

Air Force Strategic Infrastructure Plan

by

Group Captain Ron Tilley

An Air Power Seminar given at Canberra on 27 July 2017

Air bases are fundamental to the employment of air power and will continue to be so for the 5th-generation Air Force. Air Force depends on air bases in both mounting and supporting the conduct of air operations in times of contingency and peace. Air bases are also critical to the mounting and support of operations in the joint warfare environment.

The *Air Force Strategic Infrastructure Plan 2017-2027* sets out, in broad terms, how Air Force will influence and implement the future disposition of air bases and air weapons ranges, including planned infrastructure investment, to successfully deliver Defence and Air Force capability into the future.

Group Captain Ron Tilley

Group Captain Ron Tilley joined the RAAF in 1987 as a Facilities Officer in the undergraduate scheme. After completing a civil engineering degree, he enjoyed postings to RAAF Base Pearce, No 2 Stores Depot, RAAF Support Unit Butterworth, No 1 Operational Support Unit and the Directorate-General Facilities - Air Force. In 1997, he served as Aide-de-camp to the Governor-General.

After promotion to squadron leader, Group Captain Tilley served in the Defence Estate Organisation, responsible for the planning and development of infrastructure projects. He was attached to Australia's Federation Guard in 2000 to commemorate Australia's Centenary of Federation in London where he served as Captain of the Queen's Guard. He completed the Australian Command and Staff Course in 2001 and was awarded a Masters in Management (Defence Studies).

After serving in the Infrastructure Development Agency - Air Force, he was promoted and was posted to Townsville as Manager Infrastructure / Regional Planning and Development - North Queensland. Returning to Canberra, he was Technical Adviser - Air followed by Director National Airfields Projects. In this position, he was responsible for the planning, development and delivery of air base infrastructure projects, including the \$1.5 billion New Air Combat Capability Infrastructure Project.

In 2011, Group Captain Tilley was deployed on Operation *Slipper* as the Chief Engineer in Headquarters JTF633. Upon his return, he resumed his previous role until he was posted as Commanding Officer No 22 (City of Sydney) Squadron and Air Base Executive Officer RAAF Base Richmond.

Group Captain Tilley was promoted to Group Captain in October 2015 and posted to Director Strategic Infrastructure Planning - Air Force in Air Force Headquarters. His current position is now titled Director Estate and Infrastructure Capability - Air Force.

Group Captain Tilley: Just to set the scene, I'll read what's on this slide in case you find it difficult. It was very difficult to try to get a font colour that was easy to show up against the background. That background, by the way, is an artistic impression of the new facilities that are currently under construction at Williamstown to support the Joint Strike Fighter.

The 5th-generation Air Force will continue to require capable and resilient air bases that can support networked air operations and be readily adapted to meet evolving operational and technological requirements. That's from *Air Force Strategy* that was released earlier this year. Regarding *Air Force Strategy*, infrastructure is identified as one of the five key strategic factors in the strategy. The scope of the presentation is as on the slide. To provide a bit of a background, the previous version of the *Air Force Strategic Infrastructure Plan* [AFSIP] covered the period 2005 to 2015. It was signed off at the time by now Sir Angus Houston who was Chief of Air Force at that time. The current version of the AFSIP was signed by the current Chief of Air Force back in March this year and the intent of the AFSIP is to provide an overview of infrastructure planning considerations, proposals and programmed works for all Air Force bases and their weapons ranges over the next ten years. The AFSIP articulates Air Force's basing and infrastructure requirements for Defence strategic planning considerations including to provide input and assistance and support to E&IG [Estate and Infrastructure Group] as they develop the future defence estate profile. The intent is that the AFSIP will be updated with the release of each new Defence White Paper so that it remains current. We're not going to wait for another ten years. In two or three year's time when we get the next White Paper, we'll review and update the AFSIP as necessary.

