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AIR 6000 PHASE 2A/B NEW AIR COMBAT CAPABILITY FACILITIES PROJECT

Attached at Annex A is my revised submission to the Parliamentary Standing Committee on Public Works (PWC) on the above referred matter. The revision includes layout, grammar and improved description changes. The overall content remains unchanged.

Yours faithfully

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Annex: A. Submission by John Donahoo

AIR 6000 PHASE 2A/B NEW AIR COMBAT CAPABILITY FACILITIES PROJECT

SUBMISSION BY JOHN DONAHOO

RAAF Base Williamtown Runway Extension Options

Defence has three options to extend the Williamtown runway as follows:

a. Option 1. Extend the runway 610 metres (2000 feet) to the South East.

b. Option 2. Extend the runway 270 metres (900 feet) to the North West and 340 metres (1100 feet) to the South East, with the ILS Glide Slope apparatus and the Visual Approach Slope Indicator System (VASIS) remaining in their current locations. These aids provide a Glide path consisting of a radio beam and a light beam which project to the approach direction at an angle of 3 degrees, or 5.24%, or about 1:20 slope. They are located adjacent to the runway, and about 1,000 feet from the runway threshold. This option will meet Defence's **stated** needs in the draft EIS. In both VMC (Visual Meteorological Conditions) and IMC (Instrument Meteorological Conditions), Runway 12 will be a 10,000 feet runway for takeoffs, and a 9,100 feet runway for landings. Runway 30 will be a 10,000 feet runway for both take-offs and landings. Option 2 essentially proposes a 9,100 feet runway with a 900 feet paved overrun (with 200 feet stopway?) with parallel taxiway.

c. Option 3. Extend the runway as for Option 2 and move the Glide Slope apparatus and VASIS about 900 feet to the North West. (Changes to the High Intensity Approach and Runway lights will be needed to suit the selected option)

Option 3 is the Defence preferred option. This option moves ANEFs about 250 metres to the North West more than necessary as they will be moving the 15 km long approach Glidepath further toward Raymond Terrace. Essentially, Defence will be inflicting more noise and ANEFs than required on Raymond Terrace **simply to save money** on their runway extension. Option 2 should be a workable solution and clearly costs less than Options 1 and 3, and will impose less noise and lower ANEFs over Raymond Terrace. This proposed movement of radio and visual aids is to be funded from the runway extension works, that in turn is part of the works referred to the PWC. **This proposal is not overtly stated in the draft EIS, and hence there is no description of the impact. This omission could be a breach of Federal Environmental law.**

Instrument Landing Systems (ILS) at RAAF Base Williamtown

Some years ago, Defence advised that their latest ANEF Map was based in part on the provision of a new Instrument Landing System (ILS) on Runway 30. However the project staff advised that this is not part of the project. When will the promised new ILS be installed?

The current ILS on Runway 12 has a slope of 3 degrees. However, ICAO Doc 8168 Fifth Edition-2006, Volume II at Page I-4-5-2 states that for Cat 1 precision approaches, the maximum aircraft glidepath or gradient is 3.5 degrees, or 6.12 %. If this glidepath is adopted at Williamtown, then the altitude of aircraft above Riverview Ridge, Raymond Terrace will increase by about 250 feet. This should result in a decrease of about 2 ANEF units over much of Raymond Terrace as deduced from the limited Noise Power Distance data provided in the draft

EIS. This is a significant result. Defence should now prepare an ANEF map to accurately assess this proposal. One runway approach glidepath angle at Frankfurt Airport increased from 3 degrees to 3.2 degrees for mostly for noise abatement purposes.

