

H-KING



Avro Lancaster V3

— H-King Avro Lancaster V3 "Dumbo" Heavy British Bomber —

Building and Flying Instructions

Please read this manual carefully before operating this plane.

The Lancaster was a British WWII heavy bomber that was designed and manufactured by the Avro Company in England. The Lancaster was powered by four Rolls-Royce Merlin engines and first saw service in 1942. It was involved with the strategic bombing offensive over Europe and it was the main aircraft for the night-time bombing campaigns that followed.

The versatility of the Lancaster was such that it was chosen to equip 617 Squadron with them and they were modified to carry the Barnes Wallis bouncing bomb. These were used for "Operation Chastise" that attacked the dams in the Ruhr valley in Germany, becoming known as the "Dambusters". Although the Lancaster was primarily a night bomber, it excelled in many other roles, including daylight precision bombing, for which some Lancasters were adapted to carry the 12,000lb "Tallboy" and then the 22,000lb "Grand Slam" earthquake bombs.

The HobbyKing Lancaster V3 is a faithful copy of its full-size counterpart and looks very realistic when flying and doing low level fly-bys and bombing passes. Ample power is supplied from the 4 brushless motors driving the scale 3 bladed propellers and a 11.1V 1300~2200mAh 25C LiPo battery (not supplied). This V3 is a stripped down, lightweight version of the V2, it does not have main landing gear, steerable tail wheel servo, or working bomb bay doors. An optional set of electric servoless retracts are available for those who wish to upgrade their Lancaster.

Being PNF (Plug and Fly) it is reasonably quick to assemble and has the motors, ESC's and servos pre-installed.

WARNING

Please read this instruction manual fully and become completely familiar with the features of this product before operating. Failure to operate this product correctly could result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product and is NOT a toy. It must always be operated with caution, common sense and some basic mechanical ability. This manual provides instructions as to the assembly, safe operation and maintenance of this hobby product. It is highly recommended that you follow and read fully the instructions and warnings stated in this manual including safety, assembly, set-up and flying guidelines in order to operate this product correctly and avoid damage or serious injury.

SAFETY PRECAUTIONS

As the user of this product you and you alone are responsible for operating it in a manner that does not endanger yourself and others around you or result in damage to the product or property of others. This product is operated via a radio controlled system that in some cases can be subject to interference from sources outside of your control. Interference may result in a momentary loss of control so it is always recommended that this product be used in a suitably open outdoors space.

- This is a radio controlled flying model and as such must always be flown with caution and care. This is not a toy.
- The Lancaster is designed for intermediate to advanced pilots.
- Always exercise great caution when using the recommended battery to power this product. For full safety notes and operating procedures, please see information provided by your battery supplier.
- Take great care when connecting/disconnecting the battery. See battery supplier for full safety procedures.
- Never power up the model in confined spaces and always keep the prop clear of obstructions.
- This product is not a toy. Children must be accompanied by an adult at all times if operating this product.
- Only fly this model in an open area away from crowds, people, buildings, trees, power lines and obstructions.
- Always put safety first when operating this model and consider the warnings stated above.
- The supplier/manufacturer accepts no responsibility for damage or injury caused through the use of the product. Not suitable for children under the age of 14. **THIS IS NOT A TOY.**

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SPECIFICATIONS:



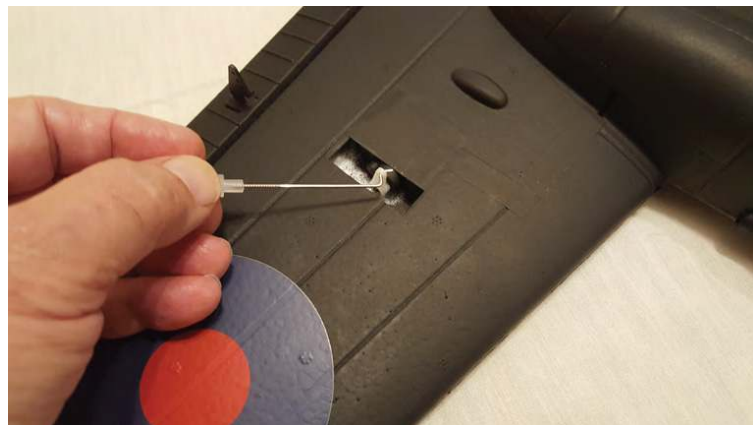
- **Wingspan:** 1320mm
- **Length:** 900mm
- **Flying weight:** 1065g upwards depending on set-up
- **Servos:** 3 X 9g
- **Motor:** 4 x 2627-1500KV Brushless Outrunner
- **ESC:** 4 x 15 amp Brushless (non-UBEC)
- **Recommended Battery:** 11.1V-1300mAh (25C or greater)
11.1V-2200mAh (25C or greater) LiPo battery if using the optional retracts.

