saab JAS39 gripen revell 1/32

designer.home.xs4all.nl/models/gripen-32/gripen-32-1.html

designer
Meindert de Vreeze

Swedish Gripen photographed by me at Kleine Brogel (B) Sept 2017.

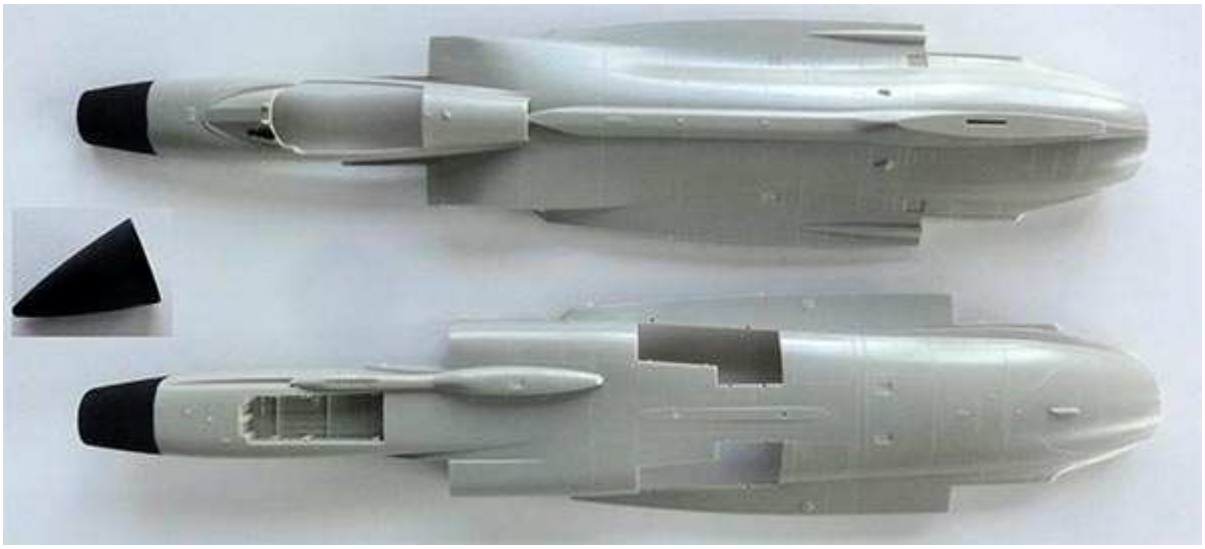
The JAS-39 Gripen is a fighter developed by Saab of Sweden as replacement of the Viggen and Draken. The Gripen has a single Volvo RM12 engine, delta wing and canards and has a top speed of Mach 2. It is relatively small but can carry many different weapons on underwing pylons. It is fully fly-by-wire. First flight was in 1988 and it came into the Swedish Air Force service in 1997 known as Gripen -A and the unarmed twoseater -B. The Gripen -C is a NATO compatible aircraft and can use advanced weaponry (with the two seater -D). It can also be refuelled in flight.

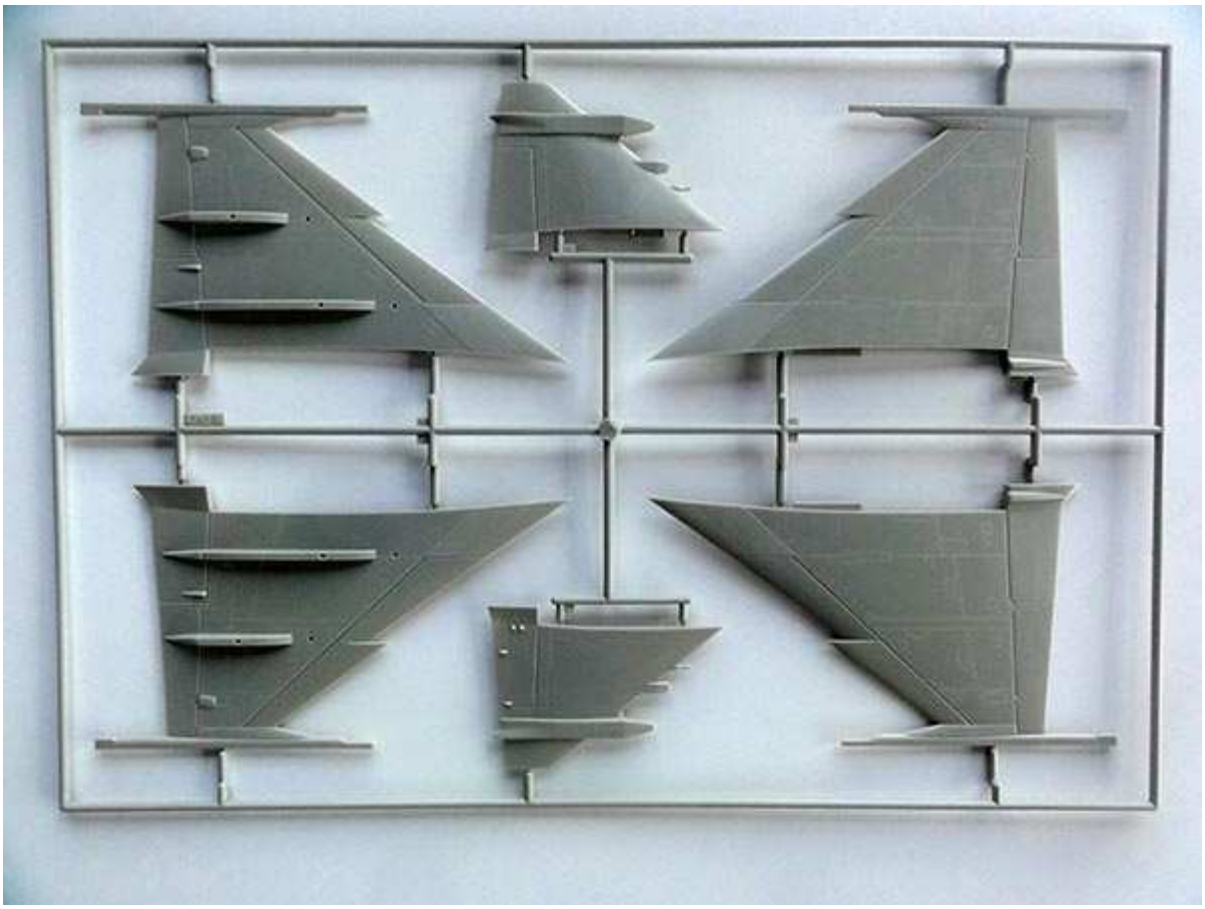
Several Gripens were also sold many years later for export to Czechia, South Africa, Hungary en Thailand. Over 250 Gripens have been built.

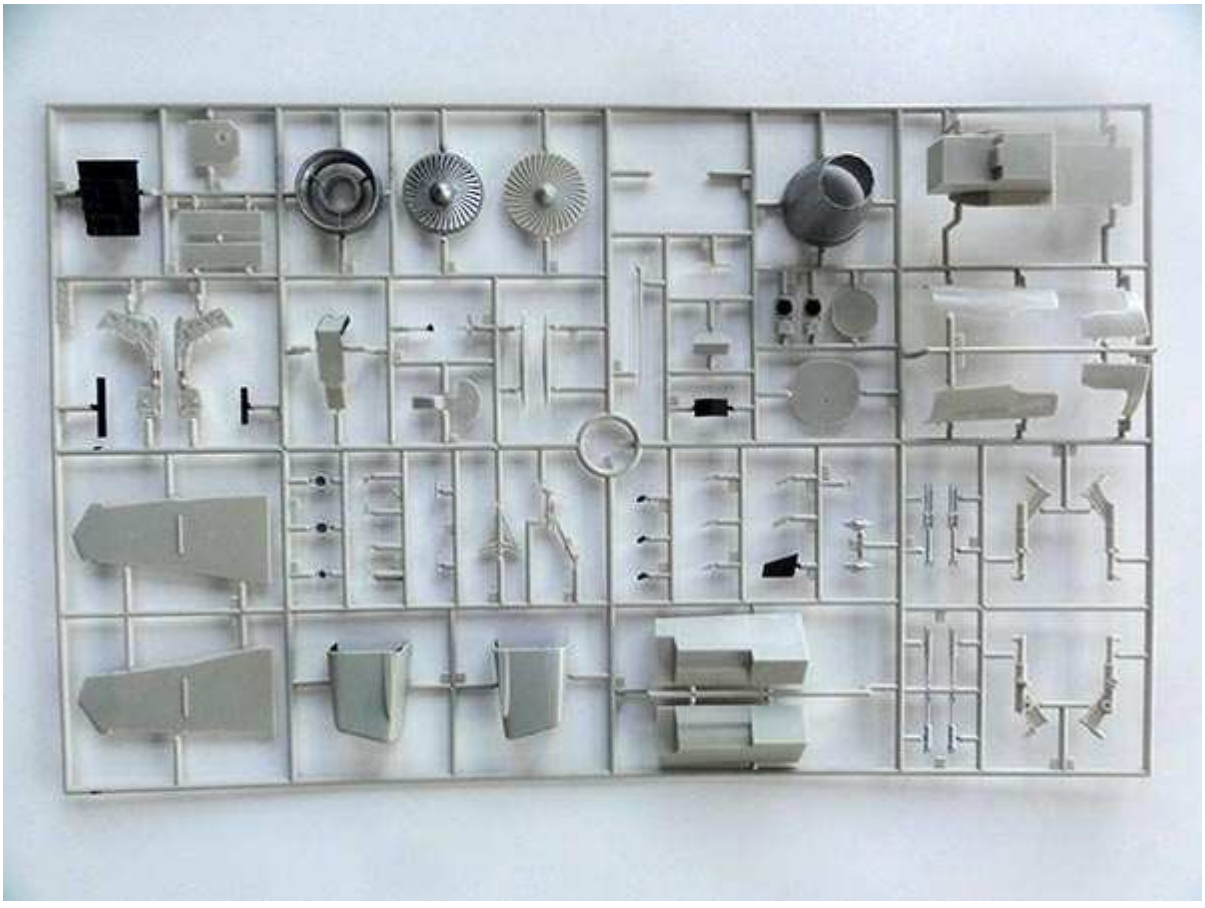
In 1/32 scale Revell Germany released a kit of the SAAB JAS 39 Gripen in 1991.

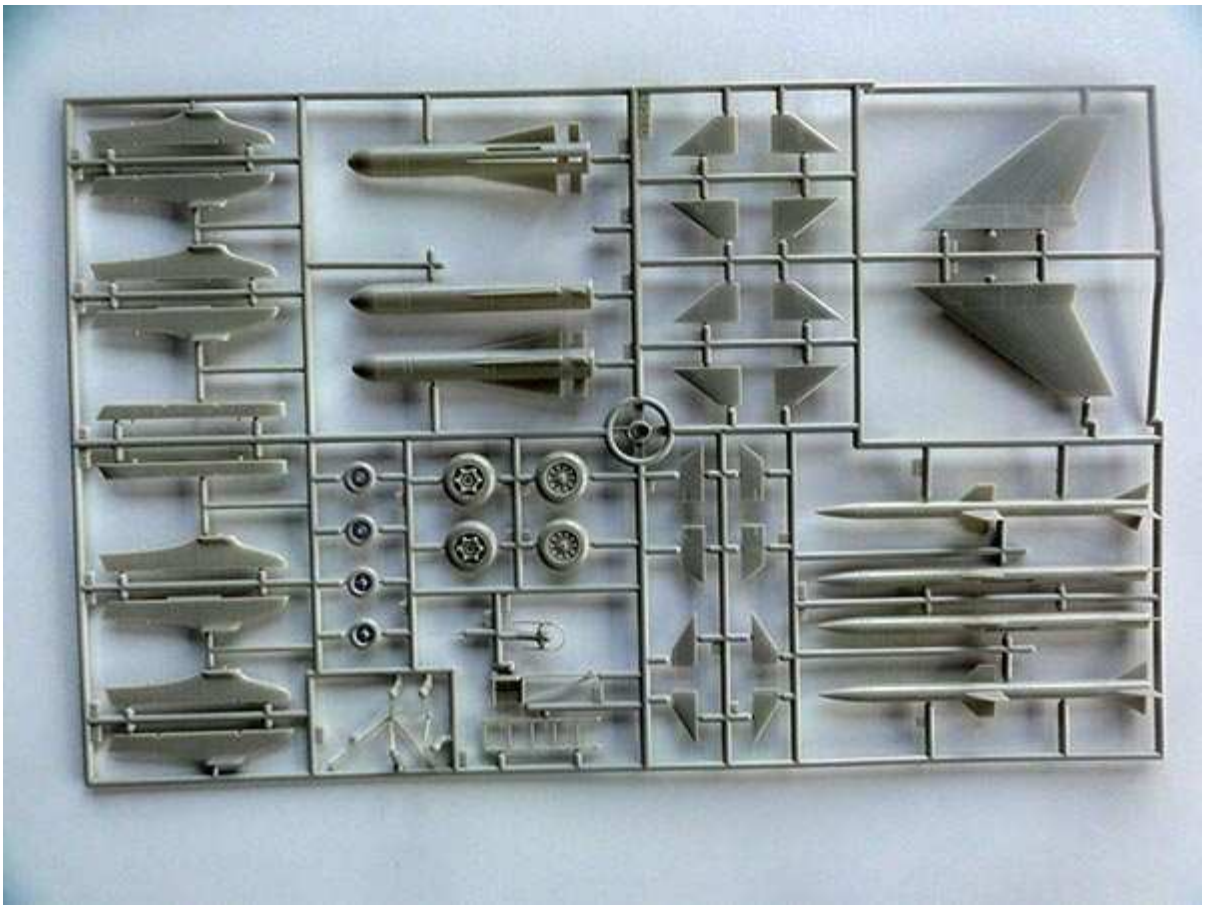
The kit #4752 has about 125 parts and contained also a sort of engine, an entry ladder and stores like missiles and fuel tanks. I bought the kit second hand quite cheap many years ago. It was sitting in the stack a long time.

The main parts are seen here. (Note that some parts have already some paint as I bought the kit second hand).









Stores are what seem to be Sidewinders, RBS-15F missile, RBS-15 anti ship missile and a single fuel tank. The kit decals are for a single aircraft coded “5” with stripes which seems to be a prototype.

The instructions are simple but clear. (I contributed./ uploaded these to the Scalemates site).

Revell SAAB JAS 39 GRIPEN

4767 -0309

PRINTED IN W. GERMANY

DEUTSCH **ACHTUNG:** Vor dem Zusammensetzen die Bauanleitung gut durchlesen. Jedes Teil ist numeriert. Reihenfolge der Montageschritte beachten. Benötigte Werkzeuge: Messer und Feile zum Entfernen und Eingraten der Teile, Garnierband, Klebeband und Wäscheklammern zum Zusammenhalten der geklebten Einzelteile. Plastikteile in einer milden Waschmittellösung reinigen und an der Luft trocknen, damit der Farbuntrich und die Abziehbilder besser haften. Vor dem Ankleben prüfen, ob die Teile passen. Klebestift sparsam auftragen. Chrom- und Farbe an den Klebeflächen entfernen. Klare Teile anstrocken. Sekor wie vom Rahmen entfernt werden. Farben gut durchmischen lassen, und dann den Zusammenbau fortsetzen. Jedes Abziehbild(e) einzeln ausschneiden und ca. 20 Sekunden in warmes Wasser tauchen. Das Motiv an der bezeichneten Stelle vom Papier abschieben und mit Löschpapier aufdrücken.

ENGLISH **ATTENTION:** Carefully read instruction sheet before assembling. Each part is numbered. Consider succession of assembly steps. Required tools: knife and file to remove and trim parts, rubber band, adhesive tape and clothes pegs to hold parts after connecting. Wash plastic in mild detergent solution, rinse and let air dry for better paint and decal adhesion. Scrape chrome and paint at area to be glued. Paint small parts on runner before removing. Allow paint to dry thoroughly before continuing assembly. Cut out each decal and dip one at a time in warm water for approx. 20 secs.; slide decal from the paper at the marked position and dab with blotting paper.

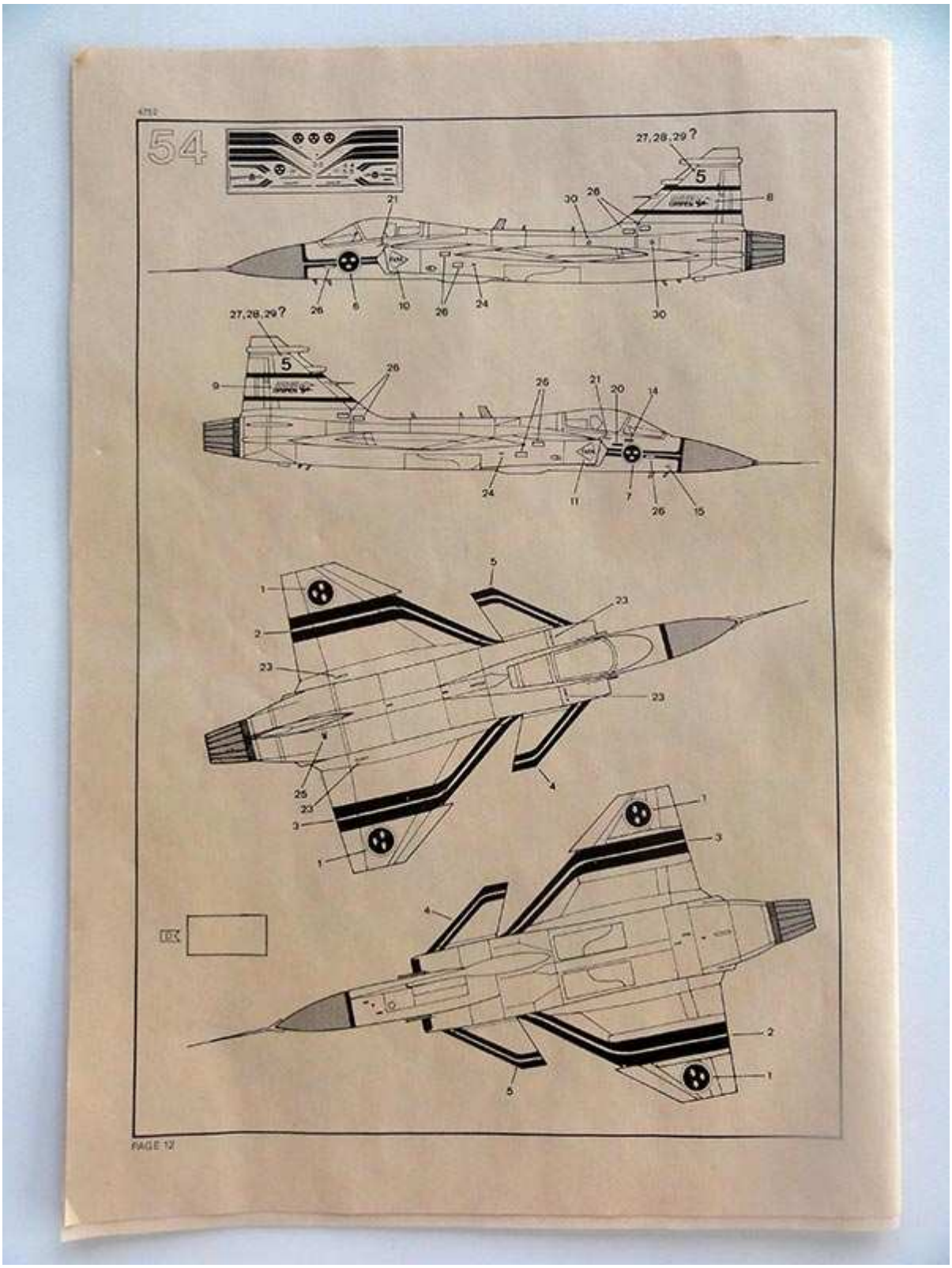
FRANÇAIS **ATTENTION:** lire soigneusement la fiche d'instructions avant d'assembler. Chaque pièce est numérotée. Suivre la succession des étapes de montage. Outils nécessaires: couteau et lime pour détacher et ébarber les pièces, élastiques, papier adhésif et pinces à linge pour maintenir ensemble les pièces après collage. Laver le plastique dans une solution détergente légère, rincer et laisser sécher à l'air libre pour une meilleure adhérence de la peinture et des décals. Ajuster les pièces ensemble avant de coller. Encollage: la colle Revell peut s'employer économiquement. Utiliser très peu de colle à chaque fois. Gratter et chrome ou la peinture sur les surfaces à coller. Peindre les petites pièces sur le support avant de les détacher. Laisser la peinture sécher suffisamment avant de continuer l'assemblage. Découper chaque décal séparément et le plonger dans l'eau chaude environ 20 secondes. Faire glisser le décal du papier à l'endroit du décor et tamponner avec du papier buvard.

NEDERLANDS **OPGELET:** aanbrengen te beginnen met het in elkaar passen, eerst de handleiding goed doorlezen. Elk onderdeel is genummerd. Aandacht besteden aan de volgorde van montage. Het benodigde gereedschap: deegt om vijl voor het verwijderen en het afvormen van de naden, elastiek, plakband en wasknijpers gebruiken voor het bij elkaar houden van de gelijmde onderdelen. De plastic onderdelen met een zacht wasmiddel oplossen, en laten drogen zodat de verf en de transfers beter hechten. Aanpassen aan elkaar, eerst voorzichtig de onderdelen passen, de lijm zuinig opbrengen. Chroom en verf van de op elkaar te lijmen delen verwijderen. Kleine onderdelen vervoor aldir deze van het gietraam verwijderd worden. De verf goed laten drogen en eerst dan verder gaan met de bouw. De transfer apart uitknippen en ca. 20 seconden in lauwwarm water leggen. Het transfer op de juiste plaats van het papier schuiven op het model en met vloeipapier aandrukken.

SVENSKA **VIKTIGT:** Läs anvisningen ordentligt innan du börjar bygga. Varje del är numrerad. Tänk igenom ordningsföljden för de olika momenten. Följande verktyg behövs: kniv och fil för att ta bort och putsa detaljerna, gummiband, tejp och klädnypor för att hålla detaljerna på plats medan limmet torkar. Tvätta alla plastdetaljerna i en tvättlösning, skölj och låt lufttorka för att få färg och dekaler att fästa bättre. Provpassa alltid detaljerna innan du limmar. Använd endast Revells plastlim. Använd sparsamt med lim. Skrapa bort krom och färg från den yta som ska limmas, måla små detaljer innan de sitter kvar i ramen. Låt allt färg torka ordentligt innan du fortsätter byggandet. Skär ut varje dekalbild för sig och blöt den i ljummet vatten i ungefär 20 sekunder, och låt dekalen glida av pappret och ner på det markerade stället. Ta sedan försiktigt upp det med hjälp av vattnet med fläskpapper eller en tuvfilt.

ITALIANO **Attenzione:** Leggere attentamente le istruzioni prima dell'assemblaggio. Ogni pezzo è numerato. Tener presente la successione delle fasi di assemblaggio. Attrezzi necessari: coltello e lima per rimuovere e rifinire le parti staccate, nastro adesivo e spilli per tenere le parti bene assieme incollate. Lavare la plastica con un detergente delicato, sciacquare e lasciar asciugare all'aria per una migliore adesione della vernice e delle "decal". Asciugare le parti da incollare. Usare solamente Revell plastic cement. Usarne poco incollare. Grattare la cromatura e la vernice nei punti da incollare. Dipingere i piccoli accessori sui supporti prima di rimuoverli. Far asciugare bene la vernice prima di continuare nell'assemblaggio. Ritagliare una per una le "decal" ed immergerle in acqua tiepida per circa 20 secondi. Applicare ogni "decal" nella posizione segnata e tamponare con carta assorbente.

ESPAÑOL **ATENCIÓN:** cuidadosamente leer la hoja de instrucciones antes de montar. Cada pieza es numerada, considerar la sucesión de las operaciones de montaje. Herramientas requeridas: cuchilla e lima para cortar y desbastar las piezas, bandas de caucho, cinta adhesiva y pinzas para sujetar las piezas, después de engomarlas. Lavar el plástico en solución detergente suave, aclarar y dejar que se seque al aire para una mejor adhesión de la pintura y la calcomanía. Adaptar las piezas bien juntas antes de encolar. Solamente utilizar pegamento plástico Revell. Utilizar el pegamento lo cautelosamente y en exceso. Raspar el cromado y la pintura en la zona que ha de ser encolada. Pintar las piezas pequeñas sobre el bastidor. Dejar secar a pintura se seque totalmente antes de continuar el montaje. Cortar cada calcomanía una por una y sumergirla en agua caliente durante aproximadamente 20 segundos. Deslizar la calcomanía del papel en la posición marcada y golpear suavemente con el papel secante.



The cockpit is basic and there is a sort of intake funnel.

As over the years it had been clear that the accuracy of this 1/32 kit was not very good. I had seen some models built over the years and the shapes simply did not look right as the model seemed to be to be too “compact”. But at that time the new Gripen was still quite secret and not a lot of the (internal) details were known. Also during these years, I did not find any accurate information.

A few decades later, I thought to examine a bit further if the model could be improved. A big trigger was that the small 1/72 Revell kit of the Gripen JAS-39C was released in 2014. This kit was made with SAAB assistance some 25 years later and the outlines of this kit seem to be quite accurate as
I made a kit. I could also measure the sections and shapes.

Yep…. I know there is a “risk” that JETMADS may come with a new 1/32 Gripen kit as they did with the SAAB Viggen and announced a SAAB Draken….

So time to look at the old 1/32 Revell Gripen kit!

A FIRST CHECK-UP

I had seen in the old days a critical review of the kit in Scale Models International magazine of Sept 1992 (see references).
Many years later I started to gather information about the real Gripen and looked for several layout drawings though we all know one has to be careful with these. Having a few “Jane’s All the World Aircraft” books, the invaluable reference source for aviation professionals, some data was compared. This table shows the Janes data.

