held positions at the Base legal office at McConnell Air Force Base, Kansas. He's been a Deputy Staff Judge Advocate at Joint Base Elmendorf-Richardson in Alaska; a Staff Judge Advocate at Grissom Air Reserve Base in Indiana; and obtained an LL.M. in Space Law at McGill

University in Montreal, Quebec, Canada; and in 2017 was assigned to the Air Force Space Command at Peterson Air Force Base, Colorado, where he is now the Chief of Space Law, U.S. Space Command and U.S. Space Force.

PODCAST INTERVIEW**MAJ HANRAHAN:**

Sir, to get started, could you talk a little bit more about what you do in your current position?

LT COL GUTZMAN:

So I'm part a team of attorneys that does the space international and operational law for both U.S. Space Command and U.S. Space Force. So on the space side, we have a lot of interaction with our commercial partners. So you probably know that [SpaceX](#) and [Blue Origin](#), those companies when they launch, they're primarily launching from Air Force installations. And we'll review and do the legal analysis for some of those commercial space operations support agreements for those companies.

On the international side, the U.S. Space Force has a couple of Space Force-led international sites. So if you think of like Thule Air Force Base in Greenland or Ascension Island in the South Atlantic, each of those sites might have anywhere from 30 to 100 international agreements that govern what the United States Department of Defense can do in those areas. And we do the legal reviews for a lot of those implementing arrangements and some of those agreements. And we're also the repository for those agreements.

And then on the operational law side, that's really kind of the lion's share of what we do. That's the law of war in the space domain, and kind of what constitutes a hostile act in space, what constitutes a hostile intent, what is a use of force in space, and when can you use force in self-defense. That's kind of the bread and butter of what we do.

MAJ HANRAHAN:

What are some, if you could perhaps offer a few maybe issues that you've recently had to face that you're allowed to talk about that you're kind of dealing with in the space domain?

LT COL GUTZMAN:

Those run the gamut between the space international and operational law portfolios. We were working on what's called a hosted payload. So sometimes companies or governments will have a satellite bus that they have some extra space on, or that they want to offer to some partners to put on their satellites, and then they'll launch it.

So Japan has recently asked us about their QZSS, the Quasi-Zenith Satellite System, their QZSS satellite. They were saying, hey, does the United States wanna put a hosted payload on that? And there were some legal issues around that that we had to write an opinion on.

On the operational law side, our team is part of CSpOC, the Combined Space Policy organization. We have an attorney who is on the legal and policy working group, and she is kind of working on space policy, what constitutes norms in space and things like that. Those are some of the big issues that we're working on right now.

MAJ HANRAHAN:

How did you first get interested in the space domain?

LT COL GUTZMAN:

Oh, that goes back a long way. So when I first enlisted, I was working as a SATCOM maintenance troop, so kind of the ground stations that talk to satellites. And it was the old combat communications construct that we had in the Air Force where we'd go out to the middle of a field and set up satellite dishes. And we'd have to kind of find the satellite and make sure that our big 20-foot dish could connect with another 20-foot dish that was a few hundred miles away, and pass whatever kind of data the command wanted to pass over it. And that's

when I really kinda first learned about electronics and began to become interested.

And then when I finished college, I was gonna go teach high school, and actually I did for Los Angeles Unified for a number of years. But while I was a teacher, California was getting into the space game. And so they had a unit called the 148 Space Operation Squadron that they were setting up and they were commissioning space officers, and I really was interested in that area. So I went through the Air Force School Officer's prerequisite training, and then initial qualification training for the [Milstar Satellite Constellation](#), and then upgrade qualification training. And then I flew those satellites for a number of years and really enjoyed it.

Then when I came back active duty as an attorney, we have an opportunity at kind of the six to 10-year mark in our careers to kinda specialize in a certain area of law. And the Air and Space Law program was available up at McGill, so I applied for that because of my space background. And I was really kind of interested in getting back into space. And I was accepted into the program and spent a year up in Montreal, and then have been very happy back here in Colorado to be able to work the space issues and the space domain, and kinda get back with some of the space folks that I knew when I was younger.