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ASSEMBLY:



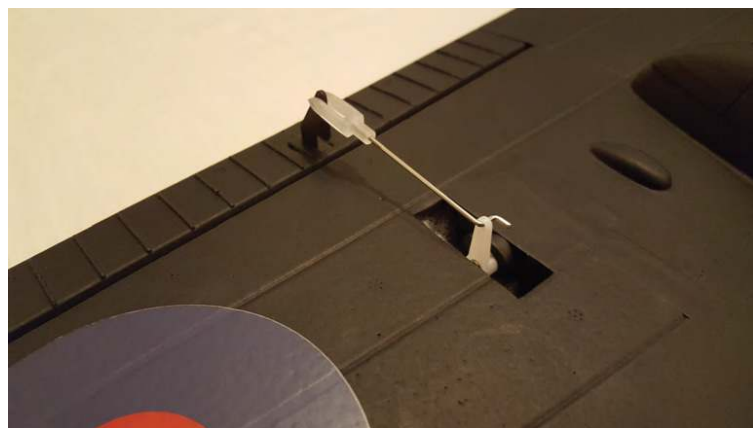
1. Flex the ailerons back and forth to loosen the hinge point, failure to do this will cause a strain on the servos.



2. Feed the Z bend end of the aileron push-rod through the outer hole of the aileron servo.



3. Ream out the top hole of the control horn to ensure the clevis is a good fit without being too sloppy.



4. Make sure the servo arm is at 90° to the servo. Adjust the length of the push rod to ensure the aileron is at neutral and then connect the clevis, make sure it snaps together securely. Repeat the above steps for the other wing.



5. Sand the ends of the horizontal stabilizers to remove the paint from the area's to be glued, see above example where one only has been done.





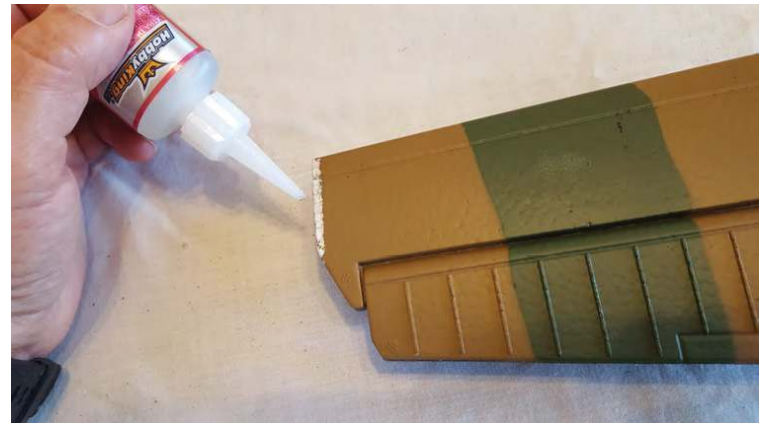
6. Scrape away the paint as well where the horizontal stabilizers glue into the rear of the fuselage.



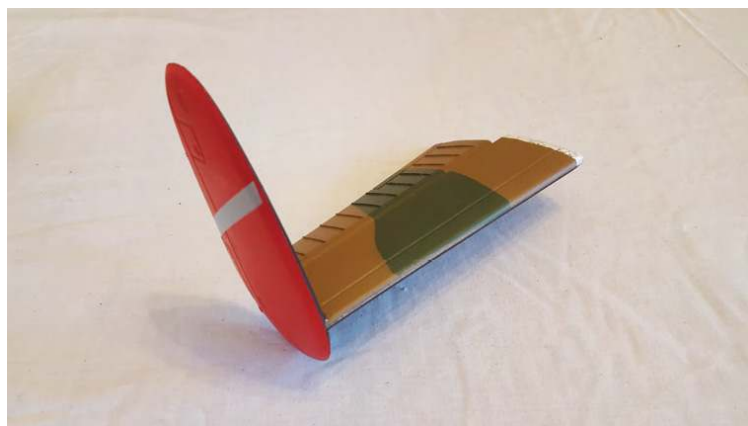
7. Cut through the foam on the outer end of the elevators to allow them to move freely. Once again flex them back and forth to loosen up the hinge point to stop any strain on the servo.



