

## CHOOSING AN ALTERNATIVE AIR COMBAT PLATFORM TO REPLACE THE F-35

Dear Chairman and Committee Members,

Other submissions at the time of writing (submissions 1-7) have extensively covered the problems with the F-35, pointing out its deficiencies as a suitable air combat platform for Australia – where the writers made reference to expert analysis of the aircraft's real world capability. They also addressed the cover-up of such facts in their communications. Rather than repeat these points this submission will make the case for a necessary replacement aircraft.

Simply put, Australia **requires an Air Superiority Fighter** in order to maintain air dominance in the region, especially considering the introduction of advanced aircraft such as the SU-35 (Indonesia), T-50 PAK FA (India), plus the J-20 and the J-31 (China).

Equipped with advanced airborne radar systems, and Infra Red search devices, adversary aircraft, armed with longer ranged missiles than currently fielded on western aircraft (until the Meteor missile becomes available), will be able to shoot down the F-35 at ranges beyond its ability to shoot down the said adversaries (even if the F-35 can detect these opposition aircraft first). Adversary aircraft will also be able to survive a 'first look' missile attack launched by the F-35 (if equipped with the Meteor) using their onboard jammers, decoys, plus using their high speed and manoeuvre capabilities. The less manoeuvrable F-35, once engaged in combat, will not be able to escape these faster and longer ranged aircraft. Obviously this situation is completely unacceptable.

The simple fact of the matter is that, as an air combat platform, the F-35 should be defined as a tactical bomber with limited air defence capability. It is not an air dominance platform and it is not a long range strike aircraft (such as the F-111).

Currently the only western aircraft that can fulfil our **air dominance requirement** against the above mentioned adversary aircraft is the F-22A Raptor. Although the Raptor is currently out of production the tooling for this aircraft has been preserved. Importantly, without needing to expend money on development costs, the projected price per new F-22A aircraft will be similar to the single engined (overpriced) F-35. Lobbying efforts will be required to restart the project – which may succeed in the near term as the shortcomings of the F-35 become even more apparent.

The only problem with the F-22A is that we are dealing with the same company responsible for the F-35 fiasco – where the company has pushed an overly expensive and inferior platform upon various nations (and the US armed forces) using its political influence.

Another option is the adoption of the proposed FA-XX aircraft presently under design review by Northrop Grumman (<http://tacairnet.com/2015/03/23/yf-23-could-set-the-stage-for-northrop-grummans-next-generation-fighter-proposal/>) This proposed FA-XX aircraft may be modelled closely on the Northrop Grumman YF-23 demonstrator that had similar flight characteristics to the YF-22 where, even today, aspects of this aircraft's performance remain classified.

In this scenario Northrop Grumman would need to be contacted directly about their design proposal and consulted about certain design parameters which would satisfy our requirements – such as easy serviceability and an open avionics architecture.

In the FA-XX scenario, Australia will need a suitable interim air dominance fighter due to the time needed to develop this 'new' aircraft (see the Addendum which offers suggestions on speeding the introduction of the FA-XX).

A reasonable interim option would be the F-15K/SA with upgraded radar and flight control systems - as currently fielded by the Koreans and Saudis (the Israelis are upgrading their present fleet of F-15I aircraft). A number of such aircraft could be fielded by the RAAF alongside our present Super Hornet fleet. While not as manoeuvrable as the best opposition aircraft, the F-15 is faster and is long ranged so that it has a greater range of options when deciding to engage adversary aircraft. Equipped with the Meteor missile the F-15 would provide a reasonable stop-gap measure.

One further consideration is the need to replace the F-111s. The F-35 is not a replacement for this strategic strike aircraft. Neither are the Super Hornets. Requesting a new design from the same defence company, Northrop Grumman, in conjunction with the USAF, in the shape of the FB-23 should be considered (<https://www.google.com.au/#q=fb-23>). Other replacement considerations for the F-111s would include the deployment of land-attack-cruise-missile-equipped submarines, and/or tanker-refuelled air dominance fighters (FA-XX or F-22A) using standoff cruise missiles and/or similarly equipped Super Hornets (as an interim platform).

