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CHINA'S J-20 STEALTH AIRCRAFT LANDS IN TIBET PREFECTURE: SO WHAT?

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Image 1: China's J-20 Stealth fighter reported to be seen at Daocheng Yadin airfield in Tibet Prefecture, Sichuan province.
Source: Tweeted by dafeng cao [@xinfengcao](#).

A few days ago Indian media reported that China's J-20 stealth fighter aircraft was seen at Daocheng Yading airport in Garze, Tibetan Autonomous Prefecture in Sichuan province. Some of the reports had blazing headlines,

"China's Top Secret Fighter Spotted In Tibet Days After it Warned India,¹" another one declared, "Days after warning India, China's stealth fighter jet spotted in Tibet." The "warning" which these reports are referring to is in relation to India's decision, in August 2016, to deploy an advanced

version of the Brahmos supersonic cruise missile in Arunachal Pradesh. This new missile has steep dive attack capability which is specifically designed to be effective against targets in mountainous terrain like the one on the India-China border. Plans for deploying it in eastern India, adjacent to Tibet, have irked China. The PLA Daily, which is the official publication of the PLA (People's Liberation Army), in an article is reported to have said "India deploying supersonic missiles on the border has exceeded its own needs for self defence and poses a serious threat to China's Tibet and Yunnan provinces²." The Indian army responded sharply and made it clear to the Chinese that, "Our threat perceptions and security concerns are our own, and how we address these by deploying assets on our territory should be no one else's concern³." The news reports also says that the J-20 has appeared in Daocheng just days before Indian Prime Minister Narendra Modi's visit to China for G-20 summit meeting, thereby implying that China is sending a signal to India of its military might. At first sight these sensational headlines surely make for good copy but the theatrics do not address the real issues. This article counters the hype in the Indian media and discusses issues related to China's J-20 development programme.

The news report has a picture of a single J-20 aircraft, covered with camouflaged net and parked in the open in Daocheng Yading airfield (Figure 1). This picture has been sent on Twitter

and is taken from the Chinese social media website Weibo. Contrary to inferences in Indian media, this picture has no correlation with either the Prime Minister's visit to China or the deployment of Brahmos missiles in Arunachal Pradesh. J-20 is China's most high profile stealth fighter aircraft programme which is still undergoing extensive flight tests. The visit of a single J-20 aircraft to Daocheng may be for high altitude flight trials. Every new aircraft being inducted into an air force undergoes extensive trials in varied terrain. This is a normal practice all over the world. This is **not** an operational deployment for combat operations nor does a single aircraft have any significance for show of force. The aircraft being parked in the open means that there is no hangar there to park the aircraft leave alone hardened aircraft shelters (HAS). Fighter operations cannot be launched by parking aircraft in the open, they have to be parked in well protected concrete shelters otherwise they will be exposed to enemy counter air strikes. And, certainly no air force commander is going to launch an air campaign with a single aircraft. Another factor which needs to be kept in mind is that fighter operations require proper airfield infrastructure like weapon storage areas, bulk petroleum installations, bomb dumps, maintenance and other facilities. Daocheng Yading airfield is located about 336 km east of the Arunachal-Tibet border. It is at an altitude of 4411m (14,472 feet) and is the highest civilian airfield in the world.

The airfield has a 4200 m (13,800 feet) long single runway. It is unlikely that a civilian airfield

like Daocheng will have all the facilities for fighter operations.

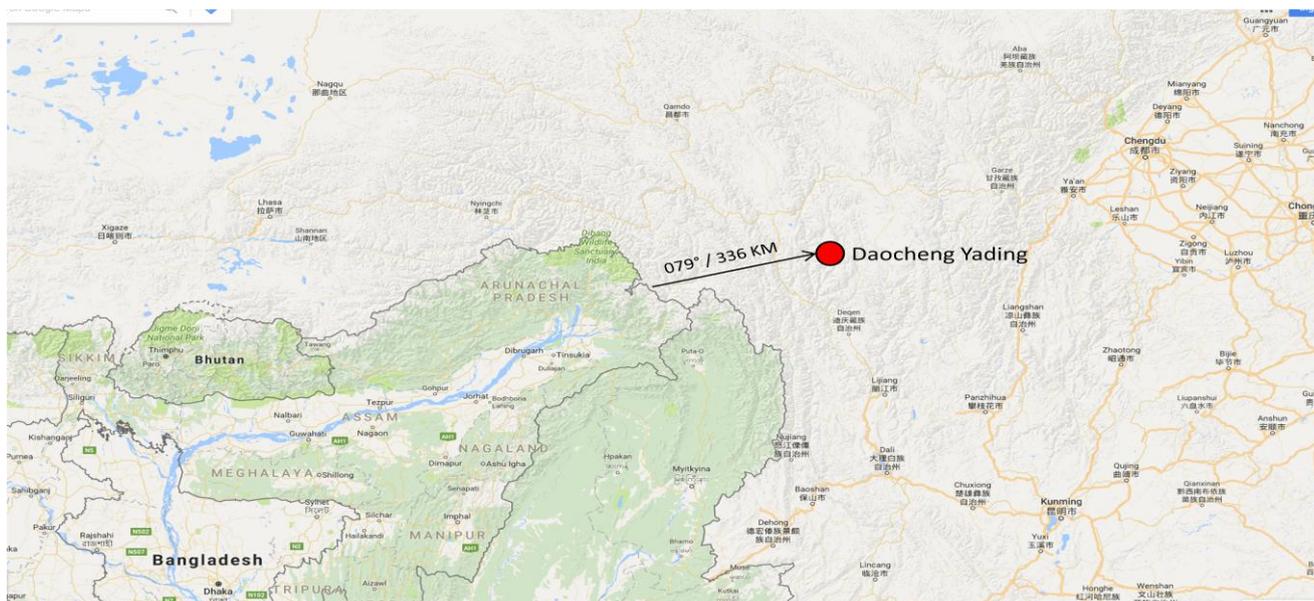


Image 2- Map showing location of Daochem Yading Airfield.

