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Y-20 HEAVY LIFT TRANSPORT AIRCRAFT: CHINA'S STRATEGIC BOOST

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Image: China's heavy transport aircraft during the flying display at Zhuhai Air Show in November 2014.

Source: <http://chinesemilitaryreview.blogspot.in/2014/11/amazing-shots-of-y-20-heavy-military.html>

Introduction

Amongst the numerous wares displayed at the Zhuhai Air Show, in November 2014, there was China's first strategic heavy lift transport aircraft, the Y-20. Designed and built by Xian Aircraft Corporation, the Y-20 first flew in January 2013 and the Zhuhai Air Show was



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the first time it was on public display. China has all these years not been able to produce an indigenous heavy transport aircraft and this marks a significant step in China's long term goal of force projection on the global stage. The military heavy transport aircraft industry is dominated by USA, Europe, Russia and Ukraine. With China now entering the fray, aircraft manufacturers around the world have shown interest in this new development, perhaps to understand how it will cut into their market. Indian planners need to take note of this development because of its effect on PLAAF force projection capabilities and use in multiple roles. This article briefly examines the capabilities of the Y-20 and the long term implications for India of this strategic transport aircraft.

Y-20 Capabilities

Design work on the Y-20 design is reported to have started in 2005 to meet PLAAF's requirement for a heavy lift aircraft. The Chinese seem to have taken assistance from the designer of An-70 of Antonov design bureau in Ukraine¹. But the Y-20 is not just another An-70; it is longer than the An-70; has a larger wingspan; more sweptback wings; a high T-tail; and four jet engines compared to the turboprop powered An-70. The Y-20 has some similarity in looks with the C-17, perhaps having gained from spying of C-17 technical details by Dongfan Chung, a native of China who was a naturalised citizen of USA. Chung was a former Boeing employee and was charged, in USA, in 2009, of selling C-17 secrets to China².

In January 2013, the Y-20 prototype made its first flight from XACs Yanliang airfield in Shaanxi Province. After this first flight the next public display was at Zhuhai in November 2014. It is surprising that the Chinese displayed the Y-20 at Zhuhai because the aircraft is still under test and will be inducted primarily in the PLAAF, rather than be exported. But the Chinese it seems wanted to show their capabilities in front of strategic cargo aircraft like the C-17 and IL-76. The Y-20 with full payload has a range of 4000 km,



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which gives it strategic capability to cover the conflict zones of South China Sea, East China Sea, India and beyond. The Chinese at present have only 16 IL-76s for the strategic airlift role. Their tanker fleet is also limited with just 10 H-6U and one IL-78³. The induction of Y-20 will provide China the indigenous capability for strategic airlift. This aircraft will also provide China with the platform for development of tankers, AWACS and other roles.

The Y-20 has a maximum payload capacity of 66 t which places it between the larger Boeing C-17 Globemaster (77 t) and the lesser capacity IL-76 (40 t)⁴. The aircraft, at present is powered by four Russian Saturn D-30KP2 (same as in IL-76), turbofan engines. China's plans for manufacturing indigenous aero engines are still in the development phase. Aero engines are a major weakness of the Chinese aviation industry but this is being addressed and finally the Y-20 will be powered by indigenous WS-20 engines which are under development⁵.

Richard Fisher Jr, citing Chinese sources, has reported that the Y-20 is likely to enter service in 2017, though he says "this would be rather early for such a major Chinese aircraft programme."⁶ In the coming years when the Y-20 enters service it will be a major boost for PLAAF strategic capabilities. The Chinese government newspaper Global Times, quoting Wen Wei Po, a military expert, said "China's air force needs at least 100 large transport aircraft of the Y-20 class to enhance its global power projection ability. Another 90 are expected to be modified into tanker aircraft, electronic warfare aircraft and early warning and control aircraft⁷." Another report by China's NDU (National Defence University) has recommended a fleet of 400 Y-20s for PLAAF⁸. With such a large requirement of Y-20s, it can be expected that when production starts, they will have to be produced at a fast rate and there could be a production run of 10 years or more.



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Analysis

China at present lacks sufficient strategic airlift capability for long distance force projection. The Y-20 will address this key weakness in the modernisation plans of PLAAF. The development of engines remains a weakness which China will have to address to enhance its indigenous capability. With China's ongoing disputes in the South China Sea - Spratly islands - and other territorial disputes the Y-20 programme is a strategic priority for China. In the Indian context, the border dispute has not yet been resolved and China's blow hot blow cold provocations on the border and providing nuclear technology to Pakistan are of serious security concern to India. The Y-20 will provide PLAAF the capability to rapidly airlift troops into Tibet. But, it is in the **tanker** role that the Y-20 will have a major impact on PLAAF capabilities against India. Aerial refueling has been a major shortcoming in PLAAF's capabilities. PLAAF at present has severe limitations in carrying out a sustained air campaign against IAF due to various factors like high altitude of airfields in Tibet, limited number of airfields in Tibet, and inadequate infrastructure in these airfields. These limitations can, to a large extent, be overcome by aerial refueling. Once the Y-20 enters service, in the tanker role, in large numbers, it will greatly enhance the reach of PLAAF's combat force. PLAAF will then be able to counter the limitations of its airfields in Tibet and operate from rear bases which are at lower heights and have adequate infrastructure. In such a scenario, IAF will need to develop adequate long range precision strike and long range ISR (Intelligence, Surveillance, Reconnaissance) capability to attack PLAAF fighter and tanker bases. Indian planners need to get into the act now and suitably plan counter attack capabilities to counter any challenge from China.

(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])



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End Notes

¹ Jane's All the World's Aircraft development and Production: 2013-2014.

² FBI website, <http://www.fbi.gov/news/podcasts/gotcha/dongfan-greg-chung.mp3/view>, November 5, 2012, accessed on March 26, 2015.

³ Military Balance 2015.

⁴ Xu Tianran "Behemoth of the skies gets test flight", in *Global Times* dated November 28, 2013, accessed on March 26, 2015.

⁵ Richard Fisher Jr, "China's Y-20 enters second phase of testing", in *IHS Jane's Defence Weekly*, dated September 4, 2014, <http://www.janes.com/article/42708/china-s-y-20-enters-second-phase-of-testing>, accessed on March 26, 2015.

⁶ Ibid.

⁷ N.4.

⁸ Richard D Fisher Jr, Washington, DC and James Hardy, London, "China's NDU recommends 400-strong Y-20 fleet", in *IHS Jane's Defence Weekly*, dated July 28, 2014, <http://www.janes.com/article/41251/china-s-ndu-recommends-400-strong-y-20-fleet>, accessed on March 26, 2015.
