

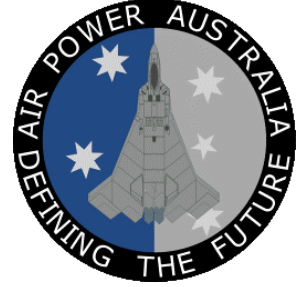
LETTER OF TRANSMITTAL

The Firm

To: JSCFADT Secretariat [jscfadt@aph.gov.au]
Cc: JSCFADT_Defence Sub Committee
Subject: AIR POWER AUSTRALIA SUBMISSION: APA-SUB-RSDR-JSCFADT-2006-02

To:

The Hon Bruce Scott
Chair, Defence Sub Committee
Joint Standing Committee on Foreign Affairs, Defence and Trade



Dear Mr Scott,

Air Power Australia is pleased to provide our submission entitled 'Meeting the Regional Challenge' as our contribution to your Committee's inquiry into Australia's Regional Strategic Defence Requirements and the public debate we advocate now needs to happen.

Profound and deep transformations are under way as long range, high technology military capabilities proliferate in our region, invalidating some of the key assumptions underpinning the Defence 2000 White Paper.

Meantime, Defence leadership seems content to place the responsibility for their analytical failures at the feet of Government while continuing to mislead the Parliament by omission, sophistry and spin on matters they themselves declare 'we do not know what we do not know' (Air Marshal Shepherd and Dr Lough, 31Mar06).

Australia's long term strategic relevance in the region will depend strongly on Asia's perceptions of Australia's strength, and thus its capacity to play an important role in the regional strategic context. If Australia is to earn the respect it deserves in Asia, its must be seen to have military capabilities which are both important and relevant to the region.

Our key recommendation is for the definition of 'the region' to be revised to encompass all nations and states with extant or developing power projection capabilities over the next three to four decades which would be able to reach Australia or Australian interests. See second boxed text on page 35.

We strongly believe that each generation of Australians is obliged to leave our country in better shape than they found it and wish the Committee every success in ensuring this is the case in this regard. We stand willing to assist should our services be needed.

Yours Sincerely,

19 April 2006

Peter Goon BE (MechEng)USNTPS (FTE)
Defence Analyst and Consulting Flight Test Engineer
Co-Founder: Air Power Australia @ http://www.ausairpower.net/
'Air Power Australia - Defining the Future'

Attachments:



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Inquiry Into Australia's Regional Strategic Defence Requirements: Meeting The Regional Challenge

Dr Carlo Kopp, MAIAA, MIEEE, PEng
Defence Analyst and Consulting Engineer
Carlo.Kopp@aus.net

Peter A Goon, FTE
Chief Executive,
Australian Flight Test Services
pag@afts.com.au

Meeting the Regional Challenge

Inquiry into Australia's Regional Strategic Defence Requirements

Dr Carlo Kopp, MIEEE, MAIAA, PEng,
Defence Analyst and Consulting Engineer

Peter A Goon, BEng, FTE (USNTPS)
Chief Executive,
Australian Flight Test Services

April 13, 2006

**Submission to the
JOINT STANDING COMMITTEE ON FOREIGN AFFAIRS,
DEFENCE AND TRADE DEFENCE SUBCOMMITTEE**

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Meeting the Regional Challenge

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Inquiry into Australia's Regional Strategic Defence Requirements, Joint Standing Committee on Foreign Affairs, Defence and Trade, Defence Subcommittee.

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Executive Summary

Should Australia opt to continue with current Defence planning, especially for the RAAF, Australia will open up the option of strategic coercion to the future leadership of regional nations suitably equipped, and do so during a period when the US will be less able to exercise power in this region on Australia's behalf. The consequence of such a situation arising will be a loss of independence in foreign policy as Australia will become increasingly dependent on decisions made in Washington and regional capitals, and lose the option of making its own choices.

Current Defence planning remains predicated on a myopically constrained definition of 'the region' and the assumption that the region will be benign for coming decades. This assumption disregards the unprecedented growth seen in China's military capabilities, but also disregards the inevitable growth in military capabilities of lesser regional nations, as these react to China's growth. Australia's unilateral pursuit of reduced long term military capabilities, in an environment where all other nations are growing their capabilities, creates a range of unwanted future opportunities for other regional players, at the expense of Australia's interests.

There is no evidence to demonstrate that the advice tendered to Government by senior Defence officials on the strategic risks arising from regional capability growth was supported by intellectually rigorous analysis. Testimony to this Committee, by the Deputy Secretary for Strategy, detailed in Section 4, demonstrates this convincingly. Therefore this advice, and its rationale, are not sustainable. Senior Defence officials had access to a wide range of analytical materials detailing regional capability growth, as early as 1998. Refer the Joint Standing Committee on Foreign Affairs, Defence and Trade, *Review of the Defence Annual Report, 2002-2003*.

Australia's long term strategic relevance in the region will depend strongly on Asia's perceptions of Australia's strength, and thus its capacity to play an important role in the regional strategic context. If Australia is to earn the respect it deserves in Asia, its must be seen to have military capabilities which are both important and relevant to the region.

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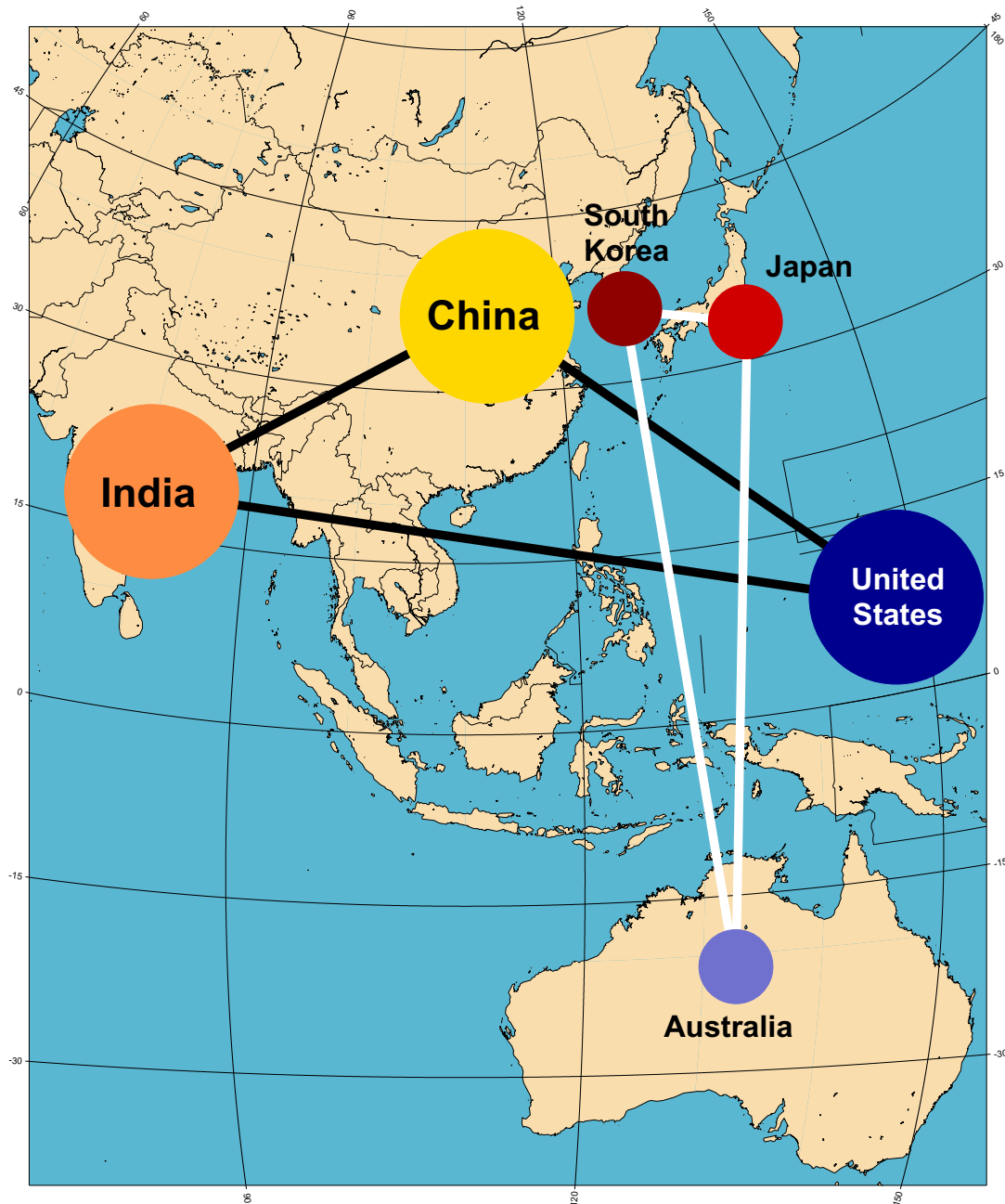


Figure 1: *In geostrategic terms, the developing region will be dominated by the interactions between the three major regional players, effectively the 'triangle' of regional power in Asia. The three lesser regional powers, Japan, South Korea and Australia, will operate in an environment of strategic competition for power and influence by the major regional players (C. Kopp).*

1 The Shifting Regional Balance of Power

Australia is currently facing a period of deep strategic changes within the region.

These changes result from the confluence of two large scale trends of global significance. The first of these is the ongoing economic growth and resulting military growth in Asia, especially China. The second of these is the 'strategic overstretch' of the United States, as it attempts to win the Global War on Terror while recapitalising and modernising its Cold War era inventory of military equipment.

A detailed discussion of trends in future US capabilities is contained in Section 2 of this submission. A detailed discussion of trends in current and future Chinese capabilities is contained in Section 3 of this submission, and Annexes B and C.

In the broadest of terms, the developing strategic context in the region is that of complexity, with the potential for shifts in alignments, alliances and intensive economic, military and political competition.

Figure 1 depicts these relationships. The three dominant players in Asia will be the United States, China and India, in terms of economic strength and military potential. This 'triangle of power' will exert the most influence on future regional interactions.

At this time we are observing a nascent China competing for influence with the United States, and investing considerable effort in displacing the United States from its dominant position in the region. India's recent and ongoing tilt toward the United States reflects its stated - and unstated - concerns about China's military and economic growth.

The region can also be characterised by the existence of a triangle of second tier powers, which include Japan, South Korea, and subject to future military capabilities, Australia. This lesser triangle remains at this time within the US sphere of dominant influence, rather than that of China.

Remaining regional nations, including Indonesia, Malaysia, Singapore, Vietnam, Myanmar, the Philippines, North Korea, Laos, Cambodia, Thailand and Bangladesh will have a limited capability to influence regional developments, by virtue of limitations in economic and military potential. North Korea's ongoing dispute over nuclear weapons and strategic delivery systems is a clear effort to carve out greater influence and impact than this rogue nation would otherwise earn.

It is significant that lesser regional nations along Dobb's 'arc of instability' continue to experience difficulties with militant minorities, and often deeper problems with their economies and internal wealth distribution. This adds an additional element of instability to the latent and underlying geostrategic considerations.

It is clear that the complexity of this regional environment, competitive behaviour between the major players, and between the minor players, presents considerable potential for future strategic shifts in alignment, with concomitant risks of local or larger disputes or conflicts.

This is a strategic environment which cannot be described as benign. The region is connected by

a complex web of bilateral relationships between nations, many of which are influenced as much by historical alignments, differences or disputes, as they are by contemporary competition in economic and military power¹.

To date, competition in the region has been largely dominated by the use of 'soft power' and by economic contests for specific markets. However, less visible has been the unprecedented scale of military investment across Asia, since the end of the Cold War. Sales of Russian and other military hardware across the region are, in numerical and capability terms, comparable to the 1980s spending spree of Warsaw Pact nations prior to the collapse of the Soviet Bloc.

It is significant that many of the systems and weapons now being exported by Russia, in the pursuit of export revenue, were never exported by the Soviet Union, as these were the basis of Soviet conventional strategic power.

Another developing consideration is that China and India are now manufacturing this technology, and actively marketing it for export, globally and within the region. Users of Russian military technology will be able to source weapons, equipment, spare parts, upgrades and turnkey support from India and China, in coming years, for a wide range of technologies. This is in addition to exports of indigenous and reverse engineered military technologies, where China has been very active over the last decade².

The equilibrium we currently observe in the region will be perturbed, inevitably, by the increasing influence of China, as grows its economy and transforms its military from a territorial defence force to a regionally significant means of projecting military power.

The growing bilateral military relationship between the United States and Japan, the expansion of the US base at Guam, the construction of new basing in Shimoji, north of Taiwan, the commissioning of the Kenney Headquarters in Hawaii, and permanent basing of almost 30% of the F-22A fighter fleet in Hawaii and Alaska, are all indicators of unstated and to a lesser extent stated US uncertainties about the future stability of Asia. The Quadrennial Defense Review, and ongoing US discussions with Japan, including Japanese interest in the acquisition of 'crown jewels' military technology such as the F-22A Raptor stealth fighter, amount to stated and unstated indicators of a US shift to increasingly rely upon its regional allies to maintain regional stability.

Within the near region, encompassing Malaysia, Singapore and Indonesia, we have observed a sustained effort to modernise military capabilities, including the acquisition of advanced capabilities such as Airborne Early Warning and Control aircraft, Russian Sukhoi fighters and aerial refuelling tankers. Indonesia for instance has stated its intent to acquire around 50 Russian Sukhois, and advanced Russian S-300 (SA-10) long range surface to air missile systems.

At this time Australia enjoys friendly, albeit often turbulent, political relationships with most of its regional neighbours, especially Indonesia.

The difficulty Australia faces, in strategic terms, is that in a complex regional environment subjected to intensive competitive pressures, the prediction of long term intent and strategic alignment of smaller, and to a lesser extent larger, regional players is fraught with serious difficulty.

The long history of intelligence failures in the prediction of major strategic shifts, globally, is a stark warning of the risks inherent in basing strategic planning on intelligence estimates centred in known or perceived intent. Internal shifts in leadership groups, changes in which political entities will dominate internal politics, and major economic changes can all result in dramatic changes in foreign policy and the strategic alignment of nations.

In practical terms, analysis of the future regional environment must be centred in military capabilities, and to a lesser extent in known strategic interests, as neither of these factors will change as rapidly as intent, or perceived intent can. If a nation has the capability to hurt Australia or its interests, Australia must confront the reality that such a capability could be exercised with a warning time consistent with a change in intent. As recent history illustrates, such changes of intent can arise with warning times of as little as months or weeks.

If we accept this demonstrably valid proposition, then the strategic environment represents several critical long term strategic risks:

1. A major regional player using its strategic conventional strike force, for instance Sukhoi fighters supported by aerial refuelling tankers, strategic bombers or cruise missile armed submarines, to coerce or strike at Australia or its interests in a regional dispute.
2. A minor regional player using weapons such as cruise missiles or Sukhoi fighters to coerce or strike at Australia or its interests in a regional dispute.
3. A minor regional player shifting alignment between major players, and providing in country basing for said major player.
4. One of Australia's allies becomes embroiled in a dispute with one of the major regional players, and Australia is drawn into the dispute and resulting conflict.
5. A minor regional player experiences significant instability due to internal ethnic, religious or cultural divisions, or natural disaster, and seeks intervention and support by a major regional player.

While good candidates for specific scenarios based on each of these risks exist, the generality of this model is intentional. Australia cannot plan the ADF force structure around the assumption that the current distribution of capabilities and the current intent and interests of major and minor regional players, are immutable. The intent and interests of major and minor regional players will evolve over time, and this evolution likely to be very rapid, yielding very short warning times, or in strategic timescales, none at all.

With Australia now poised to make some very important long term strategic force structure planning decisions, the replacement of the RAAF fighter fleet being the foremost of these, now is an appropriate time to review and revise Australia's strategic policy and force structure to better accommodate a region which has become far more complex, demanding and strategically risky, than it was a half decade ago.

2 Assessing Future US Capabilities

In February this year, the US Department of Defence released the Quadrennial Defense Review (QDR) Report, which summarises the results of last year's review and analysis of national strategy and force structure.

The QDR process is highly rigorous, involving extensive quantitative and qualitative analysis of US strategy, force structure and capabilities, against known and emerging strategic threats. This process differs significantly from Australian Defence White Papers and Strategic Updates, in that it is produced at four yearly intervals, and involves extensive war-gaming analysis to test the viability of the US armed services in a range of contingencies.

This QDR document is highly structured, well reasoned and well argued. It is however vastly more complex than earlier QDR documents, reflecting the complexity of the 21st century global strategic environment, and a reader without depth in the issues may find it intellectually challenging. Therefore many media reports do not accurately reflect the thinking presented in this document.

At the root of the shifting US strategic thinking is the reality of a multipolar world with multiple agendas and interests. The US has to confront the strategic impact of nascent Asian superpowers, developing formidable conventional capabilities, the strategic impact of rogue nations like Iran and Korea, developing strategic WMD capabilities, the impact of Islamo-fascist insurgent movements exemplified by Al Qaeda and its spawn, and the reality that public goodwill in the developing world often stands or falls on how much aid the US can deliver when dealing with natural disasters, of which there has been no shortage of recent. These realities coincide with a period of radical technological advancement, especially arising in information and communications technologies.

The QDR thus attempts to develop a new approach in strategy and force structure planning to address this reality, departing from the decades old strategic model of the Cold War, itself an outgrowth of World War II strategy and force structure.

In a sense the current global situation bears similarities to the early 20th century, with a pattern of perpetually shifting alliances and interests, massive economic and military growth in nascent powers, disruptive revolutionary movements, unstable nation states, and rapid technological evolution - a 'Moore's Law driven world'. The deeper distinction is that in a globalised world with nearly instantaneous transfer of information, crises of regional or local effect a century ago are paralleled by contemporary crises which have global impact.

The preface to the QDR report provides a good summary of the shifting strategic realities. It identifies key shifts in emphasis, designed to deal with a reality of 'uncertainty and surprise':

1. *From a peacetime tempo - to a wartime sense of urgency.*
2. *From a time of reasonable predictability - to an era of surprise and uncertainty.*
3. *From single-focused threats - to multiple, complex challenges.*

4. *From nation-state threats - to decentralized network threats from non-state enemies.*
5. *From conducting war against nations - to conducting war in countries we are not at war with (safe havens).*
6. *From 'one size fits all' deterrence - to tailored deterrence for rogue powers, terrorist networks and near-peer competitors.*
7. *From responding after a crisis starts (reactive) - to preventive actions so problems do not become crises (proactive).*
8. *From crisis response - to shaping the future.*
9. *From threat-based planning - to capabilities based planning.*
10. *From peacetime planning - to rapid adaptive planning.*
11. *From a focus on kinetics - to a focus on effects.*
12. *From 20th century processes - to 21st century integrated approaches.*
13. *From static defense, garrison forces - to mobile, expeditionary operations.*
14. *From under-resourced, standby forces (hollow units) - to fully-equipped and fully-manned forces (combat ready units).*
15. *From a battle-ready force (peace) - to battle-hardened forces (war).*
16. *From large institutional forces (tail) - to more powerful operational capabilities (teeth).*
17. *From major conventional combat operations - to multiple irregular, asymmetric operations.*
18. *From separate military Service concepts of operation - to joint and combined operations.*
19. *From forces that need to de-conflict - to integrated, interdependent forces.*
20. *From exposed forces forward - to reaching back to CONUS to support expeditionary forces.*
21. *From an emphasis on ships, guns, tanks and planes - to focus on information, knowledge and timely, actionable intelligence.*
22. *From massing forces - to massing effects.*
23. *From set-piece maneuver and mass - to agility and precision.*
24. *From single Service acquisition systems - to joint portfolio management.*
25. *From broad-based industrial mobilization - to targeted commercial solutions.*
26. *From Service and agency intelligence - to truly Joint Information Operations Centers.*
27. *From vertical structures and processes (stovepipes) - to more transparent, horizontal integration (matrix).*

28. *From moving the user to the data - to moving data to the user.*
29. *From fragmented homeland assistance - to integrated homeland security.*
30. *From static alliances - to dynamic partnerships.*
31. *From predetermined force packages - to tailored, flexible forces.*
32. *From the U.S. military performing tasks - to a focus on building partner capabilities.*
33. *From static post-operations analysis - to dynamic diagnostics and real-time lessons learned.*
34. *From focusing on inputs (effort) - to tracking outputs (results).*
35. *From Department of Defense solutions - to interagency approaches.*

Achieving this shift in emphasis is a very ambitious goal, but clearly one which is achievable over time. What is clear is that the biggest shifts and changes required are in the areas of how problems are thought about, how force is applied to get results, how forces are structured, organised, and deployed, how information is gathered, used and distributed, and how alliances are formed and dissolved.