The *Defence White Paper 2016* and the *Integrated Investment Program*[IIP] focused quite a lot on infrastructure, which was very encouraging. The Paper describes the key enabling capabilities, including critical infrastructure such as air bases and training areas, as essential to the ADF's ability to conduct and sustain operations in Australia and overseas. Additional funding has been allocated in the facilities and infrastructure component of the *Integrated Investment Program* to allow Defence to address long-term and ongoing estate maintenance issues. This is important because as you may all know, for many decades now we have had underfunded maintenance of the estate and that's lead to the gradual deterioration of the estate over many, many years. You've all been out there on the bases; you know what we have to put up with when it comes to some of our infrastructure. So, the White Paper and the IIP are very positive in that they have provided additional funding for the sustainment of infrastructure on our bases.

The *Integrated Investment Program* includes the following: increased infrastructure investment will also involve modifying the Defence estate to accommodate new high-technology capabilities and larger platforms, and to ensure that Defence is appropriately placed to meet future strategic requirements. This will involve developing new bases and their weapons ranges. Equally important, it will involve disposing of bases that no longer meet Defence's requirements.

I mentioned in the introduction that *Air Force Strategy* that was released earlier this year does identify infrastructure as one of the five key strategic factors. The strategy states that air bases are fundamental to the employment of airpower and will continue to be so for the 5th-generation Air Force. The ten year objective for infrastructure in the strategy is to upgrade Air Force infrastructure to ensure Air Force's fixed and mobile bases are hardened, resilient, flexible and readily adaptable for future airpower capabilities and requirements.

There are three infrastructure goals within the strategy:

1. To develop new, upgrade existing and harden relevant Air Force infrastructure in order to enable the conduct of advanced and high-end warfighting operations.
2. To ensure Air Force possesses basing and operational concepts that meet future operational requirements. This includes mobile and agile basing for ADF and coalition operations and campaigns.
3. To ensure Air Force's infrastructure requirements are coherent with its personnel requirements, such that Air Force basing and personnel requirements reflect the demands of a modern Australian workforce.

The Defence Estate Strategy was signed off by the Minister not long ago, earlier this year and it was officially launched about two months ago. Once again, this document is extremely important in setting the scene as it is designed to drive improvements and deliver better outcomes for the Defence estate. The Defence estate vision is a strategically aligned, affordable, safe and sustainable estate that enables Defence capability and operations. On the screen, you can see the five strategic aims as they are identified in the Defence estate strategy. From Air Force's perspective, it is essential that the disposition of our bases aligns with these strategic aims to support current and future capability whilst being affordable, safe and sustainable.

As a result, the Air Force planning principles that we use for our bases are:

1. Air Force bases must meet current and future capability.
2. Siting of Air Force bases must consider security, urban encroachment and environmental constraints.
3. Air Force basing and infrastructure must foster personnel retention.
4. Bases need to have good access to industry including maintenance and logistic support.

I now move onto the current disposition of our Air Force bases. This slide shows our bases scattered around the country. This disposition has been based on several factors for the Defence of our nation over the last 100 years. The first bases were established on the outskirts of major capital cities being close to personnel and industry support. These bases included, in case you don't know them, Point Cook down the bottom here, near Melbourne, Laverton, Richmond, Amberley, Edinburgh, Pearce and Darwin. Townsville was also established during World War II to support the war in the Pacific as well as to support the US Forces based at Townsville. In the 1980s, Defence's strategic focus turned to the security of Northern Australia, which led to the establishment, or upgrade of several other bases. It led to the upgrade of RAAF Base Learmonth, the construction of RAAF Base Curtin, the upgrade of RAAF Base Tindal and the construction of RAAF Base Scherger. Together with Darwin and Townsville, those bases make up the northern umbrella of bases which we can project airpower and sustain airpower over our northern approaches.

Of the other bases you see on the map, RAAF Gin Gin supports flying training out of Pearce, RAAF Woomera was recently re-established as an Air Force base to support airfield operations at the Woomera Range Complex. Three major training establishments in South East Australia were set up leading up to World War II and they were East Sale, Wagga and Williamtown. RAAF Glenbrook, that is the home of Air Force's operational [headquarters], now Air Command.

