

AIR, SPACE, AND CYBERSPACE POWER IN THE 21ST CENTURY
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DAY TWO

**INTERNATIONAL PERSPECTIVES:
DEVELOPING GLOBAL PARTNERSHIPS
10:00 – 12:00 NOON**

Air Commodore David Steele

DR. JACQUELYN DAVIS: --As we and our allies face increasing defense planning constraints, whether they be in the form of budget contractions, forward operating base access, environmental considerations, or as a result of changing threat perspectives. In Afghanistan, and before that in Iraq, United States is operating and did operate closely with its principal allies. Through NATO and in the context of its bilateral relationships, the US has fostered interoperability and combined training, concept development and even, lately, forces rationalization to meet common objectives.

DR. DAVIS: Together with the United Kingdom, Australia operates forces in Afghanistan and it is a close partner of the United States and with NATO ISAF, including with respect to intelligence sharing, strategic planning and regional operations. With Australia, the United States shares many common security perspectives. And our cooperation on space, cyber and strategic operational planning is essential from a US perspective, as is our capacity to access pine gap facilities and to leverage Australian capacities to deal with regional emergencies, as was the case with East Timor in 1999—and in the context of our six-party talk efforts to de-nuclearize the Korean peninsula.

Allow me to indulge you in a little bit of geography. The world as we know it, is presented to you there. But perspective can change everything. Viewing an object through another lens, through someone else's eye's can turn something entirely upside down or down under from an Aussie perspective. This is the world as we see it. And there is a lot of the Asian Pacific when you look out on our right horizon there. It is a little bit not particularly well defined but you can actually see India on the left.

Swinging through, you can actually pick up China and Japan. But, obviously, there is a lot of the Asia Pacific. To the east is the Pacific Ocean and to the west is the Indian Ocean.

Indulge me a little bit more to talk about Australia. There are only 22 million of us actually populating this huge land mass. And from east to west it takes somewhere in excess all around three and a half hours to fly from west to east coast. There are 22 million of us predominantly live on the east coast, down here on what we could call a J-curve. We have small centers of population in the north, in Adelaide and in Perth. There is a lot of agriculture in the east coast spreading out into the western plains. And in here, the huge, vast area, camels and kangaroos, not too much else.

The other thing that struck me about the vast difference between, when I've been lucky enough to fly across the US and look down, I compared to Australia, yes there are huge areas like that in Nevada that are desert. But the water resources that your country, the US, has are absolutely vast. We don't have a Canada sitting on top of us with the Great Lakes there as well. And we struggle eternally with the drought and, obviously, bush fire and things like that. So this is something that we live with. It's a different dynamic.

We are also non-nuclear. And I touched on that in my lack of understanding about nuclear deterrents. And it is something that I will actually feed back through Air Force headquarters into our strategic defense colleges that I think we need to understand a little bit more about nuclear deterrents. Because, even though we are a non-nuclear

country, the nuclear environment will not go away. But I will also acknowledge that we do rely the nuclear forces of the US to deter a nuclear attack on Australia and for that we are very grateful.

Now I had no idea that Jackie viewed our defense white paper and, luckily, I've actually brought it along. It is controversial. I would have thought of it as frank and succinct. But it is interesting to know, again, from a different perspective, someone else's lens that it could be viewed as controversial. And I'm delighted that it has, actually, raised some controversy.

Now, allow me to actually just briefly step you through our defense white paper. I can also say that it is freely available on the Internet. I'm unsure if it is running for \$180 dollars on eBay like the previous publication was alleged to. But it talks to many other chapters but it actually steps through a strategic outlook, our strategic interests, briefly on our defense policy. But it also talks(?) about(?) future development of the ADF, a radar(?) horizon of 2030.

And I guess the other important thing is, it's unashamedly called, "Defending Australia in the Asia-Pacific Century" because that is what we firmly believe that the 21st century is going to be, the Asia-Pacific century.

With regards to our strategic outlook, the white paper was actually delayed because of the global economic crisis. And it discusses that in some depth. And Australia I think, in some respects, has had maybe a little bit of a soft landing and we've been very lucky in that respect. But the global economic crisis has actually affected us to some extent and, certainly, our defense budget as well.