When it comes to defence acquisitions we need clearly set objectives - the primary goal here being to field an air dominance fighter able to contest the best adversary aircraft in the region - and a willingness to be pro-active in terms of finding appropriate solutions.

Thanks for your attention,

Mr Steven Weathers

### **Addendum:**

The following page is taken from my defence concepts page, Future ADF Page, and makes an argument for using the YF-23 as a design base for the FA-XX:

## **YF-23 Development as the FA-XX: Design Modification Proposals**



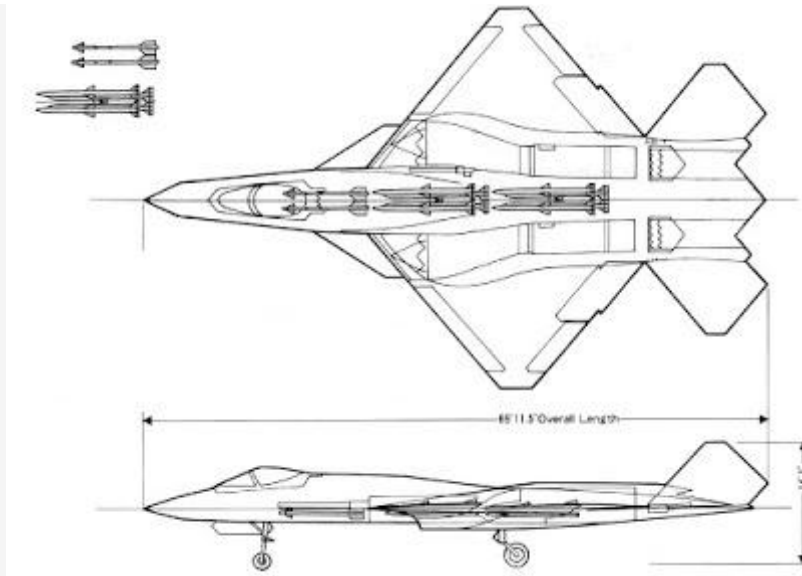
As an air combat platform the **YF-23** was the equal of, if not better than, its competitor the YF-22. The proven YF-23 design should be modified to become the FA-XX. Such an aircraft would provide the US Navy with a replacement long range Air Superiority Fighter for the F-14D Super Tomcat.

Development of the aircraft should be led by Northrop/Grumman **engineers**, not generalist managers, in conjunction with SAAB, in order to create the new aircraft. SAAB must be included in the development process because of their success with the Gripen - an aircraft that is designed to be easy to maintain and upgrade. Manufacture should be at one location, allowing easy oversight of production, and not shopped all over the country for political reasons.

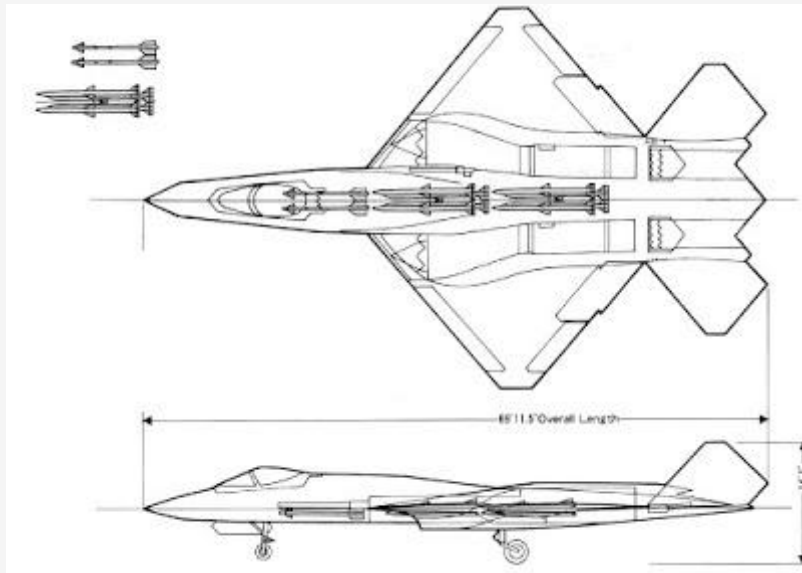
The initial aim would be to incorporate many existing top-of-the-line systems, taking advantage of proven technology, in order to speed development of the 'A' model. Technology from the latest variants of the F-15K/SA(Advanced), that include two seat cockpit variants, and undercarriage from the Super Hornet, should be considered. AnIRST system is a necessity. This 'A' model aircraft would not employ radar absorbent paint which creates difficulties in terms of maintenance. Later models, or specialist USAF variants, can feature such complexity. The design should allow for the addition of conformal fuel tanks.

