

F-86 SABRE

INSTRUCTION MANUAL



WARRANTY

Great Planes Model Manufacturing® Co. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. **In no case shall Great Planes' liability exceed the original cost of the purchased kit.** Further, Great Planes reserves the right to change or modify this warranty without notice.

In that Great Planes has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return

this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim send the defective part or item to Hobby Services at the address below:

Hobby Services

3002 N. Apollo Dr. Suite 1
Champaign IL 61822 USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.



Champaign, Illinois
(217) 398-8970, Ext 5
airsupport@greatplanes.com

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INCLUDED ITEMS



Above included with RTF (GPMA1770)

Check the parts against those shown. If any parts are damaged or missing, please call Hobby Services at: (217) 398-8970.

FCC AND ETSI

FCC REQUIREMENT



This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

CE COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Instructions for Disposal of Waste Equipment by Private Users in the European Union: This symbol on the product or its packaging indicates this product must not be disposed of with other household waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or location where you purchased the product.



Declaration of Conformity:

Product: Tactic TTX402 2.4GHz 4-Channel Tx Rx
Item number: TACJ2402, Equipment class: 1



Tactic TTX402 transmitter and Tactic TR421 receiver: The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European 2006/95/EC Low Voltage Directive:

EN 60950-1:2006 Safety

The objects of the declaration described here are in conformity with the requirements of the specifications listed below, following the provisions of the European R&TTE directive 1995/5/EC:

ETSI EN 300 328 V1.7.1 Technical requirements for radio equipment
ETSI EN 301 489-1 V1.8.1, 301 489-17 V1.3.2 General EMC requirements for radio equipment

Tactic™
c/o Hobbico, Inc.
2904 Research Road
Champaign, IL USA 61826

The associated regulatory agencies of the following countries recognize the noted certifications to this product as authorized for sale and use.

UK	DE	DK	BG	SE	FI	FR
EE	LV	LT	PL	CZ	SK	HU
RO	SI	AT	IT	ES	PT	IE
NL	LU	MT	CY	GR		

PRECAUTIONS

Your Micro F-86 Sabre should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Micro F-86 Sabre, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

1. Operate the plane **according to the instructions**. **DO NOT** alter or modify the model. If you make any modifications, you void your warranty.
2. **Test** the operation of the model **before each flight** to ensure that all equipment is operating properly and that the model remains structurally sound.
3. Fly only on calmer days (with wind speeds no more than 10 mph) and in large open areas free of trees, people, buildings, or any other obstacles.
4. If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots. You can also contact the National Academy of Model Aeronautics (AMA) which has over 2,500 chartered clubs across the country. Instructor training programs and insured newcomer training are available through any of these clubs. Contact the AMA at the following address or toll-free phone number:

Academy of Model Aeronautics

5151 East Memorial Drive
Muncie, IN 47302-9252

Ph. (800) 435-9262
Fx. (765) 741-0057

www.modelaircraft.org

TRANSMITTER CAUTIONS

- Do not use rechargeable (NiCd) batteries.
- Do not mix old and new batteries.
- Do not mix alkaline, standard (carbon-zinc) or rechargeable (NiCd) batteries.

BATTERY CHARGING PRECAUTIONS

- ❑ 1. Always remove the battery from your Micro F-86 Sabre before charging.
- ❑ 2. Allow the battery to cool after flight before recharging.
- ❑ 3. Do not leave a charging battery unattended! Unplug the battery if it gets warm, even if the charge LED has not gone out.

WARNING: Misuse or malfunction may overheat the battery and charger, resulting in personal injury or damage to surroundings.

It is critically important to use only 2S LiPo 7.4V batteries within the recommended capacity range that do not include a PCM (Protection Circuit Module) charging circuit inside the battery.

Most PCM circuits restrict the delivery of power to the ESC and motor and may cut all power to the receiver and thus, result in complete loss of control over the model.