MAJ HANRAHAN:

I presume that you've seen quite an advancement in technology since your early days when you were enlisted working as a satellite and wideband maintenance craftsman in various parts of the world to where we are today, where we're right at four and 5G.

LT COL GUTZMAN:

Yeah, it's really a stark transition. And one of the challenges we have in our current job is the binding law hasn't changed. So the last treaty that the U.S. is a part of was ratified in 1975. So the job I did back in the early '90s where we set up those satellite dishes, we had a 250-person squadron, that a cell phone is infinitely

more powerful than what we could provide back then with 250 guys. So the change in the technology and the change in the capabilities are drastic, but we're still applying the same law to present-day technologies. And that presents some challenges, particularly in the kinda commercial sector where things are happening that just weren't envisioned in the '60s and '70s when these treaties were being negotiated and ratified.

MAJ HANRAHAN:

So kinda with that, what are the main laws, treaties and/or regulations that govern space law?

LT COL GUTZMAN:

So the biggest one is the Outer Space Treaty, [1967 Outer Space Treaty](#). It sets down some of the almost now customary international law tenets of what we can and can't do in space. It sets out the principle of freedom to use and explore, so that any state that can kinda get to space, you can use it. It sets out the principle of non-appropriation, meaning, hey, you can use it, but you can't claim it from your own. There are no sovereign claims on the moon or celestial bodies. You can't say, hey, this part of the moon that the United States landed on is United States territory. And likewise, in the orbital regimes, you can't say, hey, these are United States orbits, or these are Russian orbits or Chinese orbits. It's very clear that you can't appropriate it.

The Outer Space Treaty also set out that general international law applies. And that's quite important for the job we do now. So, in general, international law, of course, is the UN Charter, which is big in international law, international humanitarian law, the law of war, whatever you wanna call it. Article 24 in the UN Charter is a prohibition on the threat or use of force, and that's domain-agnostic. It's a prohibition on a threat or use of force in the land, sea, air and space domains. Likewise, Article 51 of the UN Charter is the right to use force in self-defense. And it's the right to use force in self-defense in all domains, including the space domain. So that's really where we get a lot of the application.

And so to move back, Article III of the Outer Space Treaty says, hey, general international law and the UN Charter apply to the space domain. And then another big tenet, Article IV of the Outer Space Treaty is a prohibition on nuclear weapons and weapons of mass destruction in space. There's kinda this misconception out there that you can't put any weapons in space. And that's really, certainly not in black letter law. It's just a prohibition on nuclear weapons, weapons of mass destruction, and then there's an additional prohibition. You can't put any weapons on the moon or celestial bodies. So those are kind of the big tenets from the 1967 Outer Space Treaty.

There were a number of follow-on treaties, another four agreements and conventions. So there's a [1968 Rescue and Return Agreement](#); [1972 Liability Convention](#); [1975 Registration Convention](#).

And then there's the [Moon Treaty from 1979](#), but the United States is not a part of that and we do not consider that treaty to be binding. So the last functional treaty that we have that I mentioned earlier is the 1975 Registration Convention. And now we're challenged with the task of applying these laws to all of these new technologies that are kind of proliferating in the space domain.

MAJ HANRAHAN:

Could you talk a little bit too about maybe the impetus to how that first treaty, the 1967 Outer Space Treaty, was signed? We'd talked previously and you mentioned the story on Sputnik, right? Sputnik 1 that was launched by the Russians back in October of 1957. And then shortly thereafter, the United States launches their satellite. And you said that there was an interesting interplay between the two nations at that time on how they kind of viewed this domain.

LT COL GUTZMAN:

In 1957, when Sputnik was launched, sovereign air law was well established. So a Sputnik had flown at an altitude where aircraft fly and went over the United

States. That would have been a clear violation of United States sovereignty. And now they're sending a spacecraft still over the sovereign territory of the United States. And the United States could have lodged some type of diplomatic objection and saying, "Hey, this is an equal violation of our sovereignty," but they didn't, most certainly because the United States was intending to launch their own satellites. And we did in January of '58, just a few months after Sputnik.