Informal advice from Defence is that the F-35A will be RNP 0.3 capable by about 2020. RNP stands for Required Navigation Performance. An RNP capable aircraft uses GPS for navigation and also has Actual Navigation Performance (ANP) capability. The 0.3 refers to 0.3 nautical miles or 550 metres. This is the tolerance of the aircraft's known position. That is + or – 550 metres. Such aircraft when authorized, and with an authorized pilot can fly a final precision instrument approach from 1,500 feet in a curved descending trajectory for three of the last five nautical miles, provided the aircraft is on runway centerline at 500 feet altitude maximum allowable angle of bank of 17 degrees. The resulting calculated minimum radius for an aircraft with an approach speed of 180 knots is then 3.7 km. This means that an RNP 0.3 capable aircraft can theoretically perform a curved descending precision instrument approach from Kings Hill at 1,500 feet and land on Runway 12 at Willliamtown, thereby missing Raymond Terrace, with potential reduction in ANEFs. The foregoing data is contained in ICAO Doc 9905-AN/471: Required Navigation Performance Authorization Required (RNP(AR)) Procedure Design Manual. As Williamtown runways do not have any hills or towers adjacent to their approaches or missed approaches, then the ICAO procedures would rate both runways as RNP 0.3, and therefore able to be used by RNP 0.3 capable aircraft. However, there is some downside to the use of these procedures at Williamtown using F-35A aircraft.

RNP(AR) procedures have been in use for about 10 years at several US airports and Queenstown, New Zealand. The procedures are currently used where there is no real alternative, and with aircraft with a pilot and a co-pilot. There is no known locations where RNP 0.3 curved descending precision approaches are used in the first three of the last five nautical miles of an approach for purely noise abatement reasons. RNP curved approaches are being used at Brisbane for noise abatement, but the flight paths are beyond 5 nautical miles from the touchdown location.

A single Ground Based Augmentation System (GBAS) can provide a GBAS Landing System (GLS) for Runways 12 and 30. Williamtown would then have three ILS. The Joint Precision Approach Landing System (JPALS) is the military version of GBAS, and JPALS capable aircraft are able to use GBAS. Defence should consider the installation of a GBAS in lieu of an ILS on Runway 30 if and when the F-35A becomes JPALS capable.

After several years of testing, a GBAS system is now operational at Sydney Airport, one of only several such operational systems in the world. It has a positional accuracy of + or – 22 metres and a height accuracy of + or – 4 metres. If such a system was installed at Williamtown, curved descending approaches for up to the first three of the last 5 nautical miles of a precision instrument approach may be possible for F–35A aircraft. The foregoing assumes that RNP(AR) geometric flight criteria applies for GLS approaches. Potentially, ANEFs could be reduced over Raymond Terrace. It may be several years before Defence can ascertain if such curved descending approaches for the F-35A are feasible

Proposed RAAF Base Williamtown F-35A Facilities

Many hundreds of millions of dollars of expenditure is proposed based mostly on the premise that an event will occur that is unlikely in the extreme. This event is an aircraft catching fire and has burning fuel traveling to adjacent aircraft because the aircraft pavement fall is along the line of aircraft. The proposed remedy to this extreme event is to provide new pavements,

hangars and headquarters for the OCU and two squadrons based at Williamtown. Regardless of the fall, an aircraft fire needs to be extinguished quickly or it will engulf nearby aircraft due to the intense heat generated. While Kerosene is hard to ignite, Defence may still wish to eliminate such risks, but they should provide supporting evidence in the way of numbers of previous conflagrations of fighter aircraft, and some statistical analysis of the probability of occurrence.

Accepting that Defence requires prevention of burning fuel traveling to adjacent aircraft, an option to consider is to provide a specially designed grated drain sited in between each aircraft in the existing aircraft shelters, and extend them for about 10 to 15 metres from the nose and tail of each F-35A parking position. Each grated drain could then connect to a flame trap and then to an underground pipeline for discharge to an Open Unlined Drain (OUD) located on the airfield. This option is predicated on there being sufficient fall from the pipeline end to the OUD.

Transitioning from F/A-18 to F-35A could be undertaken by providing new facilities for only the OCU. This would provide one redundant fighter squadron facility set and enable the squadrons to move in turn to the old OCU facilities while their facilities are upgraded.

