

22nd August 2018

The Chair,
JCPAA Committee of Inquiry into
Commonwealth Contracting

**Supplementary Submission to Inquiry
Into Commonwealth Contracting**

As I note that your Inquiry is still open to submissions, I wish to submit a supplementary submission based on recent developments in Australia's F-35 Acquisition Program, which will also impact Defence's sustainment activities. This submission updates and analyses the severe impacts that recent US Project Office and Manufacturers decisions will have on Australia's airpower capabilities, and hence the national security. It highlights the embedded risks in Defence's current contracting processes in an organisation lacking in even a basic understanding of how to manage technology-dependant military capabilities.

I hope that the Supplementary Submission attached is of assistance to your inquiry.

Kind Regards,

(E.J. Bushell)

Unsolicited Comments on F-35 Acquisition

SUPPLEMENTARY SUBMISSION TO

THE INQUIRY INTO

COMMONWEALTH CONTRACTING

CONDUCTED BY

THE JOINT COMMITTEE

PUBLIC ACCOUNTS AND AUDIT

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22 nd August 2018

Unsolicited Comments on F-35 Acquisition

SUPPLEMENTARY SUBMISSION TO COMMONWEALTH CONTRACTING

Background.

In short (See Annex A), the Author's comments on the FADT References Committee Report on the acquisition of the F-35 (dated January 2017) found that the Committee reached definitive conclusions that were not supported by any validated analysis or facts and rested solely upon poorly-informed opinions and advice given by Defence, the F-35 Joint Project Office and the Makers. It also emphasized that the only validated F-35 Project status information available is that contained in the Annual F-35 Project Status Reports issued by the US DOD's Director, Operational Test and Evaluation (DOT&E), and noted that these reports had been wilfully ignored by Defence and thus denied to the Committee, as were the many well-researched individual submissions. As a result, the findings and recommendations of the Committee were considered to be baseless and the Committee was misled by Defence, with critical implications for Australia's defence capabilities and the national security.

Since the FADT Committee's Report, a number of official US governance reports have been issued relating to the F-35 project, in particular the DOT&E's Project Status Report of 23rd January 2018, and the US Government Accountability Office Report GAO-18-321 of June 2018. These Reports, and a number of media analyses that they triggered, only reinforce the conclusions arrived in Annex A, and herald a marked worsening of the F-35 drama – with long delays in producing a single aircraft that meets customer requirements, and committing customers to operating obsolete aircraft at greatly increased cost.

These developments and their implications are also relevant to the Inquiry into Commonwealth Contracting being conducted by the Joint Committee, Public Accounts and Audit, as the F-35 saga was entered into and perpetuated by Defence's persistence in relying upon standard APS contracting processes rather than robust Project Management disciplines in the acquisition and sustainment of technology-dependent military capabilities.

Major Changes.

Briefly, the Pentagon plans to cut short the System Design Development (SDD) Program, with a long list of outstanding rectifications, and to continue the Program under a separate Block 4 'Modernisation Phase'.

Block 4 is non-negotiable because, unless upgraded, all F-35s delivered before 2023 will be severely limited in their capabilities and will only be able to use very few weapons. Australia

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will, out of its 72 aircraft, have only 9 delivered to the Block 4 configuration, which may still not meet its requirements. If Australia decides to retrofit Block 4 improvements to its other (already Block 3F delivered) aircraft, it will have to pay for it, on top of sunk acquisition and post-delivery upgrade costs.

This is when foreign “partners” who have already paid a portion of the F-35’s development costs as well as paying for their own aircraft, will realize that they have been abused by Lockheed and their proxies inside the Pentagon who, in their rush to produce as many F-35s as fast as possible, have delivered so-called “fifth-generation” aircraft that do not meet contractual performance and cannot match the capability of “legacy” aircraft like Typhoon, and the latest F-15s and F-16s.

Not surprisingly, the USAF has raised again its need for the F-22 to provide the air superiority that the F-35 cannot, placing Australia in a difficult position that will require a range of operational analysis and technical skills and competencies that it does not possess, highlighting again the failure of Tange’s *Centralised Defence Organisation* to achieve its long promised, but never delivered, efficiencies and economies, despite some 45 years of continuous change.

Australia’s position in the World as well as in our Region has increasingly become more hazardous, while our foreign affairs and defence postures have been piecemeal and not reflected in its defence capabilities and posture. The resulting lack of cohesion and of any deterrence of substance is similar to the pre-WW2 years, when a centralised defence bureaucracy running an ineffective military capability was considered unable to meet the demands of an approaching war. Australia then created a decentralized organisation that was immeasurably more competent right up to 1972 when it was sacrificed to the Australian Public Service. The latest warning note was sounded when Australia belatedly acknowledged the widespread intrusion of Chinese and Russian interests into our nearby SW Asian island chains.

There have been many governance oversight inquiries into Defence matters over the years, but all to no material effect. As remedial action will take much planning and time to recover a truly deterrent defence capability, time is running out. The Defence sub-Committee is in a key position to drive the changes needed, but it will need to act swiftly if Australia is to be prepared for the challenges now and to come.

Annexes:

- A. Comments provided in January 2017 as a baseline.
- B. Project Update as at January 2018.

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C. Project Update Post- January 2018.