8. Once again remove the paint from the gluing area's on the end of the horizontal stabilizers and the indent in the vertical fin.



9. Apply glue to the end of the stabilizer, use a medium or thick CA or a glue such as UHU Por.



10. Glue the vertical fin to the horizontal stabilizer. Repeat this process for the other horizontal stabilizer assembly.



11. Apply glue to the end of one of the horizontal stabilizers where it attaches to the fuselage.

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12. Glue into place the rear stabilizer and repeat the process for the other side.



13. Ensure the elevator servo horn is at 90° to the servo. Ream out the top hole of each elevator control horn then screw on a clevis to each push-rod. Adjust as necessary to make sure each elevator is neutral.



14. At this point we recommend you add the scale detail. Trim the plastic gun turret parts to fit as necessary and glue into place.

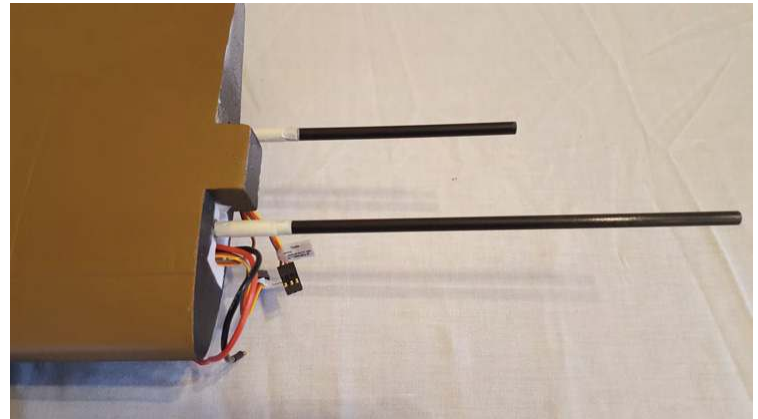


15. Drill a 2.5mm hole through the turret to glue in place the dummy machine guns.

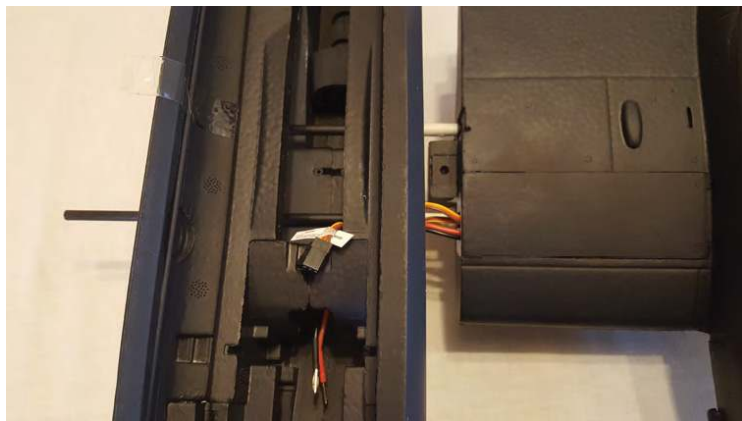




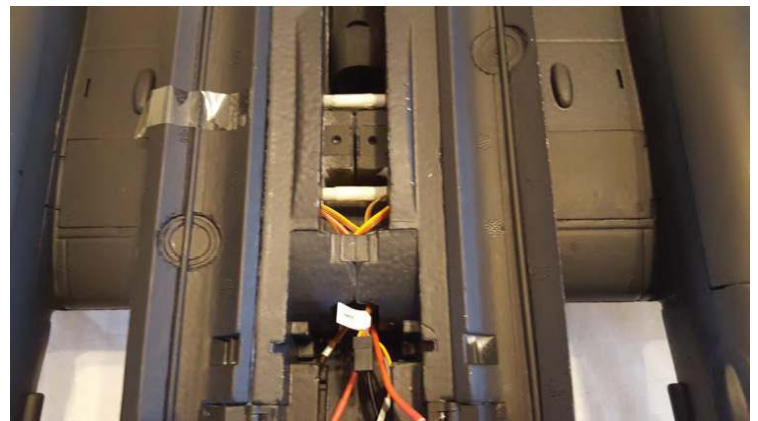
16. Mark the center of the 2 wing joining carbon rods, we recommend doing this will approx 30mm of making tape. The tape will stop the rods going too far into the wing tubes.



