



# China to Modify Y-20 Transport Aircraft for Aerial Refueling

**OE Watch Commentary:** A new variant of China’s domestically-developed Y-20 strategic transport aircraft appears to be in development as reported by the accompanying excerpted article. China’s current aerial refueling capabilities (see accompanying graphic) face limitations in the form of poor platforms, such as the limited fuel capacity H-6U, or insufficient numbers, such as the IL-78 tankers purchased from Russia.

The Chinese Air Force is currently attempting to rapidly improve its strategic power projection capabilities, which include improved bombers and larger numbers of refueling aircraft to give Chinese aircraft more range. The capability would also allow shorter-ranged aircraft, such as the J-10 fighter, to stay aloft longer carrying heavier weapons loads. The Y-20 was designed to help fill the significant gap the Chinese military faced in terms of transporting its forces rapidly within China’s borders or even globally. China had previously been forced to charter aircraft to evacuate its citizens from unstable counties. China’s current fleet of H-6-derived tankers is insufficient for its current training or wartime refueling needs.

China’s other main transport aircraft—the Y-8 and Y-9, have been modified to fill a variety of roles, but are considered poor candidates for tankers due to their design. Other domestically-developed aircraft, such as the C919, a narrow-body passenger jet, are considered unsuitable due to poor fuel carrying capacity. The Y-20 was always meant to help break China’s reliance on imports of Russian-built transport and aerial refueling aircraft. After successfully bringing that design into larger-scale production and proving its abilities in the primary role, the adaptation to refueling is a logical next step and will fill an important gap in China’s capabilities. **End OE Watch Commentary (Wood)**

Aerial Refueling Capabilities: US and China											
		Length (m)	Height (m)	Wingspan (m)	Maximum takeoff weight (kg)	Maximum range (km)	Transferable fuel (kg)	Cargo capacity (kg)	Crew	Total	
Chinese Tankers	IL-78	46.59	14.76	50.5	210,000	6,700	96,000	40,000	7	3	
	H-6U	34.8	10.36	33	79,000	7,200	16,800	N/A	4	15	
Potential Platforms	J-15S	21.9	5.9	14.7	33,000	3,500	>1100*		2		
	Y-20	50.5	33	33	220,000	4,500	N/A	40,000	3		
	C919	38.9	11.95	35.8	72,500	4,075	N/A	20,400	N/A		
U.S. Tankers	KC-46	50.5	15.9	48.1	188,240	11,830	94,198	29,500	3		
	F/A-18F	18.31	4.88	13.62	29,937	<2,300*	6,800		2		
	KC-130	29.79	11.84	40.41	70,305	4,000	26,000	33,000	4	58	
	KC-135	41.53	12.7	38.88	146,285	2,419	90,719	37,648	3	397	
	KC-10	54.4	17.4	50	265,500	7,040	160,000	76,560	4	58	

By Peter Wood

Adapted from "Table 2: Sample Global Tanker Comparison" Gabriel Collins, Michael McGauvran, Timothy White, "Trends in Chinese Aerial Refueling Capacity for Maritime Purposes," p. 200, Chinese Aerospace Power: Evolving Military Roles, Andrew S. Erikson and Lyle J. Goldstein, Eds. Naval Institute Press, 2012. Additional numbers from IISS, The Military Balance 2018.

\*: indicates rough estimate

(continued)



## Continued: China to Modify Y-20 Transport Aircraft for Aerial Refueling

“Although China also operates a few Russian Il-78 tankers, which are much larger than the HU-6, Russia was reluctant to sell more at a reasonable price, leading China to decide to develop its own large tanker.”

Source: “China develops Y-20 variants to perform aerial refueling missions: military insider,” *Global Times*, 26 November 2018. <http://www.globaltimes.cn/content/1129005.shtml>

China is modifying its domestically made strategic transport aircraft Y-20 to take on new missions like aerial refueling, a military insider said. A tanker variant for the Y-20 is now under development, the expert who is familiar with the matter, told the *Global Times* on Sunday on the condition of anonymity. There were a series of reports over the past week, which claimed to have found a prototype for an aerial refueling version of the Y-20 in a commercial satellite photo in Yanliang Airport in Xi'an, capital of Northwest China's Shaanxi Province.

China is in urgent need of an aerial refueling tanker that has a larger fuel capacity than the HU-6, a tanker developed from the H-6 bomber, for its air force to become a strategic one, said the expert, noting that aerial refueling enables a fighter jet to fly much farther without landing and reach more distant targets. The J-20, China's most advanced stealth fighter jet, is able to receive aerial refueling, China Central Television (CCTV) reported earlier this month.

China's Y-20, a domestically made 200 ton-class large multi-purpose transport aircraft, is of similar size to the Russian Il-76 transport aircraft, on which the Il-78 is based, he said. The aircraft began services in the People's Liberation Army Air Force in 2016, the Xinhua News Agency reported.

The fact that the Y-20 is domestically built means that Chinese developers can make alterations relatively easy and makes it a platform to develop more variants, the expert said. China is experienced in making variants from transport aircraft in the past, reports said. China modified the Y-9 transport aircraft into an early warning plane, patrol aircraft and anti-submarine aircraft, according to a CCTV report on Saturday.

The expert noted that it is also possible that China could make more Y-20 variants, noting that an early warning aircraft might be the most feasible one given the Y-20's size and endurance.

1986

2019



**FOREIGN MILITARY STUDIES OFFICE:**  
OVER 30 YEARS OF FOREIGN PERSPECTIVES OF THE OPERATIONAL ENVIRONMENT