SUBMISSION TO THE INQUIRY INTO

BIPARTISANSHIP ON DEFENCE

Introduction

In short, this inquiry seeks to identify the benefits and risks of a Bipartisan Australian Defence Agreement as the basis for, and funding of, Australia's Defence capability. In particular, it aims to measure the effectiveness of Australia's present strategic planning processes, baseline Defence documentation and Defence Industry planning. The questions raised may be analysed in three parts:

- The need for a formal Bipartisan Agreement on Australia's Defence capability.
- The need for a centralised agency to contribute to Australia's foreign policy, intelligence and security, and Defence architecture.
- The effectiveness of the current Defence Organisation.

Guidance to the answers to these questions may, however, already lie partly in the Federal Constitution of the Liberal Party of Australia, Part II – Objectives. The abandonment of specific objectives in this constitution may have allowed the current problems to arise, and the resurrection of the spirit of these objectives may be the best path to redressing the problems perceived.

The Bipartisan Agreement

The Constitution Objectives referred to includes:

2. "The objectives of the (Liberal) Organisation shall be to have an Australian nation:

(b) safe from external aggression, playing its part in a world security order which maintains the necessary force to defend peace; (and)

(c) in which national defence is a matter of universal duty, and in which the spirit of patriotism is fostered and all Australians united in the common service of their country."

The Australian public should reasonably expect all political parties to work together towards these objectives, but bipartisanship has been eroded severely over time as Australia's defence has become merely another financial and public relations pawn in the cut-throat competition to attract popular votes. Both major parties are to blame equally. For example, one undertook a belated defence investment program, only to strip the money from its Defence Budget to finance perceived popular social programs that had been poorly scoped and vastly underfunded. The other also undertook a significant boost in defence spending, only to support very high risk and impractical Defence Industry projects in a failed State in its search

for votes. Both sides have also protected consistently a failed Defence Organisation. In all cases, the National interest has certainly run second to 'popular' (often minority) pressures for more social service benefits and other agendas, all with their great appetite for more public service staff to provide them`.

The first challenge in the search for reform will be to gain broad agreement as to Australia's priorities.

Centralised Agencies

This inquiry recalls the centralisation of the Defence Group of Departments following the Morshead Report and the Tange proposals. Some 45 years later, we now have a Defence Organisation that has left behind three almost totally de-skilled and downsized Military Services and created a monolithic bureaucratic organisation lacking in even basic required skills and competencies. Its performance has been under continuous critical review since it was formed, and the ANAO audits covering its capability acquisition and sustainment performance, have been similarly critical. As a result, Australia's military capabilities and Defence Industries have not flourished as often claimed. Despite this, the Organisation has not been bought to heel, but enjoyed remarkable parliamentary patience, tolerance and unquestioned freedom of action, despite repeated evidence that such forgiveness is being exploited.

In reality, Australia's Defence Organisation is no longer fit for purpose.

The risks involved in forming the perceived centralised agency will most likely be those that were faced with the centralisation of the Defence Group of Departments. The specialist skills and competencies that have evolved within the current agencies will be stripped out and replaced by unskilled public service workers under a large number of Senior Executive Service administrators. Task management by proficient staff will be replaced by administrative process, with critical functions outsourced under contract officers.

The Centralised Agency will have an unacceptably wide span of control. It will rapidly take on a life of its own, and become primarily concerned with self-serving functions - guarding itself against criticism, enlarging its remit and its establishment, avoiding accountability and resisting governance intrusion from all Levels. Finally, it will temper its focus to accord with the APS's social welfare and self-expansion leanings rather than the welfare of Australia's security and defence.

The Inquiry should examine closely the experience of other centralised government departments, Federal and State, as a first step.

The Defence Organisation

At the highest level, Defence's performance in strategic analysis and capability development, as well as its responses to parliamentary inquiries, have been poor at best and misleading at

worst, an inevitable result of it not being a functional organisation managed along functional lines – it is a public service organisation driven by administrative process that eschews anything technical or 'complex', relying wholly upon its administrative processes and contract officers in charge of outsourced tasks. The path along which Defence has gained total control of all defence matters follows the paths taken by other government departments, both Federal and State, in Education, Social Services, Health, and so on. In all cases, the result has been an organisation having an excessive span of control, lacking relevant skills and competencies and management systems, mired in administrative process, and unable to be held accountable. More seriously, such organisations have been able to avoid any effective oversight by the Executive Level of governance (the Secretary), the Directing Level of governance (the Minister), and the Oversight Level of governance (the Parliament).

The implementation of the Recommendations of Defence's *First Principles Report* has merely completed the centralisation of all defence matters under the Defence Organisation, including the capability acquisition and sustainment functions that fell previously to the Defence Acquisition Organisation (DAO) and later the Defence Materiel Organisation (DMO). Under the DAO, the wrong radar was procured at considerable cost for the F/A-18 Fleet after unskilled civilian staff over-ruled expert RAAF Engineer recommendations. Next, civilian staff administered the Sea Sprite Project which was a complete failure costing over $1billion. When acquisition responsibilities were transferred to Defence (CASG), the Air Warfare Destroyer Project had incurred a cost over-run of over $1billion in one reporting year, without explanation, for the second time. In the intervening years, the ANAO's Major Projects Report comments revealed chronic problems with achieving Capability, Schedule and Cost targets. While DMO always stated proudly that its projects almost invariably came in *'within approved budget'* the Organisation failed to reveal that cost over-runs, for whatever reason, were funded promptly by Government, which explains why they came in *'within approved budget'*. The final cost against a project's planned cost was never revealed. In effect, this process transferred accountability for project financial over-runs from Defence/DMO to Government.

Since the implementation of the First Principles Report Recommendations, the Defence Organisation appears to have continued with the DMO's processes. However, it is difficult to see what is actually going on, as Defence has now become a 'black hole' from which no light is allowed to escape.

While the Finance Minister has made some broad inroads into public sector running costs, Defence still grows, and its performance has never been assessed against the efficiency, effectiveness and economy of the organisation that it replaced.

