



## Rag Rat Resins

1:72 multi-media kit of the



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# 1930 Westland Wessex Airliner

History, Notes and  
Assembly Instructions

## History

The Westland Wessex started life as the Westland IV, a three engined six seat 'limousine' aimed at feeder-liner operations. The prototype G-EBXK was powered by three 95 HP Cirrus III engines and first flew on 21st February 1929. A second prototype G-AAGW was powered by Cirrus Hermes engines of 105 HP. Drawing from the Martlesham flight test results, and the lack of orders Westland chose to re-engineer the aircraft with Genet engines. Initially powered by the 5-cylinder Genet Major, the first modified design was G-ABAJ; the first true Wessex, which first flew in May 1930.

Orders were forthcoming, and both of the Westland IV aircraft were brought up to Wessex standards. The aircraft was later specified with the 7-cylinder Genet Major 1A engines, the subject of this kit.

## Production list

- |    |         |  |
|----|---------|--|
| 1  | G-EBXK* | Used by Cobham's NAD May 1936  |
| 2  | G-AAGW* | Imperial Airways, GWR lease, RAF Aug 1940.   |
| 3  | G-ABAJ  | became Sabena OO-AGC June 1930-March 1936. Cobham 1938.                                  |
| 4  | OO-AGD  | Sabena June 1930-December 1934   |
| 5  | OO-AGE  | Sabena August 1930; Cobham G-ADEW March 1935-July 1935                                   |
| 6  | OO-AGF  | Sabena August 1930; Cobham G-ADFZ March 1935-Dec 1946.                                   |
| 7  | G-ACHI* | Imperial Airways 1933-1940   |
| 8  | G-ABEG* | Imperial Airways May 1933, used by Prince of Wales in S Rhodesia 1936, and used by RANA. |
| 9  | G-ABVB  | Portsmouth, Southsea & Isle of Wight Airways 1932-May 1936.                              |
| 10 | G-ACIJ* | Egyptian Air Force as W202 May 1934 (fitted with cowlings)                               |

\* Can be modelled from this kit.

## References

Westland Aircraft since 1915 Derek N James, Putnam

Wingspan October 1985

Flight 3 Oct 30 P1082, 2 May 31 P454, 18 Dec 31 P1251, 5 5 Oct 33 P1007 and 27 Jul 38

The Book of Westland Aircraft Lukins/Russell, Aircraft (Technical) Publications Ltd, Harborough.

## Introduction

This kit is cast in urethane resin using one- and two-piece moulds. Because of the limitations of the moulding technique, there may be a few small air bubbles in the components, but these can be filled using any of the proprietary model fillers (Green Stuff, Milliput, etc). Another deficiency of resin is that the moulds eventually show some pitting, which may make some skim-filling necessary. This 'pitting' is not caused by bubbles in the resin; it is caused by pimples appearing in the mould, sometimes very early in the mould's life.

Resin parts can be shaped with a scalpel fitted with a strong blade or a modelling knife, and can be cut with a razor saw. It is glued using superglue (cyanoacrylate) or 5 minute epoxy. We favour the use of superglue, but be warned: if your mating surfaces are well prepared, the superglue bond will be immediate and permanent. Any attempt to move the parts may result it to break. Resin is a relatively brittle material, and rough treatment of thin parts will cause them to break. Resin can be filled, sanded with wet-and-dry abrasive paper, and polished just like polystyrene,

**WARNING - THE DUST FROM URETHANE RESIN IS TOXIC. WEAR A MASK, OR SAND IT WET.**

**WARNING - OBEY ALL MANUFACTURERS SAFETY INSTRUCTIONS WHEN YOU USE GLUE, PAINT, OR OTHER MATERIALS.**

For filling, we generally recommend Milliput, because it sets thoroughly, even in thick layers. The disadvantage is that it takes around three hours to cure. Green Stuff or similar fillers which rely on evaporation are only suitable for 'skimming' and minor filling operations that need to be sanded with minimum delay.

