## Junkers Ju 52/3m















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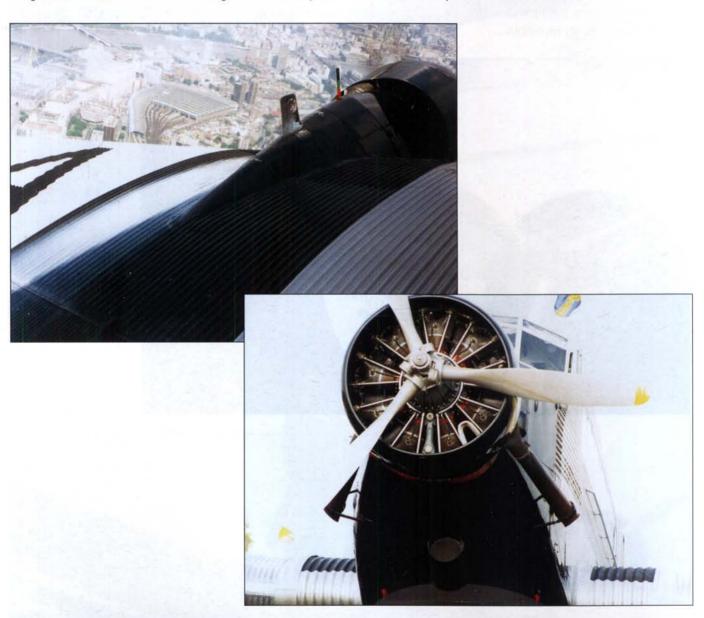




#### Introduction

Most historians and aviation enthusiasts are familiar with the history of this legendary German transport aircraft. From its appearance in March 1932, the Junkers 52 has experienced the turmoil of war, seen extensive post-war service and, remarkably, still remains airworthy and in regular use at airshows as well as giving pleasure flights to enthusiasts. Indeed, due to its rich and astonishing history, the good old "Tante Ju" deserves a thorough and extensive photo-

graphic presentation. As a result, our publication focuses primarily on some colorful side-views, drawings and close-ups of the Junkers Ju 52/3m g2e (W.Nr. 5489), which was manufactured in 1935 and is still in service today. We are able to show in the following pages, unique and interesting shots taken of this aircraft during its reconstruction in 1986 and, for those of you fascinated by the aircraft, additional close-up views.



#### •• Рното Новву Маниал



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#### W.Nr. 5489 – Ju 52/3m g2e Aircraft History

The heart of every aviation enthusiast will be instantly overwhelmed at the sight of a fully operational, battle-hardened veteran, celebrating its seventieth anniversary in 2006 The three-engine low-wing monoplane Junkers Ju 52/3m D-CDLH, in service with Berlin-Tempelhof, an affiliated branch of Lufthansa's subsidiary, Traditionalsflug GmbH was seen for the first time in the Czech Republic on Wednesday April 16th 1997, during a maintenance landing at the Berlin-Vienna aerodrome.

Junkers Ju 52/3m g2e (W.Nr. 5489) was manufactured at Desau in December 1935 and was recorded in the Civilian Aircraft Registry, with the identification mark D-AQUI, on the 6th of April 1936. It was assigned four days later, as a floatplane and named "Fritz Simon", to the fleet of German airline, Deutsche Lufthansa. The Norwegian Company D.N.L. (Det Norske Luchtfahrtselskab, Fred Olsen + Bergenske A/S) purchased it in June of the same year, assigning it the civil registration LN-DAH and naming it "Falken". Four years later, on April 9th 1940, soon after capture by the invading German Army, it was requisitioned by the Luftwaffe to support supplies of troops and armament during the invasion of Norway. On September 23rd. 1940 it was returned to Deutsche Lufthansa where it was re-registered as D-AOUI and acquired a new name "Kurt Wintgens". Until the end of the European war, it was employed as an airliner, transporting passengers from Oslo to Trondheim, Bodo, Narvik, Harstad, Tromso, Hammerfest, Vadso and Kirkenes. After the surrender of the German forces, it entered service with the Royal Norwegian Air Force on May 25th 1945, undergoing a complete maintenance checkup and repairs in the Horten Flyfabrik repair workshops. Afterwards, the aircraft was reassigned as a cargo carrier carrying the number "21" at the Skattra/Tromsó base of the Royal Norwegian Air Force.

After undergoing general repairs in Horten, it was put back into the service of D.N.L. on May 18th. 1946, re-registered as LN-KAF and given the new name of "Askeldaden". It underwent major repairs again in 1947 being provided with the corrugated fuselage of a Ju 52 3/m g8e (W.Nr. 130714, first flight: 20.06.1943) which was left in Norway by the USE GERMAN DESIGNATION. After this major rebuild it was then used by S.A.S. (Scandinavian Airlines System) under the name of "Veslfrikk" where it was subsequently written off. Ignored by the Norsk Tekniks Musea, it was purchased in Oslo by Christian Drexler, a former Flight Lieutenant and pilot with Lufthansa, who was flying for TAO (Transportes Aereos Orientales S.A.) in Quito, Ecuador.

Due to the easing of the international political scene, and after undergoing general repairs and replacement of the floats with wheels, the Junkers finally reached Ecuador in the summer of 1957, where it was registered as HC-ABS, receiving yet another name, this time "Amazonas" and served reliably with TAO for the next six years. In 1963 it

was permanently withdrawn from service and left to decay at Quito airport until May 25th 1970, when it was purchased by Lester F. Weaver for only \$5,000.

After the completion of essential repairs, it was flown to Dixon aerodrome, Illinois where it acquired the U.S. registration N130LW. Four years later, she was sold to Cannon Aircraft, who in turn sold it for \$52,500 to Martin Caldin Productions from Cocoa Beach, Florida. It then underwent general repair in the shops of Aero Facilities in Miami in 1976, where the original BMW 132 engines were replaced with American radial Pratt and Whitney R-1340 S1H1 Wasp engines. Nicknamed "Iron Annie" and receiving the new registration number N52JU, it was slightly damaged on July 17th 1976 during an accident in Gainesville, Florida. Wearing a very extravagant and attractive color scheme in the U.S.A, it came to the attention of Lufthansa, the original operators, who subsequently purchased it in 1984. The aircraft was prepared for a long-haul transatlantic flight to Germany where, shortly before departure from Opa Locka aerodrome in Florida on December 12th 1984, the pilot, Clark Woodard, wrote on the green fuselage "Nach Hause" (Going Home!) After an 8000 km long journey, the Junker's crew, consisting of pilots Clark Woodard and John Wilson, and mechanic Terry Ritter, successfully landed at Hamburg-Fuhisbuttel on December 28th 1984.

After a year and a half of comprehensive reconstruction in Lufthansa's workshops and with contributions from 28 sponsors, the aircraft's inaugural flight took place on 1st of April 1986 piloted by Captains Heinz-Dieter Bonsmann, Kurt Matzak and Brian Wallace. Five days later, it ceremonially re-entered Deutsch Lufthansa service as "Berlin-Tempelhof". An interesting feature of this aircraft is that it is the only one that may bear two civil identification marks, i.e. the current, D-CDLH, beneth the tailplanes and the original "historical" one, D-AQUI on the fuselage and mainplanes.

The newly reconstructed Junkers has been reliably used for promot-

ing the name of the great German National airline and for the amusement of dozens of passengers throughout Europe, including the participants of the USA tour.



#### Junkers Ju 52/3m D-AQUI, Duxford, England, June 1999



Full view of Lufthansa's Ju 52/3m at Duxford.



Left rear view the aircraft being prepared for flight.







Front left view clearly showing the shape of the black cowl.



The left rear view clearly showing the positioning of the black stripe on the wing.



A steward welcoming passengers onto the aircraft.





Full right view of the aircraft.



Front view of the aircraft; notice the replacement American engines, the original German BMW 132 engines being worn out due to age.







BERLIN TEMPELHOS

This close-up rear view from the left focuses on the front side of the aircraft. Note the window curtains.

This frontal view clearly depicts the engine cowlings as well as the exhaust of the centre engine.







This right front view shows both the American engines and the open doors.



A close-up view of the logo on the left side of the fuselage.

These photographs show clearly the corrugated surface on both fuselage and mainplane.





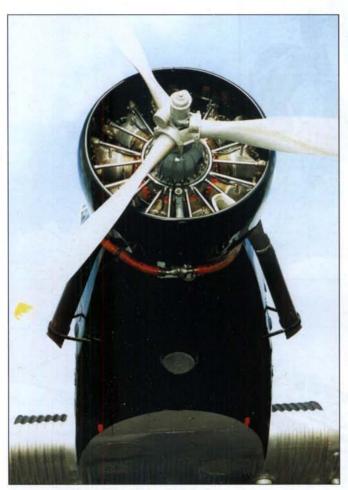
Crew member conducting a routine checkup of the head engine.



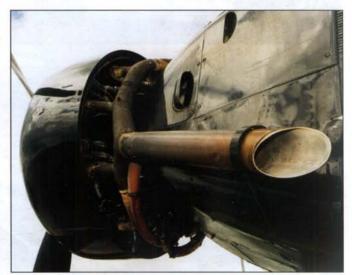


Junkers Ju 52/3m D-AQUI just before take-off.

## Engines - Ju 52/3m D-AQUI in Detail (American engines)



View of the centre engine.



Port exhaus of the centre engine



This picture perfectly shows the exhaust staining.



Starboard exhaust of the centre engine.



Oil radiator underneath the centre.





Close-up view of the port engine.

Oil radiator beneath the port engine.





Rear view of the left engine.



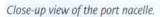
Frontal view of the aircraft showing engine.



