Aircraft In Miniature Limited

TRANSPORT WINGS

1:72 Mixed-media kit of the

KC-10A Extender

Military transport and tanker

History,
Instructions and Notes

Introduction

TRANSPORT WINGS kits are model kits of large aircraft. They are suitable for the experienced modeller, who can now own 1:72 models of many of the world's largest airliners and their military transport variants. Because of their size, they are moulded in very heavy (2 mm) plastic, and are supplied with all parts pre-cut. Additional cutting and sanding is required, and the parts are assembled with polystyrene cement, as with any other plastic kit. Resin or metal parts should be attached with super glue (cyanoacrylate) or 5-minute epoxy as the builder prefers.

History and details

The KC-10A is a modified version of the McDonnell Douglas DC-10-30CF, which entered service in 1981. Although it retains 88 percent systems commonality with the DC-10, it has additional systems and equipment necessary for its air force mission.

Using either an advanced aerial refueling boom, or a hose and drogue centerline refueling system, the KC-10 can refuel a wide variety of U.S. and allied military aircraft within the same mission. The aircraft has lighting for night operations.

The KC-10's boom operator controls refueling operations from a position in the rear of the aircraft, where the receiver aircraft can be seen through a wide window. During boom refueling operations, fuel is transferred to the receiver at a maximum rate of 1,100 gallons (4,180 liters) per minute; the hose and drogue refueling maximum rate is 470 gallons (1,786 liters) per minute. The KC-10 can be air-refueled by a KC-135 or another KC-10A to increase its delivery range.

The KC-10 can transport loads ranging from 27 pallets to a mix of 17 pallets and 75 passengers a distance of about 4,400 miles (7,040 kilometers) unrefueled. The large cargo-loading door can accept most air forces' fighter unit support equipment. Powered rollers and winches inside the cargo compartment permit moving heavy loads.

Specification

General characteristics

Crew: 4 (pilot, copilot, flight engineer, boom operator)
Length: 181 ft 7 in (54.4 m)
Wingspan: 165 ft 4.5 in (50 m)
Height: 58 ft 1 in (17.4 m)
Wing area: 3,958 ft² (367.7 m²)
Empty weight: 241,027 lb (109,328 kg)
Loaded weight: 593,000 lb (269,000 kg)
Max takeoff weight: 590,000 lb (267,600 kg)
Powerplant:

3× F103/General Electric CF6-50C2 turbofans, 52,500 lbf (236 kN) each

Maximum fuel capacity: 356,000 lb (160,200 kg).

Performance

Maximum speed: 538 knots (619 mph, 996 km/h)
Range: 4,400 mi (7,032 km)
Ferry range: 11,500 mi (18,507 km)
Service ceiling: 42,000 ft (12,727 m)
Rate of climb: 6,870 ft/min (34.9 m/s)

PARTS LIST

Vacformed Part

Fuselage-keel	1 off
Fuselage-left	1 off
Fuselage-right	1 off
Tailplane - top	1 off
Tailplane - bottom left	1 off
Tailplane - bottom right	1 off
Wing - bottom left	1 off
Wing - bottom right	1 off
Wing - top left	1 off
Wing - top right	1 off
Wing attachment block	1 off

Cast Metal Parts

Miscellaneous

Drain mast	3 off
Engine fan disc	3 off
Rudder actuator fairing, top	1 off
Rudder actuator fairing, middle	1 off
Rudder actuator fairing, bottom	1 off
Flap hinge - large (inboard)	2 off
Flap hinge - medium (centre)	2 off
Flap hinge - small (outboard)	2 off
VHF antenna	2 off

Centre Landing Gear (CLG)

Door (CLG)	2 off
Leg (CLG)	1 off
Retraction jack, CLG	1 off
Torque link, (main & centre gear)	3 off
Main wheel, CLG	2 off

Main Landing Gear (MLG)

Door Strut	2 off
Door (MLG), large left	1 off
Door (MLG), large right	1 off
Leg (MLG)	2 off
Mounting (T-bracket), MLG leg	2 off
Retraction jack, (MLG)	2 off
Sway brace	2 off
Main wheel (MLG)	8 off

Nose Landing Gear (NLG)

Door, left (NLG)	1 off
Door, right (NLG)	1 off
Leg (NLG)	1 off
Nose wheel	2 off
Retraction jack, NLG	1 off
Taxi light	1 off
Torque link, NLG	1 off

KC-10 Items

Boom - forward section	1 off
Boom - rear section	1 off
Boom - telescopic section	1 off
Boom pivot fairing	1 off
Boom pivot fairing - left door	1 off
Boom pivot fairing - lower door	1 off
Boom pivot fairing - right door	1 off

Cast Metal Parts (continued)

Drogue and fairing	1 off
Fin - left	1 off
Fin - right	1 off
Mirror	1 off
Nozzle	1 off
Operator's cupola - fixed section	1 off
Operator's cupola - rear fairing	1 off
Pilot director light strip - left	1 off
Pilot director light strip - right	1 off
Tailplane (boom)	1 off

Resin Parts

Air conditioning inlets/outlets	1 sprue of 7
Centre engine bypass duct - left	1 off
Centre engine bypass duct - right	1 off
Centre engine intake	1 off
Centre engine intake duct - centre	1 off
Centre engine intake duct - aft	1 off
Engine centre body	3 off
Engine jet pipe	3 off
Engine pylon	2 off
Fin tip (with antennas)	1 off
Outlet guide vane ring	3 off
Wing engine bypass duct - left	2 off
Wing engine bypass duct - right	2 off
Wing engine intake	2 off
Wing tip - left	1 off
Wing tip - right	1 off

Etched Brass Parts

Centre landing gear

Hydraulic bracket (I)	3 off (1 spare)

Main landing gear

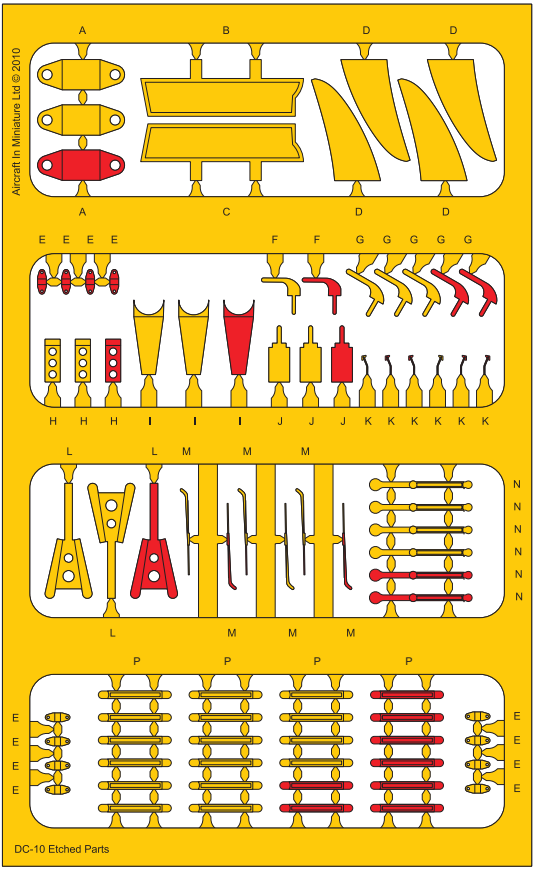
Brake rod half (P)	24 off (8 spares)
Brake rod bracket (E)	12 off (4 spares)
Hydraulic bracket - 1 (H)	3 off (1 spare)
Hydraulic bracket - 2 (L)	3 off (1 spare)
Link, half (N)	6 off (2 spares)
Small MLG door - left (B)	1 off
Small MLG door - right (C)	1 off
Sway-brace bracket (A)	2 off (1 spare)

Miscellaneous

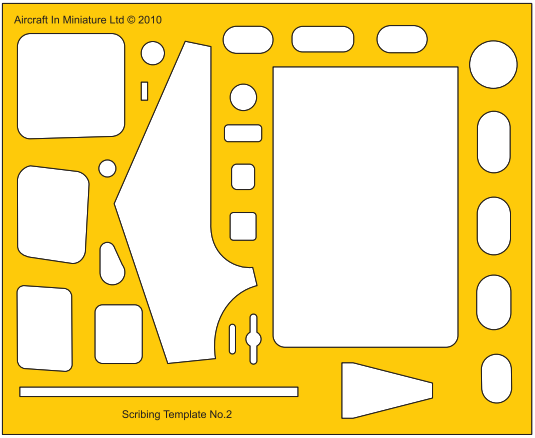
Angle-of-attack vane (J)	3 off (1 spare)
Scribing template	1 off
Engine nacelle vane (D)	4 off (2 spares)
Pitot head - large (G)	5 off (2 spares)
Pitot head - small (F)	2 off (1 spare)
Screen washer pipe (K)	6 off (4 spares)
Windscreen wiper blade (M)	6 off (4 spares)

Other Items

2mm polystyrene	1 sheet
Decals - USAF markings	1 sheet
Decals - windows & stencils	1 sheet
Instructions	1 booklet



Etched brass detail parts (Spare items shown in red)



Scribing template

1 GENERAL

WARNINGS

1 - THIS KIT CONTAINS SMALL AND/OR SHARP PARTS. KEEP THE CONTENTS OF THE KIT AWAY FROM CHILDREN.