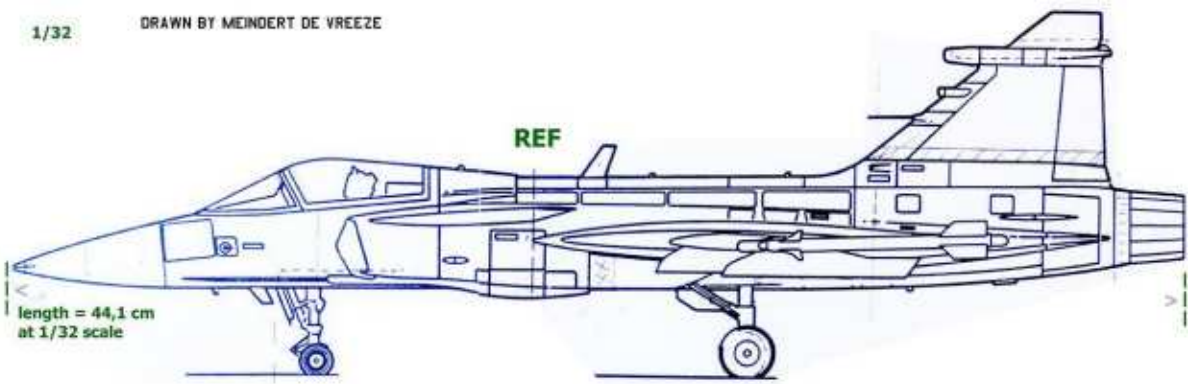
Jane’s All the World Aircraft DATA SAAB GRIPEN

JANES 1988/89 till 1992/93:	span 8.00 m and length 14.10 m.
In 1/32 scale:	span 25,0 cm and length 44,1 cm
JANES 1993/94:	span 8,40 m and length 14,10 m.
In 1/32 scale:	span 26,2 cm and length 44,1 cm
JANES 2007/2008:	span 8.40 m (inclusive missile rails) and length 14.10 m (without pitot tube).
In 1/32 scale:	span 26,2 cm (inclusive missile rails) and length 44,1 cm (without pitot tube);

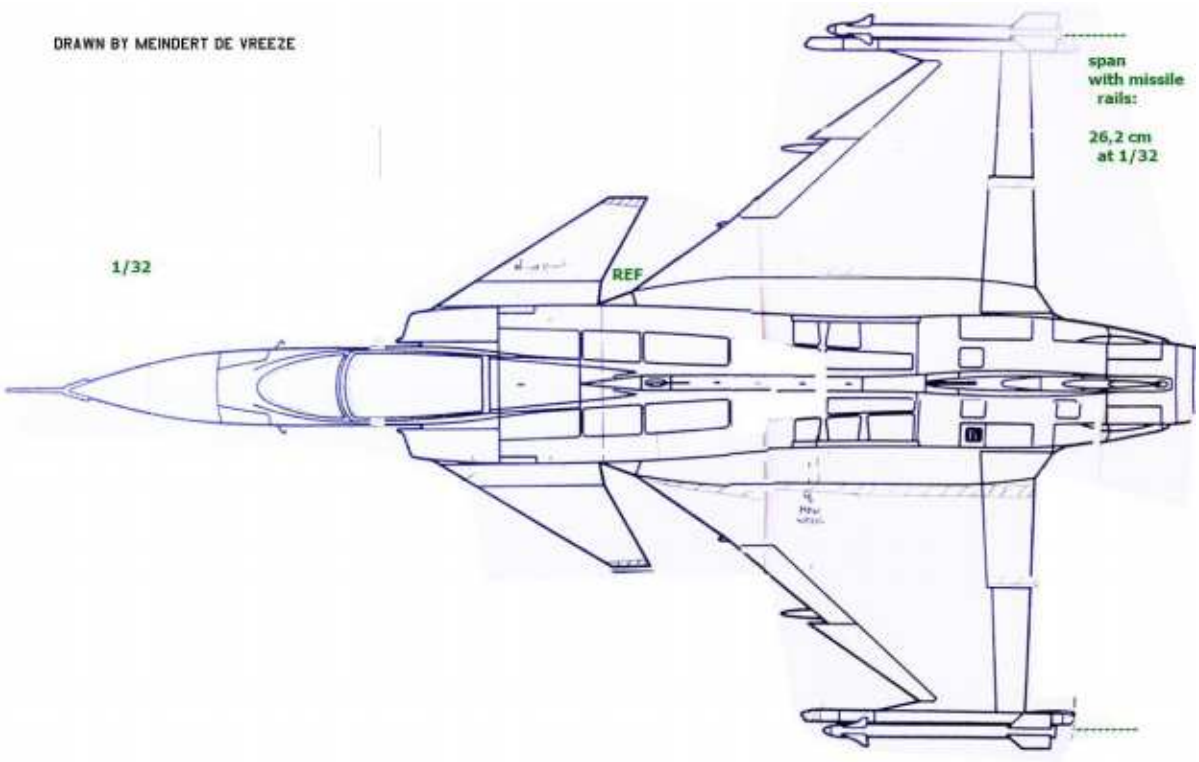
estimated length pitot tube 0,75 m (or in 1/32: 2,2 cm);

estimated missile rail width: 2 x 0,15 cm (or in 1/32 2x 0,5 cm).

Some drawings were scaled up to 1/32, continuously also checking with the 1/72 kit and measuring the main dimensions. These are my drawings.

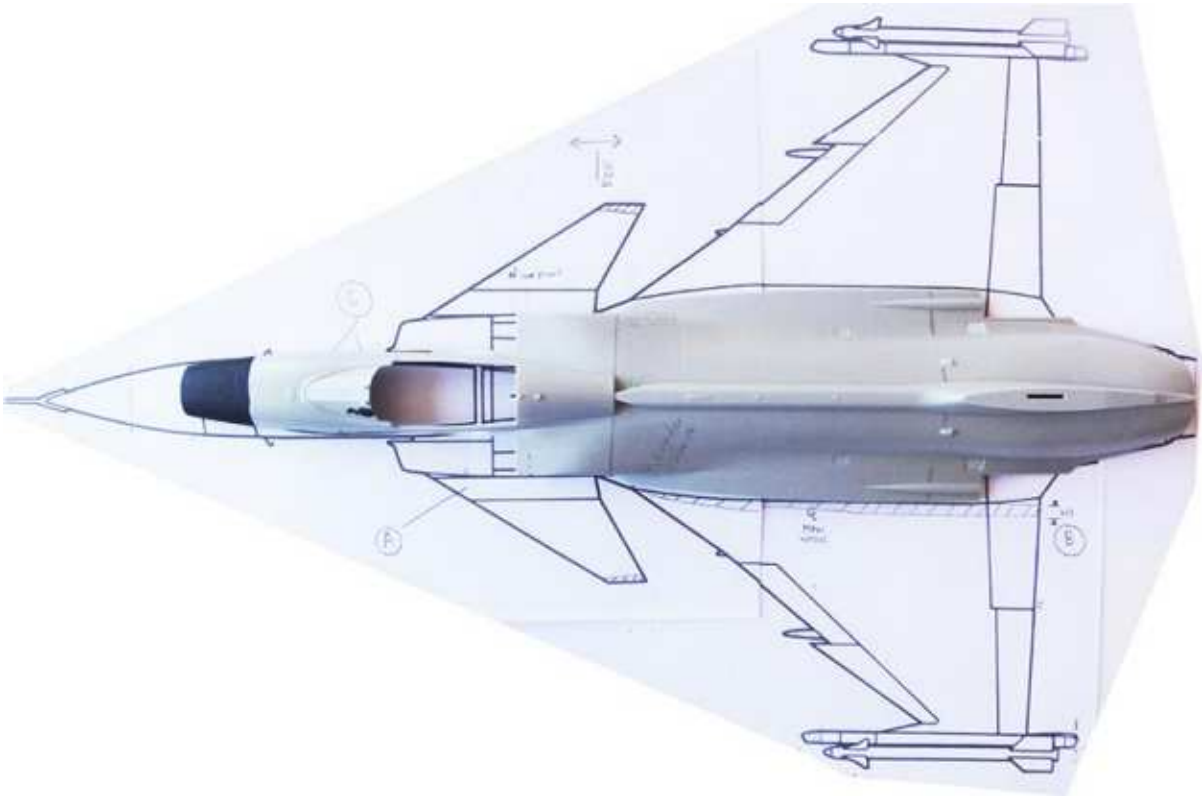


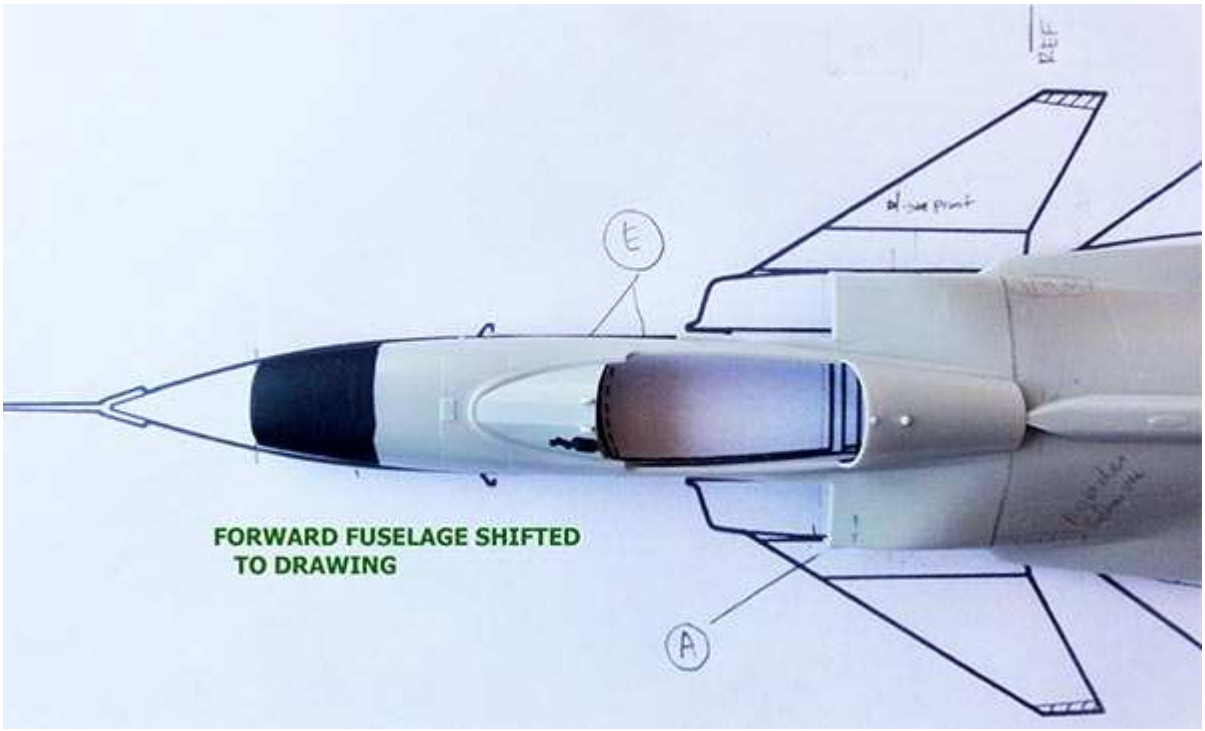
... and with pitot tube on the nose below...



Some bigger parts of the Revell kit were separated from their sprues. These were checked with the drawings.

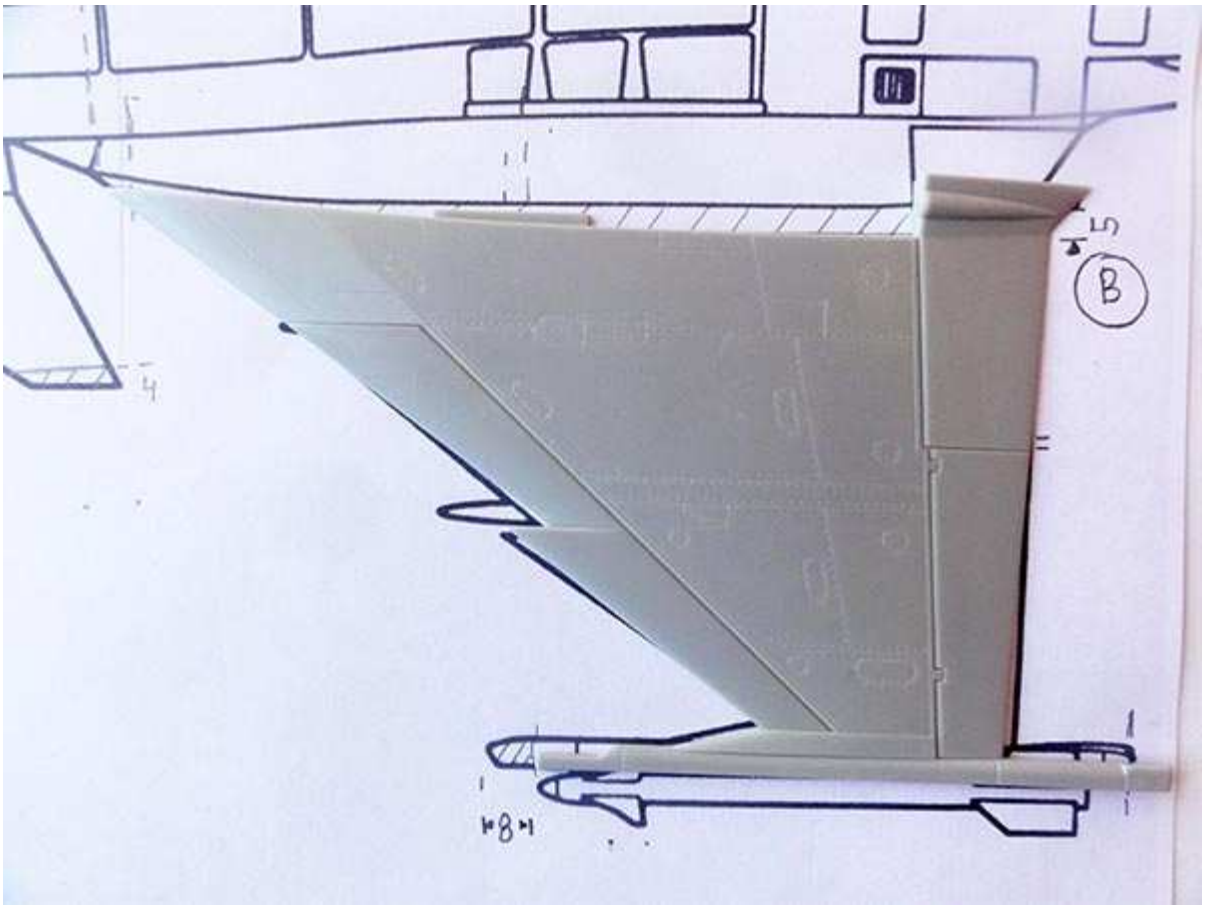
FUSELAGE:





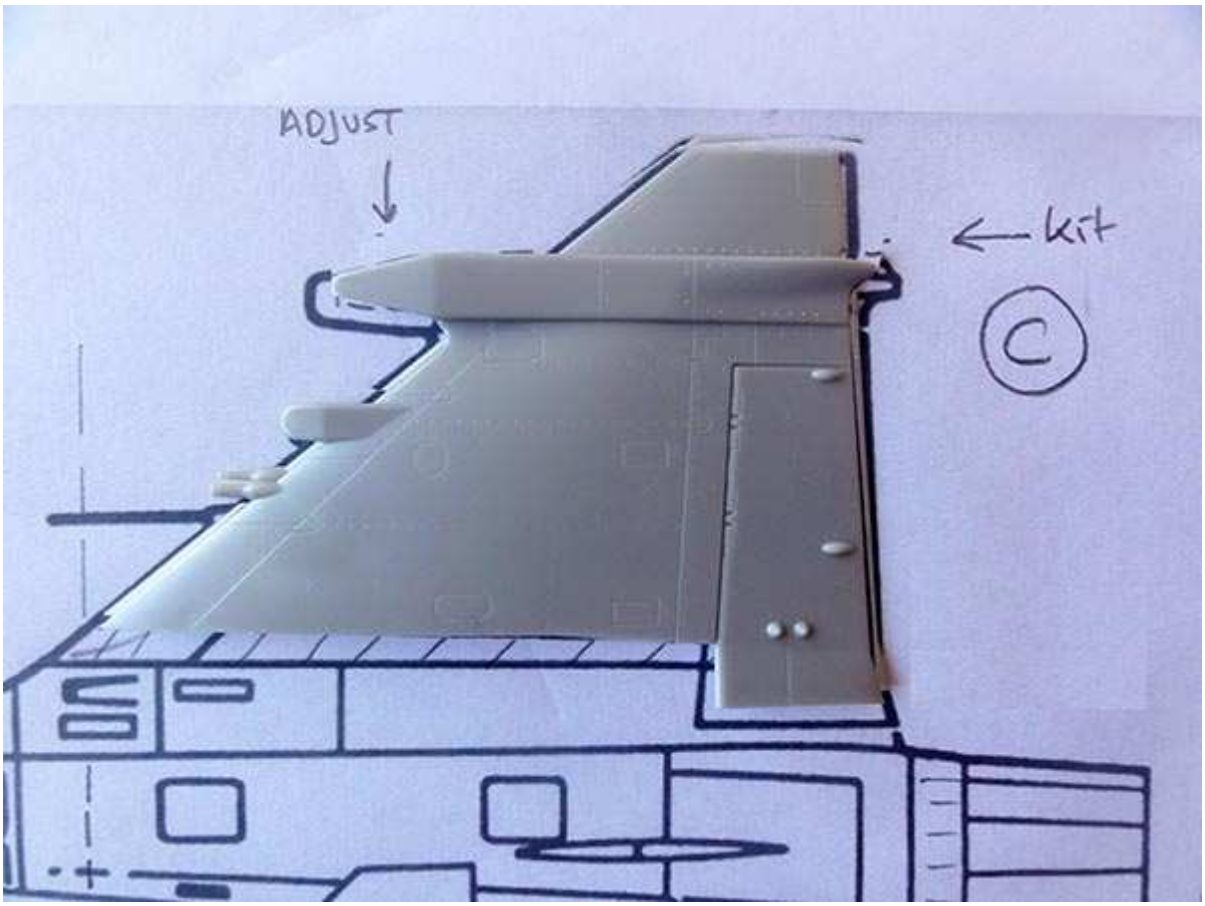
It was measured as well and it seems that the old 1/32 fuselage kit is about 21 mm too small in total length. When the forward fuselage section is set on the drawing, the nose planform does not look too bad. The air intakes seem to be pretty good but need a bit curve at their upper edges near the canards.

WING:



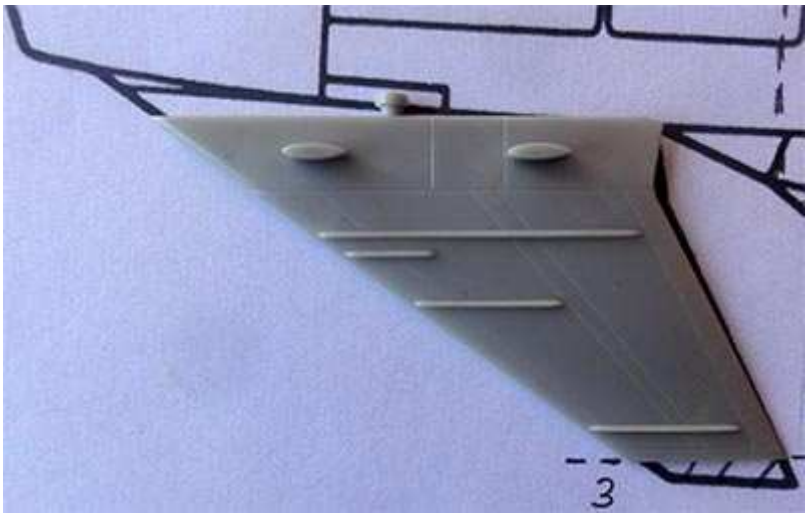
The overall wing span is about 2x 5 = 10 mm too small. Increasing the chord section seems to way to go.

VERTICAL TAIL:



The tail fin height is about 5 mm too small. (Note that using the “total height” data of the real Gripen can not be used at it is affected by the landing gear layout). Multiple small corrections are needed here.

CANARDS:



The canards can be used after a bit reshaping with some plastic card and extenting their ends. Also the kit parts need removal of the stubs (which were probably prototype flutter weights?).

FURTHER INVESTIGATION

I tried to find out what may have caused the dimensional inaccuracies in the old Revell kit. Now I saw something interesting: the Jane’s “All the World Aircraft” data from 1988 till 1993 indicated a wing span of 8 meters and length of 14,1 m. Jane’s data from more recent date (2007/2008) showed: wing span 8,4 m inclusive wing tip missile rails and length 14,1 m without nose pitot tube. So they added info about pitot tube and missile rails effects. This was also checked a bit with the new 1/72 Revell kit that seemed to correspond with this data.

I estimated the real pitot tube to be about 0,75 m long (that is 22 mm in 1/32) and the real wing tip missile rails to be about 0,15 m each wide (that is in 1/32 about 5 mm).

This adds up to the length correction of about 21 mm and wing span correction of 2x5 mm. I concluded that the Revell kit team at the time forgot about the pitot tube length and missile rails. The team assumed this to be “included” in the overall Gripen span en length dimensions as stated by the Jane’s data (and probably in SAAB promotion documentation) when making their moulds.

I looked at a lot of photos and kept in mind these issues.

Other items for improvement are:

- some work needed on the landing gear, wheels and gear bays.
- the kit wing pylons are inaccurate and need modification;
- the main exhaust kit part #30 does look too small, it should be about 30 mm in 1/32. A replacement could be a F-18 exhaust for the RB12/ F404 engine;
- the fuel tank if desired is to be improved and seek better missiles;

It seemed that corrections could be done on the Revell Gripen model. Yes, it will not be easy and would need putty, plastic card, putty, card… and a lot of patience…

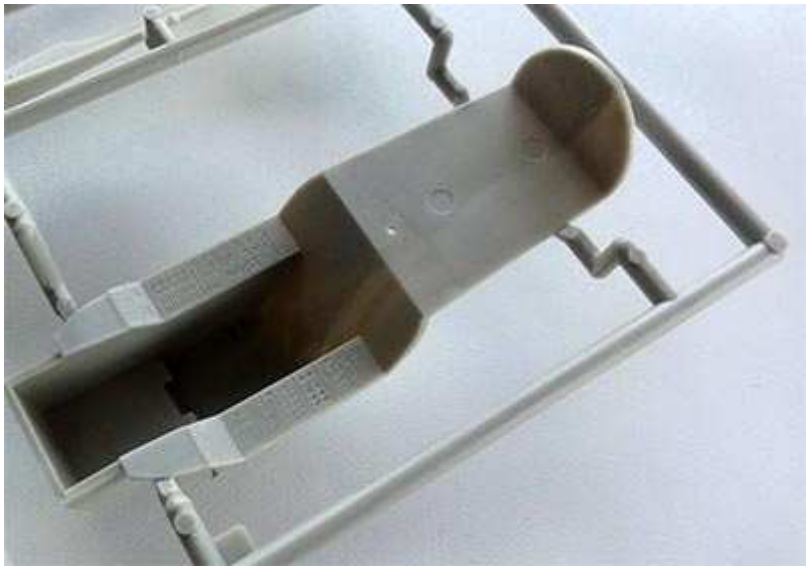
Though not perfect, at this point the only option for a better JAS-39C Gripen model in 1/32 scale. I concluded that these modification are “do able” so it was decided to improved this old kit to get a better 1/32 scale model of the current SAAB JAS-29C Gripen.

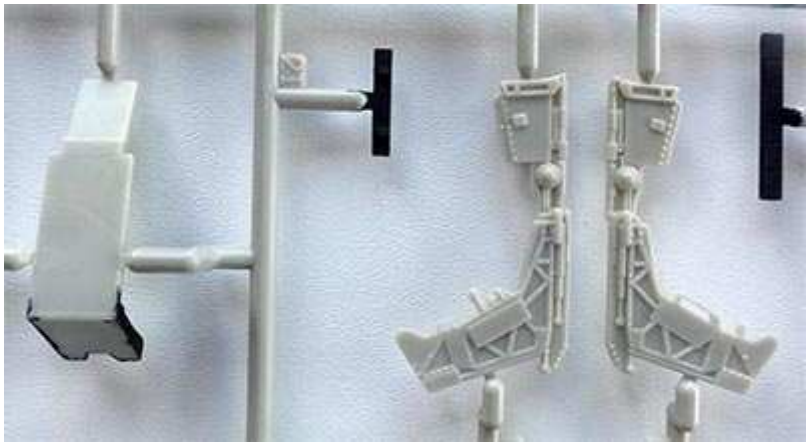
WHERE TO IMPROVE THE SHAPES

The next issue to tackle is to discover “where” to correct the fuselage, wing and vertical tail shapes. This took quite some investigation, also by measuring the 1/72 kit and looking at drawings and many many photos. Helpful was my home made 1/32 kit planform to compare with kit parts. This was done with the computer, scanner and printer by enlarging drawings from 1/72 to 1/32 by factor 2,25.

COCKPIT

A quick check was done regarding the cockpit parts like the tub. In 1/32, detailing the cockpit is worthwhile. In those days it was still a bit secret with many photos showing the “mock up” at the time. Here the basic Revell kit parts are seen.