What I'll do now is go round each of those bases to give you a bit more detail of what's

currently located on those bases and also what works we currently have planned or currently under construction on those bases. That [work] is in the *Integrated Investment Program*, so approved over the next ten years which is the period of this Strategic Infrastructure Plan. Starting with Amberley, Amberley is the home base for Super Hornets, Growlers, KC-30s and C-17 aircraft. The C-27 Battlefield Air Lifter aircraft will be relocated from Richmond, its interim home, to Amberley in the next couple of years once facilities are constructed. Army's 9th Force Support Battalion, 6th Engineering Support Regiment and 17th Construction Squadron have all been moved into Amberley as well over the last five years. There's also significant presence of Combat Support Group, Joint Logistics Unit South Queensland and CASG [Capability Acquisition and Sustainment Group] on the base. All in all, over \$1billion is being spent on the base over the next decade to support additional facilities for C-17, as I said the C-27 Battlefield Air Lifter and the Growler. New air traffic control facilities are currently being built on the base as well as a mid-term refresh and general estate works. If you've been to Amberley anytime over the last four or five years, or even the last decade, you would've seen a lot of construction work happening on the base.

Moving onto Butterworth. Butterworth is as, you should be aware, a Royal Malaysian Air Force base, not a RAAF base and it provides a forward operating base in South East Asia in support of ADF exercises and operations. The base is also the home of Headquarters Integrated Area Defence System, which operates under the Five Power Defence Arrangements. ADF facilities are leased from the Malaysian Government under a government agreement that was signed back in 1988. In the IIP, a \$20million mid-term refresh project is programmed for 2019 to 2021, which will refurbish the ADF facilities on the base.

RAAF Base Curtin was commissioned back in 1987. It is a bare base; however, it has been rarely activated for exercises since it was built. Although it was used last year for Northern Shield and I do recall that I spent six weeks there back in 1991 during Exercise Pitch Black. The Department of Immigration operated a detention centre on the base for several periods between 1999 and 2015. That did make it difficult for the ADF to use the base for exercises whilst it was being used as a detention centre. The base is located close to Yampi Sound Training Area which Army plans to use more often in the future, so that will likely result in greater use of RAAF Base Curtin. There is an ongoing requirement for retention of the base to support ADF operations and exercises in the north west Australia region. In the IIP, there is \$192million programmed between 2019 and 2022 for a major base redevelopment. Also around about \$18million is programmed between 2017 and 2020 for general estate works on the base.

RAAF Base Darwin is a forward operating base, which supports ADF operations and exercises as well as joint exercises and more recently the US Force Posture Initiative. The airfield also provides an air point of embarkation/disembarkation for the Army's 1st Brigade and the airfield is a joint-user airfield operating under a joint-user deed with Darwin International Airport. About \$1.5billion is programmed in the IIP over the next decade to support the US Force Posture Initiative and the enhanced air cooperation, P-8 Poseidon operations, new air traffic control facilities as well as a mid-term refresh and general estate works. The base is located close to the Darwin CBD, which leads to various issues regarding encroachment as well as noise complaints. Aircraft noise complaints are a problem, particularly during the major exercises during the Dry season.

RAAF Base East Sale. RAAF Base East Sale is one of our major flying and ground training

bases and is the home of No 32 Squadron, Officers Training School and the School of Air Traffic Control, as well as 1FTS [No 1 Flying Training School]. East Sale will also become the home to basic flying training under Project Air 5428; the pilot training system and the facilities are being built at the moment on the base. About \$300million is programmed in the IIP over the next decade, once again for the pilot training system, air traffic control facilities, air combat officer training system as well as a mid-term refresh and general estate works.

RAAF Base Edinburgh is the home to No 92 Wing including Nos 10 and 11 Squadrons which will convert from P-3 Orion to P-8 Poseidons over the next few years. The Air Warfare Centre, the Maritime Patrol SPO and Army's 7th [Battalion] Royal Australian Regiment are located at Edinburgh. About \$750million is programmed in the IIP over the next decade to support the P-8, Triton, Gulfstream, pilot training system, air traffic control facilities as well as a mid-term refresh and general estate works.