While case studies of the effects of the changes that have taken place with Australia's Defence Organisation over the past several decades - revealed in the media, Defence Department Reports and Inquiries, and particularly in Australian National Audit Office Reports - no action has been taken to reimpose competency, accountability and good governance. As a result, Australia's defence capabilities now live in a world that lacks

connection to reality. This is aggravated by politicians being kept overly busy with arguments and developing policies on matters that should not be a government responsibility, and who then 'fund' the unfundable. As a result, resources needed for critical government functions have been cut back to the point where little, if anything, of importance is now able to be done properly, while public debt keeps mounting.

The attached Case Study conducted into the RAAF's plans for a *"Fifth Generation Air Force"* (Annex A) amplifies a number of the points made above; in particular, the need for those responsible for the analysis and planning of defence capabilities and their security, as well as those involved in the acquisition and sustainment of those capabilities, must be competent in the technology involved and its operation, and employ management methodologies appropriate to that technology. In the absence of these requirements, the ambition to develop a "Fifth Generation Air Force" or establish an Australian submarine and ship building industry that will drive Defence Industry exports will inevitably remain merely misleading wishful thinking.

Other Matters

While the three areas discussed above relate directly to this Inquiry, the Liberal Party Constitution includes some other objectives that impact indirectly but importantly, and deserve attention:

"*(d) vii) developing to the fullest extent a national spirit in Australia;*

(l) in which a comprehensive system of child and adult education is designed to develop the spirit of true citizenship and in which no consideration of wealth or privilege shall be a determining factor.

(d) (i) a Parliament controlling the Executive and the Law controlling all."

Australia can no longer claim to have a national spirit. Minority pressures have created a wide-ranging group of tribes and agenda groups having their own disparate spirits. This has been allowed to develop by governments failing to voice and keep voicing a clear, national message with which the majority of citizens can identify and accept as a touchstone. We hear often about Australian 'mateship' and the ANZAC Tradition, but many new arrivals do not identify with these, and ANZAC has been pushed into the domain of infotainment. Such histories have their place and should not be forgotten, but a wider, more common and more visionary national spirit needs to be developed. The current government speaks of 'security', 'freedom', 'border security', 'free trade', and so on; labels that do not connect at the right level with those matters of most concern to the majority of citizens. The Party's Objectives does a better job, and may be a good place to start redefining the language that will cut through to touch the majority.

Generating a national spirit is also closely associated with the need to resurrect our education system at all levels to align with objective (l). If Australia is to regenerate a well educated

citizenship, educated in sound literacy and numeracy, and practiced in critical and logical thinking, then our education systems all demand urgent overhaul. Unfortunately, all of our education systems have been allowed to be hi jacked by a minority, left libertine education union and social (i.e. social engineering) change activists, both pushing programs that have nothing to do with sound education and learning outcomes. This has been going on for some two decades, without challenge at State or Federal level. Unless we return to an efficient, effective, and economic education system, and quickly, we will be simply graduating illiterates having no concept or spirit of true citizenship, but faced with the monumental debt that will have accumulated during governments' 'do-nothing' decades. Throwing money at the problem has long failed and will inevitably fail again; the time is overdue for firm Federal/State direction and management. Until the focus in education is taken away from social engineering, and put back on learning outcomes, education reform will be no more than a public relations fantasy.

Finally, Australia does not now have a '*Parliament controlling the Executive'*. The changes in the relationship between the Australian Public Service and Government/Parliament introduced during the Hawke/Keating/Dawkins era, and adopted by all governments since, have created a public service that is largely unaccountable, is mostly overpaid, especially at the Senior Executive Levels, has overly generous conditions of employment, generally lacks the skills and competencies needed for the proper management of its functions, and continues to underperform. This has been demonstrated by the poor advice too often given ministers, government and parliament, and the long history of highly expensive but failed development and implementation of government policies and projects.

Two important changes provide insights into this situation (1):

- The statement*:"But the Commonwealth doesn't do much evaluation of programs. Apart from the fact it requires resources and they can't afford it, the underlying belief is that the market is properly framed and the prices are being set by the market, so there is nothing to evaluate. Citizens do as best they can in the marketplace and the only worry is corruption. People are cogs in a machine where you set up the markets, arrange for prices to be set and that's it until another tender."* (Terry Moran, former Head of the PM&Cabinet Dept)

- A policy decision of 1964, which stated: *"...policy advising and top management is a distinctive and integrated function and even where a top management position does have a professional or technical content the choice of occupant should, in a high degree, be on the basis of administrative and/or managerial abilities."*

While Defence is a prime case study, its characteristics are common to most Federal and State Departments. Activities are not subject to even basic management oversight, too often being "*set and forget*", and accountability is buried behind administrative processes. This may be traced to the deregulation drive, when Australia's traditional three levels of governance were allowed to be eroded – the Executive Level (Secretary over his executive

staff), the Directing Level (Minister over his department), and the Oversight Level (Parliament over all). This situation also confounds the objective of "*The Law controlling all"*.

This submission encourages the re-establishment of a working bipartisan agreement on defence as a matter of universal duty and in a common spirit of patriotism, which should cover the policy end. At the implementation end, the ability of the Defence Organisation that successive governments have allowed to be created since 1972, to meet current and evolving threats is long overdue for a thorough, informed and transparent review. Australia's current defence capabilities, in both the Services and Defence Industry, resemble significantly those that existed prior to WW2 when they were found to be wanting.

21st July 2017

Note:

1. The problems seen in today's Public Service were covered in greater detail in the Author's Submission to the Senate Select Committee on a National Integrity Commission, 23rd March 2017.

ANNEX A: Case Study - Beyond the Planned Air Force – The RAAF's Fifth Generation Air Force.

ANNEX A

A CASE STUDY

BEYOND THE PLANNED AIR FORCE

-THE RAAF's FIFTH GENERATION AIR FORCE-

EXECUTIVE SUMMARY

While both the' Jericho' and 'Beyond Plans'' raise some important considerations, several of the assumptions upon which the Plans are based suggest that they will have little chance of achieving their objectives without major surgery to the current Defence Organisation; essentially the adoption of a lean, functional management structure and the operational and technical re-skilling of the RAAF as well as the other Services. Defence's stripping its remaining operationally and technically competent people, and increasing its contractor and advisor staff, will make the probability of the RAAF Plans succeeding even more remote.