Protection of Aircraft near Medowie Road at Williamtown

If Defence is concerned with extreme events such as fires spreading on flight lines, then to be consistent, they should examine other unlikely events. Such an extreme event is the possibility of aircraft located on the proposed Operational Readiness Apron adjacent to Medowie Road being subject to misadventure. To guard against this occurrence, protective mounds could be provided.

Fighter World at Williamtown

Fighter World houses mostly RAAF historical aircraft and provides a window to the base for the public. They also organize bus tours to parts of the base to enable ordinary Australians to see their Air Force at work. If Defence does not want Fighter World to stay in its current location, they should publically advise their reasons. Moreover, they should also pay for its relocation.

Proposed RAAF Base Tindal F-35A Facilities

Comments on the proposed Tindal facilities are predicated on the following:

a. Continental United States may be impregnable to conventional air attack, but Northern Australia is not.

b. An adversary will exploit your weaknesses and be wary of your strengths.

c. Northern Air Bases need to be prepared for anything, including air attack from strafing, dumb bombs, smart bombs and other Precision Guided Munitions.

d. The average warning time for a conflict is about 6 months.

e. Defence units should train as they would fight.

f. Passive defence increases the deterrence value of air combat capability.

The proposed facilities requirement seems to be based mostly on maintenance efficiency and security criteria. For an airline, this would be paramount, however, 75 Squadron is a military unit and therefore passive defence should be a major factor in facilities design. Passive Defence dictates aircraft dispersal and limited hardening. The Defence evidence states that visiting squadrons of F-35A can use the existing dispersals but that 75 Squadron should not. Defence should review their approach as it appears to be inconsistent. Moreover, the existing single aircraft hangars at Tindal were provided to allow aircraft dispersal and to eliminate the need for low-level foam fire suppression that is normally provided in hangars for two or more aircraft. The number of small hangars could be increased from 4 to 7 to satisfy additional hangar needs.

Aircraft Dispersals and Hardened Aircraft Shelters (HAS)

A practical way to provide passive defence for aircraft is to provide many more single aircraft dispersed aprons than needed, and by employing Camouflage, Deception and Concealment (CCD) techniques. Initially, shelters can be provided which then make it difficult to determine where aircraft are located. A HAS can also be provided at each dispersal apron when required. However, the cost and future effectiveness of a HAS needs to be considered in its design. A practical approach is to design a HAS for a near miss of say a 2000lb bomb. There is no such thing as a HAS which can be hardened for any weapon which may be developed during the life of the HAS which could be 80 to 100 years. Initially, only two HAS should be built, each with two sets of doors. One should be provided at say Woomera and tested to demolition to determine its capability and any cost effective enhancements. Following testing, a second HAS should be built at Tindal at a 75 Squadron dispersal apron for training and familiarization purposes. The design and documentation of the HAS should be prepared to a higher standard than normal. At completion of construction of the second HAS, detailed construction drawings and materials lists should be prepared to enable suitable contractors in future to commence building numerous HAS at almost zero notice if required.

Buffer Zones and Land Acquisition at RAAF Bases

The value of all Defence equipment gradually depreciates over time until each item is only worth its scrap value. Conversely, land appreciates with CPI or better with time, and each year, the sale of surplus land is included in the revenue component of the Defence Budget. Land purchase adjacent to Defence establishments is a strategically sensible approach that protects them from many forms of encroachment and provides for flexibility in future use.

There is anecdotal evidence that in the late 1960s, the then Department of Civil Aviation wanted to purchase large tracts of land adjacent to Tullamarine Airport to serve as a buffer zone to prevent urban encroachment. Apparently, the Treasury bureaucrats did not agree and the proposal did not proceed. Today, there is considerable urban encroachment and that proposed acquisition was clearly a lost opportunity.