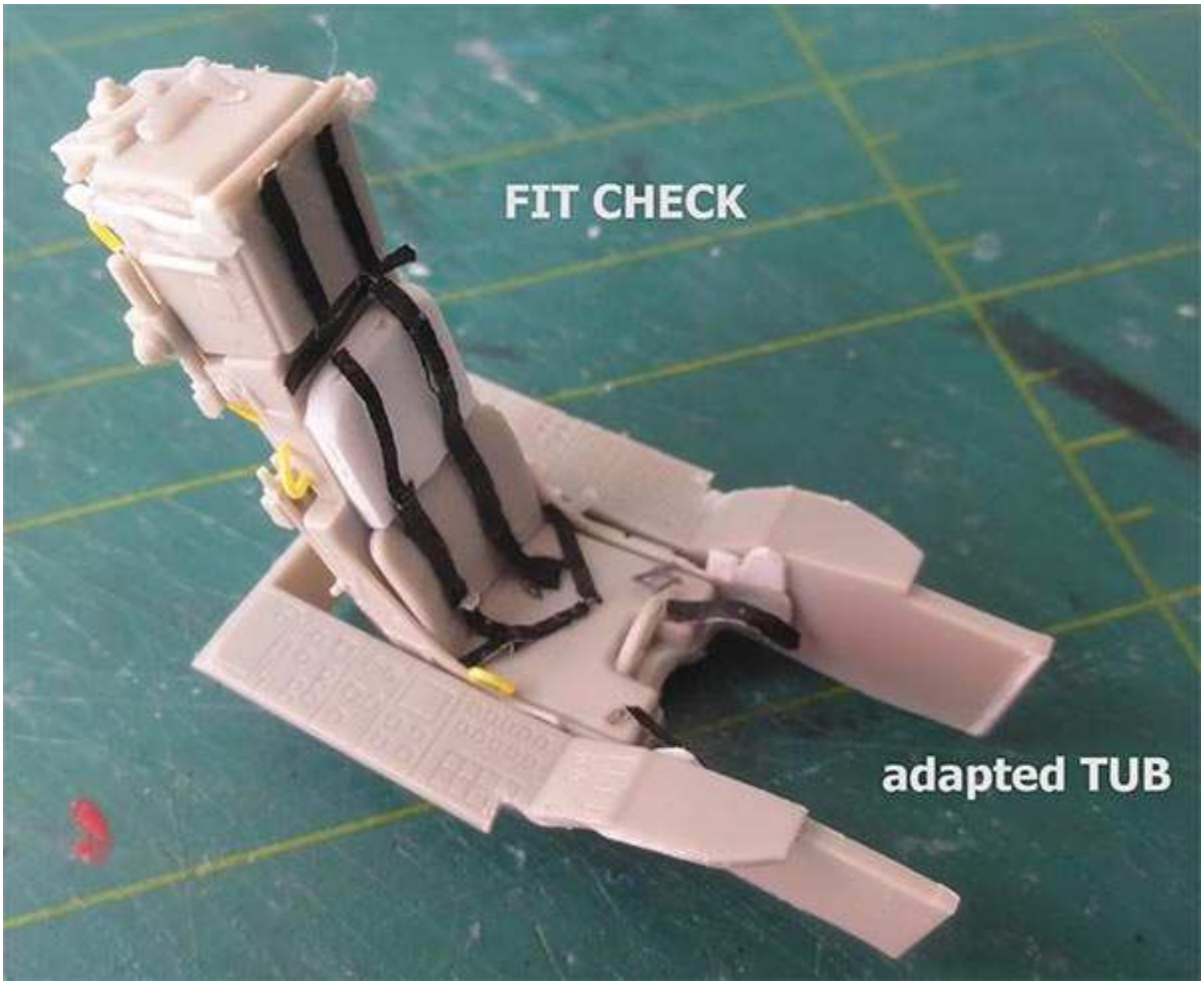


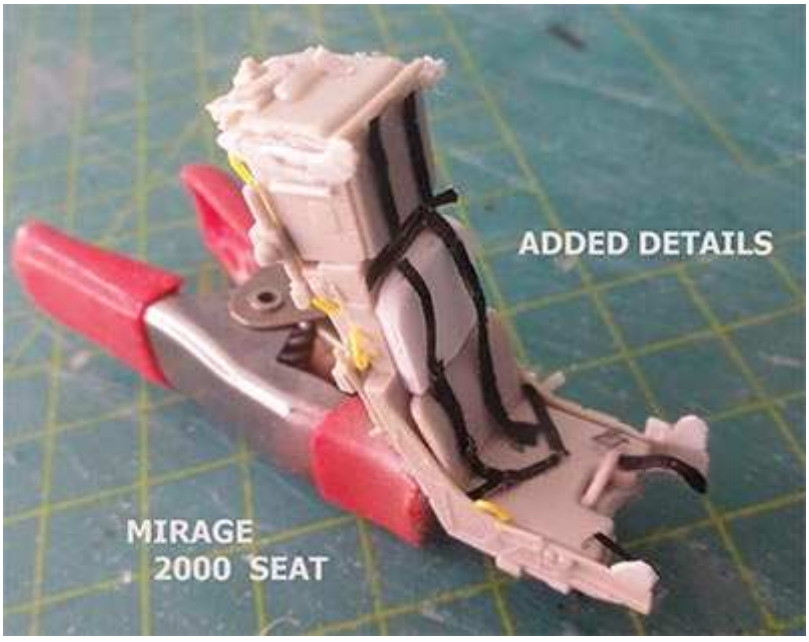
A sort of Martin Baker mk.10 is suggested. That would be close to the MB mk.10 SL seat used in the Gripen.

I found that CMK had a set for a Mk.10 but is was far to wide to fit. (note that in the photo you also see a good after market main wheel set from ARMORY that I will use, more about that later).

The basic Revell seat was taped together and checked with a 1/32 Kitty Hawk Mirage 2000 Mk.10 seat. I concluded it would be a good idea to use this KH seat and update it.

A quick check was done with the kit tub as seen here


FIT CHECK
adapted TUB


ADDED DETAILS
MIRAGE
2000 SEAT

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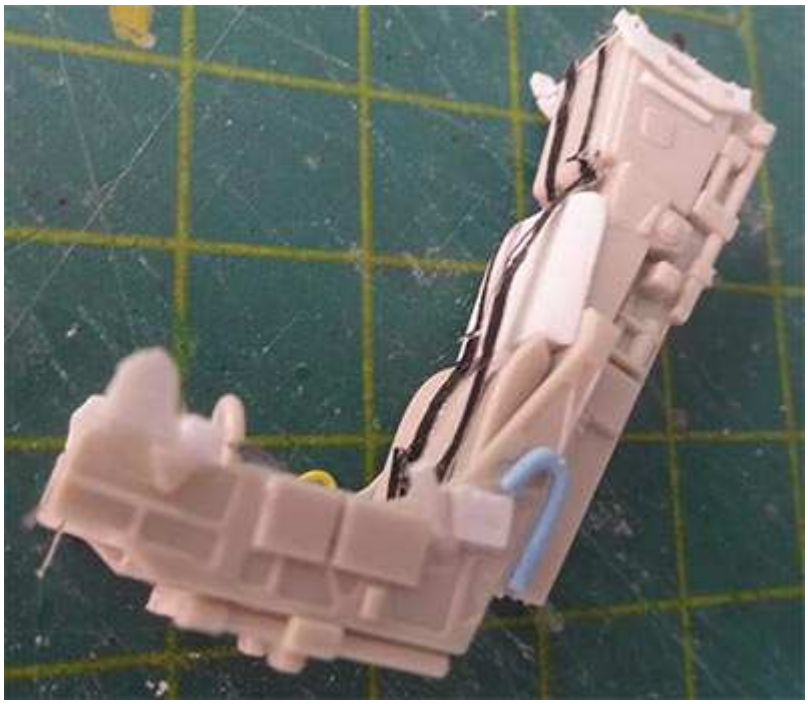


The kit cockpit tub is very simple and at this stage only the base part will be set inside the fuselage nose. Detailing the cockpit to be done at much later stages to avoid damage due to handling. A new instrument panel with side panels are than to be made from scrap.

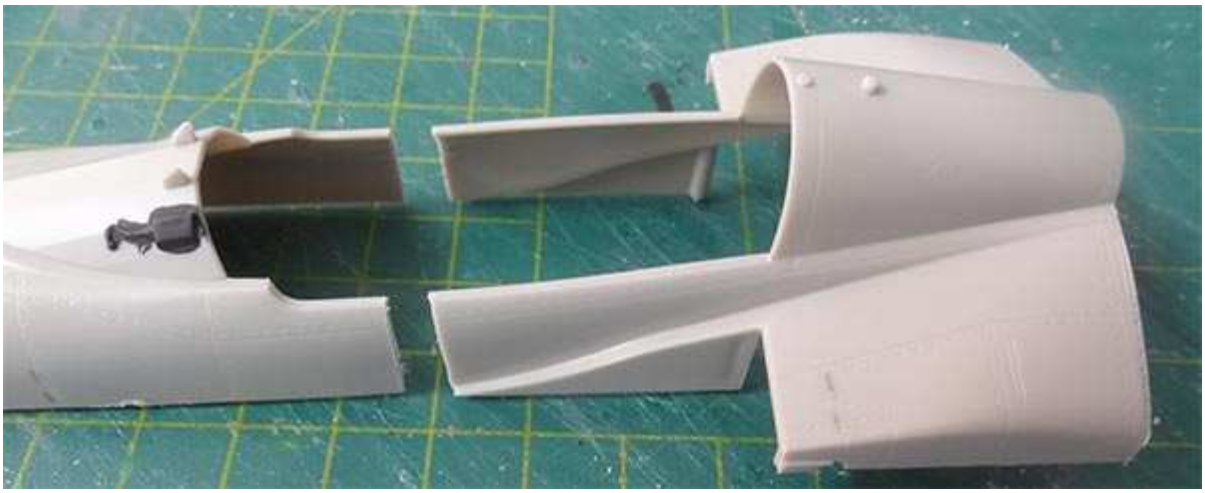
FUSELAGE

For increasing the fuselage length several cuts are required using the razor saw.

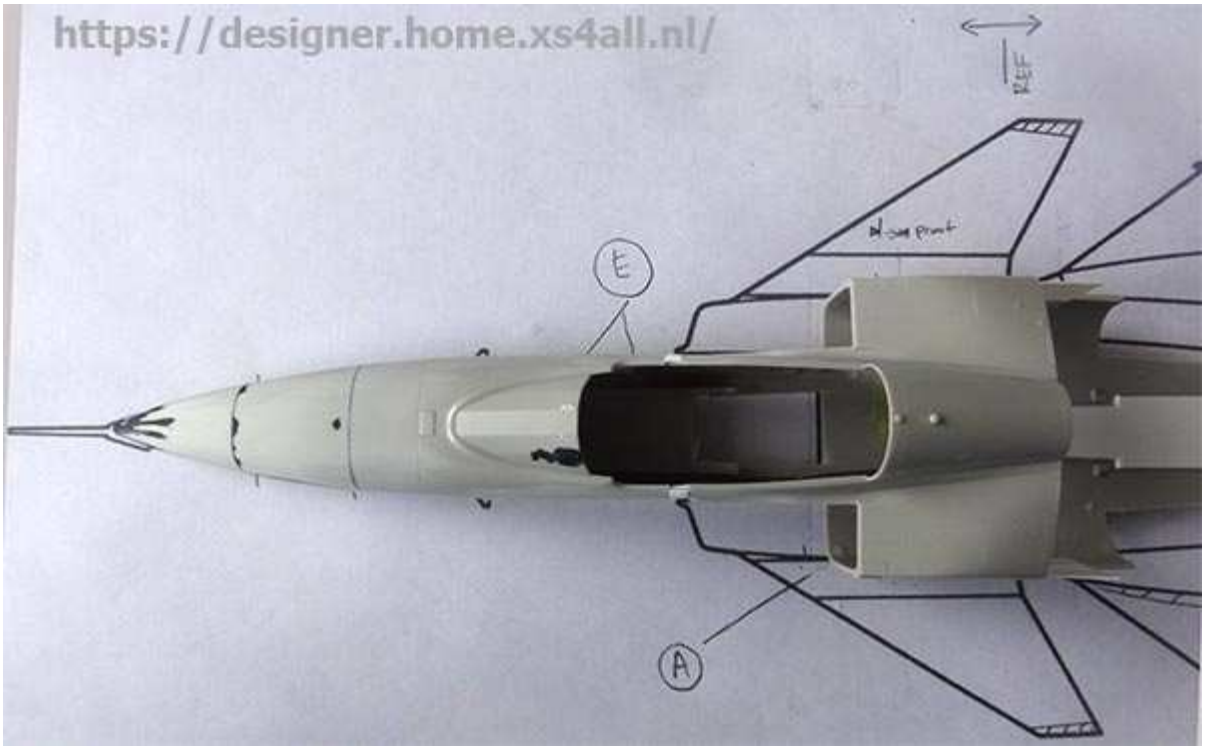
[A] increasing the upper fuselage halve length:

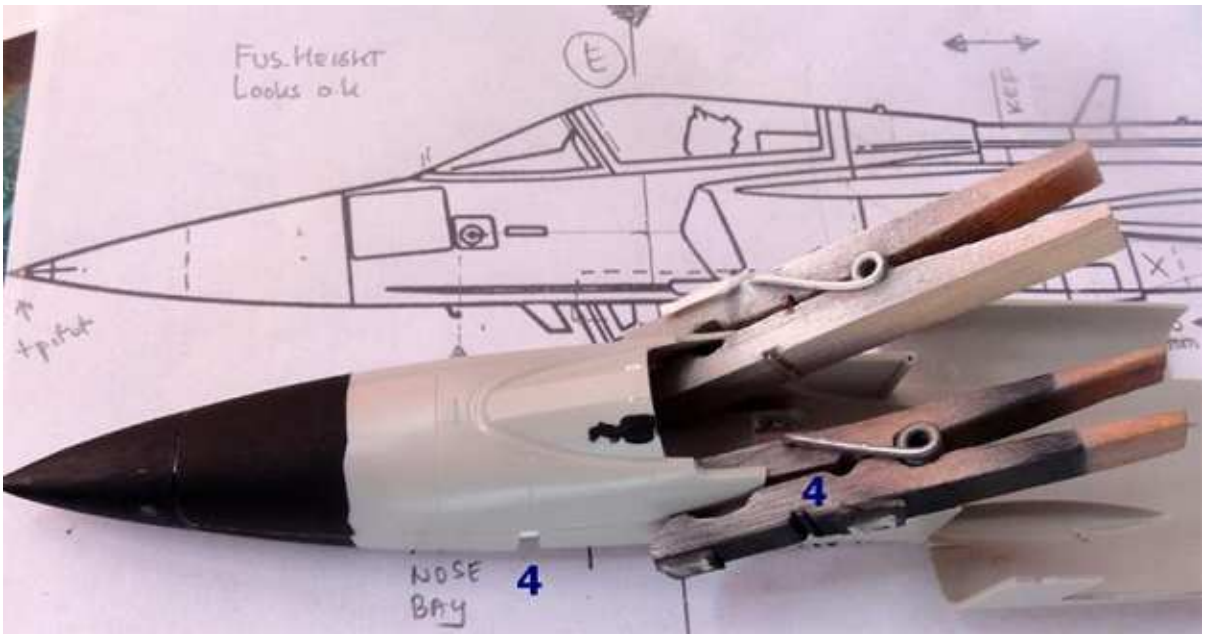
(1) the first large cut was made in the upper fuselage halve aft of the spine exhaust;

(2) at the separated nose section a vertical cut was made at both side walls at the cockpit sill.



The nose and cockpit shapes were compared with the drawing… it looks more accurate now.

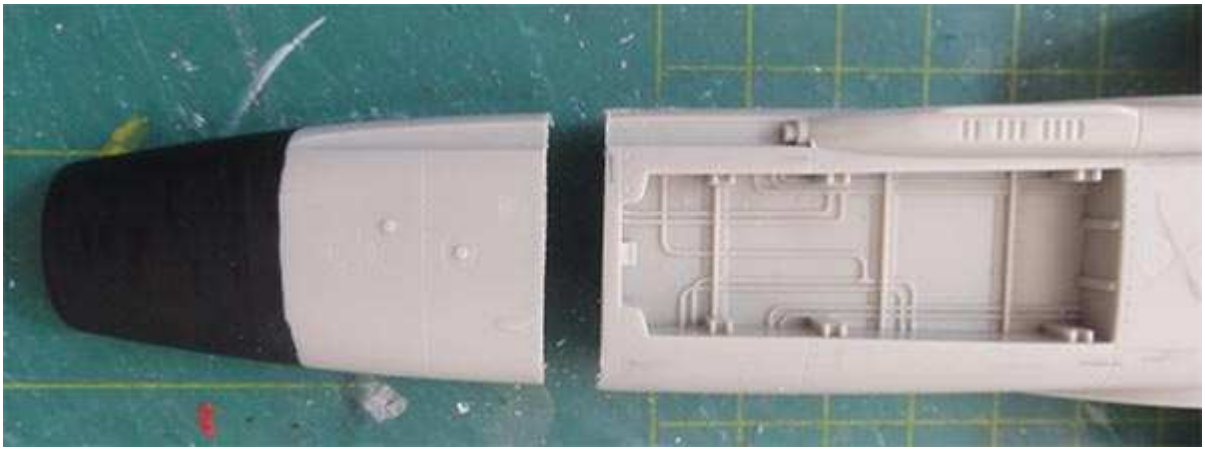




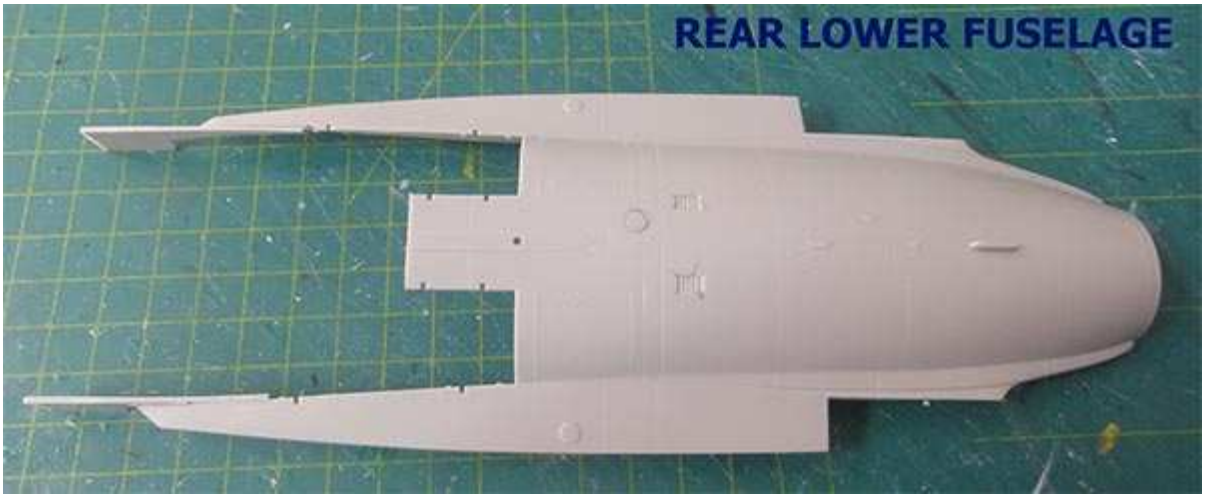
Note: as a result of the cockpit sill lengthening (with 4 mm) a 4 mm slightly longer “clear canopy” is needed; the kit part will be used: by sanding and polishing out the moulded kit frames and adding new rounded frames from card at the front edge and rear edge.

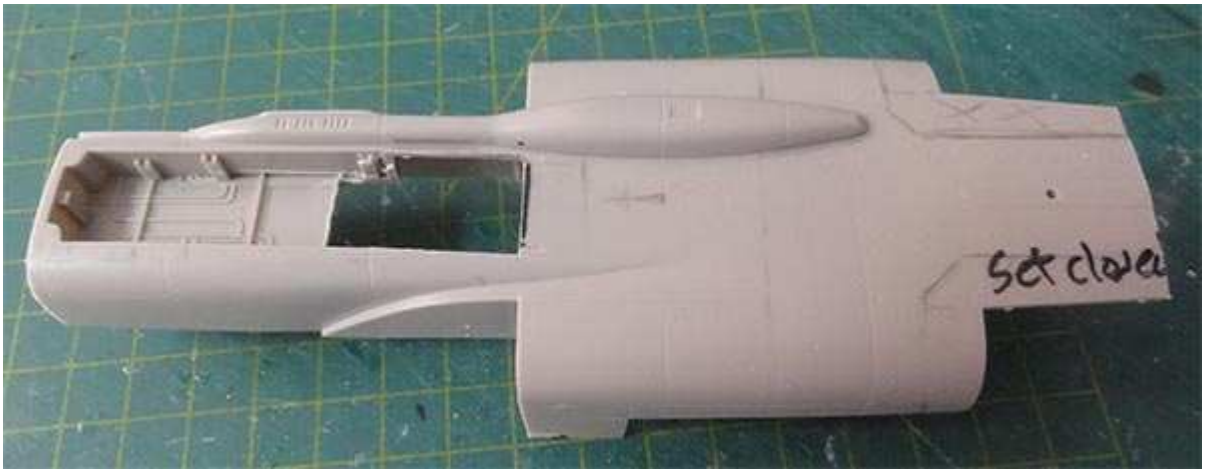
[B] increasing the lower fuselage halve length:

(3) make a cut slightly in front of the moulded nose gear bay.



(4) make a cut in front of the main gear bay opening

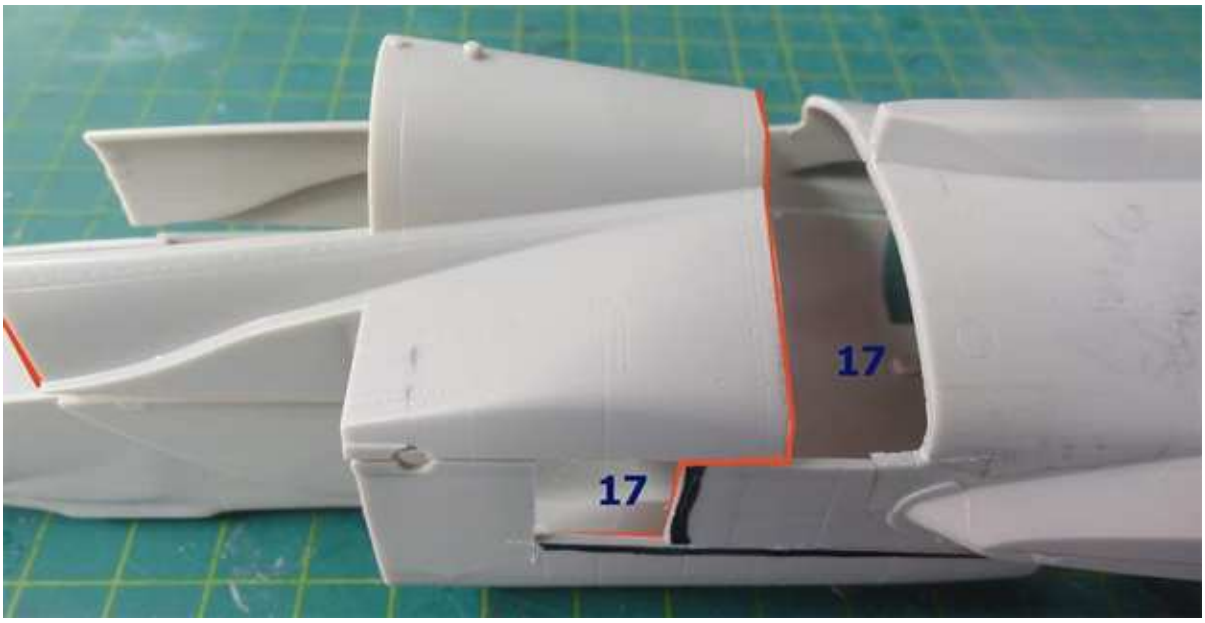




It was also decided to deepen the rear of the nose bay by removing a part of the gear bay "roof".

In order to get more strength, a small secting was repositioned of the lower fuselage aft of the canard station. This small section was moved to the rear and now sits near the wing leading edge root...

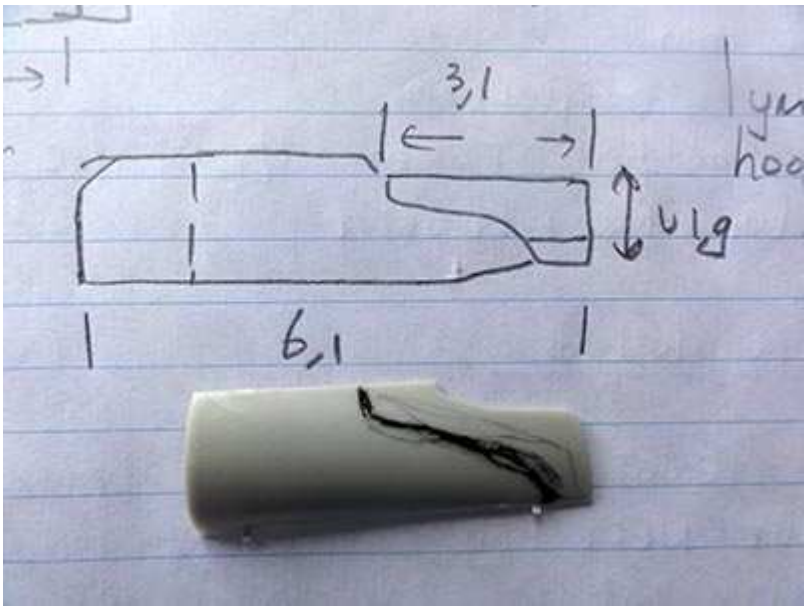
Parts can be shiften to get the 17 mm extension between nose section and rear fuselage as seen here...



.... and seen here the lower sections shifted 17 mm...

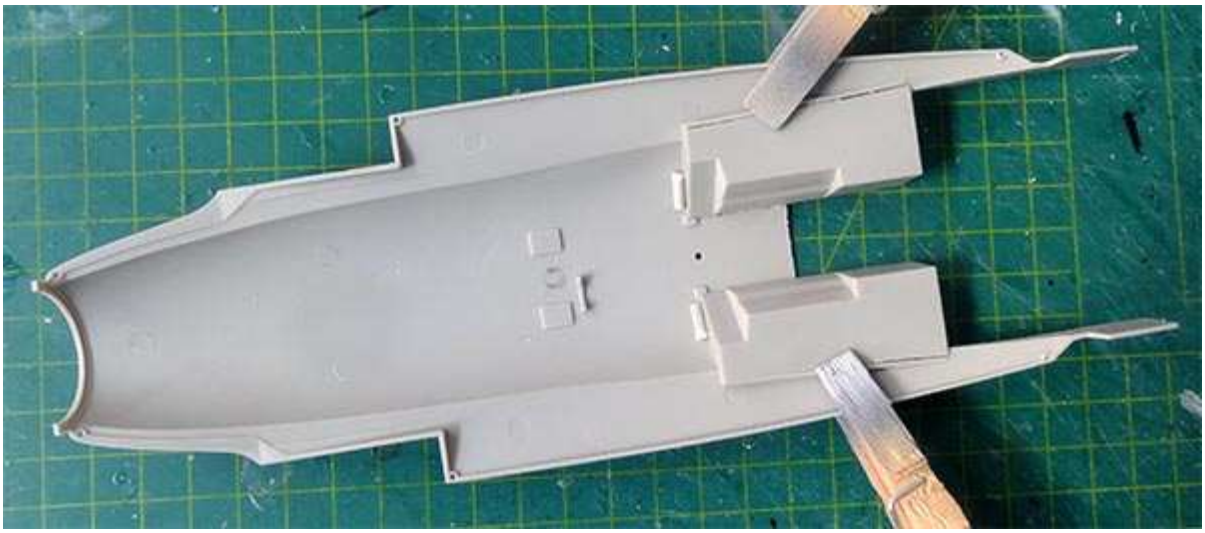
Here the overall idea is seen, making increasing the total length 4 mm + 17 mm = 21 mm.

The lengthening of the fuselage affects the landing gear obviously. First kit doors and landing gears were cross checked.



The distance between centers of nose wheels and main wheels at the real Gripen is about 5,25 m (so about 164 mm in 1/32). This number will be used to establish the location of the nose gear bay and strut and the main gear bays and struts. It was concluded looking at the made cuts and shifted parts that the struts can be appropriately set at the later stage.