ANNEX A

COMMENTS ON THE FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES COMMITTEE REPORT INTO The Planned Acquisition of the F-35 Lightning II Joint Strike Fighter

EXECUTIVE SUMMARY

The Committee's Report and conclusions rest upon a number of critical observations that are not supported by any validated analysis or facts. The Report also concludes with three recommendations that should be approached with caution, as they may well have very long-term and high risk impacts upon Australia's air power capabilities, and the National security. Overall, the Report merely follows the 'party line' long maintained by Defence, which in turn follows religiously the Manufacturer's/Project Office's changing marketing mantras. The reports issued by the Director of Operational Test and Evaluation (DOT&E), and recorded past history, the only source of validated Project status data, have simply been ignored.

It is clear that the Committee has not approached this inquiry with the same focus and soundly-based observations that characterised the References Committee's Report into Procurement Procedures for Defence Capital Projects of August 2012. Since the hasty implementation of Defence's First Principles Review, Defence now '*speaks with one voice*', by taking advantage of poorly advised governance oversight bodies in its efforts to maintain support for its position.

The JSF Project has now reached a 'tipping point' in the US, with its detailed status being provided in the DTO&E 2016 Report. The F-35A continues to strike long-term problems that may be 'resolved' only by accepting further reductions in capabilities and safety, combined with continued, increasing costs and schedule delays. The aircraft, in whatever configuration it may end up with will not meet Australia's current or future strategic capability requirements, or be competitive against emerging threats.

The committee should thus withdraw or qualify its report, or conduct a further, more rigorous, inquiry based on valid data.

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Finally, the subject of the Committee's Report needs to be seen in the context of the changes in the management and accountabilities for Australia's Military Services and the Defence Bureaucracy, which will call for some effort and thought. The attached Annex A is thus forwarded to provide such context.

COMMENTS ON REPORT

The comments that follow focus upon Chap 6 of the Report – Committee View and Recommendations:

1. **Choice of F-35A (Para 6.2):**

The Committee stated the following definitive conclusions:

“The Committee is satisfied that the F-35A is the only aircraft able to meet Australia's Strategic needs for the foreseeable future, and that sufficient progress is being made in the test and evaluation program to address performance issues of concern”

“The Committee is not convinced that any of the available alternative aircraft (suggested) are capable of meeting Australia's air defence needs.”

“The Committee accepts that the F-35A will provide the air combat capability outlined by the Defence White Paper, and will be able to defeat airborne threats, prosecute attacks against both land and sea surface targets and support Australia's land and maritime forces.”

However, the Committee Report also states in Chap 3 that: *“It is difficult to understand and critique the capabilities of the F-35A without access to detailed classified performance data. Hence the Committee cannot draw definitive conclusions regarding the details of the F-35A's performance in testing.”*

If this qualification is accepted, then none of the Committee's 'definitive conclusions' quoted above has any validity, and must therefore be classified as being baseless. The F-35 Project has from birth been driven by 'Marketeers', not by competent project managers supported by capable operations and technical analysts. Australia, being virtually de-skilled in project management and operations and technical analysis, has just 'gone along with the show', incapable of identifying and defending Australia's national interests.

On the other hand, the Committee also noted in passing the considerable evidence received criticising the F-35A, with some calling for the aircraft's procurement to be cancelled, but notwithstanding these submissions the Committee *“is satisfied the F-35A is the only aircraft able to meet Australia's strategic needs”*. As these independent submissions appear not to have influenced the Committee's Report, the qualification at Chap 3 seems to have been applied rigorously to external submissions, but waived for those coming from Defence, the Project Office and the Manufacturer. It is thus difficult to accept the Committee's Report as being adequately informed or balanced.

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Input from 'independent think tanks' should also have been regarded with suspicion where such bodies rely wholly or substantially upon financial support from Defence. Such bodies can hardly be accepted as independent experts.

The following should also be noted:

- Australia's JSF Project went ahead without any traditional Capability Analysis and Selection being conducted then or since.
- Despite statements to the contrary, the US did offer Australia the F-22 (in the same configuration as the USAF, with no development costs), but the offer was rejected rudely in favour of the JSF. (The Committee has the background to this).
- The JSF was designed from the start as a cheap bomb truck for operation after the F-22 had cleared any air defence systems and made the air space safe for JSF operations. Nothing has changed here, except that the JSF is now touted to cover both air superiority and ground attack roles, although the USAF now admits that the F-35 cannot operate without F-22 cover.
- The F-35 (all versions) have failed to meet even their original, 1990s design capabilities and continue to fall behind aircraft currently entering service in our region.
- Furthermore, after several decades, we do not have a Functional or Physical Configuration Baseline that defines any of the versions of the F-35 – we have only some 200 aircraft of various configurations still under Development and Test. As a result, customers still have no idea as to what capabilities their aircraft will eventually have, their schedule of delivery, or their cost.
- Finally, while primary attention is being paid to cost and schedule, the critical determinant for acceptance is its Capability. Despite the F-35 being marketed as a 'do all' aircraft, it is becoming clear that this is not so, and that the aircraft is well behind the capabilities of those now being marketed into our region.

When judged against this single measure of **Choice of the F-35A**, the Project must be judged a failure.

2. Performance of Aircraft in Testing (Paras 6.4 -6.6):

These Paras largely reflect the Committee's acceptance of Defence and the Project Office's assurances, such as:

- The Committee "*has confidence in the assessments made by Defence regarding both the air combat capabilities required by Australia and the F-35A's ability to meet those requirements.*"

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- The Committee “*is satisfied that the F-35 offers better stealth and electronic warfare capabilities than any other available aircraft.*”
- Software development is “*effectively complete.*”

As these definitive conclusions are subject to the same qualifications contained at Chap 3, they must also be classified as baseless.

