



Mitchell Institute for Airpower Studies

Presentation: The Contested Air Commons
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Grant: Our institute seeks to gather scholarly writing and presentations on airpower in all its forms--air, space, and cyber. And today I'm really honored to have two presenters who are going to talk to you about airpower in all its forms--its importance in the commons, its importance in the 21st Century, in both its civil and its military aspects. Their work will really speak for itself, so let me just give you a brief introduction to the two of them.

First of all, Lieutenant Colonel Kelly Martin. She is, as she told me, a straight KC-135 pilot. She is currently doing her Senior Service School Fellowship at CNAS downtown, which is the Center for a New American Security. She was the Commander at Fairchild of the OSS; prior to that spent time over at Sather Air Base in Iraq, so she has seen it all and done it all in the 135 world, and we're very honored to have her here.

With her is Mr. Oliver Fritz who is the Assistant Director in the Directorate of Strategic Planning, known as A-8, and specifically A-8X down at the Pentagon. Mr. Fritz is a graduate of Berkeley, and also did his graduate work at MIT. He spent about 10 years in the private sector in consulting and defense research and analysis, and became a member of the Air Staff about four years ago, three or four years ago, joined A-8 as the Senior Civilian Advisor to the Directorate of Strategic Planning.

They will both talk for about 20 minutes or so, and then we will have time for your questions. So without further ado, please begin.

Martin: Thank you very much for having me today here. It's great to be here and be able to talk about the work that we do with the Air Commons.

I'm going to take a few minutes and just kind of talk about how the overarching piece of the contested commons was thought of and got started there at CNAS, and how the air commons piece fit into that. Then Ollie's going to take a few minutes and talk about the piece, some of the salient points that we were trying to get across in what we were writing. Then because our chapter was part of a larger project, there were several things that we wanted to put in there that made it about as far as the cutting room floor because it wasn't necessarily in line with the larger project. So we kind of want to talk about some of those things that we didn't get a chance to put into the paper, but we definitely strongly feel positive about.

With that in mind, the origins of the project began there at the Center for New American Security a little over a year ago. At that time Shawn Brimley and Michelle Flournoy, who is the founder of CNAS, wrote a piece in *Proceedings* about the contested commons. And they saw the world with three increasing challenges that were out there. Due to the fact that we are seeing more and more rising challenges, challengers in the international community. You think of like the brick countries and such. And because of these changes in relative power, the other rising powers, there are three challenges that the US faces.

The first one is rising risk in areas that are not controlled by any one country. And that being the air, space, cyber and maritime. Second, US military might is driving would-be adversaries into the asymmetric or a hybrid style warfare. And three, global trends, such as globalization, the economic crisis, climate change, migration, all of those kinds of trends, will accelerate the decline of weak and failing states and therefore the conflicts of the 21st Century will be as much about dealing with weak states as it will about states who have strengths.

In that environment with that kind of teeing up their argument, the first being that there is the rising risk in these uncontrolled areas, the idea of the commons. This was actually first written about by Barry Posen and he kind of coined the term commons and the contested. He's written several pieces which I do highly recommend.

So they wrote and talked about what the contested commons means, and what it means for American hard power with that.

Commons defined, if you will, is commons or domains that are accessible to everyone and that no one single country owns. It kind of harkens back to the [Alfred Thayer] Mahan's description of the seas with the great highway and the idea of *mare liberum* or freedom of the seas. The overarching idea being that it's accessible and it's accessible for a country's gain with that.

The global commons is a key contributor to our economic, the global economy. It's the backbone, if you will. Ninety percent of global trade goes by the sea. That's about \$14 trillion a year. 2.2 billion passengers will fly commercially on airliners this year. Four trillion dollars is transferred over cyber networks every single day. Our space assets are

absolutely integral now to everything we do.

How many of you checked the weather this morning when you got up, or heard it on the radio or used your GPS in your car to find the Mitchell Institute? I know I did.

The commons are just becoming an integral part of not only our day to day life, but is also then available to everyone.

The major themes of the piece, the overarching piece, which we do have copies back there. Since World War II the US has been the guarantor of these commons, keeping them open and accessible for all. It's mostly due to both our military superiority as well as our economic strength. However, increasingly what you're seeing is that our relative power is in, to quote Robert Kaplan, is in an "elegant decline". The result of that is coming out with more of a multi-polar world. So how are we going to then, the question being how will we then operate in this more multi-polar world?

The US dominance of the global commons is increasingly challenged. We see we've got the ASAT test that came from China; anti-ship, anti-aircraft systems are increasingly being developed, sophisticated, proliferated; cyber attacks are increasing, and in fact I recently heard a statistic that credible attacks on US government networks are in the tens of thousands a day is happening. In turn, these threaten then our access to the global commons. We've gone from having unfettered access to the global commons to now that access ability is being threatened.

