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JOINT STANDING COMMITTEE ON

TREATIES

Tuesday, 16 August 2005

Members: Dr Southcott (*Chair*), Mr Wilkie (*Deputy Chair*), Senators Bartlett, Mason, Santoro, Sterle, Trood and Wortley and Mr Adams, Mr Johnson, Mr Keenan, Mrs May, Ms Panopoulos, Mr Ripoll and Mr Bruce Scott

Members in attendance: Mr Adams, Mr Keenan, Mrs May, Dr Southcott and Mr Wilkie

Terms of reference for the inquiry:

To inquire into and report on:

Treaties tabled on 21 June 2005.

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Committee met at 8.04 pm

DOWNING, Ms Susan Elizabeth, Acting Principal Legal Officer, International Trade Law and General Advising Branch, Office of International Law, Attorney-General's Department

HUTCHINSON, Mr Peter Anthony, Director, Agreements Section, International Branch, Department of Family and Community Services

MURRAY, Mrs Peta Anne, Assistant Director, Agreements Section, International Branch, Department of Family and Community Services

FOX, Mr Henry, Director, Western Europe Section, Department of Foreign Affairs and Trade

THWAITES, Mr Michael Jonathan, Executive Director, Treaties Secretariat, Legal Branch, International Organisations and Legal Division, Department of Foreign Affairs and Trade

MURRAY, Mr Nigel, Manager, Superannuation, Retirement and Savings Division, Department of the Treasury

CHAIR (Dr Southcott)—I declare open this meeting of the Joint Standing Committee on Treaties. As part of the committee's ongoing review of Australia's international treaty obligations, the committee this evening will review two treaties tabled in parliament on 21 June 2005. I understand that witnesses from various departments will be joining us for a discussion on the specific treaties for which they are responsible. I thank witnesses for being available for this hearing. I also remind witnesses that these proceedings are being broadcast by the Department of Parliamentary Services. Should this present any problems for witnesses, it would be helpful if any issues could be raised at this time. To begin the hearing, we will take evidence on the Agreement on Social Security between the Government of Australia and the Government of Ireland.

Agreement on Social Security between the Government of Australia and the Government of Ireland

I welcome the representatives from the Department of Family and Community Services, the Department of Foreign Affairs and Trade, the Department of the Treasury and the Attorney-General's Department. Although the committee does not require you to give evidence under oath, I advise you that this hearing is a legal proceeding of the parliament and warrants the same respect as proceedings of the House and the Senate. The giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. Do you wish to make some introductory remarks before we proceed to questions?

Mr Hutchinson—Yes, thank you. The treaty action proposed today is that Australia and the government of Ireland enter into a new agreement on social security to replace the current agreement which was signed in 1991. As you will note from the national interest analysis, the proposed agreement was signed in Ireland on 9 June 2005. Some general background on social

security agreements might be helpful. Agreements provide a number of benefits. They address gaps in social security coverage for people moving between countries. Agreements help people maximise their income and allow them greater choice in retirement as to where to live. Agreements also contribute to the overall bilateral relationship between countries and can provide foreign exchange benefits. Australia's agreement partners currently pay approximately \$540 million per annum in pensions into Australia, while Australia pays about \$194 million per annum into those countries.

In recent years, the Department of Family and Community Services has been engaged in reviewing a number of its social security agreements, and the documents under consideration today are part of that process. Ireland's is the last agreement to be revised that still contained unrestricted disability support pension. As I mentioned, Australia already has a social security agreement with Ireland. It was signed in 1991 and implemented in 1992. The agreement is working well and provides benefits for approximately 588 former Irish residents in Australia and over 200 former Australian residents now in Ireland. The agreement with Ireland is based on the same shared responsibility principle as Australia's 16 other agreements—that is, each country contributes to a person's support broadly according to the person's period of working life residence in that country. Under the current agreement, Ireland pays about \$1.4 million per annum into Australia, while Australia pays about \$1.1 million into Ireland.

