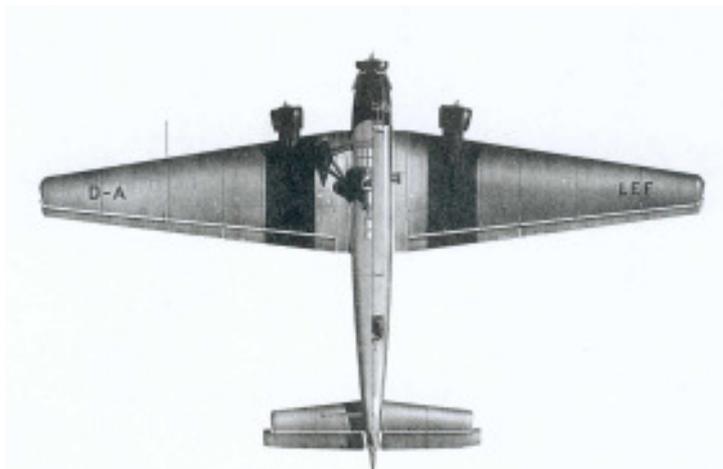


# Ju 52 - Report

The history of the legendary plane



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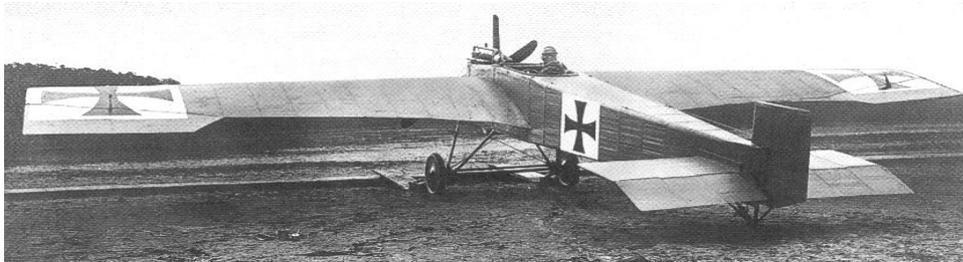
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## 1. The beginning of the story

In 1909 Hugo Junkers turned to a new area of activity: **aerodynamics and powered flights**. Together with Prof. H. Reissner, he tried to establish scientific foundations in aerodynamics. His knowledge in fluid mechanics, material testing and metal construction helped him with his work.

In 1915 the J 1, the so called “Tin Donkey”, took off and reached a climbing speed of 105mph.



The “Tin Donkey”

In 1919 the Junkers F 13 had its first flight. This aircraft became a worldwide success and for ten years the ideal model for international aircraft construction.



*F 13, the first all-metal commercial airplane with self-supporting wings*

In 1925/1926 the large capacity commercial airplanes G 23 (precursor of the Ju 52) and G 31 were successful all over the world, too. They were fire- and weatherproof, they could withstand high strain, and they were safe and comfortable for the passengers.

In 1926, the W 33 was developed on the basis of the F 13. It was a very safe and reliable multi-purpose aircraft.

On 12 April 1928 a specially converted W 33 with the works number 2504 and the identification D-1167 succeeded to cross the Atlantic Ocean from east to west in a 36-hours non-stop flight.

Another machine of this type flew 14,250 km from Berlin-Tempelhof to Tokyo. This flight was made in several stages with 90 hours of block-time.

*Flying from one record to another*



*THESE WERE THE ANCESTORS OF THE LEGENDARY AIRPLANE*

## 2. The history of our “Auntie Ju”

Just at the beginning of the Norwegian campaign in April 1940, the German military forces occupied the Norwegian harbor Narvik that was necessary for the shipment of Swedish ore. But the supply ships were intercepted and sank by the Allies on the seaway.