However, the statement at Chap 3 that “*It is difficult to understand and critique the capabilities of the F-35A without access to detailed classified performance data.*” is not wholly acceptable. Certainly, there are often some capabilities that need to be classified, but the Reports issued by the DTO&E recognise this so are designed to provide the range and depth of information, able to be understood by Congress (as well as the Project Office and the Manufacturer, and customers), to determine the Project’s Independent Operational Test and Evaluation status, the problems being encountered and the corrective action being taken, the risks involved, and the impacts upon capability, cost and schedule.

While the Committee refers to the DOT&E 2015 Report, it doesn’t draw any project status or risk conclusions from it, merely voicing some vague concerns, while accepting Project Office assurances that “*all issues are being identified and resolved.*”

However, the DTO&E Report for 2016 runs to 62 closely-typed pages, whereas the 2015 Report ran to 48 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 and cost would have declined to a handful, but as time has passed, the F-35’s deficiencies, including capability, have simply snowballed, with an ever-increasing number left unresolved – not symptomatic of a project under control.

The only current, official and verifiable source of information on F-35 Performance in Aircraft Testing is contained in DTO&E’s Reports, the Executive Summary of the Report for 2016 giving its JSF Test, Strategy, Planning Activity and Assessment, as follows:

“The Joint Strike Fighter (JSF) Program Office (JPO) acknowledged in 2016 that schedule pressure exists for completing System Development and Demonstration (SDD) and starting Initial Operational Test and Evaluation (IOT&E) by August 2017, the planned date in JPO’s Integrated Master Schedule. In an effort to stay on schedule, JPO plans to reduce or truncate planned development testing (DT) in an effort to minimize delays and close out SDD as soon as possible. However, even with this risky, schedule-driven approach, multiple problems and delays make it clear that the program will not be able to start IOT&E with full combat capability until late CY 18 or early CY 19, at the soonest.”

However, past history suggests that these dates carry a high risk that they will not be met.

The Report then summarises 14 major problem areas which are analysed in detail in the 61 pages

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that follow, which include continual comments, such as:

- *Continued Schedule delays*
- *Continued delays in completing flight sciences test points.*
- *Significant, well-documented deficiencies; for hundred of these, the program has no plan to adequately fix or verify within SDD.*
- *Over-all ineffective operational performance with multiple Block 3F capabilities delivered to date.*
- *Continued low aircraft availability.*

Achieving the JPO's new plan will simply involve reducing capabilities further and cutting out more development testing, so the risk factors to the customer will only increase. The Committee should recognise that this project has been run under high risk and optimistic, schedule/cost driven, commercial approaches which have resulted in the increasing number of capability deficiencies being detected during the transparent DTO&E audits.

The Committee is urged to read this Report fully and carefully and then decide whether the unsubstantiated and bland assurances that it has accepted as definitive conclusions are a sufficient assurance that the F-35A will provide the capabilities needed to guarantee Australia's future airpower needs. The risks associated with being wrong are far too great to accept.

Importantly, the capability gap of concern to the Committee is no longer a risk – this risk had matured, and the gap has existed since around the early 'retirement' of the F-111, when the F/RF-111C/G fleet had only just passed half of its original design life. In fact, ANAO reports and DSTO draft reports at the time showed that the F-111 fleet could be operated safely through to 2020 and beyond. The F-35A will never be able to plug that gap.

Finally, the Committee may recall the gap created by the late delivery of the F-111 and the lease of the F-4 Phantoms to cover it. The solution to the F-111's problems and the successful lease of the F-4s was a tribute to the RAAF's competencies and expertise. Unfortunately, these no longer exist, so plugging the F-35A gap will prove to be much more of a problem, but leasing remains one solution.

3. Benefits to Australian Industry (Paras 6.15-6.18):

As the JSF Project is now seen to be running out of time, being enmeshed in its failed acquisition and project management structures, and under the increasing weight of the self-serving US Military/Industrial/Congress (Political) Complex that has been allowed to build up unchecked since the Goldwater-Nicholls Act of 1986, no version of the aircraft will be capable

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of achieving their original let alone the additional roles that have been added over the years. The aircraft produced will be poor performing, overly costly and far too late to be of any real use.

The project therefore needs to be put to rest as quickly as possible and the resources remaining used to provide real capabilities across the airpower spectrum. All participants in the Project now need to make plans to salvage as much as possible in intellectual investment and sunk costs in materiel and infrastructure. The new systems evolved for the F-35 will find better homes in other platforms, especially the F-22. The F-35 was just the wrong platform to choose for the capabilities required, and little may be expected to be salvageable from either the airframe or the engine.

Australian Industry should thus be alert to expect a major change in Project direction and plan so take advantage of the rapidly approaching post-F-35 era.

Finally, when determining and announcing how much Australian Industry may gain from a project, it should be mandatory that Defence speak in net gain, that is, the perceived gains less the costs associated with obtaining and supporting the required industrial capabilities. As the latter are frequently considerable, any perceived gains may be illusory.