From Australia's perspective, the new agreement will cover age pension, disability support pension for severely disabled persons and pensions payable to widowed persons. It will also include provisions to avoid double coverage for seconded workers, and this is relevant to Australia's superannuation guarantee scheme. Consistent with the current agreement with Ireland and Australia's other shared responsibility agreements, the new agreement with Ireland will allow people to lodge claims from either country. It will help people meet minimum qualifying requirements for benefits. Under the agreement, periods of working life residence in Australia are considered as Irish periods of insurance, and Irish periods of insurance are treated by Australia as periods of residence in Australia for the purposes of claiming benefits. The agreement will also overcome time limitations on portability of payments if people live in either country, and it provides avenues for mutual administrative assistance to facilitate the determination of correct entitlements.

One major change to the agreement, very briefly, is that the disability support pension will be limited to people who are classified as severely disabled—that is, persons who cannot work more than eight hours per week. We have done this because the focus in Australia for some time now has been on the rehabilitation of people with disabilities and, to the extent possible, encouraging and supporting them to re-enter the work force rather than rely passively on income support. Obviously we cannot do this for disabled people outside Australia, so we have negotiated with our agreement partners to limit disability support pension coverage to severely disabled people. The change will not affect people already getting the disability support pension under the current agreement.

The other major change to the agreement is the inclusion of provisions to avoid double coverage for seconded workers. These provisions will ensure that Australian and Irish employers do not have to make two lots of superannuation contributions for an employee seconded to work temporarily in the other country. Under current arrangements, the employer may be required to make contributions under both Australian and Irish legislation. The general rule under the new

provisions will be that contributions have to be made only to the relevant superannuation scheme in the worker's home country.

In terms of consultation, the Irish community in Australia has been kept informed about the progress towards the implementation of this agreement. In May 2005 a letter and an information paper were sent to Irish community groups throughout Australia, a range of other welfare organisations, state and territory governments and the Southern Cross Group, which represents expatriate Australians worldwide. Comments on the new agreement were invited. As noted in the national interest analysis, the consultation process did not bring to light any concerns about the new agreement.

We consider that the new agreement with Ireland will continue to bring benefits to individuals and to Australia, as the current agreement does. The new agreement retains all the major features of the current agreement and when implemented will bring into effect long overdue changes. Subject to the views of the committee and the timely completion of necessary action in both countries, the Department of Family and Community Services, Treasury and Centrelink aim to implement the agreement from 1 January 2006.

Mr WILKIE—I am wondering where that \$250,000 administrative saving is going to come from.

Mr Hutchinson—Essentially from a reduction in disability support pension grants. That is not a very large figure and it is over a number of years.

Mr WILKIE—Is that because we are going to be applying a much stricter test?

Mr Hutchinson—The difference is that under the current agreement we pay and grant the disability support pension to people in Ireland under the test that currently applies in Australia, which is that you cannot work full-time for more than 30 hours per week. When the new agreement comes into effect it will restrict the disability support pension to people who cannot work for more than eight hours per week. So it is a much tighter regime in that sense.

Mr WILKIE—How will that compare with the tests that are applied to people over there?

Mr Hutchinson—The same test will be applied in Ireland as in Australia, essentially.

CHAIR—The amendments relate to which changes that we have made to the disability support pension?

Mr Hutchinson—Because of the nature of the agreements, some of these have taken a long time to put into effect. As I said in my opening remarks, the agreement with Ireland is the last of our original agreements to be amended in this way. It is rather a long story, but the invalid pension, as it was then known back in the early nineties, was payable indefinitely anywhere in the world. The government changed the name of the payment to disability support pension and restricted payment overseas to people who are severely disabled, so we have been progressively renegotiating our agreements to reflect that change.

Mrs MAY—To clarify, all those agreements are now the same?

Mr Hutchinson—Once this one comes into effect—

Mrs MAY—So they are all alike to each other?

Mr Hutchinson—Yes, it is the last one that includes people who are not severely disabled.