2 - THIS KIT CAN CONTAIN PRECUT PARTS WITH SHARP EDGES OR CORNERS. BE CAREFUL WHEN YOU HANDLE THESE PARTS BECAUSE THEY CAN CAUSE CUTS OR OTHER INJURIES.

3 - USE ALL SOLVENTS, PAINTS, FILLERS AND OTHER MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION. OBEY ALL SAFETY WARNINGS.

A A keel is provided to give structural strength to the fuselage - it is important that you use it because of the size of the model.

B All parts must be cut and/or sanded to the correct profile.

C Large vacuum formed parts can have blemishes from the forming process. Check all external surfaces and fill these blemishes before painting the model.

D The plastic is thick enough to let the modeller sharpen the edges of aerofoils, which can be slightly rounded from the vacuum forming.

2 PREPARATION

A Carefully remove any flash or casting seams from all the metal and resin parts.

B Make the three sets of landing gear bay components from the 2 mm plastic sheet supplied .

3 HORIZONTAL STABILIZER AND FUSELAGE SUB-ASSEMBLIES.

A. HORIZONTAL STABILIZER (TAIL PLANE)

(1) Sand the tail plane parts to the correct shape.

(2) Cement the top and bottom halves of the tailplane together.

(3) When the tailplane is dry, file and sand the Leading and trailing edges to shape.

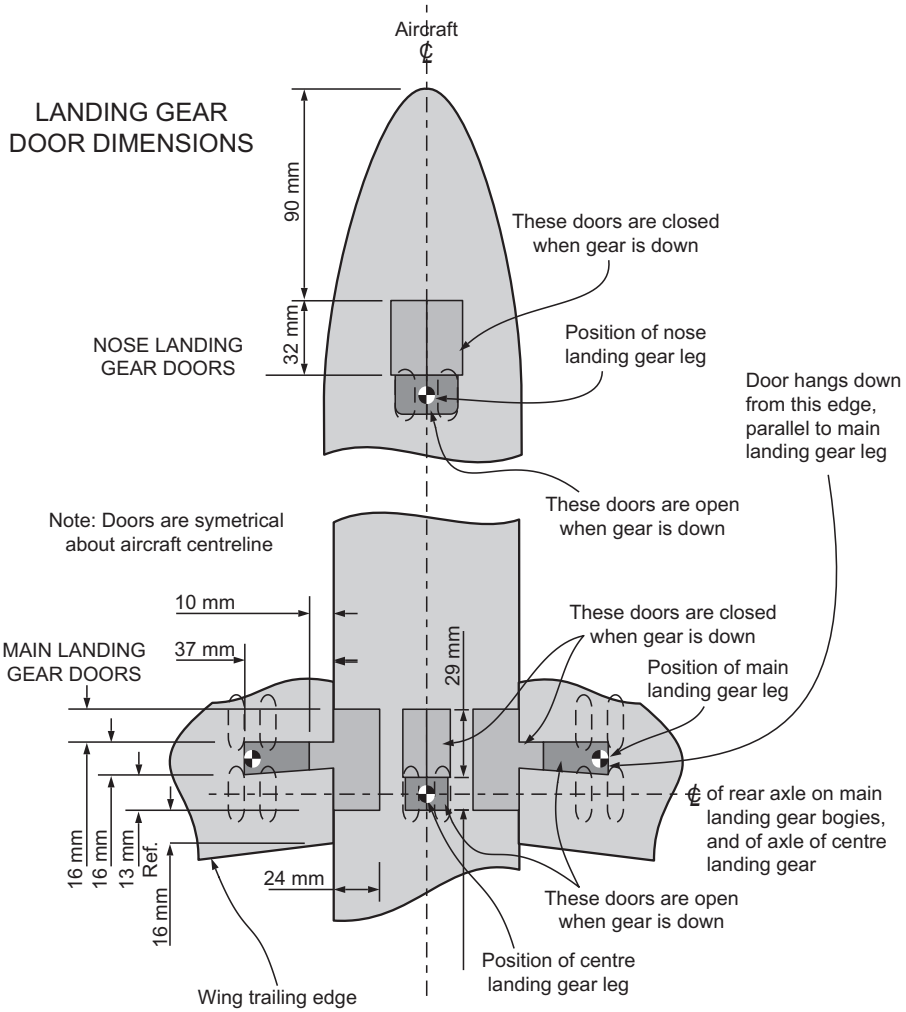
(4) Apply any filler that is necessary and sand to shape when the filler is hard.

(5) Scribe any panel detail as required, then polish the tail plane.

(6) Put the tail plane aside until required.

B FUSELAGE ASSEMBLY

(1) Sand the left and right fuselage halves and the keel to the correct shape.



(2) Cut out the rear doors for the Nose Landing Gear (NLG) and Centre Landing Gear (CLG) bays. Use the landing gear doors as templates for the size and shape of the cutouts - the NLG doors have a radius in one corner, adjacent to the hinge.

(3) Cut out the slots in the fuselage for the tail plane and wing root support.

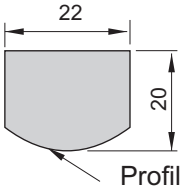
(4) **For a model with the boom extended**, cut out the hatch which has the rear fairing of the operator's cupola mounted on it (the dimensions of the hatch are given on the plan view for each colour scheme). Put a strip of scrap plastic behind the two halves of the hatch for reinforcing, assemble it and keep it until required.

(5) Cut away the fuselage and keel behind the rear fairing of the operators cupola if necessary.

(6) Make the NLG and CLG bay parts.

(a) For the NLG cut out these parts from the .080"/2 mm plastic sheet supplied:

- Roof panel - 50 mm x 22 mm
- Two side panels, each 50 mm x 20 mm
- Front and rear bulkheads to the shape shown below.

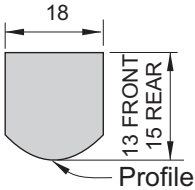


All dimensions in millimeters.
Skech not to scale.

Profile to suit fuselage curvature.

(b) For the CLG cut out these parts from the .080"/2 mm plastic sheet supplied:

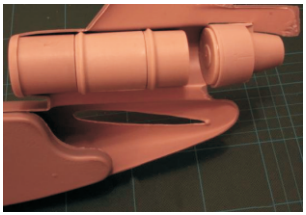
- Roof panel - 50 mm x 22 mm
- Two side panels, each 50 mm x 20 mm
- Front and rear bulkheads to the shapes shown below.



All dimensions in millimeters.
Skech not to scale.

Profile to suit fuselage curvature.

(7) Cut off the centre engine intake. Also use the resin bypass duct halves as templates cut away the rear fuselage until the resin parts fit well as shown in the photograph below.



(8) Put half the thickness of the keel into one fuselage half, clip it in place, then cement it in place with liquid polystyrene cement.

(9) File the visible edge of the fuselage keel to the internal radius of the opposite fuselage half.

(10) Assemble the NLG and CLG bays.

(a) Drill holes in the side panels for the pins on the landing gear legs and nose gear drag link.

(b) Assemble each of the two landing gear bays.

