NOT TOP GUN YET: CHINA STRUGGLES WITH WARPLANE ENGINE TECHNOLOGY

News / Manufacturer

China has built a potent military machine over the past 30 years but is struggling to develop advanced engines that would allow its warplanes to match Western fighters in combat, foreign and Chinese industry sources said.

The country's engine technology lags that of United Technologies unit Pratt & Whitney, General Electric and Rolls-Royce, said Douglas Barrie, senior fellow for military aerospace at the International Institute for Strategic Studies in London.

China's Defence Ministry, in a brief statement to Reuters, said there was a "definite gap" between Chinese military technology and some developed countries, adding Beijing would continue to strengthen its armed forces.

Western restrictions on arms exports to China prohibit the sale of Western engines for military use, forcing China to rely on homegrown designs or engines Russia has agreed to sell.

"Chinese engine-makers face a multitude of problems," said Michael Raska, assistant professor in the Military Transformations Programme at Singapore's S. Rajaratnam School of International Studies.

Among the issues, China's J-20 and J-31 stealth fighters cannot super-cruise, or fly at supersonic speeds like their closest rivals, Lockheed Martin's F-22 and F-35 stealth planes, without using after-burners, said two industry sources who follow Beijing's military programmes closely.

After-burners remove a warplane's stealthiness, a capability that allows them to escape radar detection.

Even the warplane engine that experts consider to be China's best has reliability issues, said the sources, who declined to be identified because of the sensitivity of the matter.

SOUTH CHINA SEA

A Chinese military expert, who has knowledge of the government's defence policy but who declined to be identified, said Chinese fighter jets could not perform as well as American warplanes because of inferior engine technology.

That puts China at a disadvantage should its warplanes be pitted against U.S. jet fighters or those from security ally Japan in Asia's disputed waters, the industry sources and security experts said.

Chinese warplanes are likely to come into increasing contact with U.S. fighters over the South China Sea in the years ahead after Beijing conducted its first test flights this month to one of three island runways it is building in the contested Spratly archipelago, security experts said.

In any conflict, China would likely rely on sheer numbers of fighters as well as a growing arsenal of sophisticated missiles that can be launched from warships or land, they added.

To be sure, China has made warplane engine development a priority in recent years, sources said.

The Shanghai-based Galleon group, which provides consulting services to the aerospace industry, estimates Beijing will spend $300 billion over the next 20 years on civil and military aircraft engine programmes.

Some sources said China had hired several foreign engineers and former air force personnel to work on engine development, although this could not be independently confirmed. The Chinese Defence Ministry declined to comment.

"In 20 to 30 years time, given the amount of work they have done and the effort they are putting into it, they should have a viable military engine," said Greg Waldron, Asia Managing Editor at Flightglobal, an industry publication.

ENGINE MAKERS MERGED

China first manufactured warplanes under licence from Russia in the 1950s. Its indigenous fighter jet programme kicked into full swing in the 1980s.

The country's best warplane engine is the WS-10A Taihang, made by Shenyang Aeroengine Research Institute, a subsidiary of China's biggest state-owned aerospace and defence company, Aviation Industry Corporation of China (AVIC), the sources said.

In development since the late 1980s, Chinese state media reports say more than 250 have been fitted to some fourth-generation J-10s and J-11s.

But the engines don't produce enough thrust, or power, and need frequent repairs, added the sources.

"They are trying to improve the Taihang, but reliability is a major problem," said one source.

AVIC did not respond to a request for comment while Shenyang Aeroengine Research Institute could not be reached for comment.

In October, state media said three engine makers owned by AVIC would merge into one firm.

China will do more to integrate other engine-making firms in the coming years, said a Chinese source in the country's aerospace industry.

This would help coordination across civilian and military engine research and development and production, said the source.

The Defence Ministry declined to comment.

To cover gaps for now, China has fitted Russian engines on many of its warplanes.

In November, China held talks with Russian state-owned aircraft engine manufacturer United Engine Corp on the possible joint development and production of military engines at the same time it signed a deal to buy 24 Sukhoi Su-35 fighter jets, one of Moscow's most advanced warplanes.

The Chinese Defence Ministry declined to comment on the status of the discussions.

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