Now with regards to US strategic primacy, I don't have a specific quote, Jackie, out of it. But I do know that the white paper does acknowledge that the US might find itself preoccupied and stretched in some parts of the world. The white paper, it recognizes

that a major conflict on the Korean peninsula remains a possibility and discusses the strategic implications of the rise of China, economically and in military power terms.

It suggest that the Middle East will remain violent over the period out to 2030 and Iran will remain a source of instability if it remains unchecked. It also acknowledges the pressure that on all our governments will find through climate change and resource constraints.

With regards to Australia's strategic interests, they are presented actually in geographical terms as a hierarchy that reflects relative priorities for action from a defense planning perspective—and a realistic capacity to influence those through the projection of military power. It steps us through securing Australia itself, talks about the immediate neighborhood, steps out the Asia-Pacific area, and then talks about global security in terms of a rule-based environment. But there are no order of particular priority, even though they are highlighted in the yellow document like that.

Australia's defense policy is based on three premises, that we must have the capacity to act independently. We've had the unique strategic interests at stake in relation to which we would not wish to be reliant on the combat forces of another foreign power. It leads us to understand that we would like to lead military coalitions, where we have shared strategic interests at stake with others, and in relation to which we would be willing to accept a leadership role. And as Jackie highlighted in 1999, Australia led the coalition in East Timor.

It also acknowledges that we would like to make ...(inaudible) contributions to military coalitions where we share wider strategic interests with others and are willing to accept a share of the burden in securing those interests. I guess, for example, I would say our contribution into ISAF. As you can see from our picture of the globe, you cannot see Afghanistan from Australia but we certainly know that we need to be there. And we are very happy to be assisting in that. And I think we have 1,550 airmen, soldiers, and sailors involved in that.

Can I now talk to you about the Royal Australian Air Force today. Let me just expand that a bit. The Australian Defense Force of today, we've got 55,000 people in uniform. And what struck me last year when I went down to Blacksburg to watch the Virginia Tech Hokies Thursday night college football game—I think they played the Maryland Terrapins. The stadium had 67,000 people. It was not full. It had a capacity for 75,000. The Australian Defense Force, and I'm very proud to be a member of it, but we are not a Thursday night college football game in some respects. [Laughter] I guess that is one of those interesting issues that we run into with Skile(?) in particular.

The Royal Australian Air Force today, we're actually paying, I think, last time I talked to our personnel—in fact, we are actually paying 14,200 people but our authorized funded strength is actually 14,000. Three thousand reserves and 900 civilians. And the word expeditionary is not new in the Australian lexicon. It is because of our geography and most of our forces are deployed on the right hand side of Australia, we do expeditionary operations as a matter of course.

Approximately 10% of our Air Force people are actually involved with actually supporting operations or in Afghanistan, either preparing in theater or actually restructuring after being there. And I guess in American terms, we acknowledge that we are little but we would like to think that we are actually not Little League.

Another point. When I was preparing a brief—we have a new ambassador coming in, then we actually drew on the numbers of the Royal Australian Air Force people that we actually in the US to date. Historically, we've always had slightly in excess of 100. I think we have about 160 at this point in time on the US; a handful of people up in Canada as well. So in North America, in the order of 160-plus people. That's a little bit unusual because we have some resident project teams in place for supporting the Windstar(?) project that is still going on in Seattle.

And we are also having 40 of our ...(inaudible) and technical folk training onto the Super Hornet, the Naval air station in Lemoore(?) in California. So we have a considerable number of people embedded in either exchange liaison or other training positions here or ...(inaudible) headquarters here in the US.

Allow me to step you through this diagram of the transition the Royal Australian Air Force is actually underway. Now these are exciting times for the Royal Australian Air Force. And I think General Schwartz might even be a little bit jealous of us in this respect that we know where we are going. We have a solid plan bedded down.

Now, I'll apologize. This is all platform focused. There is some work going on with command and control systems, with other non-sexy things like air(?) over the horizon. I consider an enhancement. Upgrades are going on that. So overall, we are certainly going into the 21st century as a networked force. But allow me to step you in there. Sad as it might seem, at the end of this year we will actually retire the F-111. But luckily we have a bridging or a hedging strategy in place. We are actually acquiring 24 super hornets to take us into the 21st century.