The threshold for actors to be able to contest access to the commons is increasingly decreasing. Anti-access capabilities are out there even more and more and you see this both on the military side as well as the economic side of it. The two, I think it's very important to realize that those two ideas of the commons go hand in hand--the military side and the economic side, because it's the economic piece that drives the whole reason why we even want to be in the commons to begin with.

That's kind of the gloom and doom. That's kind of the Chicken Little, sky is falling look, if you will. But what the piece seeks to do then is to provide what are the answers for the United States going forward to maintain our access into all the global commons.

The piece offers up three main ideas on the way forward. The first being to build global regimes. I think the air commons is one of the best examples in history of where that's worked. Specifically IGO. After World War II, as many of you know, there was partnership of countries to figure out how are we going to make the air accessible. We've got a building enterprise here, how are we going to make it work internationally? The IGO was founded and has worked quite well, mostly because of people's benefit is derived by being inclusive to the system.

The second recommendation was engage pivotal actors. A great example of that would be the Straits of Malacca. The key area of the world for sea transport, the amount of

trade that goes through that is significant. So obviously where there's opportunity there's piracy, so there was a real problem and it's one that the US Navy did not want to get bogged down. So the answer to that was train the countries that are in with the Straits of Malacca to police themselves, which then freed up our US Navy to do other things.

Third, reshape American hard power to defend the contested commons. That's what you see a lot of, through both our paper as well as the rest of the piece. What does that reshaping of American hard power really mean?

This piece, as I'm sure you're not too surprised, as Michelle Flournoy has moved into the Secretary of Defense's office, this idea came with her. You see it now in the QDR. It talks about the commons. It talks about the idea of the contested commons. And the idea of American hard power answering that problem. It's interesting, though, if you look at her piece that was originally written in *Proceedings*, it talks about all four of the commons as far as setting the theme, but when it talks about the "contestment" of it, it talks about space, cyber, and maritime, and air is not in there. Counter to that you've got Barry Posen's pieces where as he is talking about the commons and the threats that are in the commons, he actually states that the air common, in his mind, is the most contested common of the four. So it's kind of an interesting environment in which we found ourselves.

Now Ollie and I both agree that the air common is vital, crucial to our economic development. It's also contested in many ways. That, with that main premise, is where we started writing our piece. I'll turn it over to Ollie at this point.

Fritz: First of all, I should also add while Kelly and I, both our salaries are paid by the United States Air Force, we are not here representing the United States Air Force. We're here representing ourselves and nothing more than that.

What I'd like to do is just give a very quick overview of the air commons itself and what some of the findings we developed in looking at the air commons and some of the recommendations we had for sustaining air commons and access to the commons across both commercial and military realms.

Obviously the paper itself was divided roughly into three parts. What is the commercial commons, what does that look like; the military aspects of the commons; and then the threats to that and remedies or ways to mitigate that.

The air as a commercial commons really took off in the first half of the 20th Century. Right after World War I, recognizing the idea of sovereign air space, bolstered after World War II with what Kelly mentioned about IKO and IATA, really formalizing these rules of the road for aviation. Looking into the '70s and '80s with liberalization of air travel, both here and overseas, cheaper travel, more travelers. That led to even more open skies agreements, these bilateral agreements that boosted air traffic. And that's

correlated with economic growth and jobs, and I think that's an important piece of what Kelly mentioned in terms of countries opting in. It's in their advantage to do this.

Obviously the US was in the lead for this liberalization, coming off of this tremendous outsized role the United States had following World War II. We were really the leader in setting up a lot of these institutions and sustaining them. And as a leader in the provision of aerospace equipment, we were uniquely positioned to benefit from this leadership position. But I think it's important to note on the commercial side, and this is actually an interesting mirror image of the military side of the air commons, access to the commons is, it's a positive sum game in the economic realm. Everyone benefits from this. There is some very interesting work that we found, and that I think Kelly's going to go into a bit more detail on, on the fact that access to the air, of being a part of the commercial air network is in a country's interest. It means productivity gains, the double digit return on your investment. So these are things that really are tools for development that I think we should pay attention to.

As a military commons, I don't need to summarize the role of military airpower for this audience. You stole my thunder. I should have expected the Mitchell allusion, but--

Grant: Please go ahead. [Laughter].

Fritz: But obviously the evolution of airpower out of World War I, the inter-war period at the Air Corps Tactical School, looking into World War II with strategic bombing campaigns. And critically, when you start looking at the sea, the maritime environment really became a contest between aircraft launched from the sea and the battle of the Coral Sea, if my rusty memory serves me correct, was the first real maritime battle where there were no capital ships actually shooting at each other. It was only aircraft involved. And moving out of World War II into Korea and Vietnam, and Desert Storm in the 1990s, we really saw that airpower became a hallmark of American power and it was really that command of the air that gave us the freedom to attack and the freedom from attack. It was not only a tool to deter or coerce or deny or punish, but it was a means of providing relief, and I think that also gets at this soft power element that I'll touch on a bit later.