Mr ADAMS—If somebody is living in Ireland and the present test is applied and they are working 30 hours a week, will they lose anything?

Mr Hutchinson—If they began working more than 30 hours per week they would cease to be eligible under the current rules. To be honest, I am not 100 per cent sure whether they would have a right of reclaim under the new agreement. They probably would not. But that might be a tricky—

Mr ADAMS—So some people will lose. Is that what you are telling me?

Mr Hutchinson—Only to the extent that somebody who is currently getting disability support pension and not working improves their condition and enters the work force.

Mr ADAMS—Is there any change to somebody—

Mr Hutchinson—No. There is no change if somebody is already working.

Mr ADAMS—With regard to superannuation, they will be entitled to get one but there is no double dipping. That is how I understand it.

Mr Hutchinson—Yes. They generally remain linked to their home country's system, so if an Irish employer sent someone here to work they would remain covered by the Irish system, and vice-versa—an Australian who goes to Ireland would remain covered by the superannuation guarantee arrangements.

CHAIR—Are the Irish community organisations happy with the changes to the treaty?

Mr Hutchinson—Yes. We did not actually get any responses from the Irish community organisations. I must say that has happened before in some of our consultation processes. So by default, it appears they are very happy with it.

CHAIR—Okay. You had no response from the community groups, but you are unaware of any concerns.

Mr Hutchinson—That is correct.

CHAIR—Sometimes there is impetus from the community groups to have a social security agreement, but you have had no real communication with the community groups.

Mr Hutchinson—No, because we already have the agreement and it is not changing fundamentally with respect to individuals.

CHAIR—Are there any countries other than the 16 with which Australia proposes to have a bilateral social security agreement?

Mr Hutchinson—Yes. We are currently negotiating with a number of other countries. We have negotiations in train with Norway, Switzerland, Japan and Korea. We have had preliminary discussions with Hungary, Latvia and Sweden. Off the top of my head, that is roughly—

CHAIR—What about Greece?

Mr Hutchinson—Greece has been the subject of high-level government-to-government correspondence for many years. Those exchanges are still going on. The current position is that the minister is waiting for a response from her Greek counterpart to the proposal that she put to Greece last December.

CHAIR—What about the United Kingdom?

Mr Hutchinson—Generally speaking, our agreements—as I was saying to someone before—are not controversial at all because they are about extending benefits to people. The UK agreement was terminated five years ago with effect from March 2001. We do not have an agreement with the UK, and that is because the UK refuses to renegotiate the agreement to include indexed UK pensions in Australia.

CHAIR—As there are no other questions on the agreement before us, is there anything further you would like to add?

Mr Hutchinson—No, thank you.

CHAIR—Thank you very much for coming.

[8.25 pm]

BLISS, Mr Michael Edward, Director, International Law and Transnational Crime Section, Legal Branch, Department of Foreign Affairs and Trade

HENDERSON, Ms Jeannie, Director, United States and Canada Section, Americas Branch, Americas and Europe Division, Department of Foreign Affairs and Trade

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DUNN, Mr John Leo, Director, NASA Administration and Finance, Industrial Physics Division, Commonwealth Scientific and Industrial Research Organisation

SOOD, Associate Professor Ravi, Associate Professor in Physics, University of New South Wales, and Station Director, Balloon Launching Station, Alice Springs

Agreement concerning the conduct of scientific balloon flights for civil research purposes

CHAIR—We will now hear evidence on the Exchange of Notes constituting an Agreement between the Government of Australia and the Government of the United States of America to Amend and Extend the Agreement concerning the Conduct of Scientific Balloon Flights for Civil Research Purposes. Although the committee does not require you to give evidence under oath, I should advise you that this hearing is a legal proceeding of the parliament and warrants the same respect as proceedings of the House and the Senate. The giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. Do you wish to make some introductory remarks before we proceed to questions?