The main bays can be set at per fit at the changed rear fuselage insides.

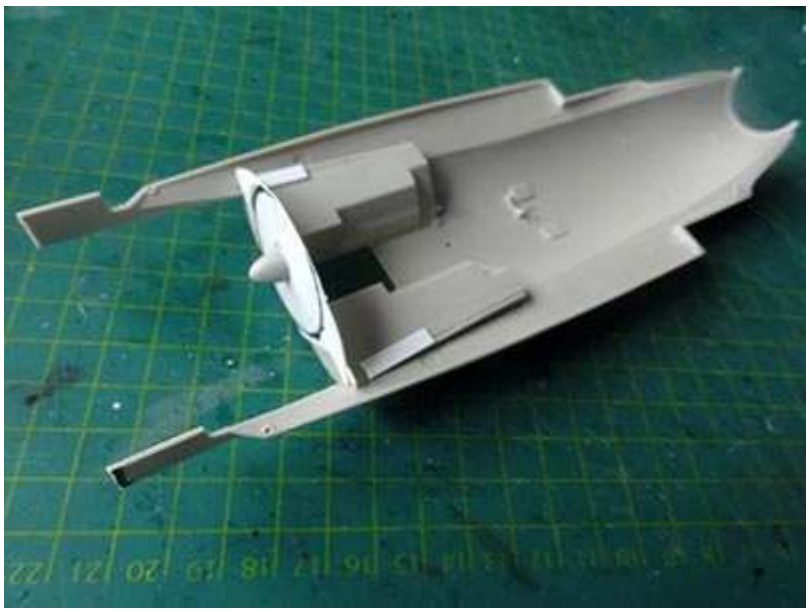


It was found that the kit main door parts are inaccurate. As the big main forward doors will be kept closed as seen on most parked Gripens and the main gear leg location will be kept, the effort is simple. The “closed forward” main doors will be “virtually” lengthened with a sort of card fairing (to be shown later).

It was also found that the main wheels of the kit are too small in diameter (2,5 mm); but the kit nose wheels can be used (only about 0,5 mm too small) though these are found also in a ARMORY resin set; more about that later on.

INTAKES

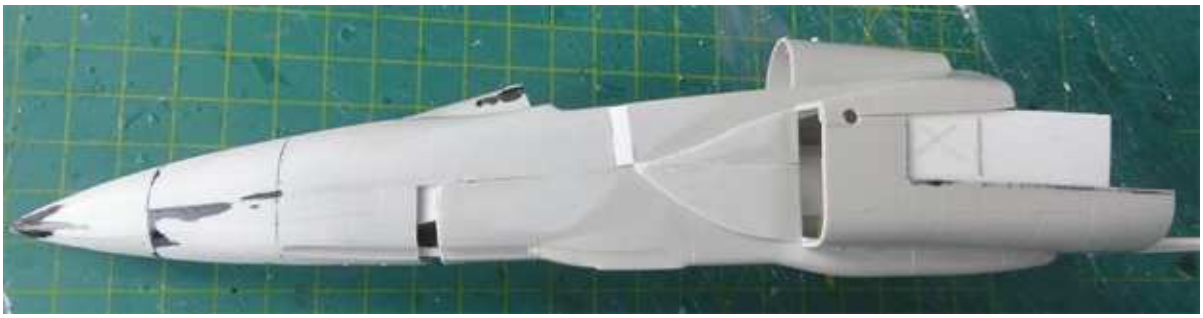
The intakes were not that bad and can be reatined and installed with their kit part splitter plates. Inside the fuselage it was decided to suggest a sort on engine air funnel with card with an engine fan. A bulkhead was made and set in the upper fuselage to ensure it would not interfere with any main gear bays. I suggested a fan but later found out using the kit part was also an option, well I forgot about this.



Note that the forward fuselage and aft section are not joined yet at this stage as first some work on the wing will be done.

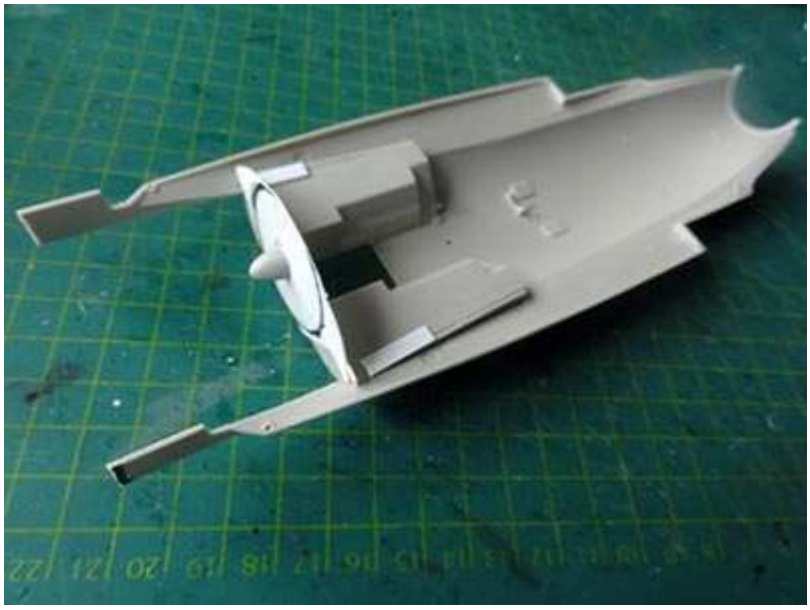
A sort of jet pipe will be set at the front of the exhaust with a part found in the spares box from probably a Eurofighter. (the kit “engine” parts were thus not used).

The prepared and modified forward fuselage was assembled with pieces of card to get the required plugs of appropriate length. At the mid sections also card was set also internally to get strong joints.



Card , putty / car filler and a lot of sanding was needed. When the cockpit sill was fine, the intakes were set with their kit part splitter plates. Again puttied and to be sanded.

Inside the fuselage it was decided to suggest a sort on engine air funnel with card with an engine fan. A bulkhead was made and set in the rear upper fuselage to ensure it would not interfere with any main gear bays. I suggested a fan but later found out I could have used the kit part....

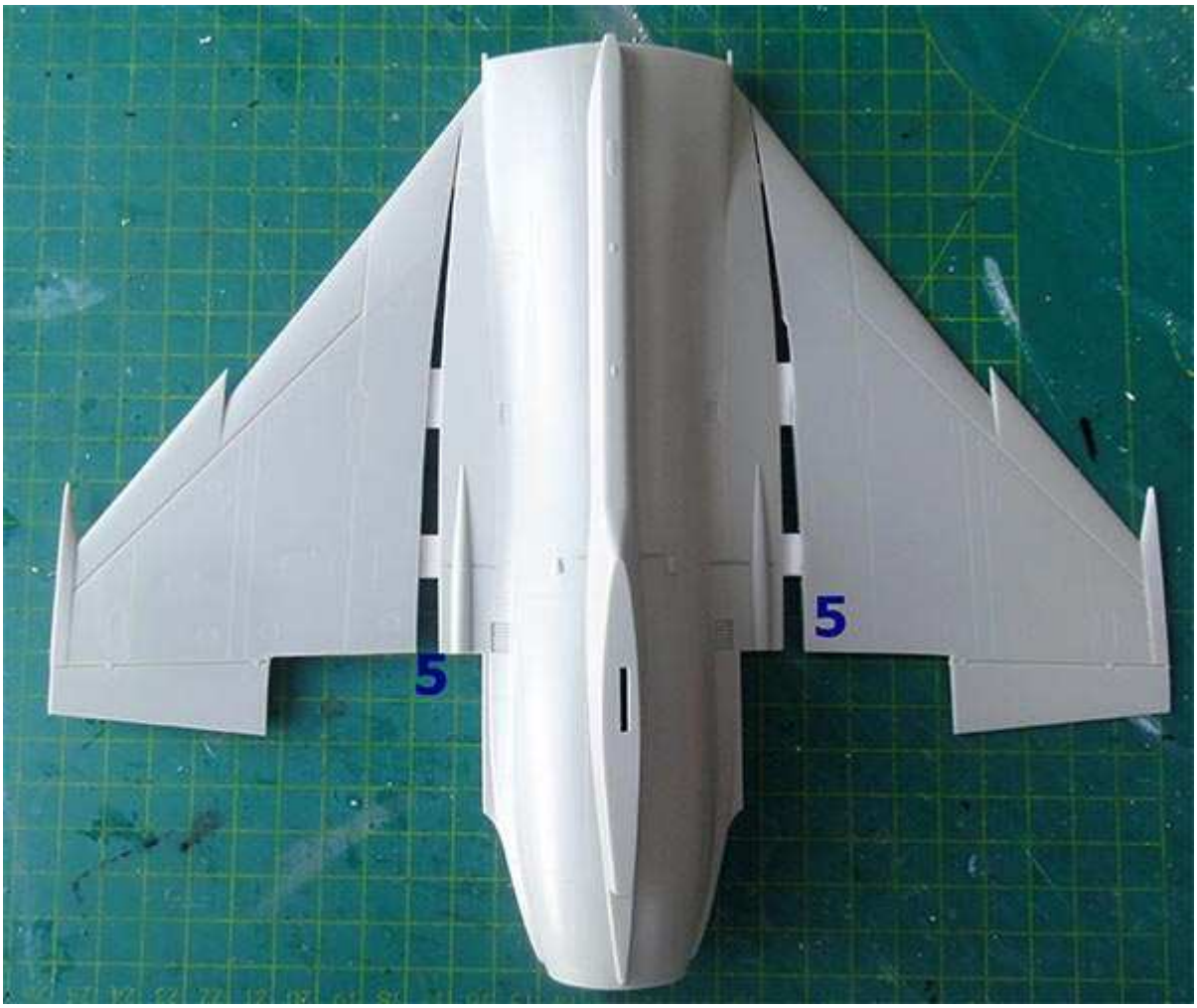


Note that the forward fuselage and aft section are not joined yet at this stage as first some work on the wing will be done.
A sort of jet pipe will be set at the front of the exhaust with a part found in the spares box from probably a Eurofighter. (the kit “engine” parts were thus not used).

WING MODIFICATION

As noted earlier the wing span needs an extra about 5 mm span increase at the rear (including the inboard trailing edge flap) at each side; (total wing span increase 2x5 mm = 10 mm)

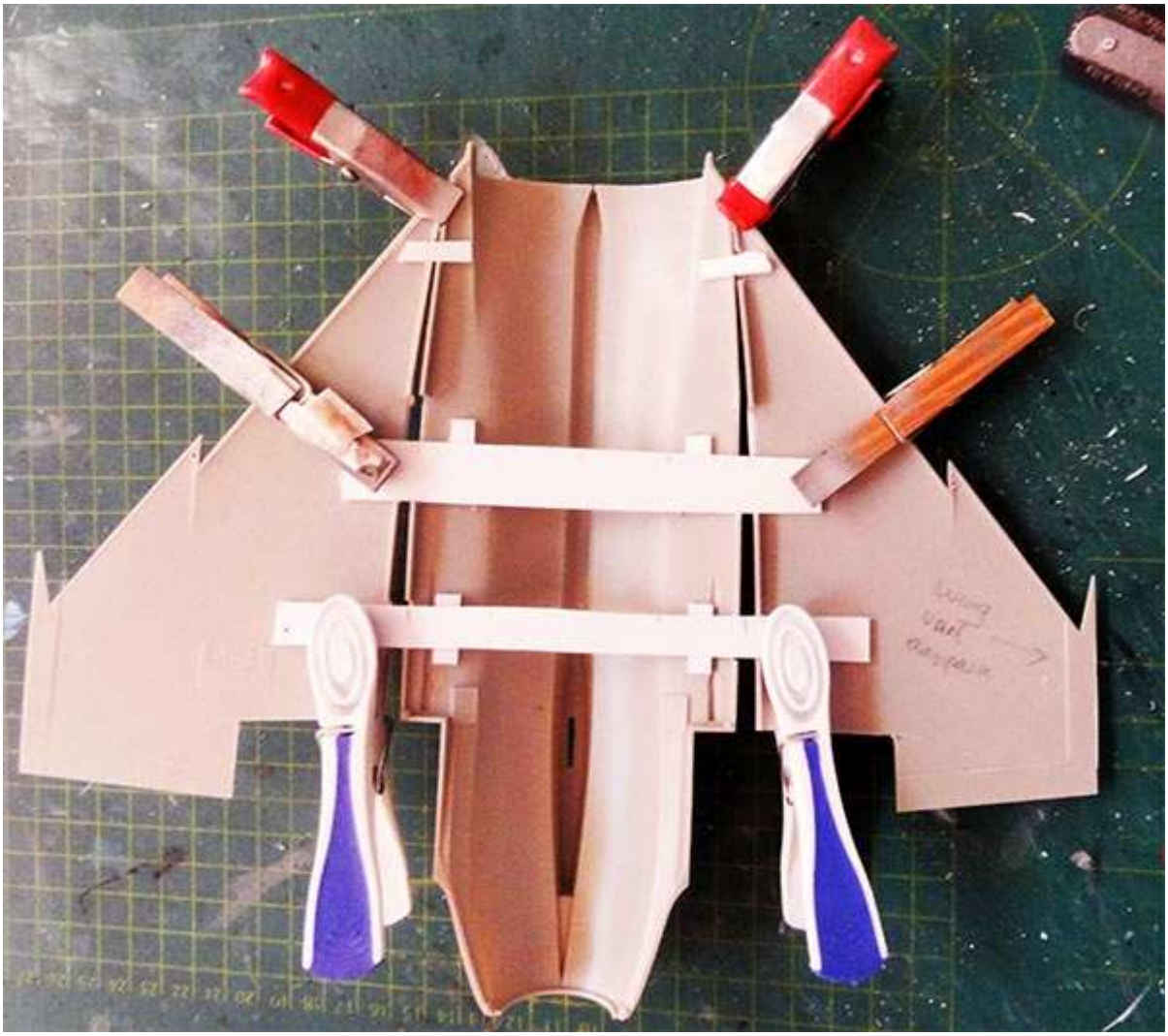
The inaccurate missile wing tip rails were separated with a razor saw. The inboard flaps were also separated.

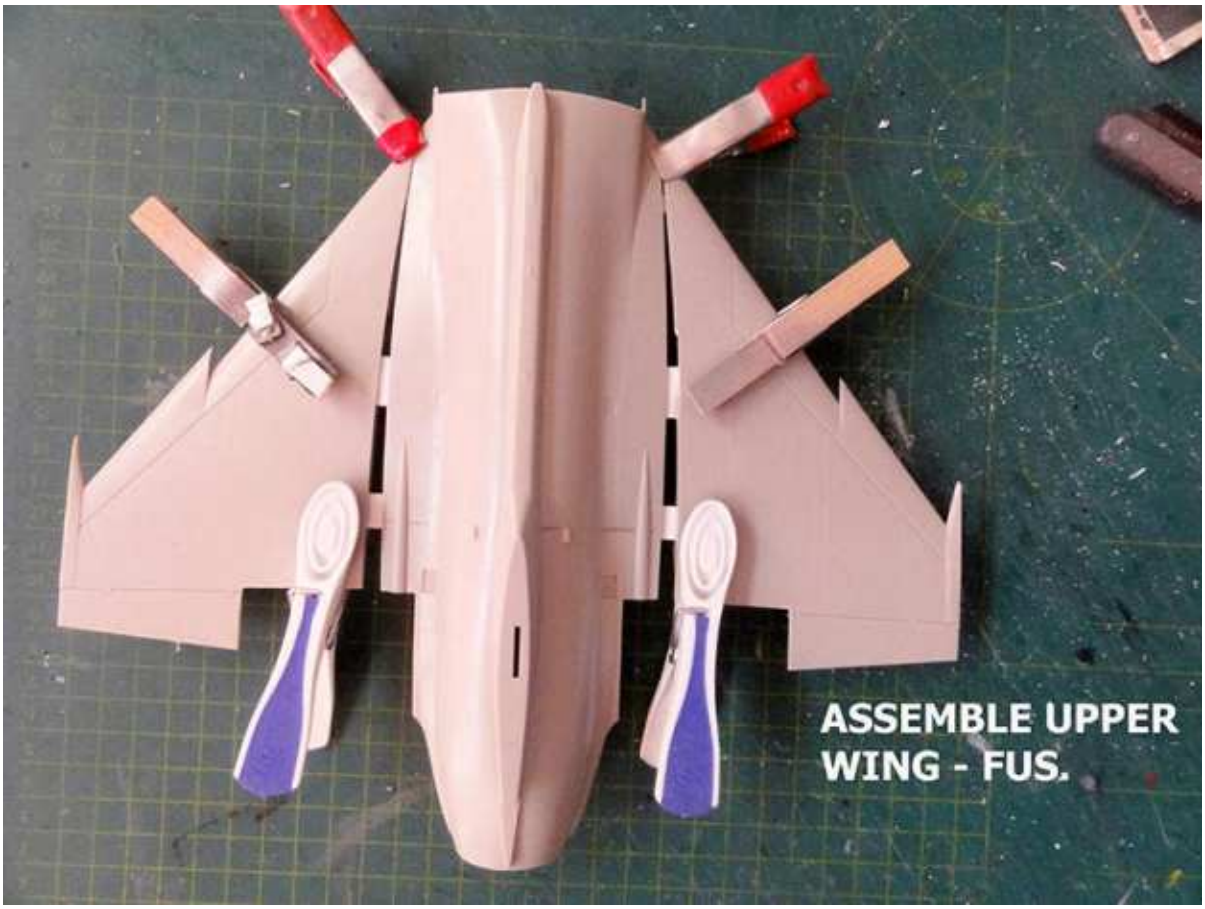


As regarding the wing, it was found also that the wing root span extension of 5 mm at the rear should be a bit less at the leading edge. It is not 100% correct but good enough.

The wing ailerons looked OK so were not changed. The spanwise pylon stations were checked with the 1/72 Revell kit but looked good enough.
The wing root inserts will be made with card and putty. Inside, thick strips were glued.

The upper and lower wing sections were joined, clamps used.





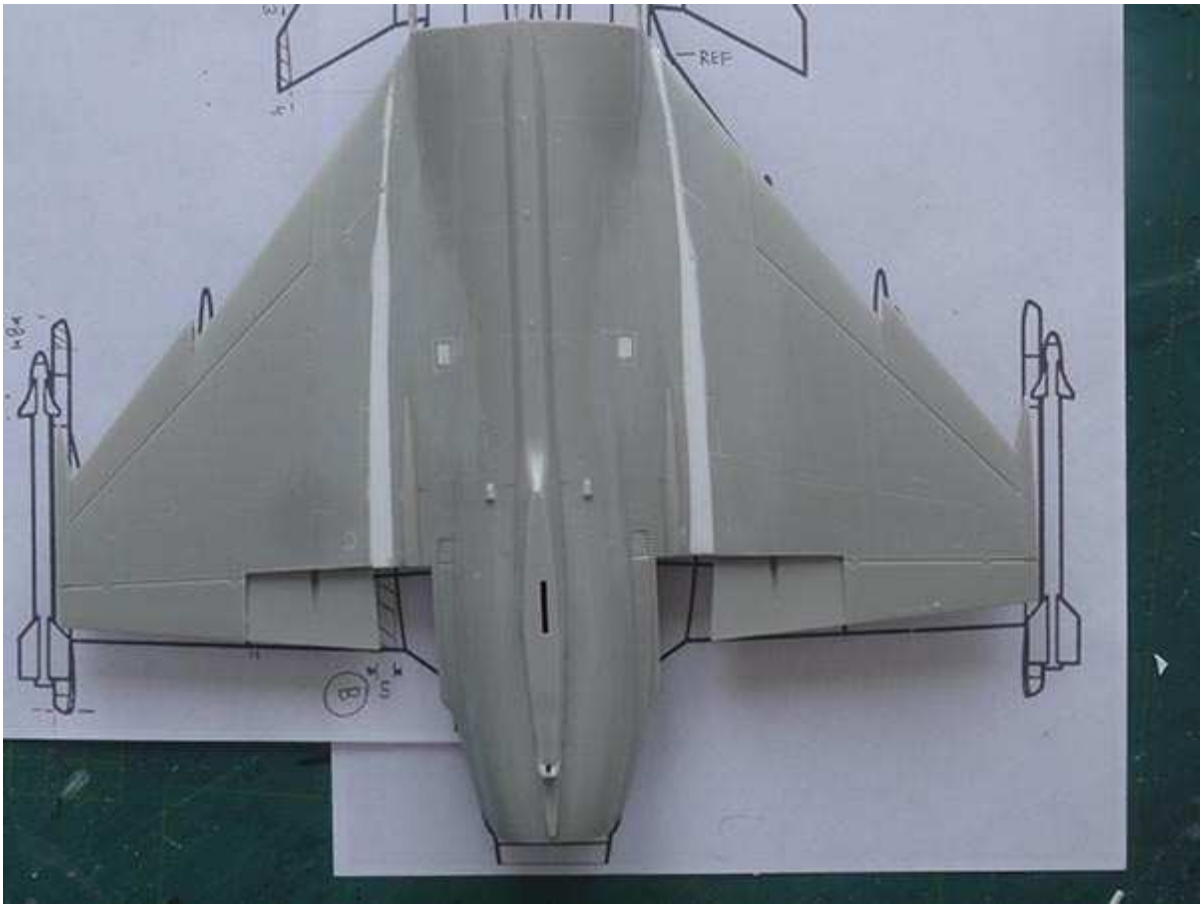
The gaps will be closed with card between wing and the rear fuselage and puttied. All was aligned with the upper fuselage to keep any ridges and curves as limited as possible.


Alabastine
Auto

The small indented grills were also filled with putty. Some new engraving will done later.

The lower areas are seen here

A check was done with the drawing and it looked much better now! (note: camera lens shows a bit distortion)



The upper rear fuselage can be kept as per kit and will be used to install the vertical tail and (changed) exhaust later on.

References about the Gripen:

- Review 1/32 Revell kit, Scale Models International, Sept 1992
- Air international vol 33, page 224 , Vol 44, page 072
- Air international vol 75, page? special.
- Flight international 1990, number 4232, page 90
- World Air Power Journal, volumes 20 (pages 30-50) and volume 42 (pages 60-100).

Books:
- Saab Gripen, Keijser, Aerofax, 2003
- Saab Gripen, Golabek and Barcz, Topshot series #48, 2009
- JAS-39 Gripen, Photo Hobby Manual #1003, CMK, 2007

Internet:

- drawings: https://drawingdatabase.com/saab-jas-39-gripen/

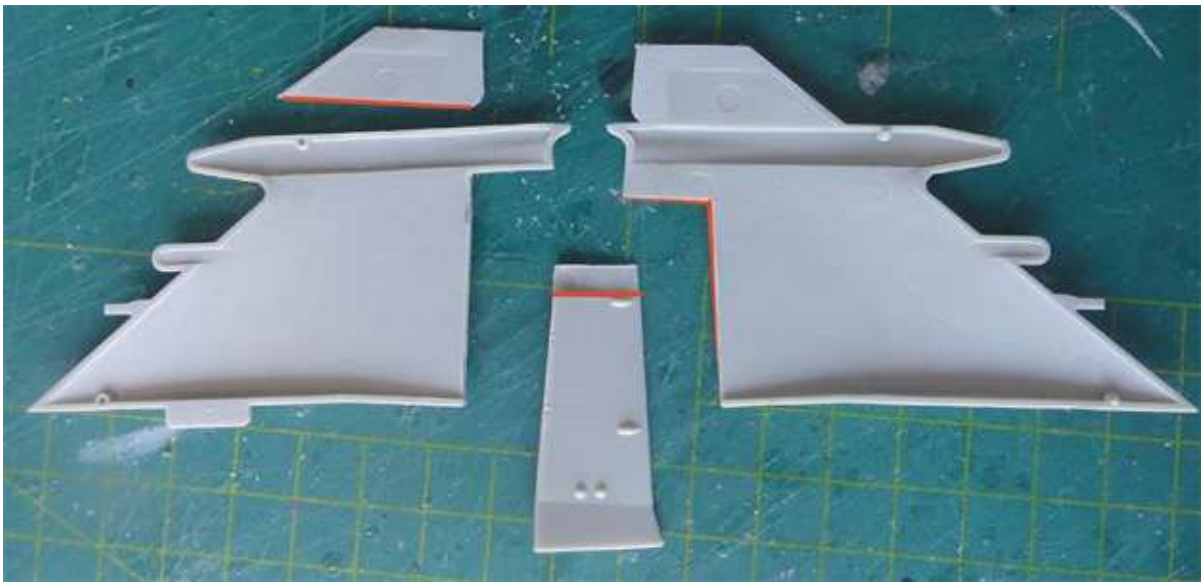
saab gripen JAS 39 revell 1/32

... continued

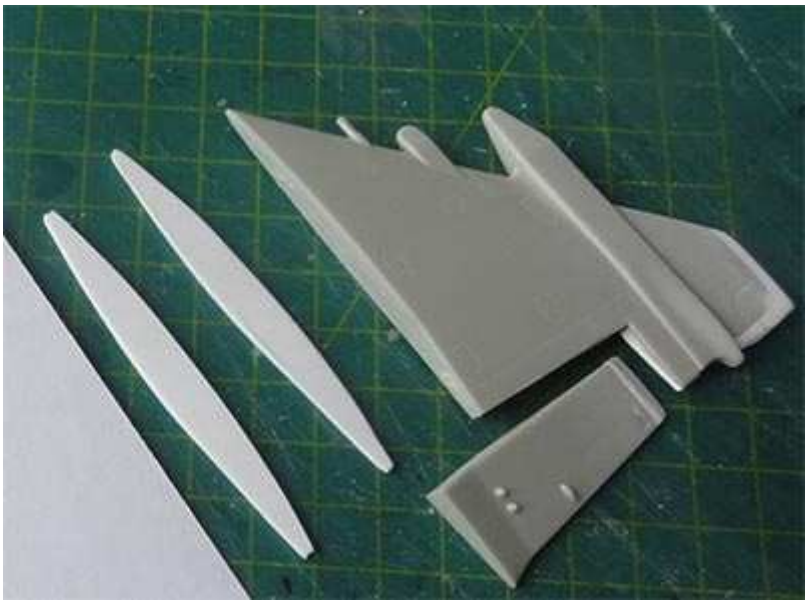
VERTICAL TAIL

This vertical tail itself needs corrections as well with an increase vertical tail height at the lower base by 3 mm and at fin top by about 2 mm (total increment = 5 mm);

With a razor saw, several cuts were thus made.



For the increased height, a few strips of card were used. The upper tail section will be a piece of card 2 mm and is seen here after puttying.