But obviously command of the commons was something that became a prerequisite for US military power, projecting power. However, both these commons--commercial and military--they're under strength. If you look at the commercial world, air traffic control. How are we keeping up our national air traffic management systems? This is next gen that is much delayed, but is nonetheless I think important that not only the United States maintain a leadership role in having that air traffic management system and how it integrates with the rest of the world. That relates to GPS as well, and making sure that the GPS, which there were some well publicized findings by the GAO about the reliability or potential shortcomings and reliability by GPS, and that's something that I think we should as a leader in the air commons make sure there are no doubts over its reliability.

Kelly mentioned cyber attacks, and this is one of those areas where there's this intersection of GPS into air, space into air, and cyber into air. You even had I think in 2004, we found in our research that part of the Alaska Air Traffic Control System was shut down due to a cyber attack. That's something that is, frankly, pretty frightening, if you think about the number of jets that are in the air every day and the implications of losing a site picture on those.

Terrorism is on, it straddles this, as we've seen in the last ten years, it straddles this commercial peacetime environment and this wartime environment, but clearly the attacks on airports which were a hallmark in the '60s and '70s and '80s, you think of the attacks on Rome, for instance, at the airport, as well as terrorism on aircraft in flight. But I think you've seen in the '80s, 1985, the Air India bombing; 1989 with Lockerbie; you see a shift I think to terrorism that is no longer--terrorism in the air is no longer about using the air as a means of transport for criminal act. It has become, the passengers are in fact the target. I think that's a shift that obviously we saw in 9/11.

Manned portable air defenses. I think that's something we've, we looked at the data and historically this has been something that we haven't seen a lot of. I think the last case was in Nairobi with that Israeli 757. But to me this is something that, it's kind of akin to the emergence of IEDs. IEDs are not new technology. They just became, the exploded when it was proven they were effective, and I think that's something we need to be very concerned about regarding the proliferation of ManPads, of the existing inventories which we only have the faintest understanding of what they are and where they are.

Moving into the pure military space, advanced combat aircraft are clearly an emerging threat to how the US controls the air. This audience is probably fairly well informed on that. The only items I would mention in addition to what's in our paper is the recent test flight of the T-50, the Sukoi Pak FA jet. It's kind of unclear exactly what those capabilities are going to be, but I think this is a hallmark of the future, which even if Russia and China are not necessarily our adversaries, chances are we're going to be confronted with their equipment in some way, shape or form.

Double digit SAMs, I think obviously these are SAM systems that are dramatically more capable than we've faced in the past, and really start to threaten not just the combat aircraft, but the entire surveillance and command and control infrastructure that has been a hallmark of American airpower. The AWACS, the JSTARS, and that's something that we need to be aware of. We found in the open press, and while this may not have been a threat concern per se, there were reports that we declined to deploy AWACS to the region in Georgia when Russia invaded Georgia, and there were probably some electronic warfare concerns there, but I think there were reports there were SA-20s moved into that region. I think that's an ominous development to me.

Most significantly in our opinion, I think, is these threats to bases that are emerging. In a sense, this is targeting airpower at its weakest link. You think of ballistic missiles,

cruise missiles, guided rockets, artillery and mortars, these are all things that are beginning to challenge these logistics nodes that are really at the foundation of how we employ airpower. You can look at Iraq, and some of the, frankly to date, not that effective indirect fire attacks on our bases, but it doesn't take much to extrapolate if the US Army is looking at GPS-guided mortars, it seems eminently reasonable that adversaries would have those as well, and that would dramatically change how we think of that operating in country force with an accurate weapon like that.

Finally, there's irregular warfare as really a tactic, that this, as we all know, is an indirect attempt to really deny the benefits of controlling the air. It's not contest and control the air directly, but it is really through diffuse organizational structures, fewer recognizable centers of gravity. It makes it more difficult to really exploit control of the air. I'm by no means saying that airpower isn't important in irregular warfare, but I think that's a challenge as we think of airpower going forward.

So how do we sustain the commons? I've alluded to these a little bit before. Foremost, we have to remain a leader. I think there's been a lot of talk about whether it's the rise of China, the elegant decline of the United States, but I think we shouldn't cede leadership to anyone in how we maintain and sustain an open and accessible air commons. As I mentioned, modernizing our civil air systems, we need to remain the global standard, whether this is through our air traffic management system, whether this is through the FAA and its regulations and norms, or whether it's as being, frankly, just a force for interoperability and accessibility across the globe. Moving from potentially what would have been mostly bilateral agreements to multilateral agreements. We need to expand access to the air around the globe. This is increasing liberalization. Foreign assistance actually help countries gain access to the air.