LITHIUM POLYMER BATTERY RECYCLING



LiPo

ATTENTION: The product you have purchased is powered by a rechargeable battery. At the end of the battery's useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste system. Check with your local solid waste officials for details in your area about recycling options or proper disposal.

WARNING: This product contains a chemical known to the State of California to cause cancer.

F-86 SABRE for REALFLIGHT 6

If you have Great Planes RealFlight® 6 R/C Flight Simulator, you can update it and fly the F-86 Sabre.



Updating to the latest version of RealFlight 6 is a simple process. The software will update all of the necessary files for you automatically. Follow these steps to access the update.

1. Make sure that your computer is connected to the internet.
2. Double-click the **RealFlight 6 Launcher** on your desktop.
3. Click the **Additional Options** button followed by the **Registration/Updates** button.
4. Click the **Update to Latest Version** button. The necessary files will then be updated for you.

UNPACK THE PARTS



Begin by removing the components from the foam packing cradle. Lift off the cradle top pieces from above the plane.



Carefully lift the airplane from the cradle and set it aside, taking care not to put excess pressure on the aileron control horns.



Remove the other components from the cradle. The transmitter will lift easily out of its pocket if you slide it straight up by pushing from the back.

LITHIUM BATTERY HANDLING & USAGE

ONLY use a LiPo approved charger. **NEVER** use a NiCd/NiMH peak charger to charge a LiPo battery.

NEVER charge in excess of 4.20V per cell.

ONLY charge through the “charge” lead. **NEVER** charge through the “discharge” lead.

NEVER charge at currents greater than 1C unless the battery is rated for a higher charge rate.

ALWAYS set the charger’s output volts to match the battery volts.

ALWAYS charge in a fireproof location.

NEVER trickle charge.

NEVER allow the battery temperature to exceed 150 degrees F (65 degrees C).

NEVER disassemble or modify the pack wiring in any way or puncture the cells.

NEVER discharge below 2.5V per cell.

NEVER place the battery or charger on combustible materials or leave it unattended during charge or discharge.

ALWAYS KEEP OUT OF THE REACH OF CHILDREN.

NEVER charge the battery in the plane.

ALWAYS remove the battery from the plane after a crash. Set it aside in a safe location for at least 20 minutes. If the battery is damaged in the crash it could catch fire.

If the battery starts to swell, quickly move the battery to a safe location, preferably outside. Place it in a bucket, covering the battery with sand. Never use water to try and put out a LiPo fire.

CHARGE THE BATTERY



The ElectriFly® LiPo Battery Charger is great for simple balance charging of 2-cell lithium-polymer batteries for small electric models. Use it only to charge batteries within a capacity range of 150 to 750mAh.

Specifications

Input voltage:	11.7V–15V DC
Battery types, # cells:	2 lithium-polymer cells connected in Series (7.4V LiPo)
Charge current:	450mA maximum
Charge method:	CC-CV (current drop-off termination)
Battery capacity:	150–750 mAh
Status indicator:	Two LEDs; one green, one red
Input connectors:	polarized DC power jack for DC input
Output connectors:	one 2S balance plug
Case size:	2.18" x 1.13" x 3.26" [55 x 28 x 82 mm]
Weight:	2.1 oz. [59g]

Special Features

- A very economical, portable and simple way to balance charge LiPo batteries
- Specifically designed for 2-cell 7.4V lithium-polymer batteries only

- “Constant current/constant voltage” charge method
- Automatically starts charge upon connection of battery to the balance plug
- 450mA maximum charge current requires no adjustment
- Twin LEDs indicate charging status

