

G to F, or reverse morphing

by John Beaman

As a result of comments I made on a conversion of Hasegawa's 1/32 Bf 109G into an F-2 or F-4, I was asked to do "tweaking" notes for others who might want to do this. Keep in mind, that one of these days Hasegawa will do an F. You can see the occasional extra "tree" in a G kit that indicates this. However, who knows when they will stop doing assorted G models and the K? So, for those who do not want to wait....

First, let me make it clear that what I say are all the things I know that you need to think about when going from G to F. There are probably others that I am not aware of. Do you have to do all these things? Of course not. Like all aspects of modeling, you do what makes you happy with your model. That's what really counts. BTW, for those who questioned my modeling skills, I do model, and have been awarded a 1st and a 2nd place at IPMS/USA contests.

The Basics

- 1) The G was an evolutionary step from the F. The basic purpose of the G was to get more power into the aircraft that would be pressurized and able to tackle the anticipated high-altitude American bombers. The visual changes in engine and cockpit was subtle, but for modelers, significant.
- 2) At this writing the best Hasegawa kit to use is the G-4, made by Hasegawa Japan and ProModeler/Revell. It avoids the issues of cowling guns, supercharge flange, etc., but there were some significant changes from the G-2, the closest G model to the F.
- 3) The F was produced in the F-0, F-1, F-3, and F-4 versions. There are differences and we'll touch on all of them, but the emphasis is on the F-2 and F-4 as far as conversion details.
 - a) The F-0 was a pre-production batch made to have operational test staff use the machine and see what problems there were or changes should be made. The ones made by WNF even had an E-type supercharger intake and it was in one of these that Oberst Adolph Galland made his famous "lobster" flight.
 - b) The F-1 was the first real production batch. 208 of these were made by Mtt Reg and WNF. It had the DB-601N engine. See below for items to look for.
 - c) The F-2 was a large batch. 1,380 were made by five companies. It looked like the F-1 except a number had rounded wheel wells instead of the squared off ones. There's no real way to tell which one had round versus square other than a photo. I suspect it had to do with who made them, but this is unproven. Again it had the 601N engine. Contrary to popular writing, there was no tropical version by a factory or a conversion facility. Some may have had locally made fittings, but I've never verified this. Also, the Z

- option (see below) was not fitted to the F-2 although it had been successfully tested on the E-7Z.
- d) The F-3 is controversial. It appears a small batch was made, but others think it never went beyond a prototype stage.
 - e) The most significant version was the F-4. With this version, made by all the manufacturers, the F reached maturity.
 - i) It used the DB-601E engine, resulting in an "87" or "B4" octane triangle versus the F-2's 96,100 or C3 marking.
 - ii) The MG 151 20mm cannon was in the nose. The F-4 first used the 20mm MG FFm, then the MG 151/15mm and 20mm cannons.
 - iii) Was eligible for the underwing cannon gondolas (F-4/R1)
 - iv) Significant numbers of F-4s were tropicalized.
 - v) The F-4 used the G-type supercharger intake (bigger)
 - vi) The tropical and Z versions used the G-type oil cooler (deeper).
 - vii) Contrary to myth, the tropical F-4 did not use the G's wider propeller. Only the F-4Z used that.
 - viii) Lastly, the tropical version did not have the teardrop-shaped bumps on the port side for attaching an umbrella. That only appeared on the G.

Basic G to F items

- 1) There is a conversion kit made by Aires. It contains quite a number of parts, including an engine cowling. I will list an item to be done and then comment on how the Aires conversion addresses the issue or does not. The conversion does address the F-2/4 issues for the most part.
- 2) Regardless of which version you make:
 - a) Remove the small cowling scoops from both sides of the main cowling and the oil tank cowling ring. These were for cooling various items on the G's DB-605A engine. If you use the Aires whole cowling, this is already done for you, but you must do some tricky sawing/cutting in removing the G-4 cowling. The conversion also has the MG 17 gun barrels, but this is because the kit was designed for the G-6 kit. The G-4 cowling (sans scoops) and barrels are fine.
 - b) Remove any scoops in the windscreen quarter panels at the cockpit. Only the Gs used these.
 - c) Some Fs had a small scoop on the port side of the cowling behind the inertia crank hole. Some did not. If you cannot see that side of the a/c you are doing, go with the scoop. The Aires kit has this scoop as an option.
 - d) The conversion has a replacement oil tank upper cover. It is easier just to sand off the cooling scoop from the G-4 cowling.
 - e) Remove the small teardrop shaped bulges from the left fuselage below the cockpit. These were only on the G.
 - f) Do not use the upper wing wheel well bulges from the G kit. No F had these.
 - g) Remove the canopy. The F canopy was quite different than the G. The Aires has a vacuformed part for this and it appears to be accurate.