Head-on shot of the replacement Pratt and Whitney engine.



Rear view of port engine oil cooler.





#### Undercarriage - Ju 52 3/m D-AQUI in detail

Note that the undercarriage and wheels differ from the wartime versions of the Ju 52/3m.



A front view of the centre section and undercarriage struts.











Photographs of the left wing undercarriage. Note the non-original wheels.



Fuselage attachment point of port undercarriage.



The landing-light situated on the wing forward of the left undercarriage.





Photographs of the right undercarriage.



Close-up shots of the tail wheel assembly.





### Tail - Ju 52/3m D-AQUI in detail







#### Mainplanes - Ju 52/3m D-AQUI in detail



Impressive rear view of the front side of the aircraft pictured over the wing.



The mounting and the system of flaps and ailerons of the port wing.



Mounting and system of flaps and ailerons of the starboard wing.





Views of the port wing from the door.



Landing light mounted on the wing, forward of the starboard undercarriage.



Landing light mounted on the bottom of the wing.





Aileron control rods on the port side of the wing.



Aileron control rods on the port side of the wing.



Aileron control rods on the starboard side of the wing.



Part of the port wing aileron system.







Wing-tip navigation light.





In-flight photographs of port wing.

### Fuselage Interior - Ju 52/3m D-AQUI



Close-up view of the passenger door handrail.





Inside the passenger door is a plaque naming the firms who contributed to the restoration of D-AQUI.

Close-up views of the Crew entrance door.



Front section of the flight deck with the main instrumentation dials and controls.





#### Cockpit and Doors - Ju 52/3m D-AQUI in detail



Close-up view of the crew entry door located on the starboard.





Round window located on the port side of the fuselage.





Starboard side of the cockpit.





Port side of the cockpit.

# Junkers Ju 52/3mg 10e restoration (Amiot AAC.1, "Toucan", serial No.: 6316)

The following series of photographs present, in detail, the restoration of the Amiot AAC-1 Toucan (serial No. 6316) which was the post-war variant the original Ju 52/3m g14e produced by the French during the Occupation. Photographs of the work undertaken were taken in the construction hangar in cooperation with members of the Duxford

Aviation Society in 1998. As the images were taken continually during the restoration, they reveal unique views of the components which are normally hidden inside the fuselage and are hardly ever photographed. Thus, both enthusiasts and modelers are given a unique opportunity to see rare views of the aircraft's inner structures.







Front view of the fuselage.

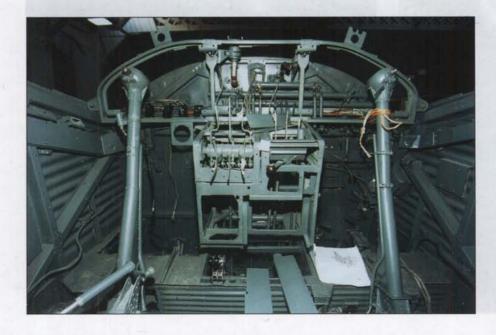




"Toucan", serial

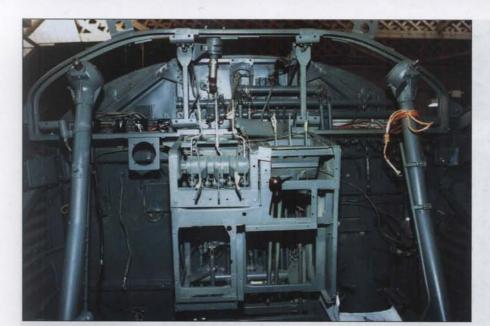
Canopy construction.



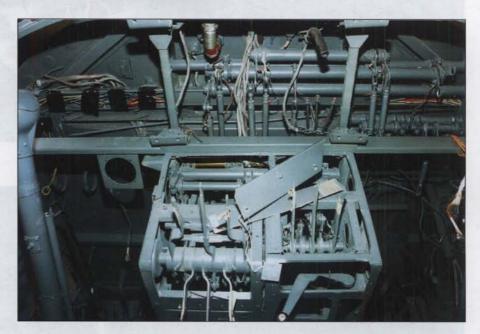


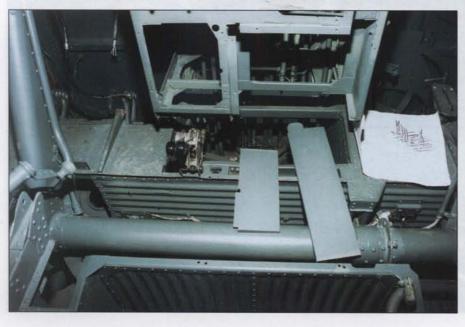
View of the cockpit front section.



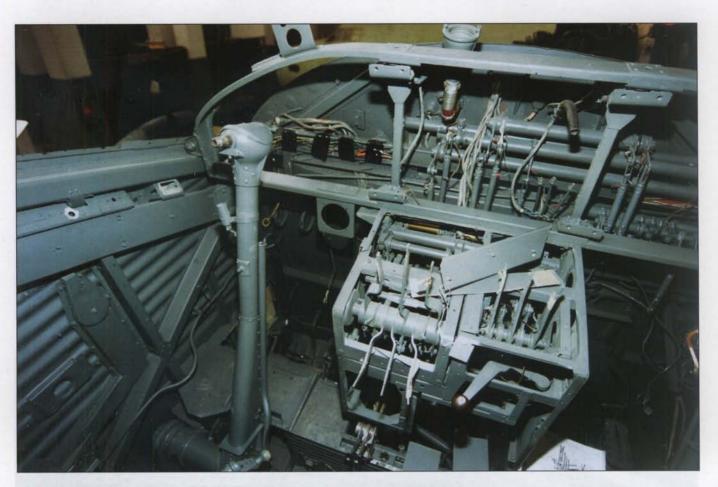


View of the cockpit front section.









Port view of the cockpit.





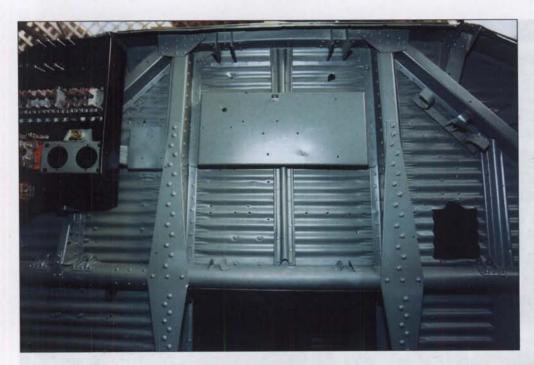


Starboard view of the cockpit.

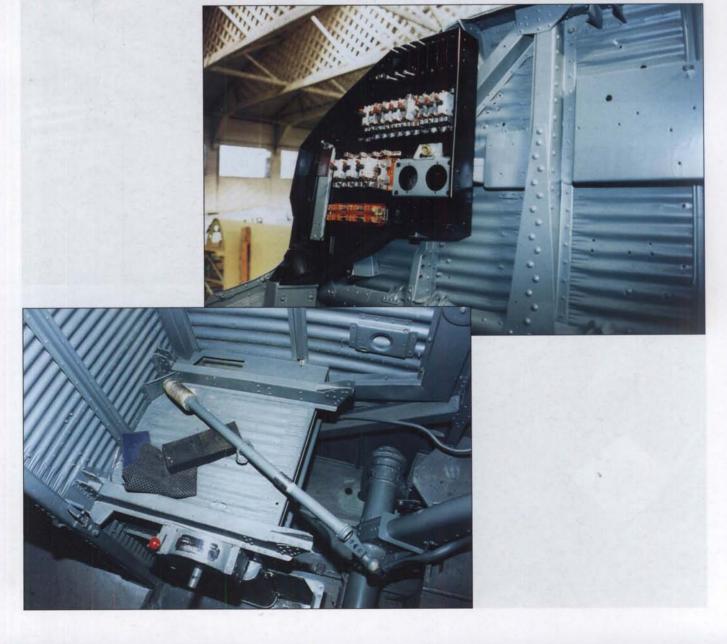








Rear view of the cockpit.