And that transited over the Soviet Union, and the Soviets also did not lodge any diplomatic objection, certainly because they had already flown a satellite over U.S. sovereign territory. And that really got us to the principle of Article I of the Outer Space Treaty of freedom to use and explore. There were only two space-faring nations at the time, and both of them had acted in such a way that made it seem that they believed, and we did believe, that you could fly a satellite over a foreign state and not violate their sovereignty. And that is now considered a principle of customary international law codified as Article I of the Outer Space Treaty. And all states that I've read or seen act, agree with that premise.

MAJ HANRAHAN:

You mentioned how we haven't signed a main treaty in decades. What challenges has that created, laws that are based from the '60s and '70s to technology of the 21st Century?

LT COL GUTZMAN:

Yeah, there are a couple of poignant examples just to that. So I didn't mention, Article VI of the Outer Space Treaty, and this is rather unique in international law. Article VI functionally states that states or countries are responsible for their non-state actors. So the United States is responsible for SpaceX's actions in space, and likewise UK for Inmarsat or in the United States for Intelsat. Well, in 1967, and that Article is really a compromise between the Soviet, if you think about the systems that were set up at the time, the Soviets at the time did not want private companies to be able to

go into space. They thought, hey, only states should be able to do it. But the United States with our capitalist economic system was looking forward to trying to encourage private investment into space. So the compromise was, okay, companies can go into space, but states are gonna be responsible for their actions. And what companies do, are gonna be attributed to their space or their state sponsors.

Well, in 1967, there was kinda this vague notion of what these companies might look like. Well, now we have all of these international conglomerates that kind of move back and forth. You know, they'll be bought by other companies that might be registered in another state. And so a good example of that is there was a remote sensing company, United States remote sensing company, that was called DigitalGlobe, and remote sensing satellites take pictures of the earth. And it was commercially the exquisite capability internationally.

And so it had all of its licenses in the United States, and all of those licenses were subject to United States requirements. Well, in 2016, MacDonald, Dettwiler and Associates, [MDA](#), is a Canadian company that was running a Canadian remote sensing satellite constellation, it was two satellites at the time, [RADARSAT](#). And MDA bought DigitalGlobe. So the question is, well, what happens now? Who's going to be responsible internationally for those DigitalGlobe satellites that are registered and licensed in the United States, now that it's a Canadian company that is directing and owning what these satellites are gonna do? And I certainly had no idea how it was gonna play out.

They set up a new company and incorporated it in Delaware, and it's called [Maxar](#) now. And so the U.S. licenses are still subject to U.S. restrictions and controls, and the Canadian licenses are subject to Canadian restrictions and controls. But it's just a kind of a challenging issue that just wasn't considered in the '60s, but now is gonna happen more frequently as we go forward.

MAJ HANRAHAN:

I'm also aware of kind of a number of different issues in space law that I've seen kinda pass through my desk, working at the Professional Outreach Division, where we get a lot of publication submissions. And one of those had to deal with space debris, which you know, that your average listener might go "Space debris, I mean, what's the big deal?" But when you actually get into it, it looks to be quite a very big deal. Could you talk about that a little bit?

LT COL GUTZMAN:

There's some legal challenges. So the problem with debris is it's dangerous. It's dangerous for these orbits. If one of these satellites is hit with just a tiny bit of debris, it can do catastrophic damage. So the legal issue is coming forward where some of these companies are looking to go up and remove some of the debris. Well, the challenge is that states have maintained jurisdiction and control of their space objects, ad infinitum. And that comes under Article VIII of the Outer Space Treaty. So that if say the United States has a defunct satellite with some type of nuclear power on it, and it's just junk up there, and a company wants to go up and remove that junk or send it into a different orbit so it's not in a commercially valuable orbit, United States still has jurisdiction and control. Likewise for the Soviets or the Chinese or for anybody.