Ms Cowan—Yes, I would like to make a short opening statement. Cooperation between Australia and the United States in space related activities has a rich history commencing formally in 1960 with a legally binding treaty to establish provisions for the operation at the National Aeronautics and Space Administrations—NASA—space vehicle tracking and communications facilities in Australia. This treaty still exists, last being updated in 2002.

In 1984, however, the US government, through NASA, approached the Australian government seeking a second agreement which would enable them to conduct scientific balloon flights within Australia. This agreement was effected by an exchange of diplomatic notes in October 1984. Since then the agreement has been amended and extended by an exchange of notes a further two times. The most recent agreement, in 1992, expired on 19 June 2002. With further balloon launches expected, NASA requested that Australia renew the agreement for a further 10 years. Both DEST and CSIRO had no objections to this request and the final text was agreed in March 2005.

Given the significant expense associated with many activities related to space, international collaboration provides opportunities for Australia to share in a vast array of knowledge in frontier technologies while not being faced with the huge burden of cost, resources and risks. Australia, luckily, has competitive advantages in many space related areas. For example, Australia's location and political stability make it a desirable location for major ground infrastructure. These circumstances have led to Australia being host to major ground station facilities in support of many endeavours in space, from astronomy to manned space programs, deep space exploration and from earth observation to telecommunications. If approved, the agreement will continue to facilitate Australian access to these benefits of space related research and it will also allow Australian researchers to work with the most important global science and technology player, the USA. As stated in the national interest analysis, it will be of no additional cost to Australia. In fact, it will bring into the Australian economy an estimated \$5 million per balloon campaign.

Turning to the agreement itself, its primary role is to amend and extend the existing arrangements between CSIRO and NASA. The agreement includes provisions for launch and recovery of balloons within Australia, protection for Australia from third party damage claims, access to data generated from the experiments for both sides, exemptions from the Australian importation taxes for NASA equipment and personal income taxes for NASA personnel, and dispute resolution mechanisms. The agreement places no obligation on Australia to amend any of its laws.

In terms of feedback from other ministers, all ministers consulted have agreed to the text of the agreement. The Attorney-General and the Minister for Justice and Customs have recommended that a clarification be made to article 14 of the agreement, which refers to the double taxation treaty concluded between Australia and the US. The clarification suggested was to include Australian treaty series numbers in citing the double taxation agreement so that it was clear the agreement had been amended by a protocol.

The suggestion to clarify article 14 by incorporating ATS numbers came after the agreement was tabled. On advice from the Department of Foreign Affairs and Trade, we therefore do not propose to amend the text but will ensure that in the event of ratification we will issue a written declaration to attach to the agreement, citing the ATS numbers of the double tax treaty and its protocol.

There is one final issue to raise, relating to provisional application of this agreement. At the time the national interest analysis was lodged, we had received advice that the next balloon campaign would commence in December 2005. We therefore proposed that, prior to its entry into force, the agreement be applied provisionally as a less than treaty status arrangement, to

enable NASA to begin importing equipment for the campaign. However, on 11 August we were advised that the campaign would be postponed for operational reasons until the second half of 2006. In these circumstances, it is no longer necessary for the agreement to be applied provisionally pending its entry into force.

In conclusion, we would say that Australia has had a great deal of success in science and technology collaboration through this mechanism and we welcome the opportunity to extend the agreement. I believe that my colleagues from CSIRO and the Australian Defence Force Academy of the University of New South Wales are now to give a small presentation on the technical aspects of the operation of a balloon flight, for your information.

Mr Dunn—We thought this was a good way to walk people through what is a bit of a foreign subject.

A PowerPoint presentation was then given—

Mr Dunn—Stratospheric balloons are an economical alternative to placing satellites in space on a permanent basis. ‘Stratosphere’ means at the edge of the earth’s atmosphere—about 30-40 kilometres up. It is good up there for astronomy and astrophysics, environmental studies, meteorology and atmosphere studies. The advantages of the balloons versus, say, satellites and the shuttle—sending them up in NASA’s shuttle—is that the payloads can weigh several tonnes underneath these balloons. The development time for the experiments to go up under these balloons is relatively short compared to what it would be if you were preparing for them to go up in a satellite or in a shuttle. So, it has some distinct advantages over the other two ways of getting experiments up into space.