RAAF Base Glenbrook. As I mentioned earlier, that is the home of Headquarters Air Command. At the moment, the headquarters building is going through around about a \$6million refurbishment being funded by Air Force. Over the next three years, around \$9million in estate works is programmed to be spent on the base.

RAAF Learmonth. RAAF Learmonth is a forward operating base and a bare base located in north west Western Australia to support ADF operations and exercises in that region as well as the Indian Ocean. The base is a jointly used airfield with Exmouth Airport operating from the base under a lease arrangement. About \$400million is programmed in the IIP over the next decade to upgrade the airfield for KC-30 operations as well as a major base redevelopment and general estate works. We are going to strengthen the runway, widen the shoulders on the runway, widen the taxiways and build new aprons to support KC-30 operations out of RAAF Base Learmonth over the next three or four years.

RAAF Base Pearce is our major flying training base in Western Australia. It is the home of No 2 Flying Training School, No 79 Squadron flying Hawk aircraft and also the Republic of Singapore Air Force flying training. The base also supports ADF operations and exercises in south west Western Australia and the southern Indian Ocean. About \$300million is programmed in IIP over the next decade for the pilot training system, P-8 operations, new air traffic control facilities and mid-term refresh and general estate works.

RAAF Gin Gin is a satellite airfield just to the north of Pearce and it also supports flying training out of Pearce. About \$25million is programmed for Gin Gin between 2017 and 2020 for works associated with pilot training system, refurbished air traffic control facilities and general estate works.

RAAF Base Richmond, located just out of Sydney, is the home base for C-130 Hercules flown by No 37 Squadron and, as I mentioned earlier, it is the interim home of the C-27 Battlefield Air Lifter. It's also the home to Headquarters Air Mobility Group, Air Movements Training and Development Unit, Air Lift SPO [Systems Program Office] and the Army's 176 Air Dispatch Squadron. There are also significant aircraft maintenance activities undertaken on the base by commercial companies. About \$500million is programmed in the IIP over the next decade for a major base redevelopment, new air traffic control facilities and general estate works.

RAAF Base Scherger, our newest air base was commissioned in 1998 near Weipa in far north

Queensland. The base has been rarely activated since its commissioning, mainly due to its remoteness which makes it difficult to support logistically. Road access from the south is usually cut off for six months of the year during the wet season as well. Also the Department of Immigration operated a detention centre on the base between 2010 and 2014, which made it difficult for Defence to use the base. About \$30million is programmed over the next decade for a mid-term refresh and general estate works.

RAAF Base Tindal. As I mentioned the base was rebuilt in the mid-1980s to support No 75 Squadron which moved down from Butterworth through Darwin, and finally to Tindal once the base was finished. No 75 Squadron will be transitioning from 'classic' Hornet to Joint Strike Fighters over the next few years. The Northern Regional Operations Centre is also located on the base. Tindal is also a forward operating base for the AEW&C [airborne early warning and control] aircraft. The base supports major ADF operations and exercises in northern Australia. At the moment, the base is a major construction site with new facilities being built for the Joint Strike Fighter. In the next few years, additional work will occur for KC-30 operations, the Triton and also the US Force Posture Initiative. All up, about \$1.5billion is scheduled over the next ten years for RAAF Base Tindal. We are going to be extending the runway by 2000 feet to support the KC-30. We will also be strengthening and widening the runway and the taxiways and building new aprons for both the KC-30 and the US aircraft that will be operating out of Tindal. New air traffic control facilities are currently being built on the base as well.

RAAF Base Townsville is the home to No 38 Squadron flying B-350 King Airs as well as the Army's 5th Aviation Regiment flying Black Hawk and Chinook helicopters. The base is a forward operating base supporting ADF operations and exercises. It also acts as an air point of embarkation/disembarkation for the Army's 3rd Brigade. The airfield is a joint-user airfield operating under a joint-user deed with the Townsville Airport. About \$650million is programmed over the next decade to support P-8 Poseidon operations, new air traffic control facilities, a major base redevelopment and general estate works.

