



# Rag Rat Resins

1:72 multi-media kit of the



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## **CASA 212 Aviocar** **Series 100, 200, 300 or 400**

History, Notes and  
Assembly Instructions

## History

The CASA 212 was designed as a replacement for the Spanish Air Force's ancient Ju-52/3M fleet. The aircraft was designed from the outset as a STOL transport for both civil and military operations. The various versions of the aircraft which can be produced from this kit are:

- A series 100 aircraft with decals for an aircraft of the Angolan Air Force.
- A series 200 aircraft with decals for an aircraft of the Portugese Air Force, and a small radome on the nose and a radome on the top of the fin.
- A series 200 aircraft with decals for an aircraft of the Air Force of Zimbabwe.
- A series 200 Search And Rescue (SAR) aircraft with decals for a Spanish aircraft and a resin radome.
- A series 300 aircraft with decals for the aircraft which was leased by the US Coast Guard for trials in 1990 with an extended nose.

Note: the series 400 is externally similar to the series 300

## Parts List

### Resin Parts

-100/-200 nose cone . . . . .	1 off
-200 'duck-bill' radome . . . . .	1 off
-300/-400 nose cone . . . . .	1 off
Cockpit bathtub . . . . .	1 off
Cockpit interior . . . . .	1 off
Engine . . . . .	2 off
Fin . . . . .	1 off
Fuselage - left . . . . .	1 off
Fuselage - right . . . . .	1 off
Horizontal stabilizer - left . . . . .	1 off
Horizontal stabilizer - right . . . . .	1 off
Leading edge gusset . . . . .	2 off
Wing - left . . . . .	1 off
Wing - right . . . . .	1 off

### Miscellaneous Items

Cockpit transparency *(two canopies) .	1 off
Decal sheet - large . . . . .	1 off
Decal sheet - small . . . . .	1 off
Instructions . . . . .	1 set

### Metal Parts

Antenna . . . . .	2 off
Control column . . . . .	2 off
Flap hinge - small . . . . .	2 off
Flap hinge - medium . . . . .	4 off
Flap hinge - large . . . . .	2 off
Main landing gear leg - left . . . . .	1 off
Main landing gear leg - right . . . . .	1 off
Main wheel . . . . .	2 off
Nose landing gear . . . . .	1 off
Pitot head - left . . . . .	1 off
Pitot head - right . . . . .	1 off
Propeller . . . . .	2 off
Radome - fin mounted . . . . .	1 off
Wheel & skid - ramp . . . . .	2 off
Winglet-left . . . . .	1 off
Winglet-left . . . . .	1 off

## Introduction

This Rug Rat Resins kit is cast in urethane resin using one- and two-piece moulds. Because of the limitations of the moulding techniques, there may be a few small air bubbles in the components, but these can be filled using any of the proprietary fillers (Green Stuff, Milliput, etc.).

**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.**

Resin parts can be shaped with a scalpel fitted with a stout blade, or a modelling knife, and can be cut with a razor saw. It is glued using superglue (cyanoacrylate) or 5 minute epoxy. Resin is a relatively brittle material and rough treatment of thin components will lead to breakage. Resin can be filed, sanded, wet-and-dried, and polished, just like polystyrene, but remember that the dust is an irritant (similar to sawdust). Wear a mask, or sand it wet. Green stuff and similar fillers that rely on evaporation are only suitable for 'skimming' and minor filling operations that need to be sanded with a minimum of delay. An alternative is automotive two-pack filler or Milliput.

Before starting assembly, wash the resin parts in a good benign solvent such as isopropanol or warm soapy water. This will remove the mould release agent from the parts. Do not use hot water because the parts may soften and distort. You can use this to advantage however if you have a warped component, or want to adjust or 'tweak' something. Heat the component with hot water or a fan heater and gently adjust it. When it cools it will keep its modified shape. If you are unhappy with any of the parts, send them back to us for free replacement.

In addition to the resin parts, the kit also contains cast metal parts and vacuum-formed transparencies.

## Assembly

### 1 Preparation

#### A Drill holes in these parts - drill:

- Two 1.3mm diameter holes in the floor of the cockpit sub-assembly for the control columns.
- A 3mm diameter hole in the front of each engine for the propeller shaft.
- A 1.75mm diameter hole in the centre of each main wheel for the axle.
- Two 1.3mm holes in the underside of the fuselage loading ramp for the skids.

### 2 Airframe assembly

#### A Remove the feed blocks from the cockpit module and the cockpit bulkhead.

#### B Cockpit sub-assembly (See figure 1).

- 1 Attach the control columns.
- 2 Add any additional detail which may be required, for example seat belts (not supplied)
- 3 Add the bulkhead to the cockpit sub-assembly and make sure that the entire assembly is a good fit when the two fuselage halves are together.
- 4 Paint the sub-assembly as required.