The 'Beyond' Plan does not identify the capabilities that its Fifth Generation Air Force must have, or in what way these will be superior to other Air Forces. The assumption that the F-35A will be the 'magic bullet' that will reward the RAAF with a 'Fifth Generation' status is not supported by the stream of Test and Performance Reports put out by the US Director of Operational Test and Evaluation and (DOT&E) over the years. The latest report, covering 62 pages, is far more damaging than supporting. However, the RAAF's optimistic position may be attributed to Defence's failure to pass these reports on to the Australian Head of Test and Evaluation for analysis of the impacts upon Australia's airpower capabilities, but more importantly its failure to accept the evidence put to the many parliamentary inquiries that have taken place.

The Plan also focuses upon "Joint Operations" and Integration, which has lead inevitably to a loss of focus upon the overarching importance of the RAAF's traditional, core airpower capabilities, as under 'Jointery', the Services have simply become niche service providers. Without RAAF core airpower capabilities, our Joint Operations may well be exposed to an aggressor that does have them. Australia's amphibious ships (LHDs), AEW&C and Tanker forces (for example) may then well become targets rather than assets.

Since its reorganisation, Defence has been fixated on Joint Operations conducted under 'friendly air'. However, remove the 'friendly air' and re-do the likely scenarios, and Australia will face an altogether different future.

The Plan then lists the need for a wide range of skills and competencies in a number of areas to 'design' the required networked 'System of Systems', and to maintain it over time. The Plan intends "*drawing upon more than 100 years of military education*", and sees its capabilities "*operated by a workforce imbued with technical proficiency and professional*

mastery of air power". However, those days no longer exist. A close reading of ANAO Major Projects Audit Reports and its review of the Defence Capability Development Organisation reveal a gross lack of even the most basic skills and competencies in strategic and operational analysis, capability project management, and technology. Australia's military capabilities are now held totally captive to a complex, brittle and non-integrated web of administrative processes and commercial contracts, whereas our only reliable form of insurance is to re-establish and maintain operationally and technologically skilled and highly professional military services supported by responsive and flexible in-Service and organic Defence Industry capabilities.

Finally, the Plan reveals a very shallow understanding of the challenges that will be faced in designing, implementing and maintaining the type of networking it envisages.

Introduction

As with many of Plans and other publications coming from the Defence Organisation,, this document is padded heavily with illustrations and photographs that do little, if anything, to provide any relevant information. The Plan was developed by the Director-General Strategy and Planning – Air Force, who sees the RAAF as becoming "***one of*** *the world's first 5th generation air forces"* (Page 5), and endorsed by the Chief of Air Force who sees the RAAF becoming "*the RAAF as becoming* ***the first*** *5th generation air force*" (Page 1). The Plan, which extends the RAAF's Plan Jericho out to 2027, reads more like a marketing document rather than an analysis of the core air power capabilities needed into the future, and how they may be achieved and integrated to best effect. However, there is no overarching Strategic or Capability policy within which the RAAF's Plan will fit. While the Plan raises some important factors, several of the assumptions upon which the Plan is based suggest that it will have little chance of achieving its objectives without major surgery to the current Defence Organisation.

A '5th Generation Air Force'

The characteristics of this concept are scattered throughout the Plan, but are reflected in the following examples:

Page 17:

- *"An amalgam of advanced systems operated by a workforce imbued with technical proficiency and professional mastery of air power."*
- *"It will draw on the accumulated experience of more than 100 years of military education."*
- *"Value a skilled and adaptive workforce" and be "A balanced Air Force."*
- *"Be integrated into joint military, national security and alliance systems, second to*

none."

Page 19:

- *"Increasing complexity of networked air power systems that will bring operational efficiency, but also complexity in command and control."*
- *Understanding how to manage and master complex systems and operations, as well as exploit complexity.*
- *"Reliance on people skilled in the application and sustainment of technologically advanced systems, trained in a joint operating environment and professionally competent in the efficient employment air power."*

However, such characteristics do not identify any actual capabilities that such an air force must possess, nor are the capabilities that 4th, 3rd or 2nd Generation Air Forces have for comparison. It is thus not possible to compare one air force with another in order to identify and measure the way in which the RAAF's 5th Generation Air Force capabilities will be superior to others.

The F-35A – A 5th Generation Capability?

The term '5th Generation' has been used over recent years to discriminate between US 'legacy' aircraft (Gen 4) and the F-22 which possessed advanced design and performance capabilities that put it a class above Gen 4 aircraft. The F-35 was inappropriately moved into this level when production of the F-22 was closed down prematurely, but despite strong marketing pressures, the F-35 cannot be considered as being a 5th Generation aircraft. The '5th Generation Air Force' has thus been so described as a result of the RAAF being equipped with the F-35A. However, the F-35 was never designed to fulfil the roles of the F-22 and has been found deficient in its own roles in assessments made by the US DOT&E Office.

Australia's choice of the F-35 has been subjected to several reviews over the years, but despite much evidence to the contrary, Government and Defence have stuck doggedly to the optimistic marketing mantra lauding the extravagant claims made for the aircraft's capabilities. The true status of the F-35 Project has been well shielded from Parliament, the RAAF and the public because Defence decided not to pass on the reports issued by the US Director, Operational Test and Evaluation (DOT&E) for Australian operational and technical analysis of their impacts upon Australia's air power capabilities and planning. This observation is supported by the following:

- The ANAO was tasked to review the JSF project and issued its report on 27 Sep 2012. However, the ANAO had no jurisdiction over the US JSF Program and so it adopted

the approach of providing a holistic account of the Program based on the US DOD Acquisition Instructions 5000.0x. Consequently the ANAO Report was quite flat and restrained. No meaningful project status was forthcoming, and it seemed to the ANAO that the Project was then at the point of being "*too big to fail*".

- The Foreign Affairs, Defence and Trade References Committee also inquired into the planned acquisition of the F-35 and delivered its report in October 2016. The Committee noted:

"*It is difficult to understand and critique the capabilities of the F-35A without access to detailed performance data. Hence the Committee cannot draw definitive conclusions regarding the details of the F-35A's performance in testing"*. The Committee did, however, go on to draw a number of definitive conclusions which merely followed Defence's 'party line'. The Committee referred to DTO&E Report 2015 (1) but did not draw any conclusions, merely voicing vague concerns while accepting Project Office assurances that *"All issues are being identified and resolved"*.