## PARTS LIST

### Resin parts

Fin	1 off
Fuselage	1 off
Nacelle, front	2 off
Nacelle, rear	2 off
Tailplane	1 off
Wing, left	1 off
Wing, right	1 off

### Miscellaneous

Decals	1 sheet
Etched brass fret	1 off
Vacform canopy	2 off

### Cast Metal Parts

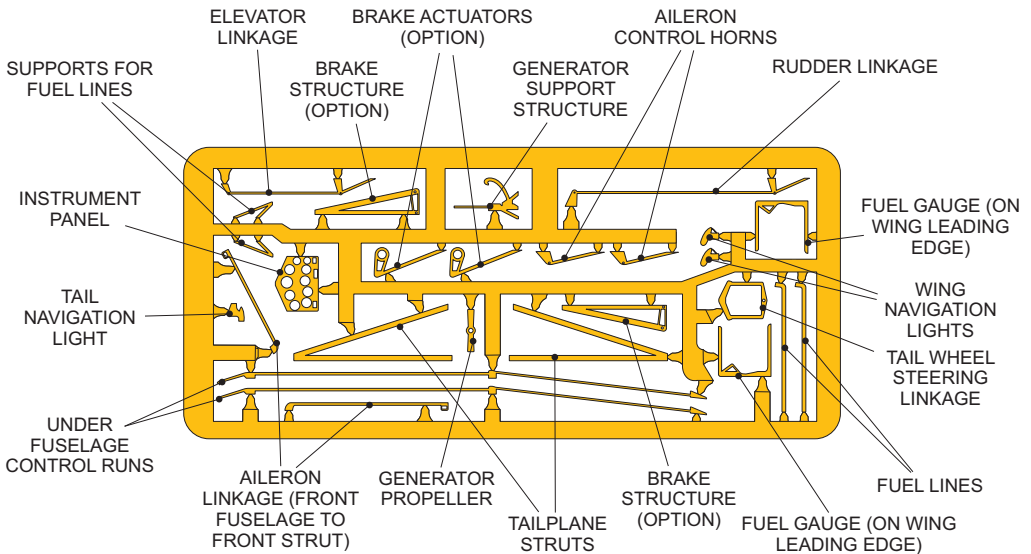
Bulkhead	1 off
Control column	1 off
Cowling	3 off
Engine	3 off

### Cast Metal Parts (continued)

Exhaust collector ring – outer engine	2 off
Exhaust – centre engine	1 off
Exhaust – outer engine	2 off
Generator	1 off
Main wheel	2 off
Mudguard, curved	2 off
Mudguard, flat	2 off
Pilot's seat	1 off
Passengers' seat	6 off
Propeller	3 off
Strut, fuselage to wheels	2 off
Strut, fuselage to engine/wing – front	2 off
Strut, fuselage to engine/wing – left rear	1 off
Strut, fuselage to engine/wing – right rear	1 off
Tail wheel	1 off
Venturi	1 off

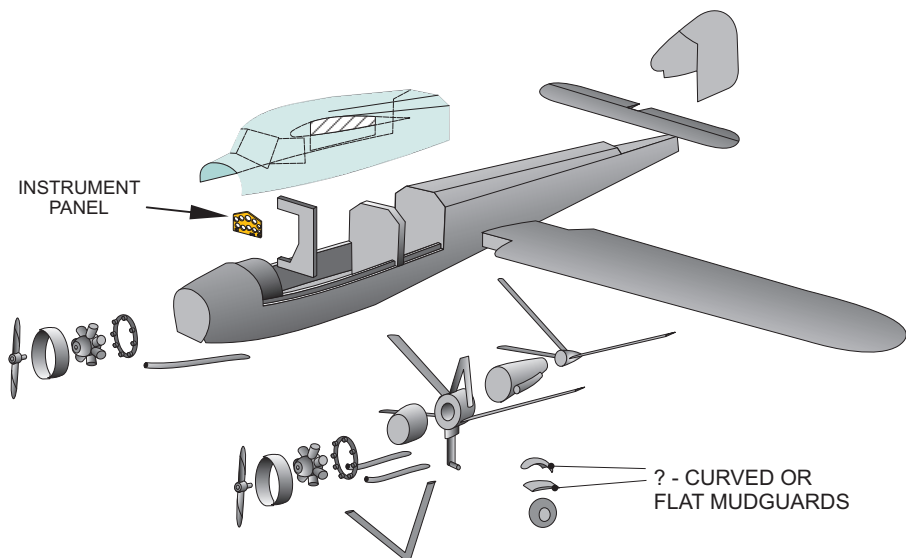
Exhaust collector ring – centre engine 1 off

### Etched brass fret



## ASSEMBLY

Notes: The transparency gives a cabin with the correct transparent areas and it is considered that this is the only difficult part of the kit. The transparency continues to the rearmost extent of the glazing. There are two small circular windows in the roof of the toilet compartment (provided as transfers), while some versions had windows in the door and on the opposite fuselage side. Please follow the instructions to minimize problems.