So it's a challenge to go out and say, okay, we're gonna just clean up this orbital regime, but you've got 15 different states with debris in there that may have a vested interest in what happens to that issue, or to that spacecraft. And the companies, you know, there's no mechanism, at least currently, for the companies to go out and say, hey, I'm just gonna go out and clean this up. I'm not gonna go to each of these different states or figure out where this debris came from and ask that state whether I can clean up that piece.

MAJ HANRAHAN:

Sir, do you have any idea how many satellites are actually orbiting earth at this point?

LT COL GUTZMAN:

Well, it's a couple thousand. SpaceX, though, it would take me a second to look it up. SpaceX is putting up their megaconstellation. [OneWeb](#) wants to put up a megaconstellation also. So the couple thousand now is going to turn into 10,000 or 15,000 here soon, and then we'll see from there.

I think SpaceX is putting up 60 satellites at a time right now and they've launched four. I think there have been four launches as of today in mid-March. So they will have thousands and thousands of satellites. It's just proliferating like crazy right now.

MAJ HANRAHAN:

So I'm assuming that's gonna lead to some high congestion in space.

LT COL GUTZMAN:

Yeah, and that's another issue. So it will lead to high congestion. Right now there's still enough space to continue to put up these satellites. But as we go through and as it becomes increasingly more congested and contested, the question is, especially from a DoD standpoint, is how are we going to defend our national security space infrastructure when these companies are putting up hundreds or thousands of satellites in the same orbital regimes that we might wanna use, or there are so many satellites and there are so many new, I guess, capabilities out there that anything that goes up could be used also as a weapon, which is what we really kinda get at. So any satellite can ram another satellite, if it has the fuel and if it's close enough to that satellite. So that's something we're dealing with on a day-to-day basis.

MAJ HANRAHAN:

So kinda transitioning a little bit, sir, you're currently the Chief of Space Law, U.S. Space Command and U.S. Space Force. What is the distinction between those two organizations?

LT COL GUTZMAN:

Oh, yeah, that's a great question.

So the way the U.S. is, the Department of Defense is organized, you have the services whose jobs are organize, train and equip. So they kinda present forces and capabilities to combatant commanders. So the service aspect is the United States Space Force. If you think of the U.S. Army and the U.S. Navy, they also organize, train and equip to present forces and capabilities to combatant commanders.

Now, the combatant commander is the commander of United States Space Command, which is the combatant commander, it's the newest combatant command. It was stood up in August of 2019. And the combatant command is really the warfighting command. So it's the, to use an Air Force term, it's kind of the difference between EUCOM and USAFE, AF European Command and United States Air Forces in Europe.

So United States Space Command is the combatant command and the United States Space Force is the service that presents the capabilities to the combatant command.

MAJ HANRAHAN:

Obviously, a lot of our listeners are very interested in the U.S. Space Force, and I think this is kinda maybe a natural segue to discuss that. It's my understanding that, in December of 2019, General John W. Raymond assumed the duties as the First Chief of the Space Force. So it's been around for a few months right now. What's the current composition of the U.S. Space Force? And also, what could you speak about the new U.S. Space Force?

LT COL GUTZMAN:

General Raymond, he's actually both the U.S. SPACECOM Combatant Commander and the Chief of Space Operations for the U.S. Space Force, or the U.S. Space Force is that new service that was stood up pursuant to the National Defense Authorization Act in December. Right now there's almost like two U.S. Space Forces.

So there's the service level U.S. Space Force, which will take over the space capabilities, but then there's also the

U.S. Space Force that I work for, which is kind of an Air Force MAJCOM equivalent that's called the U.S. Space Force. So it's a little bit confusing. But eventually all of those space capabilities in space, operators in space operations will transition from that Air Force MAJCOM-like U.S. Space Force into the service U.S. Space Force that General Raymond is the Chief of Space Operations for.

And at that point, there will just be the service U.S. Space Force and there won't be this MAJCOM-like. And that service is similar to the U.S. Marine Corps in that it's, so the U.S. Marine Corps is under the Department of the Navy. United States Space Force will be, and is, under the Department of the Air Force.

MAJ HANRAHAN:

How do you think this new service will be received by the international community?