It is hard to imagine that a pre-Goldwater-Nichols Act US Department of Defence, with its multi-headed command structure, illusions of infallibility, internal focus and institutionalised mode of decision making could have possibly produced an analysis outcome of this type.

This shift in emphasis is groundbreaking, insofar as it presents a departure from the historical paradigm in much of US strategic thinking, where 'panacea strategies' were sought - in a sense 'one size fits all problems' solutions. The QDR brings an acknowledgement of what many of us in the strategy community have long argued, which is that strategies and applied force must be adaptively 'tailored' to specific threats or opponents in combat. The deeper reality is that strategy and force application must evolve quickly and evolve to adapt to opponents faster than opponents can themselves adapt.

Looking deeper into the QDR, the new strategic construct identifies four key priorities as the focus of the QDR and future strategy:

1. Defeating terrorist networks.
2. Defending the homeland in depth.
3. Shaping the choices of countries at strategic crossroads.
4. Preventing hostile states and non-state actors from acquiring or using WMD.

These priorities are reflected in planning for future force structure and organisational constructs.

The QDR Report puts considerable focus on the detail of the Global War on Terror (GWOT), or the first of the four pronged priority list. This is also why so many media interpretations misread the aims of the document and underlying strategy.

Key evolutionary changes in the US approach to fighting the GWOT can be summarised thus:

1. *Bolstering the capacity to build capabilities in partner nations (Afghanistan, Iraq and others) to shift warfighting burdens from US and Coalition forces to local forces. The rationale is that success in counter-insurgency is driven by nations under attack defending themselves rather than relying on expeditionary forces from Western nations.*
2. *Early preventive measures to pre-empt problems developing into conflicts.*
3. *'Increasing Freedom of Action' to provide US commanders with more options.*
4. *'Shifting Cost Balances' to US advantage, by changing the asymmetric cost advantages terrorists enjoy in fighting conventional forces.*

Radical force structure changes are not envisaged to accommodate this aspect of the strategy - a very divergent view to that held by many zealous advocates of ADF force structure changes. All key proposed changes are incremental.

Under the title of 'Defending the Homeland in Depth' the QDR envisages three key aims for the US services. The 'lead' aim envisages military operations to 'dissuade, deter, defeat' external attacks on the US; the 'support' aim envisages support of civil agencies and law enforcement to deal with terrorists, consequences of attacks and natural disasters; the 'enable' aim is focussed on sharing information and techniques with other US agencies and allies. New measures in this area are also incremental.

Perhaps the most important of the four prongs in the new US strategy is found under the unassuming label of 'Shaping the Choices of Countries at Strategic Crossroads'.

This encompasses the very broad objective of influencing or deterring nations which are in a state of economic, strategic or political flux. These include nations in Latin America, the Middle East and Asia, but especially the three large players, China, India and Russia.

The strategic discussion in this part of the QDR makes specific reference to Russian exports of weapons technologies, and to China's large scale military expansion and modernisation.

The thrust of this aspect of US strategy is thus to '... seek to ensure that no foreign power can dictate the terms of regional or global security. It will attempt to dissuade any military competitor from developing disruptive or other capabilities that could enable regional hegemony or hostile action against the United States or other friendly countries, and it will seek to deter aggression or coercion. Should deterrence fail, the United States would deny a hostile power its strategic and operational objectives.'

The envisaged force structure changes identified are the largest and in terms of capital equipment, costliest, in the QDR document:

1. *Persistent surveillance, including systems that can penetrate and loiter in denied or contested areas.*
2. *The capability to deploy rapidly, assemble, command, project, reconstitute, and re-employ joint combat power from all domains to facilitate assured access.*
3. *Prompt and high-volume global strike to deter aggression or coercion, and if deterrence fails, to provide a broader range of conventional response options to the President. This will require broader authorities from the Congress.*
4. *Secure broadband communications into denied or contested areas to support penetrating surveillance and strike systems.*
5. *Integrated defenses against short-, intermediate-, and intercontinental-range ballistic and cruise missile systems.*
6. *Air dominance capabilities to defeat advanced threats.*
7. *Undersea warfare capabilities to exploit stealth and enhance deterrence.*
8. *Capabilities to shape and defend cyberspace.*
9. *Joint command and control capabilities that are survivable in the face of WMD-, electronic-, or cyber-attacks.*

The final major area in the QDR focus is 'Preventing the Acquisition or Use of WMD'. This addresses not only rogue states like Iran and North Korea, but also nations with WMD inventories which face instability and internal problems. While the strategy outlines both 'preventive' and 'responsive' dimensions to the problem, significant investments will be made into capabilities for the latter.

The consequences of the QDR will be seen in a wide range of incremental changes to US force structure.

The long term importance of the QDR lies in its dramatic departure from many well established ideas in strategy and force structure planning, many long overdue for change. What is clear is that many of simple minded 'truisms' often uttered in Australia about US strategy and force structure are largely obsolete.

From an Australian perspective, a number of key considerations arise from the QDR and its finer detail in force structure planning.

The first of these is that the US is now wedded to a truly global footprint for its force structure. The future US model is to rapidly deploy tailored forces to global 'hot-spots'. It is inevitable

that this will increase total logistical demands upon a system which is currently straining to cope. Further investment in logistics such as airlift and sealift will inevitably be at the expense of offensive capabilities.

Another consequence of a more 'global' focus in planning is that the traditional model of aligning force structure elements with particular regions will decline. How long the US will maintain significant pre-positioned force elements in specific regions, North Asia being a good example, remains to be seen. The reality is that US power will be inevitably diluted as its footprint is increased, reflecting Sun Tzu's famous dictum that 'he who tries to be strong everywhere, becomes weak'.

It is clear from the QDR that the US is deeply concerned about China, and to a lesser extent India, and the growth of their military and economic power in Asia. The QDR document, not unlike the 2005 Annual Report to Congress on China, takes an unusually soft line in assessing China's capabilities and its future intentions. Assertions otherwise are simply not supportable by the available evidence on Chinese military growth. The US is leaving the door open for China to change direction away from its aggressive military buildup, but also leaving itself the option of taking a much stronger position on China at a future date³.

The QDR to some extent addresses the issues of US combat force equipment fleet recapitalisation. The reality of this period in history is that much of US power, especially its air power, is provided by fleets of aircraft developed, acquired and paid for out of Cold War era budgets. Roughly fifty percent of the US heavy bomber fleet are B-52s, built during the early 1960s, while roughly eighty five percent of the aerial refuelling tanker fleet are KC-135s, also built during that period. Most of the current US fighter fleet was built during the 1980s.

Recapitalisation of these fleets - or replacement of existing assets with new build equivalents - represents an enormous burden for the US taxpayer, as forty five years of cumulative investment during a period of unusually high defence budgets must be largely replaced over a period of possibly half as many years.

The short term approach being pursued by the US administration is downsizing of force elements, retirement of some assets altogether, and deferred retirement and upgrading of other assets, in an attempt to spread and delay the budgetary impact. Current planning envisages incremental replacement of aerial refuelling tankers, significant life extension of C-5 and C-130 transports, upgrades and extensions to the A-10 attack aircraft, upgrades and extensions to a downsized B-52 fleet, early retirement of the F-117A stealth fighter and U-2 reconnaissance aircraft, and the introduction of a new heavy bomber type in 2018.

Critics of the QDR have pointed out that it provides an excellent strategic model, but that its implementation is going to be difficult if not impossible.

The reality which Australia must confront is that the US is entering a period of two or more decades, during which it will be under exceptional budgetary pressures as the fundamental imperatives of force structure recapitalisation and the Global War On Terror compete for funds. To maintain community support for ongoing operational effort in the Global War On Terror, recapitalisation funding will suffer. In turn the US will have to reduce its power projection capabilities, as its aggregate fleet sizes and capabilities are incrementally trimmed back. The QDR already raises the prospect of the US relying more heavily on its allies to provide key 'in situ' combat capabilities, in many respects reviving the *Nixon Doctrine* model of the past. The US may simply not be in the strategic position to make significant assets available at short notice to support Australia in a regional contingency which exceeds Australia's capability to deal with unilaterally.

3 Assessing China as a Regional Superpower

The rapid economic growth and industrialisation of the People's Republic of China over the last decade presents Australia with a new strategic reality during this decade - the emergence of China as a regional economic and military superpower.

This requires some fundamental changes in how Australia thinks about the region and its position in the Pacific Rim and Asian political, military and cultural context. Australia can no longer focus on South East Asia as its principal strategic concern within the region. An intellectually rigorous policy must exist in relation to Australia's relationship with China, and China's future relationships across the region. Not to define such a policy will expose Australia to all of the unwanted byproducts of a shifting balance of economic and military power across the region.

China's consistently growing economy has produced a wide range of side-effects, which will continue as time progresses. Many of these will impact China's behaviour on the regional and global stage.

The long term interests of an increasingly urbanised and industrialised China will focus on securing the required resources to sustain its economy and its capacity to develop markets for its products and, thereby, create wealth.

With inadequate domestic energy and raw materials resources, China will become increasingly dependent upon imports to sustain itself. With around four times the population size of the United States, China's consumption of energy will have an enormous impact on global energy resources, as per capita energy consumption progressively grows to the levels seen in leading Western nations. A byproduct of this dependency will be an increasing political effort to secure energy supplies, supported by military measures if required.

Raw materials to feed an industrial manufacturing economy will be subjected to similar pressures as China's economy grows further, affecting global prices, but also creating another key strategic vulnerability which China will aim to address over time.

China must compete in a global market to sell its products. Like Japan and South Korea, during their periods of peak industrial growth, China has an advantage in significantly lower production labour costs, in a large part due to the absence of trade unions and genuine open market policies. It is likely that low labour costs will not be sustainable over time, presenting China with the need to protect markets from competition by other nations pursuing large scale industrialisation, such as India.

Much of China's global and regional agenda over coming decades will be focussed on securing defacto control of energy and raw materials resources, and markets for industrial products. China's behaviour on the global stage in recent times represents a precursor to a future environment where much of China's foreign policy and defence policy will be aimed at securing its economic position.

3.1 China's Military Buildup

Increasing national wealth has resulted in China pursuing the single largest sustained arms buying spree observed since the Soviet buildup in the last decade of the Cold War. Unlike the Soviet buildup which effectively bankrupted a moribund economy, China's buildup is sustainable as it is funded using surplus revenue. Unless a sustained downturn occurs in China's economic growth and annual output, we can expect to observe the buildup of the People's Liberation Army to continue unabated for at least two decades.

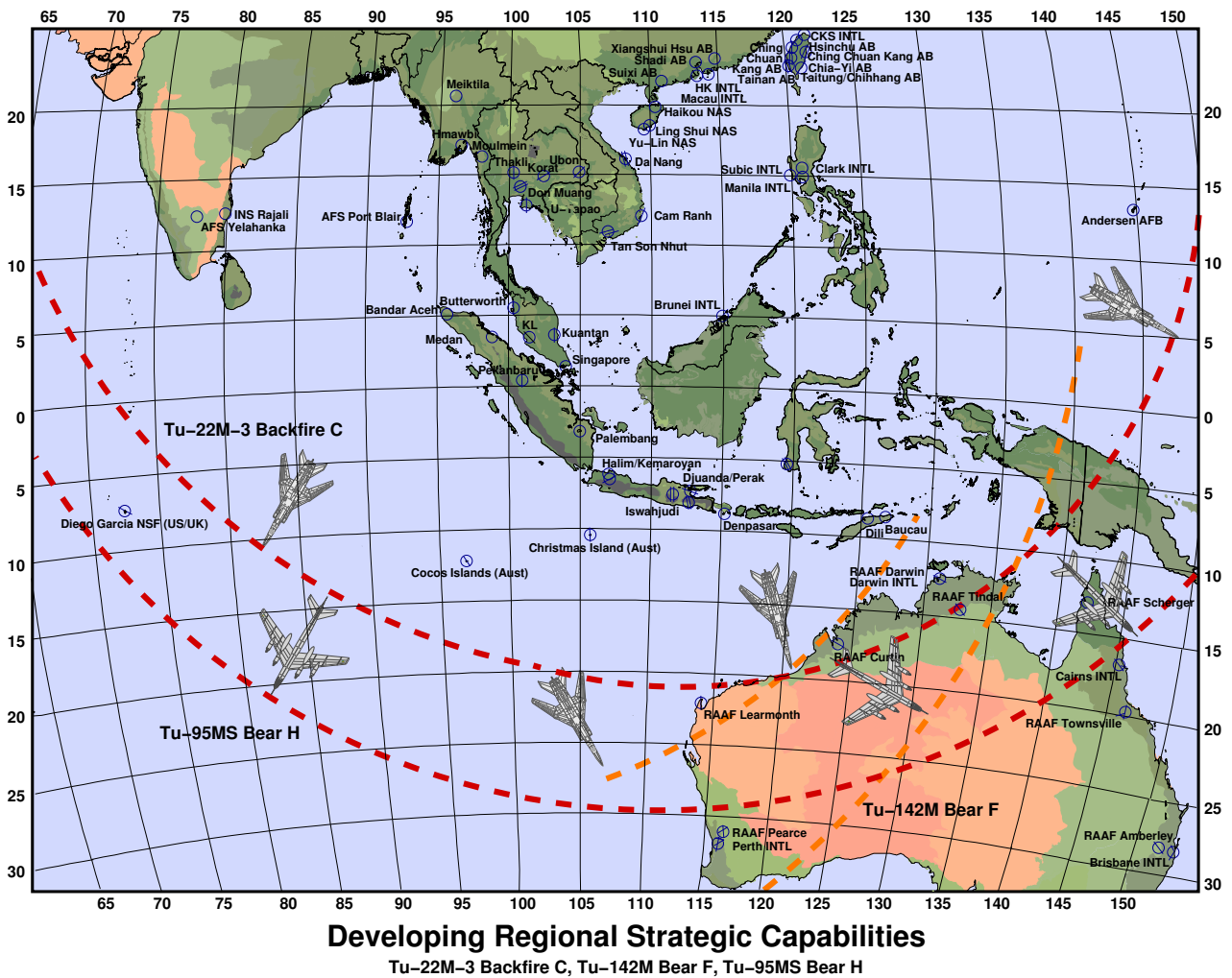


Figure 2: The now certain deployment of strategic bombers by the PLA-AF will fundamentally alter the strategic balance in the near region. This map illustrates the coverage footprint of the Tu-95MS Bear H and Tu-22M-3 Backfire C flown from southern China and Myanmar basing. The footprint of Indian deployments of like types is included for comparison (C. Kopp).

China's investment in large quantities of very modern military hardware is often described as 'modernisation'. This is a half-truth, which obscures the deep transformation taking place in the character of China's military capabilities, and its strategic reach.



Figure 3: Advanced Flanker variants such as the Su-27SMK Flanker B, Su-33 Flanker D, Su-30MKI/MKK/MKM Flanker G/H and Su-35 Flanker E have key capabilities in common with modern US and EU fighters. These include aerial refuelling probes, buddy refuelling pods, advanced multi-mode radar strike modes, electro-optical targeting systems, digital network modems, glass cockpits and the capability to carry a wide range of smart munitions (Sukhoi, US Air Force).



Figure 4: Navalised Su-27 Flanker D variants, the Su-27K/Su-33 and Su-27KUB/Su-33UB, are being actively marketed to the PLA-Navy, which last year started to refurbish the former Soviet aircraft carrier *Varyag* in the Dalian shipyard. The single seat Su-27K/Su-33 and dual seat Su-27KUB/Su-33UB are full capability multirole fighters, which were the first to introduce many of the advanced design features now used on export Flanker variants (Sukhoi).



Figure 5: A key development over the last decade has been the emulation of US force structure models by major Asian air forces. Aerial refuelling is now a priority, with the Russian Ilyushin Il-78MK Midas adopted by India (upper) and China. Airborne Early Warning and Control Systems have been adopted even more widely than aerial refuelling in Asia. China is now testing up to three prototypes of an indigenous system, tentatively labelled the KJ-2000, using the Russian Beriev A-50 Mainstay airframe and based on phased array radar technology of the same generation as Australia's Wedgetail system (lower). India has ordered the very similar Israeli A-50I, using a variant of the Elta Phalcon radar bid for Australia's AIR 5077 requirement, previously also bid to China (IAF, via Internet).

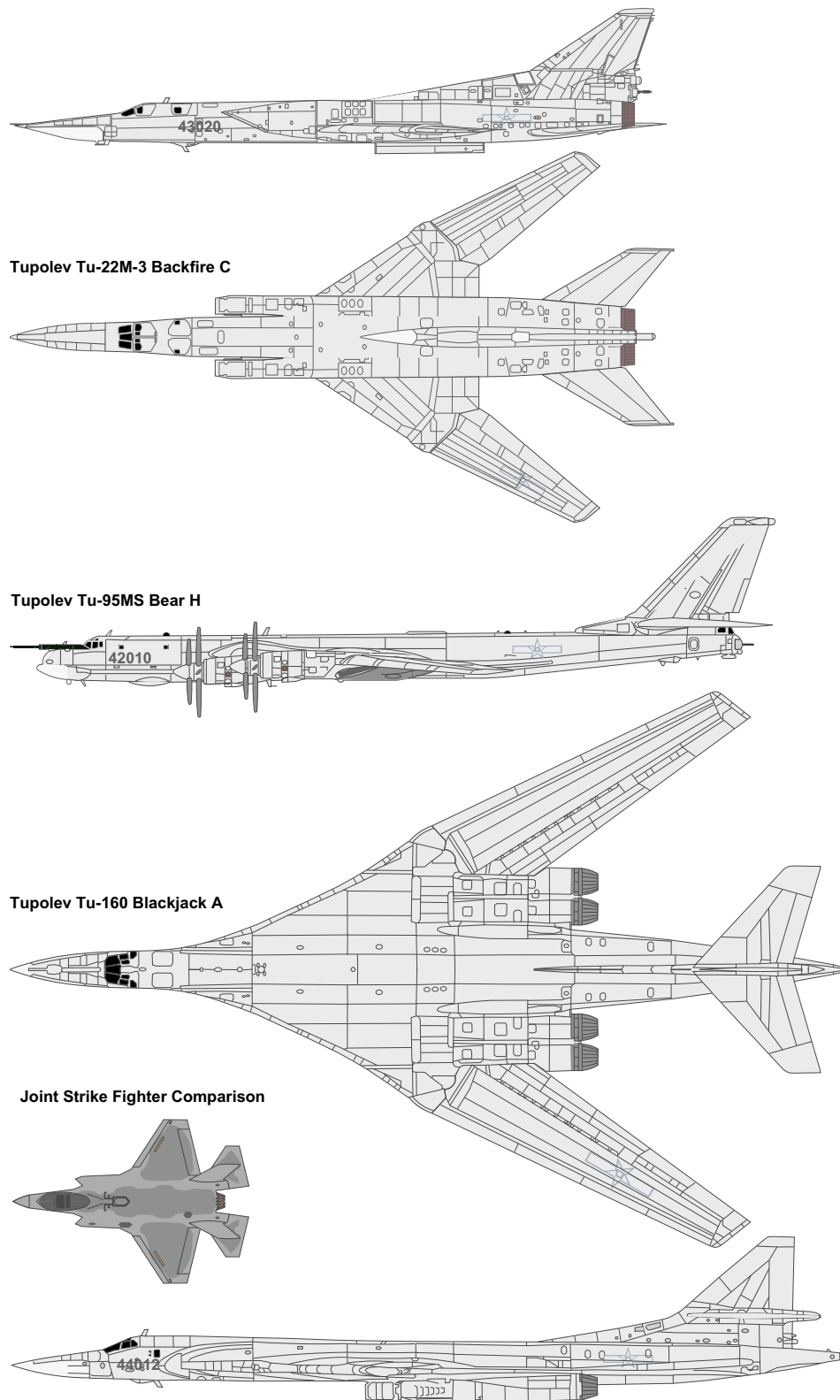


Figure 6: Relative size comparison of the Tu-160 Blackjack A, Tu-95MS Bear H and Tu-22M-3 Backfire C strategic bombers against the Joint Strike Fighter. The Tu-160 carries up to twelve long range cruise missiles, the Tu-95MS up to sixteen, and the Tu-22M3 has the capacity to carry eight such weapons. The F-111 could carry four, the Joint Strike Fighter only two (C. Kopp).