Now a classic hornet, we are running to the end of this decade. And the Australian government has recently just signed up to acquiring 14 joint strike fighters. And a white paper articulates that in a mature fighter force we will have around 100 joint strike fighters.

We are actually embarked on acquiring new tankers, the KC-30. I feel very sorry for the bind(?). I hope that the USAF can actually get through the issue with their new ...(inaudible) because I know the war fighter needs it yesterday. But we're very pleased with the tanker that we are getting. The Windstar(?) aircraft has been somewhat controversial and has drawn some adversary press over many years. We have two, Windstar aircraft on the ramp at Williamstown that have been delivered to us. I'm acknowledging that they are actually not at the contracted capability but the intent is there to sparrow(?) them up.

But after talking to the men and women who are actually flying the airplane, after talking to the fighter pilots who are actually at the receiving end of the information that the Windstar is giving them, they are extremely pleased with the capability it is actually delivering to them right here and now. So there is a good news story behind that as well.

The diagram is a little bit outdated. In fact we have now retired our Caribou and it's out of service. And in the meantime we've drawn on some ...(inaudible) and we have an intent down track to actually get a tactical battlefield(?) air(?) lifter(?). The C-17. I was gob-smacked(?). We have a fleet of four. I was absolutely gob-smacked when I stepped off an airplane on a air attaché tour at McCord Air Force base. I think there were 44 C-17s on the ramp there. Extraordinary in some respects. But our modest fleet of four, we are very happy with those.

And I'll actually come back to the C-17 a little bit later on. I guess you have noted as an Air Force that we actually do, in some respects, look like the US Navy because we do operate the Hornet. We do operate the AP-3. We are looking at, in the future, coming out of the AP-3 business, we're involved with the US Navy, with the development of the P-8, the US Navy Poseidon airplane. And that is actually something that we actually haven't made, or our government hasn't gone firm on yet. But that is something that we are looking at in the future as well.

A little bit further down track, our PC-9, our introductory trainer is getting a bit long in the tooth. And we will be looking at a new trainer. The other thing that you won't actually see on this diagram is a UAV. We are currently operating a Heron UAV in Afghanistan in conjunction with their comrades from Canada. But we're also looking at in the future a high altitude, long endurance UAV, really along the lines of a global Hawk(?).

Drawing you back to the map of Australia, our northern approaches, surveillance of that. We have a problem with illegal boat people coming down to Australia. I guess Australia

is very attractive to come to in some respects and they will find any means to get there. I guess we want to be able to control that and we think an airplane like a high altitude, long endurance UAV will certainly help us to actually understand what's happening when you get up to the north of Australia.

These are exciting times but there is a burden that actually, that comes with this as well. There is considerable work going on back in Australia now to actually re-skill, reshape, put in place our workforce, our logistics team to actually make sure that we can actually service all these new and exciting platforms that we are bringing into service. And when you bring it all together, we would like to think the Australian Air Force, as I said, is little, not Little League. But we will be a truly networked force in the end of the 21st century.

Let me just briefly talk about some alliances in international defense relationships. The white paper acknowledges that our primary alliance is with the US and that is through ANZUS, the security treaty of 1951. As an aside that has actually only been invoked once and that was a post 9/11, where Australia started to join with the US and combat the threat of extremist Islamic terrorism.

But I can draw you back a little bit further. That Australian forces in 1900 actually joined with a coalition, including the United Kingdom, the US. In fact, in 1900 we were not even a country. We were a colony of Great Britain. Australia force, predominantly maritime actually joined with the coalition and fought in the Boxer Rebellion of 1900. So we've been doing this business together for a long, long time.