# CASA 212 Aviacar

Series 100, 200 & 300

Scale 1:144



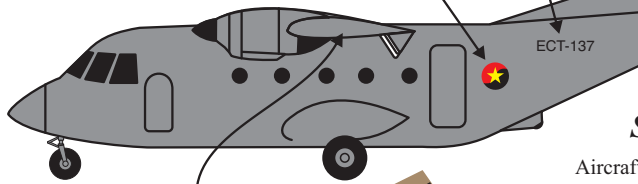
## ANGOLAN 212-100

Light Grey overall except as noted



ECT-137

ECT-137



Aircraft

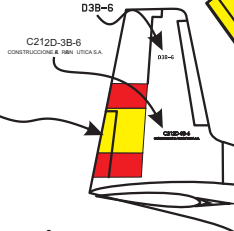
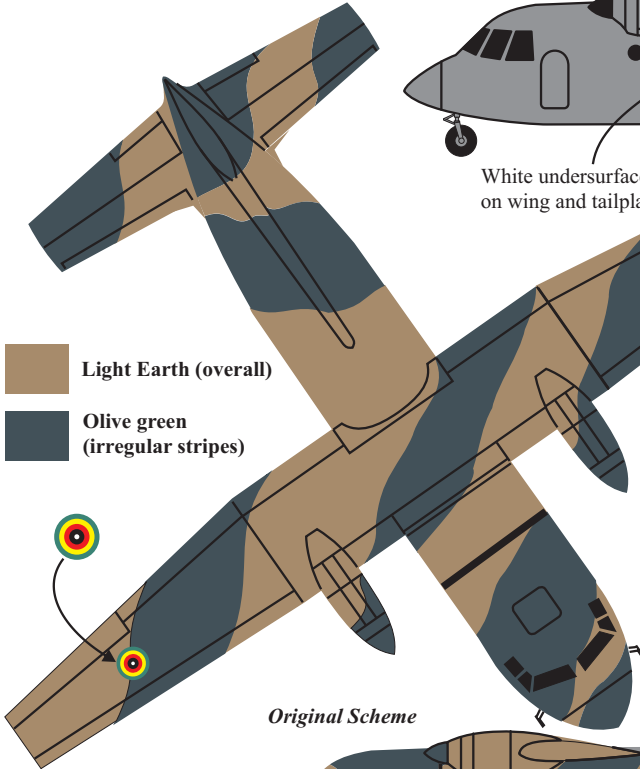
White undersurfaces on wing and tailplane

FS 33538 Bright yellow - wing tips

## ZIMBABWE 212-200

Light Earth (overall)

Olive green (irregular stripes)



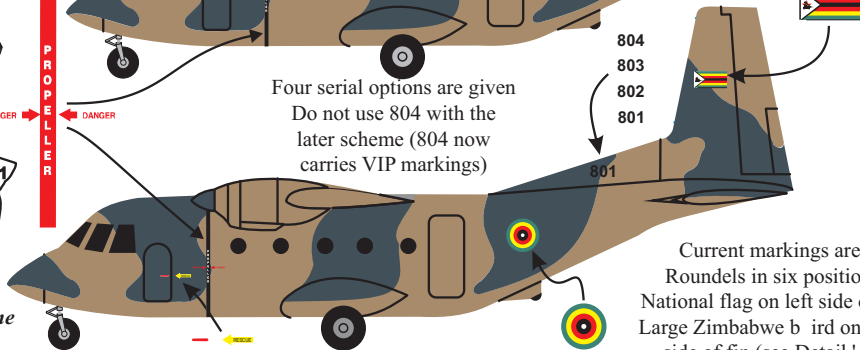
Early markings were a small Zimbabwe bird on each side of the fin

### Original Scheme



### Detail 'A'

### Current Scheme



Four serial options are given  
Do not use 804 with the later scheme (804 now carries VIP markings)

Current markings are:  
Roundels in six positions  
National flag on left side of fin  
Large Zimbabwe bird on right side of fin (see Detail 'A')

Typical

# U S COAST GUARD 212-300

Aircraft is white overall, except as noted.

## SPANISH 212-200 SAR

Aircraft is white overall, except as noted.

Yellow outer wing with black stripe (decal) on edge and black/yellow/black fuselage stripe (decal)

Bright yellow wing tips

FS 31136 Deep red (Wing tips on USCG aircraft)

Black nose & radome

Rectangular window on each side (replace round window on decal)

FS 38905 Orange/Red on underside of fuselage

Yellow exit outlines (only on USCG version)

Dark Green  
Light Tan

## PORTUGUESE 212-200

6502

...s are:  
...ositions  
...side of fin  
...rd on right  
...tail 'A')

Light aircraft grey undersurfaces

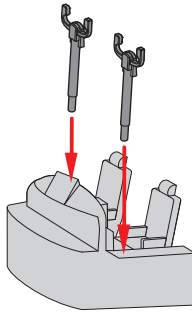


Figure 1 - Cockpit module

- C Remove the feed block from the nose of each fuselage half.
- D Make sure that the mating faces of the two fuselage halves are a good fit with the cockpit inside, then align and bond them and the cockpit sub-assembly together.
- E When the adhesive has set, fill the joint, sand it smooth, then re-scribe any panel lines if necessary.
- F Cut one of the two canopies out of the vacuum-formed sheet. Trim the canopy as necessary with epoxy cement.
- G Fill and sand the canopy/fuselage joint as necessary. Take care not to sand the window areas of the canopy.