LT COL GUTZMAN:

I think for those states, so when the U.S. Space Force was first announced and allotted by President Trump, and it's been a couple of years ago now, certain states came out, Russia came out and said, oh, this is the United States militarizing space, this is counter, if they continue to run counter to the Outer Space Treaty, we will act in kind.

There are a couple of articles about that. But if you understand the way the U.S. military is organized, this isn't substantially different. It's an organize, train and equip model. And so the U.S. Space Force is going to continue to organize, train and equip its troops to present to the various combatant commands and primarily to the United States Space Command, which would be the Space Combatant Command, or the combatant command with the area of responsibility over space.

MAJ HANRAHAN:

How does the U.S., if you could also opine this, how does the U.S. justify the Space Force creation when you have an Outer Space Treaty that is more or less a non-armament treaty?

LT COL GUTZMAN:

Yeah, so I would disagree with the premise that it's a non-armament treaty. In the preamble to the Outer Space Treaty, it says space shall be used for peaceful purposes. A, that's not in the binding clauses of the actual articles of the treaty. And B, UNCLOS, the United Nations Convention of the Law of the Sea, also says that the sea will be used for, international waters will be used for peaceful purposes. And the way the United States, and really every other state that's a major player, looks at that is peaceful purposes means non-aggressive. So you can take any type of self-defense action. Similar to what we have in international waters with our U.S. Navy, you can take the same types of actions in space and be in compliance with all of the international treaties, primarily all the space treaties and the UN Charter.

MAJ HANRAHAN:

With that in mind, I know one of the other topics we were going to talk about was kind of the quote, unquote, "law of war" in the space domain. So what actually is that?

LT COL GUTZMAN:

The law of war in the space domain is really just the law of war. The law of war applies in all domains. And what the law of war is, is, hey, you can't threaten or use force against another state in any domain. And you have the right to use force in self-defense in any domain. While there's certain kind of physical differences about the space domain and there's certain capability differences in the space domain, that the analysis is substantially the same, is, hey, has this other state, has this adversarial state committed an armed attack against us or against the United States?

And if the United States says, "yes, they have", well, then we have the right to use force in self-defense. And we can use force in self-defense in any of the domains. So you look at it and you say, okay, is this a use of force or is this an armed attack in the space domain? You say, is this a use of force or is this an armed attack against our state? And you include everything. You include, hey, this is what this adversarial state is doing on the ground,

this is what they're doing in the sea, this is what they're doing in the air, and this is what they're doing in space. And this is what our current political military relationship is with that state. And you take all of those factors and you put 'em in context, and you say, okay, given all of these, do we consider this a use of force against us? And if the answer is yes, then we, the United States, will reserve the right to use force in self-defense to any use of force. And we can use force in self-defense in any of those domains.

So the law of war, is the law of war, is the law of war. And if you try to like parse it out by domain, you're gonna be unnecessarily limiting your state's actions. So as long as you can say, okay, this is an illegal use of force or this is an illegal armed attack against our state, there's a nuance there I don't know if you want me to discuss. But as long as you can say that, then you reserve the right to use force in self-defense in all domains.

MAJ HANRAHAN:

So, in other words, the law of war, we should view that really not any differently or similarly than we do to the other domains?

LT COL GUTZMAN:

Exactly, right. We're applying the UN Charter and we're including the space domain in that application. So if an adversary state has amassed a bunch of troops on our border, and they've got some ships out, some aircraft carriers out, just outside of our territorial waters, and now they're holding a satellite, a national security satellite hostage in the space domain, you're gonna consider all of those factors and say, hey, is this an imminent use of force or an imminent armed attack? And if it is, we reserve the right to use force in self-defense.

MAJ HANRAHAN:

And sir, with the advance in technology, as we discussed earlier, and a lot of other states across the world that have now, they have their own space programs, they're getting much more sophisticated. There's many other state actors that are involved in the space domain. Do

we need to take a new and fresh approach to the current legal regime?