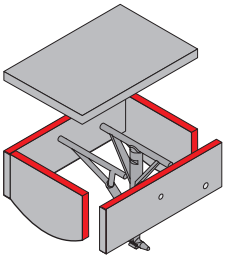
1 Drill holes in the side panels for the pins on the landing gear legs and nose gear drag link.

2 Assemble the two landing gear bays. For each bay:

a Assemble the two end panels and one side panel to the roof panel. The end panels fit between the side panels as shown in the sketch below.

NLG bay shown,

CLG bay similar.

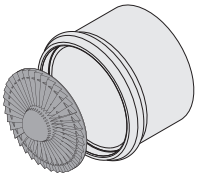


b Put the centre and nose landing gear legs and the drag link in place, then attach the other side panel to hold the legs in place.

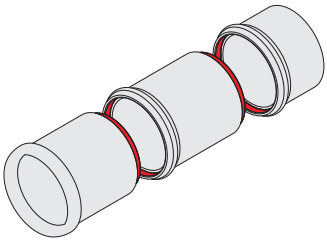
(11) Centre engine duct assembly.

(a) Paint the visible interior faces of the three parts of the resin intake duct. Do not paint bonding areas.

(b) Polish the bullet of the engine fan disc and attach it in the short intake tube.



(c) Assemble the three intake duct parts.



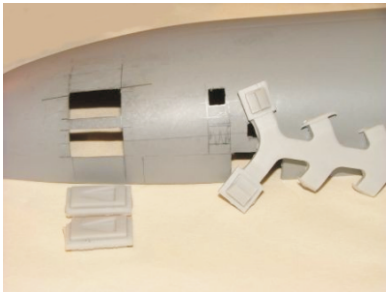
(12) NACA intakes and exhaust outlets.

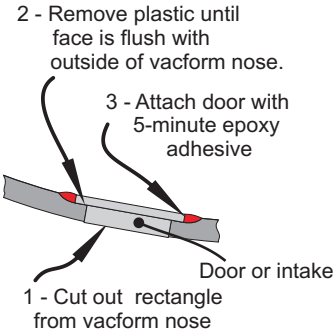
(a) Decide is the exhaust outlet doors are to be open or closed.

1 If they are to be open, cut out the areas for the intakes and the outlets.

2 If they are to be closed, use the scribing template and scribe the outlines of the doors.

(b) Cut out the holes for the components as shown in the photograph below.





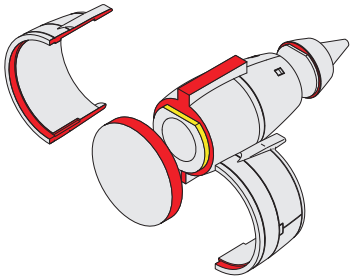
(1) Mark the position of each rectangle on the outside of a fuselage half.

(2) Carefully cut out a rectangle of plastic. Make it undersize and slowly increase the size of the cutout until the resin part is a good fit. Do this for each resin part.

(3) Remove plastic from inside the fuselage until the front of the resin part is flush with the outer surface. If you remove too much plastic, make packers from .005" plasticard to give a good fit.

(4) When you are happy with the fit of all the parts, attach them from the inside of each fuselage half.

(13) Assemble the centre (tail) engine assembly.



(14) Fuselage assembly.

(a) Attach these sub-assemblies to one fuselage half:
- NLG bay
- CLG bay
- Centre engine intake duct
- Centre engine assembly
- Keel (put the keel into the fuselage to half its depth and flood the joint with liquid cement).

(b) When the keel is securely bonded to the fuselage half, file the mating face of the keel to suit the curvature of the other fuselage half.

(c) Attach nose weights to the nose gear bay top surface (approximately 40 g).

(d) Put the tailplane in place in the two fuselage halves.

(e) Clip the other fuselage half on to the keel, cement it with liquid polystyrene cement and hold the two halves together with adhesive tape until the fuselage is dry.

(f) Fill and sand the joints in the fuselage assembly.

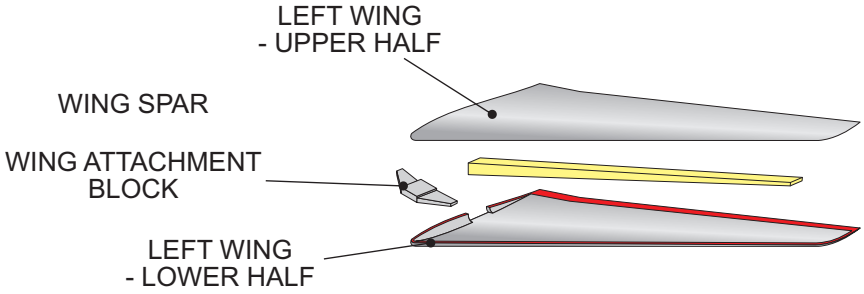
4 WING SUB-ASSEMBLY

NOTES 1 - We recommend that you put a wooden spar (not provided in the kit) in each wing to prevent the wings drooping with age.

2 - When the wings are assembled, cut off each wing tip and attach the resin wingtips supplied.

A Sand the wing parts to their correct shape and make sure they fit together correctly.

B Prepare a wooden spar for each wing. Assemble the top and bottom of the wings with the spars in place, WITHOUT ANY CEMENT to make sure that they fit correctly.



EXPLODED VIEW OF LEFT WING
(RIGHT WING IS MIRROR IMAGE)

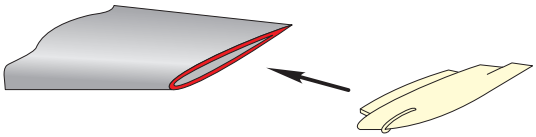
C Cut out the main landing gear doors in the wing lower surface.

D Make two sets of main landing gear bay parts. Cut out these parts from the .080"/2 mm plastic sheet supplied:

- Packers to let the T-brackets sit horizontally
- Panels to fill the space between the upper and lower faces of the wing, to give the fore and aft faces of the main landing gear bay structure.

E Cement the wing spars in place, before cementing the wing halves together.

F Cut off and discard each wing tip and attach the resin wingtips as shown below (left side shown, right side similar).

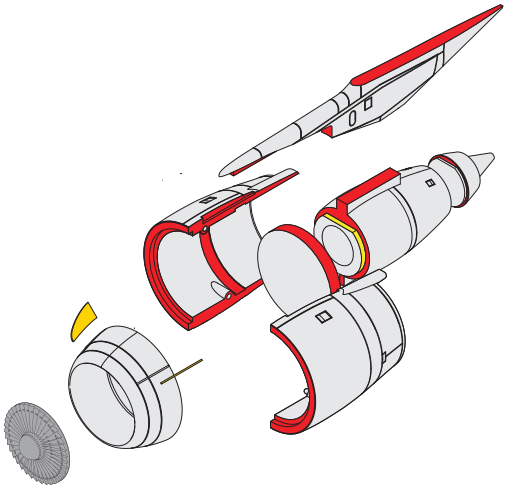


G Fill and sand the joints in the wing assemblies

5 WING ENGINE SUB-ASSEMBLIES

A Remove all the flash and feeds from the resin engine parts and pylons.

B Assemble the two engines. The bullet on the cast metal fan discs can be polished if required, before they are glued into the intakes of the engines.



C Attach the intake fences.