Now clearly as a primary provider of aerospace equipment that's in our interest, but as I said, this benefits the user as well. This is not a one-sided strategy.

We need to, I think the Christmas bomber mentioned that security in the air is a tenuous thing. And I'm not, we didn't have any bold new recommendations on how to break through in securing the air, but obviously we need to keep paying attention to that.

Finally, for the hard power element, we just simply need to maintain control of the air. I think this means range, it means survivability, it means resilience for our bases, and those are all things that we touched on in our conclusion. And I don't mean to downplay the hard power element of that. I think this is something that has been well discussed here in town. I think the debates over the F-22 were obviously symptomatic of one, the degree to which the air commons is under threat; and two, what is the right approach to remedying that. Those are two separate questions, they're not always related.

What I'd like to do now is, if that's the summary of what we talked about I'd like to go into a few things that really struck me that we didn't have time to talk about. And

primarily, those were about the significance of basing. It really struck me as I looked at the commons, that there's obviously threats to our aircraft in the air, but there's also a lot of threats to our aircraft on the ground, or to simply the logistics lines needed to supply those bases.

Recently I saw a series of profiles on how all of our bases in CENTCOM are provided fuel. It's a pretty helter-skelter organization or scheme of how all this works. Lots of contractors, lots of overland travel, lots of for some kinds of fuel actually flying in the fuel which is, to me those are all nodes that can be disrupted, and sustaining those bases is going to be a prerequisite for whatever force we have. Whether this is a force with more range or whether this is a force with less range, bases are going to be at the foundation of that.

And I think, too, in terms of sustaining our access and sustaining our ability to control the commons in a military sense, I think we need to rethink the way we posture our bases or the way we arrange our bases. It's curious, if you look at how we organize or optimize our basing for say Desert Storm, Kosovo, Iraqi Freedom, Enduring Freedom, it was very much without any concern, any real concern. Obviously in Iraqi Freedom there were, as well as Desert Storm, some limited TBM strikes, but that really wasn't enough to disrupt our operations and we were basically able to put bases, a lot of bases, right next to our target. I think we need to take a couple of things from that.

One, we probably won't be able to be that close, but the idea of having lots of bases is a good thing. I think if you look into the Western and Central Pacific and the basing strategy we're pursuing, and I don't know if super bases are necessarily the right idea. You look at emerging threats out there in terms of ballistic missiles and cruise missiles, and I think that's a potentially risky strategy for that.

I think the significance of basing also means we need to take a harder look at all of the different measures you need to harden and make a base more resilient. Whether that is the actual hardening of hangars, of fuel lines, of buried fuel storage; whether that's disbursement either around an airfield or the number of airfields you have; and whether that may include active defenses which is something I'll touch on a bit later, but it's clearly not something the Air Force usually does in terms of defending our bases from the ground. That's not in our joint job jar.

So if these are some of the implications of basing being more important, I think there are some interesting policy spinoffs or strategy spinoffs from that. The first is, and Kelly mentioned in the run-up to this, this assumption about state weakness as being sort of a part of the security environment. You clearly see that in the QDR and you see building partnerships as being the remedy or the primary policy tool to deal with that. But I think it's important to think of building partnerships not only on that irregular warfare kind of attacking state weakness problem, but to think about how we can use building partnerships to assure access to the commons. I think that is not only in terms of expanding our basing options. I was at a talk the other day where it was a nameless DOD

official talking about Asia and how a lot of these islands looking out from Guam, there are all sorts of islands--Palau, Federation of Micronesia, Saipan, Tinian. I'm reading a book on the final two years of World War II in the Pacific. It was remarkable to keep, these islands are back. That there was a remarkable opportunity there to remedy what in those islands are basically single point failures in all of their infrastructure--power, sewage, water, everything. To me, this was an opportunity for whether it's Air Force civil engineering, Navy Seabees, whoever, to be able to go into those islands, build up their infrastructure as part of American foreign policy generally, but then also perhaps were laying concrete, perhaps were putting in fuel command and control nodes, were building those relationships that will be able to broaden out our basing posture in the Pacific. I think that's something we should look more closely at, building partnerships to ensure access.

Secondly, I think we need to rethink the way we consider energy in a lot of our force planning. I think it's, when you look at the, as I call it, energy performance of DOD, in many ways it's gotten worse. Our capabilities have gotten so much better, we're able to do so much more, but the fuel requirements to do that have actually increased. I think as a result that means we are more dependent on those fuel lines, those energy supply lines. And I'm not talking at sort of a macro strategic level or national level, I'm talking about getting fuel to Guam. That's a hard and fast vulnerability that I think we have that is no secret either. You can pull up Guam on Google Earth and you can see this.