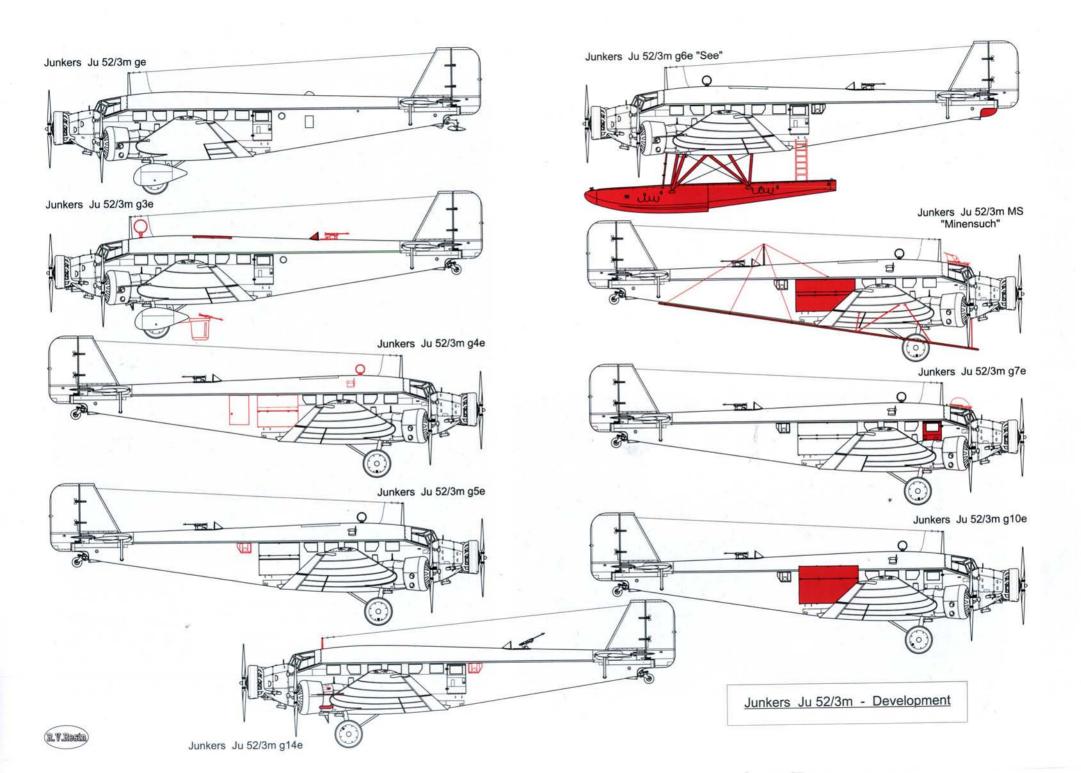


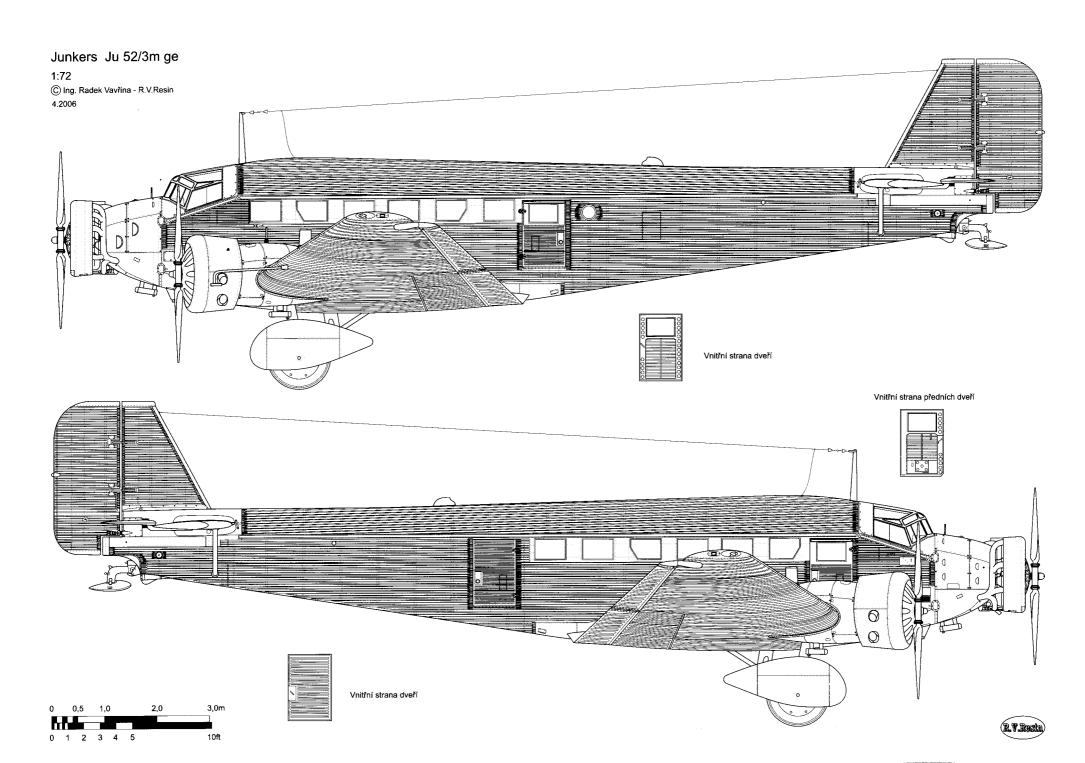


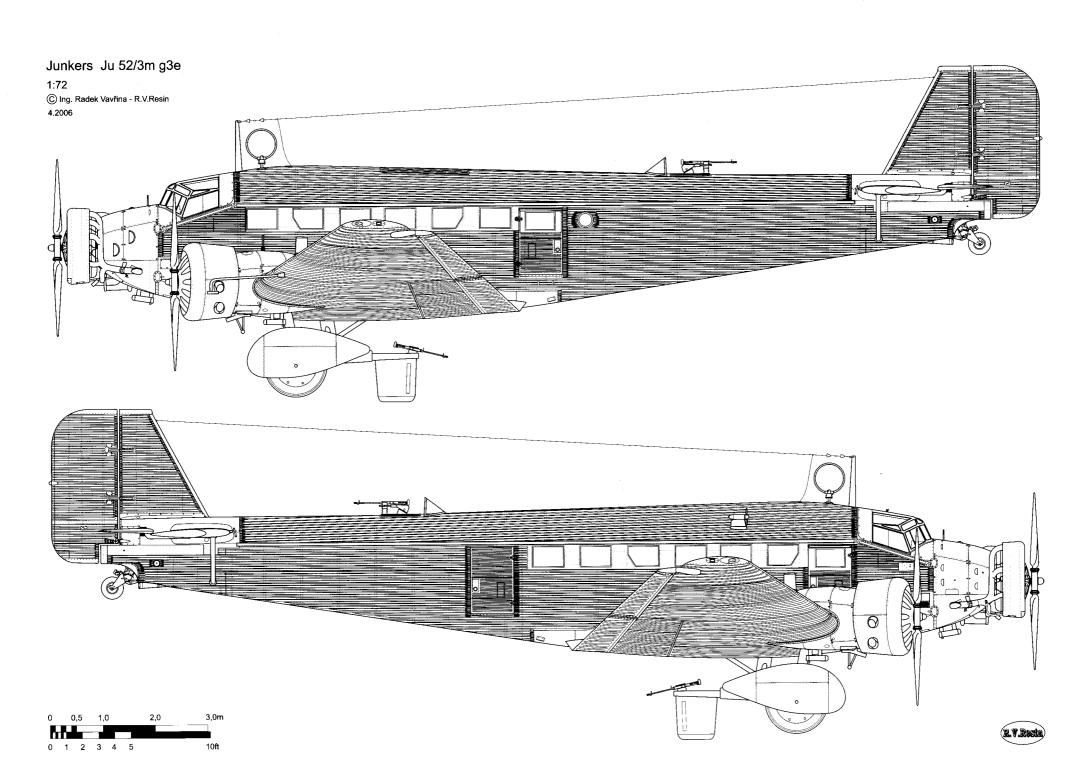


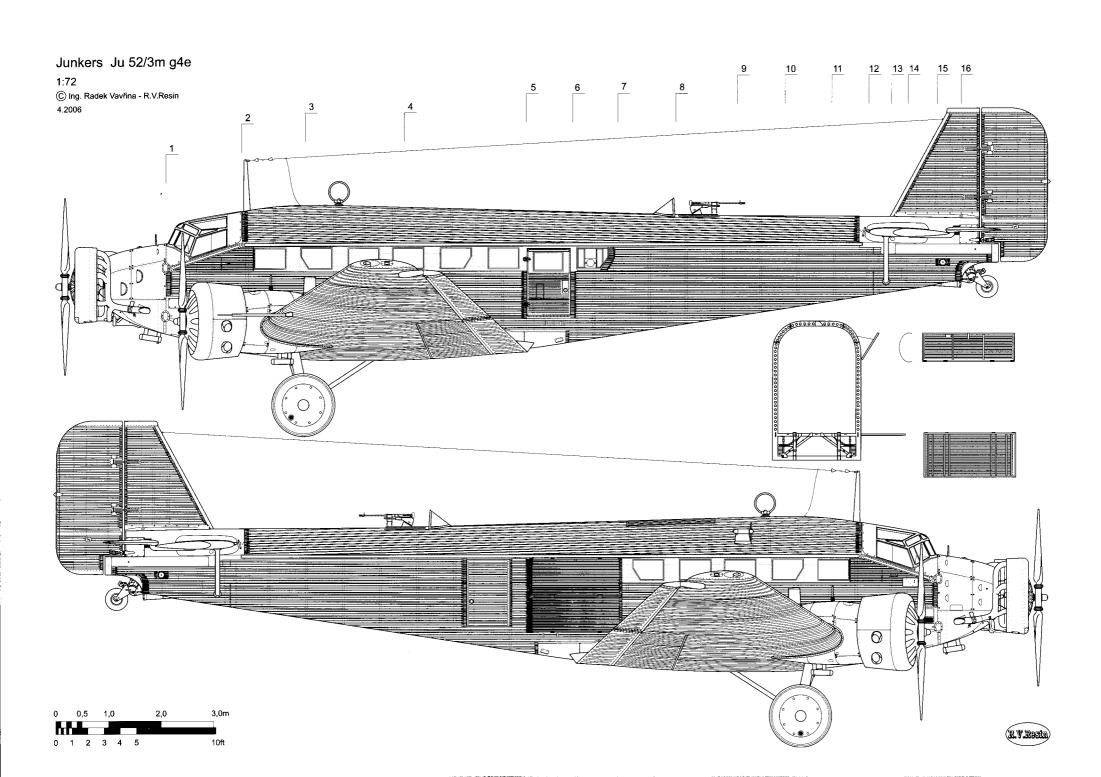
Front bulkhead facing forward.