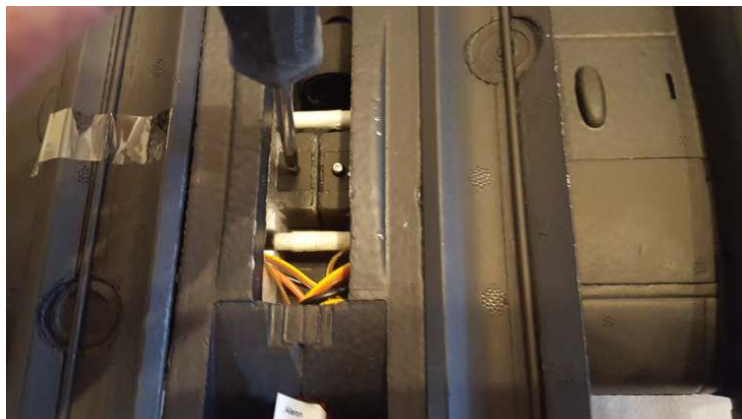
17. Slide the carbon rods into the wing tubes of one wing as shown above.



18. Pass the carbon rods through the fuselage and feed the various wires through into the fuselage.



19. Slide the other wing onto the carbon spars, again feeding the wires into the fuselage. Push both wings together so that the wing fixing tongues meet in the middle.



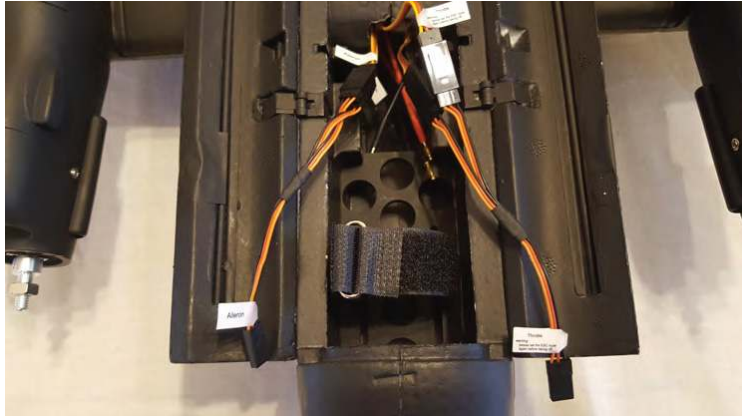
20. Retain the wings by using the two 30mm x 2mm self tapping screws supplied. These pass through the wing fixing tongues and into the mounts inside the fuselage.



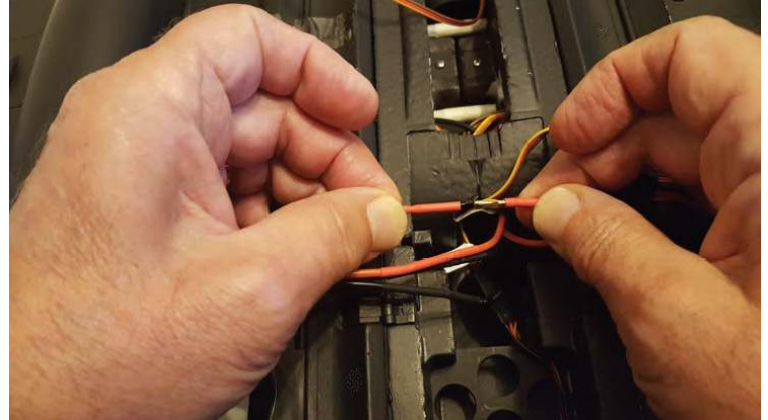
21. Feed all the wiring into the radio compartment in the nose of the fuselage.

Note: For extra security and strength you can use UHU contact cement or similar to glue the wings to the spars and fuselage.

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22. Connect the aileron and motor Y leads to the corresponding leads coming out of the wings.