To me, that means we need to rethink how we consider energy in our force planning, in our acquisition, in our requirements, and how we can increase our operational effectiveness. I'm not talking about reducing the mission, I'm talking about executing the mission with less fuel or doing more of the mission with less or the same amount of fuel.

Finally, I think there's an interesting roles and missions question that evolves out of this. If basing is important as a means of ensuring access to commons, typically the Air Force has not been the sole defender of our bases. Generally, we've had security forces, a force that has been focused on within the wire. Now in Iraq, in Afghanistan, we've gone outside the wire to push that bubble out as the Army's willingness to defend our bases has been, for whatever reason, has not been there. We've been forced to take that on ourselves. And I don't think we should--That's a good thing. It's a good thing that the Air Force had the innovation and adaptability to do that. However, I think when you look at some of the more high-end threats to our bases with ballistic and cruise missiles, this puts a very fine point on Army and Navy ballistic missile defense capabilities. Are those going to be in fact there and in sufficient numbers to protect our bases? And I think this is something, whether it's THAAD, Aegis, Pak 3, that whole constellation of defenses, are those going to be there? Are we confident of that? Are we vocal enough in making clear that this is a requirement for the projection of future military power? This isn't protecting an Air Force base, this is protecting truly a node for joint power projection. That's something that I think the Air Force should probably be more vocal in talking about that going forward.

With that, that's sort of what I would have talked about if I had more time.

Martin: I want to make sure we do leave some time for questions, so I'm going to talk real fast through this last little--

Fritz: That means I talked too long. Sorry. [Laughter].

Martin: You're good.

One of the points that we really wanted to emphasize in the air commons piece is that airpower is not just air strike. It's more than F-15s, F-16s. Airpower is so much more than that. It's more than just ISR as well. It's easy to say okay, yes, ISR, mobility. There's so much more of a range that goes with that. Airpower in such a large extent is the ability to open access and utilize the air commons for what we want it to do.

I think a prime example of that recently is Haiti. The Air Force was able to go in there and get that airport open and get it being utilized in a right manner to then affect operations that are going there. What a great example of airpower that was.

I think that so many times, especially as an Air Force, we just kind of push that aside. We don't necessarily use that to the maximum extent that we can use it. And I like this expression, I can't claim credit for actually coming up with this, but the idea of this being you build two miles of road, you can reach two miles further; but you build two miles runway, you can reach the world. So as we think about building partnerships especially in that realm we need to be thinking about what can we be doing for air access and getting these countries and partners involved with the air commons.

A couple of examples, but I'm going to shorten it down to just one that I was personally involved with. That was there in Baghdad. I was there in the end of 2008, beginning of 2009 during the SOFA agreement when we were actually transitioning the airspace back to Iraqi sovereignty.

There was big optics with it of national pride that went with Iraq actually taking control of their airspace. That was a huge thing for the people--huge things for nationalism. But unfortunately, Iraq wasn't ready to take over the whole thing. They didn't have the capabilities and they didn't have the capacity. So as we think about it, I think those are two very important concepts in terms of capacity and capabilities that we need to be able to bring as an Air Force into then these countries that we're working and building partnerships.

Whether it's a failed state like Iraq that we're trying to stand up, or another country that we're just trying to build on positive relationships and kind of a little bit of what Ollie was alluding to there.

As you know, in a failed state when we're trying to bring it back, there are three aspects to making that work. You've got to have security, you've got to have good governance, and then you have to have economic development. Through studies, research and examples. The key to economic development in these regions is developing the air infrastructure. You get double digit returns on investment. It's the only industry that pretty much guarantees that you will make back your investment dollars. So we worked to build up the Baghdad airport and to get it up to IKO standards. This was a whole of government approach as we were doing it. The Air Force, we were running the tower. We were keeping the capability and the capacity of the air commons over Iraq manageable and working until the Iraqis could build it themselves. The FAA was there through the Office of Transportation Attaché with the State Department, to then work with the ICAA to build that upper management level of the capabilities. They had contracted out with a Washington consulting group to come and actually do the training. So you had this wonderful whole of government working where you had the civilian side building capabilities, you had the military keeping the capacity going, and you had the contractors actually doing a lot of the hands-on work until we could eventually start piece by piece handing it over to the Iraqis. With us acting as, the Air Force acting as a buffer in case something didn't work out, until we could no kidding hand it over to them and we could leave and build it up.

That's an example. When we talk about really what airpower can really bring in terms of building the air commons and opening it up, and I was there firsthand. It was exciting to see something like that happen.

In the interest of time, I'll just turn it back over to Rebecca to open it up for questions and we can go from there.