Important Precautions

- Charge only lithium-polymer (LiPo) rechargeable batteries that are 2S (2 cells in series) 7.4V nominal voltage, from 150mAh to 750mAh, which have a balance connector.
- Do not attempt to use this charger with NiCd, NiMH or different types of Lithium-Ion batteries as they are not compatible!
- Do not leave the charger unattended while charging. Disconnect the battery and remove input power from charger immediately if either becomes hot! However, it is normal for the charger to get warm.
- Disconnect the battery from the charger immediately and remove to a fireproof location if the battery begins to swell or smoke!
- Only use the included car adapter or approved AC adapter to power the charger.
- Do not use charger with car running.
- Do not allow water, moisture or foreign objects into the charger.
- Do not block the air intake holes, which could cause the charger to overheat.
- Do not place the charger or any battery on a flammable surface or near a combustible material while in use.
- Do not charge on a carpet, cluttered workbench, paper, plastic, vinyl, leather, wood, or inside an R/C model.
- Never charge inside a full-sized vehicle.
- Always disconnect charger from input power when not in use.
- Do not attempt to charge a battery if it is swollen or hot.
- Keep out of reach of children.

Charging Batteries

IMPORTANT!! ALWAYS charge a LiPo battery in a location that is fireproof. **NEVER** leave the battery unattended while being charged! If the battery feels warm during charge, remove the battery at once and disconnect the charger from the power source.

Heat-resistant LiPo charging bags (GPMP0751) provide additional safety when charging and are available through your hobby supplier.

Use only approved power input accessories – the included car adapter and AC adapter (also available separately GPMM3310).

To charge a battery:

1. Connect input power to the charger. The GREEN LED will be lit, indicating standby mode. The RED LED will be OFF.

2. Connect the battery to be charged to the balance plug. The RED LED will also be lit, and remain RED during charging. Both LEDs should be lit solid while charging.

3. When the battery is fully charged, the GREEN LED will turn OFF. Remove the battery from the charger at this time.

4. Charging time depends on level of discharge and capacity of the battery. To estimate how long it should take to charge an empty battery, divide the capacity of the battery in mAh by the charge rate in milliamps:

200mAh battery / 450 mA ~ 30 minutes

350mAh battery / 450 mA ~ 50 minutes



LED scheme – Use this table to determine charge action:

<u>RED LED</u>	<u>GREEN LED</u>	<u>ACTION</u>
OFF	Solid ON	No battery is connected
OFF	Flashing	Conditioning battery
Solid ON	Solid ON	Battery charging
Solid ON	OFF	Charge complete
Flashing	Flashing	ERROR

Possible sources of battery error may include a highly unbalanced pack, charger timed out, or one cell in the pack which is low voltage. In the case of a battery error, please remove the battery pack from the charger and inspect it carefully for swelling or any other damage, such as broken wires.

1-Year Limited Warranty – *USA and Canada Only

Great Planes® warrants this product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. During that period, Great Planes will, at its option, repair or replace without service charge any product deemed defective due to those causes. You will be required to provide proof of purchase (invoice or receipt). This warranty does not cover damage caused by abuse, misuse, alteration or accident. If there is damage stemming from these causes within the stated warranty period, Great Planes will, at its option, repair or replace it for a service charge not greater than 50% of its then current retail list price. Be sure to include your daytime telephone number in case we need to contact you about your repair. This warranty gives you specific rights. You may also have other rights, which vary from state to state.

For service on your Great Planes product, warranty or non-warranty, send it post-paid and insured to:

HOBBY SERVICES (217) 398-0007
 3002 N. Apollo Drive, Suite 1
 Champaign, IL 61822

*For warranty and service information if purchased outside the USA or Canada, see the additional warranty information insert (if applicable) or ask your retailer for more information.

www.greatplanes.com

www.electricfly.com

PREPARE THE TTX402 TRANSMITTER

For more information on the Tactic Radio System included with the F-86 Sabre visit tacticrc.com



Leave the TTX402 unpowered.



Push in and slide to remove the battery door.