Inquiry into Australia's Regional Strategic Defence Requirements



Figure 7: China has displayed unparalleled interest in cruise missile technology, conducting concurrent indigenous development programs and overseas acquisition programs, the latter including illegal purchases of the Russian Kh-55MS in the Ukraine. The upper image depicts the test launch of a new indigenous cruise missile, very similar in configuration to the US Navy RGM-109 Tomahawk. The lower image is a Chinese illustration of the Dong Hai-10 (DH-10) cruise missile, tested in 2004, and also similar in concept to the Tomahawk. With a low cost and high quality manufacturing industry, locally built cruise missiles present an attractive option (via Internet).

China has been buying out wholesale the 'crown jewels' of advanced post-Soviet Russian military technology along with the means to operate, sustain, maintain, modify and upgrade these technologies (refer Annex B, C for detailed data).

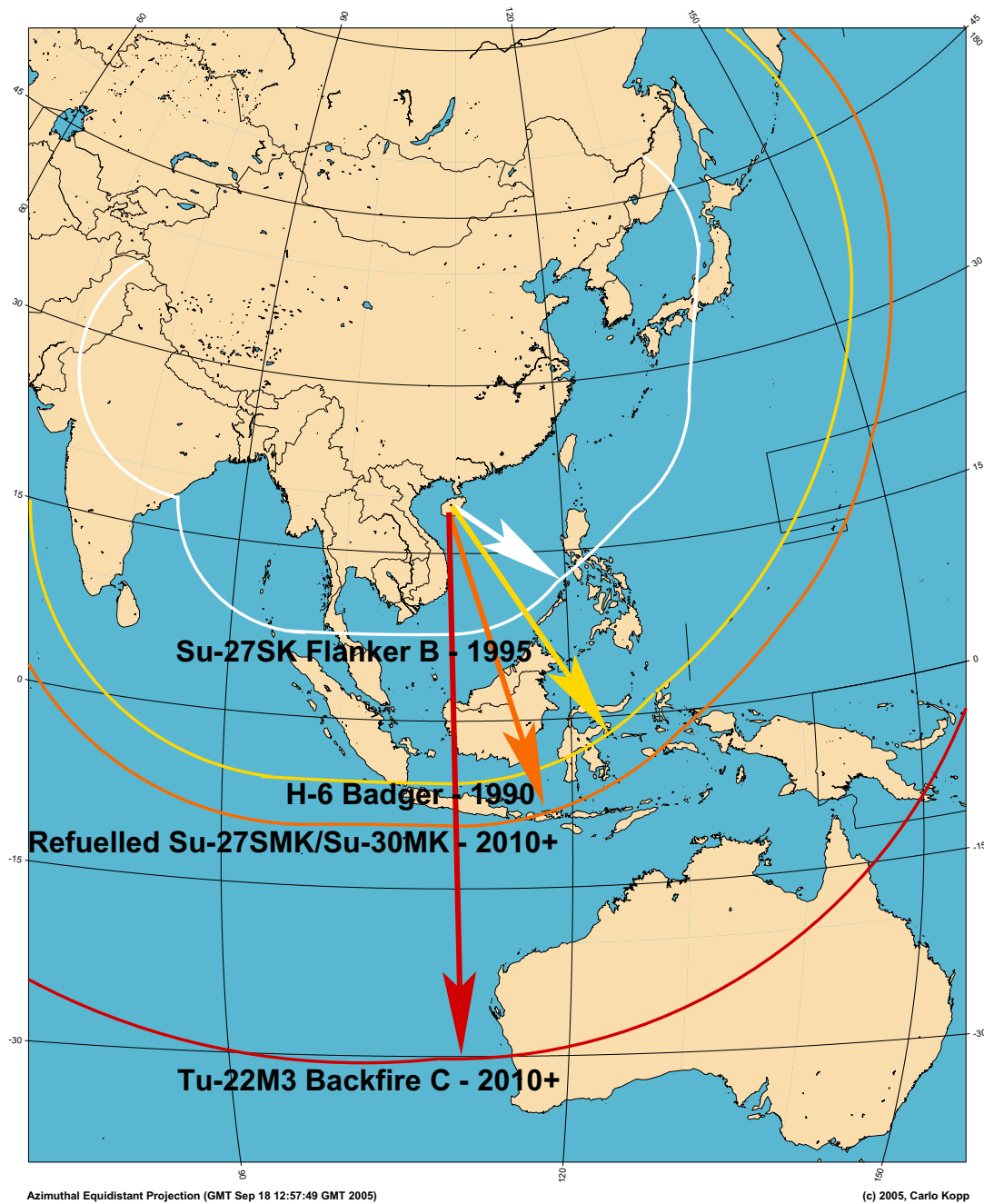
Until the 1990s China's military capabilities were focussed on defeating an invading force from abroad, and mostly comprised reverse engineered early Soviet systems with very limited reach. The PLA of two decades ago was designed to deter invasion and occupation by foreign powers, with the Soviet Union seen as a key threat.

The PLA of the future is being architected to project Chinese power across the Asia-Pacific-Indian region. The future PLA's strength will be centred in cruise missile armed long range strategic bombers and submarines, long range fighters supported by aerial refuelling aircraft, airborne early warning and control aircraft, and modern surface warships, rather than the large land armies of previous decades. This is the most profound change in China's military capabilities ever observed, and rivals the changes observed in the Soviet Union after 1945.

To appreciate the extent of these changes it is necessary to make some detailed comparisons.

1. China is operating and further expanding a fleet of Russian designed Sukhoi Su-27/30 long range fighters, to numbers close to that of the Soviet Sukhoi Su-27 fleet, and the current US fleet of equivalent F-15 fighters.
2. China is negotiating with Russia to acquire surplus Tupolev Tu-22M3, Tu-95MS and possibly new build Tu-160 strategic bombers, the very same systems which were the backbone of Soviet strategic power projection capabilities during the 1980s.
3. China is manufacturing an indigenous long range cruise missile similar to the US RGM-109 Tomahawk, and has acquired samples of the Russian Kh-55 Granat or 'Tomahawk-ski' air launched long range cruise missile for reverse engineering.
4. China has restarted production of the indigenous Xian H-6 Badger bomber aircraft, in a new configuration designed to carry four long range cruise missiles such as the Kh-55. This aircraft compares closely to the long retired UK V-bombers, but will be armed with modern technology cruise missiles.
5. China has negotiated the buy of Russian Ilyushin Il-78MK aerial refuelling tankers to extend the reach and combat persistence of its air force. This aircraft is competitive against the US KC-135 tanker.
6. China is introducing new Type 093 nuclear attack submarines, providing a global capacity to interdict shipping lanes or deliver cruise missiles.

The large scale importing, licensing and reverse engineering of Russian sourced post-Soviet era weapons and delivery systems will provide China with regional reach and punch, comparable to that of the Soviet Union during the late 1980s, but often employing later generation technologies or techniques.



EVOLUTION OF PLA-AF STRIKE CAPABILITIES

Figure 8: China has made significant investments in strike capability over the last 15 years. In 1990 China was limited to the H-6 Badger (yellow), by 1995 China had acquired long range Su-27SK fighters (white). In 2005 China has ordered Il-78MCK aerial refuelling tankers, to support Russian supplied Su-30MCK strike fighters and indigenously assembled Su-27SMK strike fighters (orange). At this time China is negotiating a buy of the Tu-22M3 Backfire strategic bomber (red) and possibly the Tu-95MS cruise missile carrier. This represents the fastest growth in strategic strike capability, globally, since the onset of the Cold War in Europe (C. Kopp).

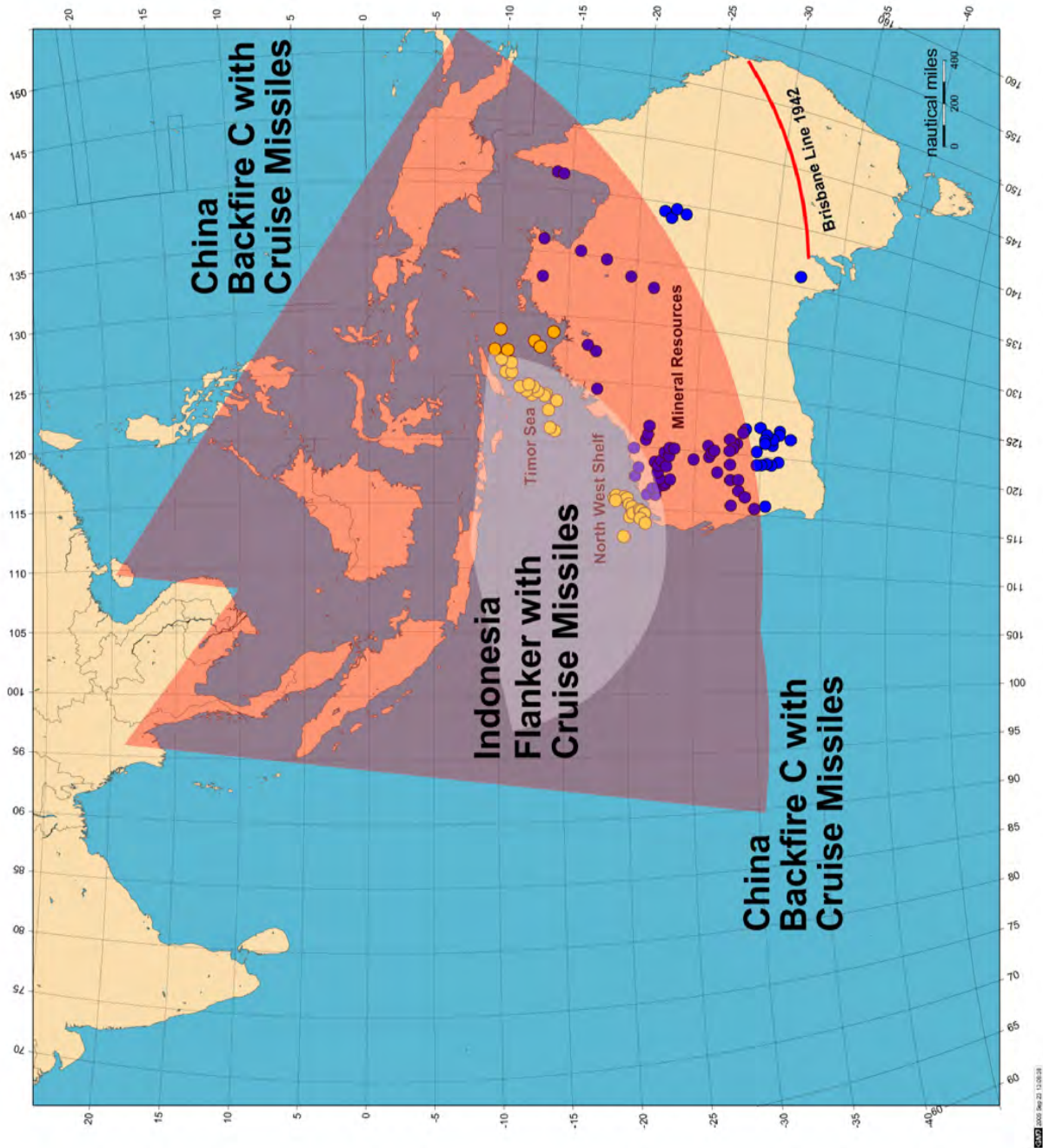


Figure 9: This chart displays the coverage footprints of representative weapon systems being sought, acquired or operated across the region, against Australia's landmass. Resource sites are current as of early 2005 (C. Kopp).

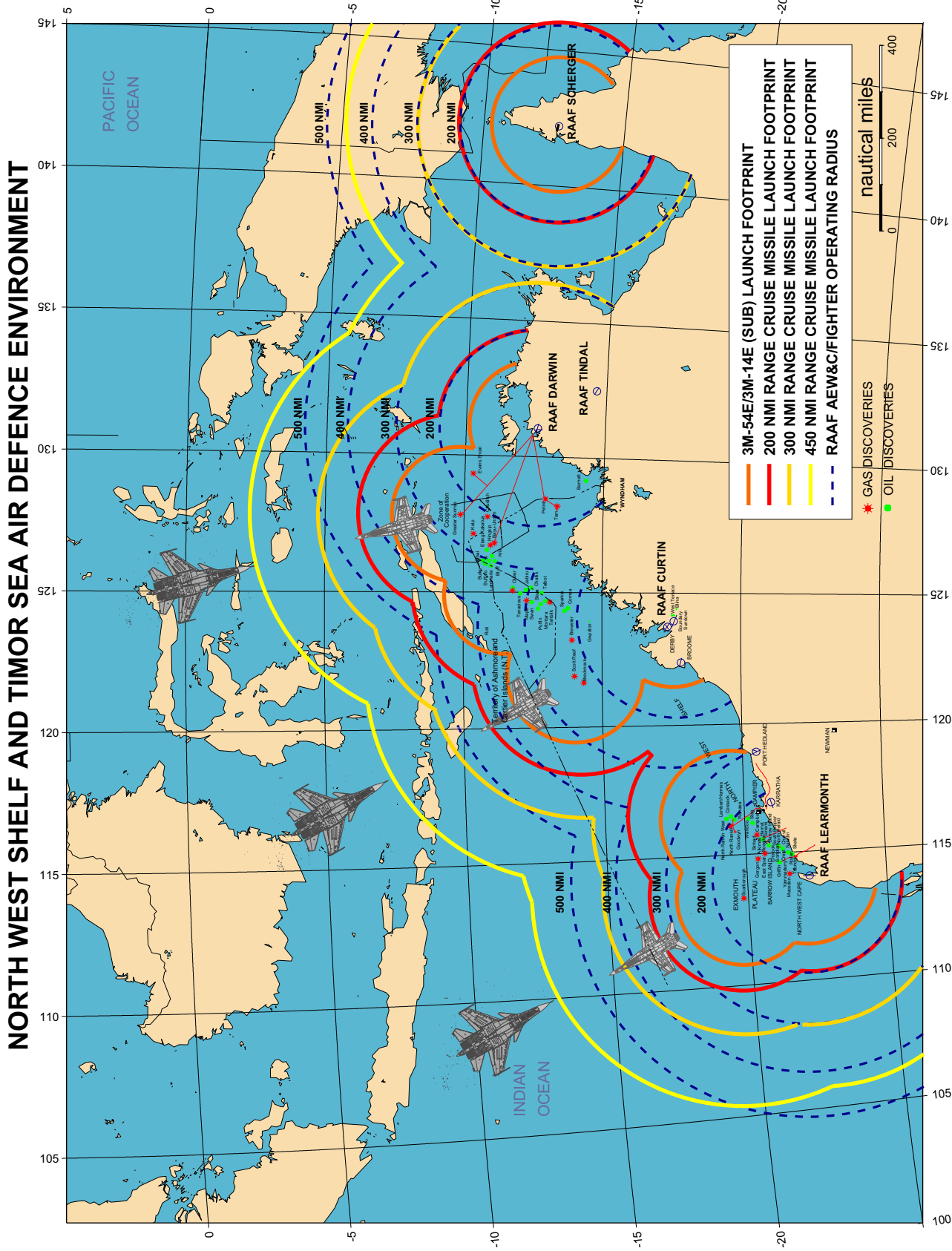


Figure 10: This map depicts key features of the North West Shelf and Timor Sea air defence environment, comparing cruise missile launch footprints against Australian targets with operating radii from RAAF basing (C. Kopp).

It is important to observe that many of these technologies are Russian analogues of technologies central to current planning for the future ADF 'system of systems', based on Network Centric Warfare. Possession of such technologies by China effectively nullifies the asymmetric technological advantage senior Defence officials in Australia argue to justify numerous high risk decisions made in planning for the ADF.

China's possession of strategic bombers and long range cruise missiles will provide a means of effectively bypassing the planned US National Missile Defense (NMD) system, which is designed to defeat ballistic missiles. Unlike Inter Continental Ballistic Missiles (ICBM) and Intermediate Range Ballistic Missiles (IRBM) which can be detected early after launch, cruise missiles provide a very difficult to detect and difficult to defeat first strike capability, at regional or strategic distances.

The use of long range cruise missiles to bypass the US National Missile Defence system is not a new concept. Three years ago Russian analyst Alexander Mozgovoi canvassed this idea in some depth, in the Rosoboronexport house journal 'Military Parade'. He argued that "Low-visibility and low-flying cruise missiles can foil the U.S. efforts to develop the NMD".

China's recently stalled political campaign to lift the EU embargo on military technology exports to China has a very clear strategic aim. This aim is to close the technological gap between many Russian sourced weapons and systems, and US manufactured weapons and systems used by US allies and the US in Asia. China has little need to source military aircraft, warships or smart weapons from the EU, as it can source equivalents from Russia at lower cost. What the EU can offer are advanced radar and optical sensors, militarised computers, digital networking equipment, secure and jam resistant communications, and other high technology niche products which are a half generation ahead of Russian equivalents. In addition, the EU provides a tool for pressuring Russia to make available to China any remaining products currently withheld from export.

The intense opposition by the US to EU military technology exports into the Chinese market reflects a growing concern in the US about the long term strategic impact of China acquiring numerical and technological parity against US and allied military forces in Asia. Russia's opposition to EU military exports into the Chinese market reflects fear of losing a defacto monopoly export market, and fear of the military advantage to be gained by China by combining Russian platforms with EU systems.

It is often argued that China's military buildup is intended to coerce Taiwan into reunification, and deter a US defence of Taiwan. This view is not supported by fact, as the scale and strategic reach of capabilities being developed by China is well in excess of what would be required to defeat Taiwan and make a US defence of Taiwan prohibitively expensive. China's long term aim is clearly to become the dominant military power in Asia, displacing the US from this position.

Achieving a dominant position in Asia would allow China to add a coercive element to its extant policy of using 'soft power' - economic and monetary - to exert influence over regional nations. Unlike the

Soviet Union, which relied mostly on military coercion and export of Marxist revolutionary warfare ideology to propagate its influence, China uses 'soft power' very effectively to achieve its strategic aims.