Moving to slide 2: as Sara said, this arrangement goes back a fair way in history. The first flight in Australia was in 1974, by the University of Melbourne. The government itself set up a ballooning facility in 1977, located in Mildura in Victoria. A lot of flights were conducted. At the same time we had an outposted station—if you would like to call it that—at Alice Springs.

Over 100 flights have been conducted since then, involving scientists from the US, Japan, Europe and Australia, as you can see from the slide. Since the start, in the mid-sixties, over 800 sorts of scientific stratospheric balloon flights have been conducted.

The next slide shows a typical flight. A one-tonne scientific payload hangs below the balloon. The volume is typically 800,000 cubic metres. It weighs one to two tonnes. NASA’s bottom price for conducting a campaign or supporting a launch is \$250,000 but they can go up to as much as \$1 million, depending on the size of the balloon, complexity of the payload, number of times it takes to get it up and complexity of the recovery once you want to get it back down. The float altitude, as I said, is about 40 kilometres which takes us about 99.5 per cent out of the earth’s atmosphere.

The launch operations are conducted at Alice Springs these days. As I said, there is no site at Mildura anymore. It takes a minimum of six hours to launch a balloon. A team is provided by NASA, specially trained and supported not so much in the field but logistically by a small team from ADFA. These are people specially trained in the different aspects of getting these balloons

up. Dr Sood will explain that. Now might be as good a time as any to get into a bit about the site itself at Alice Springs and some of the science behind it.

Prof. Sood—Just to put it in proper perspective, John gave volume data as 800,000 cubic metres. That is about the size of the MCG when the balloon is fully inflated. So it is not a trivial task to put up a balloon. It is a very expensive process. The slide I am showing is from the roof of the balloon launching station looking out onto the launch area, which essentially is one of the runways at Alice Springs Airport. The runways are closed for our balloon launches. The next slide shows the payload preparation shed. At a busy time we have housed six scientific groups in there, each consisting of about 10 people, so it gets extremely crowded. There is an enormous exchange of scientific ideas and data while people are in there.

The next slide shows our payload ready for launch. It is an x-ray astronomy payload. It has to be specially packaged and tested and so on. You can see the crash padding on the bottom. Right at the bottom, below the crash padding, is the ballast hopper. Sticking out from the top are direction sensing instruments and GPS receivers et cetera. On the left-hand side is the launch crane. That is a dedicated launch crane that is used for these launches. It is capable of handling 35 tonnes.

The next slide shows the balloon laid out on the ground and inflated ready for launch. In the picture you saw previously you could see the truck on the right-hand side of the picture with the payload hanging from it. Immediately behind the crane on the right-hand side is the parachute and then the rest of it is simply the balloon. The balloon is a very long thin tube about 200 metres long. You inflate only the top 15 per cent of it. You would need something like two full helium trailers to inflate that balloon. You have a gross inflation of about three or four tonnes. This picture is taken just before it is ready to take off.

The next slide is at take-off. It is a fairly hairy process. The length of time from the moment you release the balloon until it actually takes off is about one minute. A lot of things can go wrong. If they do go wrong then the balloon has to be destroyed. The plastic balloon costs anything upwards of \$100,000 and you can use it only once. The next slide shows the balloon at float altitude taken through a telescope. You can see that, when it is fully inflated, it takes the shape of a hemisphere sitting on top of a cone. The payload is suspended from the bottom there. That is at about 40 kilometres float altitude. It just goes with the wind—it is not a tethered balloon.