In the wider Pacific region we have a raft of bilateral agreements MOUs in place. With Japan we signed the 2008 Memorandum of Defense Cooperation. The white paper recognizes the need to engage, particularly, with China. We have bilateral relationships with India, Republic of Korea, Indonesia, Singapore, Malaysia, Vietnam, Comodia(?), the Philippines, Thailand, New Zealand. We are working closely with East Timor, Papua New Guinea, and the Solomons. We have a multilateral arrangement with, the Five Power Defense arrangement that includes Singapore, Malaysia, the United Kingdom

and New Zealand and it's Australia led headquarters embedded with two headquarters with one in Malaysia and one in Singapore as well.

Further a-field we have an enduring relationship with the United Kingdom and through our involvement in Afghanistan, as we touched on before, we are engaged with NATO.

Now I've led you well away from the topic at hand, developing viable global partnerships. I've done that on purpose because I must admit I've struggled with coming up with something innovative to actually talk to you about at this conference. And I guess when you actually reflect back on the scene I've set for you for the Royal Australian Air Force, we are busy like every other air force in the world. And we are at the max capacity in some respects.

But I have heard at the conference for the call for innovation and I know that ...(inaudible) forefathers were outstanding innovators and even, to some extent, entrepreneurs. How do we innovate when it comes to developing global partnerships? As I've said, I've struggled with this question over the last few days. We also need to understand at what level do we wish to engage further, the tactical, the operations, the strategic or even the intellectual. As airmen we are always most comfortable with bouncing back to the technical level, talking with our hands and regaling junior officers about what legends once we were. However, we need to continually push ourselves to elevate the debate and pursue areas of endeavor outside our comfort zone.

Two areas that I've thought that we should actually explore is spare capacity, in particular, our training devices. I touched on the C-17. The C-17 is going into many like-minded fleets around the world. We support that in some respects on a global supply chain. I'm aware that we've actually helped out the US Air Force in Ambler where we had a USEF(?) C-17 go USA(?). So we were able to get it up and running up and quickly as well.

So in a logistics sense we can support our Air Force or develop those global partnerships better in that sense there as well. But one of the things that I am very aware of with a strong training background, is that simulators lay dormant a significant part of the time. We could maybe network these simulators. We could maybe move our folk around between simulators, make much more use of air training devices, maybe our training ranges. There is room for pursuing the discussion there as well.

The other thing in particular that I've heard in the last day and a half is what a challenge the cyberspace presents. I think every challenge is an opportunity. I was lucky enough to be an observer at a coalition, virtual flag(?), where I saw a bunch of networked forces, including our simulators in Australia, brought into this virtual air war, this environment. And that was an extraordinary endeavor, in fact. So I think the cyberworld, not for people like me but I think the new generation of IT warriors will actually be able to pursue and expand that environment considerably on our behalf.

Now, we obviously need to be able to contain the cyber world and put a boundary around it. So it is not going to be challenged by nuisances. I think the term yesterday was a cyber vandal. But we also should be able to embellish and use the cyber domain to exploit our own sort of areas of deficiency. So I there is a considerable work that we could all be doing in that ...(inaudible).

With developing global partnerships, there are areas of opportunity there but there will always be challenges. Interoperability is always going to be one. Configuration change, perhaps with their C-17 fleet will always be a sticking point in some respects. High end versus low end, who wants to go and fight the F-22 in and exercise if you know you are going to be a bad loser every time. ...(inaudible) I wouldn't put up with that.

But stealth versus old generation and being able to actually maybe train your people to the level while actually working against and air force that has some older generation aircraft. These are all challenges but we are meant to be innovators as aviators. We need to get our head around issues like that.

DR. DAVIS: Well, we have time for some questions. We had some very interesting presentations, a lot of provocative thoughts. Who would like to ask the first question? Yes, sir. John.

JOHN SHOD: I'm John Shod from Air University. General Abrial, is I might. As you enter the world of cyberspace with Allied Command Transformation, is that going to end up being a national responsibility or are you going to paste it together from an organizational point of view or is NATO going to take this on at Suffolk(?) Moans(?) or, perhaps, Brussels?

GENERAL ABRIAL: I'm afraid I don't have the answer yet. We probably have to be a few more months patient until the concept is agreed. Today, NATO is working hard on cyber. I mentioned to you that we do have a Center of Excellence in Tallin, Estonia dealing with the issue. But we have problems making progress because we are an alliance and not everybody sees cyber the same way. Not everybody gives cyber the same weight. And we have to acknowledge the fact that cyber is very close to precise national interests. And some nations are not yet ready to make this step forward.