These root base of 2 x 1,5 mm thick = 3 mm card sections were set on the rear fuselage. The rudder will also be enlarged with card (the raised knobs on the kit part will be sanded off).
It was decided not to change the vertical tail fairings, though not 100% accurate but good enough.

An important step is now to join the forward and rear fuselage-wing assembly. It was crucial to check symmetry and get enough strength with long strips of thick sprue. An exciting moment! (prepared vertical tail is also seen)

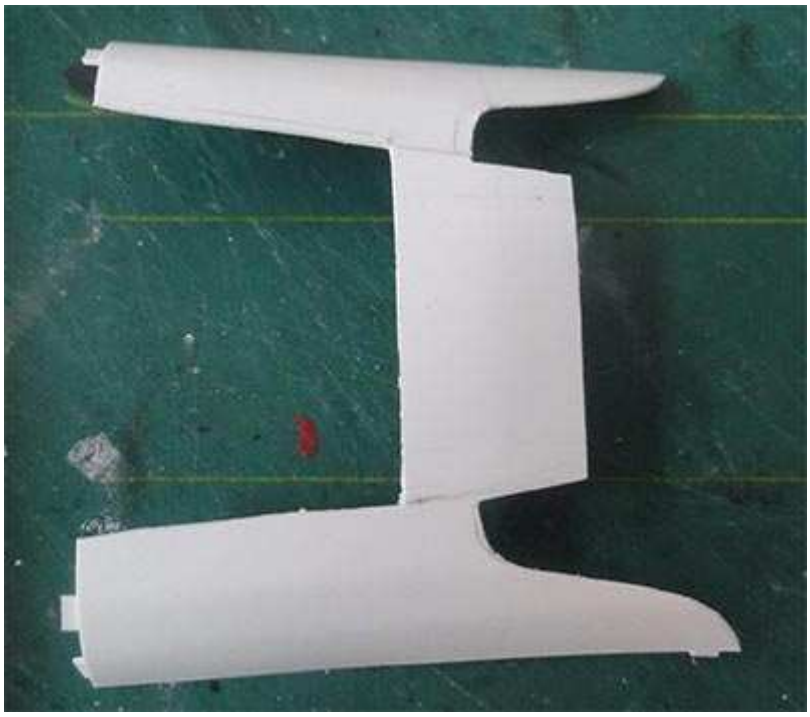
As seen below, the air funnel inside and extra strips were set between sections with spine and rear spine. Let dry for at least 24 hours.

MAIN GEAR BAYS

For the corrected main bay opening shapes, a piece of curved card insert was made to fit. This way, the main closed doors will be “virtually” lengthened 10 mm.

Also bits of card were needed to get more strength and all set with clamps to dry.

Making this curved card insert took quite some time. Note that the main closed doors are part of this insert.



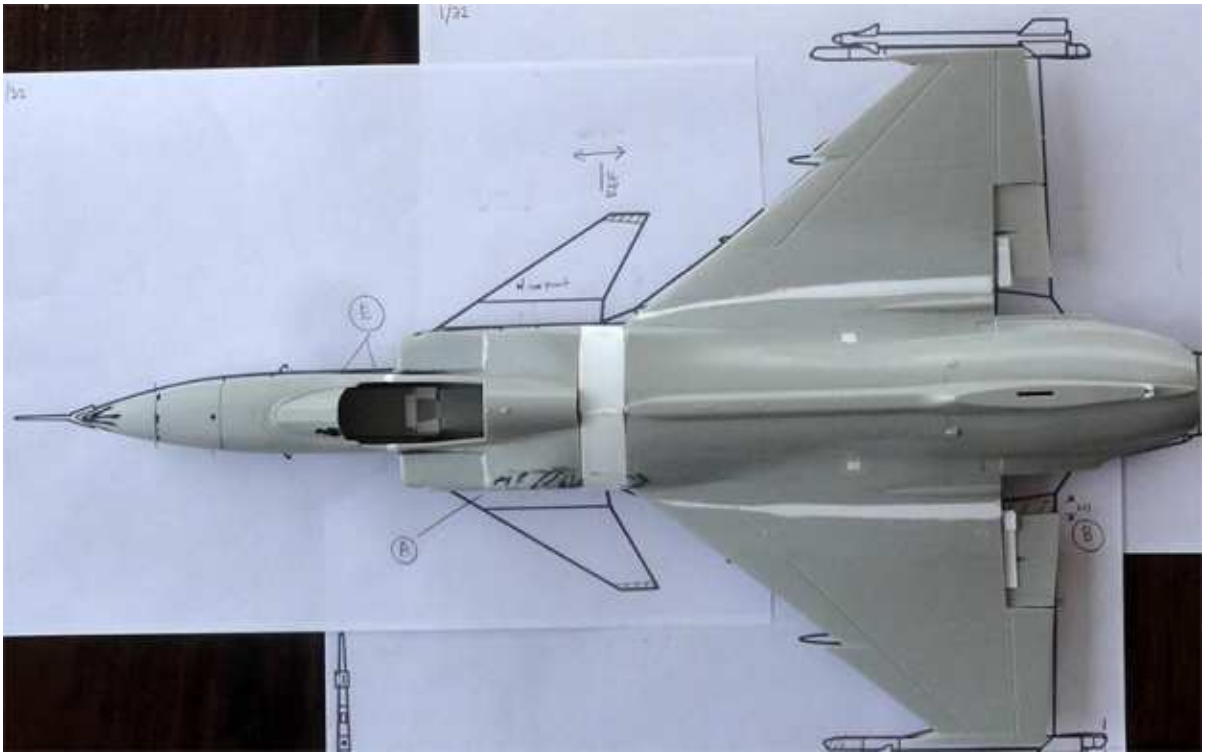
Putty will be needed.

Card was installed at the upper spine....

A check was made with the drawing and it look OK. The spine insert here is 17 mm in 1/32.

Now we have a 1/32 Gripen that is far more accurate in shape:
(1) increased fuselage lengths of 4+17 = 21 mm.
(2) with corrected wing span 2x 5 mm at the rear and the leading edge sweep looks much better now.

Note: at the ailerons, the sweep (about 1 degree) is not entirely accurate but it was decided not to mess with the thin trailing edges here.



Now a lot of putty and sanding is needed. But this will get a far better shaped model.

(photo here shows still the uncorrected gun fairing location)

Each intake upper corner near the canard station should be a bit more curved. Sanding was done, be careful here as the plastic is thin. I had to make some repairs at the intake corner insides here as the plastic was very thin. The better result is seen here....

At the wing kink/ leading edge aft of the canard station it was found a small extension was needed as seen on real Gripens. It took quite some time to see this as it is missing in the original kit and is situated at the mid fuselage extension. (see drawing check above). The small extensions were made with a bit from the spares box, putty and sanding.

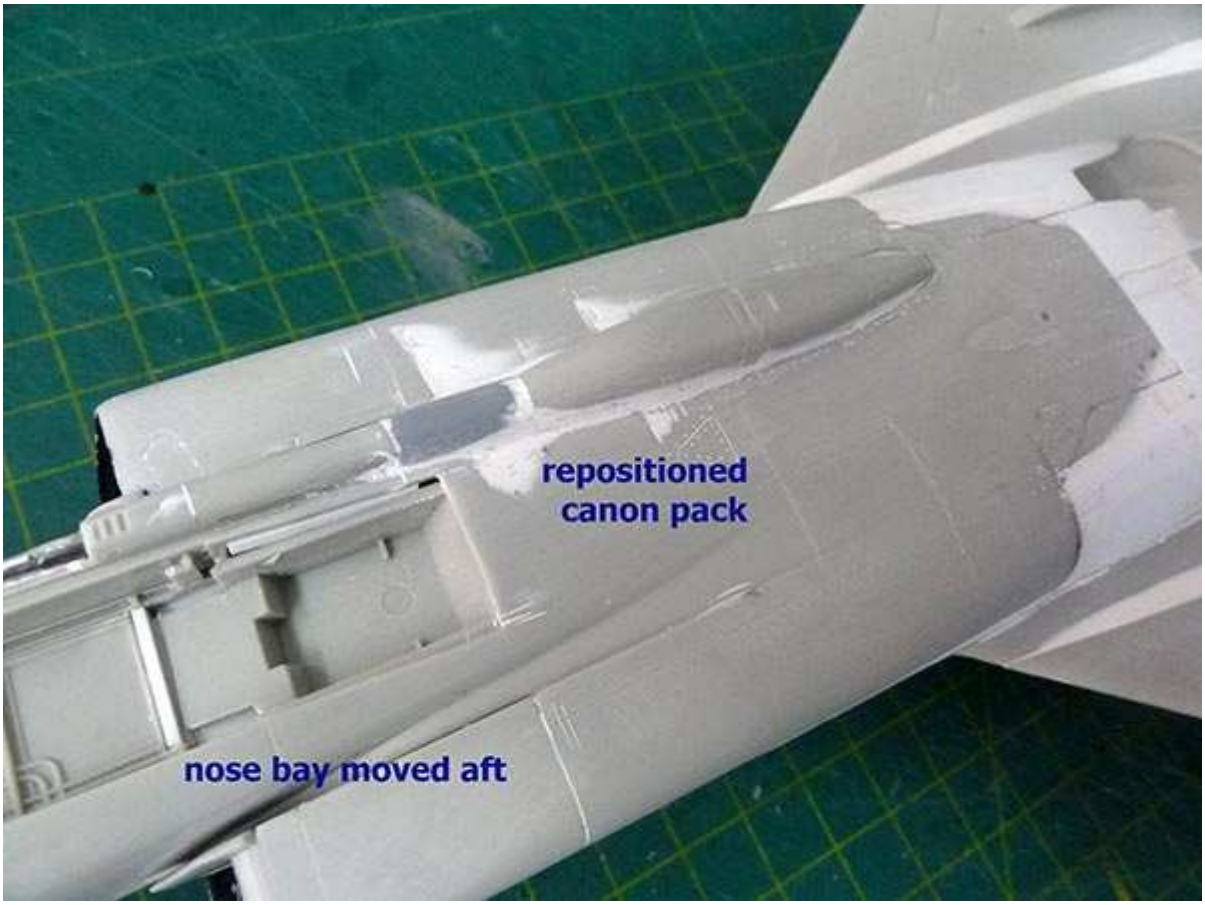
The spine exhaust aft of the cockpit took some work to get a perfect symmetrical result. Some putty still needed!

GUN FAIRING AND INBOARD FLAPS

I found a bit too late that the lower gun fairing needs to be lengthened in the middle by about 12 mm and relocated as well. So the kit shape was cut off horizontally with a razor saw.

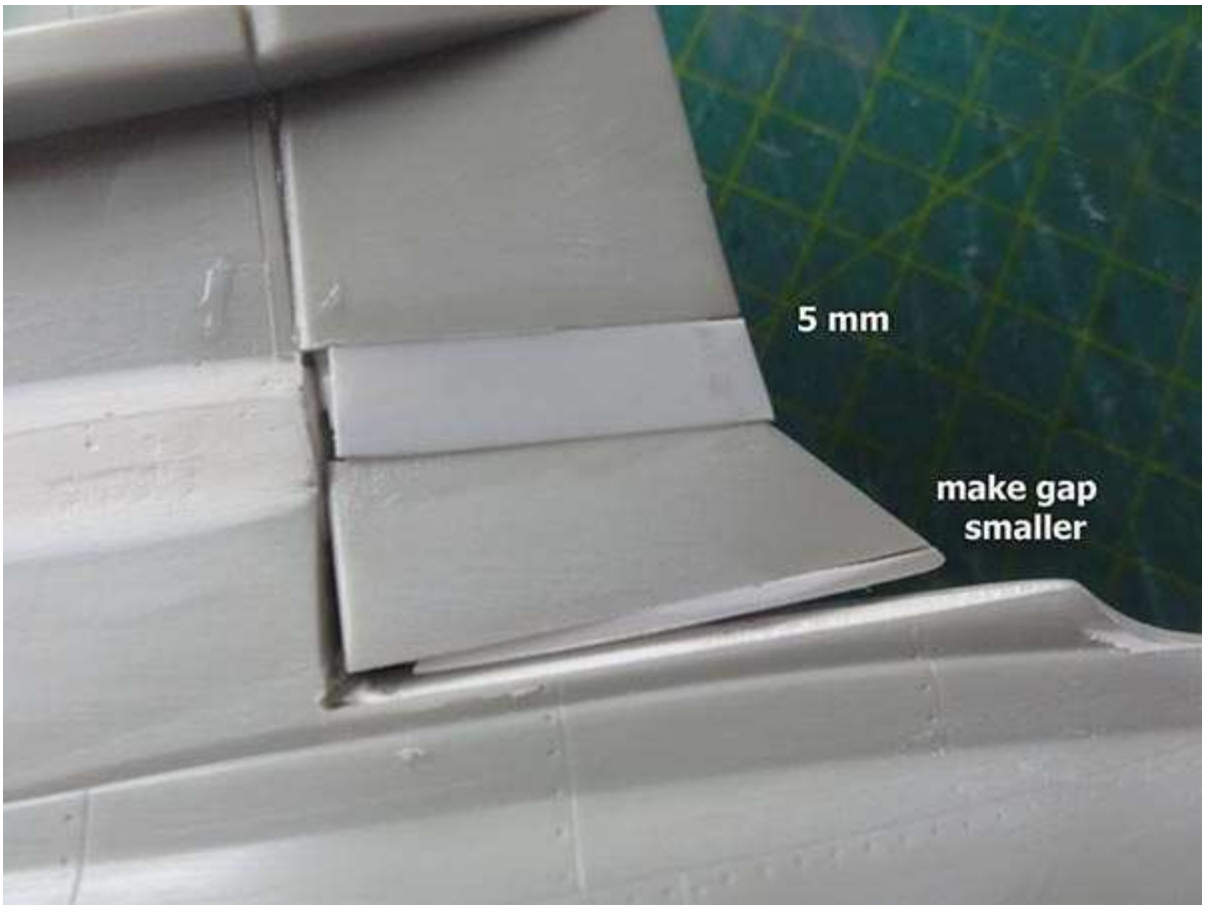
It can be done.

Some card was set and close the big gap. A 12 mm section was set in the middle and putty and sanding needed again!



FLAPS

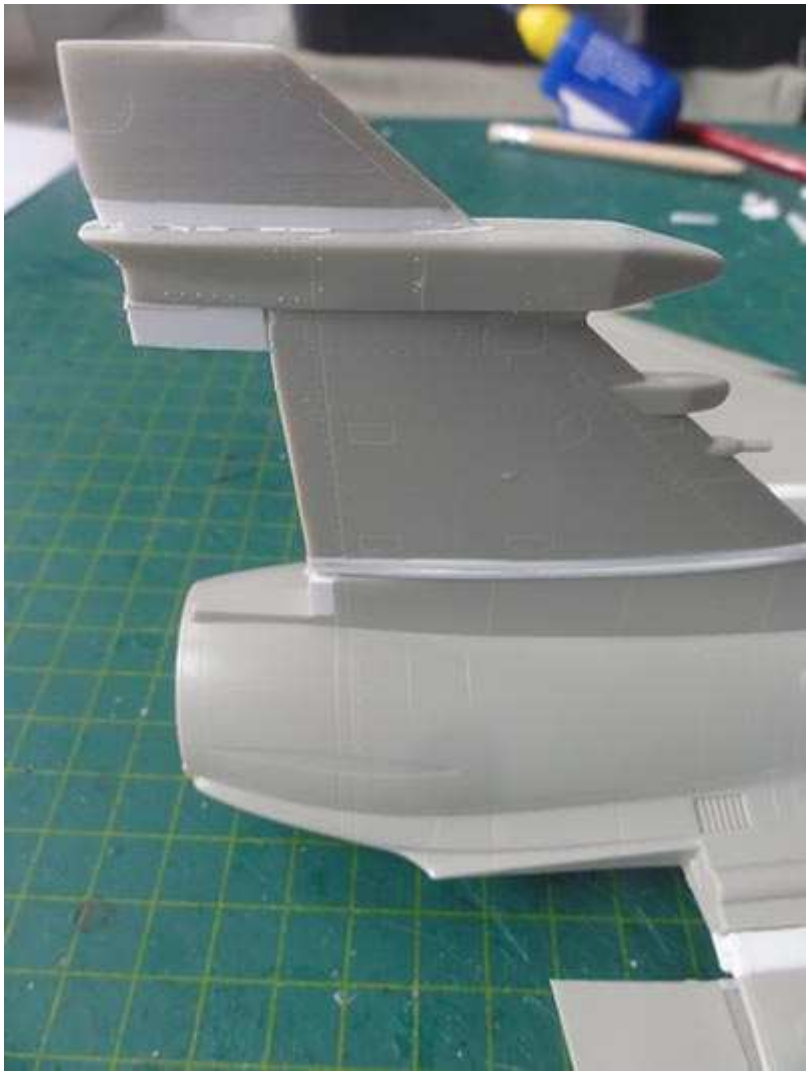
The inboard flaps are still separate parts. They will also be used to suggest a slightly better trailing edge angle as I had to rotate a bit the wing planform. Measuring and dry fitting was done now. The gaps between flap and fuselage will be kept but not too wide using card and putty. The ailerons will be unmodified.



Pieces of card (5 mm width again) are needed.... and again putty!

VERTICAL TAIL

The corrected vertical tail was set onto the rear fuselage. Ensure a vertical sit! Putty was needed



A small correction was also needed at the lower base as seen here.....

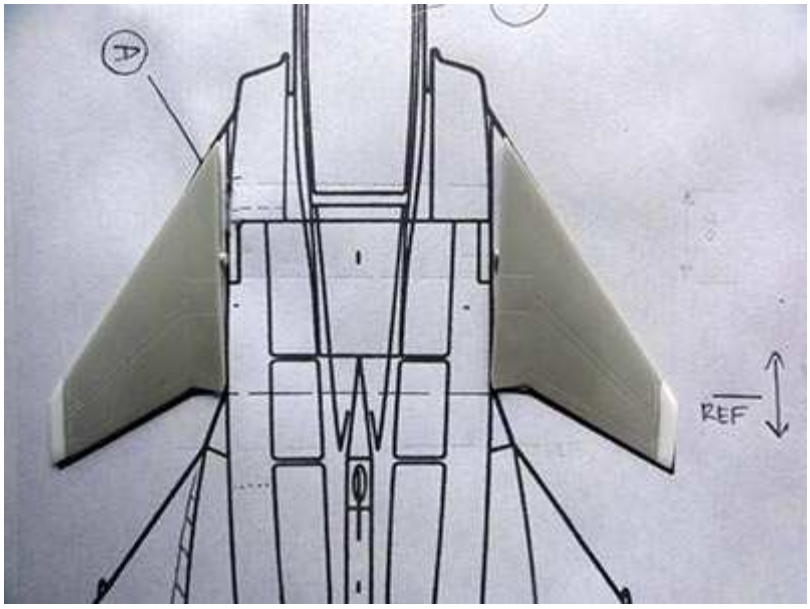
Here the overall result is seen of the kit corrections till now.

The model still needs some small putty clean ups and than a first grey base primer. Than a photo check will be made with the camera.

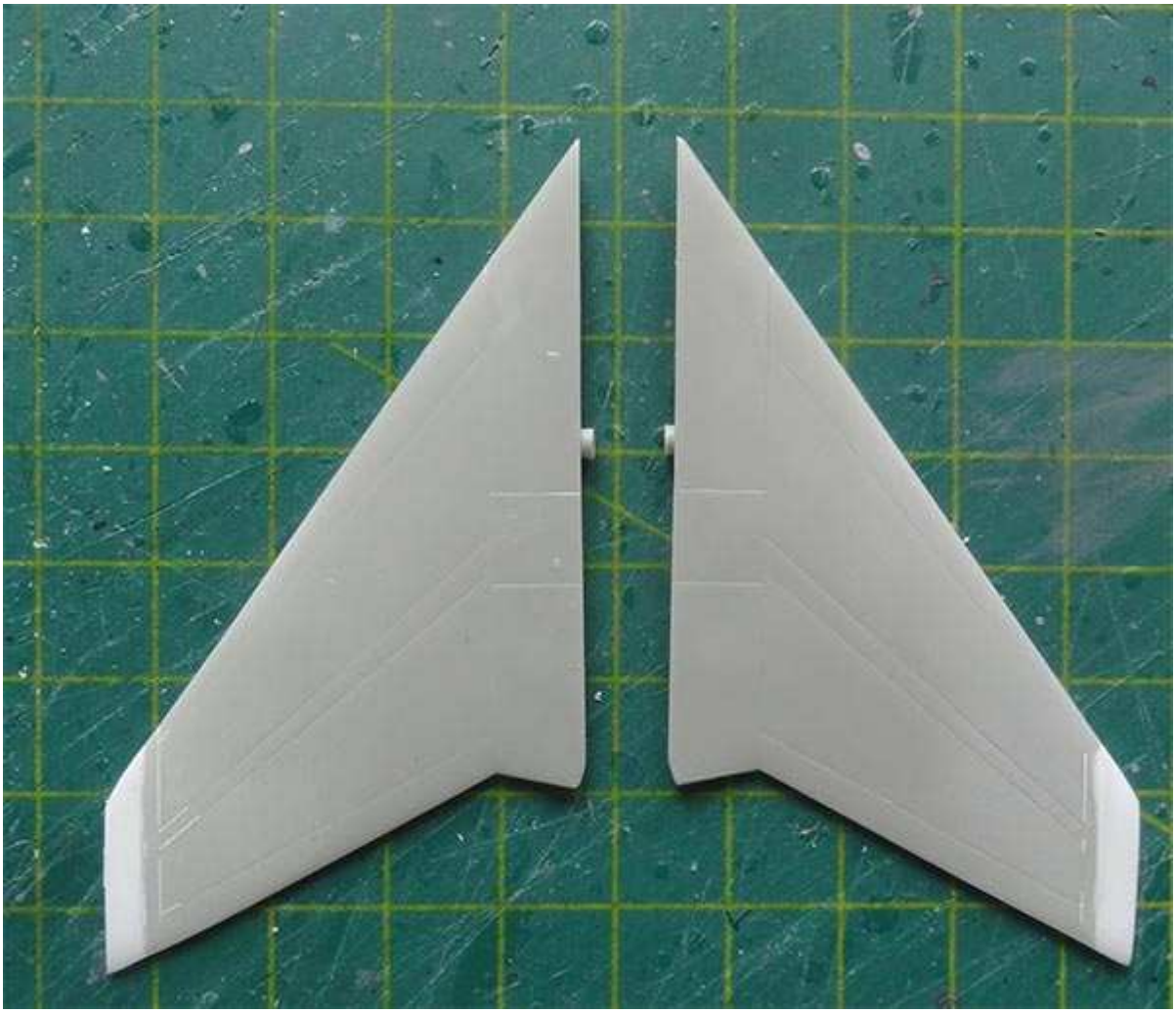
CANARDS

The shape of the canards is a good basis for further corrections. First remove the raised “stubs” and raised details.

Next, add a small tip extension of 3 mm with card. The small locks at their rotation rod were removed so it can be installed later on.



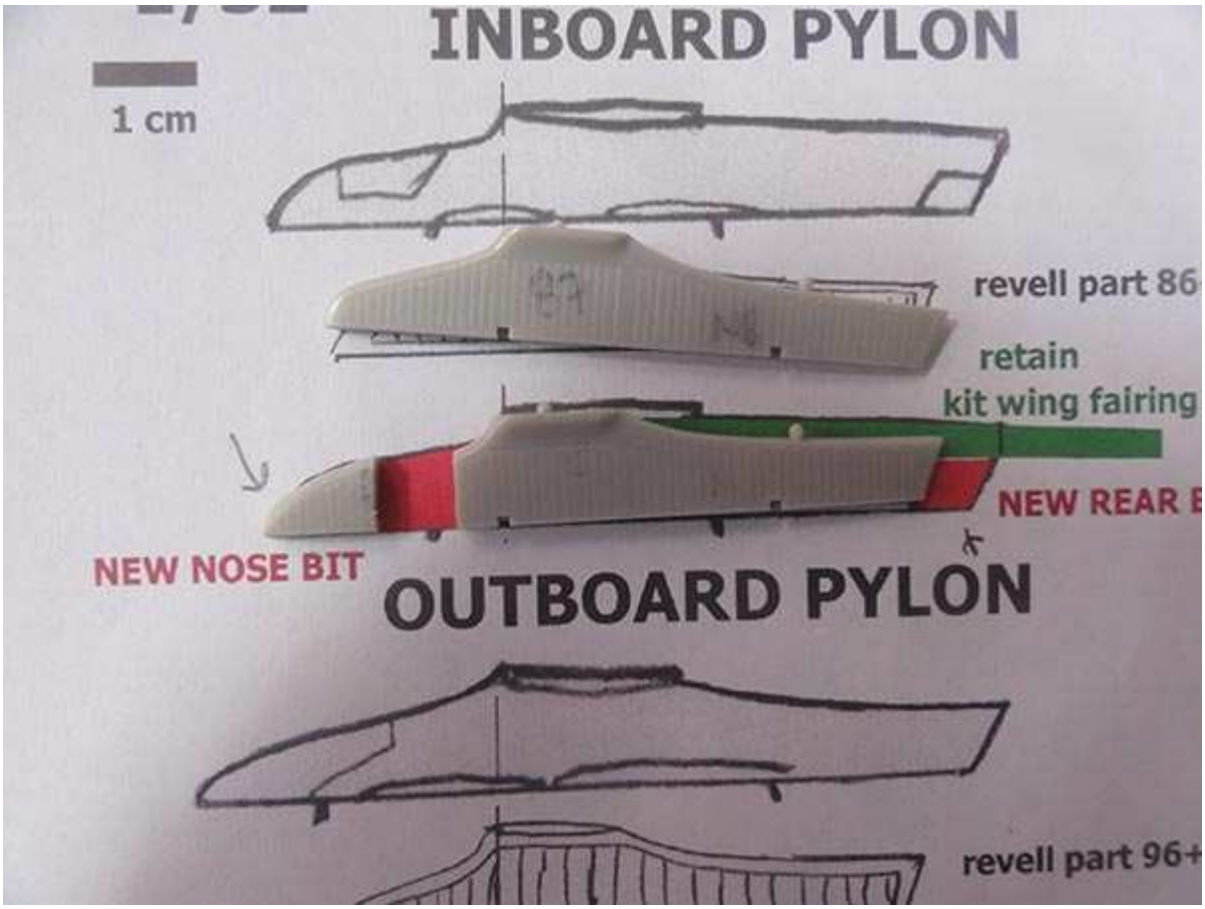
This is seen here compared with the drawing.



The canards were not yet installed at this stage as they are very vulnerable.