As to the flight durations, if you are lucky the balloon will not leak so it will not come straight down. You can go from six hours to several days, depending on your scientific objectives. One of our payloads, launched by the University of Melbourne, where I used to be, went around the world twice before we terminated it. It takes about 10 to 15 days to go around the world. It comes back at approximately the same latitude. The payload recovery depends on where the payload has come down. You can use helicopters, aircraft or all-terrain vehicles. The cost really goes up if it is in an inaccessible area. If you have to get to it early and it has a lot of weight on it, a helicopter is the only way to go. All flights in Australia are conducted under the control of John Dunn's department.

Here are some scientific highlights going back over the last 10 to 15 years. I will not bore you with the details but, for those of you who are scientifically inclined, the first gamma ray

emission from a spinning neutron star was discovered from Alice Springs. A gamma ray annihilation line from a black hole at the galactic centre was discovered in Alice Springs. The supernova star which exploded in 1987 really was a unique event in the 20th century and the observations that were made from Alice Springs over a period of about two years have not been repeated—the site really came into its own at that time—and, finally, there are high resolution images of the galactic centre.

The last slide lists future requirements. Our main requirement is to extend the duration of balloon flights. If it is up there for about four or five days it is not really competitive with satellites. Once it is up there for three months then it becomes exceedingly competitive at a fraction of the cost. That is mainly for astronomy and astrophysics. Obviously atmospheric monitoring is going to be increasingly important all around the world and I think we have a prime facility there for doing that.

Another area that seems to be expanding at the moment is telemetry between various areas using something that is floating at balloon altitude rather than going via satellite because you can obtain enormous data rates. So when offshore rigs want to communicate onshore that is the way to go. There is a lot of development in this area going on around the world.

This slide shows what the future will be in scientific ballooning. The type of balloon that we saw earlier on was a zero pressure balloon. It is open at the bottom so it does not stay up for very long. This image is of a super pressure balloon. It is completely sealed. Of course the technology is more difficult but it can stay up, in theory, for up to three months.

Regarding future operations, at the moment test flights are being conducted with small balloons from the United States and we are planning to launch a half million cubic metre balloon from Alice Springs in the future. ULDB stands for ultra long duration balloon flight. Sara has just mentioned that this has been put back to next year. We are planning for it to go around the world at least once. All the data will be recovered via radio communications with satellites, not by line of sight. The proposal is for the payload and the balloon to be recovered within Australia. There are future planned missions for up to three months.

CHAIR—That concludes the presentation. Could we have a copy of the PowerPoint presentation, if that is possible? We can incorporate that into our report.

Mrs MAY—This question is as a result of my ignorance about this. When the balloon comes down, do you direct it down? How does it work when the balloon comes down?

Prof. Sood—There is no navigation. What we do is pick a spot where it will hopefully be safe when the payload lands—because there is a one tonne payload coming down under a parachute. We project what the winds will be before we terminate the flight. An aircraft will take off from the base station in Alice Springs, position itself somewhere upwind of the balloon, press the button to terminate the flight and watch the payload come down, falling under a parachute. We also put a rip in the balloon to bring it down separately; it does not simply float away because our regulations also require us to bring the balloon down safely.

Mrs MAY—Does it always land where you expect it to?

Prof. Sood—Yes. If you are lucky it lands within a couple of kilometres of where the payload does. Sometimes the wind catches it. There are problems, for instance, if the payload lands on the ground with the parachute. The pilot has to press another button to release the parachute from the balloon otherwise, if the ground wind takes it, the payload can be dragged for several kilometres.

Mrs MAY—What sort of data are we collecting from these balloons? What sort of data are you looking at?

Prof. Sood—It depends on the type of experiment. A lot of experiments done from Australia are in astronomy and astrophysics simply because, as Sara said earlier, of our unique position in the southern hemisphere. The centre of our galaxy and a lot of other interesting objects are accessible from here but not from the northern hemisphere so there is enormous interest in people coming to Australia for those experiments. There are also atmospheric physics and cosmic ray experiments to do with astrophysics and so on.

