



Episode 238 – Is Aerospace Asset Leasing the Key to Unlocking the Next Wave of Space Growth?

Speaker: Phaedra Chrousos, COO and Max Yergan, SVP of Investments of SLI Aerospace – 21 minutes

John Gilroy:

Welcome to Constellations, the podcast from Kratos. My name is John Gilroy and I'll be your moderator. Today, we're taking a closer look at a part of the space industry that often receives less attention than rockets and satellites, but is becoming increasingly critical to growth: financing. Our guests are from SLI Aerospace, a company pioneering aerospace asset leasing to help manufacturers and operators finance the satellites, ground infrastructure, and other space assets they need without the burden of large upfront investments.

We'll discuss how innovative financing models could accelerate the commercialization of space and reshape the economics of the industry for years to come. Our guests are Phaedra Chrousos, COO, and Max Yergan, SVP of Investments for SLI Aerospace. Phaedra and Max, we could go for four hours in this, couldn't we?

Phaedra Chrousos:

We could. Definitely.

Max Yergan:

Yeah. Yeah.

John Gilroy:

What I'm going to try to do is in the theme of the World Cup, take a little soccer ball and kick it back and forth between you two and give you a chance to give your opinion on different issues here. And so we're going to start with Phaedra, and we're going to give her the toughest question here, Max. You get an easy one. She gets a tough one. SLI often describes itself as the "world's first dedicated space leasing company." So Phaedra, what problem do you see in the space economy that traditional financing just wasn't solving?

Phaedra Chrousos:

I think for us to all understand the gap that we saw, we have to take a step back and understand where we came from. So SLI is part of a larger global conglomerate called Libra Group. Libra Group has had 50 years of asset finance experience across many different asset classes from maritime where we built ships and leased them to Maersk to Aviation, bought billions of dollars of aircraft from Boeing and Airbus and leased them to operators like Singapore Airlines and British Airways. And we've grown organically over the years and done this across 60 countries.

So at some point back in 2002, 2003, we were looking, when I was at Libra Group as its chief strategy officer, we were looking back to see what have we done well over the years and how can we lift and shift that strategy into new growing asset classes? And especially assets of the future, right. That was a huge part of our mandate is how do we think about the future and what that holds? And one of the



obvious industries that we looked at was space. It's growing rapidly and it's had some interesting changes over the last few years that really make it a perfect time for asset-backed finance.

The two changes that happened are one. Well, actually the one change that happened is Elon Musk because he created both changes. But Elon Musk launched SpaceX, which lowered launch costs by 90%, and that's huge, a huge lowering of the barrier to entry to space. And he launched Starlink, which really compressed the margins when it came to communications, replacing a lot of the GeoComms with lower Earth comms. And when you have that kind of shift in dynamics in an established market, that's when you need interesting financing solutions so that you can pivot and you can grow and you can find alternative sources of capital to make your way through the transitioning industry.

John Gilroy:

Well, Max, Phaedra talked about 50 years. I'm just going to focus on five years with you. Commercial space has matured dramatically over the past five years. So why is now the right time for leasing to become part of the industry's financial toolkit?

Max Yergan:

Yeah, picking up where Phaedra left off, it really comes down to market growth. The market's experienced a tremendous amount of expansion over the past few years, and it's expected to continue growing over the next few years. It's a \$625 billion industry now. It's expected to reach \$1 trillion in total by 2030. And McKinsey projects the industry will hit \$1.8 trillion by 2035. The customer mix within the industry has shifted as well. The industry historically had been driven by government spent and national security interest primarily, but largely catalyzed by SpaceX. There's been a huge surge in commercial activity in space.

The launch costs have enabled us as an industry to put more stuff up into space, and the numbers really bear that out. There were about 2,000 satellites on orbit in 2019, and there's 16,000 today. And within two or three years, there might be 10,000 more. But these assets are very expensive. It's no secret that a satellite is a pricey piece of machinery. And the companies in this industry have largely lacked the sophisticated financial tools that other asset intensive industries have. And so it's about time to bring some of those financing tools to the space industry.