PYLONS AND STORES

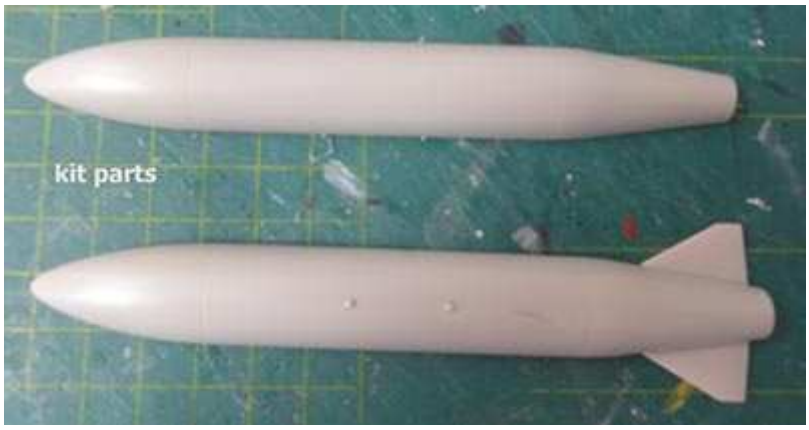
Now the base model could be further completed but it would be nice to have also some pylons and stores. It is a good idea to tackle this now as it may need adjustments at the lower wing.
With various drawings and the good 1/72 Revell Gripen kit, it was found that the 1/32 kit pylons are very inaccurate.



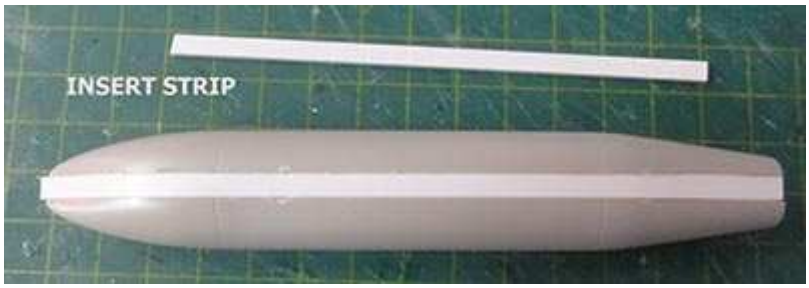
A drawing was made to 1/32 and it was clear that when making inserts, sections of the kit pylons can be used. Cuts were made and putty and card used. The strange engraved vertical lines were also filled with putty and all was sanded.

A replacement for the central pylon was found in the spares box and will be adapted.

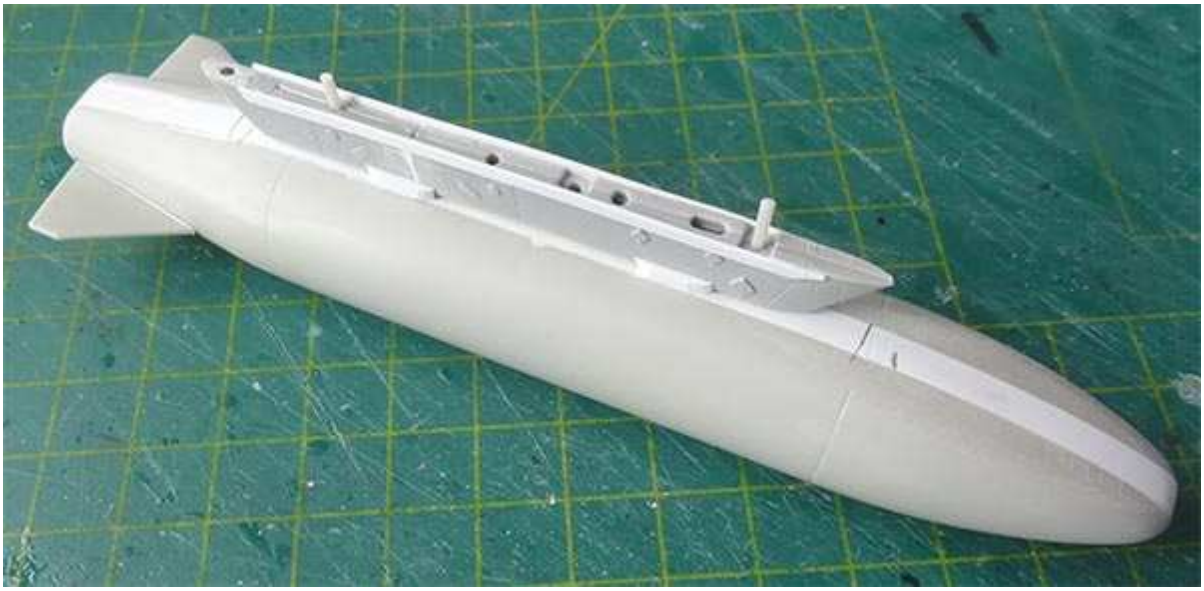
For the central fuel tank, it was also seen that it needs a flat horizontal cross section that is not in the kit parts.



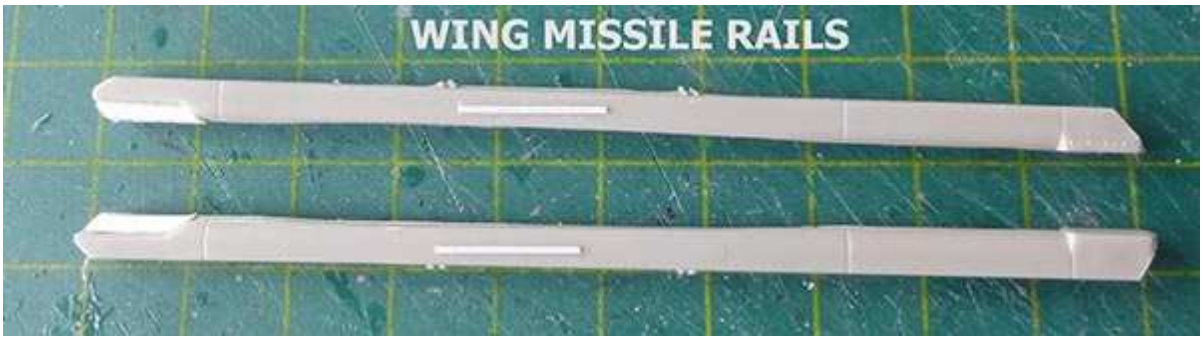
An insert was made with strip of 4 mm wide, it was bended, glued, puttied and sanded.



The far better looking corrected central fuel tank and pylon is seen here.



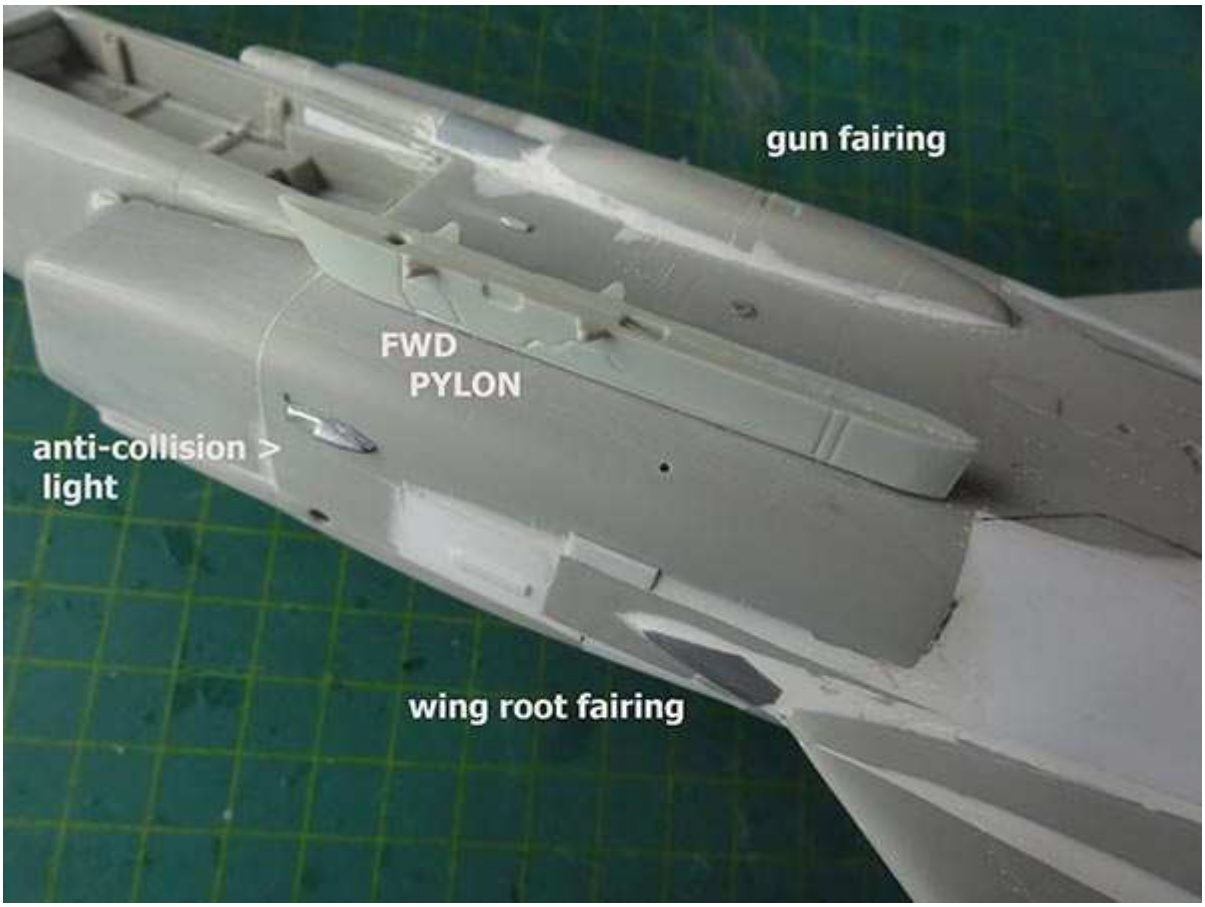
For the wing tip missile rails that had been cut off earlier, some far better ones were found in the spares box and only needed a bit adaption.



It was also decided to add an extra forward pylon below the right intake. A good one was found in the spares box and a bit adapted.

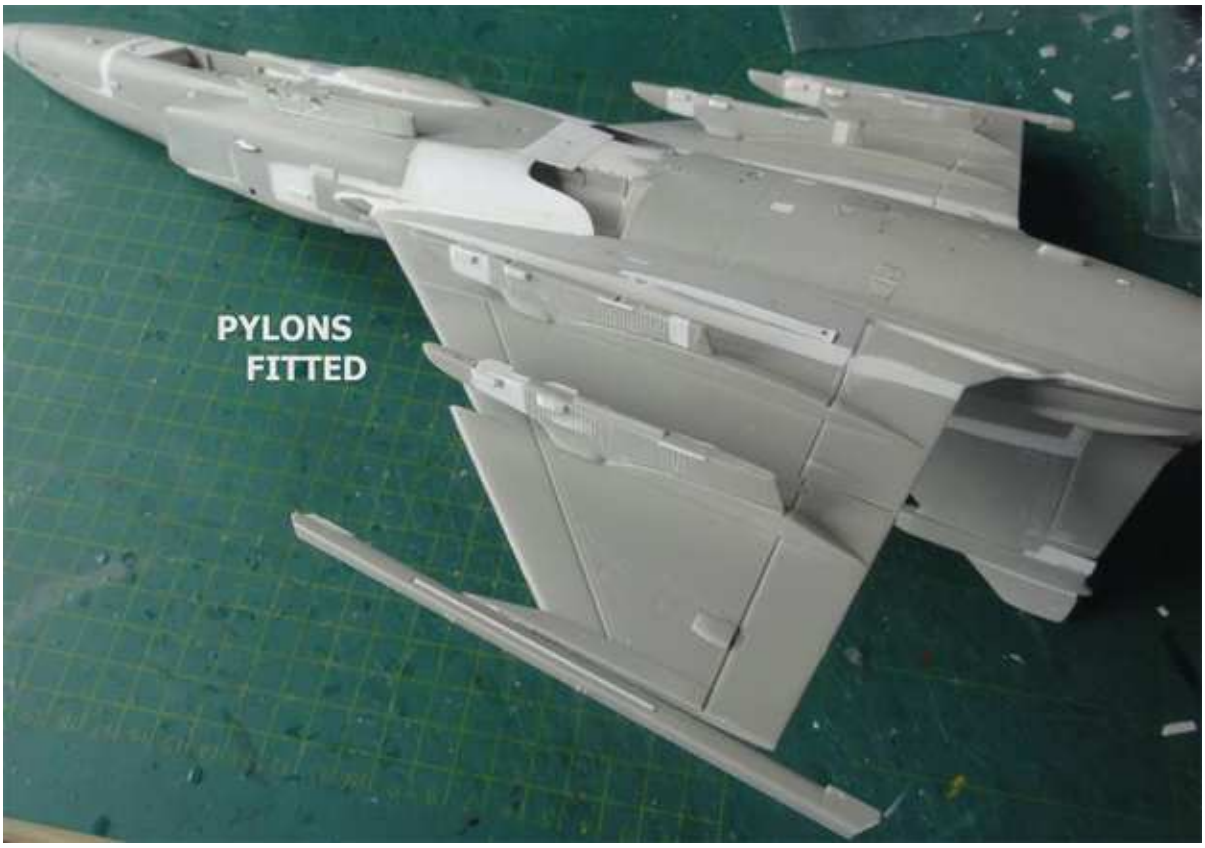
FIRST OVERALL RESULT

It look fine till now.



A small fairing for the anti-collision light on each intake was added (the kit parts #34 were not used).

Also 4 re-shaped pylons were installed after the spanwise stations were checked with the 1/72 Revell kit. Any gaps with the wing were closed with putty but it took less effort than first thought. Note that the sweep angles of the pylon bases moulded on the wing were not changed, this is almost invisible, the pylons themselves were set "in flow direction".



Please note the replaced wing tip missile launchers.

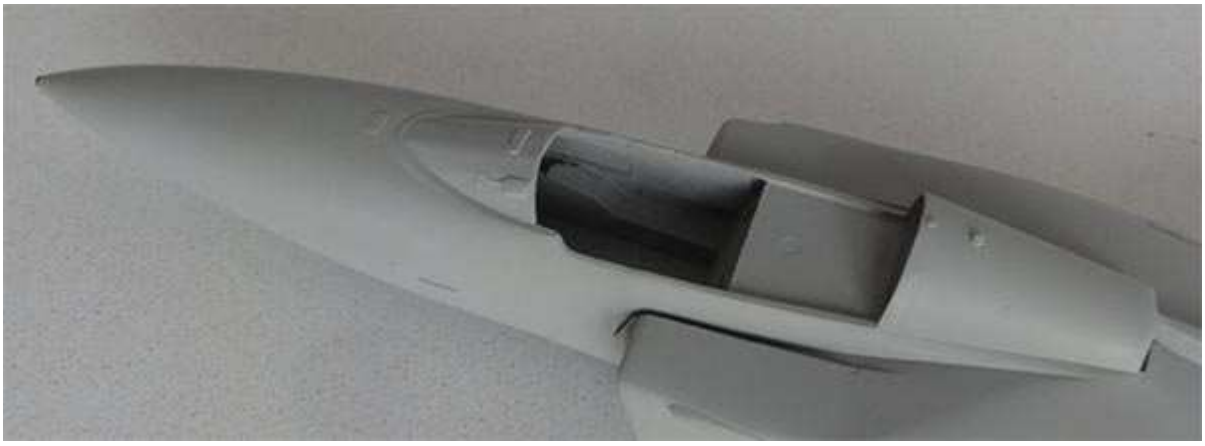
An important build mile stone was reached! The overall model could now get a base grey primer coat.

I airbrushed Revell Aqua acrylic 75 “steingrau”.

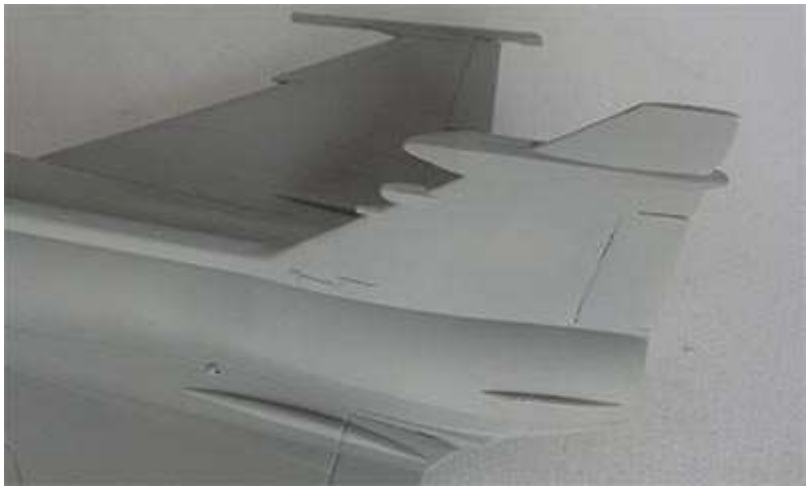
An important stage to see any flaws in the puttied areas.

It was obvious that after so much modifications and puttying some small rework was needed with putty but nothing too dramatic. Some re-puttying and sanding was needed but took quite some effort to get smooth surfaces.

It was again checked with another pass of base primer.

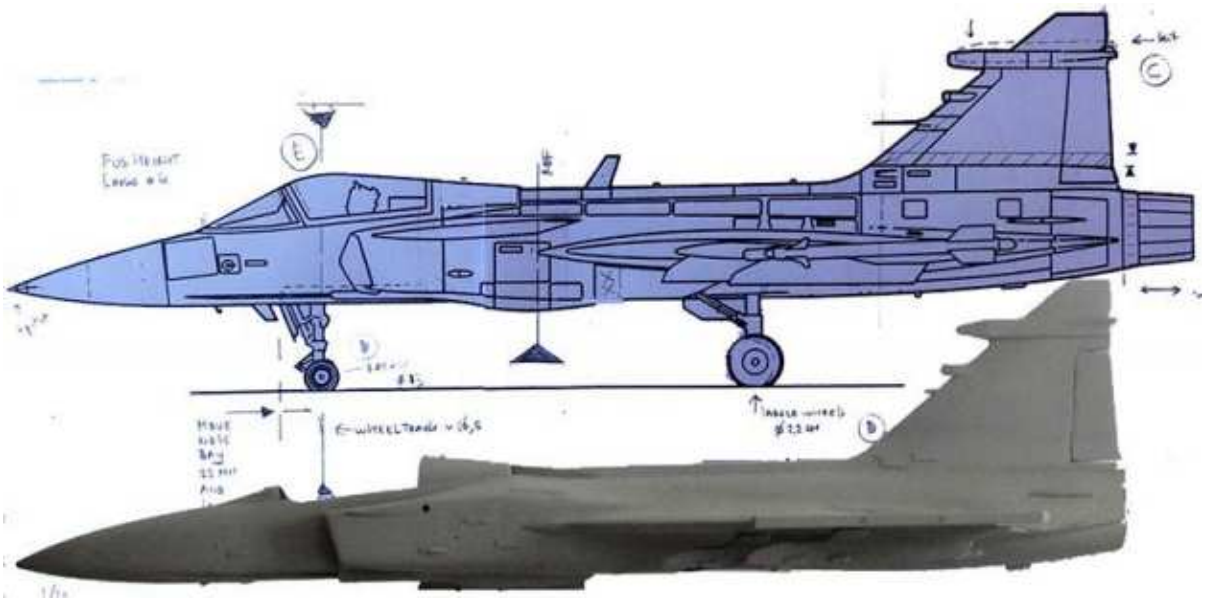


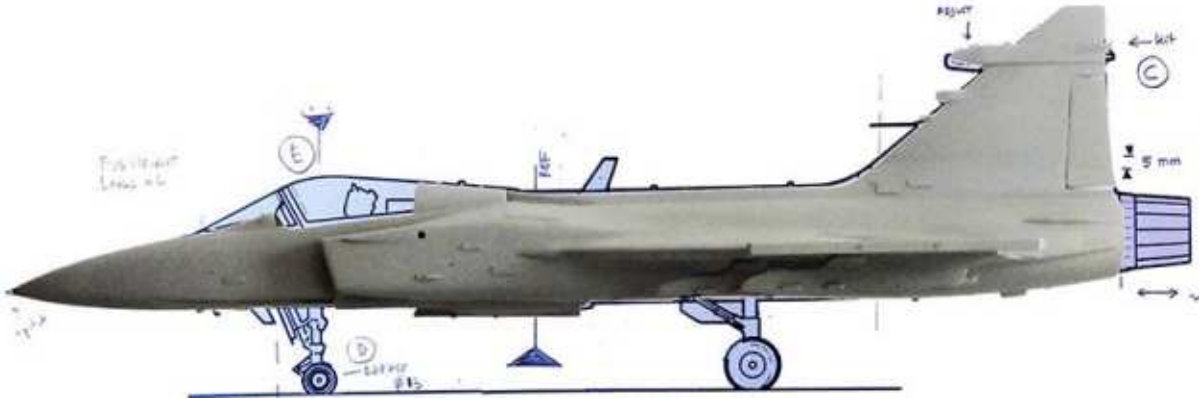
The cockpit area obviously needs extra detail, to be done later. Also, an attachment point for the canards should be made. In the photo also on the intake the small fixed fairing at the canard is seen.



Another check was made with the photo camera with the scale drawing. A few photos were made "from a far distance to avoid camera lens distortion as much as possible".
The composition is seen here.

... and superimposed on the scale drawing....

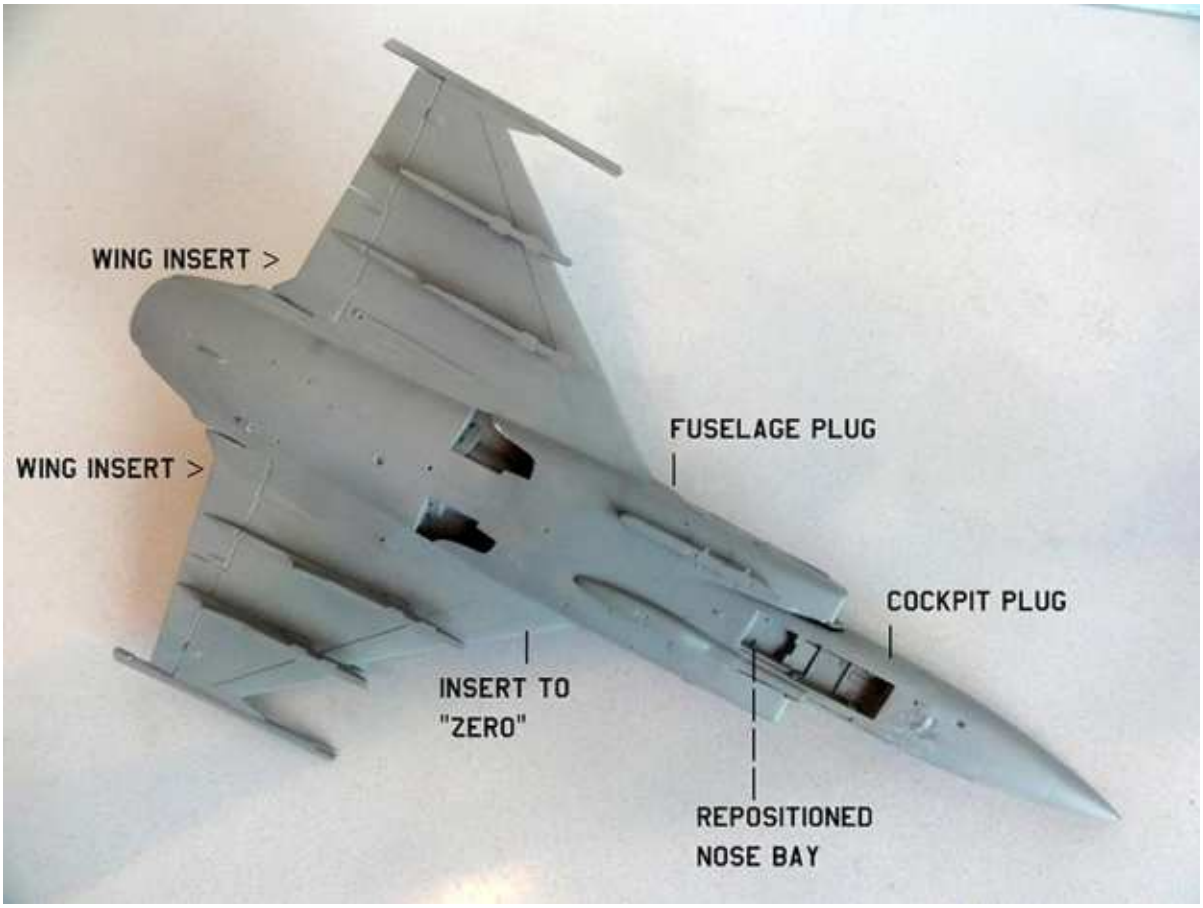




Some work is still be done with the windshield and removing 1 mm on top of the fin. The intake is now about 1,5 mm bit too far forward but will be retained as the canopy will be extended and will be set in open position....

A summary of what has been done till now:
- fuselage plug of 17 mm
- cockpit plug / sill of 4 mm
- wing span from 5 mm each near flap to near 1 mm at forward edge with "vortex" extension
- new missile rails
- repositioned nose bay
- adapted main gear closed doors and bay
- improved gun fairing
- improved pylons
- improved vertical tail
- (canards are here not yet installed)

Still, some minor corrections will follow as well as the smaller details to be added like large fences on fuselage near canards, low visibility light strips etc etc (not yet done)



From the corrected vertical tail, 1 mm was sanded off from the top. After these changes, the intakes sit about 1,5 mm too much forward; it was decided not to change this. The (to be improved) canopy will be set open and than it is not too obvious.

The next important mile stone is going forward with the colour scheme…

PANELS AND COLOUR SCHEME

The model got a few recessed panellines with the OLFA panel scriber. But I did not add many as large areas are puttied and not to spoil the surface appearance. A lot can be done also with pencilled lines and shading.

As seen, a few base “weathering” effects with black patterns were airbrushed for any recessed panel lines.

Now what scheme and air force to pick?

My long time modelling friend Erwin persuaded me to make this model in a South Africa Air Force (SAAF) scheme and provided some documentation also from South african friends. Though this would need some custom made decals with low visibility SAAF markings and flag. These sport low visibility SAAF markings and flag.

According to wikipedia: The SAAF accepted its first Gripen D two seater in April 2008 and the final two Gripen D aircraft arrived in South Africa in July 2009. The first two Gripen C single seat fighters arrived February 2010 with deliveries ongoing to October 2011. The no. 2 squadron based at Makhado AFB near the town of Louis Trichardt in the North of South Africa

operates all the SAAF's Gripens except for the first Gripen D, which is assigned to the Test Flight and Development Centre at AFB Overberg.

