

# MAN IN THE LOOP

In the fourth of our series, we look at combat aircraft evolution - does the way forward lie in UAVs, manned aircraft - or both?

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## THE FIRST 100 YEARS

### A century of military aviation

**1914** First aerial combat - French Voisin shoots down German Aviatik

**1918** Fokker D.VII flies - arguably best WWI fighter  
HMS Argus commissioned - first aircraft carrier

**1936** Supermarine Spitfire prototype flies

**1940** Battle of Britain  
First radar-equipped fighter enters service - Bristol Beaufighter MkIF

**1941** North American P-51 Mustang flies - arguably best WWII fighter

**1944** Meteor and Me 262 enter service - first jet fighters

**1949** Flight Refuelling tests probe-and-drogue aerial refuelling system

**1950** First jet-to-jet dogfight - Lockheed F-80 shoots down MiG-15 over Korea



**1951** Hawker Hunter flies - most successful UK export fighter

**1953** North American F-100 Super Sabre flies - first supersonic fighter

**1954** Lockheed F-104 Starfighter flies - first Mach 2 fighter

**1956** Dassault Mirage III flies - first of Mirage line  
Mikoyan MiG-21 prototype flies - most prolific jet fighter

**1957** UK cancels most fighter programmes in favour of missiles

**1958** McDonnell Douglas F-4 Phantom II flies

**1959** Canada cancels Avro CF-105 Arrow  
Northrop F-5 Freedom Fighter flies

**1961** Hawker P1127 flies - prototype of Harrier V/STOL fighter



One hundred years after the Wright brothers made the first manned, powered flight, debate rages over whether the latest generation of combat aircraft will be the last to have a human crew. Post-war analysis of the air war over Iraq is likely to add to the debate, as experts assess the success of pre-planned precision strikes.

The manned versus unmanned debate is not new. In 1957, UK defence minister Duncan Sandys cancelled almost every UK combat aircraft programme in favour of missiles. The controversial decision halted development of the Avro 730 supersonic bomber, Fairey Delta 3 long-range missile-armed bomber interceptor, and the Saunders-Roe SR177 mixed-power fighter. The English Electric Lightning survived to become the mainstay of UK air defences for decades to follow.

The UK combat aircraft industry survived, only to receive another near-fatal blow in 1965, with cancellation of the BAC TSR2 strike aircraft and Hawker Siddeley P1154 supersonic vertical/short take-off and landing fighter. The villain in this time was budget cuts. The result, ultimately, was to bring the UK together with Germany and Italy on the Panavia Tornado strike fighter, which paved the way for today's four-nation Eurofighter Typhoon.

In 1957, long-range air-breathing missiles then under development, such as the Northrop B-62 Snark, North American B-64 Navajo and B-77 Hound Dog, looked every bit as promising as the Boeing X-45 and Northrop X-47 unmanned combat air vehicles (UCAV) of today. In the end, they proved irrelevant in combat terms, but paved the way for one of today's most potent unmanned weapons, the Raytheon BGM-109 Tomahawk cruise missile.

### The way forward

The latest round of the manned versus unmanned debate centres on whether autonomous UCAVs are the future, and whether the Lockheed Martin F-35 Joint Strike Fighter (JSF) will be the last manned combat aircraft developed in the USA. Not surprisingly, JSF competition loser Boeing is leading the pro-UCAV charge, as it faces the prospect of exiting the manned fighter business when production of the F-15 and F/A-18 ends within the next decade. Equally unsurprising is Lockheed Martin's advocacy of manned fighters, with its F-16 continuing to sell and the F-35 planned to be in production beyond 2030.

Northrop Grumman has its feet firmly in both camps, as a partner on JSF and a leader in unmanned air vehicles (UAVs). As developer of the B-2 bomber, the company is considered a leading candidate to