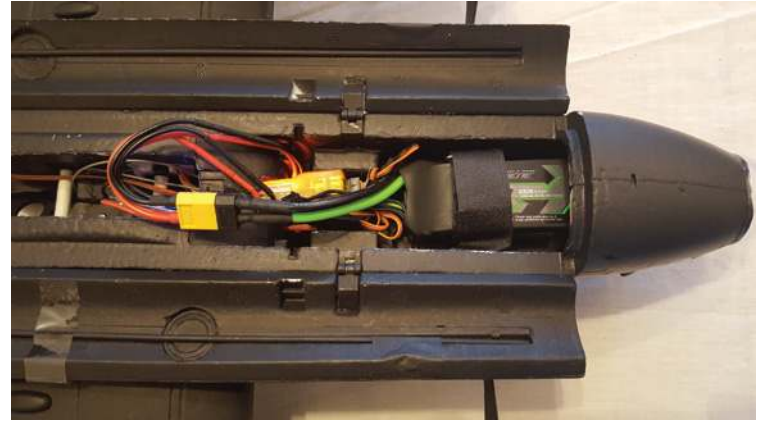


23. Connect the motor wires coming out of the wings to the supplied UBEC unit.



24. Remove the lead weight that is glued into the nose.

Note: If fitting the optional retracts then leave the lead weight in place.



25. Set-up showing a 1300mAh 3S battery in the nose with the receiver just behind. Power up the system and check the motors and servo operations.



26. Carefully identify the different propellers, there are 2 standard and 2 reverse rotation. Above you will see the starboard wing motors, use the reverse rotation propellers this side.



27. Fit the standard rotation propellers to the port wing motors.



30. Fit the propellers and tighten the nuts using two 10mm spanners, one on the nut and one on the rear of the prop driver to stop the motor turning as you tighten.

31. Fit the 4 spinners using the 10mm x M2.5 screws provided.



31. The construction of your Lancaster is now basically complete, please double check all the screws and control links for security. You can if you wish add hinge tape to the control surfaces if you think this is necessary for extra security. The next stage is to set the control throws to the suggested deflections as shown below:

Ailerons (Full rates): 12mm each way measured at the inboard end.
Ailerons (Low rates): 6mm each way measured at the inboard end.

Elevators (Full rates): 16mm each way measured next to the fuselage.
Elevators (Low rates): 10mm each way measured next to the fuselage.

Optional Differential Thrust

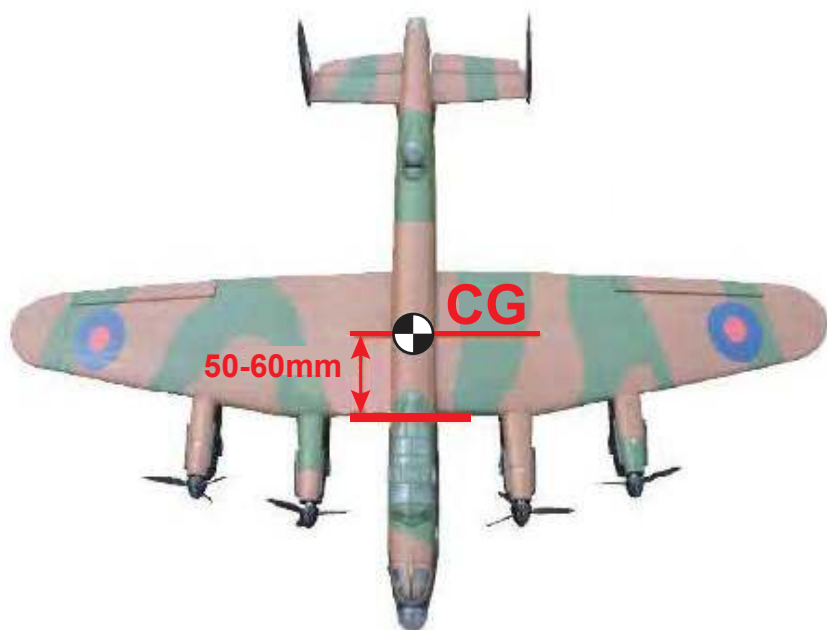
For those of you with radio's that allow mixing of channels you can set-up differential thrust on the motors. As the H-King Lancaster does not have any working rudders this is a big plus in improving the flying characteristics and makes it even more fun to fly. You need a radio that has at least 3 "Free Mixers", that is 3 mixers where you can assign which channels you want to mix rather than pre-set mixers. You will also require a minimum of a 6ch radio and receiver so that you have an AUX 1 channel available. We cannot go into all the different types of radio's and how they are mixed but we have given some guidelines below which should help.