LT COL GUTZMAN:

You know, that's a hard question. And the reason it's so challenging is that it's not just in the space domain, is that states are unwilling to unnecessarily bind their actions. So, that we're not getting multilateral international treaties in any domain these days. You'll see a bunch of what some academics will term "soft law", like United Nations General Assembly Resolutions or certain non-binding agreements, but you might see some additional bilateral agreements or coalition agreements, but I don't think we will see anything like the original four treaties. I don't think we'll see anything new like that in my lifetime.

MAJ HANRAHAN:

And if you could, sir, why do you think that's the case?

LT COL GUTZMAN:

Well, I think states have become more reticent to sign away any kind of flexible options in the future, again, in all domains. So that when space was new and they didn't know exactly how it was gonna play out, and they wanted to make sure that everybody was gonna play by a certain limited set of rules, it was a little bit easier for these states to get together and say, okay, this is what we're gonna do. And in any treaty or in any international agreement, you're giving something up, right? You're gonna say, hey, I won't do X to ensure that you also don't do X. And as space plays out, we're not at a level where all the states are going to agree that, hey, I'm willing to give up whatever that is in order to ensure that you also won't do it.

MAJ HANRAHAN:

So, would it be fair to more or less summarize that states deliberately want laws to more or less remain a little unclear or ambiguous for their own national interests, maybe much like we see in the cyber domain?

LT COL GUTZMAN:

Yeah, absolutely. I mean, in international law, there has long been a practice of intentional ambiguity where states are looking to maybe sign onto something to say that they're a member of this treaty, but they don't wanna unnecessarily bind their actions unless they have to. And that's really what we're seeing now. I mean, internationally, that's what we're seeing now, but specifically in the space domain also we're seeing that.

MAJ HANRAHAN:

What are some of the biggest challenges you think we're gonna face in the near-term, maybe in the next five to ten years in the space domain?

LT COL GUTZMAN:

I think the challenges are establishment of operational norms. So, I don't mean legal norms, I just mean operational norms. Whereas if you're in international airspace or in international waters, there are a series of norms that other states and the United States will follow so that you know, hey, this is what the intent of the other state is. So that if, say if they get within, in the international airspace, if they get within 20 nautical miles, X happens. If they get within 10 nautical miles, Y happens. But all the states know what that is, and they know if they're gonna break it, they know what kind of the potential repercussions are. And we don't have anything like that in space.

You may have seen there was an article in [Time](#) that, an interview with General Raymond, where he mentioned this Russian spacecraft that is following, that appears to be following a United States spy satellite. Well, we just don't have the norms to say, okay, this is okay but this isn't. And if you cross that line, these are the potential response actions that we have. We just don't have that at this stage. So as those norms get fleshed out, and they're being worked diligently at much higher levels than where I'm at, as they get fleshed out and we learn more about, hey, these are what the capabilities are

of these other states and this distance is okay in this orbital regime, and this distance is okay in that orbital regime, I think that's gonna be the biggest challenge going forward.

MAJ HANRAHAN:

How will those norms likely be played out? Will that be done from state to state? Or will you see bodies of states getting together to come to compromises on this?

LT COL GUTZMAN:

I think it'll be bodies of states. CSpO, the Combined Space Policy Organization, there are a couple of international manuals, mostly on the academic side, not at the state level, on the military use of space that are pending. One is called MILAMUS, which is the Manual of International Law and the Military Use of Space. The other one is called Woomera, and so the Woomera manual. Both of those will be published within the next couple of years. And those are kind of these coalition efforts. So I think we'll need, and then of course, UN COPUOS, The Committee on the Peaceful Uses of Space, the United Nations Committee on the Peaceful Uses of Space, will continue to work together to at least get non-binding guidelines put out there as we go forward.

MAJ HANRAHAN:

What excites you about space today and going into the future, sir?

LT COL GUTZMAN:

Leveraging this amazing commercial revolution of these new companies that are coming in, they're pouring billions of dollars into capabilities. And the DoD can have kind of tunnel vision where we continue to do see things the same way. Well, now we've got these commercial partners out there that are just revolutionizing the way we launch, what we can do from space, the capabilities that are out there. That's gotta be just the most exciting thing. And I'm really looking forward to seeing what happens in the next five years.