CHAIR—In the agreement, there is a section where the government of the United States is responsible for and will pay compensation for meritorious third-party claims relating, for example, to personal injury or property damage resulting from activities carried out on behalf of the government of the United States. Has there ever been a claim launched under this section of the agreement with all the exchange of notes we have had going back to the 1960s?

Prof. Sood—I have been associated with ballooning from Alice Springs since 1975. During that time there have definitely not been any claims.

Mr WILKIE—It is fascinating. I wish you all the best for future launches. I would love to get up there and have a look sometime, if it were possible. But I understand that these things are often touch and go and it is a bit hard to plan them in advance. What sort of aircraft do you use as chase aircraft for the balloons?

Prof. Sood—Normally, we hire an aircraft from Alice Springs from one of the local companies and it is specially fitted out with the radio equipment that is required for both receiving limited amounts of data and for sending commands up to the balloon.

Mr WILKIE—So you would not need to have a high-altitude aircraft?

Prof. Sood—Not at all.

Mr Dunn—No, just an ordinary four seater.

Mr WILKIE—A Cessna or something like that?

Mr Dunn—Yes.

Mr WILKIE—When you are tracking them, do you ever find that the mechanism for detaching the balloon from the payload and deploying the parachute fails?

Prof. Sood—Yes. But we always build in safeguards. There are always three different methods of bringing down the payload. This is a requirement of the Civil Aviation Safety Authority. Normally, there is a radio command. If that fails, there is a pressure command, so if the balloon starts to come down into the airlanes then it automatically terminates. Then there is a timer command. If I say that my balloon needs to be up there for three days for scientific purposes, at the end of the three days a timer on it will automatically go off and terminate the flight. The probability of all three failing is remote.

Mr WILKIE—That is fantastic. We do not have any of our Senate colleagues here. But if we looked at harnessing the hot air coming out of the Senate, would that be useful in balloon experiments in the future?

CHAIR—They would need helium.

Mr ADAMS—Have you ever lost one out of the stratosphere? What happens if it goes way out?

Prof. Sood—It cannot. It is dependent on Archimedes' law. It has to float at a certain altitude, which depends on the air pressure, the volume of the balloon and what you are suspending from it. It is the Archimedes' principle about the displacement of an exact amount of air. That is all that there is to it. That is why we have to have a very large volume, because the density of the air there is so low. You have to displace a lot of air for it to be able to stay at that altitude. We wish we could send it higher—that would be terrific—but it is not possible.

Mr ADAMS—Bearing in mind climate change and everything else, these can be very useful in looking at things. Who is driving the new balloon technologies? Is there a commercial end? Are people building balloons commercially? Is the technology being driven by companies that want to use balloons for other things?

Prof. Sood—This particular exercise, the ultra long duration balloon, is being driven purely by scientists around the world because we want a platform where we can have balloons up there for a long time with a short turnaround time. It is cheaper than satellites.

Mr ADAMS—Whose technology is that? Who is building that?

Prof. Sood—That is being built by NASA. It has been designed by NASA and it is being built within the United States.

Mr ADAMS—So it is coming out of the NASA technological brains. Is any weaponry being tested?

Prof. Sood—The platform is there and the facility is there if Defence wants to use it but we are simply involved in scientific work—nothing to do with Defence.

Mr ADAMS—No weaponry is being tested at the moment?

Mr Dunn—No. The way that the process works on these is purely scientific. We have an internal process: we go to Defence and DFAT with the details of their payloads each time they

want to fly a balloon. We run them by those people and then they come back. After that, we can go to NASA and give approval to conduct that campaign.

Mr ADAMS—Has the cost been going up or down?

Prof. Sood—It is going up slowly and the reason for that is simply a human resource cost and the cost of keeping teams up in Alice Springs. A technical campaign will see between 70 and 100 people from overseas actually stationed in Alice Springs, which is where the benefit comes to Australia. You have all that, you have all the equipment being bought and so on. The cost is essentially one of bringing people out here. The payloads are getting more complex so people have to stay in Alice Springs longer.