## OPTIONS

Where indicated, there are alternative methods of assembly, which give better results at the expense of some additional difficulty. In some cases these will rectify the few faults found in the assembled model.

- 1 Trim the excess resin off the fuselage nose and the wing roots with a razor saw. Cut to the outside of the wing root tongues so that they can be shaped more precisely later. When the wing roots are roughly shaped, trim them precisely with a craft knife using the plans to ensure the correct spacing, dihedral and sweepback. Do this in conjunction with step 2.
- 2 Carefully remove the canopy from its surround using a craft knife, scalpel, or sharp scissors, but with great caution. Check the fit with the fuselage; the canopy should fit flush with the fuselage sides against the lip moulded into the fuselage. Next, note the position of the thick bulkhead in the fuselage against the canopy moulding (one side is slightly too far forward – sorry!). Carefully trim away the wing root area of the canopy with a sharp scalpel, so that the wing root will pass through a slot in the canopy. Lots of trial and error is required, but it is easier than it sounds. When the transparency is fitted to the fuselage, the rear edge of the wing root should be a precise fit against the front of the bulkhead because it will be glued to it later. A spare canopy is supplied in case of accidents.

Option: If you are modelling a variant without windows in the door and opposite side, you may choose to cut off the transparency at the main bulkhead, building up the rear section with plastic card. It is easier to produce a seamless joint this way and the only disadvantage is that the two circular toilet windows must then be painted black.

- 3 The cast metal bulkhead supplied forms the division between the cockpit and the cabin and also supports the wing root. The wings are glued through the transparency, to the two bulkheads, the transparency will not then take any load, but rather surround the joint.

- 4 When you are happy with the fit of the transparency and wings, add the details to the interior. It has not been possible to find photographs of the cockpit of this aircraft, so there is some conjecture in the following. The cabin had 4 to 6 seats depending on the fit, with a central aisle. Insert plinths at each seat position, or glue them to the fuselage sides; if you glue them directly to the floor they will be too low. The pilot's seat is set to the left, and there is a platform to its right (for an observer/navigator?). Note that this is not a seat. The cockpit is raised well above the level of the cabin floor. The instrument panel is set centrally, with the control column in front of the pilot's seat. Scratch build a throttle assembly on the left cockpit wall. The interior colours are your choice due to lack of suitable reference. We suggest a combination of tan and brown, with a black instrument panel and silver control column, but this is to provide a little colour to contrast with the essentially silver external colours.
- 5 When the interior is finished, attach the transparency. Mix some 5-minute epoxy cement (we do not recommend the use of super glue or white glue) and put a bead of adhesive round the edge of the opening in the fuselage and some on the thick fuselage bulkhead. Attach the transparency and hold it in place until the adhesive has set (use adhesive tape if necessary). It is important to get a good fit between the transparency and the fuselage contours, as much of the transparency is painted as fuselage structure, particularly to the rear. Make sure the glue line is continuous.
- 6 Do this step carefully! There are some small blips in front of the windscreen (fuel line fairings) but these do not vacuum form well and make it difficult to get a good joint at the nose. We recommend that they be cut off and replaced later. When the transparency is set hard apply filler to the joint between the transparency and the fuselage. Use as little filler as possible and wipe away any filler from those areas that will be windows on the finished model. When the filler is dry, rub it down, making sure you do not abrade the areas that will be windows, because you cannot polish vacuum canopies. When complete, cover the wing root openings and window areas and spray the fuselage with matt grey acrylic primer. This will show up any imperfections.
- 7 Check the fit of the wings in the cut-outs and between the bulkheads. We found that good wing to fuselage alignment could be achieved by gluing some offcuts of brass-etch frame to the top and bottom of one wing, bent to the correct dihedral angle. This allows one wing to locate accurately against the other. When you are satisfied, mix some 5-minute epoxy and apply it to the rear of the front bulkhead, the front of the rear bulkhead and on the wing root, where one wing will butt against the other. Do not apply glue to the front and rear faces of the wing roots as this will ooze everywhere when you push the wings into place. Insert the wings and prop them at the correct sweep back and dihedral angles. Be careful of the sweepback angle, it is very easy to have one wing at a different sweep back angle, even if checking carefully against the drawing. Critical judgement 'by eye' is necessary. When dry, the wings will be supported by the bulkheads, and the model will feel very solid.
- 8 When the wings are thoroughly set, drill out the locating holes for the wing struts in the wings and fuselage sides. Trim the ends of the cast metal strut assemblies and glue all four into place – alignment is very easy. When the strut assemblies are dry, trial fit, trim and glue the engine fairings between the strut assemblies, noting that the tubular structure on the side aligns with the intake fronts on the front strut assembly. Shape the front of the intakes to the correct angle (see drawing). Drill out the front and rear of the intake fairing on the side of the engine fairing with a 1mm diameter drill. If desired, fill the joints to obtain a good engine fairing shape (although we admit that this is not easy!).