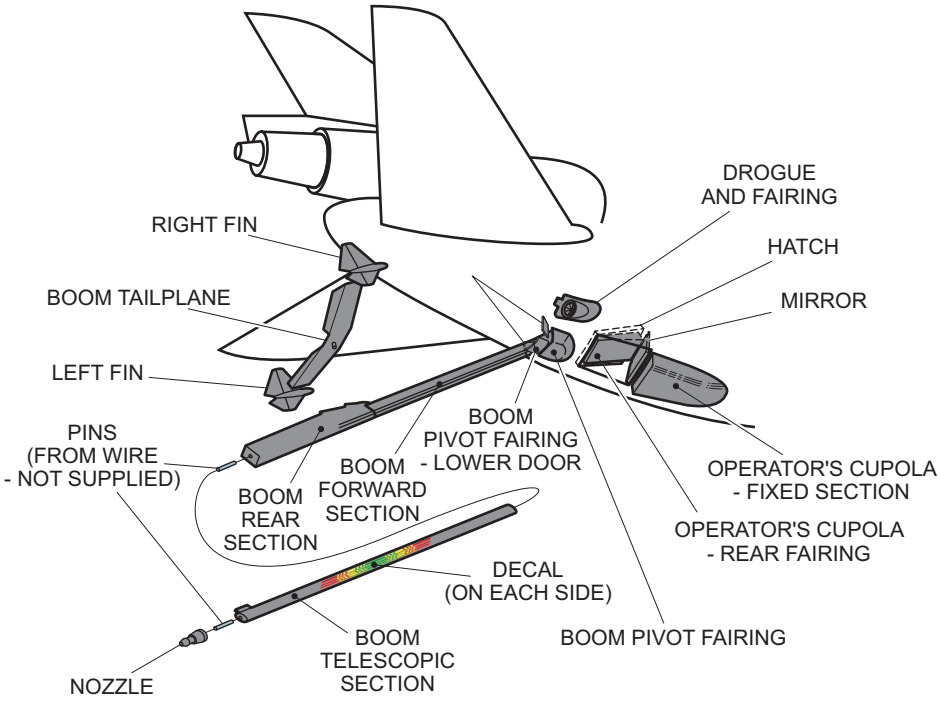
6 KC-10 BOOM AND DETAILS

A Assemble the refuelling boom (front and rear sections).

(1) Join the forward and rear sections of the boom. Drill holes in the rear end of the forward section and in the mating face of the rear section. Make the holes the same diameter as the wire you intend to use as a pin, and bond one end of the pin into the boom rear section. Attach the forward section to the rear section with 5 minute epoxy cement.

(2) Attach the tailplane to the boom (a pin on the tailplane engages in a hole in the boom) .

(3) Attach the fins to each end of the tailplane (they are cranked inwards - see detail on main colour scheme drawings).



B For a model with the boom extended:

(1) Engage the two pegs of the mirror in the sockets in the fixed fairing and attach the mirror to the fixed fairing.

(2) Attach the fixed fairing to the underside of the fuselage with the mirror inside the fuselage.

(3) Attach the rear fairing of the operator's cupola to the hatch assembled in step 3 B (4). Chamfer the rear edge of the hatch to give a larger bond area. (4)Put the hatch in position in the fuselage, with the rear edge of the hatch attached to the fuselage and the forward edge of the hatch resting on the ledge, on the top of the mirror.

(5) Drill holes in the end of the boom telescopic section and in the rear end of the boom rear section. Make the holes the same diameter as the wire you intend to use as a pin, and bond one end of the pin into the boom telescopic section.

(6) Drill further holes in the rear end of the boom telescopic section and in the forward face of the nozzle, then pin and bond the nozzle to the boom telescopic section.

C If the model is to have the boom retracted:

(1) Attach the rear fairing of the operator's cupola in place on the fuselage skin (refer to the main colour scheme drawings for the correct position), then attach the fixed section of the operator's cupola in place, with the two sections touching.

(2) Discard the mirror and the boom telescopic section.

(3) Drill a hole in the rear end of the boom rear section, (the diameter of the hole to match the pin on the nozzle), and bond the nozzle to the boom rear section.

D Bond the formation lights and drogue fairing in place.

E Attach the boom

(1) Fit the boom into the pivot fairing - attach the pivot fairing to the fuselage with 5 minute epoxy (MAKE SURE THAT YOU DO NOT GET ANY ADHESIVE ON THE PIVOT OF THE BOOM - IT SHOULD MOVE AT THIS STAGE).

(2) When the epoxy cement which attaches the boom pivot fairing has set, put the boom in the desired position and glue it in this position with super glue.

(3) Attach the boom telescopic section to the boom rear section if required..

(4) Attach the pivot fairing doors in position (open if the boom is extended, closed if the boom is retracted).

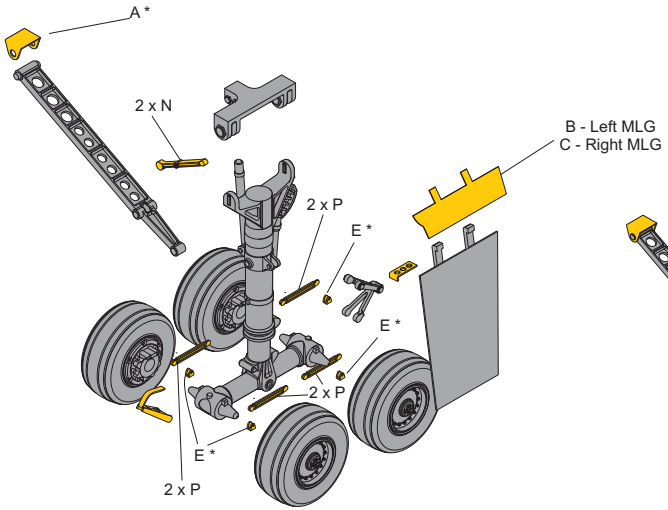
7 FINAL ASSEMBLY

A Attach the wings to the fuselage. Put the wing attachment block into the cutout in the fuselage. and attach the wings.

B Ft the engine sub-assemblies into the sockets in the under side of the wing and cement them in place.

C Cement the main landing gear legs and side braces in place with super glue or epoxy adhesive.

D Fit the wing main landing gear components as shown below.

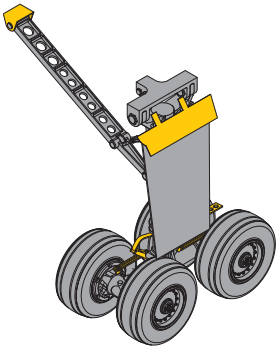


LEFT MAIN LANDING GEAR (MLG) SHOWN
- RIGHT MLG OPPOSITE
ETCHED PARTS ARE SHOWN IN YELLOW.

LETTERS ADJACENT TO PARTS
ARE IDENTIFIER ON ETCHED FRET

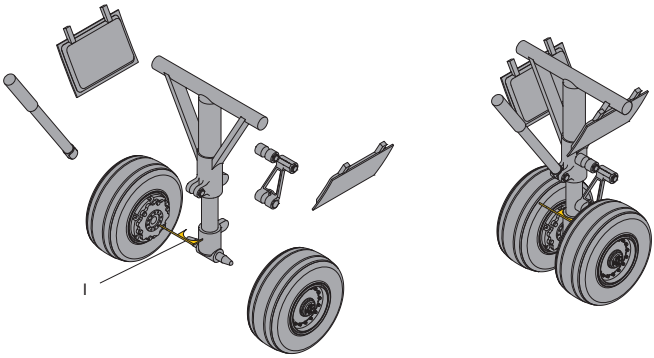
* = FOLD ETCHED PART TO FORM
CHANNEL BEFORE ASSEMBLY

BOND TWO OF ITEMS N AND P
BACK TO BACK BEFORE ATTACHING THEM

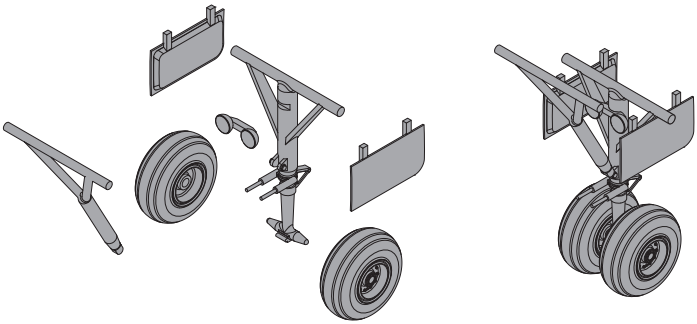


ASSEMBLED LANDING GEAR

E Fit the centre main landing gear components as shown below.



F Fit the nose landing gear components as shown below.



G. Attach the flap tracks, intake fences and other detail parts in position with super glue. We recommend that you refer to photographs of an actual aircraft if posible.

H Fill any joints and prepare the surface for painting. Add any scribed surface details which are required at this time.

I Paint the model and apply the decals.

WHITE - XTRACOLOR X141

MATT WHITE - XTRACOLOR X405

GLOSS DOUGLAS BLUE - XTRACOLOR X030?