MAJ HANRAHAN:

Do you think we'll see man walking on Mars in our lifetime?

LT COL GUTZMAN:

I don't know, maybe 30 years' time. It's hard to say when the technology, it continues to explode. It's kind of an exponential curve. I'm excited to see what happens. I just don't know what it'll be.

MAJ HANRAHAN:

I know Elon Musk has made some bold proclamations on SpaceX, so just wanted to hear what your thoughts were on that, sir [laughs].

LT COL GUTZMAN:

Nope, nope, nope.

MAJ HANRAHAN:

So, kind of in summary, sir, are there any resources, whether books, videos, podcasts or anything else that you might want to recommend to our listeners where they can learn more about space law, today's topic?

LT COL GUTZMAN:

Sure. So the United Nations has a website out there that lists all of the [space treaties](#) and that's a good starting point. And then there are a number of treatises or overviews of space law. The two that I look at are, one is by a professor out in Nebraska, [Frans Von der Dunk](#), who has a space law treatise. And then there's another one, Lyall and Larsen is another one that I usually go to when I wanna kinda figure out, hey, this is kind of where we're at. They're valuable in that, you know, you can read the entirety of those four treaties of black letter space law in 45 minutes, but then you really wanna know, okay, what have the states done since the 1960s and 1970s, so that they see what compliance with these treaties means?

And then there's, we didn't discuss it, but there's quite a bit of national law also that governs space. A space law firm, say like if you're a United States company, it's United States domestic law. So those are all things that are kind of incorporated in those treaties, so those are the ones that I like to look at.

MAJ HANRAHAN:

Thank you, sir, and we'll make sure to put those in our show notes once this is published live and on our website. With that, sir, any last final parting tips, words, or any other thing you'd like to leave with our listeners on the topic of space law?

LT COL GUTZMAN:

No, I thank you so much for having me on, I really appreciate it. It's an exciting field and it's gonna continue to grow through the next couple of decades. So people are interested in it, I encourage them to pursue getting into space law.

MAJ HANRAHAN:

Well, great, sir. Thank you so much again for your time today. That'll be the end for our show today.

LT COL GUTZMAN:

Oh, great, thank you much.

TAKEAWAYS

MAJ HANRAHAN:

Well, that concludes our interview with Lieutenant Colonel James Gutzman. Here are my top three takeaways from the interview.

Number one, space technology is pushing the legal boundaries of the main governing space laws of the 1960s and '70s. Here's a quick historical snapshot on our technological advancement to emphasize this point. On October 4th, 1957, history changed when the then-Soviet Union launched Sputnik 1, the world's first artificial satellite into space and the dawn of the Space Age. Within months, the U.S. successfully launched

its own satellite. And a year later, NASA was born. And within 12 years of Sputnik 1, U.S. astronauts Neil Armstrong and Buzz Aldrin became the first humans to walk on the moon on July 20th, 1969.

Since the late 1960s, humankind has continued to push the bounds of space exploration and discovery. We've successfully sent satellites into intergalactic space, explored planets in our solar system with remarkable precision, discovered and created numerous new technologies due to space exploration or tangentially related to it, such as GPS, LEDs, CAT scans, scratch-resistant lenses, water purification systems, wireless headsets, to the computer mouse and laptops among other advancements. And, according to multiple sources, there are over 2,000 satellites currently orbiting earth and potentially thousands more in the coming years, for the United States and Russia aren't the only state players anymore, and private enterprise has become a huge factor in the 21st century.

With that quick technological backdrop, the laws that govern space are still rooted in the 1960s and '70s. As discussed in the interview, the primary laws and conventions that govern space today include the 1967 Outer Space Treaty; the 1968 Rescue and Return agreement; the 1972 Liability Convention; the 1975 Registration Convention, which was the last main binding convention or treaty that the U.S. signed; and the 1979 Moon Treaty, which the U.S. is not a part of. These main laws have set the space legal framework for decades, along with other international and national laws and regulations. While these laws have more or less provided a sound legal framework for the space domain, they could not possibly have anticipated all the new technological developments over the last 50 years. Many of these laws remain largely ambiguous in many areas of space, which can cause uncertainty and conflict in the interpretation of them among state actors. As we sit in 2020 with the continued advancement of space technology, it seems to me that we may want to reevaluate these governing laws to ensure they are primed for our future in space.

