

Researchers chase goal of non-hijackable plane

REUTERS, Berlin

Can technology create a non-hijackable plane?

By 2008, European researchers aim to bring that vision closer to reality through an ambitious security programme to combat on-board threats in an industry left reeling this week by a security scare that raised the spectre of September 11.

On Thursday, British police said they had foiled a plot to blow up aircraft mid-flight between Britain and the United States in what Washington said might have been an attempted al Qaeda operation.

Since September 11, the idea that civilian planes can be used as weapons has taken hold globally, spawning increased security measures in airports around the world.

The researchers aim to create a "last barrier to attacks" on planes in flight.

Among the non-hijackable plane's features: computer systems designed to spot suspicious passenger behaviour, and a collision

avoidance system that will correct the plane's trajectory to prevent it from being steered into a building or mountain.

The researchers are also investigating the possibility -- although they say it is probably some 15 years away -- of developing an on-board computer that could guide the plane automatically to the nearest airport, in the event of a hijack.

"You never reach zero level of threat, no risk," said programme coordinator Daniel Gaultier of French technology group SAGEM Defence Securite, a unit of Safran.

"But if you equip planes with on-board electronics, it will make them very, very difficult to hijack."

Smart Plane

The four-year, 35.8 million euro (24.1 million pound) project, called SAFEE or Security of Aircraft in the Future European Environment, was launched in February 2004.

Among those taking part are aircraft maker Airbus, its parents EADS and BAE Systems, as well as Thales and Siemens. The European

Commission is contributing 19.5 million euros.

Omer Laviv of Athena GS3, an Israeli company taking part in the project, said the system might be commercially available around 2010 to 2012.

SAFEE goes beyond the limited on-board improvements made since September 11 -- like reinforced cockpit doors and the deployment of sky marshals.

Proposed enhancements include:

-- A chip-based system to allocate matching tags to passengers and their luggage, ensuring both are on board and removing the need for stewards to count passengers manually.

-- Cameras at check-in desks and at the entrance to the plane, in order to verify with biometric imaging that the person getting on board is the same as the one who checked in.

-- An "electronic nose" to check passengers for traces of explosives at the final ground check before boarding.

-- An Onboard Threat Detection System (OTDS) to process information from video and audio sensors throughout the cabin and detect any erratic passenger behaviour.

-- A Threat Assessment and Response Management System (TARMS) to assemble all information and propose an appropriate response to the pilot via a computer screen located at his side.

-- A Data Protection System to secure all communications, including conversations between the cockpit and ground control.

-- A secure cockpit door with a biometric system that recognises authorised crew by their fingerprints, together with a camera to check they are not opening it under duress.

-- An automatic collision avoidance system to correct the plane's course if it strays from a permitted trajectory.

Terrorist In Control

In a September 11-style hijack scenario, for example, the TARMS system would detect that the plane was on course to plough into buildings and use biometric fingerprint sensors to check whether the pilot or an intruder was at the controls.

"If there is a terrorist in control or the pilot is not aware of this (false) trajectory, the TARMS decides to avoid the obstacle so there is an automatic control of the plane," Gaultier said.

The avoidance system would

also kick in if the pilot, despite verifying his identity, persisted in the false course.

Given its complexity, the SAFEE project raises legal and ethical issues which are themselves a key part of the research.

They include whether people will find it acceptable to be minutely observed by sensors throughout their flight, recording everything from their conversations to their toilet visits.

With help from sources including security agencies and behavioural psychologists, researchers are building a database of potentially suspicious traits for computers to detect.

"It could be someone who's using their mobile phone when they shouldn't be, or trying to light up a cigarette. But it could also be something much more extreme, it could be a potential terrorist," said James Ferryman, a scientist at Britain's Reading University who is working on SAFEE.

The sensitivity of the system could be adjusted depending on factors like the general threat level, he said.

Programme coordinator Gaultier conceded the system could generate false alarms, but said the crew and pilot would remain in ultimate control, deciding if the threat was real.

Who Pays?

The improved passenger surveillance, researchers say, will be an important advantage on larger planes such as the Airbus A380, capable of carrying 550 people.

They believe passengers will be ready to accept the trade-off of less privacy for the sake of greater safety.

"We have to show it's not Big Brother watching you, it's Big Brother looking after you," Ferryman said.

Researchers say it is too early to judge the price of kitting out a plane with SAFEE, but they are working closely with a user group including airlines like Air France-KLM.

Indian dams blamed for fuelling floods

REUTERS, New Delhi

The sudden release of large quantities of water from several large dams has contributed to devastating floods in India, which have killed over 350 people, and authorities must take some of the blame, critics said on Friday.

Over four million people have been left homeless across western, central and southern parts of the country.

The flooding has been caused by the annual June-September monsoon rains -- key for the country's agriculture-driven economy -- but were made worse after authorities opened gates of dams and reservoirs brimming with water, activists say.

"The water levels in dams were actually too high prior to the monsoons so, when the rains came, vast amounts of water were suddenly released," said Himanshu Thakker of the New Delhi-based South Asia Network on Dams, Rivers and People.

"If you look at the evidence before us, it is clear that the dam authorities are guilty of criminal negligence."

Hundreds of villages and some towns in the southern state of Andhra Pradesh and the western states of Maharashtra and Gujarat have been submerged, leaving thousands of people marooned, some on rooftops, others perched in trees without food or water.

Petroleum, gas and power plants have also been flooded and crops over a huge swathe of agricultural land devastated.

Thakker said 13 dams in south, west and central India were between 20 percent and 77 percent full prior to the rains, when their capacity levels should have been between five and 10 percent.

The monsoon downpours had left authorities no option but to open the dam gates, to avoid the far greater devastation if dam walls had burst.

But the crisis might have been

alleviated by better planning and management of the reservoirs, critics say.

In Maharashtra, as many as 10 dams released water in the space of just 24 hours, the Hindu newspaper reported, bringing "into question the efficacy of dams which are built ostensibly to control floods and alleviate drought."

In neighbouring Gujarat, officials said they had miscalculated the volume of water in the Ukai dam, which is 60km south of the diamond and textile centre of Surat, a city of 3 million people.

The sudden release of water from the dam this week caused flood waters to submerge around 80 percent of Surat, cutting power and leaving thousands homeless.