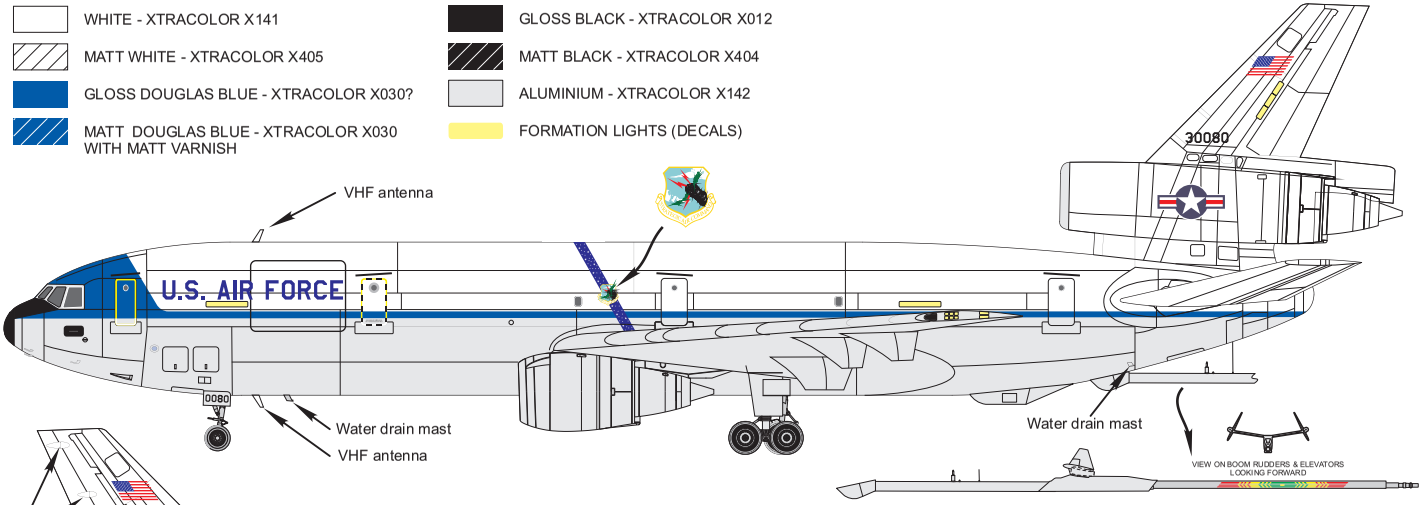
MATT DOUGLAS BLUE - XTRACOLOR X030 WITH MATT VARNISH

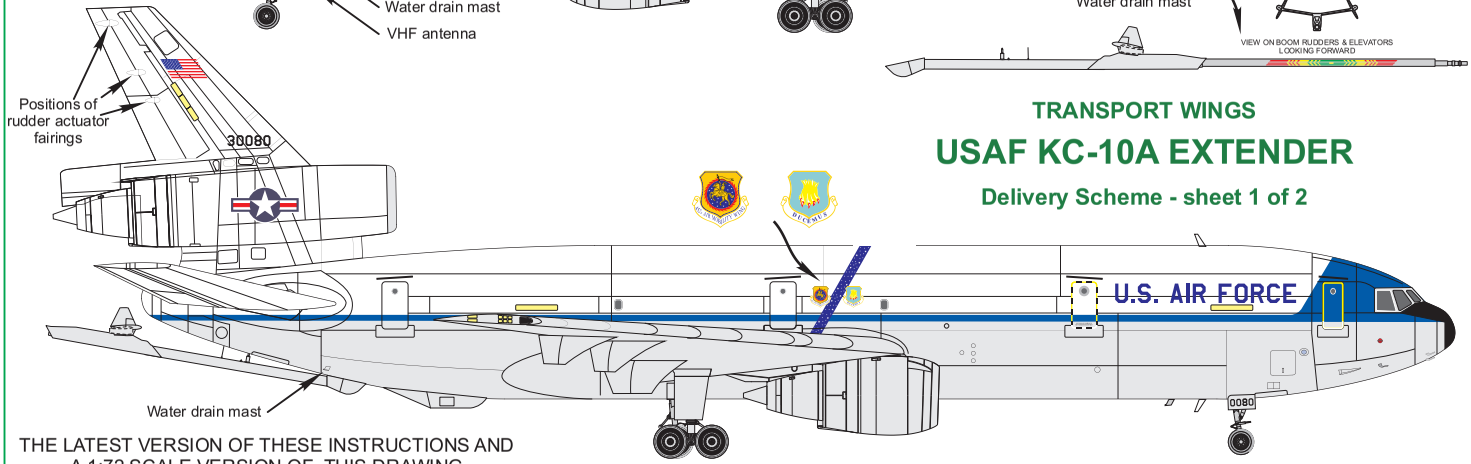
GLOSS BLACK - XTRACOLOR X012

MATT BLACK - XTRACOLOR X404

ALUMINIUM - XTRACOLOR X142

FORMATION LIGHTS (DECALS)





TRANSPORT WINGS

USAF KC-10A EXTENDER

Delivery Scheme - sheet 1 of 2

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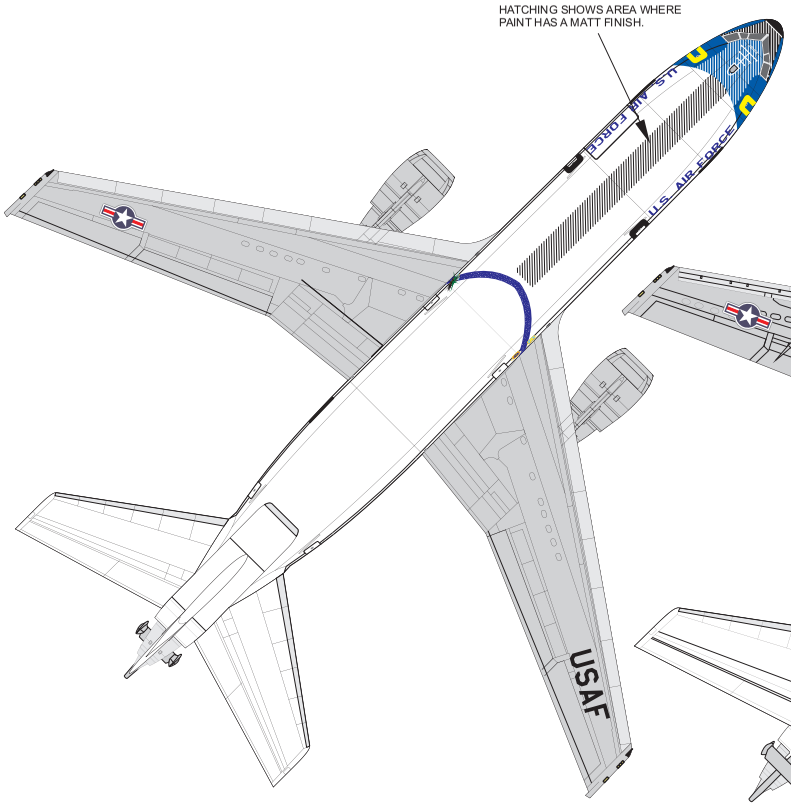
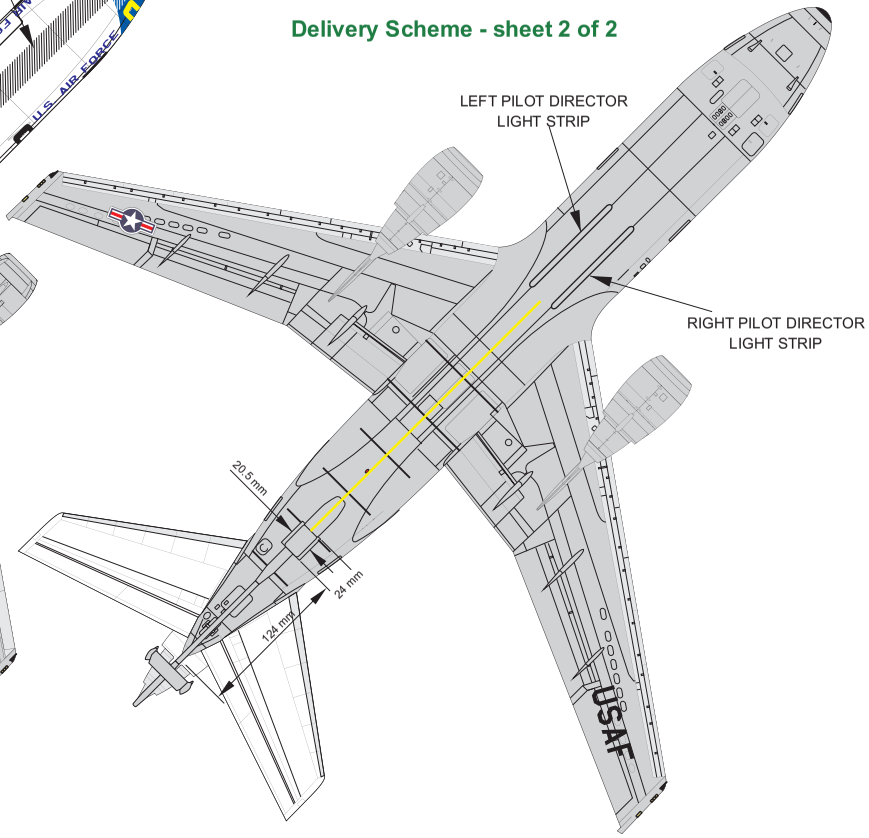
TRANSPORT WINGS