My hope is that we can develop concepts and ideas, which prove the case to the nations so that we can develop a real NATO capability. I cannot guarantee that we will be successful, at least in the short term.

DR. DAVIS: General, just a small clarification on the question if I might. As you discussed and as you described, the debate over the new strategic concept includes whether cyber should be considered an Article 5 challenge, threat or not. I wonder what your personal views were on that and how we might bring together the two sides of the debate into NATO to get a responsible language in the strategic concept on cyber?

GENERAL ABRIAL: It is a very good question. [Laughter] I'm not surprised you asked it. My feeling is that, as contrary as to what had been proposed at the beginning, there is no question any more to modify Article 5. The people who put together these very few

words are very clever. We could never do better today. So my impression is that there will be no change in the wording of Article 5. The very important factor is that all nations have a common understanding of what it means, which I might argue is maybe not the case today.

The other aspect is, what exactly do we understand? Today we have these very easy words. Article 5 deals with armed attack. What is an armed attack today? Even nations agree that cyber ...(inaudible) attack could be considered as armed. Then the logical deduction would be that is how it is considered also within the framework of Article 5. But I don't know whether we can agree.

My feeling is that cyber is not brand new but a new domain, which has not been explored so far. That we have to deal with ACT and its think tank function, is working hard on this problem, this question. And as an aviator sometimes I was thinking that if you have a bunch of aircraft trying to attack you, it may be better to defeat them by cyber, rather than having to launch a counterforce and using kinetic.

So in my very personal view, yes, cyber is central topic. Now, should it be recognized as and Article 5 issue, I think it is a more political decision.

DR. DAVIS: Thank you. Next question. Right there.

ROGER BRADY: Roger Brady, US Air Forces Europe and Commander Air Component Command, Ramstein. Several of my NATO friends here might take a crack at this but General Abrial, who had discussed air command and control with me on several occasions, will soon host a round of discussions on NATO's new strategic concept. And it's my understanding, Stephane, that they will include addressing any need for change in NATO organizations.

As we talk about things like AGS that was mentioned by Brigadier Mans, the heavy airlift wing, a couple of other things that are going to happen, French reintegration—and,

also, the latest new child on the block, which everyone is going to get very interested in is ballistic missile defense. Does this provide impetus for a discussion of the more unified air command and control structure? By the way, as most people know, none of these capabilities that I mentioned are part of the NATO air command system.

GENERAL ABRIAL: Thank you. ...(inaudible) but I redirect any answer to question to General Brady. But since he asked the question, I have a problem now. [Laughter] Well done, Roger! Yeah, we have many changes ahead. You just mentioned, rightly, we will be co-hosting the fourth and last strategic concept seminar in Washington, D.C. in the NDU next month. And those issues you have been mentioning will be on the agenda. I don't know how the speakers who are going to be in the panels will talk of these issues. And I don't know yet, of course, what the group of experts will take from them. Because these seminars are for their benefit, for them having heard all of this, having thought on all these issues, for them to make a proposal to Secretary General on what could be, or revision what should be the strategic concept.

On the air side, I do believe that we have a level of integration inside NATO, which is higher than other services, other components. It is probably due to the nature of our third dimension elements. But I also think that we can do better. I think that we need to integrate more. I think that we need to continue working on how to have flexible, reliable, deployable aspects of our air(?) sea(?) two(?) elements, on which we are working very hard as you know. We all work together. We need to have a vision, which helps us face today's challenges in the air domain and prepare for tomorrow.

My personal experience is that the sooner we envisage all the possibilities to integrate, if there is a will there. Or at least to be able to interface the best possible effective and also efficient, cost effective way, then we may help the alliances' nations to make good progress. So I hope that these difficult questions will be raised and will find some answers next month. And, again, my very personal view will be in favor of more, more interfacing and as much integration as possible.

DR. DAVIS: Air Vice-Marshal Hillier, do you want to say anything on these points, because the UK, of course, is very deeply involved in the strategic concept discussion?