- 9 Trim and fit the undercarriage V-struts. These are about 1mm too short, but are satisfactory visually when installed. It may be necessary to bend the undercarriage legs to make sure they are vertical. Do this with pliers held very close to the central ring, otherwise the undercarriage leg will bend in the middle.  
Option: The reason that the V-struts are a little too short is because the main undercarriage legs are 1mm too far outboard on the engine ring. For a perfect fit, cut off the undercarriage legs and reposition them on the centreline of the engines (about 1mm further outboard) gluing with superglue. The V-struts should then fit. This will not compromise the strength of the undercarriage legs because most of the loads are taken by the V-struts.
- 10 Separate the tailplane and fin from their resin casting feeds. You may find that the trailing edge of the tailplane is a little too thick. If desired, sand the lower surface of the tailplane to make it thinner (do not sand the upper surface to avoid removing the surface detail). Trim the lower part of the fin so that it fits against the tailplane when installed on the fuselage. Glue the tailplane and fin in position and make sure that they are square. Attach the etched tailplane struts. These etched parts can be improved if you file an aerofoil section on to the two-dimensional parts.
- 11 Apply the brake actuator detail to the main undercarriage legs. There are two different versions of this; both are on the photo-etched fret. Refer to the drawings for the correct version. Do not let the model rest on its undercarriage legs at this time, otherwise you will knock off the photo-etched parts. Glue on the mudguard, again there are two different versions – both versions are included in the cast metal parts. At this stage, paint the undercarriage legs and wheels, then glue the main wheels into position. Make sure that the wheels butt against the leg at the hub and also at the top of the tyre. The model is relatively heavy, and if you only attach the wheels at the axle, they will sag quickly and make the model look heavy!
- 12 The linkage between the rudder and the tail wheel is provided on the etched-metal fret. Make sure that this linkage will link the two to check the position of the tail wheel relative to the rudder. The position for the tail wheel which is marked on the fuselage is a little too far forward. You will need to cut out the centre of the tail wheel horn to accommodate the tail wheel. Drill a locating hole for the tail wheel and glue it in position. The model can now rest on its wheels.
- 13 Mask the cabin and cockpit windows in preparation for painting.  
Option: If desired, replace the small fairings ahead of the windscreen. As we decided to finish the nose of our model with Bare Metal foil, we thought that these would spoil the lay of the foil, so we did not do this, but if you are painting the nose silver, then it is relatively easy, using pieces of scrap plastic.  
If the model is not to be finished with Bare Metal foil, attach the venturi (cast metal) and aileron control runs from the lower front fuselage to the struts at this stage.  
The other parts should be fitted after painting is completed.

## Painting and Finishing

Option: You can attach some of the photo-etched parts at this stage. When they are attached, handle the model very carefully to avoid knocking them off. If you attach them after painting, there is a danger of the glue spoiling the paint finish. The parts that are installed before painting are the:

- Control runs under the fuselage (2 off)
- Tail wheel steering linkage
- Rudder controls
- Elevator linkage
- Aileron horns

It is best to fit the other parts when all painting is finished.

- 15 Paint the model. We used acrylic paints and sprayed it with matt grey primer first to show any defects in the surface, then finished the model in matt silver.