China has a long history of using military power for coercive purposes. The invasion of northern India during the early 1960s and Vietnam during the late 1970s, and ongoing efforts to intimidate Taiwan illustrate a consistent pattern of conduct. Where an opportunity exists to do so without sanction, China has repeatedly used military force to achieve its policy aims.

It is important to observe that China's philosophy of using military power has differed fundamentally from the Soviet model, insofar as the Soviets never hesitated to use force to expand their empire. China occupied and absorbed Tibet more than four decades ago, in a manner not unlike colonial powers of the past, and has since employed military power mostly to intimidate.

The recent introduction of legislation authorising the use of military force against Taiwan represents an important policy change, as it legislates the acquisition of territory by military invasion rather than political means. This represents a break with over two decades of policy which emphasised 'soft power' over military power as a means of achieving policy aims.

It is unclear at this time what criteria China's leadership might apply to invoke the legislation authorising the use of force against Taiwan. China has yet to clarify what would constitute a trigger for military operations directed at Taiwan, or indeed the scale of such operations.

Within the next decade China will acquire, with or without access to EU military technology, the ability to apply coercive military power against India, Japan, South Korea, Vietnam, Singapore, Malaysia, Indonesia and Australia.

This opens up alternatives not available via the use of 'soft power', to directly influence foreign policy, economic policy and bilateral economic trade relationships with all of these nations. China acquires the capability to 'finlandise' much of Asia and thus deny these nations to the US as basing or staging areas in any future dispute between the US and China. Denying basing to the US within a radius of 500 to 1,000 nautical miles of Chinese territory significantly reduces military options available to the US in dealing with China, and is thus of high strategic value to China. Concomitant to this, China gains longer term opportunities to deny these nations to the US as markets, and as suppliers of raw materials or niche products.

China's developing dual pronged strategy of using 'soft power' and military power reflects a good understanding of how the US exerts influence on the global stage, and in many respects emulates the US model very effectively. As China's strategic aims are mostly regional rather than global, China can focus smaller resources than the US could with much greater effect in Asia.

To date China's effort in using 'soft power' to sow discord between the US and its allies have been remarkably successful, exploiting existing divisions or disagreements over foreign policy and economic policy. Recent statements by China concerning the future of the ANZUS alliance are part of a broader global campaign to disrupt US alliances and isolate the US globally. There can be no

doubt that China's efforts to displace the US as the leading power in Asia will intensify in coming years.

The extent to which the US can frustrate China's longer term strategic ambitions in Asia is an open question. As noted in Section 2, US is suffering the effects of strategic overstretch in attempting to pursue the War on Terror, and occupation of Iraq, with often lukewarm or partly committed allies. Much of the US military recapitalisation program planned for the next two decades is now seriously threatened by severe budgetary cuts. With the US facing block obsolescence and age/usage related wearout in many key military equipment fleets, especially combat aircraft, the prospects are that US power projection capabilities will significantly decline over the next decade, without major near term modernisation investments.

4 Strategic Considerations for the ADF

Australia's current strategic policy in relation to the region is articulated in a range of public documents, including the 2000 Defence White Paper, strategic update documents, and a number of submissions and statements by Defence to parliament, in which interpretations of this policy are presented.

The fundamental strategic paradigm espoused in the 2000 Defence White Paper is a denial strategy model. In denial strategies, a force which is not large enough to control an area of interest is employed to make that area of interest unusable to an opponent by denying unhindered access.

In grand strategy terms, a denial model is a sound approach for Australia to pursue. Our Nation will not have the strategic weight, in numbers of personnel or platforms, to control a region the size of South East Asia and beyond. The ubiquitous arguments about the 'systems of systems' cannot change this fundamental reality. Australia does however have the military potential to effect a potent denial strategy across this footprint, if it invests appropriately in its force structure. Whether such investments are made remains to be seen.

Some observers have argued since 911, that Australia should abandon the regional focus and denial strategy espoused in existing strategic doctrine, and optimise the ADF force structure for participation in distant US led expeditionary actions, primarily those arising as part of the Global War On Terror. This idea is strategically very risky given the military growth observed across the region over the last decade. It also ignores the reality that the types of capabilities and platforms most valuable to the US in distant expeditionary actions are those capabilities which the US does not have in abundance. It should come as no surprise that these very same capabilities, such as air dominance fighters, deep strike aircraft, aerial refuelling tanker aircraft, Airborne Early Warning and Control aircraft and airborne support jamming aircraft are the very same capabilities Australia requires to effect a credible denial strategy in this region.

Where the principal difficulties arise at this time in Australia's strategic planning for the region are the areas of interpretation of strategic doctrine and implementation of ADF force structure. In practical terms, senior Defence officials have opted to interpret statements in the 2000 Defence White Paper to exclude planning for contingencies arising due to developments outside South East Asia. This is despite the reality that capabilities now being developed outside the immediate geography of South East Asia will be capable of striking at the Australian mainland and other areas of national interest. These capabilities have mostly been acquired during the period following the development of the 2000 Defence White Paper.

Submission No 15 to the Inquiry into Australian Defence Force Regional Air Superiority by the Department of Defence is illustrative. It states:

'10. The definition of the 'region' for the purposes of this submission is the same definition used in the 2000 Defence White Paper, from which the capability goal of 'maintaining air

combat capability at a level at least comparable qualitatively to any in the region' arises. This equates to the nations and environs of South East Asia and the South West Pacific. Note that operations beyond 'our region' would be as part of a wider coalition and any capability comparison would require a comparison of the coalition capability rather than just that of Australia.'

This interpretation amounts to 'using the letter of the law to defeat the spirit of the law', insofar as the definition of the region used in the 2000 Defence White Paper is an historical artifact of a period where almost all combat aircraft in use in Asia could only reach Australia if based within South East Asia.

With the advent of aerial refuelling capabilities in Asia, the now very likely deployment of surplus ex Soviet strategic bombers, and increasing ownership of air, ship and submarine launched cruise missiles, the premise that basing in South East Asia would be a necessary prerequisite for the deployment of air assets or cruise missile delivery assets, capable of striking at Australia and its interests, is no longer valid.

The second obsoleted assumption being exploited in this interpretation of the 2000 Defence White Paper is that of 'maintaining air combat capability at a level at least comparable qualitatively to any in the region'. This assumption is only safe strategically if we assume that Australia holds a decisive advantage in numerical terms and aircrew skills over regional nations with qualitatively comparable combat aircraft. While that may still hold in relation to Indonesia's TNI-AU and Malaysia's RMAF at this time, it is not generally true for the larger regional players, nor is it likely to be true in the future for the regional players of interest.

The third obsoleted assumption being exploited in this interpretation of the 2000 Defence White Paper is that of 'operations beyond 'our region' would be as part of a wider coalition and any capability comparison would require a comparison of the coalition capability'. Given current and future pressures on the United States it is unsafe strategically to assume that the United States could intervene in strength, quickly enough to preclude significant damage to Australian interests, should a regional contingency arise which Australia cannot handle unilaterally. Moreover, what assets the United States could make available may not be known until shortly before a deployment, leaving no time for Australia to make applicable changes to its own force structure.

The selective and demonstrably myopic interpretation of the 2000 Defence White Paper is clearly central to how senior Defence officials think about force structure planning.

Evidence to the JSCFADT provided at the March 31, 2006, hearing in the Inquiry into Australian Defence Force Regional Air Superiority, by Deputy Secretary, Strategy, Michael Pezzullo, is illustrative:

'The government's outstanding guidance for Defence is contained in the Defence White Paper 2000. That lays out the foundational basis upon which we do all of our planning, be that for air combat, or other capabilities, and it certainly guides the work that I do and the work that General Hurley does down the line from me in terms of developing capability strategies for government consideration.'

There have been two updates, as this committee would be well aware, to that document, but the fundamental policy, as the Prime Minister reaffirmed last December, remains the Defence 2000 White Paper. That is what we have to go on. We are not military or aviation enthusiasts, who just go off in the blue sky, if I can dare say that, and design our own capabilities independent of government direction. Government direction, of course, is informed by professional advice that we provide to them. The government has laid down quite clearly what it requires from us in terms of air combat capability. The White Paper determines that Defence will maintain and further develop and integrate and balance a joint force comprised of principally maritime capabilities which is to say mostly air and naval forces that can defend Australia by denying the air and sea approaches to Australia by any credible hostile force.

That is on the public record; it is unclassified information. It also requires certain other things from intelligence capability, strike capability and land forces that are not directly germane here, although they have a bearing when you look at the totality of how we achieve military effects.'

This statement is non-sequitur as the Deputy Secretary attributes current interpretation of strategy to 'Government direction'. Concurrently, he also argues that this direction is 'informed by professional advice that we provide to them'. Clearly that 'professional advice' did not include advice that a number of key underpinning assumptions in the 2000 Defence White Paper are no longer valid.

Determining whether the failure to provide such advice to Government was a strategic analysis failure on the part of the Deputy Secretary, or an artifact of other difficulties within Defence, is beyond the scope of this discussion.

What is clear is that current thinking on strategy within the upper echelons of Defence is not taking into account the growth in regional power projection capabilities, with the consequent option of use of coercive power against Australia, while it is also not taking into account developing and extant pressures on the United States, articulated very clearly in the Quadrennial Defense Review report.

Further statements by the Deputy Secretary, in reference to the Air Power Australia submission to the JSCFADT, make this quite clear:

'The scenario, and it is scenario based, that ultimately is embedded in the alternative submission, is predicated upon a massive erosion of US military and strategic capability. It is predicated upon Australia having to operate independently beyond our immediate regions, as I have defined them in my earlier remarks. It is predicated upon a radically different set of strategic circumstances which, I must say, I do not necessarily see even in the most speculative parts of my crystal ball.

The scenario sketched out in the comprehensive submission that you have before you from another party would require, and therefore by definition there would be, a strong element of lead time and warning time be available to us. It would require government of whichever persuasion to radically rethink the scale of its defence budget and the level of investment, particularly in capital.

It would require Australia to become self-reliant in a much larger force. It would also require and I think this is the most problematic set of assumptions that our access to the alliance capability and interoperability that we seek to have with our US alliance partners, in a whole range of scenarios and contingencies, be extinguished almost to zero. The only basis upon which I could see that arising would be through a massive political rupture in the relationship. It would also require a massive erosion of the US military capability edge which, again, I do not foresee even in the most speculative parts of my crystal ball.'

The analysis in the Air Power Australia submission was capability based rather than scenario based, and focussed on strategic options available to regional players. The claim that it is scenario based is an incorrect assertion.

As noted previously in this submission, 'a strong element of lead time and warning time be available to us' is not a valid assumption. Once capabilities are in place within the region, a decision to use them against Australia is function of intent of the owner of these capabilities, and any perceived sanctions the owner may assess as risks following the use or threat of use of these capabilities.

The claim that the Air Power Australia submission assumes the loss of 'alliance capability and interoperability that we seek to have with our US alliance partners' is false. However, what is more relevant is that having access to 'alliance capability and interoperability' has no bearing on a decision by a regional player to use or coercively threaten the use of a power projection capability against Australia. How 'interoperability' with the United States has any bearing on this matter is wholly unclear, but this statement does illustrate yet again a problem arising in statements by Defence officials, where language is used imprecisely.

The Deputy Secretary asserts that 'The only basis upon which I could see that arising would be through a massive political rupture in the relationship.' This is also non sequitur in the sense that Australia could have a firm commitment to intervention on the part of the United States yet it could still be subjected to threats of attack or an actual attack, both well within timescales that the United States would have difficulty in responding to.

The claim that 'It would also require a massive erosion of the US military capability edge which, again, I do not foresee even in the most speculative parts of my crystal ball' clearly illustrates that the Deputy Secretary has not understood the Quadrennial Defense Review report or its immediate and longer term implications. Erosion of US capabilities is now under way and the point at which it 'bottoms out' remains to be determined.

Subsequent evidence by the Deputy Secretary, in reference to the Air Power Australia submission to the JSCFADT, reinforces these conclusions:

'But also in terms of the most speculative parts of the crystal ball that I can see, it is one that we do not plan for that is to say a fully networked air force attacking Australia where Australia had no access to the kind of network capabilities that we have been touching on, where Australia's alliance had completely disintegrated for political capability or whatever reasons is something that exists in a parallel universe. I do not mean to say that dismissively.'

For a regional nation to successfully launch a cruise missile attack on Australia or a target of strategic importance to Australia does not require that nation to have a 'fully networked air force'. Indeed, Germany's large scale use of V-1 cruise missiles against the UK in 1944 predated the existence of digital communications technology. This assumption is simply false.

In terms of Australia losing the use of its planned networking capabilities, it does not require that 'Australia's alliance had completely disintegrated for political, capability or whatever reasons'. The use of long range missiles such as the Russian designed R-172 or R-37 against Airborne Early Warning and Control aircraft, or against any aerial refuelling tanker aircraft used as network relays, would substantially deny the availability of the network. No differently, the use of suitable jammer equipment could also degrade the network, or preclude its use while being jammed. There is no requirement for an attacking air force to be networked to use either 'anti-AWACS' long range missiles or high power jamming equipment. Marketing materials produced by Sukhoi now available on the Internet clearly illustrate that disruption of networks and destruction of Airborne Early Warning and Control aircraft by long range missile attack are a major selling point in the marketing of Sukhoi fighter aircraft globally. The implicit assumption in the evidence provided by the Deputy Secretary that such capabilities will not be available to regional operators or indeed used is simply not supportable by the evidence. Indeed, development of these technologies was initiated during the last months of the Cold War by the Soviets to 'equalise' the odds in combat against NATO, which would have had an overwhelming advantage otherwise.

Equally so the notion that such capabilities cannot be operated by regional nations is nonsense - India is now tooling up to manufacture the R-172 missile, and used the TKS-2 intra-flight network to defeat US Air Force F-15Cs in the Cope India exercise.

It is clear beyond any doubt that senior Defence officials do not understand the import of strategic changes to the region and strategic changes in United States' capabilities, and the impact of these strategic changes upon Australia. It is also clear, beyond any doubt, that senior Defence officials have not provided sound advice to Government on these matters. It is unclear why senior Defence officials impute that responsibility for this situation lies with the Government, as there is no evidence to support that proposition.

The reality that developing regional capabilities and erosion of US power invalidate some of the assumptions underpinning the 2000 Defence White Paper does not invalidate the basic denial model espoused by that document.

The denial strategy model remains the best choice for Australia and will remain so unless Australia changes demographically to the extent that it can support an ADF twice or more the size of the current ADF. From a strategy perspective, a simple Strategic Update document which redefines how Australia sees the region would be adequate, were this redefinition to include 'all regional nations which have or are developing the capability to deliver strikes against the Australian mainland or Australia's interests in the region'.

Such a redefinition was first proposed by one of the authors of this submission in a June 2000 ministerial submission, and has been the basis of subsequent related submissions⁴.

In force structure terms, extending the credible footprint of the ADF to permit effective denial operations beyond South East Asia requires primarily additional aerial refuelling aircraft, in credible numbers, and retention of the type of long range strike capability characteristic of the F-111. Some growth in satellite and HF communications would also be required.

In strategy terms, the additional reach of the ADF afforded by a much larger fleet of aerial refuelling tankers and strike aircraft with greater range than the JSF also translates into the ability to project a significantly larger number of RAAF combat aircraft across South East Asia, than current planning permits. This is strategically important since it acts as a deterrent to any major regional player gaining basing access within South East Asia, with the aim of intimidating Australia.

Considerations of capability need arising from a redefined regional footprint for the ADF are not confined to the projection of striking power with deterrent aims alone.

The reality is that the ADF will need a significantly stronger capability to deter and discourage, or defeat any long range strikes launched from outside South East Asian geography. This is now a strategic inevitability.

This capability depends as much on having sufficiently robust aerial refuelling capability to deploy and maintain uninterrupted air defence coverage across the North and North West of the continent, as it is dependent on having high capability category air combat fighter aircraft to engage opposing fighters, supersonic strategic bombers and launched cruise missiles, and sufficient numbers of supporting Airborne Early Warning and Control aircraft.

It takes very little analysis to observe that current planning, centred on the Joint Strike Fighter, will not provide the type of capability required to be credible. The F-22A is far better suited for this role by virtue of its supersonic cruise capability and much better radar footprint and missile payload. The Joint Strike Fighter may well be a good choice for battlefield interdiction and close air support of ground troops, but it is out of its league as an air superiority and air defence fighter.

A detailed discussion of the capability needs to be filled to achieve a credible capability for the ADF in dealing with the developing region is provided in the Air Power Australia submission entitled 'Attaining Air Superiority in the Region'. For convenience, Tables 3 and 4 are reproduced in this submission as Tables 1 and 2⁵.

In raw budgetary terms, accommodating the changes to force structure resulting from the required readjustment of Australia's strategic area of interest would not incur prohibitive costs. Replacement of 71 F/A-18As with around fifty F-22A aircraft incurs procurement costs, based on current US

figures, of around half of the sum proposed for the acquisition of the Joint Strike Fighter. Savings incurred by not performing structural rebuilds on the F/A-18A HUG, and retaining and upgrading the F-111, rather than replacing it with new aircraft, would be considerable. The existing budget proposed for the acquisition of the Joint Strike Fighter can easily accommodate the cost of additional capabilities.

Demonstrably, the force structure model proposed by Industry during the 2001/02 period is far more capable, far more cost effective and far less risky than the current plans espoused by senior Defence officials⁶.

These capabilities include additional aerial refuelling tankers rebuilt from refurbished Boeing 747-400 aircraft. Initial planning for the AIR 5402 effort was centred on the use of refurbished aircraft as these were found to be economically viable, a conclusion also reached in the recent RAND Analysis of Alternatives for aerial refuelling, a report which also identifies the Boeing 747-400 aircraft to be suitable for this purpose⁷.

Force Structure Model for Air Superiority

Type	Number	Unit	Category
F-22A Raptor	50	3, 75, 77 SQN, 2 OCU	Tactical Fighter, Air Combat
F-111S	36	1, 6 SQN	Tactical Fighter, Strike Recce
Wedgetail	8	2 SQN	AEW&C
EP-8A	4	2 SQN	SIGINT/ELINT
AP-3C	12	11 SQN	ISR, LRMP
RQ-4B Global Hawk	12	10 SQN	ISR, LRCR
KC-747-400	12	33 SQN	AAR/SAL
A330-200	5	33 SQN	AAR/SAL

Table 1: Force structure model designed to ensure air superiority in the future regional environment, excluding wideband electronic attack, dedicated airlift and training capabilities, and attrition aircraft. This table details the results of more than five years of research aimed at solving this capability need.

Category	Roles and Missions
Tactical Fighter, Air Combat	Air Superiority, Air Defence, Precision Strike, Cruise Missile Defence, Reconnaissance
Tactical Fighter, Strike Recce	Precision Strike, Battlefield Strike, Maritime Strike, Imaging Reconnaissance, Cruise Missile Defence
AEW&C	Airborne Early Warning and Control
SIGINT/ELINT	Signals and Electronic Intelligence
ISR	Intelligence Surveillance Reconnaissance
Electronic Attack	Radar, Communications, Network Jamming
LRMP	Long Range Maritime Patrol
LRCR	Long Range Communications Relay
AAR	Air to Air Refuelling
SAL	Strategic Air Lift

Table 2: Force structure model categories. While two multirole tactical fighter categories are defined, each can assume specialised tasks where its capabilities are better suited.

5 Conclusions

Should Australia opt to continue with current Defence planning, especially for the RAAF, Australia will open up the option of strategic coercion to the future leadership of regional nations suitably equipped, and do so during a period when the US will be less able to exercise power in this region on Australia's behalf. The consequence of such a situation arising will be a loss of independence in foreign policy as Australia will become increasingly dependent on decisions made in Washington and regional capitals, and lose the option of making its own choices.

