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# US Air Force prepares drones to end era of fighter pilots

The Pentagon aims to robotise 15% of US armed forces by 2015

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As part of an expanding programme of battlefield automation, the US Air Force has said it is now training more drone operators than fighter and bomber pilots and signalled the end of the era of the fighter pilot is in sight.

In a controversial shift in military thinking – one encouraged by the now-confirmed death of Pakistani Taliban leader Baitullah Mehsud in a drone-strike on 5 August – the US air force is looking to hugely expand its fleet of unmanned aircraft by 2047.

Just three years ago, the service was able to fly just 12 drones at a time; now it can fly more than 50. At a trade conference outside Washington last week, military contractors presented a future vision in which pilotless drones serve as fighters, bombers and transports, even automatic mini-drones programmed to attack in swarms.

Contractors made presentations for "nano-size" drones the size of moths that can flit into buildings to gather intelligence; drone helicopters; large aircraft that could be used as strategic bombers and new mid-sized drones could act as jet fighters.

This Terminator-like vision in which future generations of fighter aces become cubicle-bound drone operators thousands of miles from conflict is already here: the deployment that began during the Bush administration has accelerated during the first seven months of Obama's term.

Some 5,000 robotic vehicles and drones are now deployed in Iraq and Afghanistan. By 2015, the Pentagon's \$230bn arms procurement programme Future Combat Systems expects to robotise around 15% of America's armed forces. In a recently published study, The Unmanned Aircraft System Flight Plan 2020-2047, air force generals predicted a boom in drone funding to \$55bn by 2020 with the most exotic changes coming in the 2040s.

Last month, US Defense Secretary Robert Gates underscored the change in strategic thinking when he capped production of the F-22 Raptor, the US air force's most advanced interceptor, at just 187 planes, arguing that it was designed to fight 20th century super-power conflicts or "near-peer" engagements – and was not crucial to any future conflicts foreseen at the Pentagon.

In June Army General Stanley McChrystal, the top US commander in Afghanistan, said he couldn't envision a day when he had enough surveillance assets. "The capability provided by the unmanned aircraft is game-changing," offered General Norton Schwartz, the air force chief of staff. "We can have eyes 24/7 on our adversaries."

Some analysts view the Flight Plan study as a virtual death knell for the pilot profession and predict the F-22s' successor, the F-35 Joint Strike Fighter, could be the last piloted fighter program that is funded.

According to Oxford Analytica, the US is likely to account for 77% of global drone research and development and 64% of procurement over the next decade. US firms

currently control more than 50% of the market and could gain a further 10% over the next decade.

As US domestic approval for the "Af-Pak" conflict slips (a new Washington Post poll found less than a quarter of the US public support sending more troops to Afghanistan), the reliance of drones is likely to grow, analysts say.

But with mounting civilian casualties, even as an estimated 100 Taliban militants and perhaps one half of al-Qaida leadership have been killed in drones attacks since September, there is rising Pakistani opposition to US strikes on its soil. Prime Minister Gilani repeated his requests this week for the transfer of drone technology to the Pakistani military. US officials have yet to publicly respond.

The air force study suggests areas of warfare too critical for automation, including dogfighting and nuclear-bombing, could eventually be handled by drones.

For now the numbers are overwhelming – 550 drone operators compared with 3,700 fighter and 900 bomber pilots – but a future in which pilots merely direct planes remotely is unsettling to many in 61-year-old service.

"Many aviators, in particular, believe that a 'man in the loop' should remain an integral part of the nuclear mission because of the psychological perception that there is a higher degree of accountability and moral certainty with a manned bomber," wrote Adam Lowther in Armed Forces Journal in June.

Colonel Eric Mathewson, who directs the air force task force on pilotless aerial systems, has sought to downplay the study's most futuristic predictions. "We do not envision replacing all air force aircraft with UAS (unmanned aircraft systems)," he says.

The CIA runs its Pakistan-focused drone programme from its headquarters in Langley, Virginia, while the air force has designated Creech AFB, 35 miles north of Las Vegas, Nevada, as centre for operations for flights over Iraq and Afghanistan. No after-burners; no G-Force; no opportunity for "Top Gun" flair.

Currently, airborne drones are directed by trained pilots who then return to their assigned aircraft. This year, the service started training career drone operators with no airborne experience – they go to war in cubicles with a computer-game joystick and eight video screens.

"It is safe to say most pilots will always miss getting back in the air," Lieutenant Colonel Daniel Turner, who leads Predator and Reaper training at Creech, told the LA Times. "But we see where the air force is going."

The rapid development of drone aircraft has given smaller defence industry players, including General Atomics, makers of the MQ-1 Predator and the new, heavily armed MQ-9 Reaper that carries 14 Hellfire missiles and guided bombs, the chance to challenge established military contractors.

A British developer, QinetiQ, is currently developing an ultra long duration Zephyr high-altitude drone; another, Insitu, was recently acquired by Boeing after developing the Scan Eagle, a basic aerial platform originally designed for spotting ocean-going tuna.

Last April, BAE Systems announced it has won a contract to lead the development of crawling or flying robots designed to go into areas too dangerous for troops. General Atomics, in San Diego, has announced plans for the MQ-X, a three-in-one surveillance, attack and cargo drone.

Wonder at the sci-fi inspired technology, including the 2.3 gigapixel, Predator-mounted camera Gorgon Stare and Northrop Grumman's high-altitude Global Hawk, is not shared on the ground where it widely viewed as cowardice.

Plans for drones that could be directed autonomously present the military with a dilemma. Autonomous swarms of drones preprogrammed to attack on their own is, at the least, unnerving and legally problematic.

In *Wired for War*, author Pete Singer speculates the machines are harbingers of a new era of "cost-free war". In the Washington Post poll showing a majority of US public view the war in Afghanistan as "not worth fighting", the detached appeal of drone combat is self-evident.

"It's a historic change," says Singer. "Going to war has meant the same thing for 5,000 years. Now going to war means sitting in front of a computer screen for 12 hours. Then you go home and talk to your kids about their homework."

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