- h) Replace the tailwheel. All the F types had retractable tailwheels. The G-4 has this, but it is too large in diameter and width. The Aires kit has a nice replacement tailwheel. The F-4 did not have the leather "dust" cover on the tailwheel supplied in the G kit.
- i) Fill in or remove the oval fuel filler cover on the upper left fuselage behind the cockpit. The F had a circular cover under the cockpit. The Aires kit has parts for this. And, the cover was flush with the fuselage skinning.
- j) Fill in the oval hatch cover on the left side of the fuselage above the tailwheel. This was only on the G.
- k) Install the rear fuselage metal reinforcing straps at station 9. Yes, I know, some F-2s did not have them, but this was on the early ones and those F-2s that survived had them retrofitted. Some F-4s did not have them. It is VERY difficult to see if a machine DOES NOT have these, so just go with the odds and install them (heresy, I know!). If you can clearly see your machine did not have them, fine. The Aires kit has these.
- l) Replace or modify the propeller blades. The G used the wider versus the F's narrower blades. The F-4Z did use the G's blades. The Aires kit has these replacement F blades.
- m) Replace or modify the oil cooler. The F had a much shallower oil cooler and cover versus the G. The Aires kit has this.
- n) The kits have round wheel wells and while some F-2s and F-4s had square ones like the G, unless you can see the wheel wells of the a/c you are doing, go with the odds, especially on an F-4, and leave the round ones.
- o) The G-4 kit has the G type wheels and the G-3/4 type tires on a G-2 spoked wheel. This is so close to an F, I would just use the PM G-4 kit as it. You also need to fill the upper wing depression for the bulges of the later tires and wheels. The Aires kit has the F wheels, but they are not, in my opinion, as nice as the PM wheels.

Variant Differences

- 1) F-1/2
 - a) Had a more slender and slightly longer supercharger intake than the F-4's G-type. You can modify the G one. The Aires kit has the F-2 type.
 - b) As mentioned above, the F-1/2 used the DB-601N engine with its higher octane, so use the triangle markings of "96", "100" or "C3", not "87" or "B4".
 - c) The majority of F-2s had rounded wheel wells. The Hasegawa kit has these for some strange reason (no G had this), so for an F-2 just leave it alone.
 - d) There were no F-2/Trop aircraft, nor an F-2Z version.
- 2) F-4
 - a) Had the G-type supercharger intake. You can use the G-4 kit part.

- b) The F-4/Trop filter is in the Aires kit, but if you have the G-4 you can use that one.
- c) Used 87 octane fuel so you can use the G-4's decals.
- d) ONLY the F-4/Trop and F-4Z used the deeper oil cooler, so you can use the G-4 kit parts for this.
- e) The F-4Z used the G-type wider propeller blades, so you can use the G-4 kit parts. The F-4/Trop DID NOT use the wider blades, but normal F blades. For those not familiar with the Z option, it was nitrous oxide (laughing gas) mixed with water and injected into the supercharger intake as a vapor. It was called GM-1. It allowed the engine to run at higher power ratings at lower altitudes for brief periods. It had various tanks as well as fittings in the wheels wells. If anyone wants to do this, contact me OB and I'll fill you in.
- f) Virtually all F-4s used rounded wheel wells, as in the G kit.
- g) The F-4/R1 was fitted with the underwing MG 151/20mm cannon gondolas. The fitting of these was limited but are known to have been with JG 52, and JG 3. These are not in the Aires kit but can be used from a G kit.
- h) The F-4/Trop had a "survival kit" with water, food and a rifle in the rear fuselage, but it was never seen so don't worry about it unless you are doing a cutaway model.

Other issues:

- 1) If you use the Z option, gondolas, the drop tank or the bomb rack on your kit, there was a small panel attached to the lower part of the main instrument panel that had assorted switches and lights. Also the Z had some throttle fittings.
- 2) There is an unknown about the cannon cover in the cockpit. As you might be aware, there was a difference in the 20mm versus 30mm cannon covers in the G. Was there a difference between the 20mm MGFFm, the 15mm MG 151 and the 20mm MG 151? I don't know for sure and I'd welcome any information available. While in this vein, there may have also been differences in the cannon gas ejection on the belly of the F-2 for the MGFFm, but I am lacking information on this.

Two last items about the Aires kit:

- 1) In my opinion the kit's wheel spokes are too deep. I've never measured an F wheel, so I cannot be certain, but they appear that way compared to photos. Since it would be very difficult to correct this, you just have to use them as is. I've not commented on the very detailed interior furnished with the kit. It appears very well done, but there are other, competing interiors out there.

It sounds as though I am very pro-Aires kit, and, it is very nice. It is easier to use the prop blades, the oil cooler and the wheels. With a little effort you can adopt the G tailwheel supercharger intake, etc. The canopy would be very difficult w/o

the Aires or some other vacuformed replacement. Unless you are really hot to have an F, at this point, I'd wait for Hasegawa.

References to have:

Essential: Messerschmitt Bf 109 F, G and K by Jochen Prien, published by Schieffer. In addition to the basic information this has so many great photos it is worth the price even if you only build a few 109s.

Nice to have: Model Art No 408, Bf 109F . Lots of great detail drawings, many redrawn from the original manuals.

Thanks To **Mike Horina** for the "borrowing" of his Aires conversion kit.