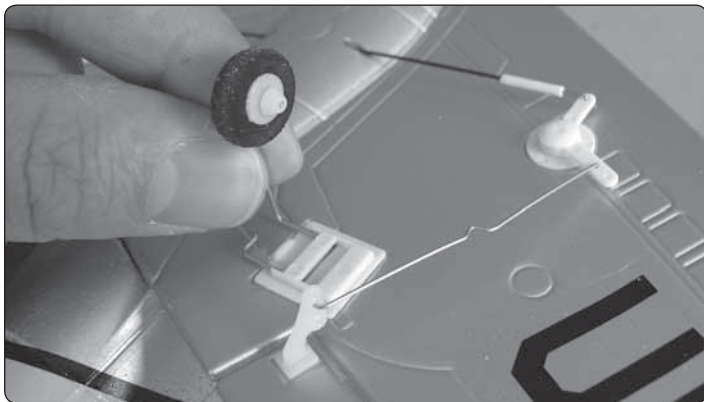


Install (5) "AA" batteries.

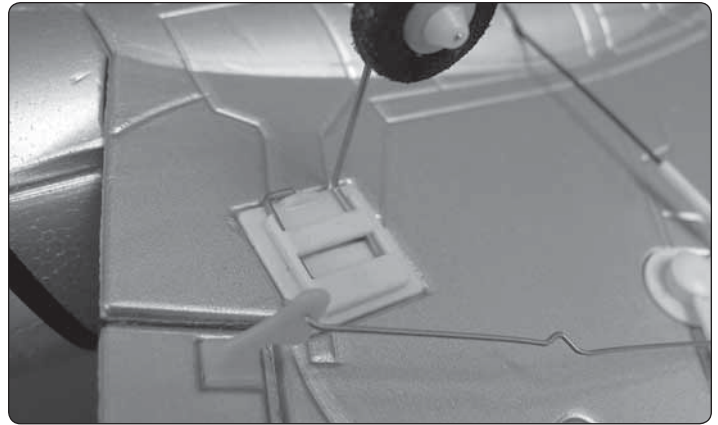
Replace the battery door.

INSTALL THE LANDING GEAR

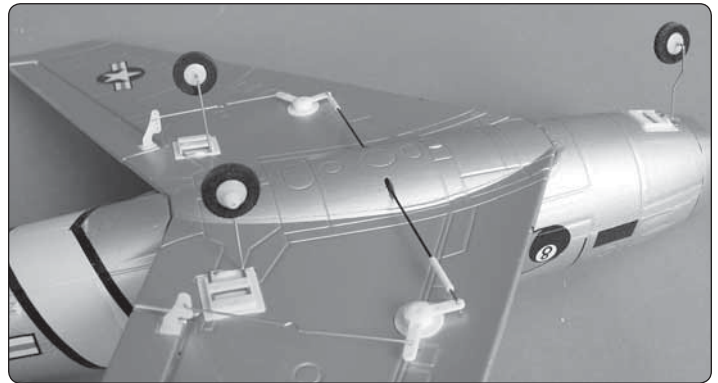
The landing gear is required for takeoffs and landings on smooth, paved surfaces such as your flying field runway or a parking lot. The gear should be left off if you plan to hand launch the plane and land it on grass.



Carefully insert the main wire landing gear into the plastic gear mounts in the orientation shown.



Slide the gear into the mounts until the small bent end of the gear base contacts the tab on the gear mounts.



Install the nose gear wire in the same manner.

When removing the gear, slide the wire straight out of the gear mounts until free. Pull the gear out at the base of the wire and work slowly to avoid damaging the plane.

POWER THE TTX402 AND CENTER THE TRIMS

Illuminated red light indicates the TTX402 is powered and transmitting.

Keep the left stick (throttle control) in the minimum throttle position during setup.

Center the rudder, aileron, and elevator trims.

Power switch "ON".