USAF KC-10A EXTENDER

Delivery Scheme - sheet 2 of 2





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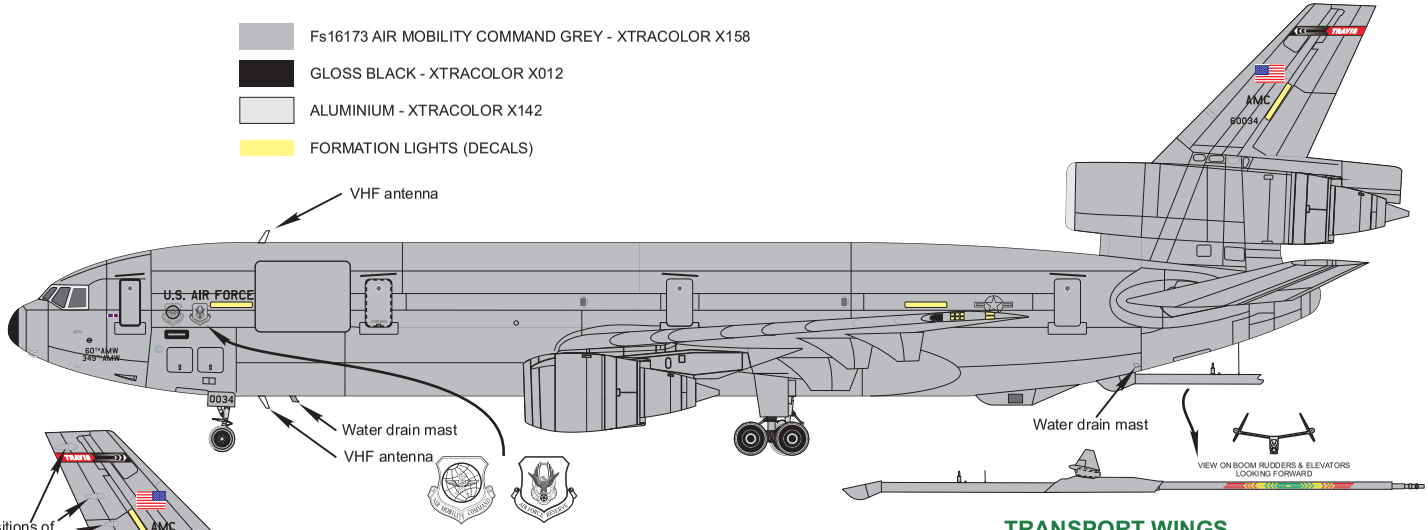
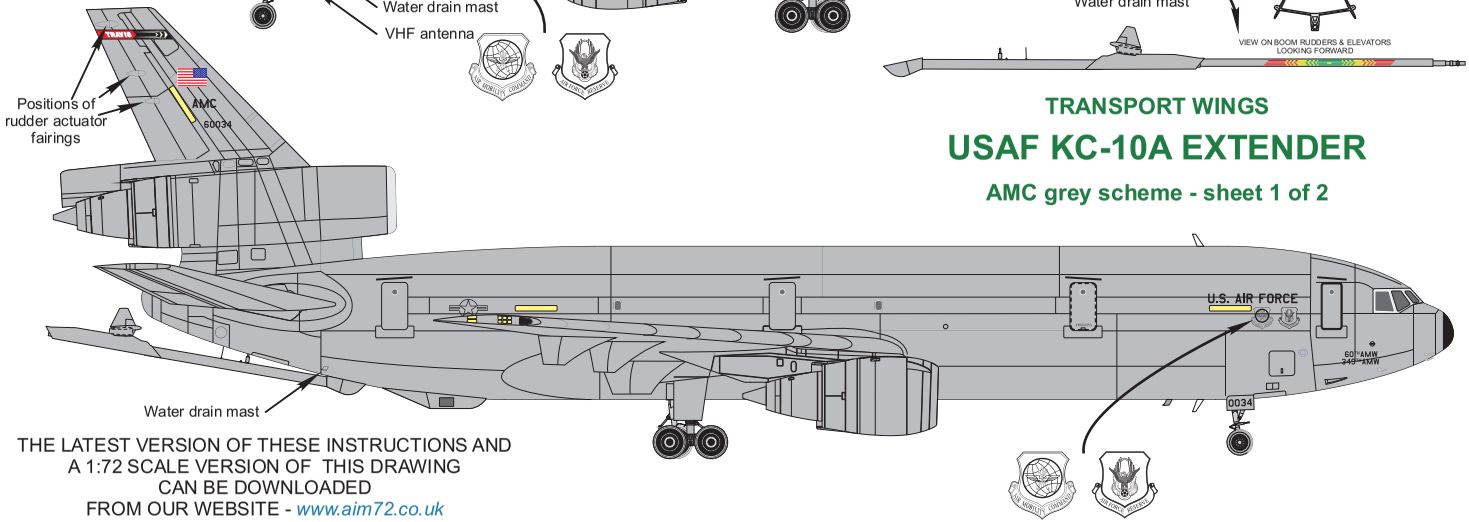
Fs16173 AIR MOBILITY COMMAND GREY - XTRACOLOR X158

GLOSS BLACK - XTRACOLOR X012

ALUMINIUM - XTRACOLOR X142

FORMATION LIGHTS (DECALS)





TRANSPORT WINGS

USAF KC-10A EXTENDER

AMC grey scheme - sheet 1 of 2

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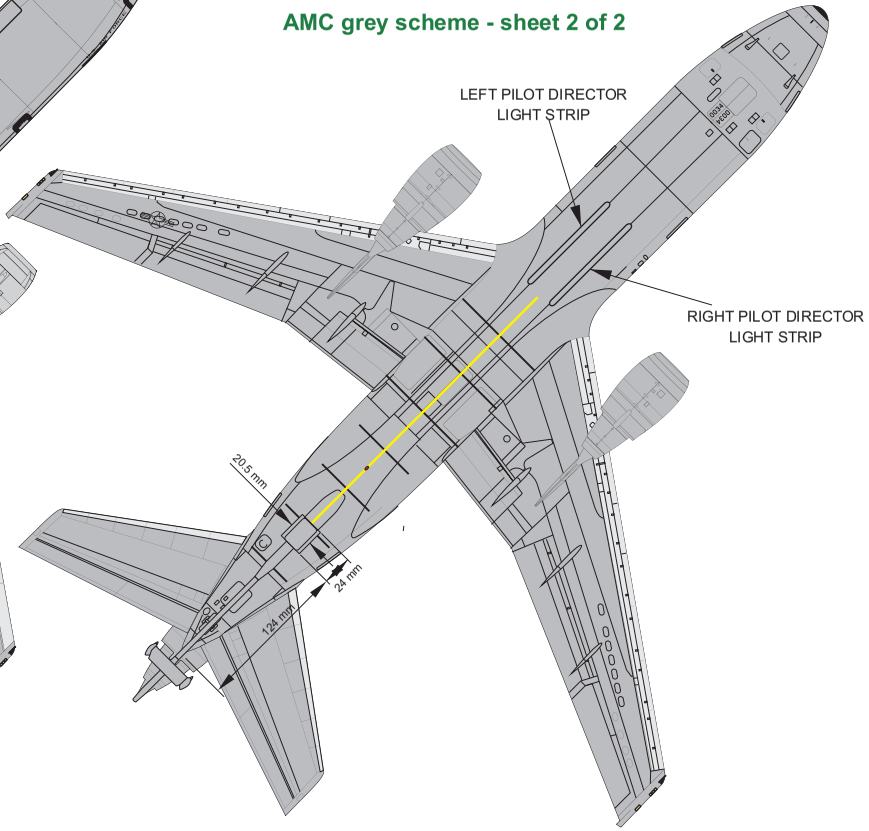
TRANSPORT WINGS