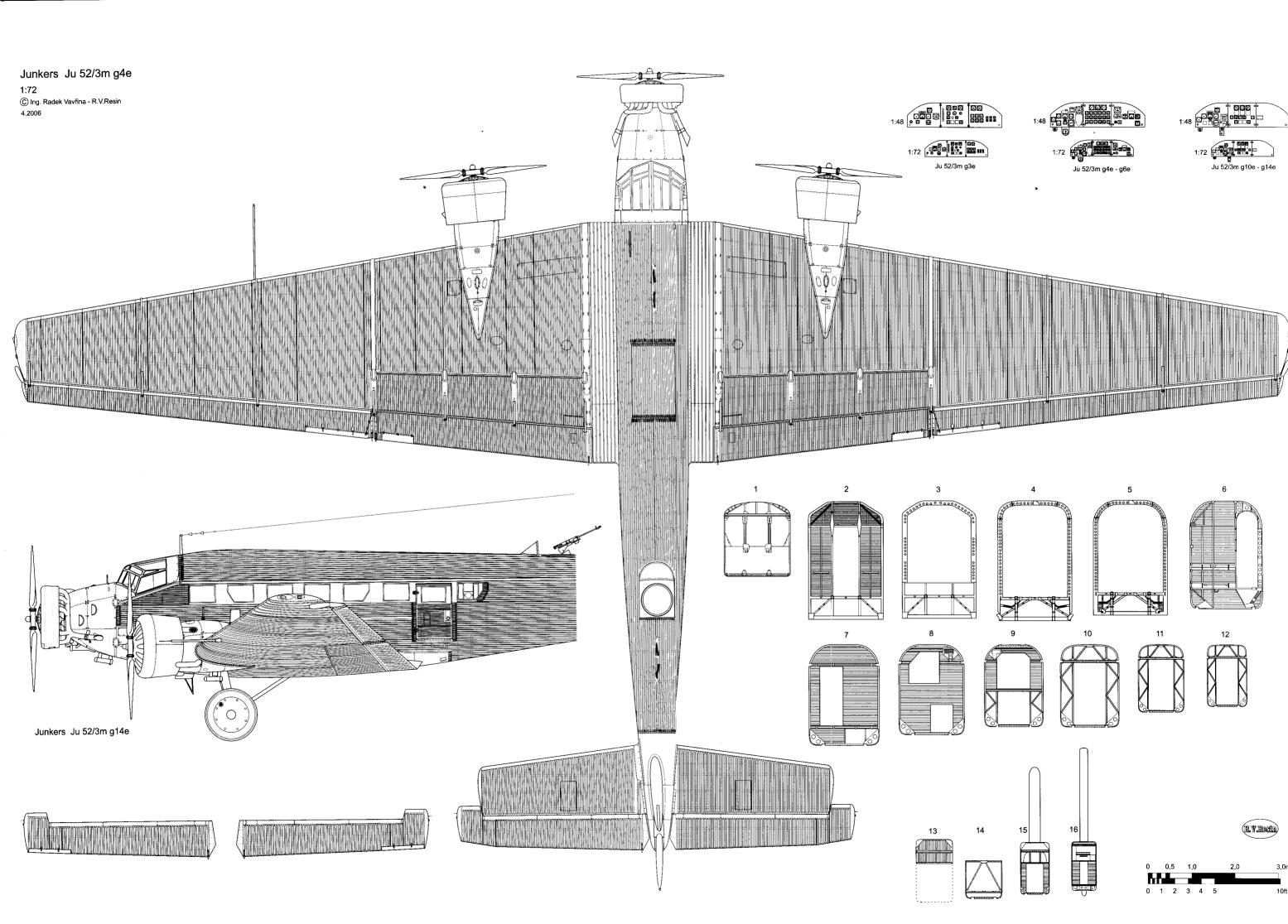


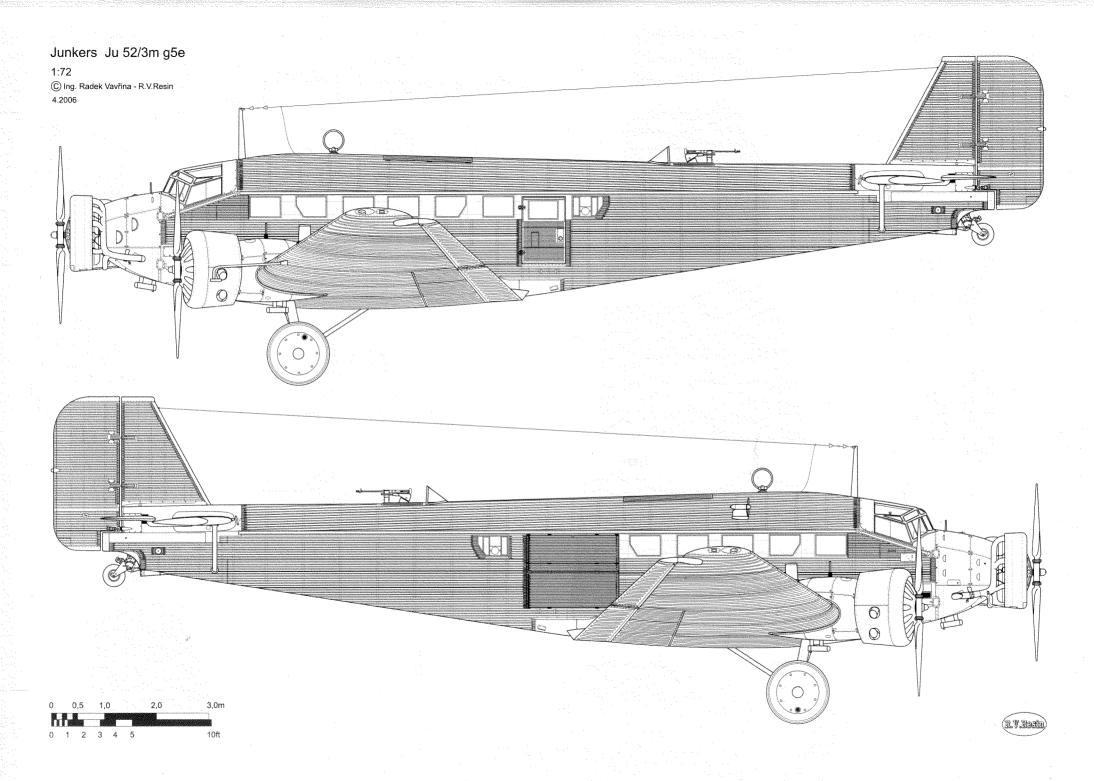


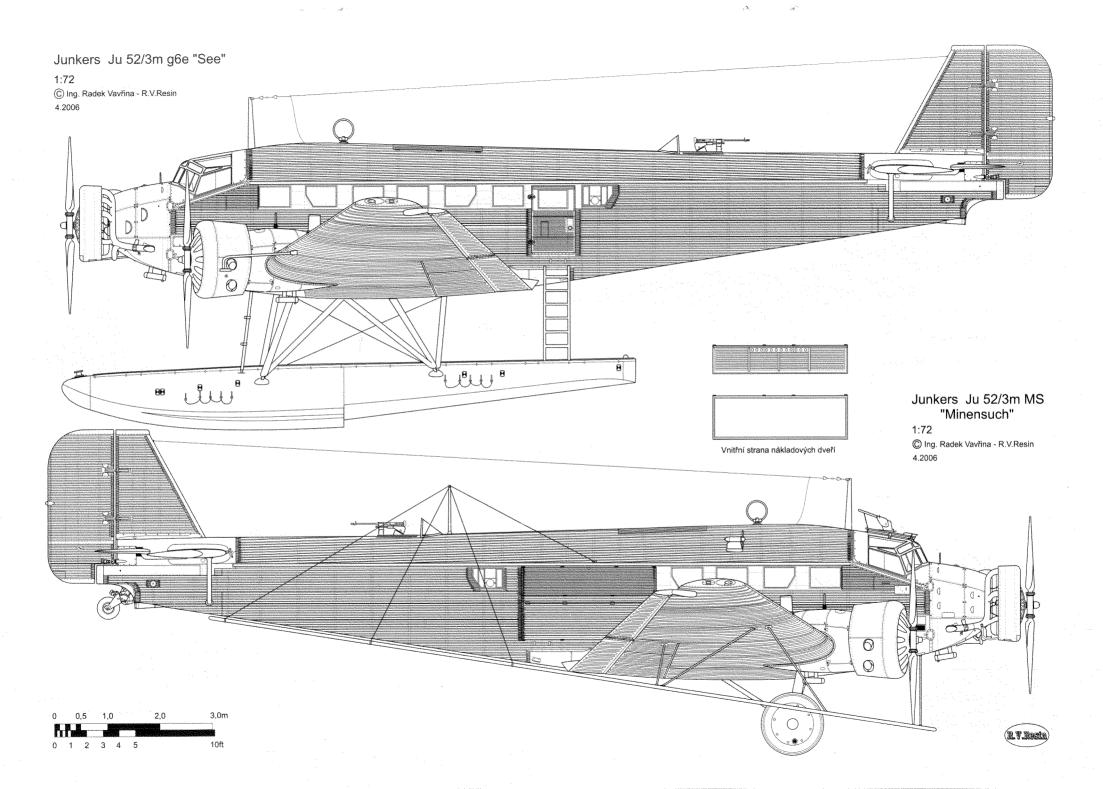


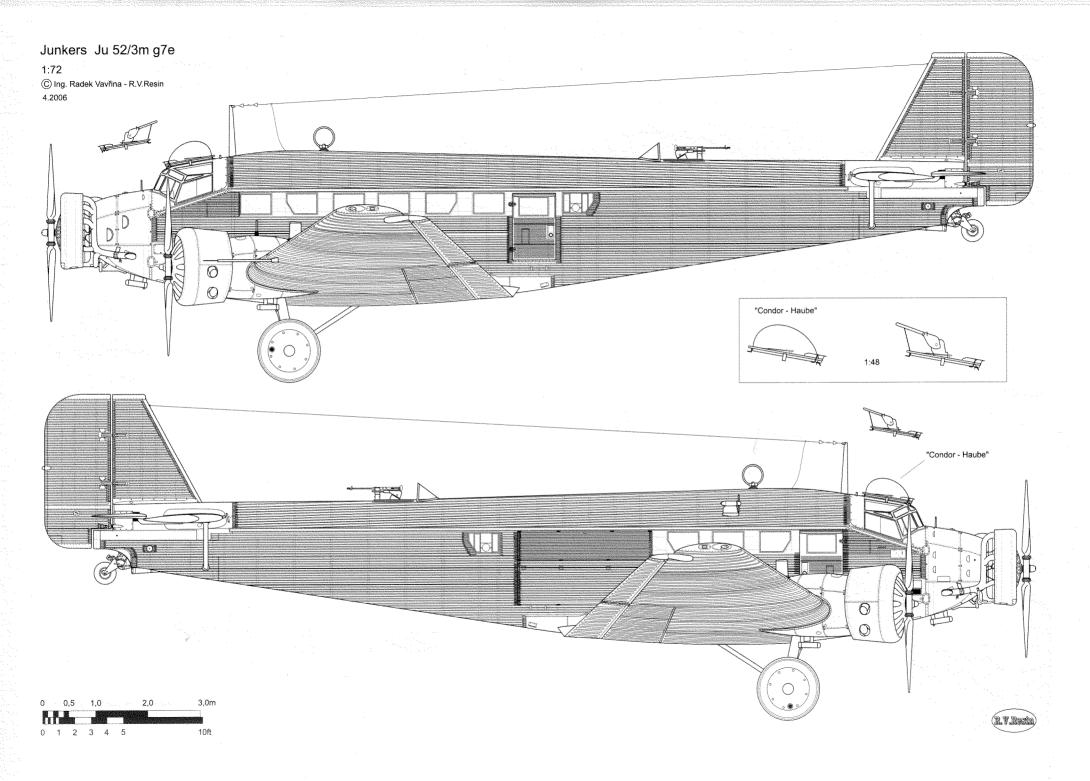


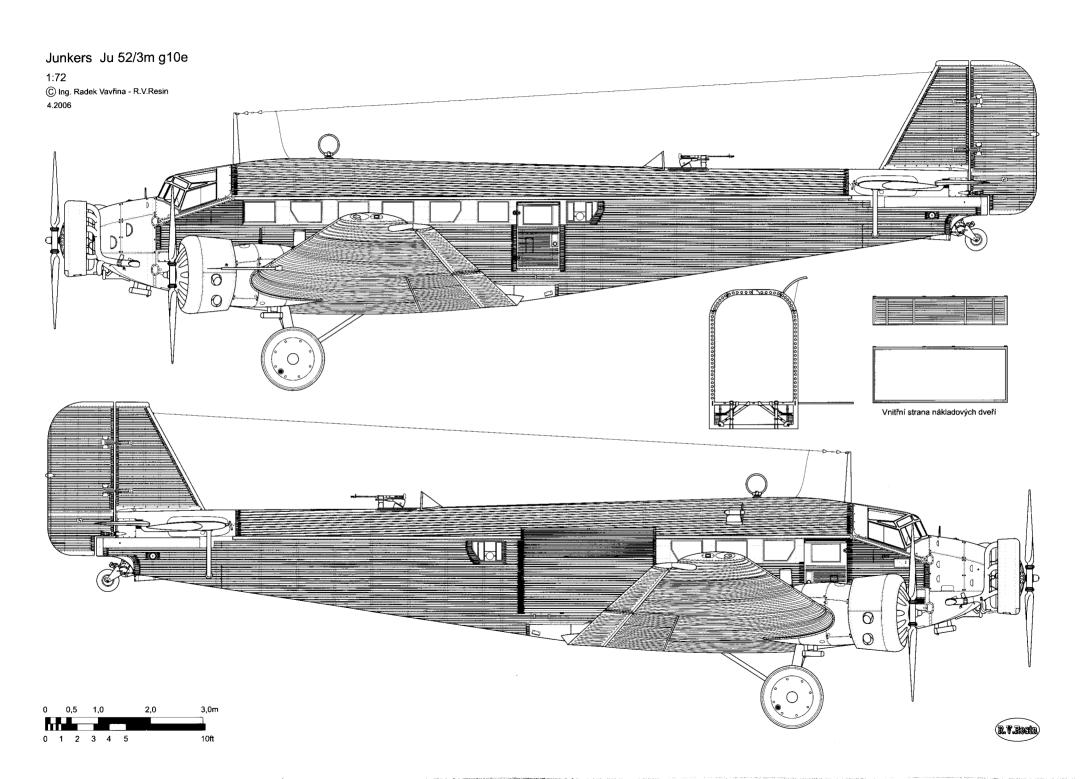


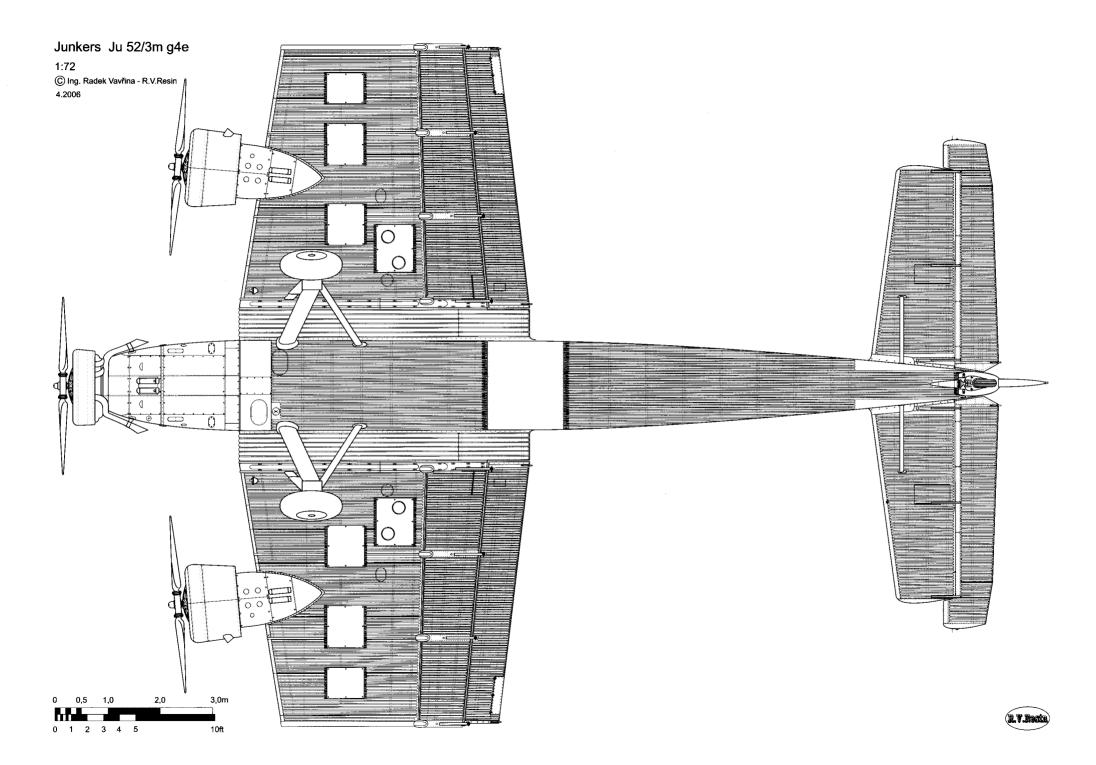


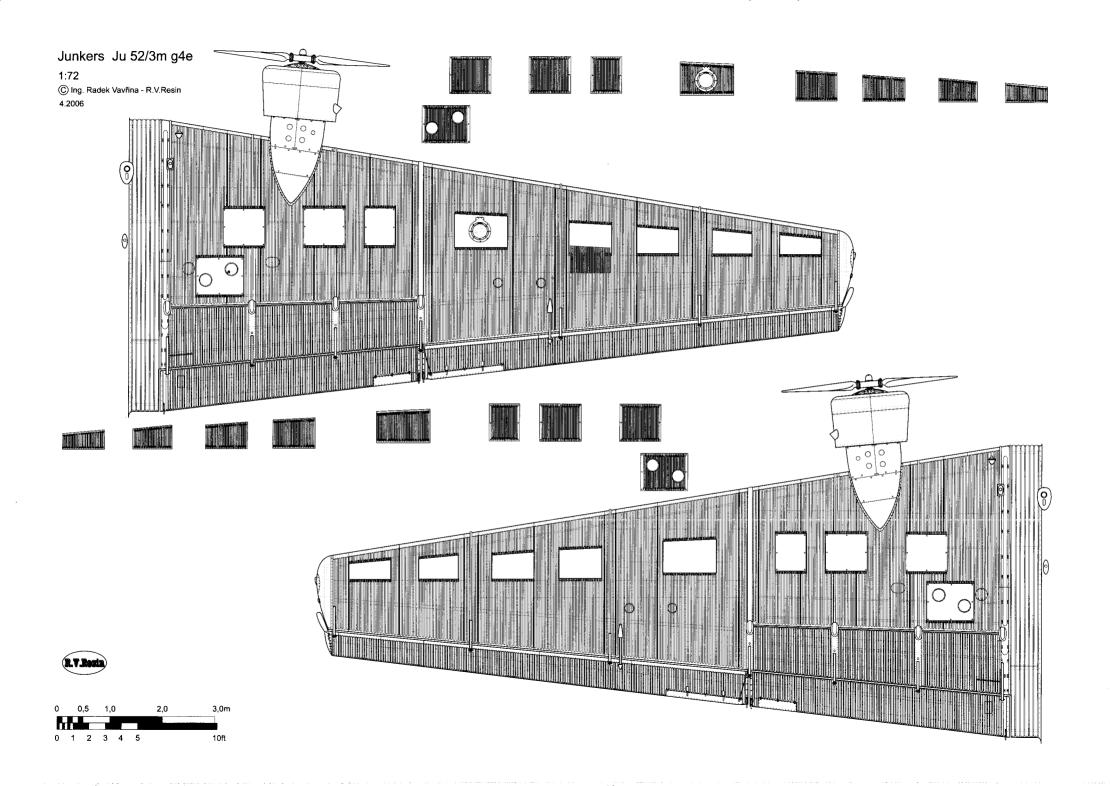


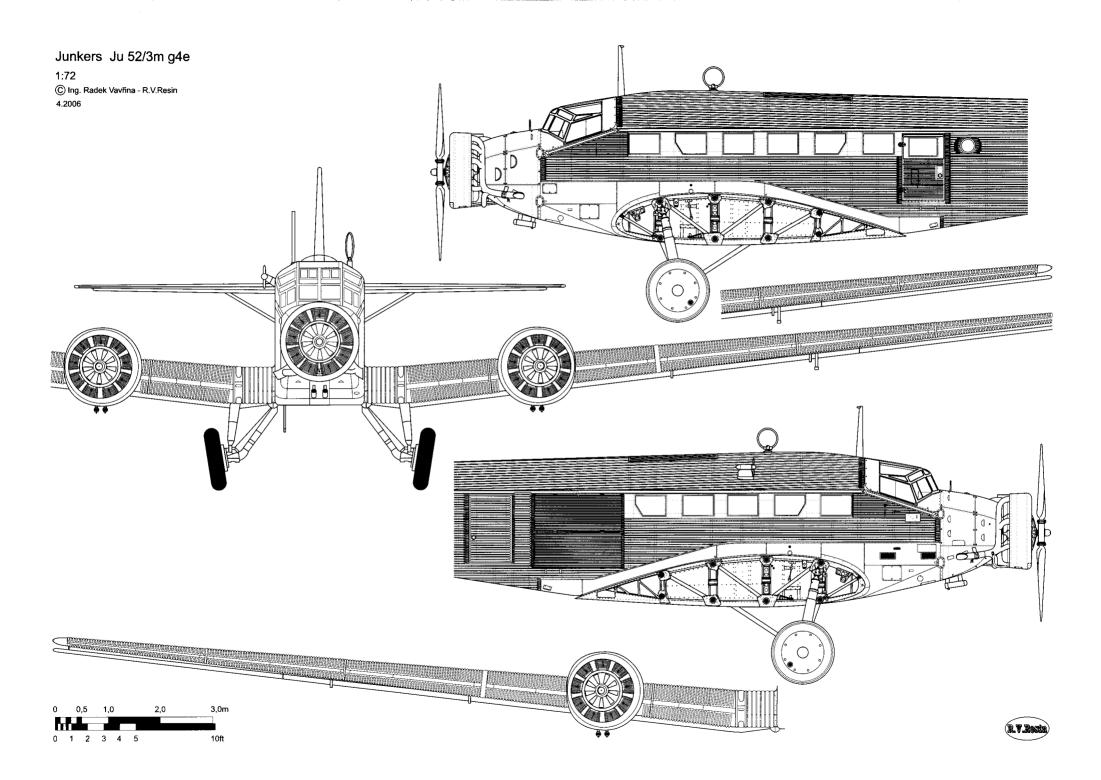










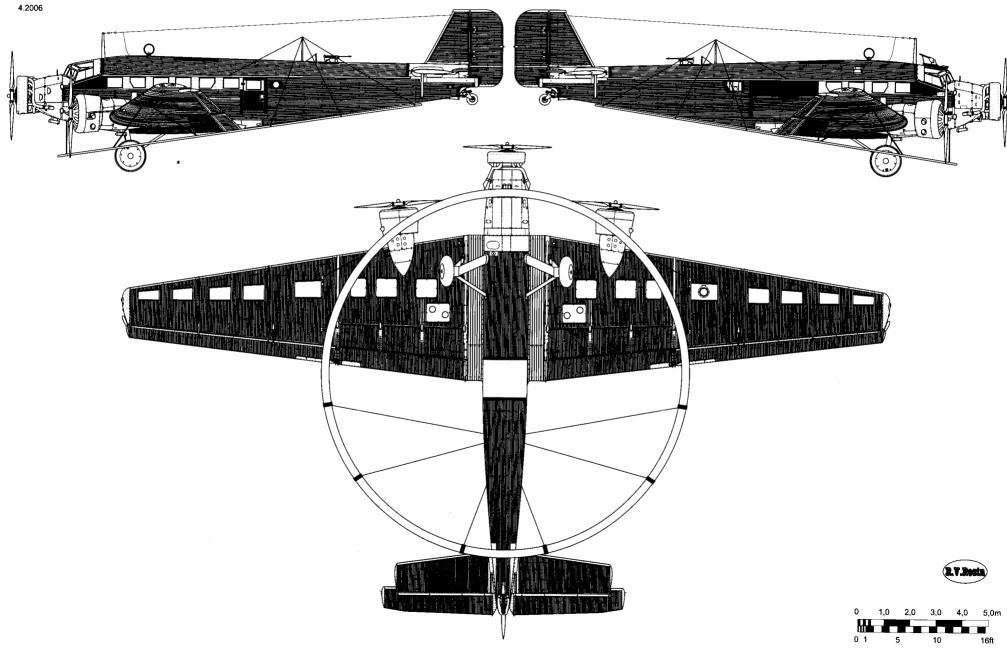