Grant: Great. Thank you both for an outstanding presentation. I'm happy to be able to ask the first question.

Kelly, you mentioned a phrase about the need to reshape American hard power to defend the contested commons, and then Ollie, you talked about a recommendation that you both had which was to not cede leadership over the air commons. I guess my question to you is, you know, we seem to be in an environment where we have a real tension. Either we are experiencing elegant decline as Kaplan would characterize it, or we are in a world where our Air Force is so much bigger than all the others, and our Navy is so much bigger, that we don't need to concentrate on it. We've seen OSD characterize it in that way at certain points in time. And those seem to be pretty different things.

My question for you two is, to what extent is the idea that we just protect the hard power and defend the air commons? How well is that idea accepted? Is it something you hear and debate? Is it something you think there's wide agreement on? And how do we go forward to encourage that notion of recrafting our hard power and keeping leadership and defending the air commons?

Fritz: We were talking about this before we kicked this off this morning. If you look at the QDR, and the QDR is kind of a curious mix of lots of recognition of the problem, but the actions associated with remedying the problem are not as robust. I think to me, what that says is there's a recognition of the commons being at risk, but I think the leadership part is deemed to be something that is not quite as pressing yet. The challenge is coming, it's not here.

Now I would disagree with that. I think there is definitely some room for changing the way, changing the mix of capabilities we are slated to get, or that we could bring into the force. But I think there's also something that I'm hearing more and more of which is how do we enhance the capabilities of the force without actually buying a new piece of hardware? Meaning how do we enhance our ability to command the commons, to control air, without necessarily buying a whole new jet? Whether this is new weapons, whether this is electronic warfare, whether this is different sensor suites.

Granted, that may not be optimal, but I think I'm seeing and hearing more of that as being a sort of interim stop-gap which is not always the most reassuring, but--

Question: Who are you hearing that from?

Fritz: I'm seeing this in a lot of the discussions going around the staff, frankly.

Question: In the Air Force?

Fritz: Yes. And again, you look at whether it's AIM-120s and things like that. Changing the way we're equipping our current generation aircraft. I guess I'll just leave it at that. That's been a thought.

And frankly, if you look at the trade space that's out there in terms of resources, that may be a way to go.

Martin: Ollie and I could talk ad nauseam about the need for hard power, but there is a reality in the world that we live in. It's been very clear that first and foremost, win today's wars is the focus and is where the emphasis needs to be and where the dollars are going to go to follow that. And it is the realization of the world in which we are at this point in time.

Going a little bit off that, I think as airmen we have an obligation to be able to talk about airpower and the need for it and to be able to express what it does and the capabilities and its importance. I'm not sure that we as airmen are doing as good a job as we should be doing. And so there's a sense that I would almost push back on my own service and my own arguments in the sense of how well am I articulating the argument.

When you talk about how many, the QDR says we're going to have X number of wings.

What does that mean in combat power though? Can I go on the Hill and say this amount of combat power? The Army can go up there very easily and say I need this many BCTs [brigade combat teams]. Now a Member of Congress may not understand exactly what a BCT really means, but they can get their arms around that. I think we as a service need to be better at even articulating what does it mean when we talk about combat power and what we're bringing? Because then, once we know and we can articulate that, we can articulate the risk. That's what we're talking about, mitigating then the risk. And being able to articulate that.

Question: Let's go back to the original underpinning of your study a little bit. When I read the Flournoy piece, I was stuck with a couple of things. A bold statement of conflicts of the future will be more about weak states and strong states. Well, let me just make two comments and you all comment on my comments.

We've never, since my birth, accurately predicted what the conflict of the future's going to look like. So the one single thing we've learned is we have to have flexibility in how we build forces. I think those that have said that American airpower, we could go to war with the force that was designed 20 years ago, is probably an accurate statement.

The second thing I thought when I read the piece was, reshape American hard power. Just that statement alone, I thought well you know, it's really the soft power that we need to reshape. It's not the hard power. The soft power--When you look at space. There are no rules. Collisions of satellites in space. When you look at cyber, we don't even have one international agreement on cyber about what constitutes an attack. As a matter of fact the Pentagon counts, if somebody logs in with the wrong password three times in a row, that's an attack. It's insanity.

Fritz: I've attacked the Pentagon many times. [Laughter].

Question: And in air, no rules for flying remotely piloted aircraft in the United States. We're not even that particularly close to. So when the war ends in the Middle East, where are we going to bring these things? So there are so many different areas. Now I would argue cede is probably a little better. So comment on that element of it, do we really need to shape American hard power or is it really the soft power that we need to set rules of the road for in these commons?

Martin: I would say yes, I think you're very correct on that. And I actually wanted more soft power in the air commons piece but again, because of being part of a larger, a lot of that got put on the cutting room floor. I completely agree that that's where we need to be going.