TRIM ADJUSTMENT

Full extent..... Centered Full extent
Constant «beep» Single «beep» Constant «beep»

CHECK THE CONTROL SURFACE DIRECTIONS



Turn on the transmitter with the throttle all the way down to the idle position. Lift off the canopy. Connect the flight battery to the ESC.



Fit the battery at the forward end of the battery tray and position the wire leads down and out of the way of the canopy hatch.



Fit the canopy hatch in place, being sure that it is properly seated flush on the fuselage and the magnets are properly securing it.



Moving the right stick down will cause the elevators to move up.



Moving the right stick to the left will cause the left aileron to move up and the right aileron to move down.



Moving the left stick to the left will cause the rudder to move to the left.

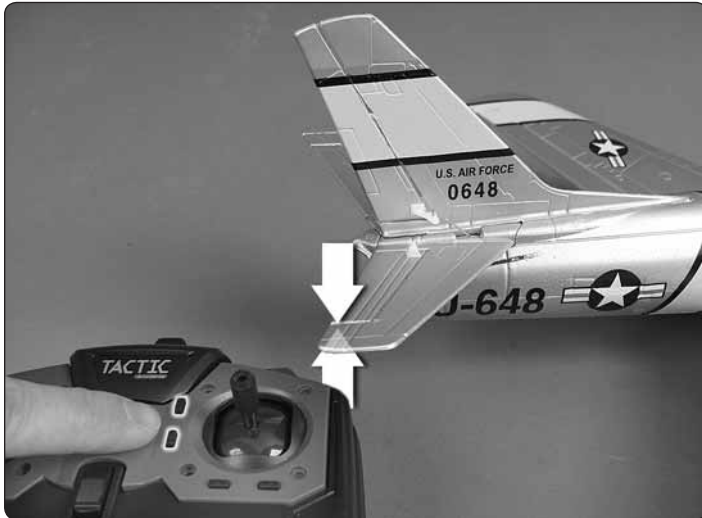
If any of the control surfaces operate in reverse of what is shown, disconnect the battery and turn off the transmitter. Press and hold either one of the trim buttons of the control surface that is not moving correctly and turn the transmitter on. Reconnect the battery and confirm that the control surface now moves correctly.

These are the control surface throws as they are set up from the factory:		
AILERON	<u>Up</u>	<u>Down</u>
	3/16" [5mm]	3/16" [5mm]
ELEVATOR	<u>Right</u>	<u>Left</u>
	1/4" [6mm]	1/4" [6mm]
RUDDER	<u>Up</u>	<u>Down</u>
	5/16" [8mm]	5/16" [8mm]

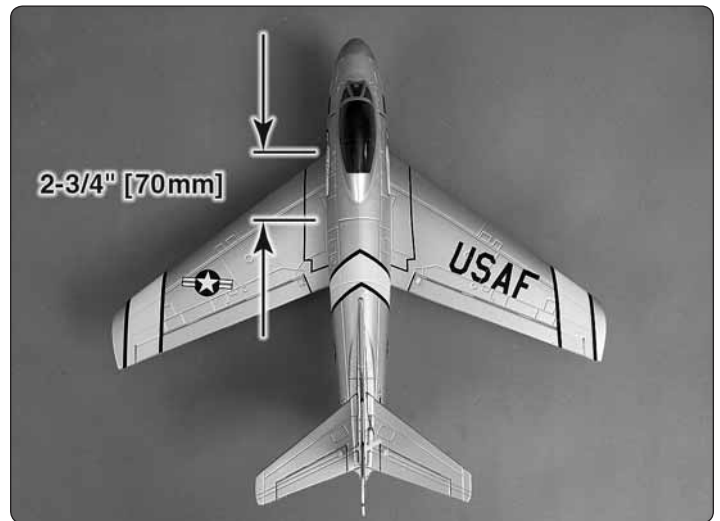
If using a transmitter with the Tactic AnyLink™ set up as above.

CENTER THE CONTROL SURFACES

Use the trim buttons to center the positions of the control surfaces.