There was only one opportunity: to bring supplies by air. However, the German Air Force had no freight planes that could make a non-stop return flight from Oslo to Narvik. A frozen lake surrounded by mountains, 9 miles from Narvik, provided a place, though not very safe, landing without return flight. That lake was chosen for the adventurous mission. On 11 April, the commander of brigade group 102 was given an order to bring some ammunition and an operating group to Narvik. Brigade 102 had been formed out of training staff from aviation schools just several days before. They were ordered to fly some pieces of mountain artillery, munitions and gun crew to Narvik with 13 Ju 52. The crews of the 13 machines, located in Neumünster, were informed about the destination in the morning of Friday, 13 April.



*Two of the aircraft landed on the frozen lake Hartvikvann in April 1940.*

During the flight from Neumünster to Oslo, one of the machines had to return because of engine troubles. One further machine, equipped with a radio set, joined the group in Oslo. They arrived at about 8p.m. after a 5h flight from Oslo. The first two machines, one of them with the commander of the squadron on board, stood on their noses in the deep snow.

The others could make a “normal” landing with a landing run of 20 meters. Only at that moment they noticed that two machines were missing. They had landed 45 miles north-west from Narvik. One of them had broken into the ice - the other one was shot by Norwegian aircraft the next morning and caught fire. The machines landed on the lake Hartvikvann were also attacked and partly damaged. The attack was executed by airplanes of the Norwegian Air Force and the machines from the English aircraft carrier HMS “Furious”

Only one of the planes landed on the lake Hartvikvann could take off for the return flight from a runway that the crews had trampled in the snow and using the fuel collected from the other planes. The crews obtained plain clothes at a Norwegian military camp occupied by German forces. They went the nine miles to the northern end of the fiord Rombakien on foot and were afterwards brought to the ore transportation railway on the southern side of the fiord by ferry. Having crossed Sweden, they reached German territories. About one month later, when the German forces had surrendered the area around the lake Hartvikvann, the Norwegians tried to repair three of the German aircraft. They put empty fuel tanks under the machines to prevent their sinking. However, in the evening of 24 Mai, English “Hurricanes” , being unaware of the Norwegians’ plans, ruined those efforts by an attack.

*ALL THE MACHINES SANK IN THE LAKE DURING THE MELTING OF ICE*

### 3. Salvage of Ju 52



Only in 1983, the public became aware of the airplanes sunken in 1940 during the melting of snow, when some Norwegian enthusiasts salvaged one of the aircraft that had been lying 165 ft deep in the lake Hartvikvann. The machine was in a surprisingly good condition, only the central engine and the undercarriage were missing. The Norwegians took those parts from another wreck to restore the salvaged aircraft. After that success, several countries including the Federal Republic of Germany showed their interest in salvaging other machines.

*Divers prepared the machines for salvage*

In 1986, some idealists from business and the Federal Armed Forces founded the public association “Interessengemeinschaft Ju 52 e.V.”. They took over the task to salvage and restore the planes from the lake Hartvikvann and to make them available to the public at suitable places in order to draw the people’s attention to the great traditions of German aircraft construction before the Second World War. After endless efforts and hours of voluntary work, and with the help of numerous sponsors, the salvage of four aircraft took place in July and August of 1986. The aircraft were lifted from a depth of about 245 ft.

*Landing” – coming back from the deep*



*Ju 52 being cleaned in shallow water*



One of the planes was brought to Wunstorf, an aviation base of the Federal Armed Forces, where you can see it today shining like in 1940. Its restoration took one year, and two more years passed before it got a shelter in a specially constructed hall. These are the names of founding members of the association “Interessengemeinschaft Ju 52”, representing the numerous supporters who took part in salvaging planes from the lake Hartvikvann: Günter Leonhardt, Karl Kössler and Walter Holinka. Thanks to their efforts, we can now see an Auntie Ju in Dessau.