As the only current, official and verifiable source of information on F-35 Performance in Aircraft Testing is contained in DTO&E's annual reports, why were they not considered during the Reference Committee's deliberations?

- The answer to this question may be found in statements made by Dr Keith Joiner, until recently the Head of Test and Evaluation for the ADF, who advised *'A Background Briefing'*:
    - *"Australia does not participate in the testing of the troubled jet, we don't even have our test agencies read the US test reports."*
    - *"Australia has formally nominated the US to carry out all the testing on our JSF jets, which at $17.8 billion so far are the most expensive Defence item we've ever bought."*
    - *"I asked for Australia to participate in flight tests, but Defence said no, because it would cost too much money."*
    - *"Australia does receive test progress reports out of the US, but those test reports are not being given to Australian test agencies."*

  Defence should be required to explain why it did not provide the FADT References Committee with the DTO&E Report so that the Committee could have made a more informed judgement as to the true status of the Project.

Some Major Questions

Both 'Jericho' (2) and 'Beyond' Plans envisage a challenging number of skills and competencies that will need to be developed, coordinated, and applied successfully within a

dynamic environment. While the Plans beg many comments, this review will focus upon three critical elements:

- The role of 'Jointery' and 'Integration'.
- The skills and competencies challenge.
- The challenge with Networks.

The Role of Jointery and Integration

'Jointery' has become embedded as a priority within Australia's Defence Organisation, much as it was in the USA some years ago, and may be traced to the requirements in Defence's "*Pathway to Change- Evolving Defence Culture" 2011* (Page 13):

"*All Colonel and EL2 equivalent and above to work with jointery and integration as their prime decision-making lens rather than Group or Service-specific*".

When combined with the priority afforded cultural change in "*Beyond Compliance", 2012,* the priorities imposed upon the Service Chiefs became:

1. Being a conforming and complying member of the Minister's Executive Team.
2. Pursuing 'Jointery' in all matters.
3. Implementing Cultural Change in accordance with "*Beyond Compliance"*.
4. Service specific matters.

'Jointery' was perceived by Sir Arthur Tange as being a major factor for organisational change, and the US's early emphasis on 'Jointery' probably reinforced Defence's focus upon it. However, Sec Gates abolished the US Joint Force Headquarters as a savings measure in 2010, losing 6,324 HQ positions, but adding 20,000 acquisition workers.

In the US, there developed a loudly-voiced perception that the "*Defense fish is rotting from the head down*" due to protracted, ineffective leadership at the Secretary and Chief of Staff Level, similar to Australia's experience with its Diarchy. Strategy documents have become only statements of good intentions, unsupported by effective capability, procurement and budgetary plans, and lack any measures of effectiveness. ***Importantly, the US has not yet resolved the strategic conflict inherent in its total focus upon 'Jointery' and the Global War on Terror, as opposed to the need to ensure that its Services are updated and equipped to maintain the US's global military advantage against nation state challenges.***

The main problem with 'Jointery' is that if it is given primary focus, then it is most likely that focus upon, and a clear understanding of, the role and importance of traditional, single

service core capabilities will be lost. Today, the Services' focus is upon being service providers to Joint Operations, but without single service capabilities in place, Joint operations may be exposed to an aggressor that has them in place. Under such asymmetric conditions, Australia's amphibious ships (LHDs), as well as its AEW&C and Tanker fleets (for example), may well become targets rather than assets.

The Skills and Competencies Challenge

While the 'Beyond' Plan sees RAAF's future capabilities "*Drawing upon more than 100 years of military education*", and being "*Operated by a workforce imbued with technical proficiency and professional mastery of air power"*, both statements ring hollow.

There was once such a time:

"*For 60 years, no activity has been more important to the RAAF's professional well-being than its education and training programs. It was primarily through these programs that after the trials of WW11 and the neglect of the interim period, the RAAF reinvented itself as one of the world's premier high-technology defence forces*." (The Australian Centenary History of Defence Vol 2, the Air Force, Alan Stephens 2001.)

That this situation no longer exists has been demonstrated time and again in the continual flow of reviews, inquiries and audit reports into Defence problems over the past 44 years, all to no meaningful effect. All problems have stemmed from the inevitable adverse affects of the Tange-proposed reorganisation of the Defence Group of Departments – the return to a single, centralised Department of Defence, as was the case pre-WW2, and the disbanding of the Services' Ministers and their Boards of Management. This process started in 1972 and has continued unbroken with the imposition of Defence's self-serving 'First Principles Review'.

Defence Minister Barnard's implementation of Tange's policy, followed by the Defence-driven Defence Reform and Commercial Support Programs, then destroyed the professional organisation, skills and competencies that the RAAF had built up over that 60 years and had been proven in war and peace. The RAAF, downsized, de-skilled and made wholly dependent upon civilian contractors for acquisition and for engineering, maintenance and supply support now bears only superficial resemblance to the RAAF of the pre-reform period. An informed reading of the Australian National Audit Office's Major Projects audits and its review of the Capability Development Organisation (3) reveals a gross lack of even basic skills and competencies in strategic and operational analysis, systems management and all technical matters. A measure of the skills and competencies stripped from the RAAF, and now found to be sorely needed, may be gauged from Attachment A "*The RAAF Capabilities before Defence 'Reforms'"*.

As a result of Defence's 'Reform' process, Australia's Military Services have become part of

a totalitarian bureaucratic executive, comprising civilian and service people, with a natural tendency to plan short term, operate from the top down, think within existing parameters, and affirm the correctness of existing plans – an organisation designed to look backward rather than forward.

Furthermore, a primary lesson that has yet to be acknowledged is the brittleness of relying upon a web of foreign-controlled contractors for the preparedness and sustainment of our military capabilities under any and all circumstances which, from experience, can arise at very short notice and in unexpected ways. A similar high risk is associated with relying upon security treaties with nations that may (from experience) be reluctant or unable to provide support as and when needed. There is only one effective and reliable form of insurance against such risks, and that is to establish and maintain operationally and technologically skilled and professionally managed military Services supported by highly responsive and focused in-service and organic defence industry capabilities.

Australia's defence capabilities must thus not only be a real and constant deterrent to potential aggressors, but also have a large measure of organic, in-country support.