RAAF Base Wagga is one of our major Air Force training bases. It is the home to Headquarters RAAF College, No 1 Recruit Training Unit and the School of Post-Graduate Studies as well as Headquarters Ground Training Wing, the RAAF School of Technical Training and the RAAF School of Administration and Logistics Training. The airfield is currently leased to the Wagga City Council and in the IIP over the next decade there is \$413million programmed for a major base redevelopment between 2021 and 2025 and \$8million in estate works over the next three years.

RAAF Williams, Laverton and Point Cook. I believe now that Point Cook is officially known once again as RAAF Base Point Cook but I've referred to it here as RAAF Williams, Laverton and Point Cook. RAAF Williams is home to the Air Force Training Group, the Defence International Training Centre, the ADF School of Languages, the Air Force Band and the Air Force Museum. Importantly, the RAAF Centenary celebrations will be focused at Point Cook in 2021. In the IIP, there is \$147million programmed for a base redevelopment of Point Cook between 2018 and 2022 and \$236million allocated to Laverton for redevelopment between 2020 and 2024. Also \$43million will be spent in the next three years, in the estate works program for general estate works on the base.

RAAF Base Williamstown, one of our main bases just north of Newcastle, is the home base to Headquarters Air Combat Group as well as Headquarters Surveillance and Response Group.

Nos 3 and 77 Squadrons as well 2OCU [No 2 Operational Conversion Unit] currently fly 'classic' Hornets at the base but they'll be transitioning to the Joint Strike Fighter over the next few years. No 76 Squadron flies Hawk aircraft and No 4 Squadron the PC-9s from the base as well as No 2 Squadron flying the AEW&C Wedgetail aircraft from the base. No 44 Wing and Tactical Fighter SPO are also located on the base. The airfield is a jointly used airfield under a lease arrangement with the Newcastle Airport. All up, about \$1.2billion is scheduled in the IIP over the next decade. Most of that is going to be spent on building new facilities for the three squadrons flying the Joint Strike Fighter, as well as a major base redevelopment that is happening. New air traffic control facilities are about to be built on the base and general estate works.

And the last air base, RAAF Base Woomera, we shouldn't forget about that, it's probably our newest Air Force base. It was only re-established as an Air Force base a couple of years ago to support ADF and international use of the Woomera test range. In the IIP, there's about \$750million programmed for a major base redevelopment and upgrade of the range and general estate works over the next decade.

Moving on to our air weapons ranges. On the slide you can see all the air weapons ranges that we currently use around the country and whether we intend to retain those ranges. [We are] reviewing the requirement for Saumarez Reef and also potentially replacing Muchee air weapons range, which we only lease, with a new air weapons range at Lancelin Training Area in WA. Apart from those, all the other air weapons ranges have an ongoing requirement.

This slide shows all of the major capital facilities projects around the country on each of our air bases. We update it every time we get an updated version of the IIP, or the facilities and infrastructure program component of it, and we provide it to the Chief the Deputy Chief and various other people. I went through a lot of those projects when I went through the bases but all up, if you had done your sums as I was going through the slides, you would have counted approximately \$10billion worth of work programmed in the *Integrated Investment Program* over the next decade to be spent on the Air Force bases and training areas. I've got Delamere up there as well. So quite a bit of money is being invested for the future upgrade of our bases to support air power.

Moving onto some of the major infrastructure issues that we are currently facing on our air bases. The first one is underinvestment in the Defence estate. I mentioned earlier in the presentation that for decades we have not had sufficient funding to spend on the maintenance of our existing facilities, let alone the construction of new facilities. However, as I mentioned, the *Defence White Paper* and the IIP identified this and have come up with additional funding for infrastructure on our bases.