4. The Three Recommendations:

Recommendation 1: The Committee recommends that the Department of Defence develop a hedging strategy to address the risk of a capability gap resulting from further delays to the acquisition of the F-35A. The strategy should be completed by 2018 and capable of implementation by 2019 at the latest.

As shown by ANAO Audit No 6 2013-14 into Capability Development Reform, Defence is incapable of discharging this task, and may be expected to be even less capable following the implementation of the First Principles Recommendations, which did not deal with the core deficiencies in Defence organisation with its lack of accountability, or the lack of appropriate management systems and required operational and technical skills and competencies throughout the Organisation. Defence may thus be expected to continue to adopt whatever 'party line' is set by the US Project Office and the Manufacturer.

Recommendation 2: The Committee recommends that the Department of Defence develop a sovereign industrial capability strategy for the F-35A to ensure that Australian aircraft can be maintained and supported without undue reliance on other nations.

The Committee does not seem to appreciate that the F-35 Project requires that logistics support be governed by the ALIS and be supported by the international supply chain. There is no known provision for participating nations to modify this arrangement in response to national objectives.

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The implications, especially in the configuration and software development fields, would raise extremely complex and risky engineering problems.

Recommendation 3: The Committee recommends that the government endeavour to establish Australia as the Asia-Pacific maintenance and sustainment hub for the F-35.

With the JSF Project poised for major review, and in the face of the risks identified in the 2016 DTO&E Report, this recommendation carries far too high a sovereign risk. A decision on the future of the Project, together with far more valid information on what would be involved with such a task, are needed before this subject is even raised.

Conclusion:

The FADT Committee's Report and Recommendations rested upon a number of critical observations and conclusions that are not supported by any validated analysis or facts. The Report also concludes with three recommendations that should be approached with caution as they may well have very long-term and high risk impacts upon Australia's air power capabilities, and the National security. Over-all, the Report merely follows the 'party line' established by Defence, which in turn follows religiously the Manufacturer's/Project Office marketing mantras. The reports issued by the Director of Operational Test and Evaluation (DOT&E), and past history, the only source of validated Project status data, have simply been ignored.

It is clear that the Committee has not approached this inquiry with the same focus and soundly-based observations that characterised the References Committee's Report into Procurement Procedures for Defence Capital Projects of August 2012. Since the hasty implementation of Defence's First Principles Review, Defence certainly now appears to '*speak with one voice*', even to appearing to take advantage of poorly advised oversight bodies in seeking support for its position. The Senate's Defence Sub-Committee Review of the Defence Annual Report 2013-14, which included the First Principles Review (FPR), was provided with the author's analysis and warnings of this review, but these do not appear to have made any impression.

The JSF Project has now reached a 'tipping point' in the US, with the detailed status being provided in the DTO&E 2016 Report. The F-35A continues to strike long-term problems that may be 'resolved' only by accepting further reductions in capabilities and safety, combined with greater costs and schedule delays. The aircraft, in whatever configuration it may end up with will not meet Australia's strategic capability requirements, or be competitive against emerging threats.

The committee should thus qualify its report, or conduct a further, more rigorous inquiry.

Finally, the subject of the Committee's Report needs to be seen in the context of the changes in the management and accountabilities for Australia's Military Services and the Defence

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Bureaucracy, which calls for some effort and thought. The attached Annex A is thus forwarded to provide such context.

E.J. Bushell, Air Cdre RAAF (R'td)

January 2017

Attachment:

- A. *“A Brief History of 44 Years of Defence Reform”, covering “The Decline in the Management of Defence, and the Impact upon Australia’s Airpower”. (**Detached**)*

ANNEX B

UPDATE AS AT JANUARY 2018

Developments.

The comments and recommendations on the Planned Acquisition of the F-35 Lightning 11 Joint Strike Fighter included as Annex A were not considered, as none appears to have led to any positive project management action, despite the glaring differences between the Defence/Committee's perceptions and the hard evidence of the DOT&E Report

However, since that submission was made, several highly relevant developments have occurred, namely:

- The Defence Major Projects Report 2015-16 and the Auditor-General's Report No 40, 2016-17 of July 2017 have been tabled.
- The Auditor-General's Performance Audit of Defence's Management of Materiel Sustainment dated 11 Jul 17 has been released.
- The US GAO Report 18-75, 26 Oct 17, into F-35 Aircraft Sustainment, especially readiness and cost transparency, was released.
- The House of Representatives launched its Inquiry into Commonwealth Contracting in Dec17.

While all of these documents should be relevant to the Defence Sub-Committee's F-35 Project governance oversight, this Annex focuses upon the findings of the most recent DOT&E and GAO Reports, which identify major implications not only for the F-35 Project, but for Australia's airpower capabilities over the F-35's planned 60 year life cycle, and identifies a major causal factor behind the inability of the Committee to come to verifiable conclusions.

Briefly, the GAO Report identified:

- Repair capabilities are 6 years behind schedule. Repair times average 172 days, double the planned time.
- Spare parts shortages are degrading readiness, keeping 22% of aircraft off line.
- Technical data requirements and cost have not been defined, delaying future sustainment contracts.
- The ALIS (central to F-35 sustainment) continues to be complex and not fully funded.

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- The operational performance requirements set for the three F-35 variants during the late 1990s, although reduced, are not being met and will likely need to be further reduced.
- The F-35 Life Cycle Sustainment Cost Estimates have risen 23.9% from 2012 to 2016.

Clearly, both operational capabilities and sustainment remain complex, and lack clarity and transparency.

