

Exchange of Notes constituting an Agreement between Australia and United States of America to amend and extend the Agreement concerning the conduct of scientific balloon flights for civil research purposes

Introduction

- 3.1 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* (the Agreement) will allow for the continued cooperation between Australia and the United States on scientific balloon flights.¹

¹ National Interest Analysis (NIA), para. 6.

Background

- 3.2 The Agreement amends and extends a predecessor agreement between Australia and the United States on the same subject.² Since the expiration of the predecessor agreement in 2002, balloon flights have continued under a non-legally binding arrangement between the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the National Aeronautics and Space Administration (NASA).
- 3.3 In practice, the National Scientific Balloon Facility (a NASA facility managed by the Physical Science Lab of New Mexico State University) uses the Alice Springs Balloon Launching Station.³ The School of Physics, Environmental and Mathematical Sciences at the University of New South Wales, Australian Defence Force Academy (ADFA) campus, is responsible for overseeing all operations at the Balloon Launching Station.⁴
- 3.4 On launching a scientific balloon, it is partially filled with helium and released with the payload suspended beneath it.⁵ As the balloon rises, the helium expands and fills out the balloon until it reaches its float altitude. When inflated, some balloons can be approximately the same size as the Melbourne Cricket Ground.⁶ The float altitude is about 40 kilometres, which takes the balloon above 99.5 per cent of the Earth's atmosphere.⁷
- 3.5 Over 100 flights have been conducted from the Alice Springs Balloon Launching Station.⁸ Scientific findings of balloon launches from Alice Springs include the first gamma ray emission from a spinning neutron star, the discovery of a gamma ray annihilation line from a black hole at the galactic centre, observations of the supernova star

2 *Exchange of Notes Constituting an Agreement between the Government of Australia and the Government of the United States concerning the Conduct of Scientific Balloon Flights* [1992] ATS 26. Entered into force 19 June 1992 and terminated 19 June 2002.

3 National Scientific Balloon Facility: <<http://www.nsbfnasa.gov/>>

4 Alice Springs Balloon Launching Station: <<http://www.ph.adfa.edu.au/balloons/nasansbf.html>>

5 The payload contains the instruments to record the information as well as the command and control mechanism for the balloon.

6 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 9.

7 Mr John Dunn, *Transcript of Evidence*, 16 August 2005, p. 9.

8 Mr John Dunn, *Transcript of Evidence*, 16 August 2005, p. 8.

which exploded in 1987 which have not been repeated since and high resolution images of the galactic centre.⁹

Features of the Agreement

3.6 Key features of the Agreement include:

- the Government of the US agrees to coordinate any necessary support activities with other countries and to comply with the relevant provisions of Article 8 of the Convention on International Civil Aviation (Article 2)
- civil law claims cannot be brought by either Party against each other for the injury, death or damage resulting from activities under the Agreement, except where it is caused by wilful misconduct. Criminal proceedings can still be brought (Article 5)
- the Government of the United States will be responsible for and 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 under the Agreement (Article 6)
- the Parties are only obliged to transfer such data and goods as are necessary to fulfil their respective responsibilities under the Agreement (Article 9). Such data and goods are to be used exclusively for the purposes of the Agreement (Article 9(4))
- all activities carried out under the Agreement by both Parties must be in accordance with their national laws, including those relevant to export controls and the transfer of classified information (Article 9(1))
- technical data with respect to operational matters under the Agreement and data relating to the safe conduct of the program will be made available without restriction, unless contrary to the Parties' national laws (Article 9(2))

⁹ Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, pp. 9-10.

- the Government of the US retains title to equipment, materials, supplies and other movable property provided by or acquired in Australia at its own expense, for the purposes of this Agreement (Article 10). Movable property provided by or purchased in Australia under the Agreement can only be disposed of within Australia, with the permission of CSIRO (Article 10)
- the dispute resolution clause refers matters of disputes to program managers in the cooperating agencies at first instance and then to the Parties at second instance (Article 16).

3.7 The Committee heard evidence on the safety mechanisms used in bringing down scientific balloons. Given that payloads often weigh between two and three tonnes, the Committee was reassured to hear that the Civil Aviation Safety Authority (CASA) requires there be alternative methods for bringing down the payload:¹⁰

Normally, there is a radio command. If that fails, there is a pressure command, so if the balloon starts to come down into the airplanes 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.¹¹

3.8 The Balloon Launching Station's location in the Southern Hemisphere is advantageous for viewing the centre of the galaxy and other scientifically valuable objects which are not accessible from the Northern Hemisphere.¹²

3.9 For this reason, experiments conducted from Alice Springs are in astronomy and astrophysics, as well as atmospheric physics and cosmic ray experiments that relate to astrophysics.¹³ The Committee was informed that the experiments were purely scientific in nature and that no weaponry was tested under the Agreement. Each payload experiment is assessed by the Department of Defence and the Department of Foreign Affairs and Trade before approval is given to NASA to conduct that campaign.¹⁴

10 Civil Aviation Safety Regulations 1998, Part 101.185. Available from <<http://www.casa.gov.au/rules/1998casr/101/index.htm>>

11 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 12.