Understandably, governments are careful not to set precedents in land acquisitions at military airfields, as some would then argue that the same should apply at civil airports. However, there are some differences between them. The cost of acquiring land to say the 25 ANEF at Sydney, Melbourne and other capital city Airports would be prohibitively expensive. However, RAAF Bases Williamtown and Amberley are unique. While civil airports have low aircraft noise levels and high average daily aircraft movements, the afore-mentioned RAAF airfields have high aircraft noise levels and medium average daily aircraft movements. Moreover, the cost of acquiring available relatively undeveloped land would be more affordable at these localities. **The foregoing bases are vital national assets and they are virtually**

irreplaceable. Clearly, every effort should be made by the Commonwealth to protect their long term viability.

If it was not for the natural buffer land provided by the Pacific Ocean, the sand hills, crown land including the NPWS owned Tomago sand beds, State Forestry land and Hunter Water land including Lake Grahamstown; RAAF Base Williamtown may have been forced to close decades ago from adjacent incompatible development. The population of the Lower Hunter is now about 600,000. In 20 years time, it may be about 800,000. The Sydney basin is filling up and an increasing population has to live somewhere. This will lead to increasing development adjacent to the Base and some of these developments may not be compatible with Base activities. The relocation cost of moving the facilities at the Base could be of the order of $4 billion, but to where would they move? A suitable site may not exist. In any event, for recruiting and retention purposes, Defence prefer to have their large airfields close to major cities. Any large Corporation with an investment of this size, and faced with future security of tenure issues would spend at least $5 to $10 million per annum as insurance to guard against this possibility. Defence should spend this amount in land acquisition. The RAAF Base represents about 5% of the Lower Hunter economy. Clearly, it is in the interests of the Commonwealth and the State to safeguard the aviation activity in the Lower Port Stephens area and they need to work together to ensure this outcome.

Defence **does not appear to have a policy** on buffer land acquisition adjacent to its airfields, **but it does have a practice** of buying land to the 20 or 25 ANEF in the development of new airfields, and the re-development of an existing airfield. The impetus for buying about 25,000 hectares of land in the early 1980s for the new airfield at RAAF Base Curtin arose from the noise complaints received from Salt Ash residents over Mirage fighters using the Salt Ash Air Weapons Range. A few visionary senior RAAF officers decided that this would not happen with future airfields. This practice was again followed when RAAF Base Tindal was redeveloped in the mid to late 1980s. The land holdings were increased from about 1,000 hectares to about 40,000 hectares. When RAAF Base Scherger was developed in the mid 1990s, a core land area of 5,000 hectares was acquired, and a buffer land area of 8,000 hectares was leased for 198 years. More land would have been acquired or leased but it was not available. As a major re-development of Williamtown is currently planned and is similar in scope to the Tindal development in the 1980s, consistency in approach dictates that the current area of about 1,200 hectares be considerably increased. Defence should establish a **Buffer Land Policy**. That policy should include acquiring more buffer land at other RAAF establishments. This should occur firstly at RAAF Bases Amberley and Learmonth; and then at RAAF Bases Pearce, East Sale and Nowra. RAAF Bases Darwin, Townsville and Edinburgh are built out and little if any land is available at a reasonable price. However, the SA State government seems to be more supportive of applying AS 2021 that the NSW State government, and this is positive for Edinburgh.

Our Constitution effectively states at Section 51 xxxi that: the Parliament shall have power to make laws with respect to the acquisition of property on just terms. The current legal view seems to be that imposing an ANEF over someone's property, even after they have lived there for 20 or more years is not deemed to be an acquisition of an interest in land, and therefore no compensation is payable. However, something is being taken from the landowner, and this includes the right of free enjoyment of the land, property devaluation and the stigma of land being included in an ANEF zone. While currently, there may not be a legal argument for compensation, or for voluntary land acquisition, there is a strong moral case for such action, as in this era, the government should not be treating its citizens in such a shabby way.