Clarifying the Failure to Advise the Committee of Validated DOT&E Project Findings.

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 but did not draw any conclusions, merely voicing vague concerns while

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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 far more informed judgement as to the true status of the Project.

A Major Causal Factor Behind Inadequate Defence Department Advice to the Committee.

It is not difficult to understand why the References Committee was led to take the decisions and make the recommendations that it did, while stating: *"...it is difficult to understand and critique the capabilities of the F-35A without access to detailed classified performance data. Hence, the Committee cannot draw definitive conclusions regarding the details of the F-35A's performance in testing."* – Despite the fact that DTO&E Reports provided all the information needed.

However, it is understandable, but not pardonable, when the following is recognised:

- The FADT Committee members were not competent to reach proper, demonstrably valid conclusions, a common problem with Parliamentary inquiries, which made the Committee highly/wholly dependent upon 'specialist' advice from the Defence Department bureaucracy. However, such advice was not available from the Department because it is no longer required to possess the skills and competencies needed to provide such advice. Current Australian Government Public Service policy requires: *"...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 administration and/or managerial*

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abilities.”

- Such expert advice, pre the Tange/Defence Reform initiatives, had long existed within the Services, but this was thoroughly stripped out and outsourced to (mainly) the original equipment manufacturer under the Defence Reform/Commercial Support Programs.
- That Parliament, Government, the Defence Department, the Services, Australia and its national security are now too dependent upon foreign major companies with their vested and conflicts of interest is no better evidenced than with the F-35A Project.

Over-all, these F-35 program developments emphasise the embedded and widespread deficiencies in Defence's 'business model' for the acquisition and sustainment of technology-dependent military capabilities. Furthermore, such deficiencies will continue to arise as the F-35 Project progresses. The Project, although believed to be "Too Big to Fail", is most unlikely to avoid that fate.

Until this situation is redressed, Australia's defence capabilities and national security must remain at high risk.

ANNEX C

UPDATE POST- JANUARY 2018

Background.

From January 2018, several US Governance and Independent Analysts' Reports have been released, and critical changes made to F-35 Program Planning. Some of the more important were:

- The release of the DOT&E F-35 Status Report dated 23rd January 2018. (1)
- The US Government Accountability Office Report (GAO-18-321) "*Development is Nearly Complete, but Testing Need to be Resolved.*" dated June 2018. (2)
- Plans have been made for testing the F-35 against the A-10 Thunderbolt II (Warthog) to demonstrate that the F-35 was superior to the A-10, F-16 and F-18 in ground support roles, as the F-35 Project is contractually required to demonstrate. (3)
- Independent analysis of the Project released by Defence - Aerospace. (4)
- Additional information has been received on the proposal to re-birth the F-22. (5)

Individually and collectively, these developments do not bode well for Australia's planned reliance on the acquisition the F-35 to provide the airpower capabilities promised by the Project and upon which Australia relies heavily to underpin its national security. In short, the F-35 Project remains an incipient failure in Project Management and will be an increasing, major risk to Australia's national security.

Standard and well-proven Project Management disciplines require that each phase of a Project be completed to well-defined requirements before progressing to the next Phase. The F-35 Project, however, driven by marketing, financial and political vested interests, decided to ignore this philosophy and adopt a Phase-overlapping methodology. The results of this decision have become obscured from adequate public and governance scrutiny over the past 12 years, with dire consequences for F-35 capability, cost and schedule factors. Unfortunately, the Project has been allowed to survive under ineffective oversight by Government and Defense/Defence Departments, favouring Project Office/Manufacturer's inflated claims and promises over verifiable DOT&E data.

As a result, the F-35 Program, after some 16 years of development, produced its first F-35 some 12 years ago to meet capability requirements grounded in the late 1990s, but has been unable to

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achieve its most critical milestone in Project Management – the Design/Development Phase. In effect, the Project will deliver an aircraft that is unacceptable at the end of an incomplete Design Development Phase, and will move to a separate program having its own baseline and regular cost, schedule and performance reporting, yet to be dimensioned, planned or costed. This follow-on, 'Block 4 F-35 Modernisation' Plan gives no confidence that it will perform any better than the long-running, current program.

The DOT&E F-35 Status Report of January 2018 (1).

This Report, released by a new Director, provides a fresh view and measure of the status of the F-35 Program. Not surprisingly, being based upon verifiable measures, it confirms and updates previous DOT&E findings and recommendations. Some of the Director's key observations follow:

- *The operational suitability of the F-35 fleet remains below requirements and is dependent on work-arounds that would not meet Service expectations in combat situations.*
- *Over the previous year, most suitability metrics have remained nearly the same, or have moved only within narrow bands which are insufficient to characterise a change in performance.*
- *Overall fleet-wide monthly availability rates remain around 50 percent, a condition that has existed with no significant improvement since October 2014, despite the increasing number of new aircraft. One notable trend is an increase in the percentage of the fleet that cannot fly while awaiting replacement parts.*
- *Reliability growth has stagnated. It is unlikely that the program will achieve the FSF ORD (Operational Requirements Document) threshold at maturity for the majority of reliability metrics.*

The Director was also critical of the JPO's plan "to transition into the next phase of development – Continuous Capability Development and Delivery (C2D2) - beginning in CY 18, to address deficiencies identified in Block 3F development and to incrementally provide Block 4 capabilities." The original C2D2 Schedule for this he believed was not executable. In the meantime, the JPO was trying to close out the current SDD Phase, notably by deleting test points.