Current Defence planning remains predicated on a myopically constrained definition of 'the region' and the assumption that the region will be benign for coming decades. This assumption disregards the unprecedented growth seen in China's military capabilities, but also disregards the inevitable growth in military capabilities of lesser regional nations, as these react to China's growth. Australia's unilateral pursuit of reduced long term military capabilities, in an environment where all other nations are growing their capabilities, creates a range of unwanted future opportunities for other regional players, at the expense of Australia's interests.

There is no evidence to demonstrate that the advice tendered to Government by senior Defence officials on the strategic risks arising from regional capability growth was supported by intellectually rigorous analysis. Testimony to this Committee, by the Deputy Secretary for Strategy, detailed in Section 4, demonstrates this convincingly. Therefore this advice, and its rationale, are not sustainable. Senior Defence officials had access to a wide range of analytical materials detailing regional capability growth, as early as 1998. Refer the Joint Standing Committee on Foreign Affairs, Defence and Trade, *Review of the Defence Annual Report, 2002-2003*.

Australia's long term strategic relevance in the region will depend strongly on Asia's perceptions of Australia's strength, and thus its capacity to play an important role in the regional strategic context. If Australia is to earn the respect it deserves in Asia, it must be seen to have military capabilities which are both important and relevant to the region.

Submission Endnotes

¹ Some excellent examples are the relationships between Japan and the Koreans, Japan and China, Japan and Indonesia, Malaysia and Indonesia, China and India, China and Vietnam, China and Myanmar, China and North Korea, the bilateral relationships between all of these nations and the United States. The complexity of Australia's relationships with its nearer neighbours, Japan, the United States and China is a case study in its own right.

² A visit to any of the major military trade shows in the region will provide more than ample evidence of this trend.

³ The unpalatable political reality the Bush administration must deal with is maintaining community support for the occupation and rebuilding of Iraq. That, and ongoing expenditures in the Global War on Terror, present a far more immediate political issue for the administration, in comparison with securing the long term US strategic position in Asia. It is notable that these pressures have significantly influenced administration public comments on developments in Asia, since 911.

⁴ Refer Kopp C, *Regional Denial: An Alternative Deterrent Strategy for the ADF*, A Contribution to the ADF Force Structure Debate, June 2000, unpublished ministerial submission. This document was written as a supplement to RAAF APSC Working Paper 82, *A Strategic Tanker/Transport Force for the ADF*, published in 2000, and provided a supporting strategic rationale for the expansion of the RAAF's tanker fleet.

⁵ Kopp Carlo and Goon Peter (2006), 'Attaining Air Superiority in the Region - Inquiry into Australian Defence Force Regional Air Superiority', Submission to the JOINT STANDING COMMITTEE ON FOREIGN AFFAIRS, DEFENCE AND TRADE DEFENCE SUBCOMMITTEE, February 17, <http://www.aph.gov.au/house/committee/jfadt/adfair/subs/sub20.pdf>, last accessed April 2006.

⁶ Refer Kopp Carlo and Goon Peter (2006), 'Attaining Air Superiority in the Region - Inquiry into Australian Defence Force Regional Air Superiority', Submission to the JOINT STANDING COMMITTEE ON FOREIGN AFFAIRS, DEFENCE AND TRADE DEFENCE SUBCOMMITTEE, February 17, <http://www.aph.gov.au/house/committee/jfadt/adfair/subs/sub20.pdf>, last accessed April 2006.

⁷ Refer Kopp C and Cooper B.H, Brigadier (ret), 'KC-33A: Closing the Aerial Refuelling and Strategic Air Mobility Gaps', Air Power Australia Analyses, Volume II - APA-2005-02; and Kennedy M et al, 'Analysis of Alternatives (AoA) for KC-135 Recapitalization', Executive Summary, RAND Corporation, Research Report, March 2006, F49642-01-C-0003.

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7 Annex B - Developing PLA-AF and PLA-N Capabilities

The following material was compiled from publicly available sources and reflects the best currently available unclassified intelligence.



Additional Resources

Regional Capabilities: <http://www.ausairpower.net/region.html>

Regional Strategy: <http://www.ausairpower.net/strategy.html>

Weapons Capabilities: <http://www.ausairpower.net/weps.html>

Defence Policy: <http://www.ausairpower.net/policy.html>

F-111: <http://www.ausairpower.net/pig.html>

F/A-18A Hornet: <http://www.ausairpower.net/bug.html>

Joint Strike Fighter: <http://www.ausairpower.net/jsf.html>

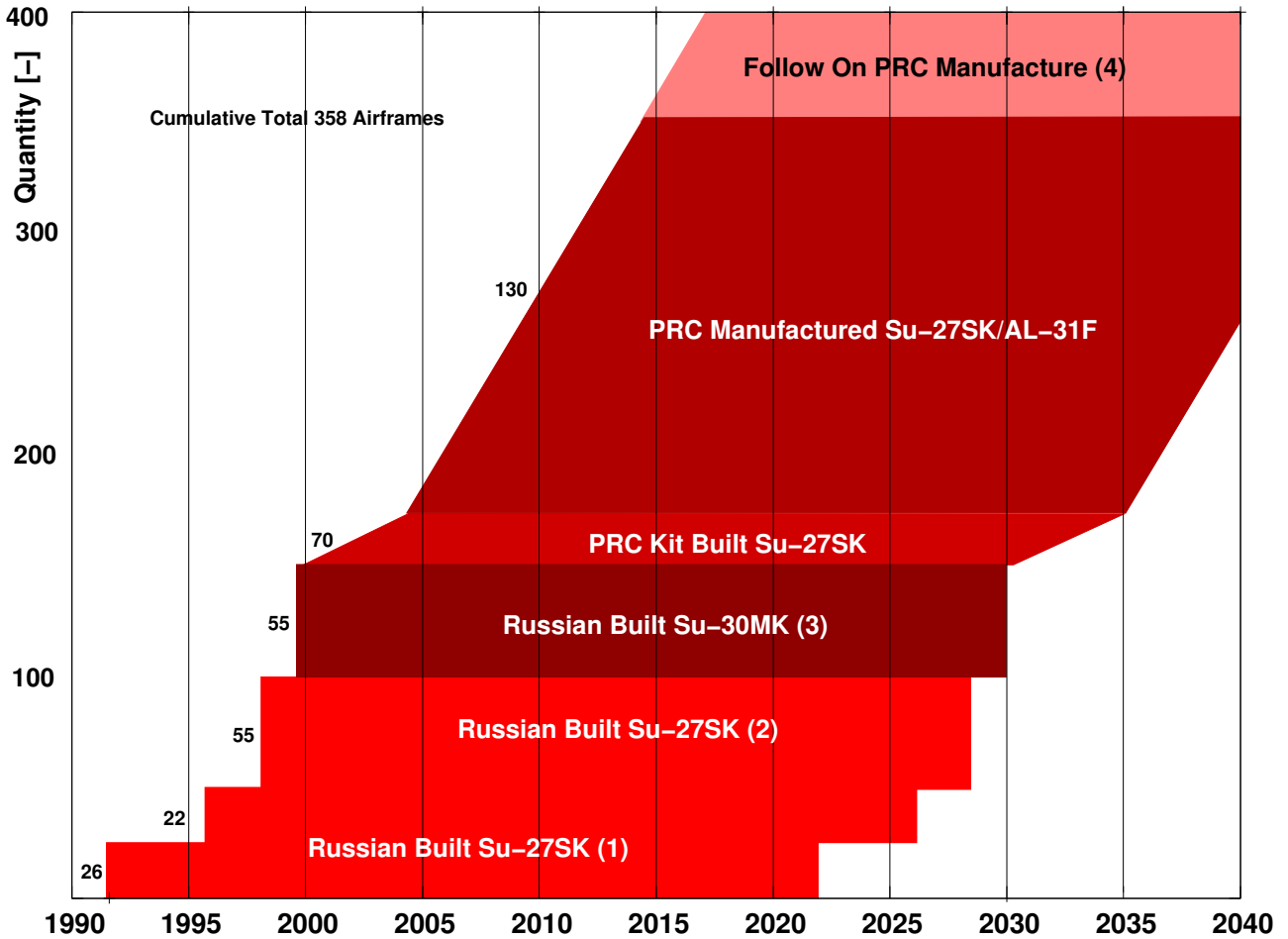
F/A-22A Raptor: <http://www.ausairpower.net/raptor.html>



Figure 11: *The KNAAPO/Shenyang J-11 is an imported or licence built Russian Su-27SK/UBK long range multirole fighter, broadly equivalent to the US F-15C Eagle. Licence production was suspended until negotiations were completed for the latter 100 Chinese built models to be delivered in a later configuration, specifically the Su-27SMK with precision weapons capabilities. Direct imported Su-27SK/UBK numbers are usually cited at 76 aircraft to date. It is not known whether the Saturn AL-41F supersonic cruise engine is being discussed for the second tranche J-11 build, the AL-41F having entered production last year. Current planning sees around 300 Su-27/J-11 in service by 2015 (PLA).*



Figure 12: The KNAAPO/Sukhoi Su-30MKK and Su-30MK2 are an imported Russian KNAAPO Su-30MK long range strike fighter, broadly equivalent to the US F-15E Strike Eagle. Around 76 Su-30MKK have been delivered with larger numbers likely in the future, the possibility of licence builds has been reported. To date 28 Su-30MK2 have been ordered, with more expected. A further evolved subtype, the Su-30MK3 has been reported (PLA).



- (1) 48 aircraft currently in service comprising mix of Su-27SK and Su-27UBK (ITAR-TASS)
- (2) Reported follow on order of 55 Su-27SK and Su-27UBK (ITAR-TASS 1997)
- (3) Currently under negotiation, reported to be 55 examples of single seat Su-30MK variant
- (4) Speculative

Projected PLA-AF Flanker Variant Deployments

Figure 13: This 1998 projection of KNAAPO/Sukhoi Su-27SK/J-11 and Su-30MKK numbers proved optimistic. Since then additional orders for the Su-30MKK were placed, and the PLA-N Naval Air Arm ordered a further batch of modified Su-30MK2 aircraft to supplement the small fleet of indigenous JH-7 fighters, to perform anti-shipping strike roles. Current totals and orders stand at 380 aircraft, or 63% of the US F-15C/E fleet strength (C. Kopp).



Figure 14: Sukhoi's Su-34 Fullback strike fighter entered initial production last year. This aircraft sits in capability terms between the F-15E strike fighter and the F-111. The PLA is known to have been interested in acquiring this aircraft (Sukhoi bureau).



Figure 15: The Chengdu J-10 is an indigenous Chinese agile multirole fighter and is broadly equivalent to the F-16C, Rafale, Eurofighter Typhoon and defunct Israeli Lavi. It is in low rate initial production (PLA).



Figure 16: China was reported to have ordered several examples of the Russian A-50E AWACS in the wake of the aborted deal to source the better Israeli A-50I Phalcon variant. Since then photographs have emerged of an indigenous conversion, based in concept on the Israeli A-50I. The images illustrate the use of a phased array radar, similar in technology to the new RAAF Wedgetail - the A-50I radar offered by Israel to China was a variant of the radar offered to Australia for the AIR 5077 bid (via Internet).



Figure 17: Russia's latest Tu-160 Blackjack A strategic bomber, similar to the US B-1B Lancer, has been publicly canvassed as an export to the PRC. Deliveries to the PLA-AF would require restarting production in Russia as the Russian Air Force stock is not large enough to provide a surplus. Russia is currently assembling several new build examples from stockpiled components (RuAF).

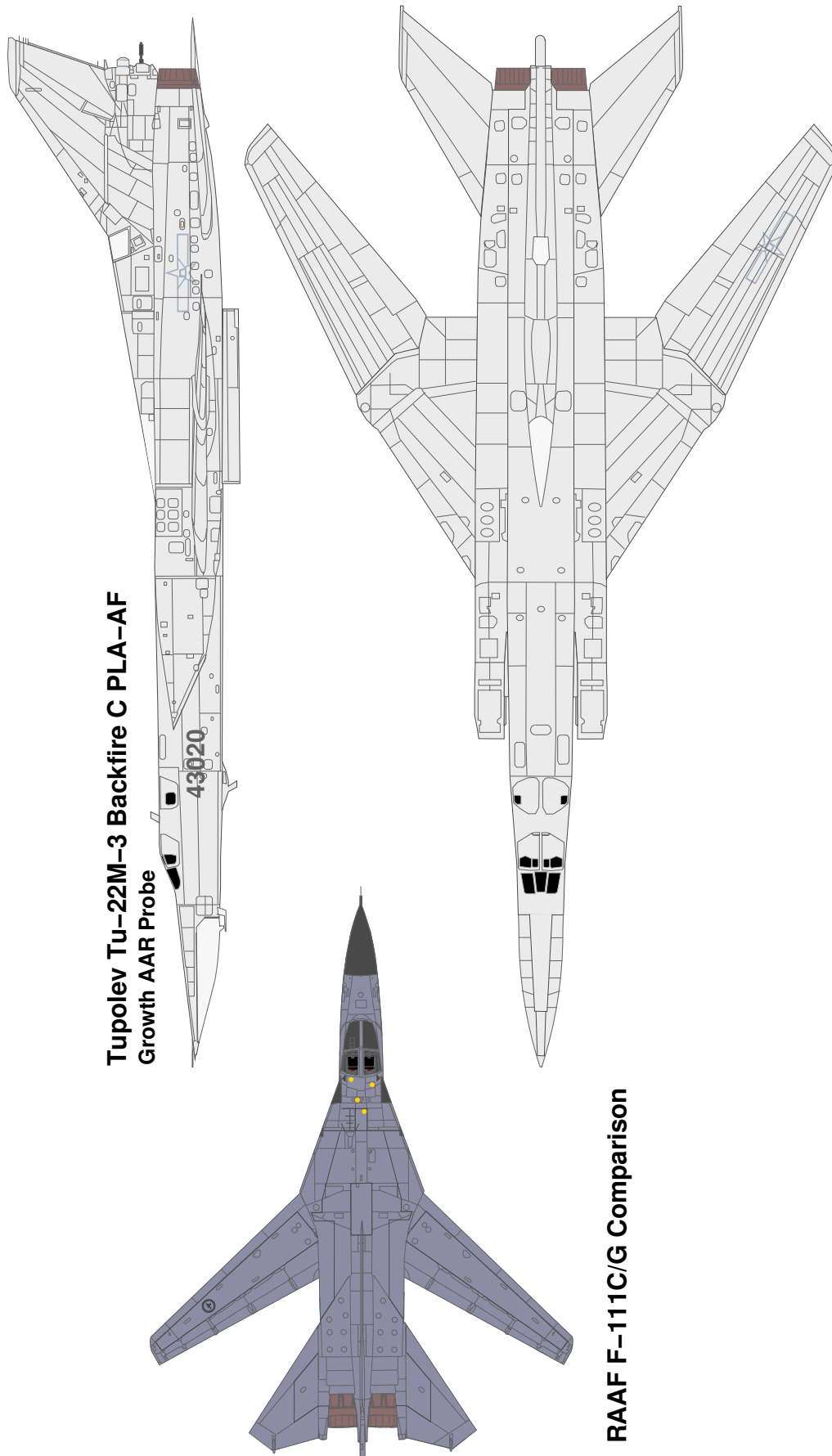
Inquiry into Australia's Regional Strategic Defence Requirements



Figure 18: *The Tu-95MS Bear H cruise missile carrier has been publicly offered to the PLA by Russia. A direct equivalent to the US B-52H, these long range aircraft remained in production until 1993, making the Russian fleet 'young' in accrued airframe hours (US DoD/RuAF).*

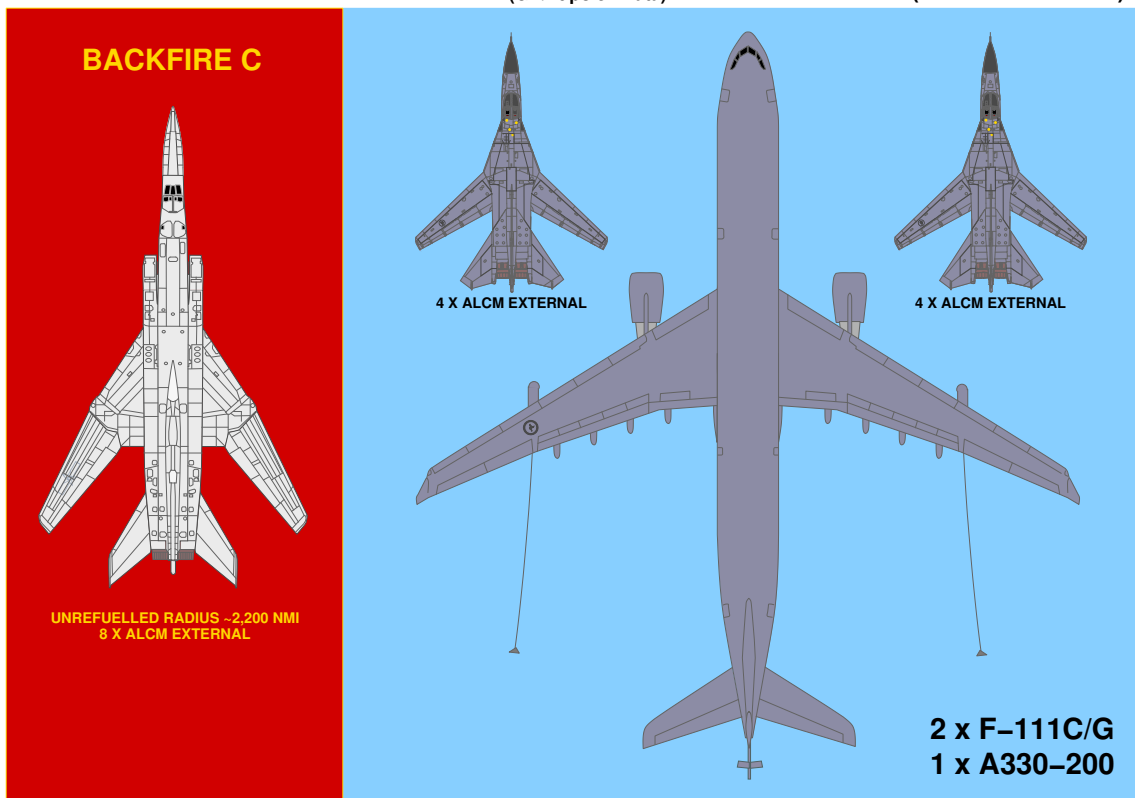
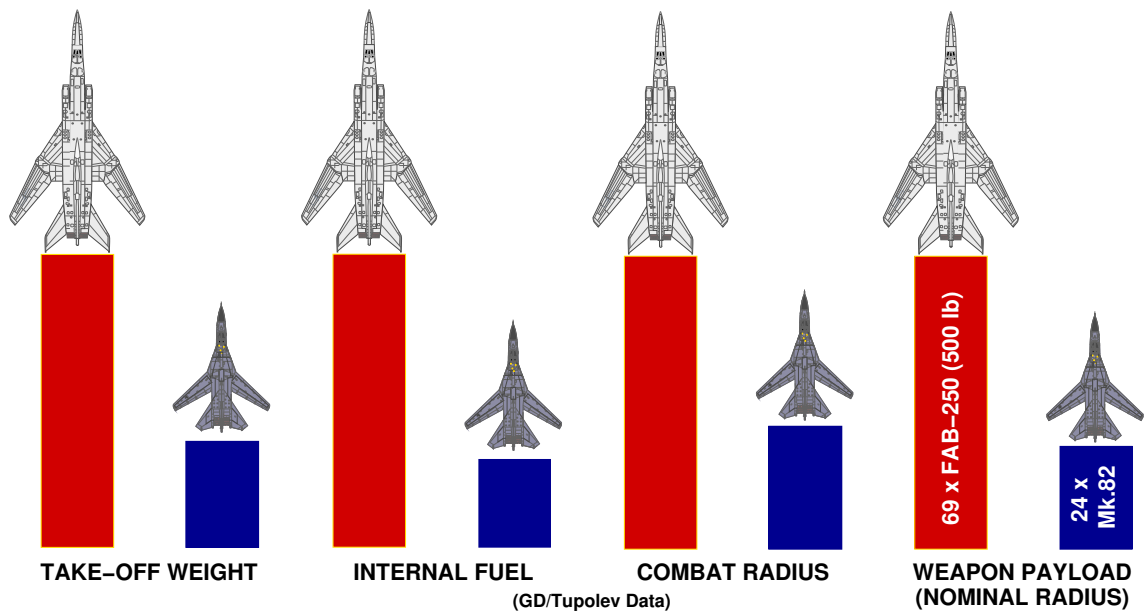


Figure 19: *During the 1990s China made repeated attempts to persuade the Russians to supply the Tu-22M3 Backfire C supersonic strategic bomber, of which around 250 were built during the Cold War. The publicly stated intent to acquire this aircraft now coincides with an export drive by Russia to supply them. Russian sources claim up to forty aircraft could be available for export, in lieu of mothball storage. The aircraft remained in production until the early 1990s, as a result of which much of the fleet has very low accrued airframe hours (RuMoD).*



**Tupolev Tu-22M-3 Backfire C PLA-AF
Growth AAR Probe**

RAAF F-111C/G Comparison



THROW WEIGHT EQUIVALENCE – 8 x CRUISE MISSILES

Figure 20: The strategic weight of the Tu-22M3 can be easily appreciated by parametric comparison against the RAAF's F-111s. A single cruise missile armed Backfire delivers the punch of a pair of F-111s supported by an A330-200 tanker, or four JSFs supported by multiple A330-200 tankers (C. Kopp).