The Challenge with Networks

Plan Jericho sees the RAAF as:

"Developing and integrated, networked force (that) will be the difference between simply owning fifth generation aircraft and being a truly fifth generation Air Force." Widespread networking is also seen as being the key factor in the success of the ADF well into the future. Much emphasis is also given to the term "*design*", but neither Plan gives any indication as to the where the skills and competencies needed for such a specialised task will come from. They are not available from within the Defence Organisation. The capabilities that existed in the Services were stripped out as part of the Defence and Commercial Support Programs, and simply putting the task out to contract is not feasible as such tasks have to be driven by the Customer under strict Project Management methodologies if they are to be successful. Failure to identify this fact has been a constant factor behind the very expensive capability acquisition and sustainment failures that dogged the DMO throughout its life, and remain embedded today in the CASG.

Networking is great when it works, but it also carries the risk of multiple single points of failure, and it cannot be assumed that the enemy will cooperate. Failure of one link may result in chaos and danger, but within a dense network the risks may multiply quickly. The large 'System of Systems' network envisaged will present a particularly difficult challenge, as there are multiple vulnerabilities in both links and nodes. Put very simply, it will need to link a large number of sub-system capabilities to the Network, channel data received for analysis, and return selected data to the sub-systems and command and control posts. The result will be a very dense web of data links that aims to meet the needs of each capability under imagined Joint Operations scenarios.

Such systems must not only be afforded a high level of security, but also:

- Avoid single points of system failure in all hardware and software elements in the network chain. (System Engineering Design)
- Ensure that the reliability performance of both hardware and software elements is acceptable throughout the network chain. (System/Sub-system Reliability Engineering)
- Ensure rapid detection, analysis and response to network problems, including external threats. (System and Sub-system Network, Operational and Engineering Experts)
- Ensure low probability of detection to ensure that potential opponents cannot employ network device radio emissions to target RAAF assets. The new adage is ***"If you emit, you die."*** (4)

System Availability, put simply, is driven by the designed (and demonstrated) Mean Time Between Failure (MTBF), which gives a measure of its Reliability and the designed (and demonstrated) Mean Time to Repair (MTTR), which gives a measure of its Maintainability.

Even though all sub-systems in a 'System of Systems' may have an individual reliability of, say, 0.99, the Reliability of the 'System of Systems' may be degraded by its web of interactive sub-systems. If two systems are linked, the Reliability will reduce to: 0.99x0.99=0.98, if three: 0.98x0.99=0.97, if four: 0.97x0.99=0.96, and so on. The expectation that sufficient redundancy will exist to overcome the effects of damage to multiple interdependent components is reflected in current RAAF thinking, but if an opponent specifically seeks to degrade or cripple a networked 'System of Systems', multiple opportunities will exist to do so.

Finally, while the Plans emphasise the need for the Defence Organisation and Industry to work closely together, the functional design of individual capability data systems and their unifying 'Systems of Systems' is not able to be outsourced, a lesson not learned from years of Defence/DMO/CASG Major Project Reports and audits, where capability requirements have been specified inadequately, and were driven by contract administration processes rather than Project Management methodologies under the control of people having a sound understanding of the operational and engineering aspects of the technology being managed. The Customer must be able to specify his requirements in detail, in operational and technical terms, and manage the capability as a Project from the beginning to end.

Unfortunately, the Customer does not now have the functional organisation, the required management methodologies, or the operational and technical skills and competencies to do this. They were wiped out by the Defence 'Reform' Process. Government has to recognise the need to reform the Defence Organisation so as to align accountability with responsibility and resources, and re-skill the Services, if the efficiencies, effectiveness and economy

demonstrated by the pre-reform RAAF are to be recovered.

The probability of networking successfully our planned force of five G550 (modified) Gulfstream, six E-7A Wedgetail AEW&C and eight Poseidon aircraft, as well as our naval and land capabilities, will be far beyond our capabilities and will join the overly ambitious and expensive naval ship building and Defence Industry programs upon which Defence and Government have embarked.

Recent increases in Australia's surveillance capabilities provide for 19 aircraft, all of which will require protection as they may be as much targets as assets. Two critical questions arise here:

- How will they be protected?
- What are we to employ when threats are detected?

Will the F-35As or Super Hornets be capable of protecting these valuable assets and neutralising the threats identified? Both escorts will need air-to-air refuelling when operating at range and may probably also need AEW&C support, making for even more targets. The critical need to establish air superiority over our theatre of operations seems to have been neglected.

RAAF and US Army Plans

Much of the RAAF's Plans follows thinking reflected at (4), the US Army's concept of the changes needed to fight future tactical and operational levels of war. However, the US concepts start from an over-optimistic baseline:

'Over 27 years since the Cold War ended, the US has enjoyed unparalleled conventional dominance at the tactical and operational levels of war' and 'unimpeded freedom of action-land, sea and air.'

However, two points need to be made:

- US and Allied Forces have not had to operate under hostile air, and
- despite the US's 'huge advantage', US tactical operations have long lacked any clear strategic plan and have not brought their many intrusions to any satisfactory conclusion. The US is still bogged down in wars started more than 10 years ago, despite heavy losses, both financially and in lives lost.

Today, 'big competitors' are developing widespread challenges to land forces that need redressing urgently if the US is to retain its perceived dominance at the tactical and operational levels. The US Army Plan envisages an operational level battle network: a sensor grid, a C3I grid and an affects grid, all interconnected. Technology and better trained people are seen as key elements in making this work.

The RAAF Plans appear to reflect much of what the US is planning, but caution is advised, as:

- The US Plan is focussed upon the tactical and operational levels of joint Army/USAF capabilities. While interoperability may be important, the scale of US and Australian force requirements will differ greatly.
- Neither US nor RAAF Plans envisage fighting without having air superiority, let alone air dominance which will probably be critical when employing small numbers of ground troops in a high mobility environment.
- Neither the US nor the RAAF Plans are built upon any clear strategic objectives. The need to create and maintain a credible, deterrent air power capability to ensure that land forces will not have to fight under hostile air is ignored.

Australia's strategy for the RAAF should be firstly to maintain an air power deterrent to guard against direct threats in our areas of interest, and in the absence of any outside assistance, and secondly to plan how best we may be able to contribute to allied forces when necessary.