The complete listing of the failings and problems identified by DOT&E are contained in his report. Two examples of high interest follow:

- *As of mid-November 2017, the JSF development program was monitoring a total of 2,769*

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deficiency reports. These were reduced to a priority list of 301 Priority 1 and 2 deficiencies deemed necessary for the program to address for combat effectiveness and operational testing, but only 88 of the 301 Priority 1 and 2 deficiencies were in work, with the remaining 213 unresolved.

- *Of particular concern is that the JPO suspended durability (fatigue) testing after completion of a second lifetime of testing in February 2017 as the test article had so many repairs it was no longer representative of the production aircraft. With the aircraft subject to continuing design and capability changes, the testing done so far will be wholly unrepresentative of the aircraft's multiple configurations that will be operated and will thus have no validity, leaving customers with no measure of the aircraft's safety in operation or fatigue life.*

The DOT&E Report thus gives no confidence that the JPO/Manufacturer's planning will succeed.

The GAO Report (2).

In short, the GAO, which is required to review the F-35 acquisition program until it reaches full scale production, recommends that:

- *No funds are made available for F-35 Block 4 until DOD provides a sound business case for the effort.*
- *DOD resolves all critical deficiencies before full rate production.*

These recommendations stem from the GAO's conviction that outstanding deficiencies need to be redressed before closing the SDD Phase and moving on to the Modernisation Program.

The GAO recommendations require an extended testing schedule, injecting a delay of 6 to 8 months, but notes: "*DOD plans to defer some critical deficiencies found in testing until after its full-rate production decision in October 2019, even though DOD's policy states that critical deficiencies will be resolved before then.* However, throughout this project, there has been a continued rise in critical deficiencies that have built up an unmanageable backload, and this trend may be expected to continue throughout Block 4, which, after some 12 years, has yet to produce its first F-35 meeting system design requirements.

The Joint Program Office (JPO) declared arbitrarily that the SDD Phase will finish with the F-35 Block 3F (limited capability) baseline, and will thus be unfunded, by end-June 2018. The program is then proposed to come under a separately planned and annually funded Block 4 Modernisation Program under a new approach referred to as Continuous Capability Development and Delivery C2D2). DOD will establish C2D2 processes and improve the Block 4 baseline estimate over the next two years by:

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- Completing design work on new data processors.
- Establishing laboratory and flight test assets for modernisation requirements verification.
- Addressing deficiencies from development testing.

As a consequence of this approach, the cost of rectifying and flight testing outstanding SDD deficiencies, in addition to those that will arise throughout Block 4, will need to be borne by the post-SDD (G2D2) annual budget. As the UK has already found, such costs will flow on to foreign customers, and based upon previous experience these costs will almost certainly be far greater than planned. The implications for Australia, with its drive to become the F-35 South West Pacific support hub, are immeasurable, and sorting out the work that was devoted to making the aircraft acceptable as meeting its design requirements (and thus qualifying as a 'standard' configuration) and what work is a modernisation extra will be a nightmare.

As one analyst sees it (4): Defense-Aerospace.com, Mar 09 2018

“This means that the JPO is implying that a mere 20% (\$11bn) add-on to the SDD bill will pay for:

- *Completing and flight testing Block 3F.*
- *Fixing and flight testing 1000+ known and serious SDD deficiencies.*
- *Fixing and flight testing the myriad undiscovered deficiencies sure to emerge during the much more rigorous IOT&E tests starting next year.*
- *Developing and flight testing the whole wish list of Block 4 'modernisation' capabilities.*
- *Conduct planning and systems engineering work for initial capabilities for Block4.*

This appears impossible and supports the 2017 DOT&E Annual Report assessment that the current C2D2 plan as “unexecutable”.

Capability Testing – Ground Support (3).

As part of Congress mandated tests, the F-35 Program is contractually required to show better mission effectiveness than the legacy aircraft it will replace - the A-10 Warthog and the F-16 and F-18. To this end, plans were made to have the F-35 fly off against the A-10. A set of unpublicized tests began on July 5 and concluded on July 12, according to a copy of the Test Schedule reviewed by the Center for Defence Information at the Project On Government Oversight, which concluded that the tests as designed were unlikely to reveal anything of real value about the F-35's ability to support ground troops in realistic combat situations. The Center also noted the unrealistic nature of the tests, their non-compliance with the Senate's strict test

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requirements, and that the fate of each aircraft was hanging on the outcome. Other observations made by the Center include:

- *Air Force leaders came up with a simple solution to this dilemma. They are staging an unpublicized, quickie test on existing training ranges, creating unrealistic scenarios that presuppose an ignorant and inert enemy force, writing ground rules for the tests that make the F-35 look good – and they got the new testing director, the retired Air Force general Robert Behler, to approve all of it.*
- *No one from the USAF's Test and Evaluation Squadron was involved in the tests and no Army or Marine representatives participated. The testing should have been designed by the Joint Strike Fighter Operational Test Team.*
- *Rather than going through the proper channels, design of these tests was outsourced to a consultant from Tactical Air Support Inc., a company with a contract to provide adversary aircraft to serve as air-combat training opponents for the U.S. Air Force, especially for the F-35 squadrons, but also foreign air forces. In other words, the test was designed by someone with a vested interest in the F-35 Program, rather than by people whose primary interest is its performance in combat.*
- *The first day's test scenarios reveal numerous ways in which they were designed to favor the F-35: For example: The F-35's weapons load unrealistically lightens the aircraft in an attempt to give it a maneuverability advantage, the absence of specialized testing equipment makes it impossible to gain useful insights about the relative hits on the F-35 versus the A-10, and using only uncamouflaged targets conflicts with the realities of actual combat. The subsequent tests reveal a similar pattern of distortion to favor the F-35.*
- *The most significant failing in these tests is that the designers created a laboratory demonstration to show how aircraft can hit non-moving targets in a sterile environment, quite unrepresentative of actual combat conditions.*

