A-10A Warthog

by Thierry Laurent

TYPE: **Fairchild A-10A Thunderbolt II (USAF)**

SCALE: **1/32**

COMPANY: **Trumpeter**

KIT Number: 2214

MOLD CREATION DATE: 2001

TWEAKS LIST VERSION 1.0 (publication date: March 2006)

The following list is intended to help modelers in improving scale accuracy of an airplane model replica. In no way is it intended to support or be offensive towards a scale model company.

As such, it is only the result of a progressive process and is in no way intended to be absolute or even comprehensive. Hence, it is intended to focus on commonly admitted discrepancies and will probably not cover some errors. It is up to the modeler to decide whether correcting the listed issues is worth the time and money he will have to invest in the quest for accuracy process.

No aftermarket correction or detail set is mentioned in this document as the availability of such items may be very variable. Hence, refer to other LSP sections to find relevant information. Moreover, aftermarket sets do not necessarily correct all listed issues. Please refer accordingly to relevant documentation.

General note:

Kit is a hybrid mix of features belonging to two nineties Warthog versions. As such, it does not depict any existing configuration. The modeller has to choose the era and depict accordingly correct features (RHAW antennae and other LASTE features, GPS dome, formation light strips, etc.). Consider also that some modifications asked for a rather long period of time to be carried out on the Warthog fleet (e.g. LASTE update began in 1990 to end in the mid-nineties). Last but not least, some specific modifications (LARS, NVIS, etc.) were done more or less in parallel with LASTE general update. Hence, the list will pinpoint most of the differences and give some information regarding the modifications timeframe to allow the modeler to choose which type of Warthog he wants to depict. Please check closely your references!!!

1. NOTICEABLE FUSELAGE ISSUES (from front to rear)

- The nose is too blunt. More specifically, the shape is too wide in plan view. There is no easy way to solve this. The sole solution implies reshaping the nose and restoring surface details. To do this, apply a thick layer of epoxy putty or cyano gel glue to the inside of the fuselage halves around the forward nose. Then, scrape, file and sand the nose sides progressively. To obtain a more accurate section, it is necessary to go through the plastic (remove more or less two millimeters). Polish the sanded area and restore scribing and other surface details such as antennae. Do not forget modifying as well part K24 (front LG wheel well) as it must be fitted to the fuselage halves.

- Presence of EGI GPS receiver dome antenna behind the canopy indicates a very late, updated airframe (21st century modification). However, kit has only part of the LASTE modifications it should have. It has the fin sensors but not the ones under the tailplanes. Slime light strips are also missing and should be added with plastic strips or photoetched parts on the fins, wing tips (T shaped), top of the fuselage (V shaped) and below the tail.

- The covert lights tubes protruding on the top of the aircraft behind the aft upper UHF antenna were added during LASTE upgrade.

- Another example of hybrid features is the ALR antennae combination on the kit. Kit has the ALR-69 small domes on the nose and ALR-46 antenna molded under the tail. To build an early A-10, remove the small protruding domes and scratchbuild the missing ALR-46 RHAW antenna and glue it under the nose. To build a late (LASTE) A-10, simply remove the ALR-46 tail antenna. Note that even if Trumpeter molded the dome antennae in clear plastic (i.e. parts L8), they are not clear on the actual airframe. It must also be stated that some airplanes have flat ALR-69 antennae: check your references. More generally, check the airframe you want to depict to be sure that the kit antennae accurately correspond. In practice, this implies the replacement of various antennae under the front and rear of the fuselage belly.

- Some other small external details on the front fuselage area such as AOA indicator (on part A5) or air temperature probes deserve to be refined or replaced. Small intakes in the forward fuselage areas (on parts A5 and A6) should be opened.

- Some LASTE upgraded airframes received two antennae (for the LARS) under the forward fuselage right side. Again, check your references to see if this applies to the airframe you want to depict.