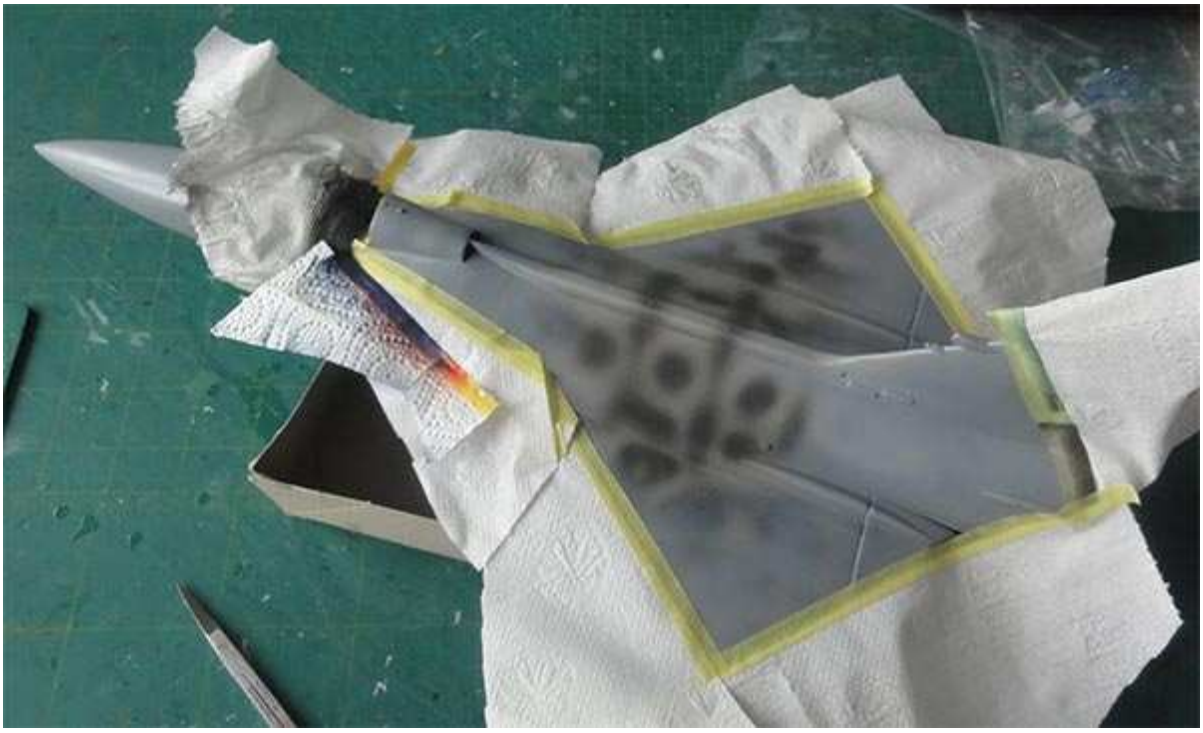
Photos were studied. SAAF Gripen JAS39C tail code “12” cn 39-2103 coded 3912 of no. 2 squadron was picked.

I will design the decals with a graphics program on the PC and the decals than will be laser printed by a friend on decalpaper. More about that later on.

The SAAF Gripen camouflage scheme shows a sort of “diamond shaped pattern”. Apparently, the specified colours and scheme when the Gripens were ordered were not followed by SAAB for unclear reasons.

It seems that the actual colours of the SAAF Gripens are approx. an overall scheme of Fed.Std FS36320 grey and the diamond in FS36118.

Gunze Sangyo acrylic colours were airbrushed of respectively H307 and H305 but any paint brand will do for these Federal Standard colours.



Some “soft masking” is needed with now the diamond seen..

The gear bays and door insides are mainly white.

As the cockpit sill had been increased 4 mm in length, so the canopy should be increased in length, the proportions will than also look like seen on the real Gripen.

The approach chosen was to shave off any raised kit canopy details. Frames of 2 mm each at the rear and front edges will be added from bended card strips.

First the canopy was, after masking the main areas, carefully sanded at the raised edges so the raised frames are now removed/ hidden and than polish A LOT!

The needed canopy extension of frames of 2x 2 mm width: at front and rear edges were made with bended plastic strip.

The interior of the canopy framing was made from scrap with card looking at photos. This canopy is turned open to the left, there is a strength bar aft of the seat. Also, I saw rather wide edges at the canopy front with the mirrors almost being unvisible when seen from the front. The mirrors were cut from metal sheet.

Detailing the canopy requires care as not to damage the clear section. Main frame colours are black.

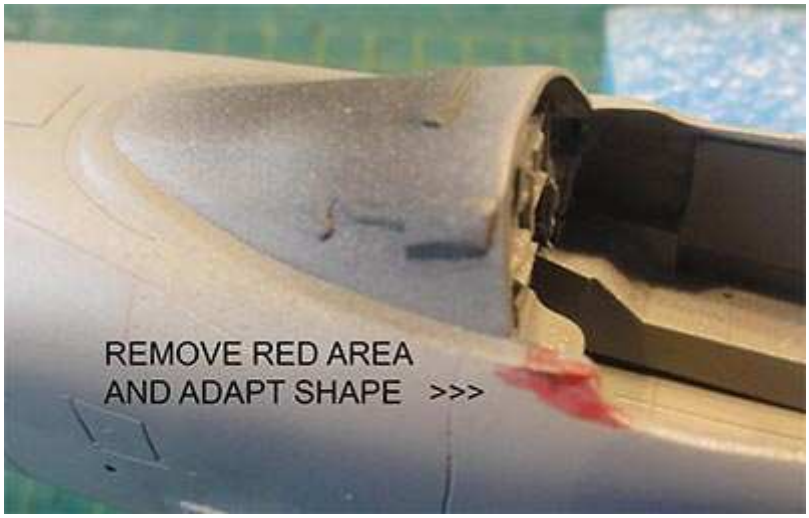
IMPORTANT NOTE: a central thin frame is not yet set, it will be added later onto the canopy top centre line; also, the cross bar had to be repositioned more to the rear; to be seen later.

WINDSCREEN

The windscreen was the next item. It was placed in position but it did not look good. It seemed that the steep angle was a bit too much. To make sure, another overall model side view photo was made from long distance to avoid camera lense distortion. With the photo editor program it superimposed on the scale drawing.

I concluded that the windscreen should still be set about 2 mm more forward and tilted a bit to get a less steep angle…

This can be achieved in 2 steps: first by removing some plastic at the rear area of the windscreen mating surface; this is marked here “red”:

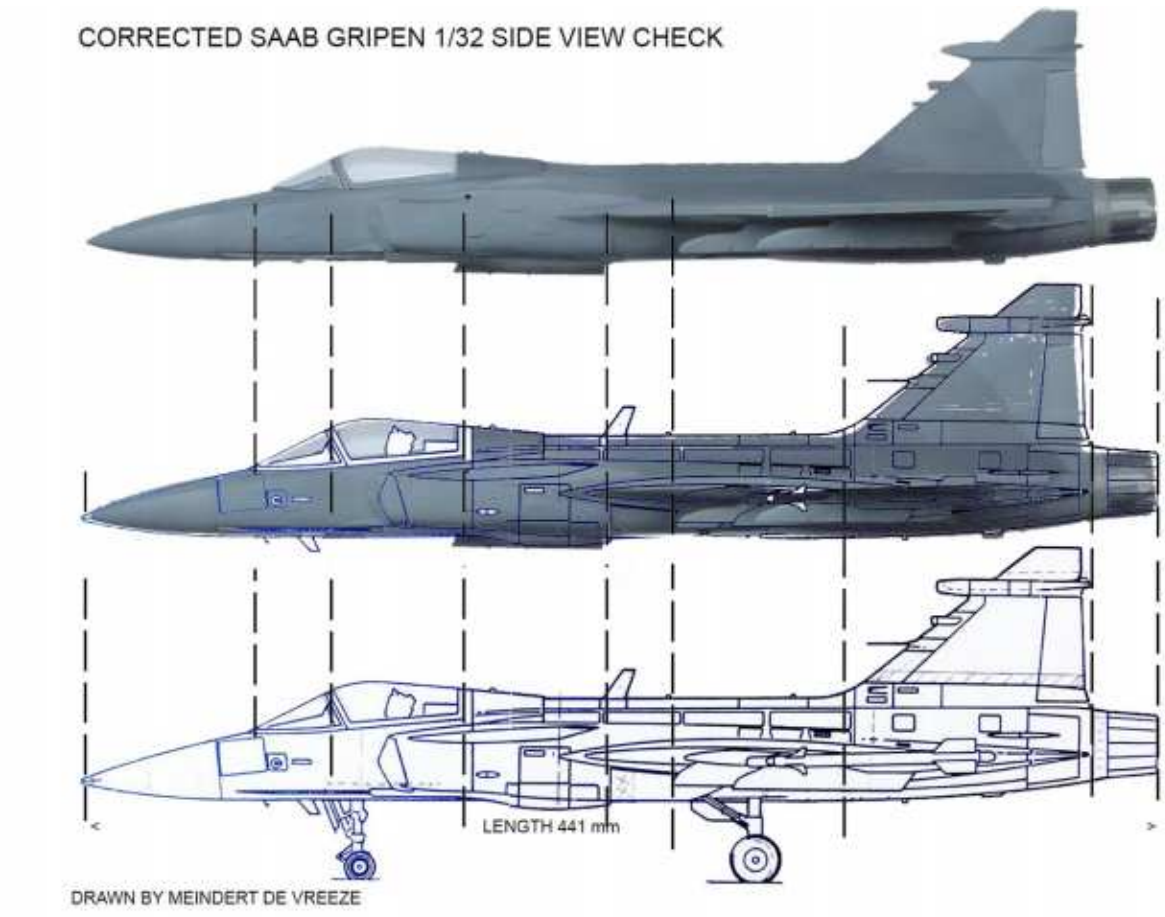


Sand symmetrical. Next, I added a strip of 1 mm below the front of the wind screen nose at the mating

surface. There will than be a visible gap but this can be closed/ filled with putty. The other small gap between the windscreen rear edge and front of canopy is not obvious as the canopy will be set open on the model. To be done.....

PHOTO CHECKS

A new side view photo with corrected wind screen sit (again from long distance to avoid camera lense distortion) was made and another check including the "line patterns" as seen here:

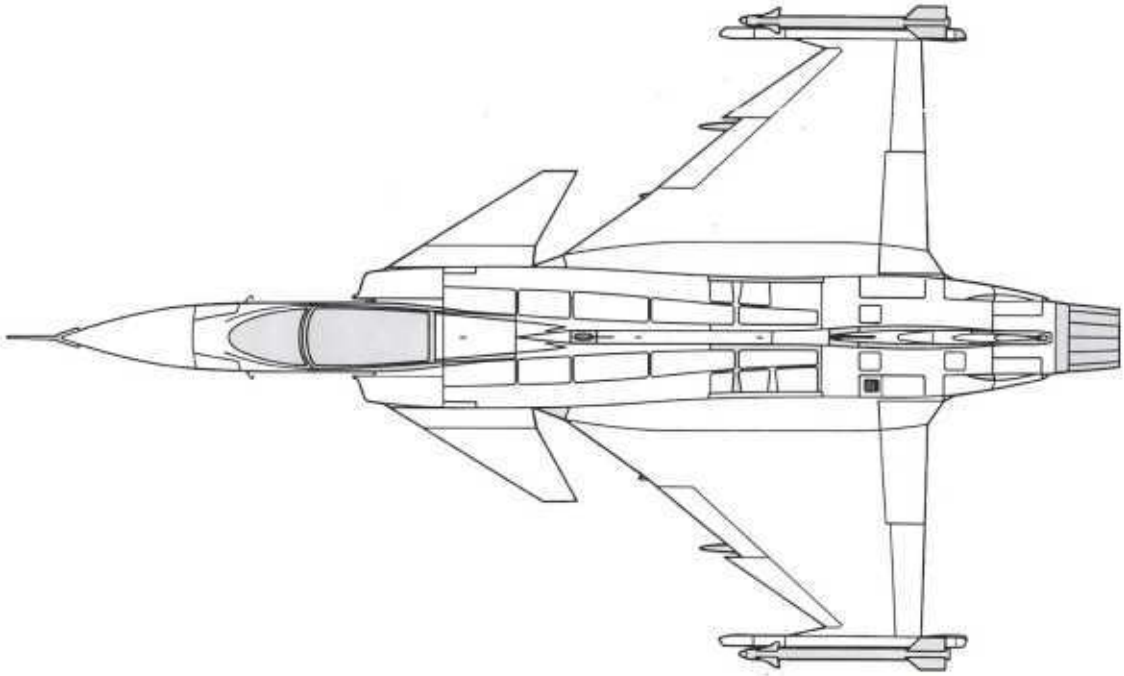


The side profile looks fine though the intake looks to be about 1 mm bit too far forward but this is almost undetectable.

An upper view photo was made from a large distance to do a check.

PLANFORM
COMPARISON DRAWN BY MEINDERT DE VREEZE

SAAB GRIPEN



CORRECTED REVELL GRIPEN 1/32

In upper plan view the model looks quite good. The span is correct with a better leading edge sweep. The trailing edge angle and wing chord at the ailerons deviate as expected a bit as the wing planform was rotated but this is not obvious when looking at the model. The nose upper profile with canopy and wind screen looks good now.

As regarding the intakes they look OK though the angled upper is a bit different than the drawing, but may be here the drawing is not entirely correct. It was concluded this issue is almost indetectable. Also the canopy will be set in open position.

After all that effort done on correcting the Revell kit I was happy! Ready to proceed further on detailing.

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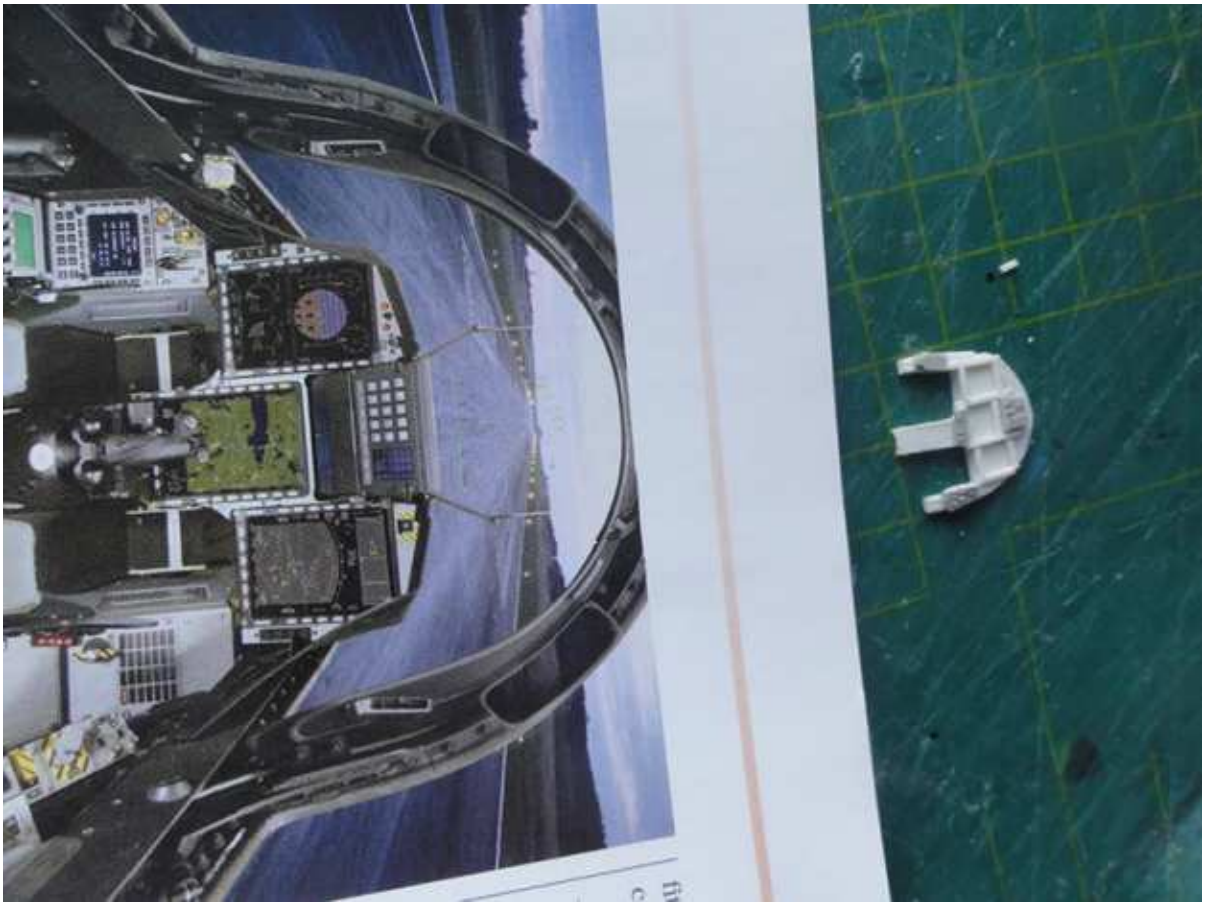
saab JAS-39 gripen revell 1/32

COCKPIT DETAILING

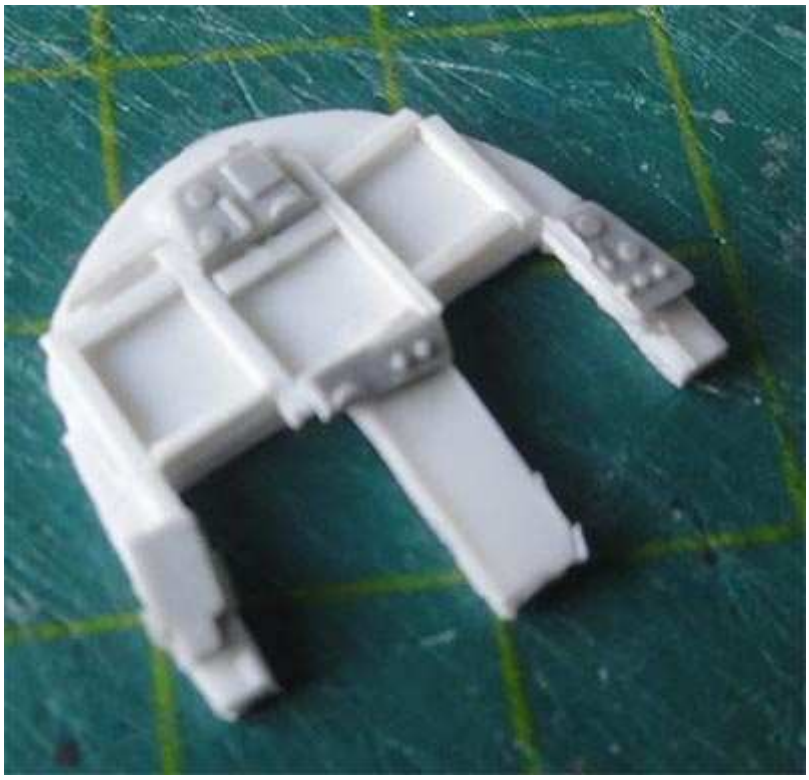
The kit cockpit parts are unusable, Revell did not have the information as the Gripen was still highly secret. A few decades later, it is surprising that still no full 360 degree cockpit photos can be found in various books and internet. Many still show mock-up photos.

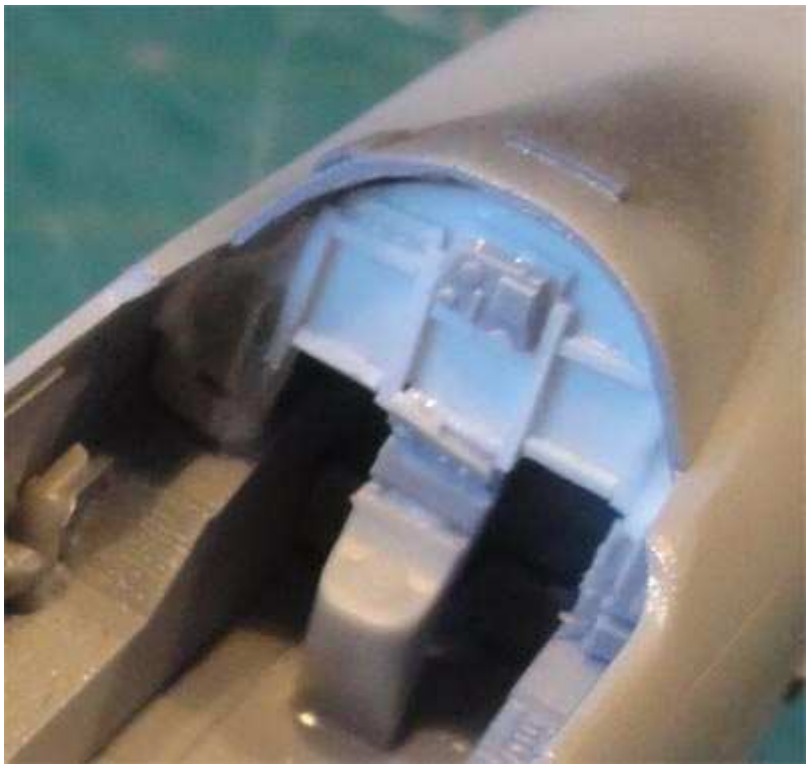
A few good photos were found in a Czech book showing Czech Gripen details including some cockpit photos. The overall impression is that the Gripen has a rather clean cockpit layout.

The main instrument panel has 3 large CRT displays and a few “clocks” only. The panel was made from scrap.

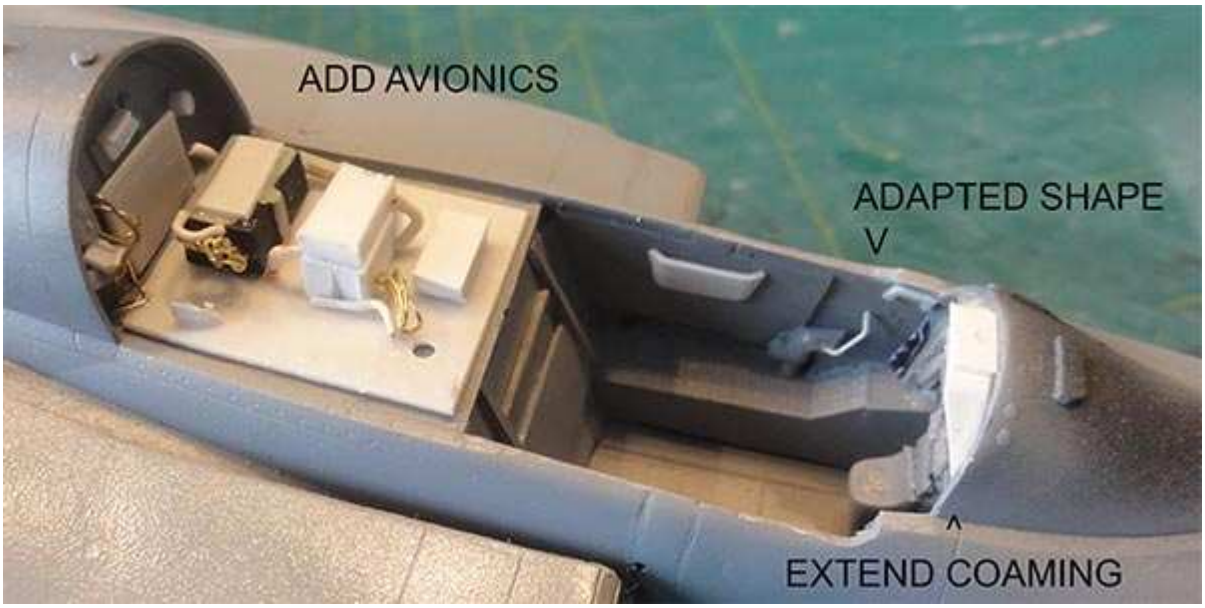


The panel is pretty small even in 1/32!



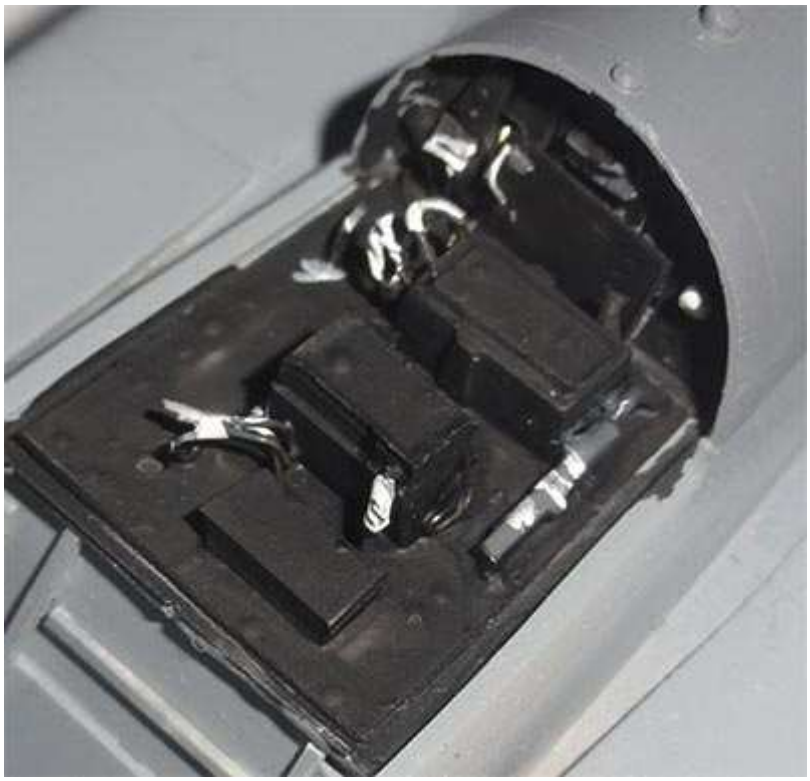


The smaller side panels and details were made from bits found in the spares box and decals. At the front of the instrument coaming a sort of angled extension plate was made from card.



The basic interior colour is probably FS36320 with black details and black internal canopy frames.

The rear avionics boxes need a new scratch replacement. Card, stretched sprue and metal wires were used with main colours in black.



EJECTION SEAT

As noted earlier a 1/32 Kitty Hawk Mirage 2000 Mk.10 seat will be used for the Gripen Mk.10 SL seat. A seat harness was added made from tape, etched metal buckles from the spares box. The main colour was black with olive green parapack and details in some other colours. Some etched metal seat buckles were added found in the spares box. Some final detail to be added at the later stage when setting in the cockpit.