John Gilroy:

Yeah. Phaedra, if you look at the space industry from Leo, from a high sky here, historically, companies needed to own satellites, ground stations, or other infrastructure just outright. So how does shifting from ownership to leasing change the economics of building a space business?

Phaedra Chrousos:

It changes it significantly actually, because it shifts CapEx to OPEX, right. I think the main thing is you can use your capital that you have on hand for high growth areas like business development and strategy and human capital. And you don't need to use it to build out new assets or buy new assets. And that's something we've seen in aviation. 60% of all airplanes that exist in the world today are leased. And that's because the aviation industry has realized that it's smarter to use the capital they have and more efficient in a high growth way and use asset finance and especially leasing for their CapEx.

And you see that in telecoms, you see that in aviation, you see that in maritime. I like to say that this is the most vanilla financing instrument and the most interesting industry. This is not rocket science. And Max likes to say that we explain finance to rocket scientists and rocket scientists to financiers.



John Gilroy:

Well, Max, Phaedra mentioned assets here. Let's poke the bear and talk about assets.

Max Yergan:

Okay.

John Gilroy:

Which categories of space assets do you believe are most likely to move towards leasing over the next decade? Satellites, ground stations, optical terminals, lunar infrastructure, or something else?

Max Yergan:

All of them.

John Gilroy:

Whoa.

Max Yergan:

No, we're starting with ground and then expanding out from there. We like to say that ground is the gateway to space. You can't have space without having ground. And in many ways, the ground infrastructure is quite similar to existing industries like data centers and telecom towers. So some of our financing partners have familiarity with the different structures and tools that are used to fund these types of assets. Moving on from ground, GEO and LEO are quite primed for releasing structures. And of course, the way you structure for those different orbits definitely varies based on the type of asset.

But then it can get more exotic from there. Things like in-orbit servicing. A few weeks back, we saw the launch of an in-orbit servicing project. So a very exciting step for the industry and eventually rockets. With Starship, Mr. Musk is projecting a large fleet of them. And much like the commercial aviation industry, there's no reason why you can't have a significant amount of financial investors owning the assets and leasing them to operators like SpaceX or like other launchers that might come up over time.

John Gilroy:

Phaedra, if you've been around the IT business for a while, and many listeners have, they know about this as a service concept.

Phaedra Chrousos:

Yeah.

John Gilroy:

So we've seen cloud computing transform IT through an as-a-service model.

Phaedra Chrousos:

Right.

John Gilroy:

So is the space industry heading towards a similar future when infrastructure becomes increasingly consumed as a service rather than owned?

Phaedra Chrousos:

Absolutely. I think that's the perfect analogy. The space industry is just at the beginning of its journey. Right now, cloud computing feels very abstract, but it truly is a hard asset, a capital-intensive asset on



the ground that draws a lot of power and has a huge use case to many different people that are all using, kind of underpins our digital world that we all use. And this is a shared service, and it was more cost-efficient to do this as a shared service than as proprietary data centers.

We're seeing this happen in ground. We've partnered up with a fantastic company called RBC Signals, and we've partnered with others that do ground stations as a shared service. And that's becoming very popular in a way that people can focus on their core competencies and outsource the hardware, outsource to the cloud, outsource the ground stations. We're seeing that trend picking up with satellites. And eventually, I think we're used to this hardware as a service model in our daily lives, whether we lease a car or our house or the cell phone that we hold every day. It makes sense to be able to lease these larger capital assets hardware as well.

John Gilroy:

Max, you mentioned 10,000 satellites and very expensive proposition, that 10,000 satellites. One of the industry's biggest challenges is raising enough capital to scale. So how can innovative financing accelerate growth through startups without forcing them into excessive equity dilution?

Max Yergan:

Yeah. As you said, financial tools are really critical to giving a particular industry scale. These financial tools such as leasing can help companies avoid dilution as well as manage risk, particularly financial risk. They can focus on their operations instead of focusing on the financial aspects of the investment itself. Leasing also helps expand the customer universe. If the only option to obtaining a satellite were to buy it with cash upfront, that's a very limited universe of folks who can afford that type of asset.