#### Junkers Ju 52/3m MS "Minensuch"

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O ing. Radek Vavřina - R.V.Resin





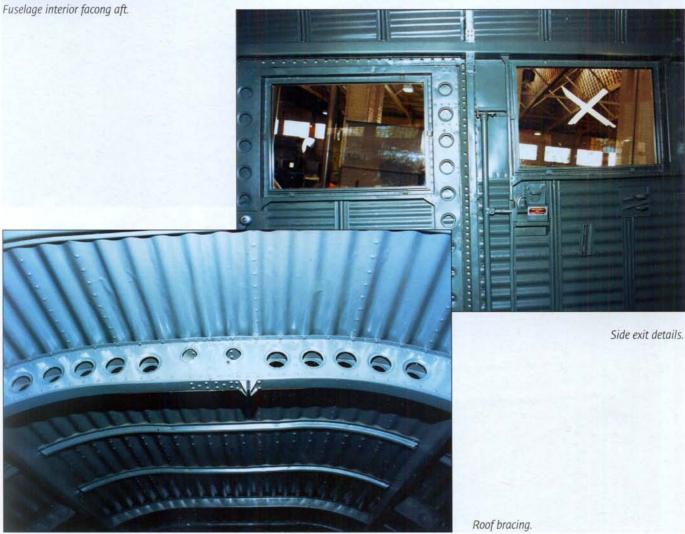




Fuselage interior facing forward clearly showing the corrugated outer skin and internal bracing.











Further details of the roof structure.









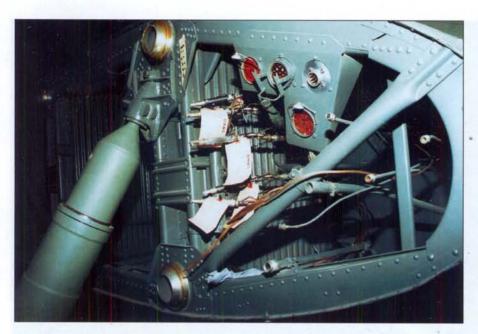
Wing rooth showing undercarriage attachment.



Close-up of wing rooth with undercarriage attachment and inner walls.