1. First thing you need to do is remove the Y lead from the ESC leads coming out of the wings (if you have already fitted it). You then need to plug one lead into your throttle channel and the other into AUX 1.
2. The first mixer you need to make is "Throttle to AUX1". So Mixer 1 is THR>AUX1. Rate will be + or - 100%, Offset + or - 100%, Trim (Active) and Switch (On). If you have a display monitor on your transmitter then at this stage check that the throttle and AUX 1 channels move together. If they move in opposite directions reverse as necessary.
3. The second mixer you need to make is "Rudder to Throttle". So Mixer 2 is RUD>THR. Rate will be -25% both ways (you can use more but we have found this is more than sufficient), Offset 0%, Trim (Inhibit), Switch (Select the switch you prefer to use on your Tx such as Gear etc).
4. The third mixer you need to make is "Rudder to AUX1". So Mixer 3 is RUD>AUX1. Rate will be the same as you set in Mixer 2, ie, 25% each way or whatever you set, Offset 0%, Trim (Inhibit), Switch (same as you selected for Mixer 2).

If you get stuck there are plenty of video's on YouTube which are very easy to follow for quite a few different makes of transmitter.

C Of G Location:

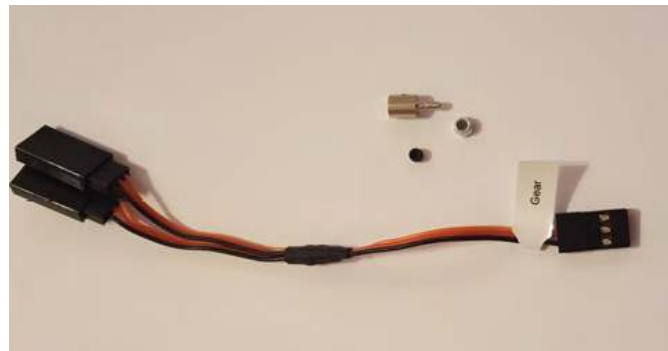
Please ensure that the Lancaster balances ready to fly with the battery installed between 50mm and 60mm from the leading edge of the wing. For initial flights we recommend that you balance your Lancaster near the forward 50mm mark.





Extra Parts Supplied

You will notice in the box that you have an extra Y lead marked "Gear" and an extra servo connector. The Y lead is there if you wish to fit the optional retracts and tail wheel servo,. The servo connector is to connect the preinstalled steerable tail wheel pushrod to your 9g servo (not supplied).



Fitting of Optional Retracts



1. Start by gently easing off the skid plates from the inner nacelles to reveal the factory installed retract mounting blocks.



2. Feed the retract servo lead into the wing channel with the gear in the down position.



3. Position the retract onto the mounting block.



4. Retract the gear and then screw the unit into place.

Model Flying Precautions:



- Select your flying area carefully. Always choose an open space that is clear and not obstructed by trees, poles, pylons, and buildings etc. Also ensure you are away from people and crowded areas. Avoid flying in areas with roads, near water, or within close proximity to full size air traffic.
- Do not fly this model in poor weather, for example: high winds, low visibility, inclement temperatures, and rain and storms are also to be avoided.
- Never attempt to catch the model whilst it is in flight, even a slow moving model can cause harm to yourself and risks damage to the model.
- This model is not recommended for children under the age of 14 years old. All children no matter what age, should be supervised by a capable and responsible adult when operating this model.
- Always unplug your model battery when not in use, never leave the battery installed in the model.
- Please remember to keep clear of the propellers at all times when your flight battery is connected.
- Before flying, always turn ON your transmitter first, then plug your flight battery into the model.
- After flying, always unplug your battery first in the model and then turn OFF your transmitter.
- Exercise caution when charging your batteries, and follow in full your battery manufacturers safety guideline when doing so.