Number two, private enterprise continues to become a bigger player in the space domain. As Lieutenant Colonel Gutzman mentioned, commercial partners are revolutionizing the way we quote, unquote, "do space" from the way we launch to communication systems, travel, and the very operation in space itself. Private enterprise has taken a controlling lead in many areas of space through companies like SpaceX, Blue Origin, and OneWeb.

For example, SpaceX and OneWeb both want to put up megaconstellations. SpaceX is putting up 60 satellites at a time, and there have been multiple launches so far. This will lead to higher congestion in space, which will pose new challenges. For example, how will states defend their national security space infrastructure when private companies are filling out the orbital space regimes above earth? Plus anything that goes up into space could potentially be used as a weapon, as Lieutenant Colonel Gutzman mentioned. How will this play out in space norms?

Further, corporate mergers and acquisitions have also led to legal dilemmas. For example, DigitalGlobe was the commercial exquisite private company, and it had all its licenses in the U.S. Then, MDA, a Canadian company, bought DigitalGlobe to the tune of \$2.4 billion. From a legal perspective, who becomes responsible for this new company's space assets? If you recall, under the current legal space framework, each country is responsible for private enterprises from its own country. MDA set up a new company and incorporated it in Delaware called Maxar Technologies in an attempt to separate U.S. companies and Canadian companies under each of their respective state regimes' legal authorities. If this sounds a little confusing, that's the point. Private enterprise with its mergers, acquisitions and other unique attributes, has made the space domain even more complicated.

Number three, international space norms remain the number one challenge in space. Lieutenant Colonel Gutzman mentioned that the number one challenge in the space domain is in establishing norms. This point

essentially ties into the previous two points. And these are not just the legal norms, but operational norms as well.

Further, Lieutenant Colonel Gutzman mentioned that many states have deliberately treated the space domain in an ambiguous manner. They're more or less afraid of effectuating change that could negatively impact their own space interests and/or national security concerns. Fair enough there. However, leaving much of the law in a state of ambiguity is likely not the best long-term solution. As space becomes more congested, private enterprise becomes even more vested, and more conflicts arise, the laws will need to be updated.

In summary, we've come a very long way indeed from Sputnik 1's first orbit of earth in October of 1957. And more recently, on December 20th of 2019, the U.S. created the world's first Space Force. How other countries react to this step remains to be determined. Where will we be in 10, 20, 50 or 100 years from now is anyone's guess. Elon Musk, the founder of SpaceX, has boldly proclaimed that man will walk on Mars in our lifetime and perhaps colonize it in the next 100 years. If this turns out to be even remotely true, which many believe it will be, we owe it to ourselves and future generations to take a clean and fresh look at the space law regime in context with our technological advancements.

Thank you for listening to another episode. If you liked this episode, please let us know by leaving a review on Apple podcast. We appreciate the support. We'll see you on the next episode.

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GLOSSARY

- **CAT scan:** computerized axial tomography
- **COPUOS:** Committee on the Peaceful Uses of Space
- **CSpOC:** Combined Space Operations Center
- **EUCOM:** European Command
- **GPS:** Global Positioning System
- **JAG:** judge advocate general
- **LED:** light-emitting diode
- **LL.M.:** Master of Laws
- **MAJCOM:** major command
- **MILAMUS:** Manual of International Law and the Military Use of Space
- **NASA:** National Aeronautics and Space Administration
- **QZSS:** Quasi-Zenith Satellite System
- **SATCOM:** satellite communication
- **SPACECOM:** Space Command
- **UNCLOS:** United Nations Convention on the Law of the Sea
- **USAFE:** U.S. Air Forces in Europe