Rear fuselage facing aft.



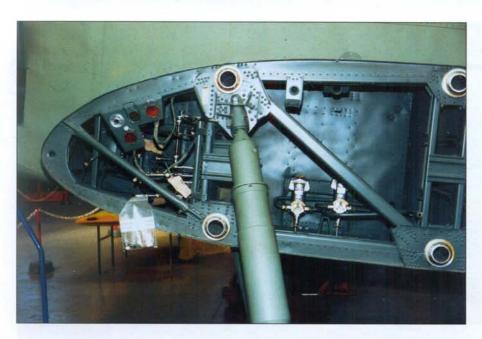


Wing root internal structure.

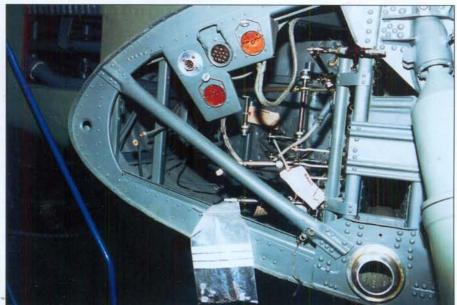








Port wing root with internal details and undercarriage attachment.





Inner face of port undercarriage.



Inner face of starboard undercarriage.





Undersurface of centre section.

Doors in port fuselage.



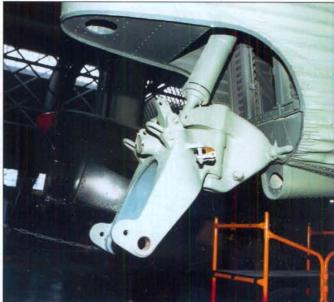


FinIfuselage attachment point.