However, if you structure it such that the payments are made over the useful life of the asset, it expands the market significantly and opens it up to people who historically have not had access to space. This includes sovereign governments, countries around the world, and many commercial companies that are now leveraging space to provide services within their business. So all in all, I think as Phaedra said, it's critical to use capital for the highest return opportunities. User capital to invest in the business, not to invest into the metal itself.

John Gilroy:

Yeah.

Phaedra Chrousos:

Yep.

John Gilroy:

Phaedra, this word sovereign is really trending-

Phaedra Chrousos:

Yes.

John Gilroy:

... in the satellite space community in the last couple of years here. Governments are investing heavily in sovereign space capabilities. Do you see leasing being part of national space strategies as countries look to deploy that capability faster and more efficiently?

Phaedra Chrousos:



I think it's absolutely the catalyst towards sovereign space because what leasing does is it allows countries that have multi-year appropriation cycles to be able to act on it today, right. So they don't need to raise the \$300 million upfront from their Congress or from their government and get that appropriated, which takes a long time. They can actually start leasing the satellite over many years. And I think that we've actually seen that demand. We put a purchase order in for AscendArc satellites and ReOrbit satellites, which is public. And most of the companies or most of the organizations that we're talking to are either sovereign or sovereign aligned organizations around the world who are looking for just that.

They're saying, "We need this. We've been mandated to go ahead and launch our own satellite. We don't have the capital upfront. We need to go back to our Congress to get it. We need to raise taxes to get it. How do we do this differently?" And one thing that we've been really careful with is obviously sovereignty and ownership, people feel like they go hand in hand, but it's truly sovereignty and control. So we've worked with our lawyers to put in clauses that give sovereign governments a lot of comfort around the contracts that they're signing that really give them full control regardless of ownership. So I think this is actually going to be very catalytic for sovereign space.

John Gilroy:

Yeah. Max, a few minutes ago we talked about assets and you mentioned ground infrastructure. Now, ground infrastructure often receives less attention than spacecraft, yet it's becoming increasingly strategic. So Max, how do you see demand evolving for ground stations, data infrastructure, and other supporting assets?

Max Yergan:

Yeah. As mentioned before, we really see ground as the gateway to space and you can't have space without having ground. And we also like to say that ground is quickly becoming the bottleneck in space. An immense amount of data is captured up in space by satellites, whether it be earth observation for weather or for other purposes. And that information needs to get back down to the ground and then processed for it to become usable. And so that whole process can't happen without the ground networks.

And for ground itself, speaking a little bit to the sovereign issue that Phaedra had mentioned before, countries are really realizing the strategic importance of these assets. And they understand that if these assets are not protected and not kept safe, then you can lose access to your connection and to your connectivity. And so ground, it's really it's gateway to space. And it's companies, different countries are starting to wake up more and more to how critical a component of infrastructure that ground is.

John Gilroy:

Oh, there's a T-shirt. Gateway to space.

Max Yergan:

Yeah, I like that one.

John Gilroy:

So Phaedra, as AI and direct-to-device services and multi-orbit networks drive demand for new infrastructure, where do you expect the greatest financing opportunities to emerge over the next five years?

Phaedra Chrousos:



I think you've touched on a really important kind of underlying part of our thesis, which is about data and data growth. And AI is a huge element of that. If you think about it, AI is a rising tide that lifts all boats. If you believe that we're creating more data through autonomy, which is happening all the time, or creating more data through health wearables, which is happening quietly, we're gathering all this data, we're creating more data with AI, whether it's video or written content, and all of this data needs to move through the world through infrastructure.

So if your thesis is around fiber or data centers, then your thesis should also be around growth and ground stations and satellites and whether that's GEO or LEO constellations. So I think the financing opportunities are only going to grow, and I think AI is the reason that we can have that thesis.

John Gilroy:

Now, Max, we began this interview with origin story with Libra, and we talked about aviation finance. So got to delve into that a little bit here. So what lessons from aviation finance translate directly into the commercial space sector? And where do the industries diverge? Converge, diverge? Where?