CENTER OF GRAVITY



The optimum balancing point is 2-3/4" [70mm] from the wing leading edge where it meets the fuselage when looking down at the fuselage from above (see photo). Positioning the battery at the forward end of the battery tray will achieve this balance position. It is recommended to make at least your first few flights with the battery in this position. Moving the battery further aft on the battery tray will allow the plane to be more maneuverable. However, it will be more sensitive to elevator inputs. If you do decide to change the center of gravity, we do not suggest exceeding 1/16" [1.6mm] forward or aft of the recommended position.

ARM THE MOTOR

The F-86 requires that an arming routine be completed before the motor will operate. With the transmitter on and the throttle stick in the idle position, connect the flight battery to the ESC. Move the throttle all the way up and listen for the beep. Move the throttle back to idle and you will hear four fast beeps confirming the motor is now armed. **Moving the throttle up will now cause the motor to operate!** Keep items and fingers clear of the EDF duct.

CHOOSE A FLYING SITE

The Micro F-86 Sabre is a fast flying model and an adequate space free of trees and buildings is required. A park or open field that is at minimum the size of two football fields side-to-side with no obstructions or your local AMA sanctioned flying field would be ideal. The F-86 can handle winds as much as 10 mph. However, we recommend your first few flights be done in calm conditions so you can safely trim the model and become accustomed to its flying characteristics.

The included landing gear will allow the plane to take off and land on a smooth paved surface. The surface should be in good condition and free of debris. At least 100' [30m] of runway is recommended. If wind is present, confirm that the plane can take off **directly into the wind** when taking off from the ground. If the runway is not oriented with the wind direction, we recommend you remove the landing gear so you can hand launch the plane into the wind.

RANGE CHECK

With the transmitter turned on and the battery plugged into the Micro F-86, walk 50' [15m] from the aircraft and check the control functions for proper operation.

HAND LAUNCHING AND GROUND TAKEOFFS

It is a good idea to have a helper hand launch the F-86 for the first few flights until you are comfortable with its flying characteristics.

Hand Launching



Hold the airplane by the fuselage just behind the wing. Point the plane directly into the wind and at a slight upward angle of 15 to 20 degrees with the wings level with the horizon. Apply full throttle and toss the plane into the wind, taking care to launch it straight without any rotation. The F-86 does not require an aggressive launch to achieve flying speed. A hand launch similar to the effort applied when throwing a dart is all that

is needed. Immediately following the plane's launch, apply a little up elevator to gain altitude and be prepared to make any corrections with the ailerons. Once you are at a comfortable altitude, throttle back to a comfortable speed, make your first turn and begin to trim the model for straight and level flight.

Ground Takeoff

Set the plane on the runway pointed directly into the wind. Arm the ESC and apply full throttle to get the plane rolling. Be prepared with the rudder to make any corrections in order to keep the plane rolling straight down the runway. Allow the F-86 about 30-40' [9-12m] to gain enough ground speed. Then, gradually apply a little up elevator to get airborne. Avoid applying too much elevator early during your ascent because a lack of airspeed may stall the model and you will not have enough altitude to recover. Once at a comfortable altitude, throttle back to a comfortable speed, make your first turn and begin to trim the model for straight and level flight.