When the paint is dry, apply Bare-Metal foil to the nose area. This was bare metal on the original aircraft, and was frequently highly polished. You can also apply foil to the engine pods as these were also natural metal.

- 16 Apply the decals.

A Varnish the cockpit and cabin window areas (decals do not attach well to bare vacformed canopies), and when the varnish is dry, apply the window and canopy decals. The decals are very thin, and fold back on themselves very easily. If they are applied on a wet film of Jonhsons Klear they pull down well over any details. Wet each decal, then when it has released from the backing paper, put the decal (still on it's backing paper) adjacent to the required position and move it into place with a paint brush. Finally remove surplus water and Klear with the dry bristles of a paint brush and leave the decal to dry.

B Apply the decals for the panel lines, doors and toilet window surrounds. When the decals are dry, fill any gaps with paint.

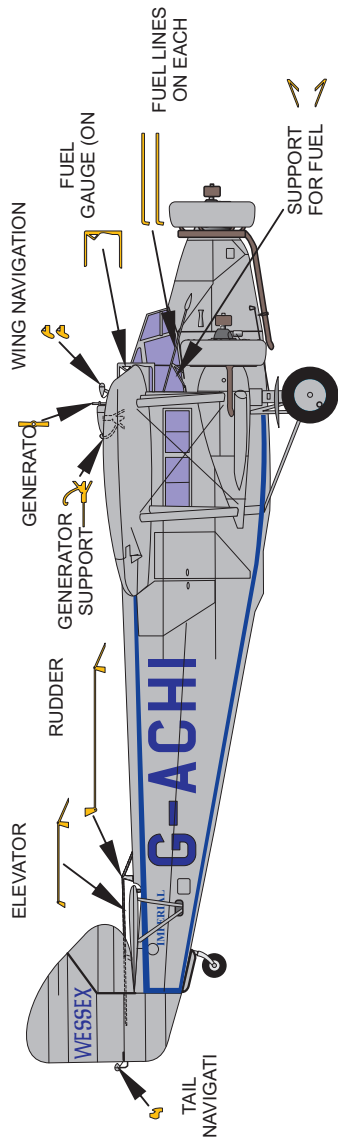
C Apply all other decals.

- 17 Assemble the engines and exhaust rings. If the optional cowlings are to be used, remove the rocker box covers from the engines and lue the engines inside the cowlings.

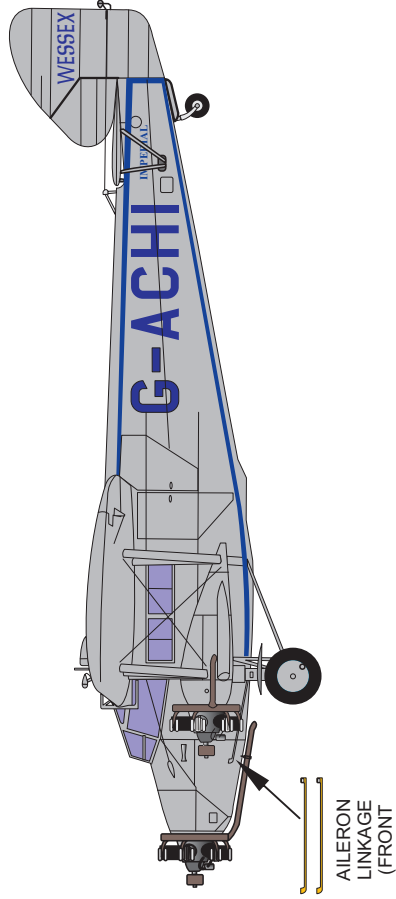
Option: The exhaust rings on the Wessex appear to be almost flat in section in photographs, with the stubs almost non-existent. If desired, file them to this profile. When the glue is dry, paint then engines with dilute metallic black paint to highlight the details.

- 18 Rig the bracing struts under the wings with stretched sprue or your preferred material.

- 19 Paint the other photo etched parts and attach them with PVA glue or superglue. The monut for the generator must be bent to shape, and twist the propeller blades for the generator. The generator body is black. Apply some PVA glue to the navigation lights to give round bodies, and use Krystal Klear for the lenses.



