

The World's Heaviest Fixed Wing!

by Johan de Villiers

The majority of us lesser mortals consider the Airbus 380 or the Galaxy C5 as the world's biggest fixed wing aircraft. Some pundits would even view the Boeing 747 Large Cargo Freighter or the Hughes H-4 Hercules (The "Spruce Goose") as larger, but this would also be incorrect.

Designed by the eccentric billionaire inventor, Howard Huges, the Spruce Goose was engineered to carry 750 soldiers and to this day, retains the record for the greatest overall height and largest wingspan of any fixed wing plane. Unfortunately, this multi-million dollar disaster only flew once at a height of 70ft and over a distance of a staggering 1 mile!

Thus, the accolade for the world's heaviest plane belongs firmly to the Russian Antonov An-225. (For those purists out there, the H-4 was 20% shorter than the An-225 and in addition to that weighed less)

Known in Russia as the Mriya (Ukrainian for "Dream") and with the NATO reporting name "Cossack" the Antonov An-225 ultra heavy cargo plane

was originally designed for the Russian Space Program to airlift the Buran Space Shuttle and the Energia Rocket Boosters, very similar to the USA's Shuttle Carrier Aircraft (Boeing 747 LCF). Originally, a modified M-4 Molot bomber would have been used with this objective in mind, but did not have the payload lifting capabilities required.

The first recorded flight was in 1988 and during this flight, the An-225 managed to set 106 new world records! Although two were originally ordered, only one ever made it to full production and operational flight.

Towards the close of the Cold War, Russia was keen to commercialize some of its military assets to generate revenue and as such, Antonov Airlines was set up by the Antonov Design Bureau in the late 1980's. This heavy airlift shipping corporation was operating from London's Luton Airport in partnership with Air Foyle Heavy lift, but based in Kiev, Ukraine.

The An-225 has a wingspan of 291 ft, landing gear

Top: Front view of an AN-225.

Middle: View of the massive Ivchenko Turbo fans.

Right: Landing gear featuring 32 wheels.



Above: Interior cockpit view of flight deck.

consisting of 32 wheels and weighs in excess of 600 tons with a reinforced cargo floor. Six Ivchenko Progress D18T turbofan engines are fitted as standard, which are two engines more than the An-124 on which the plane is originally based. Unlike the An-124, the rear cargo door was removed to save weight and the fuselage and wingspan stretched considerably.

The reason for the twin tail design with oversized horizontal stabilizer on the An-225 was to correct the disrupted aerodynamic airflow when large external loads were transported on top of the plane. Unlike the An-124, the An-225 was never intended for military short field operations, otherwise known as tactical airlifting.

The An-225 can carry ultra-heavy and oversized freight internally up to 250 000 kg or more than 200 000 kg on top of the upper fuselage. The cargo on top of the aircraft may exceed a length in excess of 70 meters!

The second An-225 differed from the original plane with the fitment of a rear cargo door and

a redesigned tail with a single vertical stabilizer. This airframe, together with the original An-225 was put in storage in 1994 after the collapse of the USSR. The original plane's six engines were stripped and used on older An-124 planes at the time.

In 2000, the Antonov Design Bureau (ADB) tendered their An-124-100M for the British Royal Air Force's Short Term Strategic Airlift tender, but lost out to the Boeing C17 which had greater maneuverability, being a smaller plane. This decision by the British MoD was taken in spite of the An-124 being more economical to operate with a greater payload capacity.

As a response, ADB decided to enter the super heavy airlift market and the original An-225 was re-engined with upgraded avionics at a cost of USD 20 million and placed back into service by Antonov Airlines in 2001 after receiving its type certification from the Interstate Aviation Committee Aviation Register (IAC AR). This plane is now officially referred to as the An-225-100.

This brute managed to carry a record breaking load of 279

tons in September 2001 at an altitude of 6600 ft at a speed of 763 km/h! This machine has since been entered into the



Above: Note double vertical stabilizers

Top pic: Buran space shuttle on top of an AN-225.

Guinness Book of Record for transporting the heaviest cargo by fixed wing in history.

The An-225 has built up an enviable reputation for the ability to airlift ultra heavy cargo as diverse as train locomotives and 150-ton generators, not to mention the value that this plane provides to international relief organizations worldwide for the ability to move huge amounts of emergency supplies during disaster relief operations.

By 2006, a decision was made to complete assembly of the second An-225 in Russia. Unfortunately, by 2009 the work on this aircraft was abandoned owing to lack of funding.

Airbus recently announced that a stretched & cargo version of the A-380 will be produced, which would exceed the maximum take-off weight of the An-225. Apparently, this plane will be able to accommodate 900 pax in economy class, which would provide airlines with a decreased fuel per passenger cost. Only time will tell! •