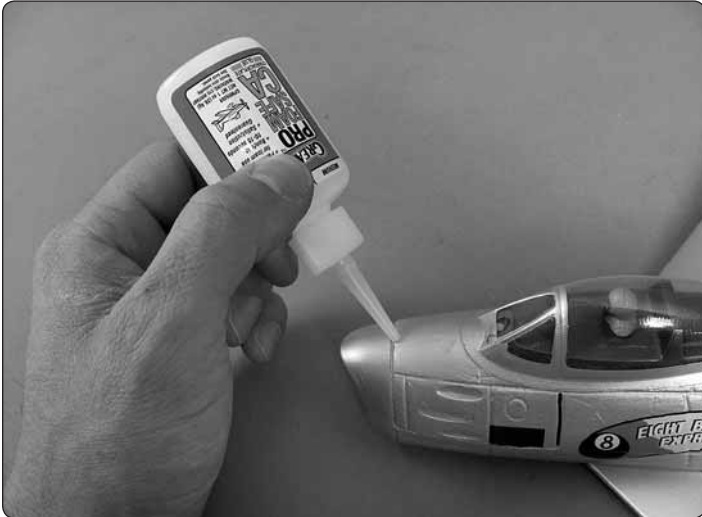
FLIGHT

The F-86 is a predictable flier and the controls are responsive. Be prepared for this during your first few flights by maintaining altitude and get a feel for the roll rate. The plane is capable of flying at a minimum of 1/2 to 3/4 throttle. Reduce your airspeed until you have the plane trimmed out. Begin by practicing wide, level turns and avoid over-controlling. The plane will maintain airspeed and therefore be more responsive when the circuits around your airspace are fluid and controlled. Because the jet is small and is capable of fast rolls and tight loops, be sure to stay focused and do not fly outside your capabilities.

Expect flight times of approximately 3 minutes (using full throttle) with the included battery. Allow yourself excess time to prepare for your landing approach. When it's time to land, make your final pass with the wind, slow the model and make a wide banking turn into the wind approaching your landing spot. Maintain approximately 1/4 throttle and allow the plane to descend, being sure to keep the plane at a level attitude. When the plane is about one foot off the deck, apply some up elevator to flare the model and cut the throttle.

If the motor begins to pulse, the battery is depleted and can no longer adequately power the motor. The F-86 can still be controlled after this point. As soon as you hear the motor pulse, turn into the wind as soon as possible and immediately land the plane. Failing to do so may result in you landing "dead stick" (completely without power) and your model may suffer damage from an uncontrolled landing. We strongly encourage you to use a flight timer set for three minutes (safe flying time with a fully charged battery) and allow yourself enough time to make your landing approach before the timer goes off.

