



C H I N A A E R O S P A C E S T U D I E S I N S T I T U T E

Status of 41st Aviation Brigade Transition to the J-20

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By late last fall, the People's Liberation Army Air Force's (PLAAF) 41st Aviation Brigade active out of Wuyishan Airbase in Fujian province appeared to be transitioning to the J-20. Commercial satellite imagery from 29 November 2023 shows six J-20 airframes in the open at Wuyishan Airbase. This supports speculation online about PLAAF J-20 inventory expansion and that J-20s were being produced for the 41st Aviation Brigade in July 2023.¹ Given the informed speculation regarding construction of aircraft with tail numbers associated with the 41st Aviation Brigade and the presence of this many aircraft, it is highly likely that this transition is occurring.

Imagery of the airfield indicates that at least six J-20 airframes of an unspecified variant are active at the airfield as of late 2023, with potentially more airframes being delivered and more pilots conducting transition training as time has gone on.



China: Six J-20 Airframes at Wuyishan Airfield

GEO: 274153N/1175945E | MGRS: 50RNR 98176 64147 Geographic coordinates are approximate and should not be used for navigation or targeting purposes.



MAR 2024 | China Aerospace Studies Institute

Previous assessments that the PLAAF prioritized geographic distribution over units completing transitions still holds true, with several aviation brigades transitioning to the J-20 simultaneously across all the theater commands.² Assessments indicating that the PLAAF prioritized this

dispersal across the coastal theater commands appears to have been true during the buildup to every theater command air force transitioning an aviation brigade to J-20s. While the buildup of J-20 units in the Eastern Theater Command (ETC) may appear to be the result of an overall PLA focus on force buildup in the ETC, it is important to note that the limited evidence used to analyze the rationale behind PLAAF efforts to upgrade units to the J-20 likely does not paint a comprehensive picture. The likely transition of the 97th Aviation Brigade in the Western Theater Command to the J-20, which was first identified in March 2024 when a J-20 airframe was spotted with a tail number indicating it would eventually belong to the 97th Aviation Brigade based at Dazu Airfield,³ indicates that the PLA still has a broader focus on upgrading multiple units across different theater command air forces at a time.

Combat Units Operating the J-20			
Unit	Theater Command	Airfield	Year J-20 Adopted
9 th Aviation Brigade	ETC	Wuhu Air Base	2019
8 th Aviation Brigade	ETC	Changxing Air Base	2022
41 st Aviation Brigade	ETC	Wuyishan Air Base	2023
56 th Aviation Brigade	CTC	Zhengzhou Air Base	2022
111 th Aviation Brigade	WTC	Korla Air Base	2022
97 th Aviation Brigade	WTC	Dazu Airbase	2024(?)
5 th Aviation Brigade	STC	Guilin Tannan Air Base	2021
1 st Aviation Brigade	NTC	Anshan Air Base	2021

In the case of the 41st Aviation Brigade, as of the time of this satellite image it is likely that at the minimum the first flight group of the unit is likely nearing completion of its transition to the J-20. If the assumed starting point of the transition is sometime in July 2023, when the online speculation began, and four months later in November 2023 the first flight group neared the completion of its transition to the J-20, a flight group (8-10 aircraft) likely completed the transition to the J-20 in four months. At this rate it is likely that the second flight group of the brigade will finish its transition sometime in late March or April. At the pace of one flight group completing a transition every four months, it is possible that the third and final flight group could finish its transition sometime in July or August, if the transition continues at this assessed pace. Operating under this assumption, the current PLAAF inventory of J-20s could be around 160 to 200 airframes in varying states of readiness, based on the combat aviation brigades known to be operating this aircraft, with at least 64-80 or 40% of those airframes stationed in the Eastern Theater Command. This does not include J-20s operated by aggressor units or testing units.

Despite the rapid expansion of combat units operating the J-20, the US Military is still set to hold a numerical advantage over the PLA in fifth generation aircraft. At the assumed rate of one flight group worth of aircraft being introduced to the PLAAF every four months, and the assumed ability to have at a minimum two aviation brigades transitioning simultaneously, it would take the PLAAF between three and a half to four and a half years to catch up to the current total

inventory of 630 fifth generation aircraft operated by the United States Air Force (USAF) globally as of 2024.⁴ Given this assumed transition rate, the PLAAF appears to be capable of introducing between 48-60 J-20s per year, which at the higher end is greater than the proposed 51 F-35A airframes the USAF is budgeting to procure in fiscal year 2024.⁵ It is important to note that, under ideal circumstances, it would still take the PLAAF over 47 years to introduce more J-20s than the USAF would incorporate into its force posture at the proposed 2024 F-35A procurement rate. Additionally, including the proposed procurement of the US Navy and US Marine Corps F-35C and F-35B variants in the comparison, and that some years F-35A procurement alone has reached as high as 60 aircraft⁶ indicates that production of all F-35s and the incorporation of F-35 variants across the services of the US military that operate them still outpace Chengdu Aircraft Industry Group's ability to produce the J-20 and the PLAAF's ability to introduce it to aviation brigades.

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ENDNOTES

¹ Andreas Rupprecht, X-Post, 23 July 2023, <https://twitter.com/RupprechtDeino/status/1683216291929128966> and Dutch Aviation Society China Air Force Order of Battle, 2024, <https://www.scramble.nl/planning/orbats/china/china-air-force>.

² Solen, Derek, "Third Combat Brigade of PLA Air Force Likely Receives Stealth Fighters," China Aerospace Studies Institute, January 2022.

³ Chinese Military Aviation, 2024, https://chinese-military-aviation.blogspot.com/2012/07/fighters_18.html.

⁴ 2024 Department of the Air Force Budget Overview, 2024, p. 43 <https://dml.armywarcollege.edu/wp-content/uploads/2024/01/Air-Force-FY-2024-Budget-Overview-reduced.pdf>.

⁵ Losey, Steven and Cohen, Rachel, "Congress Offers Procurement Boost for F-35 Jets in FY24 Spending Bill," Defense News, 22 March 2024, <https://www.defensenews.com/congress/budget/2024/03/22/congress-offers-procurement-boost-for-f-35-jets-in-fy24-spending-bill/>.

⁶ Losey and Cohen, "Congress Offers Procurement Boost for F-35 Jets in FY24 Spending Bill," Defense News, 22 March 2024.