Since its reorganisation, Australia's Defence Organisation has been fixated upon Joint Operations conducted under friendly air. Remove the 'friendly air', re-visit the possible scenarios, and an altogether different future beckons us.

The Next Phase

On 23rd March 2017, Air Force Headquarters issued an Invitation to Tender (ITR) seeking approaches pertinent to the Air Force of 2017 (5). The ITR specifically excluded input from the Military as the Jericho Team was "*seeking different perspectives borne from experience in the private sector, people of innovative mind who can view the problem space from a different angle; those having dealt with issues of corporate command and control in the commercial sector, and people with the technological and/or technical expertise to check and balance the big ideas."*

This approach would confirm that RAAF is aware that it no longer has the skills and competencies, operationally or technically, the required innovative mind, or the management ability to apply the required checks and balances needed to identify what it needs to meet its perceived command and control challenges into the future. The approach also accepts that what applies to the commercial sector will be directly applicable to a military service having a far more complex challenge, and paying a far greater cost for any failures.

Conclusion

While both the' Jericho' and 'Beyond Plans'' raise some important considerations, several of the assumptions upon which the Plans are based suggest that they will have little chance of achieving their objectives without major surgery to the current Defence Organisation;

essentially the adoption of a functional management structure and the operational and technical re-skilling of the RAAF as well as the other Services. Defence's stripping its remaining operationally and technically competent people, and increasing its contractor and advisor staff, will make the probability of the RAAF Plans succeeding even more remote.

The 'Beyond' Plan does not identify the capabilities that its Fifth Generation Air Force must have, or in what way these will be superior to other Air Forces. The assumption that the F-35A will be the 'magic bullet' that will reward the RAAF with a 'Fifth Generation' status is not supported by the stream of Test and Performance Reports put out by the US Director of Operational Test and Evaluation and (DOT&E) over the years. The latest report, covering 62 pages, is far more damaging than supporting. However, the RAAF's optimistic position may be attributed to Defence's failure to pass these reports on to the Australian Head of Test and Evaluation for analysis of the impacts upon Australia's airpower capabilities, or to the parliamentary inquiries that have taken place for their consideration.

The Plan also focuses upon "Joint Operations" and Integration, which will lead inevitably to a loss of focus upon the overarching importance of the RAAF's traditional, core airpower capabilities, as under 'Jointery', the Services simply become niche service providers. Without RAAF core airpower capabilities, our Joint Operations may well be exposed to an aggressor that does have them. Australia's amphibious ships (LHDs), AEW&C and Tanker forces (for example) may then well become targets rather than assets.

The Plan then lists the need for a wide range of skills and competencies in a number of areas to 'design' the required networked 'System of Systems', and to maintain it over time. The Plan intends "*drawing upon more than 100 years of military education*", and sees its capabilities "*operated by a workforce imbued with technical proficiency and professional mastery of air power*". However, those days no longer exist. A close reading of ANAO Major Projects Audit Reports and its review of the Defence Capability Development Organisation reveal a gross lack of even the most basic skills and competencies in strategic and operational analysis, capability project management, and technology. Australia's military capabilities are now held totally captive to a complex, brittle and non-integrated web of commercial contracts, whereas our only reliable form of insurance is to re-establish and maintain operationally and technologically skilled and highly professional military services supported by responsive and flexible in-Service and organic Defence Industry capabilities.

Finally, the Plan reveals a very shallow understanding of the challenges that will be faced in designing, implementing and maintaining the type of networking it envisages. Over-all, the probability of failure $\mathbf{P_{Fail}}$ must be assessed as **1.**

ANNEX 1: RAAF Capabilities before Defence 'Reforms'.

References:

1. The DTO&E Report 2015 ran to 48 pages, whereas that for 2016 ran for 62 pages. At this point in any successful project, especially with some 200 test aircraft produced, it would be expected that the number of items and their impact on capability, schedule, cost and safety would have declined to a handful, but as time has passed the F-35's deficiencies have snowballed, with an ever increasing number being left unresolved, many dropped from the list and left to the Services to deal with after operational acceptance. This is hardly the measure of a successful project. It has set a record, however – The F-35 has managed to overlap all phases of a project – Design, Development, Production, Test and Acceptance and even Operational Acceptance, and has still not produced a single aircraft that meets its key 1990s specification requirements.

2. Plan Jericho comprises 152 major activities to be managed by 15 "Joshua's" over a period of seven years. It sees:

   "Air Force must be a strategy-led organisation, with strong links to technical research and development organisations, industry and strategic policy think tanks. Above all, it must evolve and grow its intellectual capital"

3. Australian National Audit Office Report No. 6 2013-14, 30 Oct 2013.

4. Robert O Work, Deputy Secretary of Defense, in "*Remarks to the Association of the U.S. Army Annual Convention. Washington D.C., Oct 04 2016."*

5. ITR AFHQ/ITR/001/17. This sought "a *study into new and emerging command and control concepts pertinent to the integrated and networked force of 2027."* It planned a two day workshop for 20 selected respondents, but excluded '*Defence personnel or Defence Service Providers contributing or participating in preparing the ITR process.'* Responses would be limited to five pages maximum (10 Point font). All responses shall remain the property of the Commonwealth and be used/disclosed as desired, and respondents would be responsible for their costs. IP should not be included. The ITR comprised eight pages of contract clauses covering some 62 requirements, and a page and a half of 'Statement of Requirements' which avoided any core operational or technical matters. This ITR follows standard Defence *ASDEFCON (Invitation to Register)* template and is administered by the Contract Officer.

ANNEX 1

RAAF CAPABILITES BEFORE DEFENCE 'REFORMS'

Before the implementation of Defence Minister Barnard's organisation changes, and the subsequent Defence-driven series of 'reforms', the RAAF was characterised as an organisation that:

- Maintained Australia's air power at a high state of capability and readiness.
- Ensured that the force could be launched quickly in response to a wide range of tasks.
- Enabled the force, once launched, to be sustained, both home and abroad, from RAAF and Australian Defence Industry facilities.
- Provided a high degree of flexibility in the application of air power in time, space, and role.