12 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 11.

13 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 11.

14 Mr John Dunn, *Transcript of Evidence*, 16 August 2005, pp. 12-13.

3.10 Leading up to campaigns, the Australian and American teams will work together and share information required in preparation for the launch. During campaigns, the Australian team facilitates and supports the launch. A member of the Australian team will be in attendance for the entire campaign period. Where there is doubt as to whether the launch should take place, it is the responsibility of the Australian member to make the final decision.¹⁵

3.11 Other factors influencing the decision to launch a balloon include the time of year and the weather. The Committee was informed that the time of year the balloon is launched will depend on the type of experiment.¹⁶ For instance, an experiment which lasts for two to three days and requires the balloon to stay in the same position will be launched in 'turnaround time'. Professor Sood of the University of New South Wales explained that:

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 to three days, that is the time do it - in April and October.¹⁷

3.12 The Committee heard evidence that the best time of the year to launch ultra long duration balloons is December-January because of the strong winds blowing towards the west.¹⁸ As strong winds will tend to keep the same latitude, when a balloon is launched into it, the balloon will also keep that latitude. This makes recovery of the balloon easier, as it returns to Alice Spring usually within 100 kilometres of its original launching point, after having gone around the world.¹⁹

15 Mr John Dunn, *Transcript of Evidence*, 16 August 2005, p. 14.

16 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 13.

17 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 14.

18 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 14.

19 Associate Professor Ravi Sood, *Transcript of Evidence*, 16 August 2005, p. 14.

Implementation and costs

- 3.13 No new legislation is required to give effect to the terms of the Agreement.²⁰
- 3.14 The Agreement is not expected to give rise to any additional costs.²¹

Consultation

- 3.15 The NIA advises that State, Territory and most Federal Government Ministers²² were advised of the proposed extension of the Agreement.
- 3.16 The NIA further advises that the Minister for Transport and Regional Services noted that CSIRO and NASA need to comply with CASA's Safety Regulation, part 101 and in particular, Subpart E which covers the requirements for operations of this nature in Australian airspace. The NIA notes that both NASA and CSIRO are aware of these regulations and will ensure that they are adhered to when conducting the experiments in association with the balloon flights.²³
- 3.17 The Commonwealth Treasury recommended minor changes to Article 14 to ensure consistency with a taxation agreement between Australia and the United States.²⁴ These changes were incorporated into the Agreement.

Entry into force

- 3.18 Under Article 18, the Agreement will enter into force following the exchange of notes between the Government of Australia and the Government of the United States.²⁵

20 NIA, para. 3.

21 NIA, para. 18.

22 Federal Government Ministers consulted: The Treasurer; the Attorney-General, Foreign Affairs; Transport and Regional Services; Industry, Tourism and Resources; Immigration, Multicultural and Indigenous Affairs; Communications, Information Technology and the Arts; Defence; Agriculture, Fisheries and Forestry; Environment and Heritage; and Justice and Customs.

23 NIA, Consultation Annex, para. 3.

24 NIA, Consultation Annex, para. 5.

25 NIA, para. 3.

3.19 Representatives from the Department of Education, Science and Training informed the Committee that the provisional application of the Agreement before its entry into force, foreshadowed in paragraphs 4 and 5 of the NIA, would no longer be required.²⁶ This is a result of the postponement of NASA's next campaign from December 2005 to the second half of 2006.²⁷

Conclusion and recommendation

3.20 The Committee recognises the value of the Agreement as a continuation of longstanding cooperation between Australia and the United States in the operation of scientific balloon flights. The Committee further recognises the value of such cooperative arrangements to Australia's scientific community and welcomes any further collaboration in this area.

Recommendation 2

The Committee supports 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* and recommends that binding treaty action be taken.

Dr Andrew Southcott MP

Committee Chair

²⁶ Ms Sara Cowan, *Transcript of Evidence*, 16 August 2005, pp. 7-8.

²⁷ Ms Sara Cowan, *Transcript of Evidence*, 16 August 2005, p. 8.