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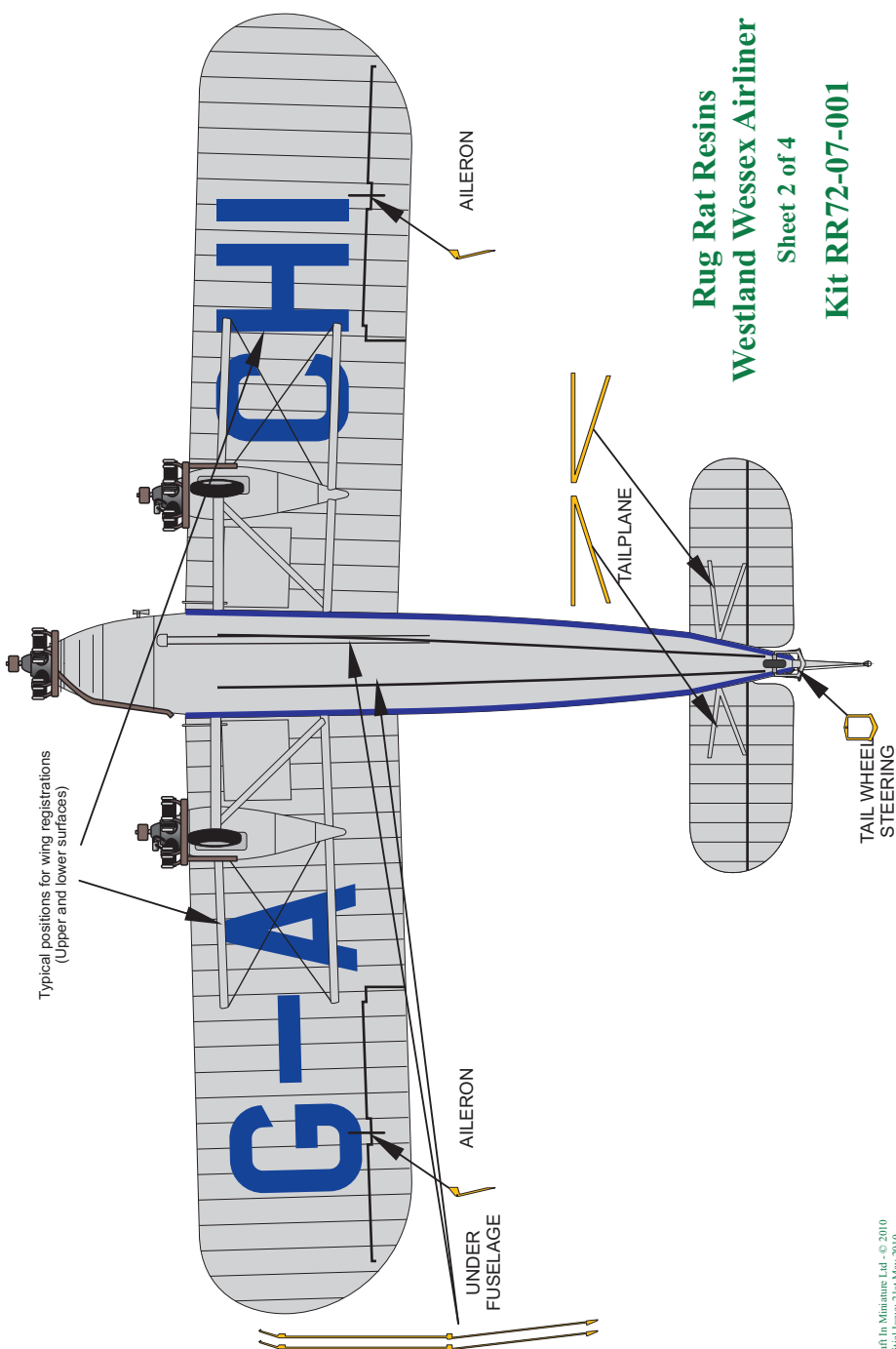


# Rug Rat Resins Westland Wessex Airliner

Sheet 1 of 4

**Kit RR72-07-001**





Typical positions for wing registrations  
(Upper and lower surfaces)