These capabilities were achieved through the RAAF's organisation, but they stemmed, fundamentally, from one main factor:

The Chief of Air Force had, under his command and control, the resources needed to achieve the required results, principally an effective, functional organisation, manpower and skills, money, equipment, and facilities. That is, there was an inherent clear unity of effort and direction.

Each one of these resources, including money, was managed in terms of the required force readiness, responsiveness, sustainability, and flexibility, which is precisely the proper management relationship between function and resources. The horse and cart were in their correct relationship.

Within this organisation, the RAAF was able, in a controlled and measured way, following well-established policies, systems and procedures born of hard won experience, to:

- Specify its requirements for aircraft, as well as the whole range of high technology environmental systems and equipment upon which it depended.
- Evaluate contending systems, both operationally and technically, and select that which best met RAAF requirements, a function which required sound Service operational and technical knowledge and experience, not merely 'box ticking' or accepting maker's proposals.
- Negotiate, raise and manage the procurement contracts involved.
- Establish the engineering, maintenance, and supply support bases needed to support new systems from the time of their acceptance. This included liaison on the development of local industry support.

The RAAF thus had the skills that enabled it to introduce weapon and support systems into service to specification, on time, within budget, and fully supported.

An honest evaluation of what the RAAF was achieving at that time would find that Australia was getting excellent value for money. Problems were certainly encountered, but they were capable of being resolved promptly and without undue stress. DSTO (ARL) played a critical supporting role in specialist areas, such as fatigue monitoring, through a close and continuing working relationship with RAAF on technical matters.

The Defence/DMO/CASG organisations have demonstrated consistently that they have been incapable of approaching the efficiencies, effectiveness, or economy of the organisation that characterised the RAAF before the 'reform' process.

The ability of the RAAF to handle these tasks successfully and without undue fuss was due in no small part to the existence within its organisation of an Engineer Branch, supported by a Supply Branch. The RAAF recognised that it was the most highly technological enterprise in Australia and had established formally an Engineer Branch in 1948. The head of the Branch was a member of the Air Board (later an Assistant Chief of Air Force) who managed two specialist directorates at Air Force Office level, Engineering and Maintenance. Within the Branch, the Director General Technical Plans (DGTP), was the focal point for translating all Air Staff plans, programmes, and priorities into interlocking and fully integrated technical policies, plans, programmes, and priorities, for technical manpower and skills, facilities, maintenance policies, documentation, and spares; indeed all technical support requirements. This proved to be a highly responsive, efficient, effective, and economic solution to a very complex and critical interface with operational requirements and capability plans.

The Supply Branch, in turn, developed supply plans and programmes to procure and position, in time and space, the range and quantity of equipment, both technical and non-technical, needed to support Air Staff plans and Maintenance requirements.

The point to be made here is that the success achieved by the RAAF in both project management and in-service support was due to:

- A proper delegation of responsibilities and resources, and
- A sound and tightly knit professional organisation, manned by people who were experienced and who followed a clear unity of direction which ensured success. Service ethos was high, as was the professional competence and ethics that sat at the core of the specialist, professional groups.

Traditionally, the RAAF's engineering and maintenance workforce was managed as a central resource, able to be moved into new projects, to operational bases, both at home and overseas, or into support areas in response to Air Staff plans, programmes, and priorities. New projects came and went; Project Offices were formed as required and then disbanded as

the project was handed over to the normal support system. Air Force Office and Support Command provided technical and supply support policy and guidance, drawing resources and experience from across the Service, from local industry, and at times from overseas services and industry. The general thrust was to ensure that unit maintenance was focussed wholly upon supporting operations, and not subject to distractions. This was a highly robust, responsive and flexible operational support organisation.

The result was a force in which all operational and technical work was under sound professional control, ensuring satisfying, rewarding, and productive, if at times frustrating, work. The 'complexities' and utter waste of resources that have bedevilled the DAO/DMO from their inception would simply not have arisen under the RAAF's traditional organisation and management procedures.

A Benchmark for Defence.

In measuring the competence of the current Defence Organisations to provide sound strategic analysis, new capability and in-Service support, the most appropriate baseline against which performance should be measured should be what the RAAF was able to achieve with usually constrained resources before the Government's structural changes were imposed.

For some 70 years, the RAAF, supported by its Technical Services Branch:

- Operated and manned three major Aircraft Depots which overhauled several aircraft types, the TF30 engine for the F-111, a wide range of aircraft sub-systems and equipment, and ground telecommunications systems.
- Operated and manned four major Maintenance Squadrons that provided direct support for the major operating elements – Bomber, Strike/Fighter, Transport, and Maritime.
- Operated and manned No 1 Central Ammunition Depot which managed all explosives ordnance.
- Carried out a comprehensive Engineering and Maintenance regulatory function, principally airworthiness management and maintenance efficiency.
- Planned and managed all major repair and overhaul arisings for aircraft, engines, repairable items and other technical equipment at RAAF facilities and Contractor facilities in Australia and overseas.
- Assessed and (with the Supply Branch) procured and distributed the technical spares and other equipment needed to support all RAAF operational and maintenance programmes, controlling a technical inventory of some 643,880 lines, while meeting engineering, maintenance, and supply inventory management requirements.
- Planned and managed the progressive capability enhancement and life extension programmes for all weapon and other systems in service.
- Planned and managed the replacement of extant capabilities, including the technical evaluation and source selection of new capabilities, ensuring the procurement, introduction and establishment of all levels of support for new capabilities by the time that they were introduced into service.
- Monitored the performance of all technical support facilities, taking timely management action when needed.
- Provided technical support for selected Army and Navy aircraft.

Together, the Aircraft Depots and Maintenance Squadrons safeguarded the RAAF's operational independence of operation, and developed the deeper level expertise needed for the planning and introduction of new capabilities, while providing a reserve of resources able to support emergencies and protracted operational deployments.

The whole focus of the RAAF was centred upon:

- Maintaining the Force at a high state of readiness.
- Ensuring that the Force could be launched quickly in response to a wide range of tasks.
- Enabling the Force, once launched, to be sustained, at home or overseas.
- Supporting a high degree of flexibility in the application of air power in time, space, and role.

These four objectives represent the benchmark against which all Defence Organisation decisions and activities should be measured.

Impacts of Resource Constraints.