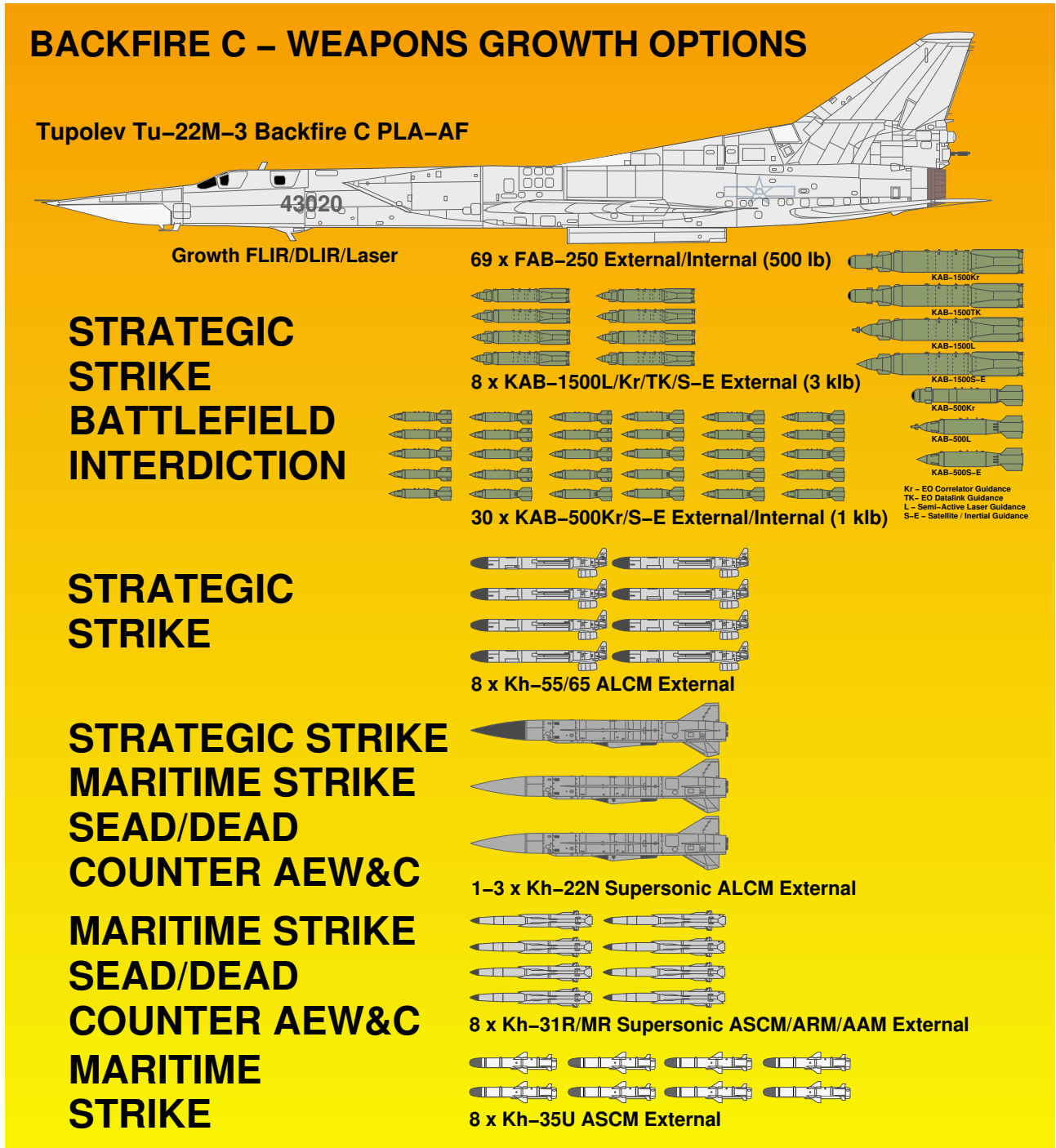


Figure 21: A wide range of weapons options exist for upgrades of the Tu-22M3 Backfire C (C. Kopp).



Figure 22: The Xian H-6 is a reverse engineered Russian Tu-16 Badger, broadly equivalent to the 1960s RAF V-bombers. Production was resumed last year, involving a new H-6H cruise missile carrier variant, tentatively designated the H-6M. Around 150 Badgers are in service, mostly built between 1972 and 1992 (Xian).



Figure 23: These images depict a H-6 Badger being armed with the KD-63, which is an indigenous PLA-AF cruise missile (PLA).

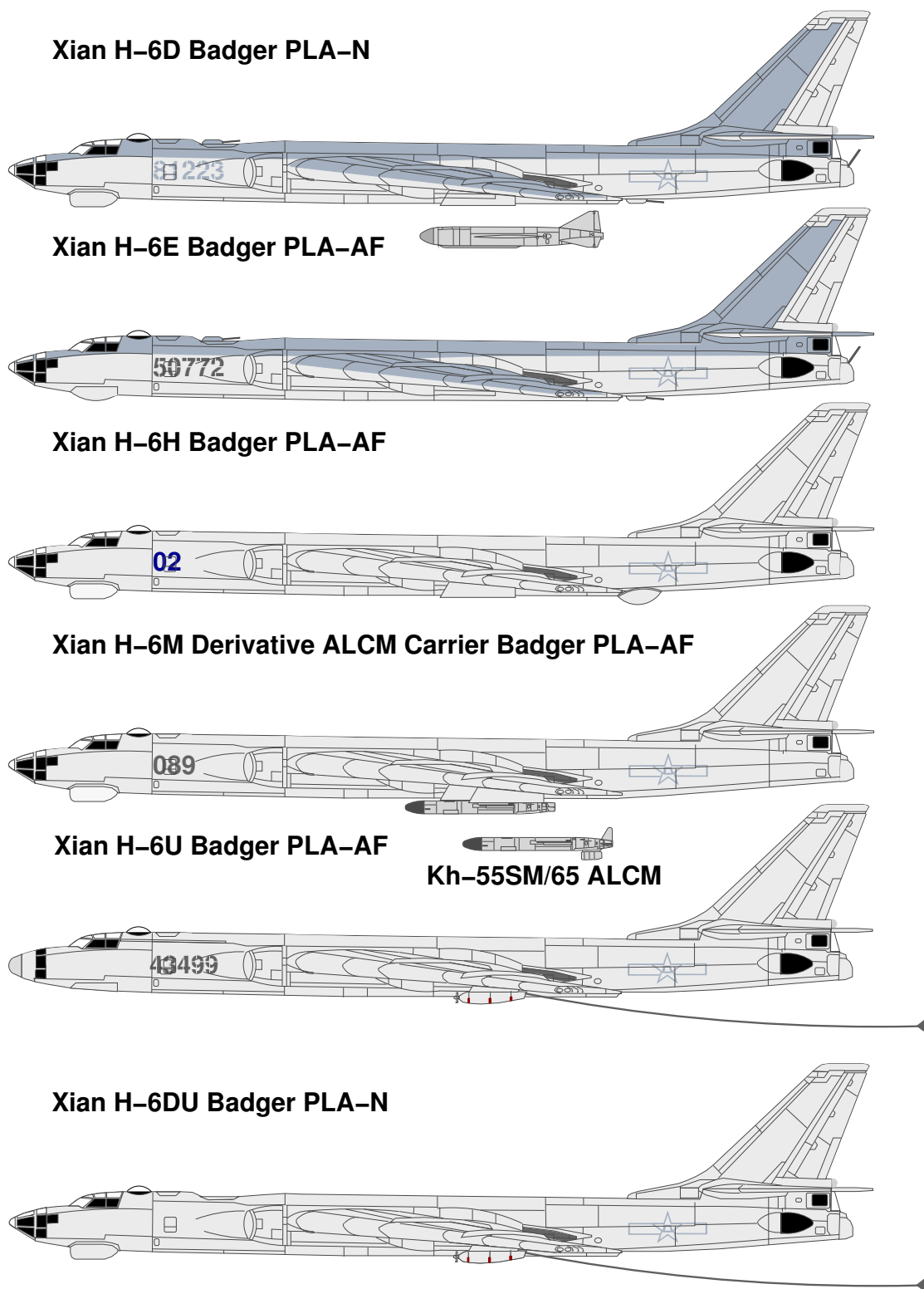


Figure 24: A wide range of H-6 variants exist. In the long term it is expected that cruise missile carrier and aerial refuelling variants will dominate the fleet (C. Kopp).

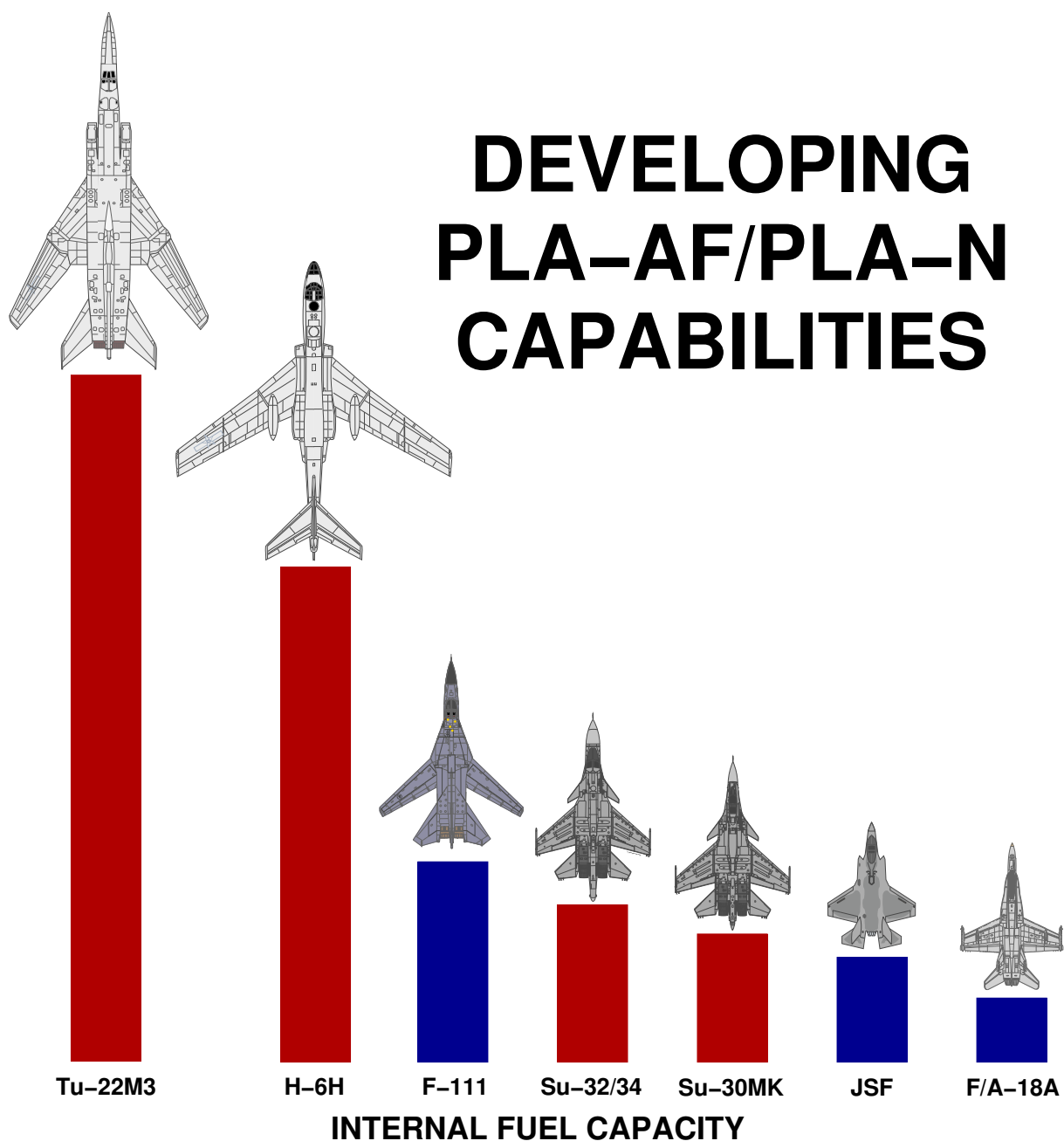
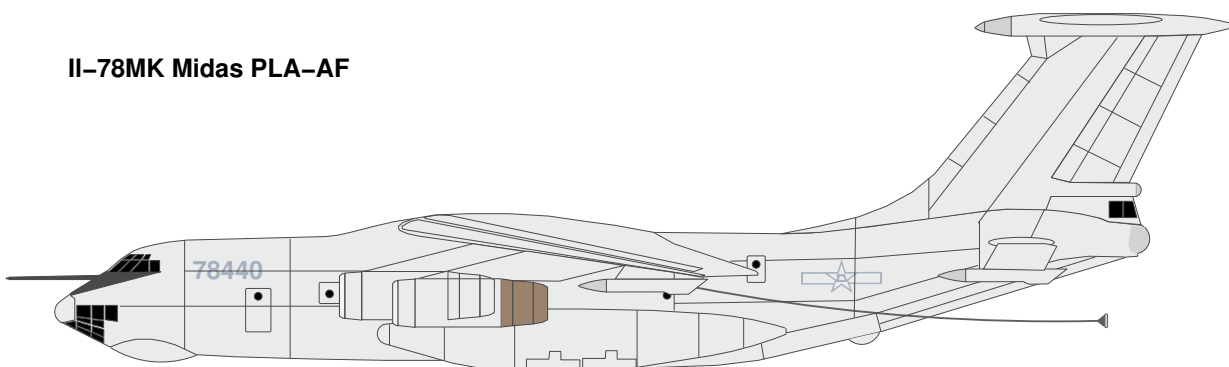


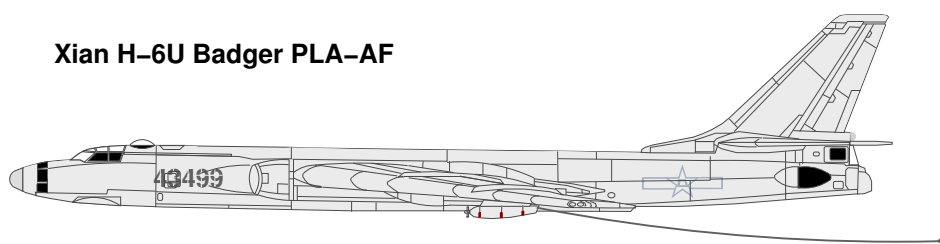
Figure 25: Comparison of internal fuel capacity for a range of combat aircraft. Internal fuel capacity is a measure of effective range and persistence in combat (C. Kopp).



Il-78MK Midas PLA-AF



Xian H-6U Badger PLA-AF



Xian H-6DU Badger PLA-N

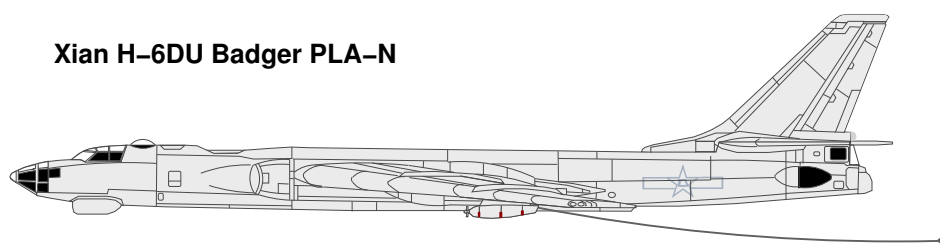


Figure 26: The PLA is reported to negotiated the buy of an initial batch of six Russian Il-78MK Midas tankers, based on the Il-76 Candid airlifter already flown by the PLA-AF. This aircraft compares closely in offload performance to the US KC-135 Stratotanker (RuMoD/C. Kopp).



Figure 27: The Il-78MK Midas tanker uses a variant of the UPAZ-1A Sakhalin aerial refuelling pod, which has also been cleared for buddy refuelling on some variants of the Su-27 fighter (RuMOD).



Figure 28: *The Xian H-6 is the basis of China's indigenous aerial refuelling tanker program. Development was reported to be initially a collaboration with Flight Refuelling Limited in the UK during the 1980s. With the questionable usefulness of the Badger as a conventional strike aircraft, it is likely many more will be converted to tankers, especially given the low age of much of the Badger fleet. As a tanker the Badger compares closely to the now retired RAF Victor K.2 (PLA).*



Figure 29: China continues to manufacture and operate a range of legacy types. The Q-5 is an indigenous evolution of the Russian MiG-19 Farmer and is broadly equivalent to the A-4 Skyhawk. Around 600 are in service. The J-7 is an indigenous evolution of the Russian MiG-21 Fishbed and is broadly equivalent to the Northrop F-5 series, but faster and more agile. Around 700 are in service (PLA).



Figure 30: The J-8-II Finback B is an indigenous Chinese multirole fighter and is broadly equivalent to the Russian Su-15/21 series and RAF Tornado ADV/IDS. The lower image depicts a J-8-II armed with PL-8 missiles, reversed engineered from the Israeli Python 3 (PLA).



Figure 31: The Xian JH-7 is an indigenous Chinese strike fighter and is broadly equivalent to the RAF Tornado IDS. Around 20 serve with the PLA Naval Air Arm, with the PLA-AF recently taking first deliveries of the enhanced JH-7A variant (PLA).