AIR VICE-MARSHAL HILLIER: I mean I'm not personally sort of involved in those discussions ...(inaudible) perhaps offer a personal very. And I touched on it a little bit in my presentation about command and control. And I think it is just making sure that command and control works for us, rather than us working for command and control—and that it is based on what you need to get the job done rather than geography, for example. And need to make sure that command and control isn't judged as remote from the wars that we are in at the moment.

So I think I would just simply say that, you know, whatever we are looking for, it needs to be that agile, adaptable, and relevant for what we are doing. So that is a personal view. That is to say, it is not something I'm involved in, in terms of the mechanics of how it is going to work through.

DR. DAVIS: Yes. There is a question here.

CAITLIN HARRINGTON: Hi. I'm Caitlin Harrington with *James Defense Weekly*. My question is for Commodore Steele and Vice Admiral Hillier. There has been a lot of talk in the US in the past few days about the joint strike fighter program. It looks like there is going to be some delay on flight testing, which could impact the unit price of the early production orders of that aircraft. And for Australia and the UK, I'm wondering what the sense is in your air forces? Is there any concern there about the unit cost going up? Will that affect how you are thinking about your purchases as you move forward?

DR. DAVIS: Stephen?

AIR VICE-MARSHAL HILLIER: Well, again, I mean I'm not familiar with all the detail of the UK's approach in the F-35 program. But clearly, as a major acquisition program for the UK it's of great relevance. I think what the UK would be looking for is from F-35

that it has got to be capable to do what we require it to do, to be adaptable. It's got to be able to fit the full spectrum of conflict and not just a niche capability.

And it's got to be affordable. I think the affordability works in two ways. It's got to be value for money within the program itself. And it's got to be affordable in relation to defense priorities. And so where does the F-35 sit, again, in the context of the UK's defense review? It will be considered, I'm sure, against those benchmarks of capable, adaptable and affordable. But I wouldn't pick F-35 out and say that, therefore, somehow it is a particularly special focus. Every part of UK defense has to be able to justify itself against those sort of parameters in any defense review. So I don't see it as an exceptional case.

DR. DAVIS: I guess, Stephen, you don't want to wade into the debate that occurred over the weekend, reported in the *Telegraph* and the *Guardian* between our good friend Mark Stanhope, First Sea Lord, and David Richards about aircraft carriers and what they may carry and how many there may be?

AIR VICE-MARSHAL HILLIER: No. Wade into four-star debate. [Laughter] I will perhaps only tip my toe in rather than wade in. But I think I mentioned in my presentation, is that there is a debate going on in the United Kingdom at the moment looking at this defense review. I think that is entirely healthy. And one of the key parts of the debate is, what is the balance between high and low end capabilities? What are the most likely conflicts we will be in? What are the most dangerous conflicts? And what are the risks associated with taking particular courses of action.

And it is just an assessment of choices and risks, which will ultimately be political decisions. So I don't think that we should read in that the UK is going in a particular direction as a result of these speeches, which were made. It is simply healthy debate as part of the run up to the defense review.

DR. DAVIS: Air Commodore Steele?

AIR COMMODORE STEELE: Thanks. I think the Australian government has taken a cautious approach to acquisition of JSF. It was timely, their decision to sign up to acquiring the first 14. And from the previous government as well, I think the hedging strategy of acquiring the 24 Super Hornets as a bridging air capability, combat capability is again, shows that cautious approach.

We, obviously, are very interested in the schedule and cost because our F-11s are going to be withdrawn as classic Hornet fleet is getting old. We want to have a networked, truly fifth generation force early in this 21st century. So we are keeping ourselves apprised of, particularly a schedule and cost as more information comes through to the surface.

DR. DAVIS: General Abrial, it is perhaps not fair but I'm going to exercise the prerogative of the Chair, again, to ask you a belated question, with respect to JSF. Because General Schwartz and the United States has a decision and it has to do with the nuclear capable variant, wiring the JSF to be nuclear capable. And that has to do with the DCA mission in NATO. And I wonder if you could say something about your thinking about the future of DCA deployments in Europe as you think about the changing deterrents landscape in Europe and globally?