Source: Based on Google maps.

The J-20 is a single seat, twin engine, supposedly fifth generation fighter aircraft which was first test flown in January 2011 and has recently entered into low rate initial production (LRIP). Designed and developed by Chengdu Aircraft Corporation (CAC), eight J-20 prototypes were built which continue to undergo testing. In December 2015 CAC rolled out the first LRIP J-20 and by July 2016 a total of four aircraft were built and handed over to PLAAF (People's Liberation Army Air Force) for operational testing and initial operational clearance. At this rate of production PLAAF is likely to have twelve J-20 aircraft operational by 2017-2018⁴. These aircraft will be deployed as per China's threat perceptions. China's main threat perception is on its eastern coast against a Taiwan contingency and the likelihood of USA entering the fray. India is not a priority in China's threat perceptions.

Therefore, deployment of J-20 at this stage, against India, will not be the main concern for China.

J-20 is bigger and heavier than the American F-22 Raptor and the Russian PAK FA T-50⁵. Not many details are available about the J-20 performance, therefore, how advanced it is compared to American and Russian stealth fighters will have to be seen in the coming years. But, from available imagery it can be seen that the J-20 design is optimised for frontal aspect stealth. It is not likely to be very stealthy in the beam aspect. Another point about the J-20 project has been of finding a suitable aero engine. China's aviation industry has not been able to develop high performance fighter jet engines for their advanced fighters. At present the J-20 is powered by two Russian AL-31 turbofan engines

– same engines are in SU-30 aircraft – which are not powerful enough to enable the J-20 to “supercruise”. However, the Chinese are developing new WS-15 engines which are likely to be ready by 2019-2021⁶. In its present state with the J-20 being under powered and being exposed in the beam aspect, the aircraft can be intercepted by Rafale class of aircraft with their advanced AESA radar and new generation ramjet powered Meteor beyond visual range air to air missiles (BVRAAM). The planned procurement of 36 Rafale fighter aircraft for the IAF will enhance its capabilities against PLAAF.

India’s plans for a fifth generation stealth aircraft include the indigenous Advanced Medium Combat Aircraft (AMCA) and the joint Indo-Russian project, FGFA (Fifth Generation Fighter Aircraft). Both these projects are planned for induction in about a decade. India needs to expedite work on these programmes to maintain its technological lead against China.

IAF also needs to look at counter stealth technology. These are relatively low cost passive detection systems and VHF/UHF band advanced radars. China is known to have procured four Kolchuga-M passive detection systems from Ukraine along with their S-300PMU2 missiles. The system provides the capability for S-300PMU2 to do silent engagement. The Russians have also developed VHF band AESA radar, 1L119 Nebo SVU, which they claim has excellent pick up on stealth aircraft. IAF needs to consider

integrating counter stealth systems with its SAM systems. India has plans to procure Russia’s lethal long range S-400 SAM. This missile system if integrated with counter stealth systems will provide a powerful response to the challenge from PLAAF J-20s.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

¹ Vishnu Som, “China’s Top Secret Fighter Spotted In Tibet Days After it Warned India,¹” in NDTV website, <http://www.ndtv.com/world-news/chinas-top-secret-stealth-fighter-spotted-in-tibet-days-after-it-warned-india-1453693> , September 2, 2016, accessed on September 5, 2016.

² Rezaul H. Laskar, “China warns India against deploying BrahMos missile in Arunachal Pradesh,” *Hindustan Times*, August 23, 2016, <http://www.hindustantimes.com/india-news/china-warns-india-against-deploying-brahmos-missile-in-arunachal-pradesh/story-ui0psBJZ3WOvn3ajzLCqj.html> , accessed on September 5, 2016.

³ Vishnu Som, “ Not Your Business, Says Army After China’s Warning Over Brahmos Missile,” in NDTV website, <http://www.ndtv.com/india-news/ignoring-china-warning-army-confirms-brahmos-missile-for-arunachal-1449104> , August 23, 2016, accessed on September 5, 2016.

⁴ Jeffrey Lin and P.W. Singer, “Four in a row: China’s stealth fighter fleet grows again,” in *Popular Science*, July 13, 2016, <http://www.popsci.com/four-in-row-chinas-stealth-fighter-fleet-grows-again> , accessed on September 6, 2016.

⁵ “J-20 Black Eagle [Black Silk?] (Jianji-20 Fighter aircraft 20) / F-20”, <http://www.globalsecurity.org/military/world/china/j-20.htm>, accessed on September 6, 2016.

⁶ Jeffrey Lin and P.W. Singer, “China stays ahead in Asian stealth race,” in *Popular Science*, February 3, 2016, <http://www.popsci.com/china-stays-ahead-in-asian-stealth-race> , accessed on September 6, 2016.