Figure 32: *The PLA acquired a pair of 8,000 tonne Type 956E Sovremenniy class destroyers (Hangzhou, Fuzhou), and subsequently ordered another pair. Armed with the supersonic 3M81 Moskit (SS-N-22 Sunburn) cruise missile, these are the most heavily armed warships in the region. In size and capabilities they compare closely to the DDG-51 Arleigh Burke class destroyer (RuMoD).*

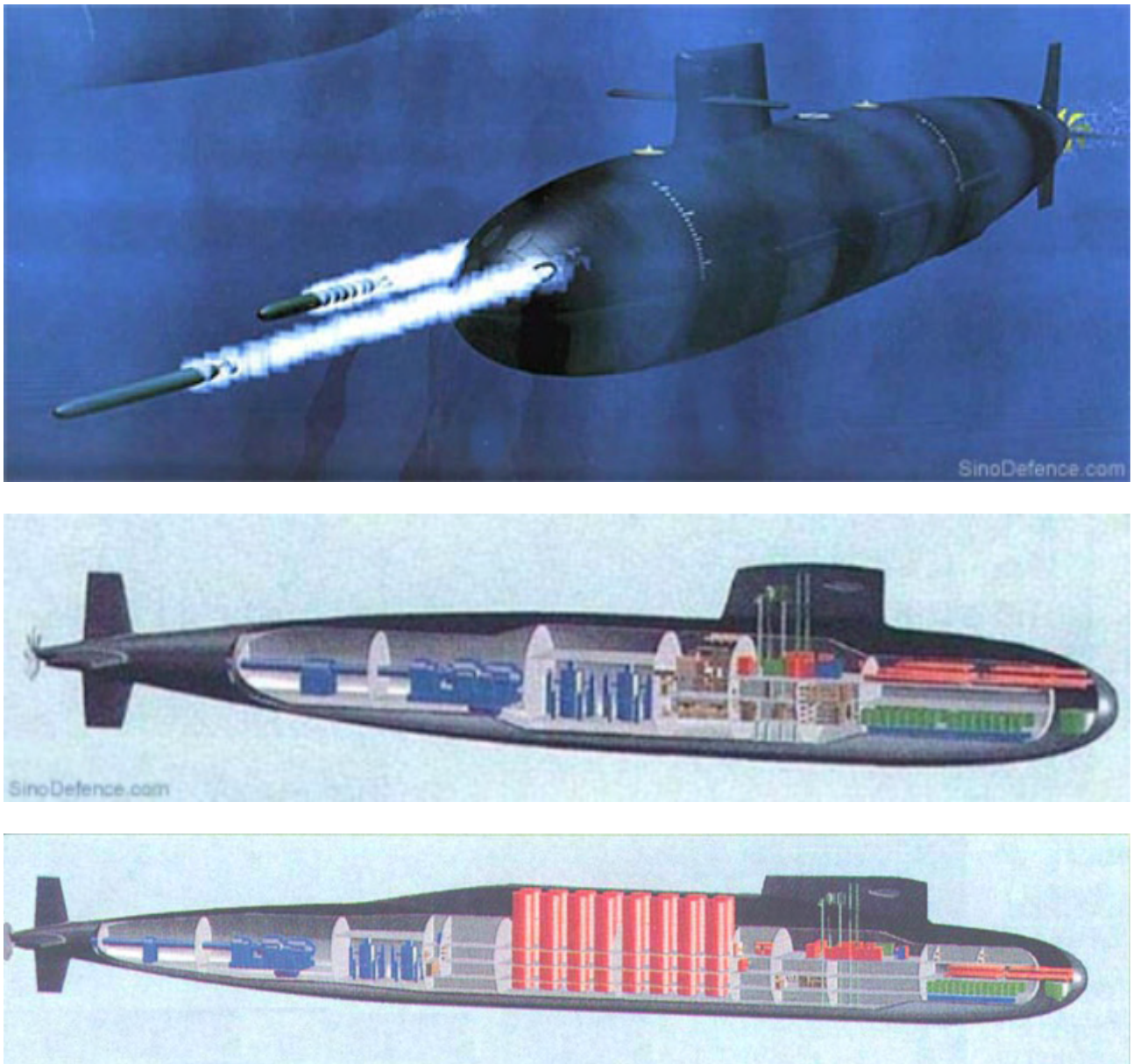


Figure 33: The PLA-N is deploying a new generation of indigenous nuclear powered submarines. The Type 093 is an attack submarine expected to also carry long range cruise missiles, the Type 094 a ballistic missile submarine, to be armed with sixteen JL-2 SLBMs (CSS-NX-4) with MIRV delivery systems (via Internet).

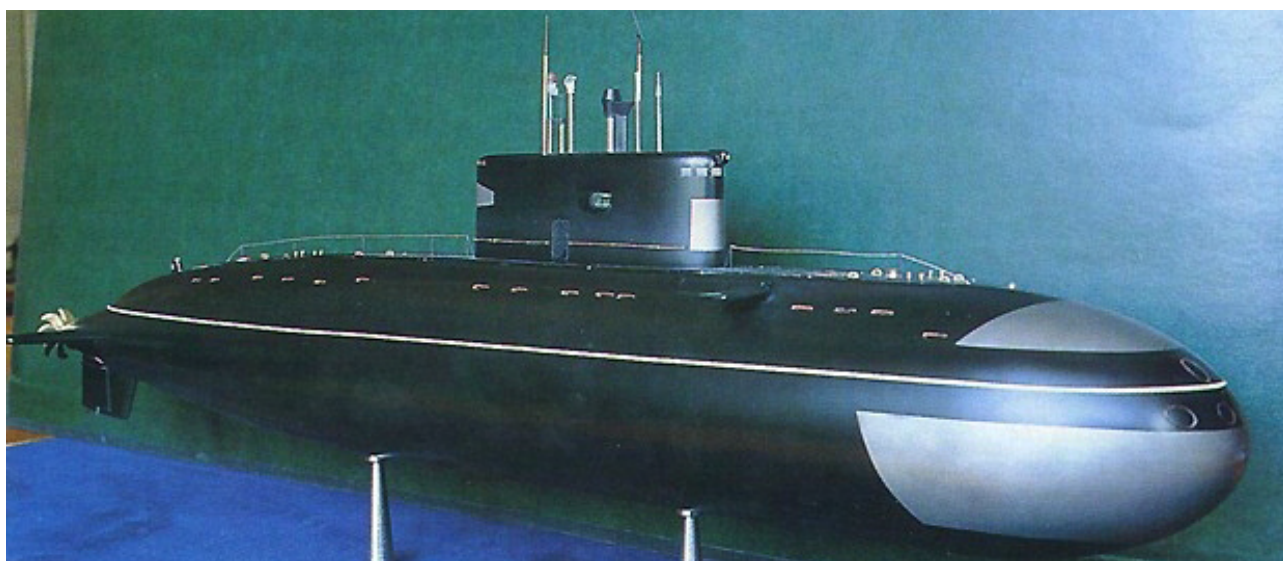


Figure 34: The PLA acquired a pair of Project 877EKM Kilo diesel-electric submarines, followed by a pair of enlarged Project 636 Kilo boats, armed with the 3M-54 series cruise missile. More recently another eight Project 636 Kilo boats were ordered. These low signature boats are considered difficult to defeat (Rosvooruzheniye).

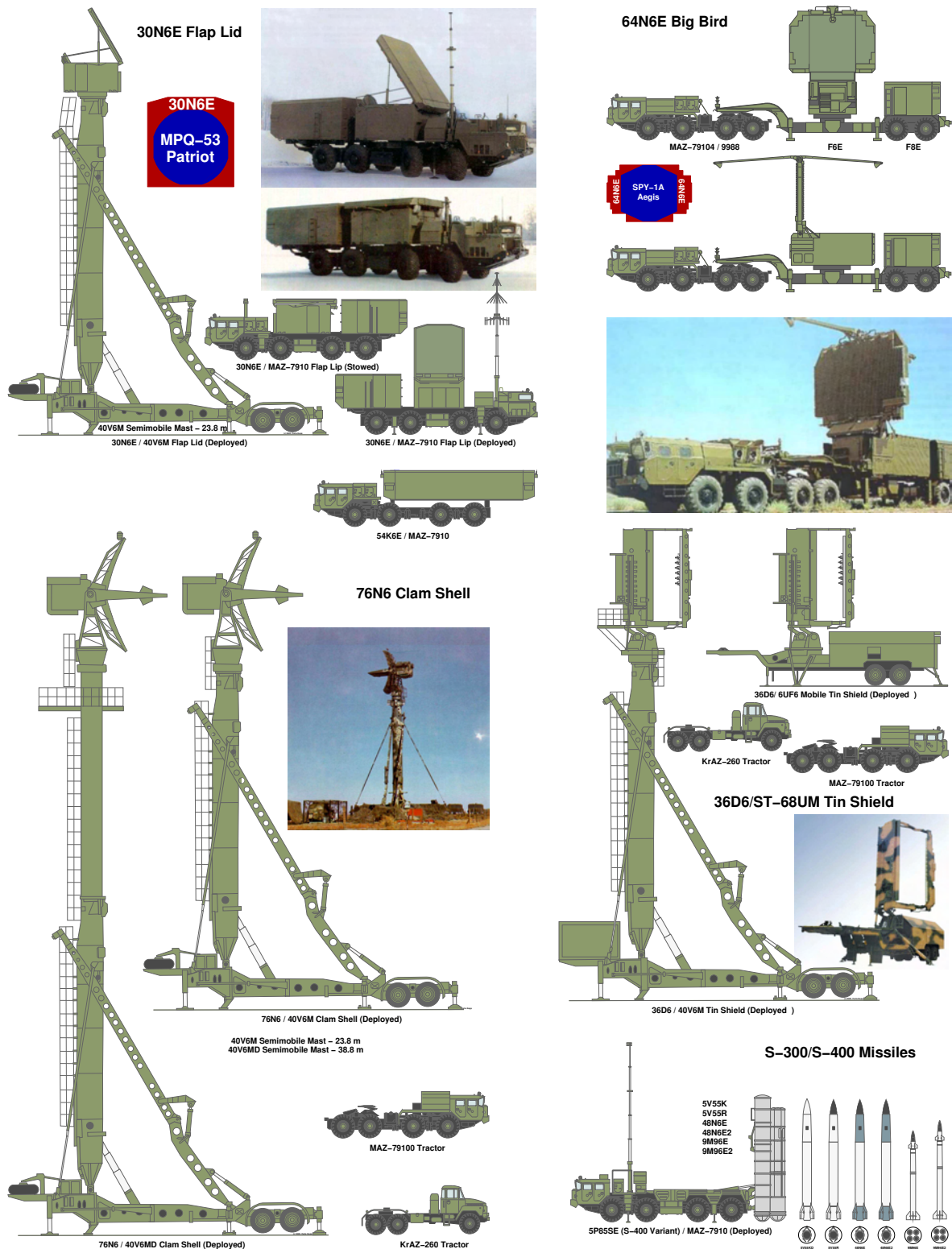


Figure 35: The PLA is the sole significant export client for the S-300PMU (SA-10/20 Grumble) family of SAM systems, with twelve or more batteries reported in service. Last August an additional four to eight batteries were ordered. The SA-10 is a Russian analogue to the US Patriot system, although the 64N6 acquisition radar in later models best compares to the SPY-1 Aegis system. It is not known when the improved S-400 system will be ordered (Almaz, LEMZ, C. Kopp).

Inquiry into Australia’s Regional Strategic Defence Requirements



Figure 36: The PLA uses the SA-10 as a replacement for the obsolete S-75 system, reversed engineered by Chinese industry as the HQ-2, and available in semimobile variants and full mobile variants. US sources claim that a licenced SA-10 variant, the HQ-9, is being manufactured in China. The HQ-9 is the basis of the FT2000 anti-radiation missile, designed to destroy Airborne Early Warning and Control aircraft (PLA).

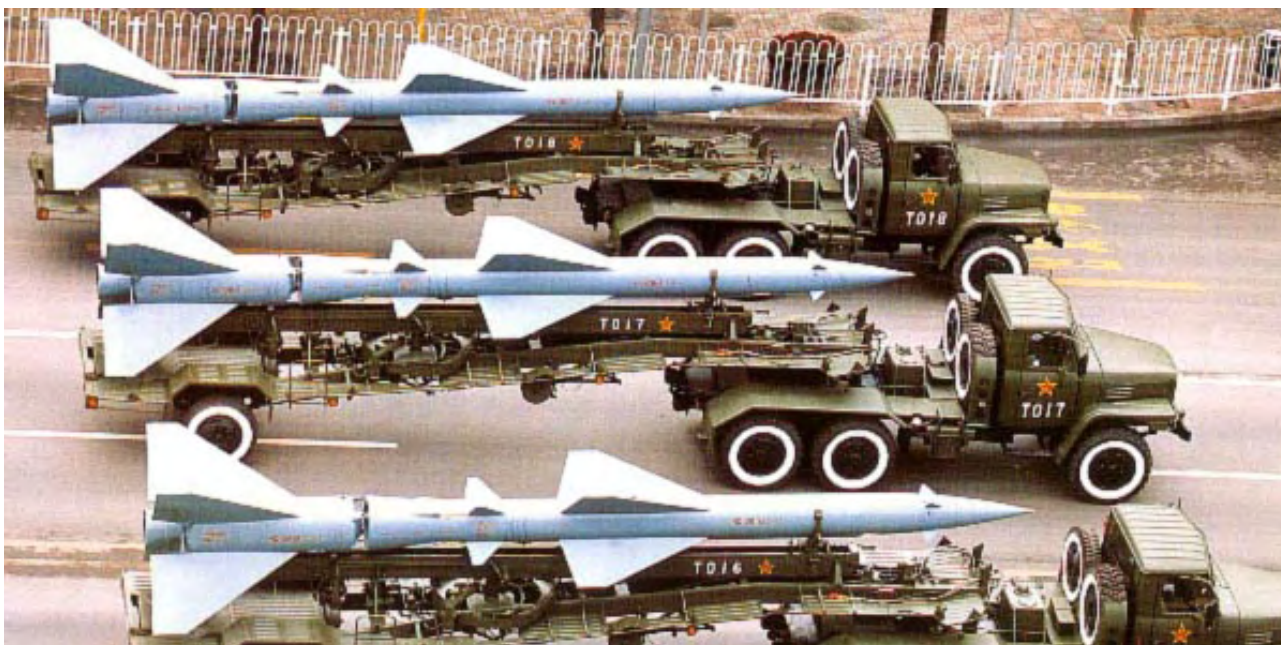


Figure 37: The PLA continues to operate variants of the legacy HQ-2 (SA-2 Guideline) series strategic SAM system. Unlike the semi-mobile Soviet original, the PLA employs a large number of fully mobile HQ-2 Transporter Erector Launchers making this variant significantly more survivable against defence suppression aircraft (PLA).

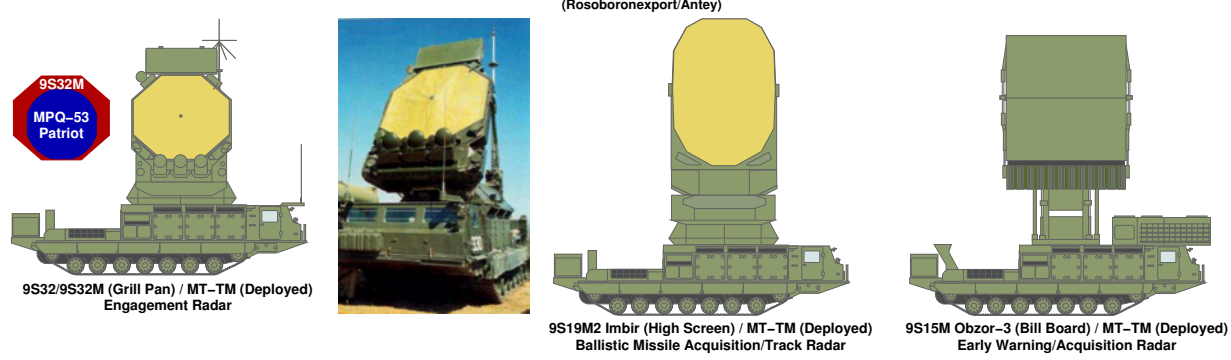
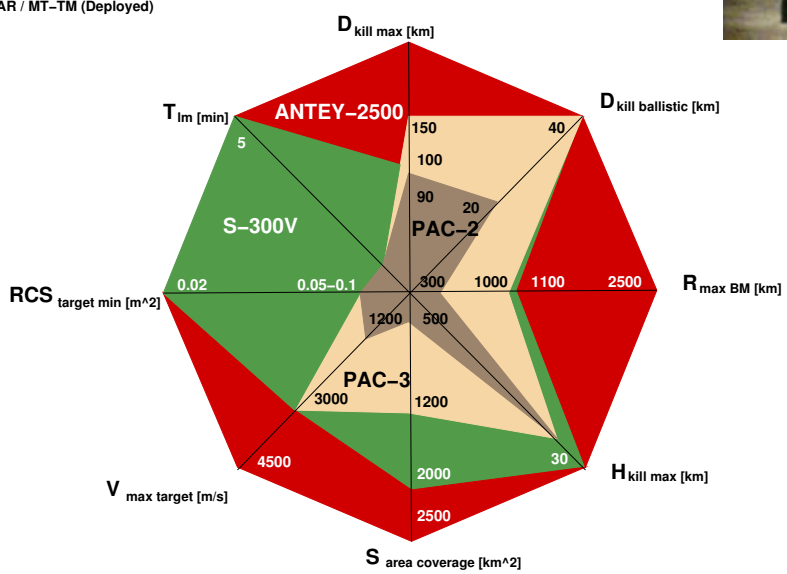


Figure 38: US sources claim that the PLA is interested in acquiring the S-300VM (SA-12 Gladiator/Giant) long range SAM/ABM system (Rosoboronexport/C. Kopp)

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Figure 39: *The PLA acquired several batteries of the Tor M1 (SA-15 Gauntlet) point defence SAM during the 1990s. With phased array capability, this system is difficult to jam (Rosoboronexport).*

8 Annex C - Developing PLA Guided Weapons Capabilities

The following material was compiled from publicly available sources and reflects the best currently available unclassified intelligence.





Figure 40: The Raduga Kh-55 Granat or 'Tomahawk-ski' (AS-15 Kent) cruise missile was developed as an equivalent to the US AGM-86 carried by the B-52H and the US RGM-109 Tomahawk carried by submarines, and arms the Tu-95MS and Tu-160 strategic bombers. Numerous reports claim the PLA illegally acquired Kh-55 rounds from the Ukraine five years ago, and legally purchased tooling for the non-nuclear Kh-65 variant of this missile. The lower image shows the improved Kh-55SM with conformal fuel tanks, providing a range of up to 1,600 nautical miles (RuMoD).



Figure 41: The PLA has had a long running program aimed at developing indigenous long range cruise missiles for submarine and air launched applications. The upper image depicts a submarine launched cruise missile very similar to the US RGM-109 Tomahawk, believed to be of the HN-1/HN-2/HN-3 series, the lower image a H-6M Badger prototype carrying four missile shapes resembling the Kh-55/65 series (PLA).



Figure 42: *Raduga Kh-41/3M-80/3M-82 Moskit (Upper). This supersonic sea skimming anti-ship cruise missile has been exported to the PLA in its ship-launched variant. The missile is on offer as the air launched Kh-41 for the Su-30MK fighter. There is no Western equivalent to the Moskit (Rosvooruzheniye). OKB-52 3K-55/3M-55 Yakhont (Lower). This supersonic sea skimming anti-ship cruise missile has been licenced to India for domestic manufacture. It has been reported as the armament for latter 956E series destroyers to be supplied to the PLA-N. There is no Western equivalent to the Yakhont/Brahmos (Rosvooruzheniye/NIC).*

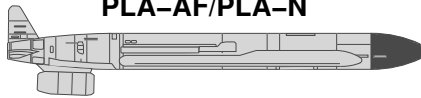


Figure 43: Novator 3M-54 Alfa/Club. This family of subsonic and supersonic sea skimming anti-ship cruise missiles has been exported to the PLA. The Club suite includes the subsonic 3M-54E1 anti-ship and 3M-14E land attack missiles which resemble a shortened Tomahawk, and the supersonic 3M-54E anti-ship missile. The Club is available in ship-launch, submarine-launch and air-launch variants, the submarine-launch variant is now in service. The land attack 3M-14E recently entered production. There is no direct Western equivalent to the 3M-54E (Rosvooruzheniye/NIC).