The Center also notes that Air Force leaders are fond of saying the F-35's stealth characteristics will allow it to perform close air support in situations with heavy air defences in a way that the A-10 cannot. However, in the ground support role, the F-35 will have to carry external tanks to provide the loitering capability required, as well as carry ordnance stores on external hard points, destroying any pretense of stealth.

These secretive and contrived tests, designed to paint an overly-optimistic picture of the F-35's severely limited ground support capabilities, appear to be designed primarily to push the aircraft prematurely through its SDD Phase so that full-rate production may start. Unfortunately, they

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also call into question whether, in doing so, the DOT&E organization will from now be compromised and unable to discharge its independent test and evaluation responsibilities free from interference from a number of vested interests.

The Impacts of Premature Closure of the SDD Phase (4).

The impacts of closing prematurely the System Design Development Phase will be far reaching, causing radical changes in the aircraft's delivered capabilities, cost and schedule; in effect, rewriting the aircraft's performance, cost and schedule while it remains unable to meet its original contracted requirements. These impacts will hit all F-35 customer air superiority and ground support plans hard and call for re-evaluating their national security expectations. The results of the JPO's radical change in F-35 management have been well analyzed at Defense-Aerospace.com. Some key findings of this analysis follow:

Three quarters of all the F-35s delivered to foreign customers until 2023 will be obsolete and will require major retrofits before they can deliver their promised performance. Analysis of F-35 contracts awarded to date shows that 343 of the 460 export aircraft that Lockheed is to deliver until the end of 2024 will be in the current, obsolete Block 3F, Low-Rate Initial Production (LRIP) configuration.

Until 2023, all the LRIP aircraft ordered by Australia will be delivered to the current obsolete configuration under the following plan:

- *Aircraft ordered at 6/2018:* 72.
- *Aircraft to be delivered by 2024:* 63 Up to Block 3F (to 2022) Lots 1 to 14.
9 Block 4 (from 2023) FRP Lot 15.
- *Percentage of early aircraft:* 87%.

All LRIP aircraft will require substantial and expensive upgrades to bring them up to the latest Block 4 standard at uncertain cost. The JPO currently sees 108 of these aircraft as being not cost-effective to upgrade. European operators seem to have "overlooked" mentioning the cost of upgrading their older aircraft to Block 4 standard when reporting to their Parliaments. The risk that Block 4 aircraft will still fail to meet requirements has not been faced.

*Block 4 is non-negotiable as because, unless upgraded, all F-35s delivered before 2023 will be severely limited in their capabilities and will only be able to use very few weapons. **Australia will, out of its 72 aircraft, have only 9 delivered to the Block 4 configuration. If Australia decides to retrofit Block 4 improvements, we will have to pay for it ourselves, on top of***

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acquisition and post-delivery upgrade costs.

This is when foreign “partners” who have already paid a portion of the F-35’s development costs as well as paying for their own aircraft, will realize that they have been abused by Lockheed and the Pentagon who, in their rush to produce as many F-35s as fast as possible, have delivered “fifth-generation” aircraft that do not meet contractual performance and cannot match the capability of “legacy” aircraft like Typhoon, and the latest F-15 and F-16s.

Unfortunately, Australia’s Department of Defence and continuing Parliamentary F-35 Oversight Inquiries have, since the project was being considered, been advised by experienced engineers of the risks involved, but all to no affect, apart from receiving disparaging comment. While the Author (Annex A) warned that the project was ‘on the brink’ of failure, the Project has now passed that stage and can only be described as a tragedy and a case study of bureaucratic and governance incompetencies, highlighting the outcomes inevitable when high technology projects are administered by people having no understanding of the technologies involved or the systems engineering disciplines that must always be followed to succeed.

The F-22, The Phoenix Rises (5).

As the recently formed, centralized Department of Defence was flexing its muscles and being wooed by Lockheed Martin to commit to their Joint Strike Fighter with its promises of low cost, amazing capabilities and inexpensive sustainment, a USAF F-22 Team that had been discussing the release of the aircraft to Australia, arrived with an offer to provide the F-22 via most favourable conditions – under Foreign Military Sales arrangements, to standard USAF configuration and at no additional cost. They were met and greeted rudely with the news that Australia had selected the F-35 and that they should leave. The details of this meeting have long been known by Defence and Parliament, but never acknowledged.

We now have the USAF repeating clearly that the F-35 would not be able to operate in the absence of F-22 cover, an assumption underlying the original F-35 specification. However, after much hype, in a bid to convince operators that the F-35 would also be capable of replacing the F-22, the long obvious has become visible: A genuinely dual role F-35 was never a possibility, and resuming production of the F-22 was required if US air superiority was to be regained.