*It is one of the four planes salvaged from the lake in 1986.*

#### 4. The transport to Dessau



*The last one of the four machines salvaged from the lake Hartvikvaan in 1986 seemed to be already waiting for its return.*

*Preparation for loading in snow and ice*



On 16 January 1995, a day of bright sunshine and severe cold, everything was stored at last and ready for the journey to Dessau

*Driving on the snow-covered roads was not easy*



*AT THE END OF THE LONG TRAVEL, THE JU 52 WAS "AT HOME" AGAIN*

## 5. Restoration

*The beginning was difficult, but all the participants were very enthusiastic.*



On 21 and 22 February 1995, three specialists from Deutsche Lufthansa Berlin Stiftung examined the Ju 52 in Dessau for the first time. The service manager Hans-Jürgen Duwe wrote in his report, among other things: "The engines are in a desolate condition. The frameworks of two engines are missing. Some cylinders are broken, the valve tappet is also broken, and so on."

*Hundreds of working hours had to be invested ...*

The main landing gear was missing and the brackets of the main and of the tail wheels were heavily corroded. So were some parts of the fuselage whose tail unit had gone out of shape during the transportation. The whole fuselage structure had been severely damaged by the removal of some parts. The wooden cabin floor was completely destroyed and it was impossible to identify the structure under it. The seats for the parachutists were partially destroyed, too. The cargo compartment door was out of shape, but the hinge-joints still moved.



*... before the plane could finally be given to the museum on 31 Mai 1999.*



"The control panels on the right and on the left were still there but the control wheel was not there. All the instruments, engine operations, battery, trim wheel, rudder gears and other parts were missing."

The wings were also in a desolate condition. The leading edges were dented, the top surfaces showed numerous deformations, all fuel tanks were dented, the fuel valves were corroded, the edging strips out of shape and torn. The receptors for the pitch elevator on the left side were torn out and the planking was therefore severely damaged. The empennage, the pitch elevator and the rudders were damaged, too. The landing flaps and the aileron were not accessible.

Heinz-Jürgen Duwe summarized:

*"HIGHER INVESTMENTS AND MANY WORKING HOURS ARE NECESSARY TO PREPARE THIS AIRCRAFT FOR THE EXHIBITION."*

## 6. About the history of Ju 52

The Ju 52 is one of the most famous and popular airplanes in the history of aviation. In the 1930s, it was a symbol for the reliability of air transport and easy aeronautical operation which brought it the nickname "Auntie Ju".

The development of Ju 52 was based on a number of previous models and goes back to the time of the First World War. In 1915, Hugo Junkers constructed the first all-metal experimental aircraft J 1 - the "Tin Donkey". Already in 1917, while constructing the J 7, he exchanged the iron sheets for Duralumin, which was much lighter and became more stable when given a corrugated shape. Thus, the main principles for Junkers' further aircraft construction were established.

After WW I, Junkers devoted himself to the construction of commercial aircraft. The first all-metal monoplane in the world, F13, whose presentation took place in 1919, was far ahead of its time. It proved its aerodynamic advantages and was a commercial success. It was used on almost all continents and established the good reputation of Junkers' factories in Dessau. F 13 was followed by construction of the really successful aircraft Ju 52. Engineer Ernst Zindel was responsible for the development of that aircraft. Initially, a little number of that commercial aircraft was produced as a one-engine version, but isolation of two more engines on the wings was possible. To the characteristic features of Ju 52 belong the high-lift flaps along the trailing edge of the wheels that enable a better curving of the wings and, consequently, an extremely low landing speed. The wings of Ju 52 could be seen as precursors of the wings of modern aircraft.

In 1932 a three-engined version of the Ju 52/3m replaced the Ju 52/1m and very soon it became legendary. 231 machines of the Ju 52 made up the core (85%) of the German Air Forces in 1939.

Ju 52 also played an important part in inquiring long-distance routs. In 1934 a long-distance flight Berlin-Shanghai took place, and even more flights to China and Afghanistan in 1936-1937. The planes flew over the 4,000-5,000 m high Pamire Mountains. The plains Ju 52 were used in air companies of 25 countries on all continents.