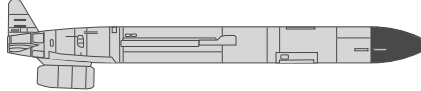


Figure 44: Kh-22M Burya. The Kh-22 series of supersonic cruise missiles was developed during the 1960s and is equivalent to the RAF's former Blue Steel missile carried by the V-bomber fleet. This Mach 3 missile is the primary weapon of the Tu-22M-3 Backfire C bomber, available in anti-shipping and land attack variants. Reports claim a mid life upgrade has been designed. As it employs identical liquid propellants to the PLA's Silkworm/Kraken, introduction of this missile presents no difficulties for the PLA (US DoD, RuMoD).

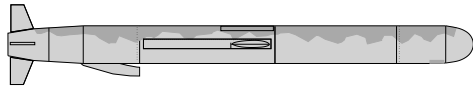
**Subsonic Cruise Missile Types
PLA-AF/PLA-N**



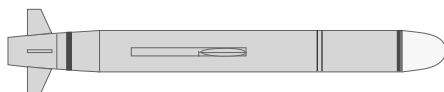
Kh-55SM (AS-15) Land Attack Cruise Missile (H-6, Tu-95, Tu-22M)



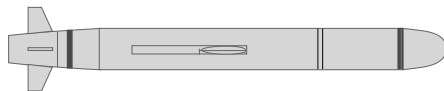
Kh-65SE (AS-15) Land Attack Cruise Missile (H-6, Tu-95, Tu-22M)



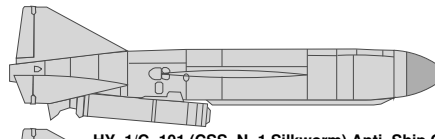
PLA-N Indigenous Land Attack Cruise Missile (TELS, 093 SSN)



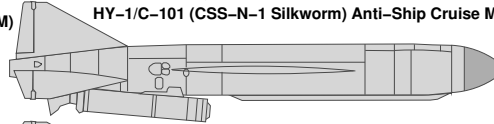
3M-54E1 Alfa (SS-N-27) Anti-Ship Cruise Missile (636 SSK)



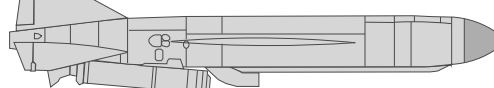
3M-14E Alfa (SS-N-27) Land Attack Cruise Missile (636 SSK)



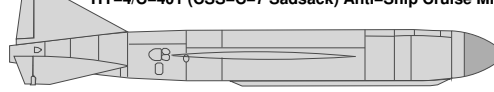
HY-1/C-101 (CSS-N-1 Silkworm) Anti-Ship Cruise Missile



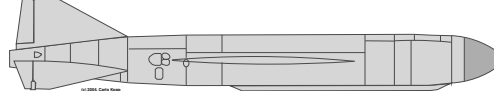
HY-2G/C-201 (CSS-N-2 Seersucker) Anti-Ship Cruise Missile



HY-4/C-401 (CSS-C-7 Sadsack) Anti-Ship Cruise Missile

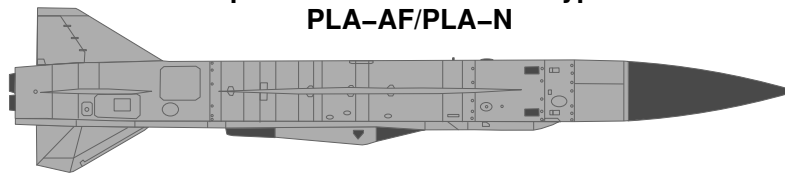


YJ-6/C-601 (CAS-1 Kraken) Anti-Ship Cruise Missile (H-6)

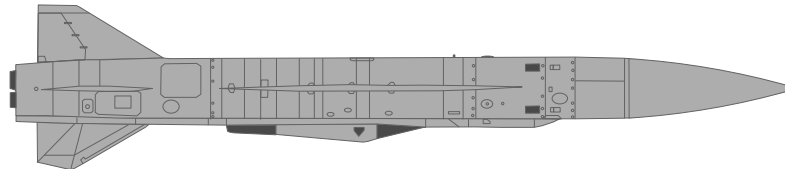


YJ-61/C-611 (CAS-1 Kraken) Anti-Ship Cruise Missile (H-6)

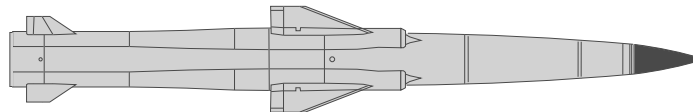
**Supersonic Cruise Missile Types
PLA-AF/PLA-N**



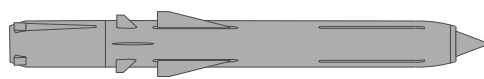
Kh-22N Burya (AS-4 Kitchen) Anti-Ship Cruise Missile (Tu-22M3)



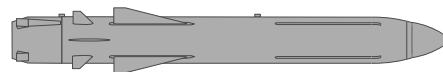
Kh-22N Burya (AS-4 Kitchen) Land Attack Cruise Missile (Tu-22M3)



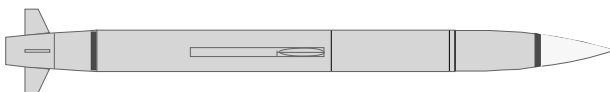
3M-81/Kh-41 Moskit (SS-N-22 Sunburn) Mach 2.2 Anti-Ship Cruise Missile (956E DDG)



3M-55 Yakhont (SS-N-26) Mach 2.5 Anti-Shipping Cruise Missile (956E DDG)



Kh-61 Yakhont (SS-N-26) Mach 2.5 Anti-Shipping Cruise Missile



3M-54E Alfa/Club (SS-N-27) Mach 2.9 Anti-Ship Cruise Missile (636 SSK)

Figure 45: Comparison of cruise missile types operated or being acquired by the PLA. The greatest strategic impact will arise from the deployment of 'Tomahawk-like' long range weapons, examples being the Kh-55 series and indigenous copies of the Tomahawk. China's manufacturing capacity will permit large warstocks to be built up over time (C. Kopp).



Figure 46: *The supersonic ramjet Kh-31P was originally designed as an anti-radar missile to suppress NATO air defences. Since the end of the Cold War it has evolved an extended range variant, the Kh-31MP, and an anti-ship variant equipped with a radar seeker, the Kh-31A/MA. It has no equivalent in the Western inventory. The PLA is reported to have licenced this weapon (RuMoD).*

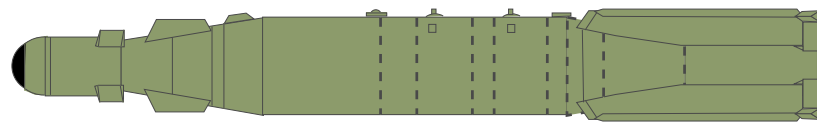


Figure 47: The Kh-59M/D series stand-off weapon is a direct equivalent to the AGM-142 missile now being integrated on the RAAF's F-111C, and carried by the US B-52H (Upper). Evolved from an anti-radar missile, it is now available with an optical seeker. The PLA-N is reported to have ordered an anti-ship variant equipped with a radar seeker, designated the Kh-59MK2 (-). Dubbed the 'Kharpunski' the Kh-35U Uran is the Russian equivalent to the US RGM-84/AGM-84 Harpoon carried by the F-111C and RAN warships (Lower). The missile is available in surface launched and air launched versions (Rosvooruzheniye).

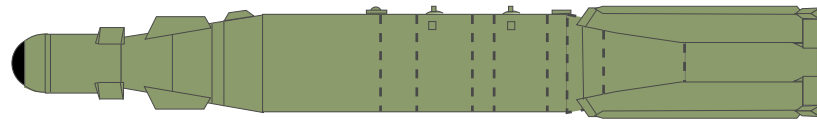


Figure 48: Russia is actively marketing smart bombs for the Sukhoi fleets supplied to the PLA. These images depict the laser and television guided KAB-1500 (1500 kg) series and KAB-500 (500 kg) series guided bombs, available in bunker busting and standard explosive variants. These weapons are broadly equivalent to the US Raytheon GBU-10, GBU-24 carried by RAAF F-111s, and the Boeing GBU-15 which was carried by the F-111 during the 1980s (Rosvooruzheniye).

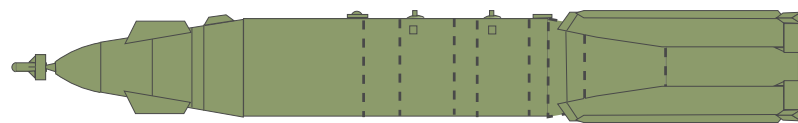
Inquiry into Australia's Regional Strategic Defence Requirements



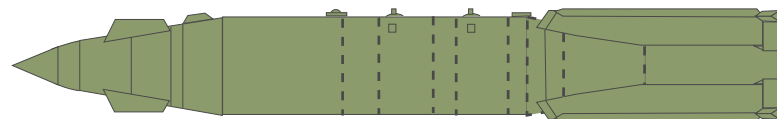
KAB-1500Kr EO Correlator Guidance



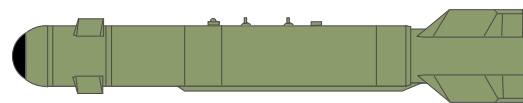
KAB-1500TK EO Datalink Guidance



KAB-1500L Semi-Active Laser Guidance



KAB-1500S-E Satellite / Inertial Guidance

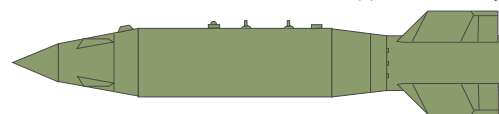


KAB-500Kr EO Correlator Guidance



KAB-500L Semi-Active Laser Guidance

(c) 2005, Carlo Kopp



KAB-500S-E Satellite / Inertial Guidance

Figure 49: The Russian KAB-500 and KAB-1500 series precision guided bombs share numerous design features with the US Raytheon GBU-10/16 Paveway and Rockwell GBU-8/15 families of smart bombs. The KAB guidance kits are available for 500 kg and 1,500 kg warheads. Guidance kits include laser seekers, electro-optical TV seekers, either with radio datalink or fire-and-forget image correlator support. The latest variant is the satellite / inertial S-E kit, similar in function to the US Joint Direct Attack Munition used in Afghanistan and Iraq. China is known to have acquired the laser guided and electro-optical TV guided variants for use on the Su-30MKK fighter (C. Kopp).

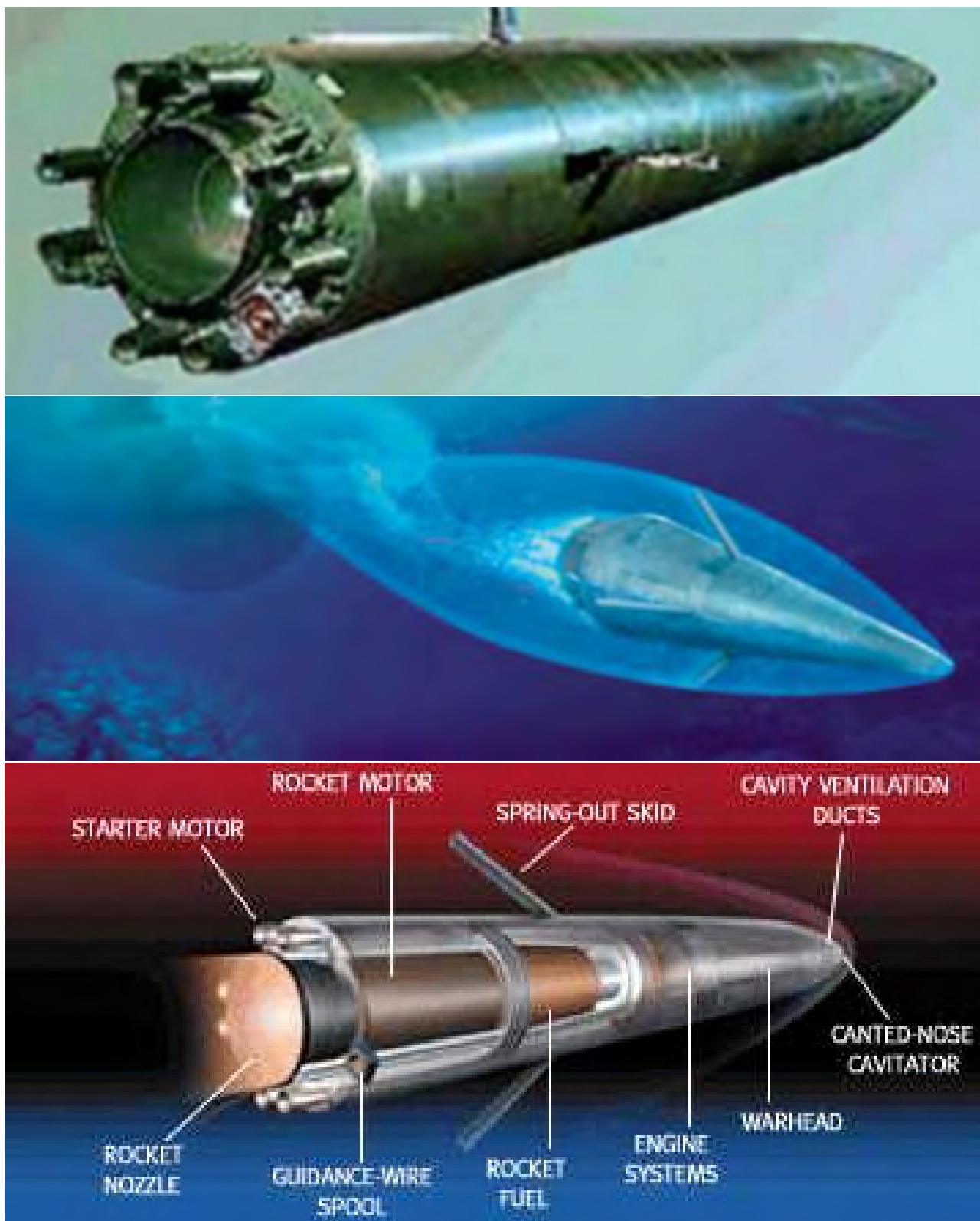


Figure 50: The PLA acquired the Russian Region VA-111 Shkval-E (Squall) rocket propelled super-cavitating wire guided torpedo for use on its submarine fleet. The VA-111 is the fastest torpedo in existence, it generates a surrounding gas bubble to reduce drag unlike conventional torpedoes (military.cz).

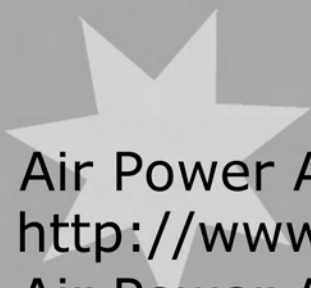
9 Annex D - Regional Capability Growth

Key air and missile capability acquisitions over the last 15 years, or currently in progress, include:

1. China acquiring up to 380 or more Sukhoi Su-27SK/SMK/J-11 Flanker B and Su-30MK Flanker G high capability category long range fighters;
2. China acquiring up to 1,000 indigenously developed Chengdu J-10 lightweight air combat fighters.
3. China acquiring Russian Ilyushin Il-78MKB Midas aerial refuelling tankers, similar in capability to the US Boeing KC-135R;
4. China developing an indigenous derivative Beriev A-50 Mainstay AWACS using similar radar technology to Australia's Wedgetail;
5. China manufacturing a range of indigenous cruise missiles, and illegally acquiring samples of the Russian Kh-55SM/AS-15B Kent strategic cruise missile;
6. China negotiating to buy surplus Russian strategic bombers, specifically the Tupolev Tu-22M3 Backfire, Tu-95MS Bear, and possibly new build Tu-160 Blackjack, similar to the US B-1B Lancer;
7. China restarting production of a sub-strategic cruise missile carrier variant of the Soviet era H-6 Badger bomber;
8. China acquiring a significant fleet of 3M-54 cruise missile armed Kilo class diesel-electric submarines;
9. China refurbishing the former Soviet aircraft carrier Varyag for sea trials; requests for flight demonstrations of navalised Su-27K/Su-33 and Su-27KUB/Su-33UB Flanker D carrier capable long range fighters.
10. China acquiring Russian smart bombs including the KAB-500 and KAB-1500 weapons, developing indigenous laser guided bombs, and acquiring the Russian Kh-59MK standoff weapon, similar to the AGM-142 weapon now carried by the ADF's F-111;
11. China acquiring the advanced Russian R-77 Adder Beyond Visual Range air to air missile, and developing an indigenous equivalent to the AMRAAM missile used by the US and the ADF;
12. China acquiring the Russian Kh-31P Krypton anti-radar missile;
13. China acquiring twelve or more batteries of the Russian S-300PMU Grumble long range mobile Surface to Air Missile system, equivalent to the US Patriot.
14. China funding development of the Russian S-400 Gargoyle long range mobile Surface to Air Missile system, which outperforms the US Patriot.
15. India acquiring 180 Sukhoi Su-30MKI Flanker H high capability category long range fighters;

16. India initiating a program to replace up to 400 or more legacy Soviet era fighters with new aircraft;
17. India acquiring A-50I Mainstay AWACS surveillance aircraft, using a derivative of the Israeli radar bid for the ADF's Wedgetail program;
18. India acquiring Russian Ilyushin Il-78MKI Midas aerial refuelling tankers, similar in capability to the US Boeing KC-135R;
19. India licensing the Russian Yakhont supersonic cruise missile as the indigenous Brahmos;
20. India buying into the development of the Russian R-172 'anti-AWACS' long range air to air missile;
21. India acquiring the Russian Admiral Gorshkov aircraft carrier and an air wing including MiG-29K Fulcrum air combat fighters and Russian Kamov AEW&C helicopters;
22. India tendering to upgrade and arm with cruise missiles its fleet of Tupolev Tu-142 Bear F maritime patrol aircraft;
23. India acquiring a significant fleet of 3M-54 Sizzler cruise missile armed Kilo class diesel-electric submarines;
24. South Korea acquiring 40 Boeing F-15K Strike Eagle high capability category long range fighters;
25. South Korea tendering to acquire AEW&C aircraft;
26. Japan acquiring Boeing E-767 AEW&C aircraft;
27. Japan acquiring Boeing KC-767 aerial refuelling tanker aircraft;
28. Singapore acquiring Boeing KC-135R aerial refuelling tanker aircraft;
29. Singapore acquiring Northrop Grumman E-2C AEW&C aircraft;
30. Singapore acquiring 20 or more Boeing F-15SG Strike Eagle high capability category long range fighters;
31. Vietnam acquiring a mix of Russian Su-27/30MKV Flanker B/G high capability category long range fighters;
32. Malaysia ordering Russian Su-30MKM Flanker H high capability category long range fighters;
33. Malaysia tendering to acquire AEW&C aircraft;
34. Indonesia acquiring an initial batch of Russian Su-27/30MK Flanker B/G high capability category long range fighters, publicly stating that up to 48 are being sought;
35. Russia actively marketing L175V / KS418 high power standoff jamming pod equipment in Asia;
36. Russia actively marketing airborne networking equipment in Asia;

End of Submission



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