I think in the paper as well as in my own views, there is a push for that as far as one of the recommendations, in terms of building the global regimes. Why have we in the US not passed Law of the Sea? We abide by it, but it hasn't actually made it through Congress yet. So there are things like that that we need to be doing.

Yes, we need something on cyberspace. Boy, that's a big elephant in the room, though, in a lot of discussions.

No question in terms of I think that's where we're going. It is easier to talk in terms of dollars and again, articulate a position when you talk about platforms in many regards. So sometimes I think we default to the easiest conversation and that being to talk about a platform.

I think it's interesting, and you look at some of the conflicts and some of the areas where we, that don't get a lot of press but have actually been pretty successful in terms of areas of conflicts, and I think of Operation Enduring Freedom, the Philippines. I think about Plan Colombia back in the 1990s and some of these. They don't get a lot of press about it. But there, you really kind of went outside the box of necessarily straight hard power action. So I think we need to start looking at some of these other areas where we have had success and what can we learn from those and how can we bring in the whole of government, the economic side, the governance, working with host nations, those kinds of things. And really put that in a lot of our rhetoric, in what we're talking about, in our strategic planning.

Unfortunately, again, so much of our strategic planning comes back to what kind of platforms are we going to buy.

Voice: We're working on that.

Martin: We are.

Fritz: I would only add, sir, that I think the soft power, the effectiveness of soft power often at its foundation has strong hard power. Soft power is effective when there's sort of--Achievement or success has its own demonstration affect. So when it comes to things like UAS, like you said, if we're able to get that in order in our own airspace we can start to, we have a stronger basis to move forward. So that would be all I would add there.

Question: I was wondering if you could elaborate a little bit on what you mean about irregular warfare and the tactic and how that influences ability to [inaudible]? Would you just elaborate, if it makes it more difficult to exploit the airspace, are you talking about SAMs or--

Fritz: What I'm driving at there, there is no, the air over Iraq and Afghanistan is not really contested. There's no real opponent or threat above a certain altitude. But the ability, if you look at the effectiveness of air campaigns in the past, there were--there's a curious evolution, really. If you look at Desert Storm and you look at how very sort of a Soviet style organization, mechanized forces, picked apart. A thousand hours of airpower, 100 hours of land power. Right? You move into the Balkans and you move into Kosovo. In Kosovo you start to see this, where you start to see disbursed units. You

start to see units that are not massing as the Iraqis did. And I'm not saying these are all part of a coherent evolution, but they're datapoints that then lead to Iraq and Afghanistan where, for reasons that I think are far different than because they wanted to escape airpower, the effects of airpower. But I think the decentralized organizations, not a lot of massed organization. There's not a lot of equipment to most of these organizations. I think that changes the ability of anyone with control of the air to exploit that and I think when I say exploit, I think there's probably a bias towards strike, that we're shifting to different things. And that's why I think you've seen the demand for Predators and Reapers. Which are, again, they're not going to survive in contested airspace, but in uncontested airspace they're needed because they're able to sit overhead, and they're able to, that is the best way to try and make the most of airpower which is these fleeting targets, patterns of life, how you're able to track that and look at that from the air. That's just very different in terms of the way we think of airpower influencing warfare. It's a shift and I think that's something we're seeing in Iraq and Afghanistan and I think as a result, I think you're likely to see that in the future.

Question: A couple of quick points. I think in regards to your basis that you discuss there, maybe a better role model for you may be what we have in Korea today. Our main operating bases, our collocated bases, to get at some of the things you were talking about.

Here's a perception on my part. I hope that you come back and say I'm full of water. It gets back to this elegant decline. Here are some of the writings I've seen that go there.

We created this layered effect of some of our possible near competitor adversaries, whether it's China or others, that they have created such a threat there that we can't go against them. That we have to look at soft power or other ways to get around it, or I would say possibly that we pull back pressing the global commons and our right to transit and our right to on behalf of coalitions and our allies, to use those global commons. That's [pointing me] to where we create, there's a perception, my perception is that people have created such a threat that it's so difficult [inaudible], so why exercise our rights.

Fritz: I would add there, I think there is, what you're talking about is kind of who's shaping whom. I think that having an effective hard power capability that, in the context of a great power conflict, I think part of an effective deterrent to that is going to be kind of this idea of crisis stability. That we're going to be able to survive a first strike. I think you look at some of the adversaries out there with growing theater ballistic missile capabilities, you look at growing cyber capabilities, you look at growing abilities to contest space, and you can see this sort of multi-domain kind of Pearl Harbor effect, right? I think we need to be--in terms of sustaining our ability, our deterrent capability, our credible deterrent--we need to have a force that can survive that first contact. And obviously there's sort of an intelligence and warning piece that comes to this, but I think that's a critical part, that this isn't going to be, it's not going to be a short conflict. I think the perception, if the adversary has that perception I think that's to our benefit, that I

think that will help us shape those opponents more. And frankly, I think we probably need to do more to complicate that calculation. I think sometimes, again, I mentioned the basing posture. We kind of simplify the problem that the adversary might have.