All in all, almost 5,000 machines were built. Most of them, however, were used in the German Armed Forces for the transportation of military troops and injured soldiers as well as for the detachment of parachutists during the Second World War.

After the war, further 170 machines were built in Spain under the designation CASA 352. The production of the Ju 52 was also started in France at the instigation of the Vichy government during the war. After the war, the production lines were used again and further 415 machines were built under the designation A.A.C.1 "Tucan". It is hardly known that there was a production line in Hungary during the war, where 26 machines were built.

Today, only six machines are air-worthy in europe: D-AQUI at Lufthansa, four machines of JU-AIR in Switzerland and one frenchmaschine.

*THERE ARE SOME MORE MACHINES IN VERY GOOD CONDITION IN VARIOUS MUSEUMS.*

## 7. Technical data of our "Aunt Ju"



<b>Powerplant</b>	Junkers Aircraft Factory in Dessau ( <i>Junkers Flugzeugwerke Dessau</i> ), Bernburg Factory ( <i>Werk Bernburg</i> )
<b>Serial No</b>	6134
<b>Fitting</b>	g4e
<b>Intended use</b>	Transport aircraft
<b>Engines</b>	3
<b>Type</b>	BMW 132-A 3
<b>Power rating</b>	660 HP
<b>Propeller type:</b>	Junkers adjustable propellers made of two metal sheets Diameter: 9,5 ft
<b>Fuel capacity:</b>	15,4 barrel
<b>Range:</b>	940 miles
<b>Length:</b>	62 ft
<b>Hight</b>	20 ft
<b>Wing span</b>	98 ft
<b>Wing area:</b>	1,190 sq ft
<b>Aspect ratio</b>	25 ft
<b>Maximum speed</b>	max. 165 mph near the ground max. 175 mph at an altitude of 3,000 ft
<b>Cruising speed</b>	125 mph at an altitude of 3,000 ft
<b>Landing speed</b>	70 mph
<b>Climb rate</b>	10 ft/sec
<b>Climb time</b>	ca. 17 min.
<b>Crew</b>	3 (pilot, copilot, radio operator), max. 19 tip-up seats

**Owner:** *TECHNIKMUSEUM „HUGO JUNKERS“ DESSAU*

## 8. Ju 52 in museums

### **Luftfahrt-Museum Laatzen-Hannover e.V., Hannover Laatzen**

One Ju 52/3m in colors of *Luftwaffe* (German Air Forces)

### **Museum für Verkehr und Technik, Berlin**

One Ju 52/3m, identification: D-AZAW (D-2201)

### **Flugausstellung Leo Junior, Hermeskeil**

One CASA 352L, identification: D-CIAD

### **Auto + Technik Museum, Sinsheim**

One Ju 52/3m

Two CASA 352; years of construction: 1945 and 1946

### **Technik – Museum Speyer**

One Ju 52/3m

### **Deutsches Museum, München**

One Amiot AAC 1 Tucan

### **Musée de l’Air, Paris**

One Amiot AAC 1 Tucan

### **Imperial War Museum, Duxford**

One Amiot AAC 1 Tucan

### **The Aerospace Museum, Cosford**

One CASA 352, identification: G-AFAP

### **Museo de Aeronautica y Asronautica, Madrid**

One CASA 352

### **Museo Do Air, Alterca do Ribatejo**

Two Amiot AAC 1 Tucan

Four Ju 52/3m

### **Board of Civil Aviation. Stockholm**

Cockpit Ju 52, identification: SE-ADR

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#### SOURCES:

TECHNIKMUSEUM „HUGO JUNKERS“ DESSAU

H. DUDDECK (SHORT EDITION)

INTERESSENGEMEINSCHAFT JU 52 E.V. („COMMUNITY OF INTERESTS JU 52“)  
HANNOVER

PAUL SIMSA, JUNKERS JU 52GÜNTER SCHMITT, DAS JUNKERS  
FLUGZEUGTYPENBUCH (TYPES OF JUNKERS AIRCRAFTS)