AILERON

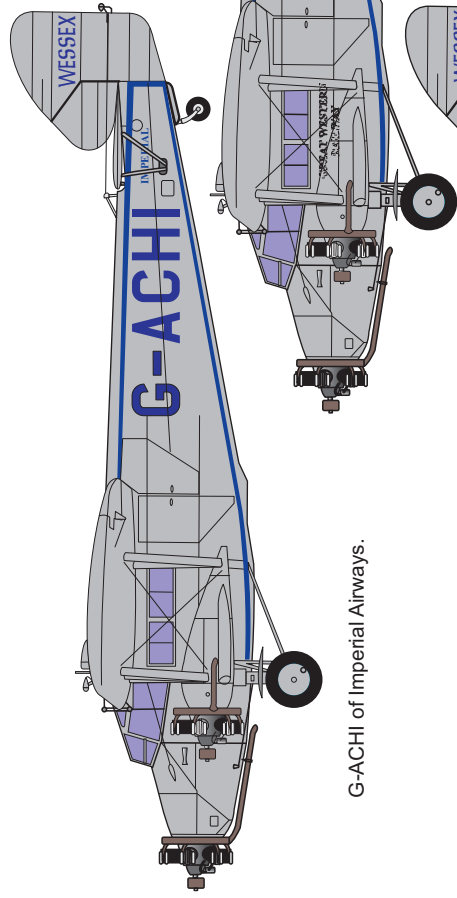
AILERON

UNDER  
FUSELAGE

TAIL PLANE

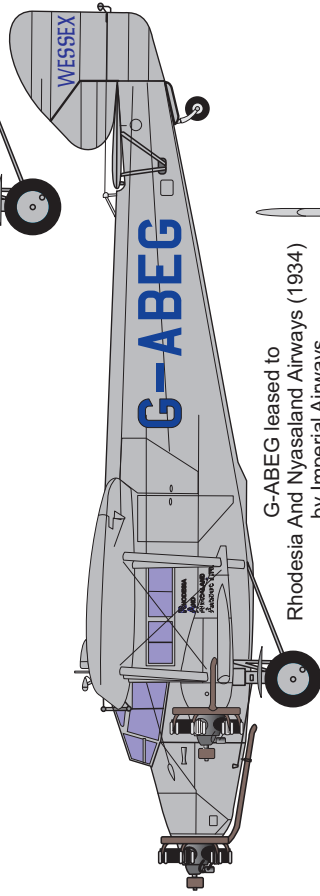
TAIL WHEEL  
STEERING

**Rug Rat Resins**  
**Westland Wessex Airliner**  
 Sheet 2 of 4  
**Kit RR72-07-001**



G-AACHI of Imperial Airways.

G-AAGW leased to  
Great Western Railway Air Services  
by Imperial Airways

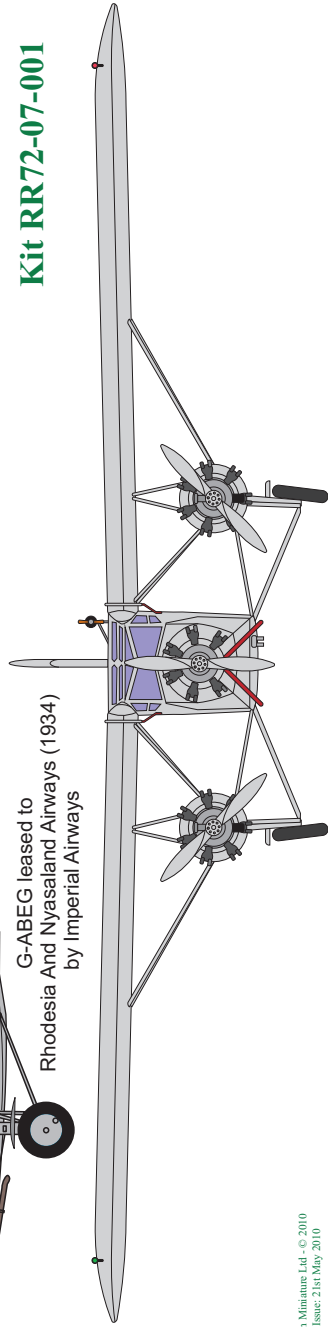


G-ABEG leased to  
Rhodesia And Nyasaland Airways (1934)  
by Imperial Airways

## Rug Rat Resins Westland Wessex Airliner

Sheet 3 of 4

Kit RR72-07-001



## Notes

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*This kit is manufactured in the United Kingdom by*

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