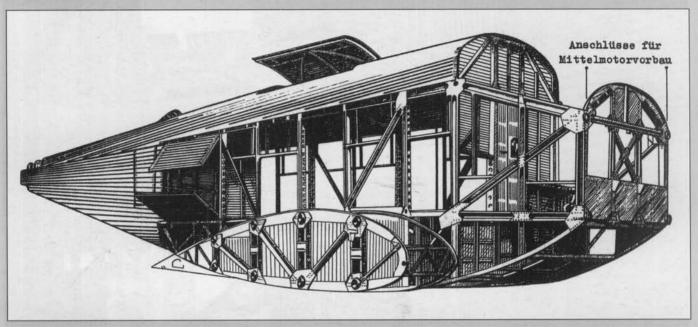


Tail wheel yoke and shock absorber.

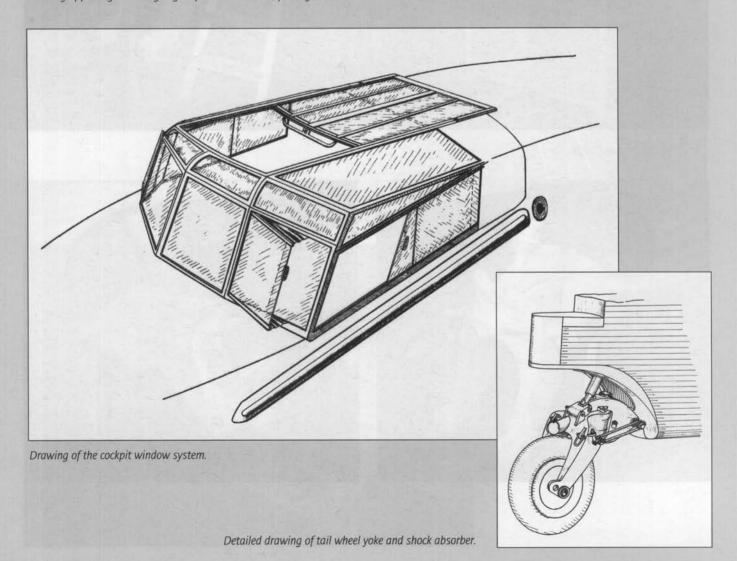




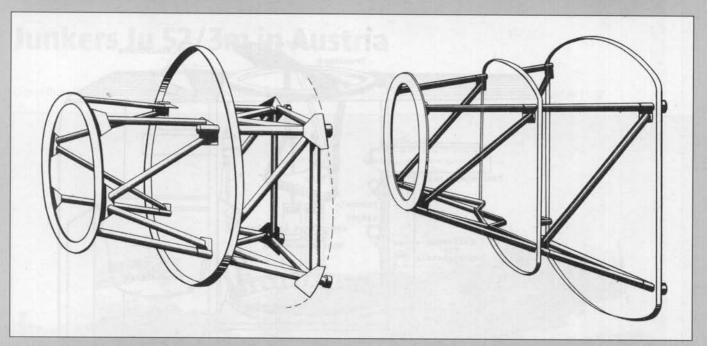
## **Technical Manual**



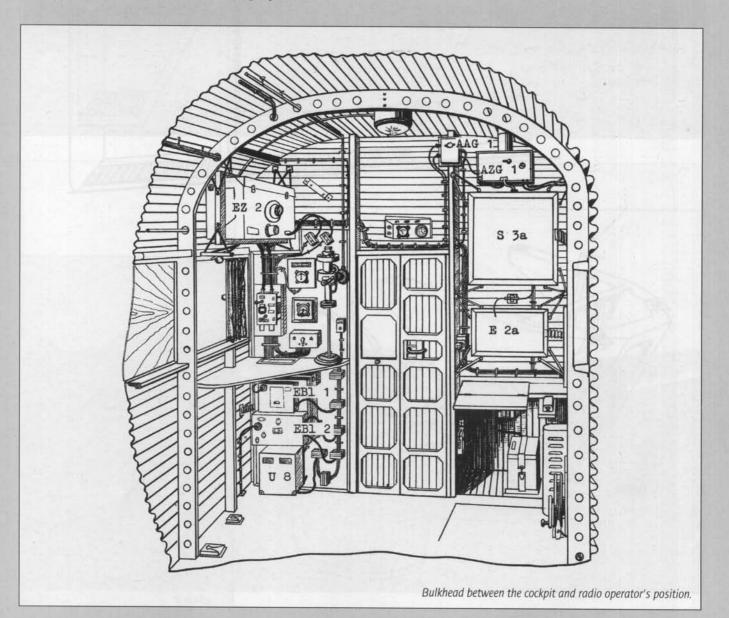
Drawing of fuselage showing engine firewall and basic fuselage structure.

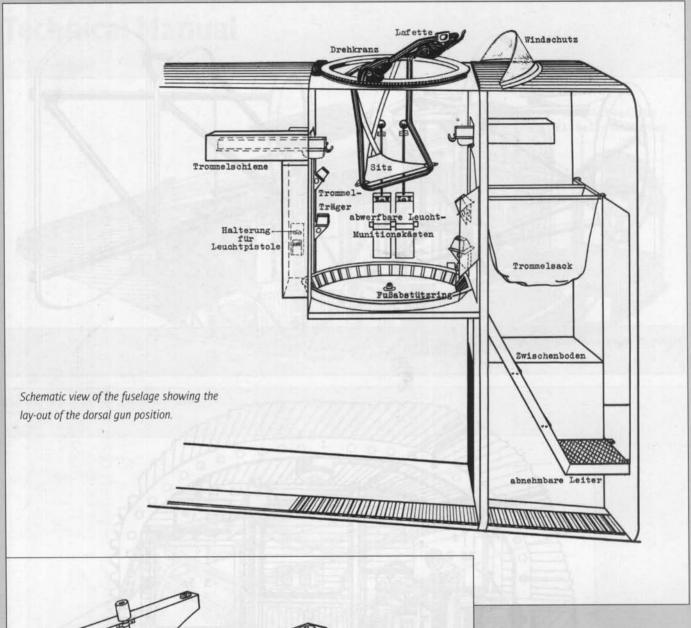


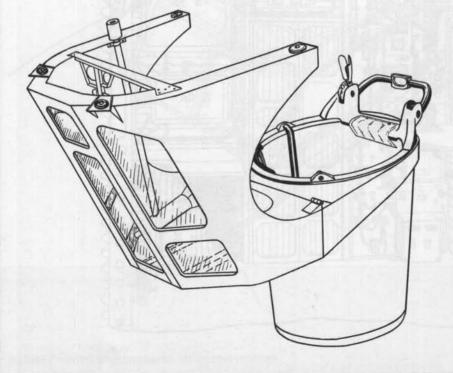




Drawing of engine bearers for both centre and wing engines.







Drawing of the retractable ventral gun position

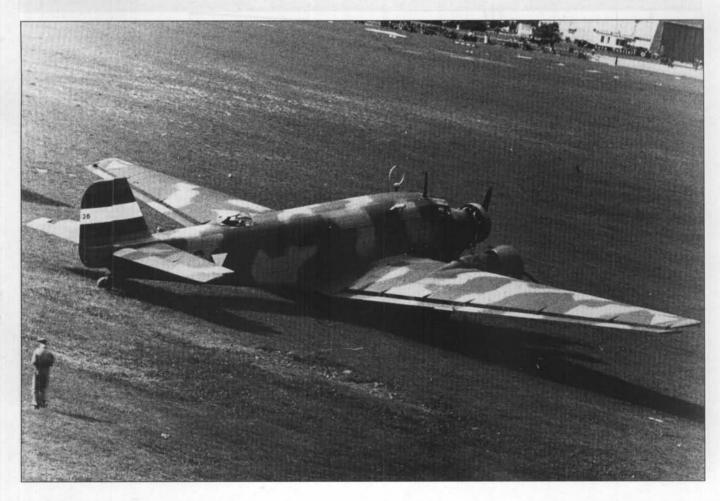
### Junkers Ju 52/3m in Austria

One of three Ju 52 3Im sold to the Ősterreische Luftsteitkrafte (Austrian Air Force) pictured at a pre-war Austrian airfield in 1937.





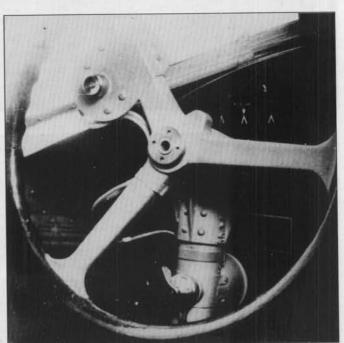




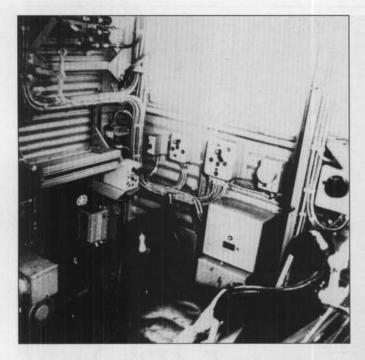




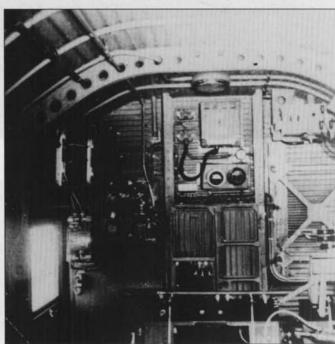
The view from the radio operator's position showing the centre console.