Major structural modifications would see the separation between the engines increased to allow for an extended weapons bay, and the (possible) addition of canard/leading edge extensions - which would function within the subsonic flight envelope.

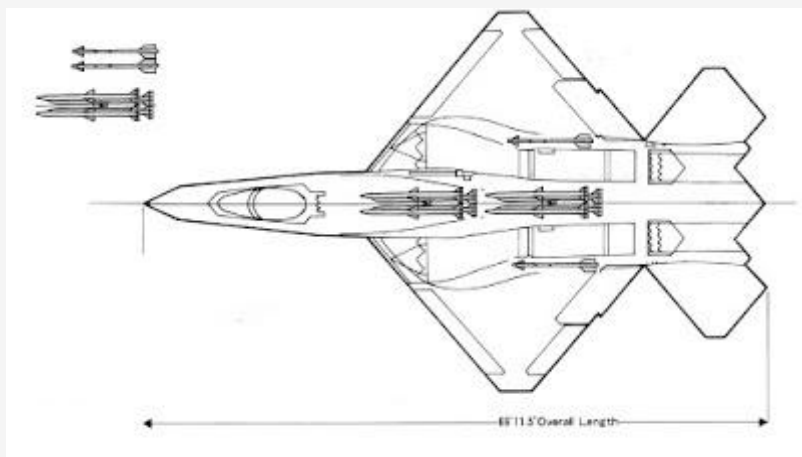
The basic USN design changes to the YF-23 can be seen in the following image (note the extended undercarriage):



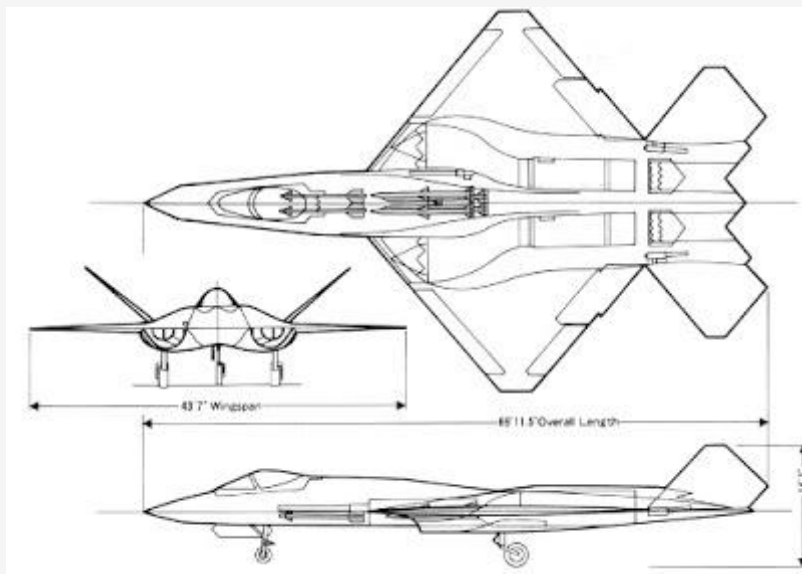
An Air Force version would (potentially) delete the canards:



This is an alternative weapons bay arrangement that places the short range air to air missiles in outboard positions.



This is the original YF-23 design for comparison (see below). Please note that all modifications on this page are proposals that would need to be fully assessed. They are presented here as a **conceptual exercise**, intended to stimulate serious debate on this issue (of revisiting the YF-23, a proven Air Superiority design - an aircraft that is sorely needed in the face of emerging threats from Russia and China). Other operators of the type could include the UK, Canada, Japan, and Australia.



A further radical design change, for a later F-23 variant could see a reworking of the aft section of the airframe to allow for 2D or 3D thrust vectoring, to help point the nose of the aircraft in low speed situations. Such modifications should only be incorporated after the 'A' model has entered service.