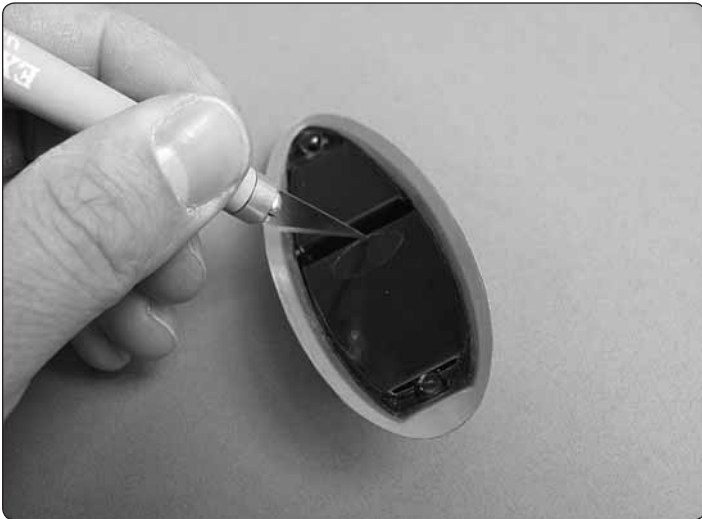
REPAIRS



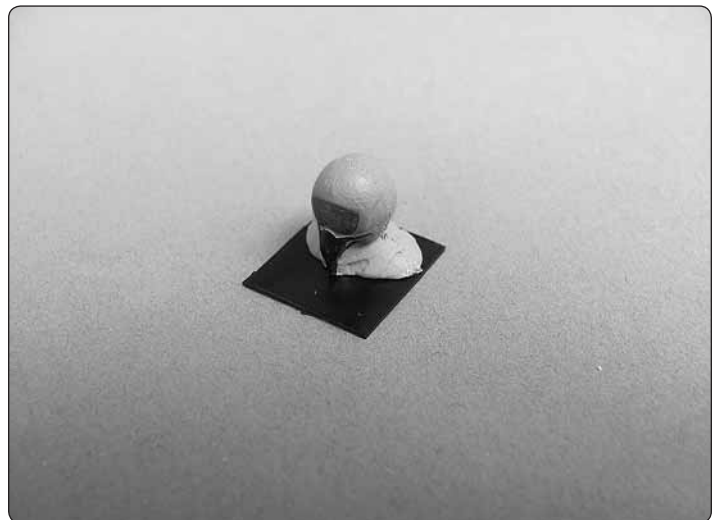
Repairs to your Micro F-86 Sabre can be made quickly and easily using foam safe CA glue. Apply a small amount of glue into the joint that is being repaired. Excess glue will squeeze out of the joint and onto the surface of the plane so use the glue sparingly. Hold the joint together and apply a light mist of CA accelerator to the glue line. Blow on the joint to cause the accelerator to evaporate quickly from the surface of the plane. This will minimize any discoloration of the paint.

PILOT INSTALLATION

Use a sharp hobby knife to carefully cut along the elliptical outline on the underside of the canopy hatch.



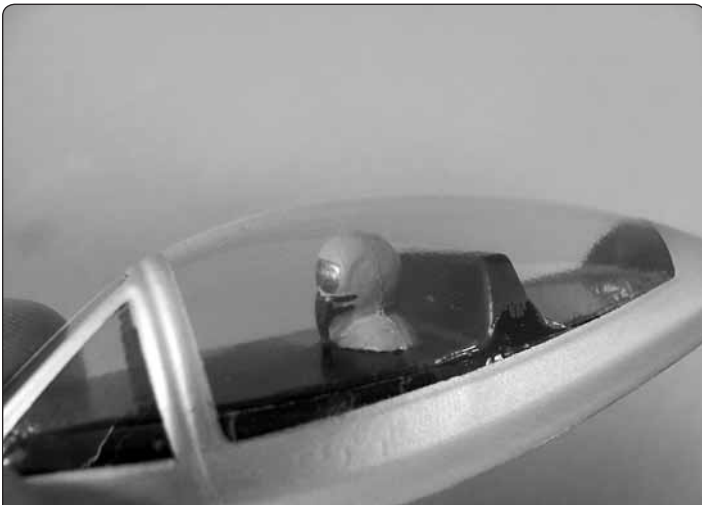
Paint the pilot figure using the colors of your choice. Acrylic paint is recommended. Other paints may attack the foam.



Glue the pilot figure to the pilot figure base using foam safe CA glue.



Fit the pilot through the elliptical cutout in the canopy hatch and glue (or use clear tape) the pilot figure base to the underside of the hatch.



REPLACEMENT PARTS

Replacement parts are available only as listed. Replacement parts are not available from Product Support, but can be purchased from hobby shops or mail order/Internet order firms. If you need assistance locating a dealer to purchase parts from, contact:

Product Support

Phone: 217-398-0007 Fax: 217-398-7721

E-mail: productsupport@hobbico.com

REPLACEMENT PARTS LIST

Order No.	Description
GPMA2280	Fuselage
GPMA2281	Wing/Tail Surfaces
GPMA2282	Canopy/Battery Hatch
GPMA2283	Hardware Set
GPMA2284	Decals
GPMG3915	Hyperflow 30 mm Ducted Fan
GPMG5100	Ammo 10-15-11500 kv Brushless Motor
GPMM3321	2S Micro LiPo Charger AC/DC
GPMM3322	2S Micro LiPo Charger w/Car Adapter
GPMP0694	LiPo 2S 7.4V BP 200 mAh 15C
GPMP0810	LiPo 2S 7.4V 250 mAh 20C

This product is suitable only for people of 14 years and older.