In this current era, surely it is unacceptable for the Commonwealth to be inflicting homeowners at Salt Ash and possibly elsewhere with 105 dBA noise levels. Defence should commence a voluntary land acquisition program that in the first instance allows for buying properties from severely noise affected residents in Salt Ash, Fullerton Cove and adjacent areas. Defence should institute a 30 year plan to acquire non-Crown Buffer Land to include: all Explosive Ordnance (EO) Purple Lines as defined in the NATO EO Safety Principles; all land affected in the zero and 7.5 metre building height restriction zone as mandated by the proposed changes to the Defence (Areas Control) Regulations to include Williamtown; selected land in the North West Approach to the Salt Ash Air Weapons Range; all land to the 30 ANEF where practicable, and land to the 25 ANEF on an opportunity basis. Defence should seek a binding agreement with the State to ensure that Defence have first right of refusal of any crown land proposed for sale in a noise affected zone?

By their recent actions in approving Development Applications (DAs) in aircraft noise affected areas, the Port Stephens Council have given themselves a 5 ANEF discount. This is so, because in their interpretation of the AS 2021 in the consideration of DAs, they have effectively changed the 25 ANEF and the 30 ANEF into the 20 ANEF and 25 ANEF respectively. Defence should request the NSW State Planning Minister to issue a binding planning directive to the Port Stephens Council ASAP that requires any approved DA that is inconsistent with the AS 2021 to be referred to State Planning for their review; if requested by any one Councillor. Moreover, the proposed binding planning directive should be a legislative instrument and which also specifies compliance with AS 2021 by State Planning in their review of DAs.

Last year, Senator Feeney was rebuffed by the Port Stephens Council and the then NSW Planning Minister when he requested they oppose the approval of residential development that was inside the 25 to 30 ANEF Zone at 2 Halloran Way, Raymond Terrace. Senator Feeney rebuffed the Medowie Progress Association when they requested that Defence introduce procedures to stop civil aircraft from overflying Medowie. The losers in all this negative activity are the residents, our children and our grandchildren. Political and community leaders at all levels owe it to them to ensure that **proposed aviation activity is compatible with existing development**, and that **proposed development is compatible with existing and proposed aviation activities**. The Commonwealth and the State seem to be able to work together on the proposed Badgerys Creek Airport, why can't they apply similar effort to the Port Stephens Aviation Zone? Defence proposes to spend millions of dollars on facilities at Williamtown to move their personnel away from aircraft noise, why then will they not spend money to reduce noise to adjacent residents? Defence should initiate the development of an agreement between the Commonwealth and the State that covers the Lower Port Stephens Aviation Zone where the State agrees to prevent development that is non-compliant with AS 2021, and Defence agrees to a plan of land acquisition of Buffer Zones over time as outlined above. Moreover, any development at King’s Hill should be deferred until Defence has completed examination of Flight paths with the community over Medowie, and the possible application of new technology that may result in less overflights at Raymond Terrace.

In the early 1970s, there was debate within Defence regarding the need for the then proposed Defence (Areas Control) Regulations, and a view was expressed that local Councils could be asked to control building heights adjacent to military airfields. Legal advice was that to ensure certainty, legislation was necessary and that Councils could not be relied upon to act in the Commonwealth interest at all times. This has certainly been the experience for the control of residential developments in ANEF zones in the Port Stephens Local Government Area.

Each generation of fighter seems to be noisier that the previous one. The US Air Force and the US Navy are currently developing 6th generation fighter aircraft with prototypes expected to fly in the mid to late 2020s. To provide for future development options, it is strategically prudent to acquire land now while it is available and relatively cheap. Defence should keep abreast of these developments to ascertain if they need to provide a future runway closer to the sea at Williamtown for future noise abatement purposes and they should have a master plan that deals with these matters.

Ultimate ANEF Map for RAAF Base Williamtown

Residents and the Port Stephens Council see ANEF contour lines as **'walls of stone'**, but Defence sees them as lines on a drawing that they can change every 10 years or less. Defence should issue an Ultimate ANEF Map that is allowed for in the relevant standard, AS 2021 and which applies at Canberra Airport. This would provide certainty for Land Use Planning in Port Stephens.

Conclusion

While some matters raised in this submission are not directly related to the PWC Terms of Reference, they are allied issues. I hope the foregoing information is of some assistance to the Committee in their deliberations of the referenced works.