- Avenger GAU-8/A gun has complete separate barrels, breech and ammo drum. However, the Gatling muzzle is far from terrific as such and vent holes deserve to be drilled to improve the look of this quite prominent part. Unfortunately, in this case, it appears immediately than barrels are too short and have to be lengthened with plastic rods. Moreover, out of the box, there is no way to show the gun system internal details and the ammo belts are unfortunately not correct as they are given as simple shell lengths whereas they should be in a metal wrap around feed belt. Opening belly gun bay asks for additional detailing with inner bulkheads, extra wiring and so on. Take care before cutting as bay panel lines are not correctly positioned. Note that one of the first LASTE modifications relied in the change of the gun muzzle-fairing panel from a solid panel to a split one (allowing the removal of the lower half for maintenance without removing the entire panel). Note also that during the nineties some A-10s used temporarily a gun gas dispersing device.

- Do not forget adding ballast weight (e.g. in the ammo drum) to avoid the tail sitter syndrome.

- Two inverted scoops were added on the nose left side in the mid eighties (to pull gun gasses out of the gun bay). To build a very early Hog, remove the scoops (parts M24 and M25), close the gaps and file in shape. Note that the reverse scoops were removed from the right side of the aircrafts updated from 2003. Please check your references accordingly as some airframes had only the rears scoop! To build a current Warthog, fill gaps; make new vent holes according to the picture of the airframe you want to depict; add fine mesh and restore correct surface details (take care as there are detail variations).

- Ventral strakes parts are too short (parts K27 & K28). They should be closer to fuselage pylons. Move them more or less 4 mm to the aft, slightly under the wing.

- Formation electro-fluorescent lights were added around the LASTE modernized aircrafts. Remove them for earlier airframes.

- To mate smoothly the front and rear fuselage, it is recommended to remove more or less the half of the depth of the lip on the front section.

- APU exhaust hole must be enlarged and drilled in the rear port fuselage. Add a short section of tube to simulate the exhaust. Later birds (late nineties) had a deflector on the edge of the hole to channel hot exhaust gasses away from the port engine nacelle. Note that the correct position of APU hole crosses a rivet line wrongly positioned by Trumpeter. By default, it is easier to leave the APU between rivet lines as correcting rivet lines position is a chore…

- Improve centerline vent and fuel dump pipe (under the rear fuselage).

- The engine nacelles intake fans should be positioned deeper than showed in the step 30 of the instruction sheet (in the forward end of part Q5). Correcting this is easy: grind the fan mounting step molded on nacelle halves and put directly the Q1 fan part on the edge of the engine support clear parts (Q3&4). Double check the fan part position to ensure it will be glued at the correct vertical angle. Note that the fuel drain fairings are missing on the nacelles underside.

- Allison TF-34 Engines resin engines are well molded with defined details including the larger fuel lines and some other plumbing. There is nevertheless scope to add the various smaller missing internal fairings, cabling, conduits and fuel pipes and drains that are visible on reference pictures. Port side corresponds closely to reference pictures but situation is rather different regarding the starboard side… Engine exhaust shape is not fully accurate. It has neither mounts nor fuel drain pylon. Moreover, there is no turbine end and some releases had filled exhausts. If you're the unfortunate owner of such parts, drill them or replace them with aftermarket ones but whatever may be the chosen solution, be prepared to surgery time...

- Closing engine cover requires filling and sanding. Unfortunately, clear engine doors are not correct if you want to open them as such. To use them in the opened position, cut front and rear sections of the inner clear part as the actual engines nacelles have a short front outer shell and a large exhaust cover. On the real aircraft, sections of this inner mounting open as part of the nacelle door allowing direct access to the engines.

- Add the square engine nacelle bumpers on the fuselage sides (up to the rear wing root) if you depict a late 90s or more recent Warthog.

- Cooling system intake and exhaust edges should be thinned (J12 part).

- Removing the seam after having mated the two rear tail parts is far from easy without damaging the molded rivets. Best solution is probably to protect them with masking tape and use limited amount of filler smoothed with acetone-based nail polish remover or two-components epoxy putty smoothed with water or alcohol. If some rivets have to be repaired or replaced, use aftermarket ones such as Grandt Line or retrieve some from an old 1/35-1/32 AFV kit with a scalpel blade and glue them with a small amount of Future.