The short and direct lines of command and control enabled the RAAF to absorb the inevitable ebbs and flows in Government policy and funding with a controlled, minimum impact upon core operational capabilities and the support infrastructure. Support plans could also be varied to respond appropriately and promptly to meet changing Air Staff Plans and Programmes, while protecting the Defence Industry Base upon which the RAAF depended and which Government required to be in place to sustain Australia's self-reliance. Under the current Defence Organisation, the impacts of resource restraints can only be guessed. The trail is too convoluted and crosses too many administrative interfaces for any results to be forecast and managed.

No interminable reviews were necessary before the reform process. Those undertaken were mostly in response to the evolutionary demands of experience. Nor were there endless Parliamentary Inquiries and Reviews into deficiencies in RAAF management and performance.

Unfortunately, with the other two Service arms, the RAAF was downsized and de-skilled to the extent that it can no longer guarantee the air power and force sustainment expected by and relied upon traditionally by the Australian people.

The 'new age' excuse of increased complexity in the management of current day systems does not pass the common sense test or stand up to either expert scrutiny or past experience. Such 'complexities' were managed as a matter of course by the RAAF before the imposition

of the DER/DRP/CSP changes. The management fiascos faced by Defence in regard to the Super Sea Sprite Project, the Sea King tragedy, the Blackhawk 221 incident, the glacial pace of the F/A-18 HUG Program and subsequent major problems, cost overruns, and incorrect capability decisions, together with the brick wall against which current New Air Combat Capability Project planning must crash inevitably, all attest to fundamental deficiencies in Defence's competencies.

One of the main complexities within the Defence Organisation relates to the strange matrix administrative organisation adopted which seems to be aimed primarily at increasing public service staff, particularly in the Senior Executive Service, and diffusing accountability, in total contradiction to the objectives of traditional and effective functional management principles.

Defence/DMO Performance.

Since the imposition of the DER/DRP/CSP structural changes, there have been continuing problems in every major area of Defence Organisation management, ranging through recruitment, retention, morale, military justice, strategic analysis and force structure planning, project management, capability requirement definition, comparative analysis, and source selection, as well as in - service support. Coupled with this, there has been a continued de – skilling and withering of both Service and Defence Industry support capabilities. Repeated Parliamentary and internal inquiries and reviews have been largely ineffectual, leaving little, if any, evidence of their passing. In effect, Australia's traditional parliamentary oversight processes do not work when dealing with the Defence Organisation.

DMO, now CASG, in particular, have cost the taxpayer billions of dollars, and left the Services unbalanced and without needed capabilities, in what Prime Minister Rudd described as ***"A massive, rolling policy failure".*** Regrettably, the Prime Minister did not correct this failure, and his Minister largely accepted ownership of it, a situation that has continued since. These failures include (examples only):

- The $A1.4 billion upgrade of four Guided Missile Frigates.
- The more than $A1 billion Super Sea Sprite debacle, a capability intended primarily for a ship that never eventuated.
- The AEW&C and Tanker Projects.
- The F/A-18 Upgrade (HUG) Program.
- The upgraded M113 APCs, amongst a range of other Army projects from transport to boots.
- All Air Power decisions covering the F-111, the Super Hornet, and the JSF.
- The Air Warfare Destroyer major cost increase and the Amphibious Ships projects, which have undergone inadequate vulnerability analysis against evolving air and other missile threats.
- The Army's Tiger Armed Recce Helicopter.
- Critical failures in the Capability Development function.

It should be noted here that the reasons behind these expensive errors have been hidden rather than identified and corrected, and those responsible for the errors have not been called to account. The various Ministers, Defence Secretaries and CDFs, and Deputy-Secretaries involved, as well as the CEO DMO and his staff, have all been allowed to avoid accountability.

An even greater problem has been that, despite reviews aimed ostensibly at improving Defence Organisation performance, nothing of substance has resulted. Defence's First Principles Review merely further centralised Service functions under the Department, reduced remaining critical skills and competencies, and increased public service, adviser and contractor numbers. Despite this, failures continue to occur for the same reasons as in the past:

- The Services have been hollowed out and de-skilled. As a result, requirements cannot be specified fully and accurately, or analysed and managed with the degree of professionalism that was commonplace pre-reform.

- Defence/CASG/Industry/Manufacturers have been unable to fill this gap and indeed cannot. Hence, critical operational and technical questions are not generally raised, and where they are the answers are incapable of being analysed and evaluated professionally. The Services, Defence, and CASG are simply constrained to accept whatever the Manufacturer tells them in terms of capabilities, cost, and schedule.

- The Department does not have the policies, systems, or functional management methodologies in place needed for the proper operational and technical analysis of requirements, or any effective project management systems.

The Way Ahead.

Defence should, by now, have realised that the user Service must have the span and depth of operational and technological expertise and experience needed for them to:

- Contribute meaningfully to the development of strategic policy and planning.
- Analyse and specify its capability requirements fully and professionally.
- Evaluate contending capabilities.
- Select, specify and manage the procurement of the system that best meets the Service requirements to planned capability, cost and schedule.
- Specify and introduce the support base required to meet Service needs.
- Identify and manage all operational and technical risks throughout requirements and procurement activities in accordance with Systems Engineering methodologies.
- Establish and manage all organic support facilities needed to provide Australia with an autonomous capability to mount and sustain operations when contractors fail and friendly nations are unable or unwilling to assist.

None of these functions may be outsourced, as no external agency can comprehend fully the Services' needs, and nor can any other organisation be held accountable for any deficiencies. This has been evidenced repeatedly in the failure of practically every Defence major capability project. In regard to airpower capability requirements, the Chief of Air Force alone carries responsibility to ***"Deliver Air Force capability for the defence of Australia and its interests".*** (see CAF Charter). At present, he cannot be held accountable for this responsibility as he does not have the skills base, organisation, or proper authority over the resources and activities involved in the development and maintenance of airpower capabilities.

For this to be achieved, the division of responsibility between the Defence Organisation and the Services will need fundamental review against the baseline requirements discussed above. Not to do so will result in an even more dysfunctional Defence Organisation continuing to embed inadequate military capabilities. To do so, will require guts and determination on the part of government/parliament as large bureaucracies are not brought to heel without a very bitter fight.