Pre-flight Checks:



1. Always range check your model before any flying. Follow your radio manufacturers guidelines for performing this check.
2. Check all screw and mounting points are firmly secured including control horns and clevises.
3. Only fly with fully charged batteries. Failure to do so could result in loss of control, damage to the model and possibly property around you. Make sure your batteries are fully charged.
4. With the model powered up check that all control surfaces are free from damage, moving in the correct directions and with no binding.
5. Inspect the model and props for any damage that may have occurred during transit to your flying site. Listen for any unusual sounds from the electronics when powered up, if in doubt, do not fly.
6. With the model held securely and the propellers free of obstructions, increase the throttle just slightly to confirm the rotation of the propellers is correct. The model should want to pull straight forward when the throttle is applied.
7. If this is your first flight with the model double check that the C of G is at the correct position. If not, adjust the battery position inside model as necessary.
8. If you are an inexperienced model pilot, seek the help and assistance of an experienced pilot to perform these final checks, and to test fly the model for you.



Trouble Shooting:

- **Motors do not run:**

1. Battery is not fully charged (Charge the battery).
2. Transmitter battery is low (Charge or install a fully charged battery).
3. Motors are not connected properly (Check the motor to ESC connections and the ESC to battery connections).
4. Receiver is not bound to the transmitter (Consult your radio manual and go through the binding procedure).
5. ESC is in set-up mode (Hold model and move throttle up to full then back to idle, or reverse the throttle channel on your transmitter. Switch everything off before doing this).

- **Model moves backwards:**

1. Propellers installed on the wrong motors (Swap the propellers around).

- **Control surfaces not moving with stick input:**

1. The servo leads are not connected properly (Check the servo connections).
2. The servo is damaged (Replace the servo).

- **The model does not fly straight:**

1. Control surfaces are not at neutral (Adjust the trims/sub trim on your transmitter).
2. C of G is not correct (Re-position the battery to achieve correct balance).

- **Model does not climb well:**

1. The battery is not fully charged (Charge the battery).
2. The elevator servo is reversed (Change the direction via your transmitter settings).
3. C of G too far forwards making it nose heavy (move battery backwards or add weight to tail).

Flying the H-King Lancaster



The Lancaster is not a difficult model to fly, it is not for beginners but you do not need to be highly experienced to enjoy flying it. Before you fly please make sure your batteries are fully charged, the center of gravity is within the recommended limits, you check all the controls are working correctly, and you have carried out a range check on your radio.

Select a grassy, open flying area away from roads, trees, pylons, water, crowds of people, and not near full size aircraft activity. Also make sure you pick a dry day with light winds for your maiden flights.

Once all above is sorted and you are in your designated flying area switch on your transmitter and then plug in your flight battery, wait for the ESC's to arm. Close the bomb bay doors and turn the model over, hold the model securely and check the controls are working correctly and in the correct sense, open the throttle a small amount to check the motors.

If you have a helper available at this point then it is better to ask them to hand launch the model for you. If not then hold the model either underneath somewhere near the C or G point and above your head for an over arm launch, or on the top for an under arm launch. Point the model into wind, open the throttle to about half power and then give the model a firm hand launch with the nose slightly up. The Lancaster will climb away beautifully on half power and due to the contrarotating props it should climb out nice and straight, any tendency to turn then correct with a small amount of aileron. Climb up to a safe height and fly around back over the take-off area, trim the model at this point to fly hands off.

Once you are happy with the trim and the model is flying nicely explore the flying characteristics. You will find it is best to keep a bit of power on in the turns, if you have set the model up with differential thrust then this helps enormously to do nice scale turns. Low passes are a dream, the Lancaster if set-up correctly is very smooth to fly and not twitchy. It is nicely aerobatic but of course this is not very scale like, but it is fun !!!

Once you are ready for a landing fly the model upwind and off to one side at about 150ft. Turn the model downwind and throttle back to about a third throttle, fly downwind to a point just past your landing area. Then do a 90° turn to put you onto the base leg of the circuit, throttle back to about a quarter or a little less, be careful not to reduce power too much as four wind milling propellers cause a lot of drag causing the model to slow down very quickly. Once almost in-line with your landing area do another 90° turn to line up with your grass runway. At this point reduce throttle some more so that you achieve a nice steady descent to the landing area. Remember on the approach that your elevator is your speed control and the throttle is your height control. If you are under-shooting do not put in up elevator otherwise you may stall, apply a small amount of power instead, if you are over-shooting do not put in down elevator, take some power off, but not too much.