- Hinges area on the rudders and elevators parts should be cleaned. Elevator main hinge is too large and another one, although not very obvious, needs to be added on the outer

section. Re-enforcements strips needs to be shortened on lower and upper sides of the elevators. Improve hinges and add small trim actuators and fairing on the stabilizer.

- Tail plane parts do not seat correctly in fuselage recess without a lot of carving and sanding. The same problem appears where the horizontal stabilizers join to the fuselage under the tail.

- As abovementioned, for a late Hog, do not forget adding the LASTE radar altimeter antennae missing on the underside of each horizontal tail. Covert lights on the tail cone were also part of the LASTE upgrade program.

- Existing LASTE sensors on tail surfaces should be reshaped as the front ones are different from the rear ones.

- In the mid to late eighties, the locator beacon antenna protruding slightly on the starboard vertical stabilator was removed.

2. NOTICEABLE WING/WEAPONS ISSUES

- The wings have separate sliding flaps. Flap parts are not easy to assemble and do not extend fully. Removing the tabs help in positioning them. The area needs a lot of filling, sanding and cleaning. Dry fit more than once. Add a spar inside the wing and fill with epoxy putty. Structural details as well as actuators need also to be added in the flaps bays. Clean the hinge recesses for the speed brakes and the brake hinge pins to ensure smoother positioning. There are also errors regarding parts numbering on the instruction sheet as the port inners should be numbered 3 & 5 rather than 4 & 6.

- Position of aileron engraved hinge line is not correct. It should also be more pronounced. Possibly separate the part and detail hinges. Replace the trim tab with thin plasticard and add its trim rod. Cut and set at correct angle aileron outer edge balance rod. Aileron actuator fairing also needs to be improved by separating the rod and creating a gap. Lastly, add the pylon attachments braces with plastic card and rods.

- The wing fences inboard of the wheel fairing are wrongly shaped and need to be rebuilt with plasticard. Add the stall strip on each wing leading edge.

- Locating lugs of the leading edge slats are cast at a wrong angle. Hence, it is not possible to open them. Replace them with scratchbuilt parts to obtain correctly angled pieces with be a gap at the top and bottom.

- Wing tips underside seam need filling and sanding (a Warthog kit classic...) Check if the use of locating tabs on wing parts does not interfere with correct positioning of upper and lower parts as well as fuselage. Dry fit is the rule here.

- Remove the formation lights and the small dark covert (NVG) lights on the wing tips on pre-LASTE airframes.

- Fairings end shape is not totally accurate. Correct or replace with aftermarket parts the too narrow rear chaff/flare ALE-40 dispensers molded on the bottom of the fairing parts (installed in the mid-eighties).

- Take care to correctly glue fairings front end on the wings as fit is far from good. The top fairing part on the starboard wing top one is wrongly shaped. Use the lower one (part M1) as a guide to reshape the upper part.

- Correct the refueling point details (N12&13 parts) on the port fairing and its door. The refueling port has been molded vertically whereas it should slope downwards (the break should be facing forward on a steeper angle with a small lip at the bottom). Details are also far too simplistic. Door part deserves as well to be improved (its angle is neither correct).

- Black ILS antenna (port gear fairing nose) was added during LASTE upgrades.

- Two panel lines on the leading edge of the bottom do not line up with the corresponding ones on the top. As upper ones are correctly located, fill and re-scribe lower ones.

- The wings do not fit the fuselage correctly. Removing the thin raised strip on the inside of wing bottom parts E1 and E2 (on the inside end of the flaps closest to the fuselage) will help a lot in mating the wings and the fuselage. Try getting the smoothest possible seam on the extrados-fuselage join. Unfortunately, doing it this way leaves a huge seam (more or less 1mm) on the intrados. Use plastic strips to fill it with cyano glue as this area will support part of the kit weight.

- Replace starboard wingtip pitot tube by a new one scratchbuilt with micro tubes or hypodermic needles sections.