Max Yergan:

Yeah, I've spent a number of years of my career focusing on aviation and aerospace. And now stepping into space in particular, I've been very surprised by how similar the two industries actually are, a lot more than I had expected. At the end of the day, both industries, from a leasing perspective, it's really a credit-driven analysis. It's understanding the companies that are utilizing the assets, what they utilize them for, and how they generate revenue with them, because ultimately that revenue is used to pay for the lease. And so there's also a significant focus on the useful life of the asset.

And so for planes, there's a well-defined sort of different lifecycle process for aircraft. And at times they can have as much as three different owners. Whereas with satellites, they typically have one or at most oftentimes two owners throughout their life. Some other ways that they're different is the end users tend to be more sovereign and strategic in space relative to aviation where it's airlines. And as the industry is transitioning, it's becoming even more and more like aviation. For example, software-defined satellites. Software-defined satellites are making multi-owners throughout the life cycle of an asset making that much more possible and feasible.

And another point of difference, people think of space and think of it as literally so far away and exotic and out of this world, but there's actually some benefits to assets like satellites being up in space and in orbit. For example, for a plane, it needs to be maintained. And if it's not maintained right, it'll impact its ability to fly, to provide a service, and it will impact its value. However, with a satellite, there's no hands-on maintenance in the same way. And also for a satellite, in the event of a lessee default, you're not going to have to go to some far-flung country to retrieve your helicopter or your plane.

It's a much more simple, straightforward process where instead you punch in a couple lines of code and you now have control over your asset again. And so oftentimes people find the distance challenging, but we like to say that there's actually many benefits that people don't quite anticipate.

John Gilroy:

Yeah, yeah. Phaedra, I'm going to ask you to anticipate or maybe even make a prediction all the way into 2035. I mean, this is going to be a tough one, but I got to ask it. Okay. If we revisit this conversation in 2035, what will surprise people most about how commercial space infrastructure is financed and deployed?

Phaedra Chrousos:



I think what will surprise people the most is how ordinary it all seems.

John Gilroy:

Wow.

Phaedra Chrousos:

So I think today we mortgage our homes, we lease our cars, we use data storage via cloud-based service providers. I think companies will be shocked at how ordinary asset finance will be in the future. And just like aviation went from zero to 60% and helicopter leasing from zero to 70 plus percent, I believe that that same trajectory will happen and history will repeat itself only in this new asset class.

John Gilroy:

Well, Max, we're on the Constellations Podcast here, and the Constellations Podcast focuses on technologies shaping the future of space networks. So looking ahead, your turn to look ahead, what emerging trend do you believe is still underappreciated, but could fundamentally reshape the space economy?

Max Yergan:

Yeah, I think people generally underestimate the role of space in their lives today. We look at space as the next layer of infrastructure that here on earth there's a lot of digital and telecom infrastructure that we're all familiar with, but similar versions of that exist just one layer up on orbit. Things like GPS. GPS is really just a network of satellites. And much of our modern life, whether it be our phones, navigation in our cars, you can name a million different use cases for GPS, it's all dependent upon space. And I think with things like emergency satellite connectivity on iPhones and things like that, folks are becoming much more aware of the influence that space has in their daily lives.

And I think one really fundamental change is going to be direct-to-device. There's globally a very significant portion of the population does not have digital access. And so proliferation of direct-to-device technology delivered by satellite has the ability to bring the whole world online. And the impact that connectivity and data has on the lives of individuals is profound. And so I think the one thing that, to point to one thing that gets me particularly excited might be the direct-to-device and really how that technology is going to transform the whole world.

John Gilroy:

Yeah. Max and Phaedra, I think you've given our listeners a better understanding of space leasing and how it transforms the whole industry. You have been listening to the Constellations Podcast. I'd like to thank our guests, Phaedra Chrousos, COO, and Max Yergan, SVP of Investments at SLI Aerospace.

Max Yergan:

Thank you so much.

Phaedra Chrousos:

Thank you.