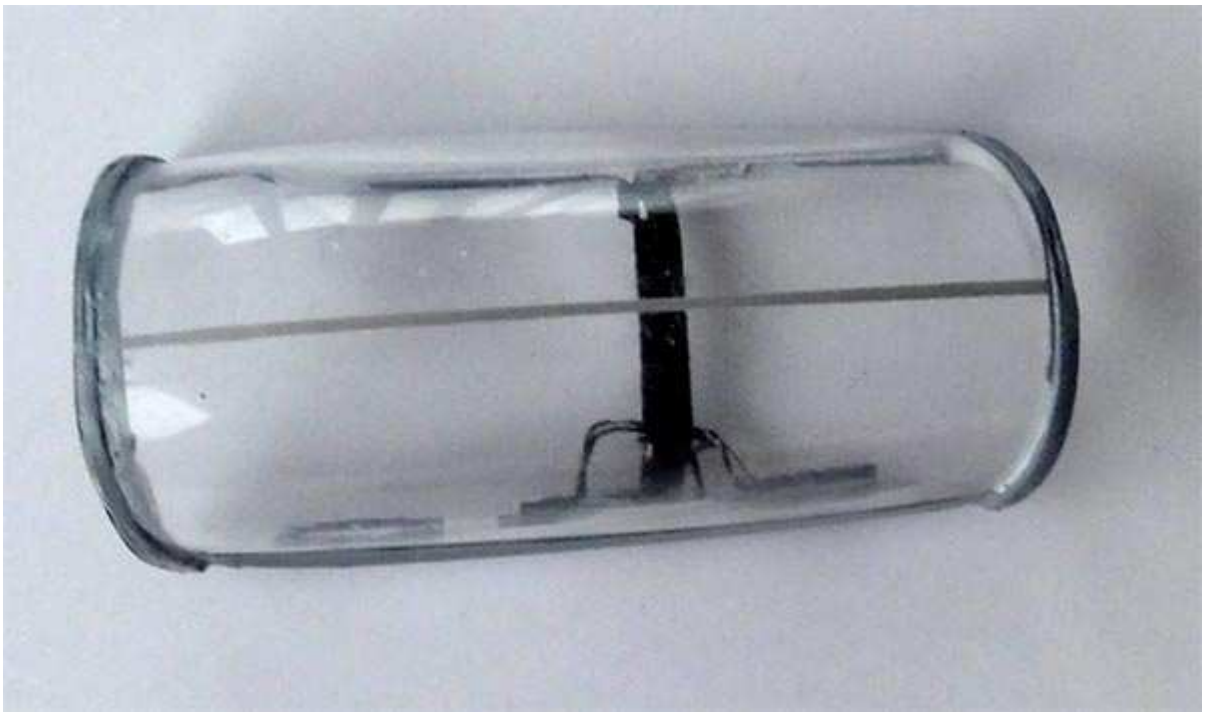
Here it is loosely set in the cockpit…

FINAL WINDSCREEN FITTING

A big task now is fitting the windscreen. It had been changed earlier, see previous remarks. Now it needed gap closing. The clear screen was protected with tape. Next, surrounding surfaces protected with masking tape and gaps filled with putty and sanded.

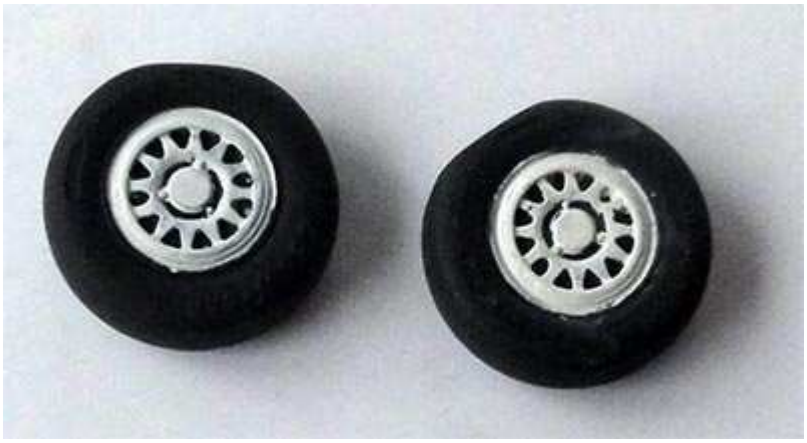
Sanding was done and than another few passes of the grey colour FS36320 coats were airbrushed. Note that the pitot with small flow vanes is not yet installed as to avoid damage.

At the same time, a central thin frame was to be painted onto the improved main canopy. After very careful masking, this narrow frame was airbrushed as well (in the FS36320).



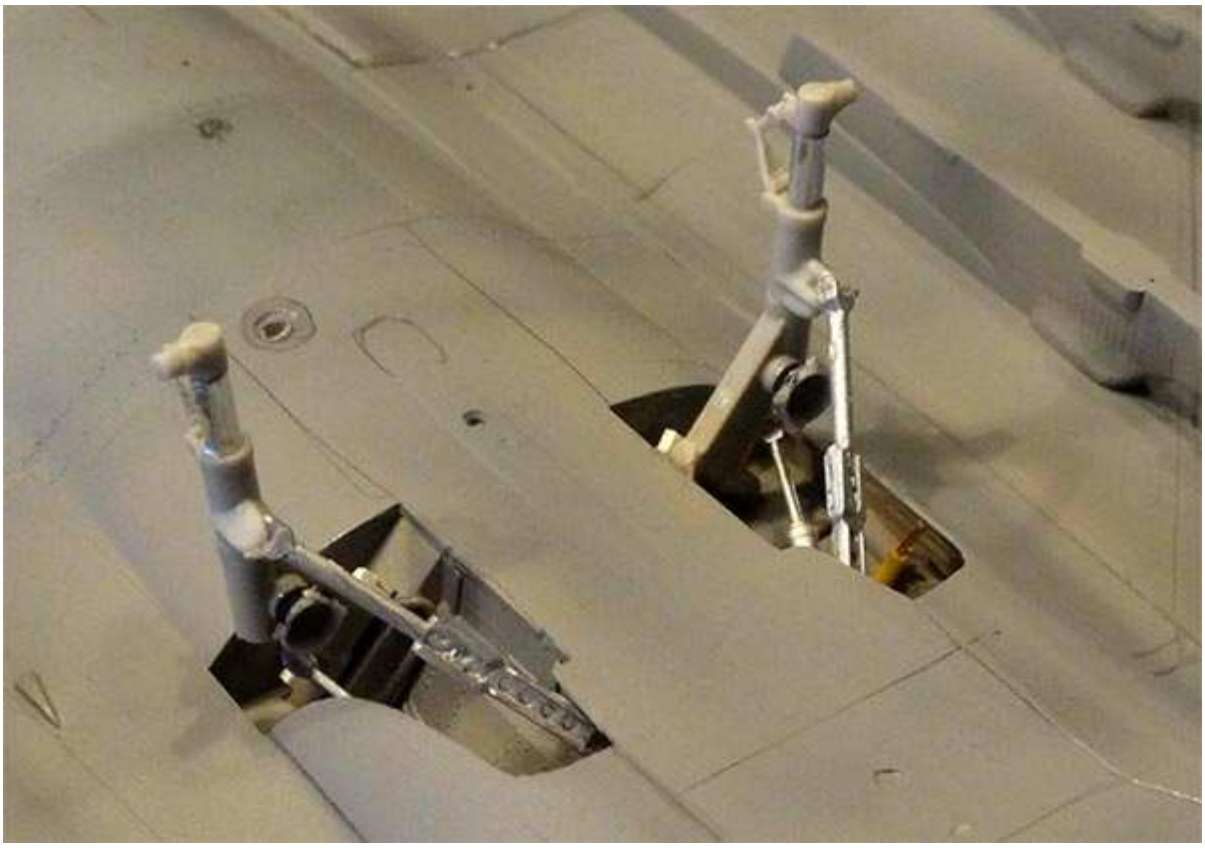
The undercarriage takes some rework. The too small diameter kit wheels were replaced by new ARMORY resin wheels from their set AR AW32503.

The main wheels are 20 mm diameter and the nose wheels 11 mm. Just a tiny bit too small, but better than the kit wheels. These ARMORY wheels are “flattened” so will need care to install correctly. They were painted tyre dark "panzer" grey and white. I needed to enlarge hole on each wheel to get a strong fix to the strut.



The main gear struts from the kit were measured and checked with photos. Those from the kit are not that bad at all and have the correct angles and dimensions! I checked the track of 2,4 meter (or 7,7 cm in 1/32) and the height of the legs without the legs set fixed. After it was clear how to set these, the main legs were installed.

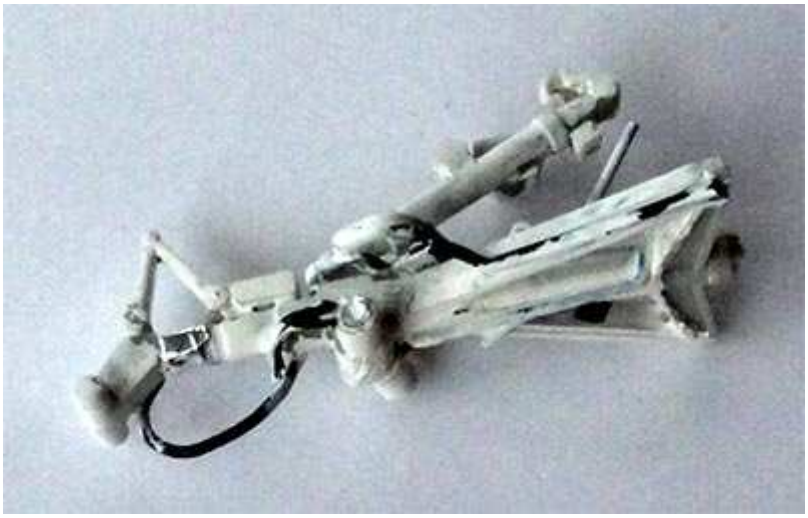
In the main bays, some details were added like the hydraulic lines using “JMC lead wire” that can be bended and twisted easily. Detailing the main gear is not a lot of work.



Note that the big main gear doors are in the “closed” position as seen on most parked Gripens. A few small curved gear doors were made from card (not seen here).

The large landing light was set on each strut was made using a set with shiny bits found in the hobby shop.

The kit nose wheel strut parts can be used as well. Again, to my surprise. Detailing was done with wire and sprue.



Setting the strut in the nose bay was checked with the real Gripen wheel base of 5,20 m for the single seater Gripen which is 16,2 cm in 1/32.
Inside the repositioned bay, smaller bits were added to have the extra detail.

The nose gear bay was painted white.

The resin Armory nose wheels were set and the pair of new long nose doors of 56 mm made from card. Again hydraulics and wires were set using “JMC lead wire” that can be bended and twisted easily.

The front gear door was set and the large hole in it should correspond with the location of the strut landing light made.

VARIOUS LIGHTS, ANTENNAS AND OTHER BITS

The landing lights was set on the gear struts were made from shiny bits of a hobby set. The white anti-collision lights on the rear fuselage next to the exhaust were made from clear plastic just like the tri-angular light above the rudder. The anti-collision lights on the intakes were set on the previously re-shaped fairings and painted a tiny bit of clear green and clear red with Tamiya clear paints.

The large antenna on the spine was made with card as were the tinier antennas. Below the cockpit nose, an additional antenna was was and one below the rear fuselage. Small vanes were set made from metal bits on the cockpit sides and in front of the nose gear.

On the missile wing tip rails, the black recesses were suggested with black paint. These will be mostly hidden when the IRIS-T missiles will be installed but a small portion can still be seen.

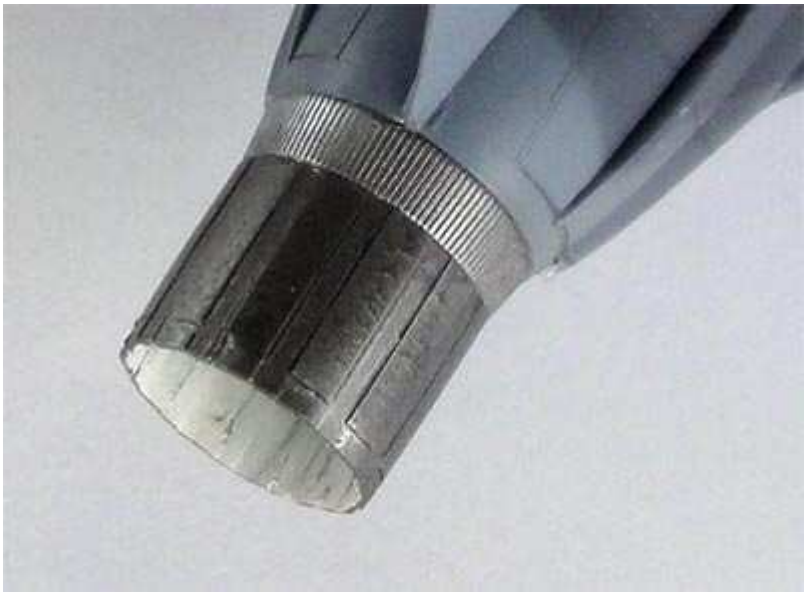
EXHAUST

The kit exhaust part can be used but it is moulded in the closed setting. I wanted an open exhaust and had found something earlier in the spares box that could be used. This part has the correct 30 mm diameter and is from probably the F404 engine found in the Academy F/A-18 kit. (in fact: the real Gripen RB12 engine is derived from the F404 engine I believe). I also found an afterburner flame holder to be set inside.

A few slots were cut and with some twisting extra detail suggested.

The exhaust was airbrushed in a few coats of ALCLAD burned metal.

The insides were painted burned white with oil paint.



(Note that I had prepared most of this work earlier).

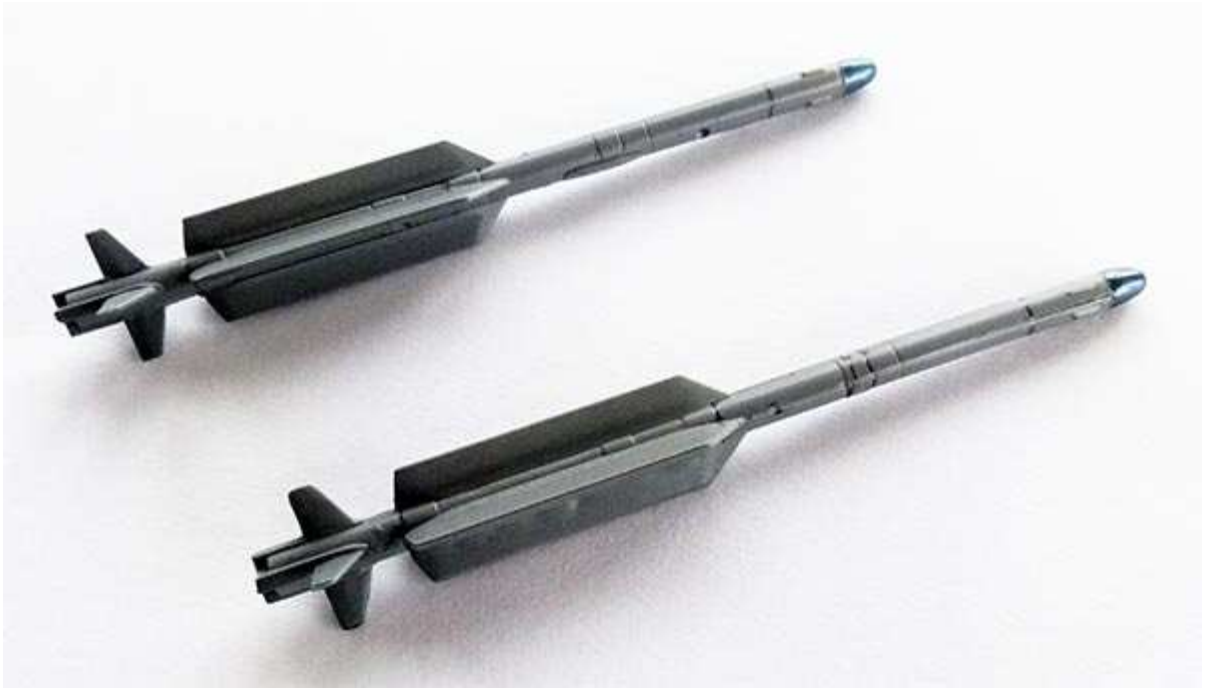
Now the exhaust was set in place with super glue. Any tiny reamining gaps filled with white glue but after drying this was not painted but suggests the exhaust to be perfectly set.

CANARDS

The pair of canards, that were improved earlier, were set in place. They have a bit angle upwards and were set at slight rotated tilt. On parked Gripens, their orientation varies.

I wanted to add a few stores onto the Gripen. Some nice photos on the internet and in books showed that the SAAF Gripens can carry in theory a large variety of stores. It is unclear if these were all delivered due to high costs.

I saw on photos IRIS-T missiles though on the wing tip rails. These missiles were luckily found in the spares box coming from the 1/32 Revell Eurofighter kit. I had to shave off a few raised stubs on the missile part in order to get a fit without too large gaps with the rail. The missiles were airbrushed ghost grey FS36320 with a few painted stripes and metallic seeker head.



I saw a few nice photos with SAAF Gripens flying with probably sort of mk.80 series bombs with short fuse. These are probably mk.82 “dumb training bombs”. The bombs were found in the 1/32 Trumpeter A-7 Corsair II. Each bomb had a white body and the rear bomb section with fins is about FS34079 green. After that, a few stripes were added with decal and a shortened fuse head that was painted metal.

All was airbrushed.

From a few bits from the spares box, the needed bomb carrying Alkan twin store carriers were crafted.

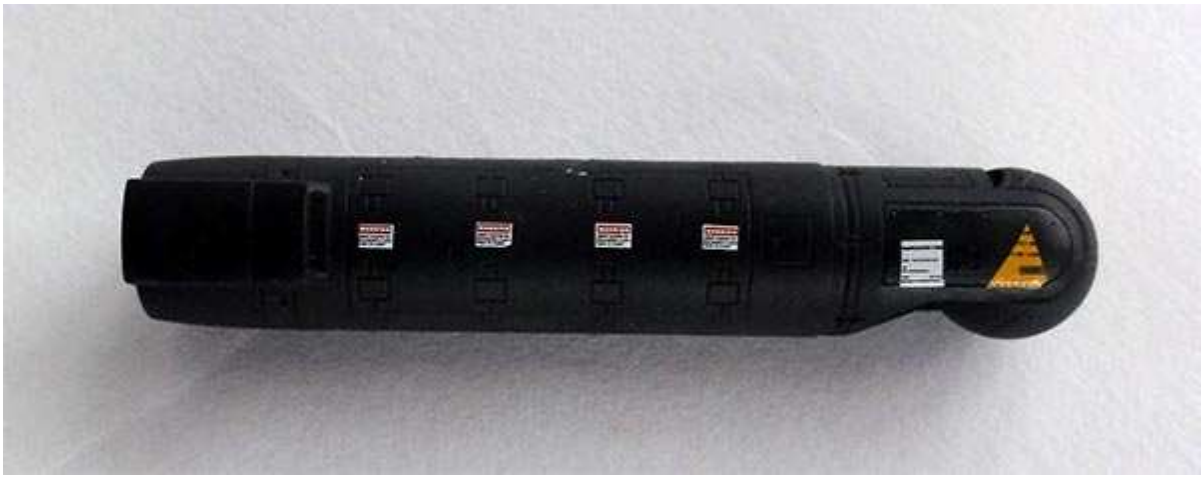
Some guessing was needed. They are about 48 mm long in 1/32.

The central station corrected fuel drop tank was already made and seen here.

A Litening targeting pod was seen on SAAF Gripens as well below the starboard intake. I have seen on internet that though these pods are available, the smart bombs are not ?? I only saw dumb bombs when the pod was installed during training missions.

Wel, anyway, a spare pod found in the spares box, left over from a 1/32 Tamiya F-15E kit.

The pod was airbrushed dark gunship grey and a few stencils added with decals.



A lower pylon for the pod was previously made from scrap card of about 6 mm height and 60 mm long.

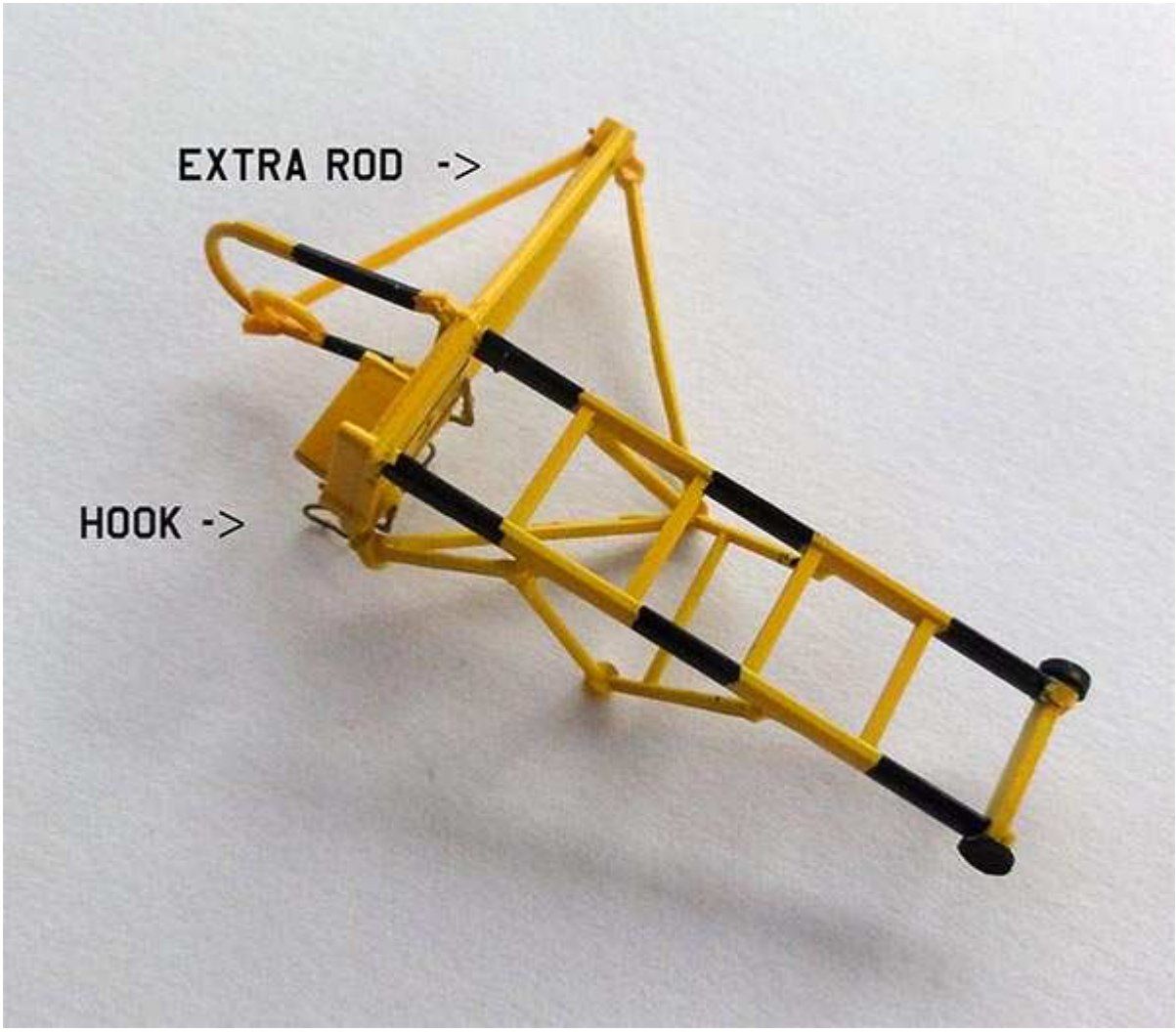
FINAL COAT

I always airbrush a final varnish coat on a model, in this case a semi-gloss coat. This to give the model an even sheen and to protect the decals.

I airbrushed a mix of my favourite Johnson Future acrylic floor varnish thinned 20% with IsoPropylAlkohol (IPA) and some drops of Tamiya X-21 Flat Base, this will dull the varnish a bit giving a semi-gloss sheen. The stores were not forgotten and also got a coat and all was set aside to dry.

LADDER

As the canopy would be set open, it would be nice to use the entry ladder with the model as well. The kit parts proved to be quite good in shape so the kit parts were used. I only added an extra cross bar and that was it. The ladder got a yellow FS13538 coat (with Gunze Sangyo H329) and hand painted black sections. I did not want to fix the ladder, so from tiny metal rod a sort of hook was made to hung it in place. (strictly, this is not seen on the real ladder).



It fits well with the correct proportions as very early the cockpit section of the fuselage had been lengthened and the windscreen was also corrected.


DANGER

ON FINALS

A few final steps to go but before installing the stores, a few photos were made of a “clean model” as the Gripen is often seen flying. The canopy was temporarily positioned on the cockpit closed; photos are presented at the end of this article.

After the photos were made, the stores were set in place with super glue, everytime just a tiny glue dot is needed. This took an afternoon to set all stores aligned and symmetrical. Note that there are still tiny gaps seen on the real Gripen at the pylons and thus also on the model. Stores set are:
- IRIS-T wing tip missiles
- central fuel drop tank
- designator pod
- 4 pairs with mk.80 series bombs.

That’s it after a 4 month and a 150 hours effort!
This old 1/32 Revell Gripen “after waiting for 30 years in the loft” has turned out to be a nice model in the collection after all!

SOUTH AFRICA


Location of South Africa (dark blue)
– in Africa (light blue & dark grey)
– in the African Union (light blue)
SOUTH AFRICA
BOTSWANA
NAMIBIA
ZIMBABWE
MOZAMBIQUE
SWAZILAND
LESOTHO
Polokwane
Pretoria
Nelspruit
Mafeking
Johannesburg
Kimberley
Pietermaritzburg
Bloemfontein
Durban
Bhisho
Cape Town
Port Elizabeth
INDIAN OCEAN
SOUTH ATLANTIC OCEAN
150 km
Capital
Pretoria (executive)
Bloemfontein (judicial)
Cape Town (legislative)

[area: 1,221,000 sq.km | population: 60 million | capital: Pretoria | GDP 6,500 USD per capita nominal]

Some 17 SAAB JAS39C and 9 dual -D Gripen fighters were acquired and delivered from 2009 but usage is limited due to lack of pilots and finances.

For more information about the SAAF, look at the Mirage page here...

Photos of the 1/32 Gripen in the “clean configuration”:

.. with canopy closed...

... cockpit canopy open....


12

… and with the stores installed…


12


12


12


12


12


12


12