- Locating tabs should be removed on most pylons parts to position them correctly. Pylons and attachment points need to be detailed. As they are adjustable for flight stability reasons, pylon braces parts (H22) need some slight bending to assure that they mate correctly with the stores.

- Kit has AIM-9L/M Sidewinders, ALQ-119 ECM pod, BLU-27 napalm canisters, Mk. 20 Rockeyes, CBU-52s, GBU-10 Paveway, GBU-8 TV guided bomb, Mavericks with single and triple launchers, Mk.82 LDGPs with MERs and center line fuel tank. Unfortunately, what is not outdated is rather inaccurate or misshaped: Mavericks seem to have been manufactured by a Stalinian era tank manufacture; Mk82 shape is beyond relief, AIM-9s are too pointy, other bombs are as detailed as 1/72 ones, kit has two MERs but no TERs (whereas MERs are only used for training but TERs have been used in the field), etc. Last but not least, locating tabs should also be removed on most parts. Forget kit ordnance and raid your spare box or rely on aftermarket parts. Otherwise, be prepared to a painful job…

- Note that Maverick triple launch rails were not used operationally.

3. <u>NOTICEABLE COCKPIT ISSUES</u>

- Armored tub parts are correct. To be sure it fits correctly, position the assembled cockpit inside the bathtub before attaching the rear bulkhead part (N14). Then, cautiously glue the cockpit tub in the right front fuselage half. Note that putting correctly the tub between fuselage halves is not easy if you do not take time. If you do not succeed in putting it correctly, remove the position lugs and fill possible seams with putty.

- The side consoles have very soft details and are wrongly sized. Front instrument part is poorly represented by a too small decal and the plastic part does not match the hood part. ACES II seat is quite nice. Control stick asks for drastic improvement and there is no throttle, nor foot pedals. Kit cockpit at least requests new front instruments and seat belts. Useless to say that an aftermarket set will really leverage the kit appearance. Take care regarding the era of the airframe you choose as pre and post LASTE cockpits are different. The most noticeable difference is the air-conditioning and de-misting ducts and

vents running along the cockpit sides on pre-LASTE airframes. Other differences are not really noticeable.

- Front instrument hood and HUD need additional detailing as well as the turtle deck area with canopy actuator behind the seat (missing bay of the actuator mechanism, missing thermos/helmet's bag tube ring brackets, missing wires, etc.)

4. NOTICEABLE CANOPY ISSUES

- The canopy shapes are unfortunately off:

  - Most noticeable issue is the angle of the vertical frames joining the windshield and canopy parts (when looking from the side): it is vertical whereas it should be tilted forward. This means that the aft canopy part should drop more and be more rounded. Cross section of the part should also be more curved with a kink where it meets the fuselage. And last but not least, the location of the framing edge is set too high near the rear end, the clear area being somewhat larger on the actual airframe.

  - If the front flat windscreen has the correct square profile at the bottom, it is also wrongly shaped. Its cross section is not enough rounded and the sides should be more vertical. Moreover, its central armored glass should be flat between two parallel and thicker straight frames.

  There is no other solution than scratchbuilding new parts or replacing them with an aftermarket set. There is no other solution than scratchbuilding new parts or replacing them with an aftermarket set. If you still want to use the kit parts, check if the airframe you want to depict had a lightning diverter tape on the rear section of canopy. If this is the case, carefully remove the forward 10mm of the canopy central mould line and leave the rest as on the full scale part.

- Do not forget add the missing tubing, locks and other details on the canopy parts.

5. NOTICEABLE LANDING GEAR ISSUES

- Brake hoses and different hydraulic lines are missing on the landing gear legs. Oleo scissors, lights supports and other details may be replaced by finer parts. Note that landing gear struts are not correctly positioned in the fairings but this is not too noticeable.

- Using the small screws to attach wheel hubs on the undercarriage legs is far from easy. Gluing them with epoxy glue is a better solution.