GENERAL ABRIAL: Again, this is an issue, which is part of strategic concept debate. And it is an issue, which will be dealt with next month, in and around the force(?) seminar. I must say I have not studied this issue so far because it is not exactly in ACT's portfolio. The only experience I have is in my previous capacity. And this, I think—I'm still somebody who thinks that we do need both visible commitment and capabilities in this field. And the link that we have established through the years is very important to the global position in every alliance.

DR. DAVIS: Thank you. Next question. Yes. Right here.

BOB TAYLOR: Bob Taylor, the Commander of Air Force Space Command. And this is for the entire panel. We have long histories of collaboration between our forces, either bilateral history or through alliances. I think each of you at some level mentioned about the importance of space to us, both operationally and in terms of our overall national security. Could you comment on where you see opportunities for us to collaborate? I know, General Abrial, you mentioned this specifically in your remarks.

But for each of you, could you comment on where we might have some opportunities to improve our cooperation, collaboration regarding space activities?

DR. DAVIS: General Hokazono, would you like to start?

GENERAL HOKAZONO: Thank you very much for your question. As you know, Japan is one of the leading country of the space development. But mainly the responsibility is conducted by education and technology ministry. And three years ago Japan established a law, the basic space law, which allows us to use space for the defense of the nation. So, it was the start for the Japan Self-Defense Force, to be involved to the space matters.

At this moment, in the defense ministry, we don't have a specific project. But as self-defense force we have two, main areas to develop. One is space communication. And the second is space sovereignty(?) by optical way, to follow the situation in the space. And those are not budgeted ...(inaudible). I think we are studying now and waiting to the cooperation with the United States at this moment in our mind, to send our officers to your basic space education program. And to have the knowledge from the United States about a space operation and space management for our officers of the JSF Defense Force. And step by step we will go forward, follow you. Thank you.

DR. DAVIS: General Abrial, do you wish to add to that?

GENERAL ABRIAL: I can just say space, as you know, is a very sensitive issue. Not everybody has a similar understanding of what we could or should do in space and the nations have various points of view—which is probably why NATO has not been further than it is today in this domain. It is one of the new domains, which ACT is working on very hard. It's always an issue, which is very close to sovereignty matters, displaying to others what type of capabilities you need, where and when you need to look at things. It can be very hard to share with others.

On the other hand, maybe communications could be easy to share because your very specific nation's devices can be on the ground somewhere and space could just be the vehicle to make sure that he gets the information he wants or he needs. On that matter I think that it will be difficult to get unified NATO position but I see some future in multinational initiatives, like the NSCC, which has been briefed here, like the helicopter initiative, like the C-17 initiative—where some nations might want to share with each other, a few of these aspects as just mentioned. And this will also help smaller nations with smaller budgets to jump into the fray. Whereas alone we could never do it.

So I think that the way we should look at the issue is, try to find what are the areas in which groupings of nations in ...(inaudible) alliance could work.

DR. DAVIS: Air Commodore Steele, do you want add to that?

AIR COMMODORE STEELE: Thank you. I guess ten years ago I would have said that Australia ...(inaudible) the Royal Australian Air Force, in particular, the Australia Defense Force is not a space force. But that would be patently wrong now. Now though we don't actually put assets on orbit, we are inherently involved in day-to-day business in the space game. When we think about space, I just think about it as a medium to conduct operations. That's all. It's an asset that we need to use.

The Chief of Air Force in the Australian Defense Force is the coordinating capability manager for space. But space spreads across the whole spectrum of our defense force.

We are investing in wideband global satellite, investing in the SIC(?) satellite to go on orbit. So we are involved in that constellation. We are involved in UHF SATCOM that is going over the Indian Ocean. And because of our relationship with the US in particular, space is just another medium for sharing information.

We understand there are opportunities for us to contribute to the space situation awareness that we all need to look out of our atmosphere into the other world ahead—as well as look down on the globe. And we believe there are some opportunities that Australia could contribute in the SASA(?) environment as well.

DR. DAVIS: Thank you very much. Unless there is a last burning question—it remains to me to thank our panel members and close this session and let us show our appreciation.

[Applause]

END OF SESSION