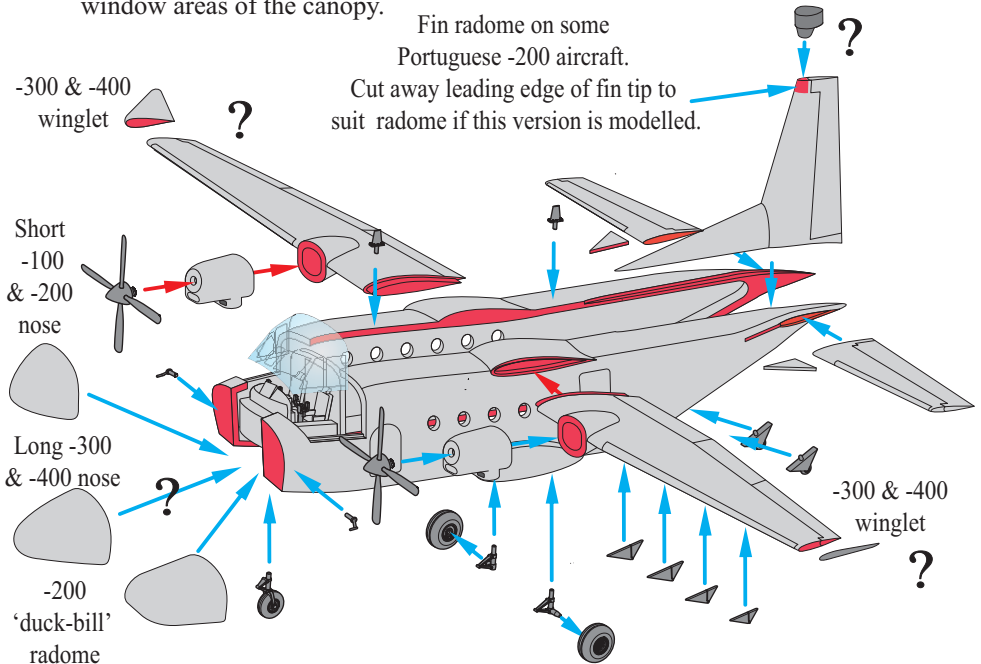


Figure 2 - Airframe assembly

- H Make sure the mating faces are flat and true, then attach the correct nose for your preferred variant.
- I Drill these holes in the assembled fuselage:
  - A 1.25mm diameter hole in the underside of each sponson for a main landing gear leg.
  - A 1.5mm diameter hole in the underside of the nose fuselage after the fuselage has been assembled.
  - A 1.25mm diameter hole in each side of the nose for the pitot heads.
  - Two 1.5mm diameter holes in the top of the fuselage for the antennas.
- 3 Wing assembly
  - A Remove the feed stubs from each wing root and remove any flash from the locating tabs.
  - B Make sure that each wing is a good fit to the fuselage and attach it. Support the wings with the correct dihedral angle until the adhesive has set.
  - C Attach an engine to each nacelle.
  - D If applicable, attach the winglets for a series 300 or 400 aircraft.
  - E Fill and sand all joints, then re-scribe panel lines as necessary.
- 4 Empennage assembly.
  - A Remove the feed stubs from each horizontal stabilizer and the fin, then remove any flash from the locating tabs.
  - B Make sure that each part is a good fit to the fuselage and attach it. Support each part at the correct angle until the adhesive has set (the horizontal stabilizers have no dihedral, so are horizontal, while the fin is vertical).
- 5 Final assembly and painting.
  - A Attach the landing gear.
    - 1 Attach the two main landing gear legs in the holes already drilled below the fuselage sponsons.
    - 2 Attach a main wheel to each main landing gear leg
    - 3 Attach the nose landing gear leg and wheel in the hole drilled below the nose fuselage.
  - B Attach the flap hinges.

Note: it is very difficult to identify the inboard (largest) and centre (medium) hinges. The base of the inboard hinge is very slightly longer.

    - 1 Remove any flash from the mounting face of each flap hinge.
    - 2 Attach the hinges as shown in the multi-view drawing in the centre of these instructions.
  - C Attach the two skids to the ramp under the rear fuselage. If applicable attach the leading edge fillets for a series 400 aircraft.
  - E Apply the paint masks to the transparency, then paint the model and apply the transfers/decals as shown in the drawing.
  - F Attach the final detail parts.
    - 1 Remove all the paint from the bond areas and from all locating holes.
    - 2 Attach the pitot heads on each side of the nose fuselage.
    - 3 Attach the two antenna to the top of the fuselage.

## G Painting & glazing

- 1 Fill each open window in the fuselage with damp tissue paper to prevent paint fumes in the fuselage.
- 2 Paint the model in the desired scheme.
- 3 Apply the decals.
- 4 Remove the tissue paper and glaze the windows with a liquid glazing material (not supplied in the kit).