- Note that NLG wheel does not go far enough onto the aisle. To solve this, enlarge the hub part gap (J13 part).

- Rubber tires do not stay firmly on wheel hubs/rims without being superglued. Alternately use resin aftermarket wheels.

- Landing gear doors are too thick and should be sanded down to a more realistic thickness. Some very noticeable ejection marks should also be removed with a lot of care in order to avoid damaging the doors stiffening ribs. In some cases, it will be easier to sand everything and restore details afterwards.

- Structural details ribs, fuel lines and hydraulic plumbing are missing in the wheel wells. A very visible fuel pipe line should be added in the port bay.

6. OTHER NOTICEABLE ISSUES & MISCELLANEOUS REMARKS

- The kit molding is generally crisp with engraved panel lines, rivets and details as well as correct raised rivets on the rear fuselage tail, engine nacelles and rear fins. All intake and outlets parts are separately molded allowing them to be depicted open. Wing slats, flaps and speed brakes, boarding ladder bay and refueling point may be positioned or opened.

- Kit has wheel chocks, engine resin inserts, vinyl undercarriage tires and white metal landing gear legs, boarding ladder and pitot tube, thread for the wheel chocks, photoetched hinges and rearview mirrors, clear engine nacelles and front turbine blades with gaps between them.

- Unfortunately, many parts need a lot of preparation time before mating them. Fit is sometimes excellent, generally average and sometimes very bad (wing parts, the wing tips join, the join on the tail, the fairings on the wing, the wing & fuselage join, the ordnance pylons, etc.).

- It is recommended to devote time to check and study the wing elements parts and choose a possible configuration before assembly as, as such; obtaining a realistic result is not obvious.

- If shapes and dimensions are generally correct, the nose and canopy areas are clearly misshapen.

- Pilot figure should be politely forgotten...

- Note that if you want to depict a “ready for combat” airframe, white chaff are installed in ALE-40 wingtips launchers whereas flares are used in the landing gear fairing ones.

- Two decal sheets are included (aircraft markings and ordnance stencil data) for 75 TFS/23 TFW with sharkmouth and 706 TFS/926 TFG AFRES with Hog noseart. They are thin and easy to apply if a little bit fragile. However, some kits had printing alignment issues and some stencils are mispelled (Releas Manele, camopy, No life, etc.). The decal scheme refers to early nineties Warthogs whereas the kit has a lot of later features (LASTE, GPS). Hence, to use kit decals, some abovementioned later features should be removed. Kit instruction diagram depict Desert Storm era A-10s. Note that the Euro 1 scheme pattern evolved during the Hog’s life. The colors did not change but the pattern differed at the beginning of the nineties, after Desert Storm but before the LASTE overhaul and application of gray camo.

The following sources were used to build this list.

Modelling essentials:

- Neubeck, Ken, *Walk Around A-10 Warthog*, n°17, Squadron Signal Publications, 1999.

- Peeters, Willy, *A-10 Thunderbolt* , Lock On n°.7, Verlinden Publications, 1990.

- Zmuda, Tom, *A-10 Thunderbolt II*, Kagero, 2005.

Scale plans and TM extracts:

- Bell, Dana, *A-10 Warthog*, Detail & Scale n°19, Kalmbach books Publications, 1989.

- Stephens, Rick, *A-10 Thunderbolt II*, World Air Power Journal Special, 1995.

Colour pictures photofiles:

- Dorr, F. Robert, Jolly, Randy, *A-10 Warthog*, Osprey Photo Special, Osprey Publishing Limited, 1992.

Other used books:

- Bell, Dana, *A-10 Warthog*, Custom & Markings n°24, Kalmbach books Publications, 1989.

- Drury, Richard S., *The A-10 Warthog America's Mudfighter*, 1037, Concord Publications, 1993.

- Neubeck, Ken, *A-10 Warthog*, MINI in action n°4, Squadron Signal Publications, 1995.

Other references:

- Some magazines articles (more particularly from Replic & Tamiya)

- Some web pages (more particularly LSP, www.a-10.org, www.warthogpen.com)