Urban encroachment and noise issues are major problems for a couple of our bases, in particular Darwin and Williamtown, as well as Amberley. They suffer from aircraft noise issues and encroachment. During exercise periods, as I mentioned, the problems are Darwin and Townsville. We're working very closely with E&IG to look at purchasing adjoining properties to our bases, when they become available, so that we can maintain suitable buffers around those bases. That's one way we can do it but we also have input into any private developments around our bases to ensure that we don't have incompatible land uses on, in and around our bases. That is a struggle; that is a challenge quite a lot of the time but we'll continue to provide input and try to build up those buffer zones around our bases as best we

can.

Environmental issues. Climate change is affecting some of our bases. Bases such as Williamtown, Townsville and Amberley are being affected more by flooding and storm surges which are associated with climate change. Also, a number of contaminants are known to exist on our bases through past practices and the use of materials now known to be hazardous. Remediation programs are either in place or are being developed to ensure our bases are compliant and safe working environments, as well as responsible neighbours to adjoining communities. You would have seen all the articles in the daily news summary for the last 12 to 18 months on some of those issues.

Heritage issues. Air Force did establish the History and Heritage Branch in 2016 and one their responsibilities is to work closely with E&IG to ensure that our infrastructural heritage on our Air Force bases is properly preserved and maintained.

Technological advances and innovation. Every time we introduce a new aircraft, it usually means new technologies which leads to new base and infrastructure requirements. This is why we're building new facilities at Tindal and Williamtown for the Joint Strike Fighter, new facilities at Edinburgh to support the P-8 Poseidon, new facilities down at East Sale to support the PC-21 introduction. There's a whole bunch of new facilities requirements to meet these new technologies.

Living-in accommodation. Air Force has recently amended its living-in accommodation policy whereby new or single members just new into the Air Force will now be expected to live in living-in accommodation for up to 12 months following their initial employment training. It's something that Army's had in place for a while and I believe Navy may be coming on board as well. That means that we need more accommodation on our bases and better quality accommodation. We're working very closely with E&IG on that at the moment and we'll just have to see how we go. Single Living-In [Project] Phase 3 never got funded in the end and Air Force missed out on Single Living-In [Project] Phases 1 and 2 at the time because our policy was not that single members had to live on base back then.

Joint-user airfields and use of non-Defence airfields. As I mentioned, Townsville and Darwin are joint-user airfields operating under joint-user deeds. There are complications when we have to deal with the civil airport when it comes to joint funding of upgrades to the airfields and other issues. Several air bases operate under a lease arrangement or have a private airport operating on our bases under a lease arrangement. That includes Wagga, Williamtown, Tindal, Learmonth and Curtin. We quite often use non-defence airfields such as Cocos Island, Christmas Island and Canberra Airport where No 34 Squadron is located. [Defence] also used Rockhampton for instance recently for Exercise *Talisman Saber*. With Cocos Island, we will be spending some Defence money to upgrade Cocos Island airfield to support P-8 Poseidon operations. That's also in the *Integrated Investment Program*.

In conclusion, air bases are fundamental to the employment of airpower and will continue to be so for the 5th-generation Air Force. The current state of air base infrastructure presents a risk to Air Force capability. Air Force requires improved base infrastructure to support our new capabilities and military modernisation. Expanding capability within our region means that we must put more focus on the resilience and flexibility of our air bases. The good news is more funding has been identified in the IIP for infrastructure and there is a lot of money being programmed for air bases over the next decade, over \$10billion worth but we need to

ensure that we spend that money wisely so that our air bases can continue to support the projection of airpower now and into the future.

If you are interested in reading the full *Air Force Strategic Infrastructure Plan*, that's the address. If you want a copy of it, please contact me and I'll make sure that we send a copy out to you. I didn't bring any copies today but we do have it in booklet format. We just need to make sure that we control the distribution of these documents. But if you do want one, just contact me and I'll make sure that you get one.

I'll now open the floor up to questions.

End of Recording.

Note: Words in square brackets [] have been added to the transcript during the editing process for clarity.