Question: To pick up on your point about basing. I fully understand your rationale, your argument, the amazing things that air platforms do, the fact is we have to base them somewhere, and [inaudible]. I would contend that [inaudible] trying to mitigate that base is [inaudible] different. I think [inaudible] a few areas, I think we may do stuff better than you, if I may be so arrogant.

Fritz: I work with an RAF officer every day, so I'm well aware of how you think you're better. [Laughter].

Question:--getting our [inaudible]. [Inaudible], it's that we have bred our own in-house force protection capability called [inaudible], our in-house [inaudible], but they're air minded and they're air aware, and they have a responsibility which reaches outside the perimeter fence. So they're very [inaudible] a vehicle that's five kilometers outside the fence, and they find a gas hole that's [inaudible]. They know [inaudible] welding torch [inaudible]. Air minded and air aware. They're a crucial part of our deployed expeditionary capability and they're massively well respected and well regarded, to the extent that as we sit here today, the senior British officer down at CENTCOM, [inaudible] coattails, is a Royal Air Force, RAF two star.

So I think that poses some cultural challenges for you. I accept your analysis. But if you're going to bolster this latest view of credibility, that source of activity, I just [inaudible]. [Inaudible] your security forces [inaudible], but they're a bit of a [inaudible] organization. They're buried under the A-4 umbrella, they're under the A-3 umbrella. It will be a while before you see security forces [inaudible]. Maybe that's a cultural challenge for you.

Fritz: I think that's right. And I think there's also a bias towards offense. I think that it's very much part of the Air Force culture. I think that element of air defense isn't something that is really celebrated and pushed throughout the organization. So I think you're right. And I think as an Air Force we probably need to think long and hard on this joint interdependence idea. Is this going to work? Is this reliable enough? It's funny to hear after all these other joint Army/Air Force battles, frankly or ground/air battles in Iraq, to see this sort of flip around. Now we're sort of forced with that same or a similar kind of thought experiment. But point taken on the RAF regimen.

Question: [Inaudible] may be linked. I think as practitioners of air we don't understand the cost of doing business as well as we should. We need to have better metrics not only for hardware, for software. I guess that struck me as sort of [inaudible], and correct me if I have the wrong metric, but those million ton miles per day with the Air Mobility Study. When you're done [inaudible] the cost of doing business for things like F-22 or other [inaudible], cyber things. So we need to have better metrics that we can actually

then talk to other people and make them understand our business better.

Linked to that, I guess my second observation, we understand when a carrier battle group swings into the Mediterranean that that is an arm of diplomacy. I would suggest to you when an air wing deploys, or a handful of F-22s deploy, that is an arm of diplomacy that we need to I guess push into the joint environment so people understand what air brings to the fight.

Point in case, the first people on the ground in Haiti were air people. Airmen. Doing business. Now that wasn't just a military presence, that was a diplomatic presence, and that was an enduring presence. So I think there are opportunities there that we can make a much better showcase of the way airmen do business and what we bring, and that we actually are diplomats in a lot of respects. So I would suggest to you that we need to have a better metric and make a go against it so we need to be pretty sophisticated in our [inaudible] be able to showcase that, but show that it is a business, it is an expensive business, but it has a diplomatic side to it and then showcase it a lot better than what we do.

Martin: Absolutely. I found it interesting that the 82nd Airborne got more press about what they were doing in Haiti than our own airmen did in terms of really opening up that airport and getting the aid. I would argue that the airmen had much more of a strategic effect on the whole operation, even though there were fewer numbers, than the other side. And that's not to disparage my Army brothers. Not at all.

Along that same line, kind of what both of you gentlemen said. I think as we go more and more to joint operations one of the things that is needed, especially in our officer corps, is better education about each other's services. To be able to speak each other's languages. Not training. I don't need to know how to drive a tank. I don't need to be trained in that. But education about how the joint fight gets put together. I'm not sure, I'm kind of going one-off here. Again, my own personal opinion. But I'm not sure that any of the services, we do that very well. Really educating on what each roles and missions are in that joint fight.

I also would just comment real quick on what you had to say. General Schwartz said once that we need, in the Air Force we need to change what we call operators. And that's something that stuck with me when I heard him say that in a speech once. As we think about what is airpower and what does the airman bring to the fight and that air mindedness. We need to start thinking differently internally about who we call the operators and who are making the mission happen.

Grant: I think that's a great note on which to end. Thank you both very much. Thank you to our audience.

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