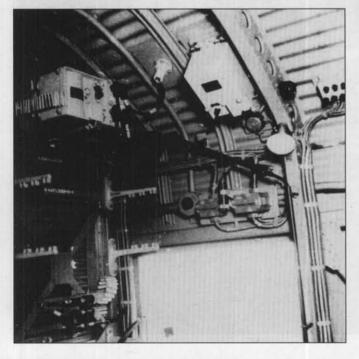
Close-up view of the control column and yoke.



The radio operator's position as seen from the cargo deck.



Shots of the cargo deck's rear bulkhead.



## **BMW 132 Engine (Deutsches Muzeum Munchen)**

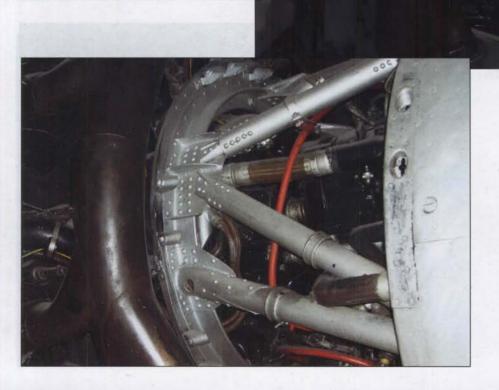


An excellent shot of a partially exposed BMW 132 engine. Compare this with photographs of the Pratt and Whitney units installed in the Lufthansa's Ju 52/3m.





Rear view close up of an engine and mounting.





This picture clearly shows details of the exhaust pipes, cylinders and the distribution cables.



Views of the oil coolers located on the undersurface of the centre section.





## Building the Junkers 52/3m g4e



# Modelling the 1/48th. Revell Junkers Ju 52/3m kit using the CMK, Eduard and Aires after-market sets

Model: Junkers Ju 52/3m g4

Photo: P. Brojo

Manufacturer: Revell 1/48

Documentation: Ju 52 K.O.D. No.06, (HeRo 1990), Ju 52 Bílek modelářům No.3, Ju 52 Ersatzteil-Liste, Flugzeug 2/1993, Ju 52 Flugzeug Profile, Replic – photoscope, Air international (October 1975)

Types of paint used: Aeromaster color

Types of filler used: Cyanoacrylate glue, Tamiya filler Types of glue used: Cyanoacrylate glue, Revell Contacta

Many years ago I found under the Christmas tree, the Revell release of the Junkers 52/3m g4e. Numbered 04519 in the Revell catalogue, the kit contains parts to make various types of this well-known transport including the ventral gun turret on the early bombers versions as well as the spatted undercarriage whilst another release, this time from Pro-Modeller (now deleted) offered even further parts such as the "Condor-Haube" turret above the cockpit canopy and a decal sheet by Scalemaster.

Being guided with the motto "Size matters not", I started exploring the contents of the kit, which contained four large separate sprues in a large protective bag together with a separate bag containing the clear parts. Each of the major sprues had legs moulded to each corner to avoid damaging the sprues beneath and similar to the method currently used by Eduard in their WW. I range of aeroplane models. The surface of the main components, such as the wings and more especially the fuselage, clearly show the corrugated sheeting of different widths for different surfaces, including raised rivetst. My kit had a problem which may not be present in other boxings in that the top edges of the windows on the right-hand fuselage (part 2) were malformed for some length. The only may to correct this was to apply cyanocrylate glue to build up the area and then to wipe off any excess before it fully cured as sanding would have removed the surface detailing.

Fortunately, while I was building the kit, the PUR accessory kit manufactured by AIRES (cockpit cat. 4078) came onto the market, as well as kits produced by CMK (accessory set cat. 4043, engine kit set. 4044 and exterior set cat. 4061) and etched components by Eduard (cat. 48286). In addition to these, Eduard also produces a cockpit masking set (EX070) as well as a set of templates for the national markings (XF574). I decided to combine all these accessory kits to achieve the maximum effect with the completed model.

As a result, I decided to undertake the following modifications to my model:

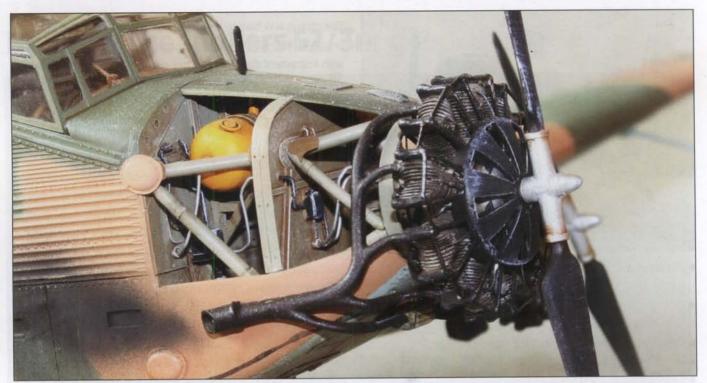


- Remove the kit's rudder, elevators and trailing-edge flaps and glue theme back in at a more realistic angle
- Open the port wing and engine nacelle to display the oil tanks and fuel cell (CMK)
- Open the centre engine back to the firewall (CMK)
- Open both cargo and entrance doors (CMK)
- Detail the cockpit and cargo area

As I have already mentioned a lot of corrections had to be done to the fuselage. To reveal details of the main engine, it was necessary to cut off the front section of the fuselage at the firewall (see CMK assembly manual). Initially the top decking together with the upper, side and rear entrance doors were removed but I decide to close as they exposed the fuselage bulkhead which had prominent ejector marks on them and trying to remove them would have destroyed the surface detailing. Nearly all of the doors came from the CMK accessory kits.

The cockpit was built by combining components of AIRES and CMK accessory kits. AIRES has, unquestionably, the best cockpit interior with instrument dials for the flight panel. The cockpit sides (which AIRES does not include) and the pilots' seats were supplied by CMK while the seat harnesses came from the Eduard etched brass set although the pre-coloured set were not available at the time when I started the model. The etched instrument panel was chosen from AIRES (one of two alternatives) as the relief of its instrument dials appealed to me the most. There are three different variants of instrument panels to choose from, Eduard and two from CMK, to satisfy all tastes depending on history and references. Metallic rods, used to represent the control yokes, came from CMK, which suggests that a rather different instrument panel was fitted to the later Ju-52/3m g14e versions. The rest of the cockpit was constructed from the components supplied by the AIRES model accessory kit such as the cylindrical compartment boxes situated above the pilots' seats and curtains. Even though the acetate cabin cover produced by CMK is thinner than the original, it was less transparent and I only used the removable section which served as a cockpit emergency exit on the real aircraft. However, I did use the Eduard Express Mask for the application of the camouflage scheme and Eduard truly deserves recognition for the masks applied to the inner surface of the fuselage windows because the windows are fitted in a row and it is necessary to spray over the adjoining areas with the interior paint. I removed the rows of seats designated for paratroopers because their construction required a lot of room and I was really reluctant to make so many seat belts. My 'Auntie Ju' has proven to be a challenging endeavor, indeed. The fuselage was as easy to assemble as a box of matches, i.e. just put together two sides, bottom and a roof but the









use of instant glue is recommended. Any streaks of glue left on the surfaces can be washed off quickly using a solvent without damaging the surface detail.

The next step was to assemble the wings. Their assembly was not as daunting fortunately. The right wing did not require any adjustments but underneath the port wing three fuel tanks from the CMK set needed to be fitted. Also, an oil tank was set up behind the engine. It needs to be mentioned that mounting the tank in a piece "as a box" would have made it very difficult to paint later. The trailing-edge flaps as supplied in the kit came as one piece and they only had to be separated in the right place.

The engines supplied by the kit were not bad but they were substituted by the die-cast ones from the CMK kit. A problem arose due to the combination of the main engine assembly set with that of the cockpit supplied by AIRES. This led to a misalignment between the cockpit base from AIRES (Part RP3) and the firewall produced by CMK

(Part PUR15). The AIRES part had to be adjusted because CMK didn't have the room to, plus it had to be sanded until it became transparent. The other problem was mounting the tank (PUR10) at the incriminating wall (PUR15) as the indicated connection points at the wall did not correspond with those on the tank even though I tried to fit the tank in its position to determine whether it would interfere with the piping of the engine base. The engines were well designed but the exhaust pipes of the centre engine were of no use. I retained the kit engines for the mainplanes but the two round openings that should have been located between the radial cylinders of the engines leading to the carburetor were missing.

I encountered another significant problem during the assembly of the undercarriage. The undercarriage struts (parts 29 and 30), which were designed to be used without spats, were of various lengths (in radius) and one of the struts had to be replaced with the aid of a colleague of mine. The struts could be interchanged after a minor adjustment. I wanted to choose an interesting camouflage scheme for the model. I stayed with the Mediterranean camouflage scheme of the classical splinter RLM 65/70/71 partially sprayed with a sand paint (RLM79?) from 1. (F)/123. I used Aeromaster acrylic paint for the application of the scheme. The decals were manufactured by Third Group (48-055). Due to the corrugated sheeting of the external surfaces, I used templates to spray the national markings and code letters. It looked very realistic and there was no need to trouble about using decal softeners. The wing Crosses and tail fin swastika templates were taken from the Eduard XF574 kit whereas the codes and the fuselage cross were cut out from fabric by a friend of mine. In the end, the time it

took to spray the symbols and codes was shorter than if I had used decals and softeners to get them where I wanted.

Weathering was applied with oil paint and a dry paintbrush. However, some sections were weathered by using a spray gun. To finish the model, I added the external fittings (i.e. antennas, machinegun, etc.) but not the wind-driven generator as this was absent in the original photograph. Finally I attached all the doors and the model was finished. Finally, I could firmly assert that "Size really matters not".

M. Šourek, IPMS ČR - Liberec, Photo: P. Brojo 🗆