USAF KC-10A EXTENDER

AMC grey scheme - sheet 2 of 2



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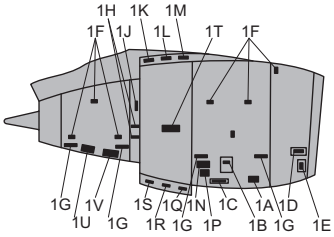
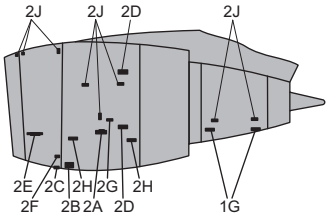
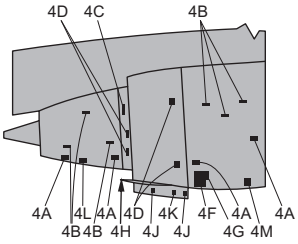


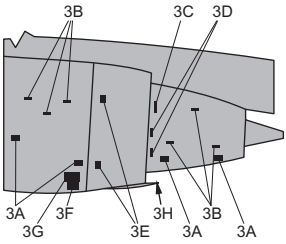
STENCIL DECALS ON WING ENGINES (RIGHT SIDE)



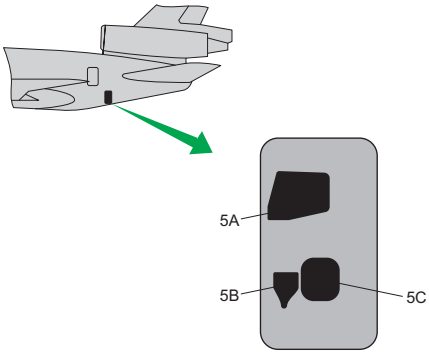
STENCIL DECALS ON WING ENGINES (LEFT SIDE)



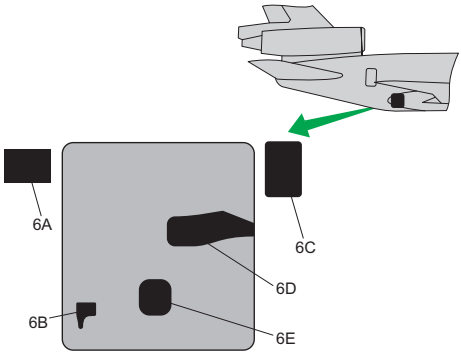
STENCIL DECALS ON CENTRE (TAIL) ENGINE (RIGHT SIDE)



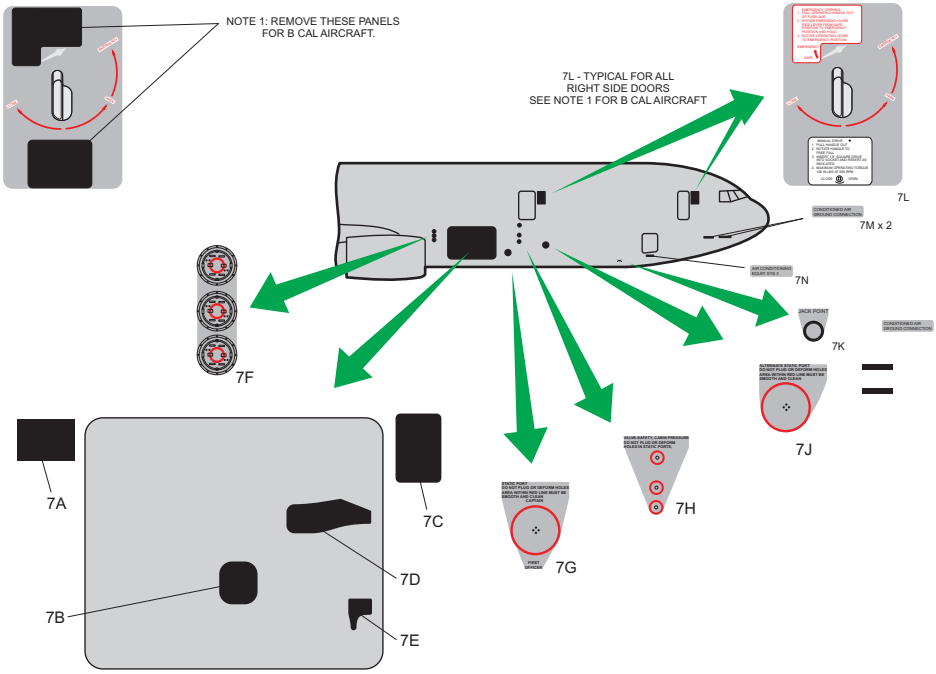
STENCIL DECALS ON CENTRE (TAIL) ENGINE (LEFT SIDE)



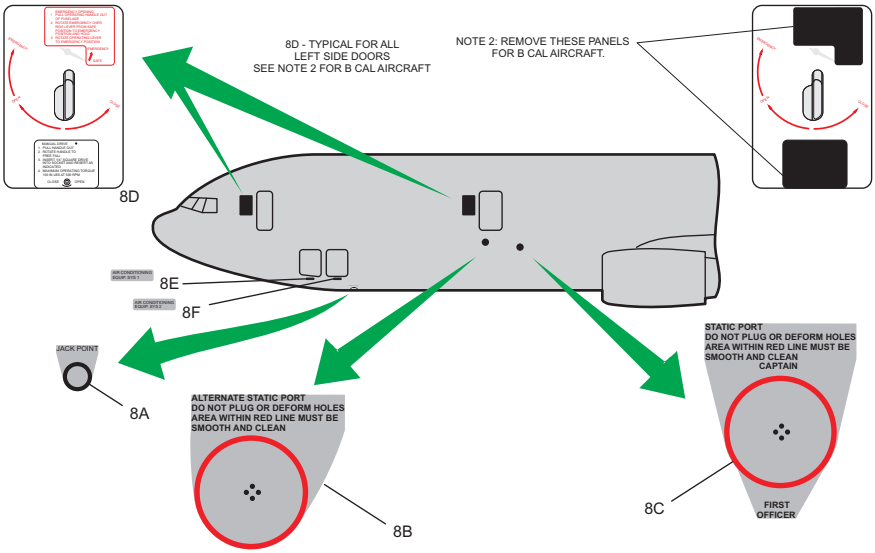
STENCIL DECALS ON DOOR LEFT REAR LOWER FUSELAGE



