

The Sukhoi Su-57: Russia's Troubled Top Gun Maverick Villain
Henry Kelsall - HotCars



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The Cold War may be over, but there is still a bit of a military arms race going on between the West and Russia. More so now as fifth-generation fighters start to enter the fray.

In the United States, and other air arms, the F-35B Lightning II has entered service and is one of the most advanced fighter aircraft in the world.

It joins the likes of the F-22 Raptor and Eurofighter Typhoon as a highly capable and advanced fighting machine. Russia though is also now utilizing its own fifth-gen fighter.

Some people may recognize this aircraft, as it starred as the main opposing fighter in the recent Top Gun: Maverick film, although it wasn't directly named.

That is the Sukhoi Su-57 Falon. A Russian twin-engine, multi-role fighter with stealth capabilities that has not exactly had the easiest of ride during its development and testing.

The aircraft first flew in January 2010, but did not enter service with the Russian Aerospace Forces until December 2020, over 10 years since that first flight. But Russia will hope that it lasts in service for at least 35 years, and becomes the most potent aircraft in its arsenal.

Origins And Development Of The Su-57

Amazingly, the origins of the Su-57 go back to 1979. This was when the Soviet Union outlined a need for a new, next-generation fighter for the 1990s. The idea was that the new aircraft would eventually replace [the MiG-29](#) and the Su-27.

Mikoyan were initially selected to develop the new Multifunctional Front-line Fighter, or MFI, but that overran by nine years and first flew in the year 2000.

Sukhoi had already begun developing their own technologies for a next-gen fighter, despite not being directly involved in the MFI.

And as such, Sukhoi was thus chosen over Mikoyan in 2002 to produce the new fighter after the Mikoyan MiG 1.44/1.42 project (pictured above) was subsequently canceled.

Development of the then named Tu-50 would soon begin, with existing Sukhoi air-frames used to test subsystems and concepts. The design and shape of the aircraft was formally approved in December 2004, and there was hope that the first three flying Tu-50 prototypes would be ready by 2009.

However, this was already a delay from the first planned flight in 2007 and problems with the engine and technical research hindered the project. The first flight of the Tu-50 finally took place on January 29th 2010.

The Su-57 Was Plagued With Problems During Testing

Sukhoi would go on to built ten flying prototypes for the aircraft. However, the original number was initially supposed to be just six aircraft.

Testing though revealed major issues in the air-frames, with the prototypes not having an adequate fatigue life and early structural cracks would form in the air-frame.

A huge redesign was now needed for the sixth prototype onwards which saw an elongated tail sting and a great wingspan and a reinforced air-frame just some of the changes made to the Tu-50.

The various technical issues for the aircraft meant that plans for the number to be actually delivered to the Russian military greatly reduced as the program went on. An initial order of 60 standard aircraft was then reduced to 52 aircraft.

In 2015, plans were massively cut down thanks to things such as Western sanctions on Russia after its annexation of Crimea. The introduction into service of the jet was continually pushed back too, from 2015, to 2017, 2018 and 2019 before the now Su-57 actually entered service at the end of 2020. The aircraft is now in service, but the Su-57 still isn't having a great time.

The Su-57 Enters Service

As of May 2022, only five Su-57s are in service thanks to the various issues surrounding the project. It is now expected that the Russian Aerospace Forces will have some 76 Su-57s by 2028, thanks to negotiations bringing the price of the aircraft and its equipment down by 20%.

The Su-57 does have a lot of promise. Its two Saturn AL-41F1 after burning turbofans should propel it to a speed of 1,327 mph or Mach 2, and it has a range of 2,200 miles when flying subsonic.

Its low radar cross-section gives it stealth capabilities like the F-22 Raptor, and it does have a highly advanced radar system.

The Uncertain Future Of The Su-57

It isn't quite clear yet how effective the Su-57 will turn out to be. It is now at least in service, although in small numbers. The aircraft has reportedly had some use during phases of the current invasion of Ukraine, although well out of the range of Ukrainian air defenses.

Beyond that, it is now expected that the first full regiment of 24 Su-57s will be fully equipped by 2025, but this is some time after the aircraft's original planned production. Whether the Su-57 will be as capable as the likes of the F-35 is a question that is still seeking an answer.

**** Sources: YouTube, Military Today, FlightGlobal, The Aviation Geek Club*