There has been much poor media cover of the F-22, seemingly as part of an unceasing effort by proponents of the F-35 to prevent funds being drawn away from the F-35 program. There has also been a focus upon the ‘high cost’ of re-opening the F-22 production line and the unit cost of the aircraft. However, most estimates have been questionably high. Analysts now see:

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- *With F-22 production ceasing at 187 aircraft, it has become one of the most hotly debated and controversial procurement-related decisions of the time. Today, it is widely viewed, even among the USAF's top brass that this decision – made a decade ago - was near-sighted and we continue to find out new information as to how exactly it came to pass.*
- *Finally, in 2016 with pressure mounting for more F-22s, Congress mandated that USAF look into restarting the production line, but the reporting document has remained classified until now. Using RAND's conclusions from 2011, the USAF crafted a set of cost estimates and assumptions for what it would take to restart F-22 production for 194 aircraft. A review of that report found that it lacked depth and that the cost figures were high.*
- *The non-recurring costs appeared particularly high. The unit cost, estimated to drop to \$206m for the final aircraft, doesn't make sense considering all other major defense programs seem to tout steeper unit cost reductions over a production run, and especially over the first production lots. The fly-away costs of the last 60 F-22 aircraft which averaged \$137m were was approaching the F-35A's cost during the same time in its production run.*
- *USAF General Mosley lost his job when he resisted the cut in F-22 production, noting: "We didn't, and still don't need a thousand of these things. But you need the right number...The last airplanes we took delivery of were \$87m...Had we been able to go another multiyear (contract) there was an understanding that we would be able to get them for \$85m...Find me an airplane out there right now that costs \$85m and has that capability."*
- *The USAF is still determined that it was "technically feasible" to develop an export version and this would cut cost burdens.*
- *Further cost reductions could be realized beyond those the study states, considering the F-22 is a known commodity, not some new fighter just entering production. The conclusions of the study were likely baked into it before it really began. (The results preordained to satisfy non operational imperatives)*

The Japanese Solution.

While Australia's Defence Organisation has persisted with accepting, without question, the inflated optimism of the F-35's capabilities and its design, development and testing status over the past 16 years, other customers have followed DOT&E's Reports closely and with increasing

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concern. Some have, or are now, reviewing their orders, while others, those that have retained operationally and technologically competent Services and Defence Organisations, have moved to develop a 'Plan B' to ensure their future airpower requirements. Of these, Japan appears to be the clear leader, advising that it now aims to build its own stealth fighter, while "*considering domestic development, joint development and the possibility of improving existing aircraft*".(6)

Almost immediately, Lockheed proposed a 'hybrid' F-22/F-35, but without any perceived configuration. US Military export policies also shifted rapidly: "*Trade, more than military strategy, seems to have spurred Washington's change of heart. President Donald Trump looks to score political points by lowering America's roughly \$70Bn trade deficit with Japan, and sees expensive military equipment as a prime tool for doing so.*"(6)

How Australia's Defence Organisation will approach the F-35 Program changes reviewed in this submission will set in concrete Australia's long-term airpower capabilities, both in air superiority and ground support roles, as well as determining Australia's national security. Based upon previous experience, the current Organisation will fail to develop any coherent or effective Plan B as it does not now possess the required expertise in strategic and force structure analysis, or the operational and technological competencies needed to drive these activities, or its acquisition and sustainment functions. Australia's security is thus now beyond its Defence Organisation's ability to comprehend and rectify.

The task of identifying what needs to be done and the organisational structure best suited to implement change and embed required competencies now rests with Parliament, with the Defence Sub-Committee in the vanguard. Time is running out if Australia is to avoid a re-run of the 1930s.

Conclusion.

Annex A emphasised a need to review Australia's current Defence Force organisation and its capability contracting processes in the light of world and regional developments and the potential risks that they carry. Since then, Australia's belated acknowledgement of Chinese and Russian intrusion into island chains in the South West Pacific only brings those risks into sharper focus. Clearly, Australia's Department of Defence is unable to analyse those threats, develop appropriate and flexible strategic and tactical responses, provide matching military capabilities, or a rational and financially responsible Defence Industry. After some 45 years, Australia's Defence Department exists primarily to maximize its vested interests, while providing Government and Parliament with the advice that it feels those governance bodies will find most comfortable, both politically and financially.

The Australian Strategic Policy Institute's Peter Jennings in July 2018 noted the need for a Defence Plan B, listing 10 steps to achieve it. However, the past 45 years have shown that

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Defence is incapable of working through such a challenge. It has none of the skills, competencies, or methodologies required and is thus also incapable of 'outsourcing' any successfully. Until Defence's 'Business Model' and contracting processes are replaced by successful models, Australia remains as unprotected as it was immediately pre-WW2.

Finally, although much debate exists in regard to Australia's dependence upon the ANZUS Treaty, there has been no acknowledgement of the fact that the treaty only requires the parties to consult. It does not guarantee that either party will come to the aid of the other when requested. Actual military support will only follow if the request is considered both politically and militarily possible at the time. Australia's experience has been that requests for support may well not be available when requested.

Australia must have an independent capability to defend itself in the absence of any allies, but Defence in its current form is not a suitable organisation to achieve and maintain this objective, as has been proven before and evidenced today.

Much of the problem arises from the adoption of inappropriate contracting processes for the acquisition and sustainment of technology-dependent capabilities, both military and non-military

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