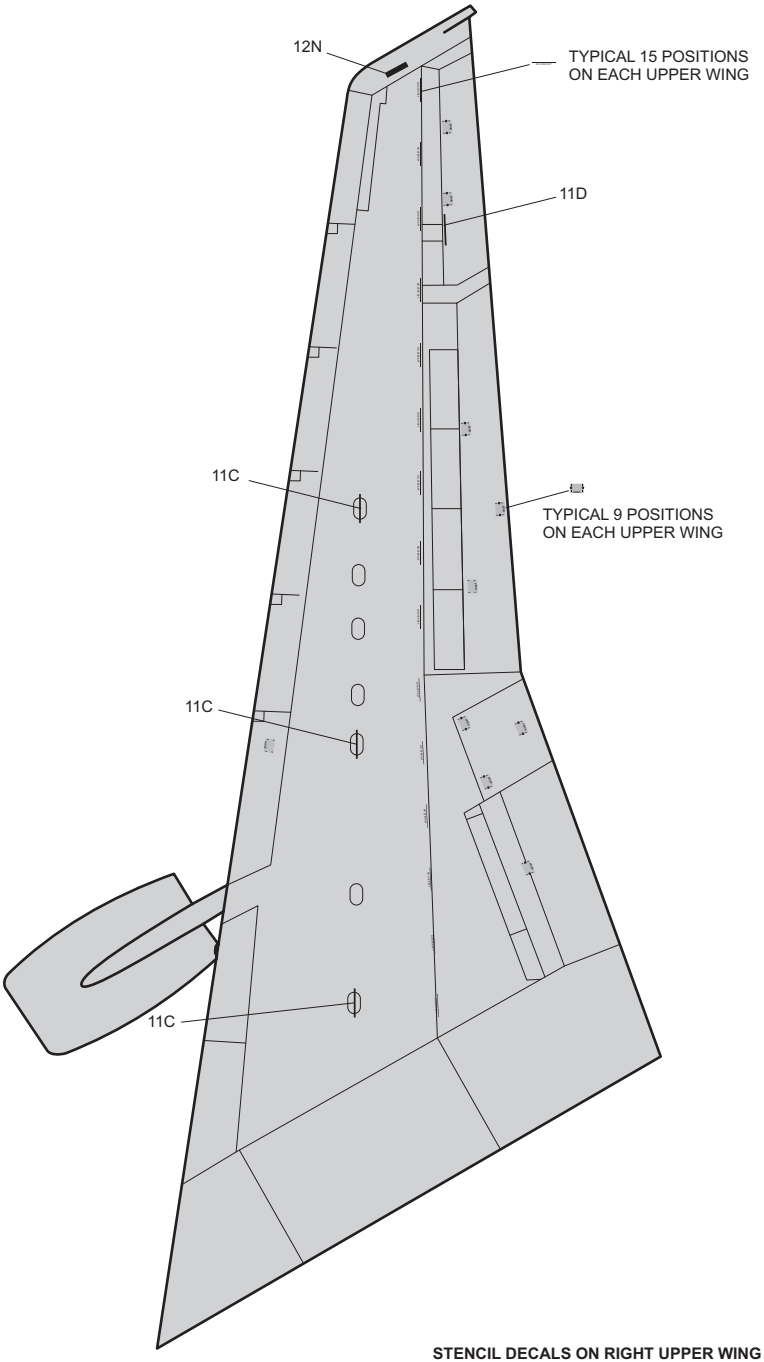
STENCIL DECALS ON CARGO DOOR RIGHT REAR LOWER FUSELAGE



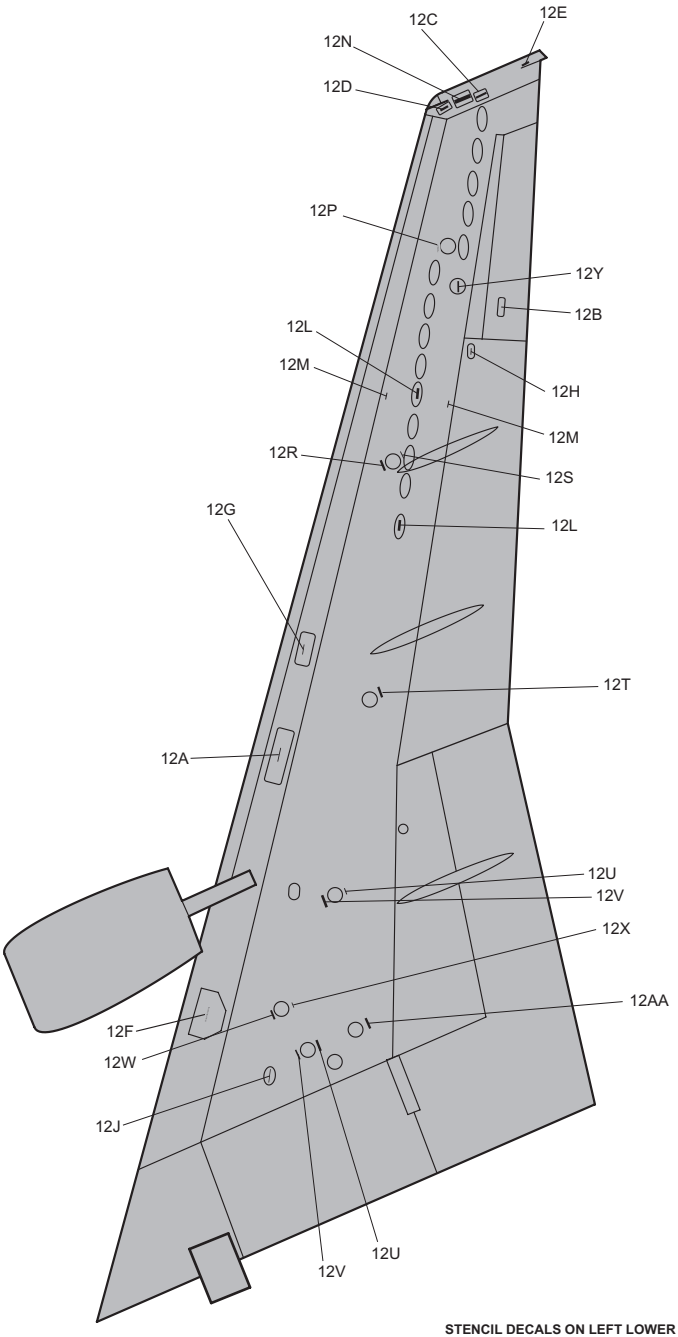
STENCIL DECALS ON RIGHT FORWARD FUSELAGE



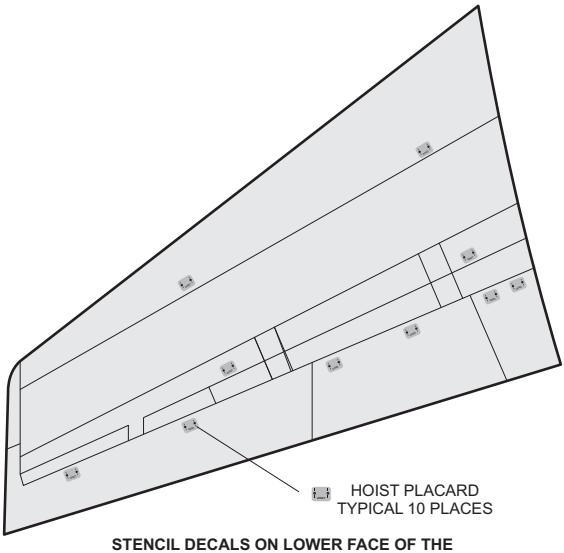
STENCIL DECALS ON LEFT FORWARD FUSELAGE



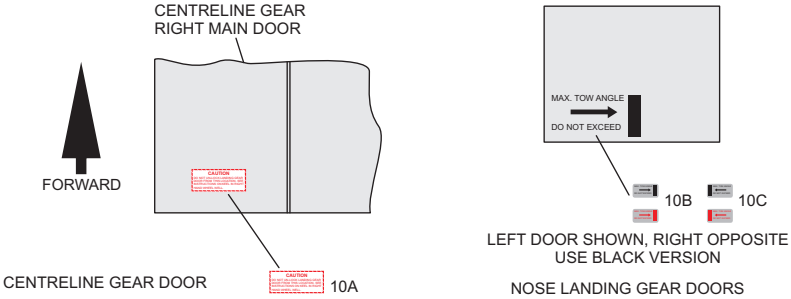
STENCIL DECALS ON RIGHT UPPER WING
(LEFT WING SIMILAR)



STENCIL DECALS ON LEFT LOWER WING
(RIGHT WING SIMILAR)



STENCIL DECALS ON LOWER FACE OF THE RIGHT HORIZONTAL STABILIZER AND ELEVATOR (LEFT SIDE SIMILAR)



STENCIL DECALS ON LANDING GEAR DOORS

NOTES

IF THESE INSTRUCTIONS ARE UPDATED, THEY CAN BE DOWNLOADED FROM OUR WEBSITE - *www.aim72.co.uk*

Our thanks to Curtiss Knowles for his help and advice in producing this kit, and to Adrian Constable and Simon Lind for the use if their photographs in these instructions.

This kit is manufactured in the United Kingdom by

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