Once over the landing area and at a height of about 5ft or less take some more power off but not all of it, remember the drag of the propellers. At about 2ft smoothly apply a small amount of elevator so that you fly level with the ground, as the speed slows and the nose wants to drop apply a bit more elevator, then and only then take all the power off, you should touch-down in a flared attitude. The propellers are very resilient and will not be damaged when landing properly on grassy areas, the nacelles also help keep them off the ground.

Collect the model and remove it from the flying area, turn it over and open the bomb bay doors to unplug the battery, then switch off your transmitter.

We hope you have lots and lots of great flying with your H-King Lancaster and please watch for more exciting products at **HobbyKing.com**.

Thank you for purchasing this product, and we hope you enjoy flying it. When you do, be sure to always follow all Federal/National, and local laws and ordinances related to its operation.

We wish you safe flying.



Spare Parts:



Fuselage

SKU: 9306000508-0



Main Wing Set

SKU: 9306000509-0



Horizontal Stabilizer & Elevators

SKU: 9306000510-0



Vertical Stabilizers

SKU: 9306000511-0



Screw Set

SKU: 9306000512-0



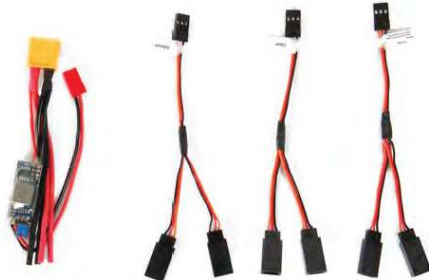
Canopy, Bomb Aimers Dome & Turret Set

SKU: 9306000513-0



Main Wing Carbon Spars

SKU: 9306000514-0



Y-Lead & UBEC Set

SKU: 9306000515-0



2627-1500KV Brushless Motor

SKU: 9306000529-0



Optional Servoless Electric Retracts

SKU: 9306000516-0



Prop & Spinner Set

SKU: 9306000123-0



Cannon Set

SKU: TBA

Recommended Accessories:



**OrangeRx Tx10i Mode 2
EU Version**
SKU: 9171001399-0



**Turnigy TGY-i6 Mode 2 AFHDS
Transmitter and 6CH Receiver**
SKU: 9114000020-0



**OrangeRx Tx6i Mode 1
Int'l Version 6ch**
SKU: 9171001327-0



**Turnigy 9X 9Ch Transmitter
w/ Module & iA8 Receiver**
SKU: 9114000070-0



**OrangeRx R720X V3 7Ch
2.4GHz DSMX**
SKU: 9171001395-0



**Turnigy TGY-iA6B V2 Receiver
6CH 2.4G AFHDS 2A Telemetry
Receiver**
SKU: 9114000062-0



**OrangeRx R620X V3 6Ch
2.4GHz DSMX**
SKU: 9171001394-0



**OrangeRx RSF08SB Futaba
S-FHSS/FHSS-2**
SKU: 9295000020-0



**Turnigy Nano-Tech 2200mah
3S 45~90C**
SKU: N2200.3S.45



**Turnigy Nano-Tech Plus
1300mAh 3S 70C**
SKU: 9210000294-0



**Turnigy Graphene Panther
2200mAh 3S 75C**
SKU: 9067000371-0



**ZIPPY Compact 2200mAh
3S 25C**
SKU: ZC.2200.3S.25



**Turnigy 9X 9Ch Transmitter
w/ Module & iA8 Receiver**
SKU: 9114000070-0



Rhino 1300mAh 6S 50C
SKU: 9952000020-0



**HXT900 Micro Servo 1.6kg /
0.12sec / 9g**
SKU: HXT900



**Turnigy TG9e Eco Micro Servo
1.5kg / 0.10sec / 10.1g**
SKU: TG9e



**Foam-Cure EPP and EPO Foam
Glue 4 oz.**
SKU: 9117000006-0



UHU POR Glue
SKU: 9934000001-0



**HobbyKing Super Glue CA
(50g / 1.7oz) Medium**
SKU: HC-50-175C



**HobbyKing Super Glue CA
(50g / 1.7oz) Thick**
SKU: HC-50-1100C

H·KING



Made in China