Mr ADAMS—It is using the balloon as a platform; you are saying that if you could get a balloon that could stay there for three months, in reliable circumstances that could do the job of a satellite?

Prof. Sood—Yes.

Mr ADAMS—Especially in communications and things, so there are a lot of applications.

Mr Dunn—There are pictorial things that NASA has drawn about these sorts of balloons being launched from spacecraft, say near Mars, and doing the same sort of thing, if they can develop them. They would do the same thing up there.

Mr ADAMS—Yes, communication between the planet and earth—that sort of thing.

Mr Dunn—Yes. That is a bit far-reaching but they have done their drawings and their wishes.

Mr ADAMS—Their vision.

Mr WILKIE—How visible would one of these balloons be from the ground?

Prof. Sood—It is. You can actually see it from a distance of up to 200 kilometres, even though it is that distance away and it is at a height of 40 kilometres, because of the size of the thing. Particularly if the sun is shining on it, you can see it up to about 200 kilometres.

Mr WILKIE—Do you get many reports of people seeing them when they are up there?

Prof. Sood—Gosh, yes.

Mr Dunn—Half of Alice Springs lines the fence!

Mrs MAY—Are you limited regarding the time of year when you can launch the balloons? Weather must play a big part in all of this.

Prof. Sood—A very big part. It depends on the type of experiment one wants to do. If one were to go straight up and stay there for two or three days, we launch these balloons at what is

known as turnaround time. During six months of the year the winds are blowing very hard easterlies and for the other six months they are blowing very hard westerlies. So twice a year they change around and there is a period of about four weeks when the winds are extremely light. If you want an exposure time of, say, two or three days, that is the time to do it—in April and October. With these balloons here, which we want to go around the world, the best time to do it is in December-January, because then you have extremely strong winds blowing them towards the west. The reason for using very strong winds is that it keeps them at the same latitude. We launch them from Alice Springs and they can come back, having gone around the world, within about 100 kilometres north or south of Alice Springs. It makes recovery very easy.

Mr ADAMS—It is interesting. It makes you think of the early sea people who used the winds. Why do we have somebody from the crime branch here?

Mr Bliss—My section title describes the very broad range of work for which I am responsible. Part of that is transnational crime but the other substantive part is international law and it fits squarely into that category.

CHAIR—Do any other countries attend the launches?

Mr Dunn—It depends on the experiments. They can be made up of a conglomerate of experimenters from different countries. The launch team themselves is a NASA sponsored team. Yes, there can be other countries there, but not launching. They can launch their own balloons, but it will be the NASA team that launches the balloon.

CHAIR—Could you explain how the Australian team and the American team work together during the launch? Is there always an Australian team there when a NASA launch is occurring?

Mr Dunn—There is. Part of the requirement is that, with respect to Ravi and his team from ADFA, someone will be there consistently for the whole period. There is a ‘go/no go’ decision that they make about whether it goes or not.

CHAIR—Could you clarify the formal and informal relationship between the Australian and American teams?

Mr Dunn—We work with the team from the US. Leading up to a campaign there is a flow of information about what they will require in preparation for the campaign and those sorts of things. When they arrive here it is not so much that Ravi and/or his team or I, if I am up there, get embedded in their team, because we are not experts in launching balloons per se—although Ravi is. They bring out their own team to do that. Our role is to facilitate and provide support. As I say, in the finish, if there is a discussion about whether a balloon might be ready to go, the experimenter might be ready to go, but if the winds are moving around and they are moving the wrong way, it is the Australian government’s decision whether that balloon goes or not. For each of these we operate with a cooperating agency arrangement that we have put into place which defines reasonably clearly each party’s roles and responsibilities.

CHAIR—There being no further questions, thank you very much for coming.

Resolved (on motion by **Mr Wilkie**, seconded by **Mrs May**):

That this committee authorises publication, including publication on the parliamentary database, of the transcript of the evidence given before it at public hearing this day.

Committee adjourned at 8.56 pm