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Eli Tirk

Qi Xiaoke

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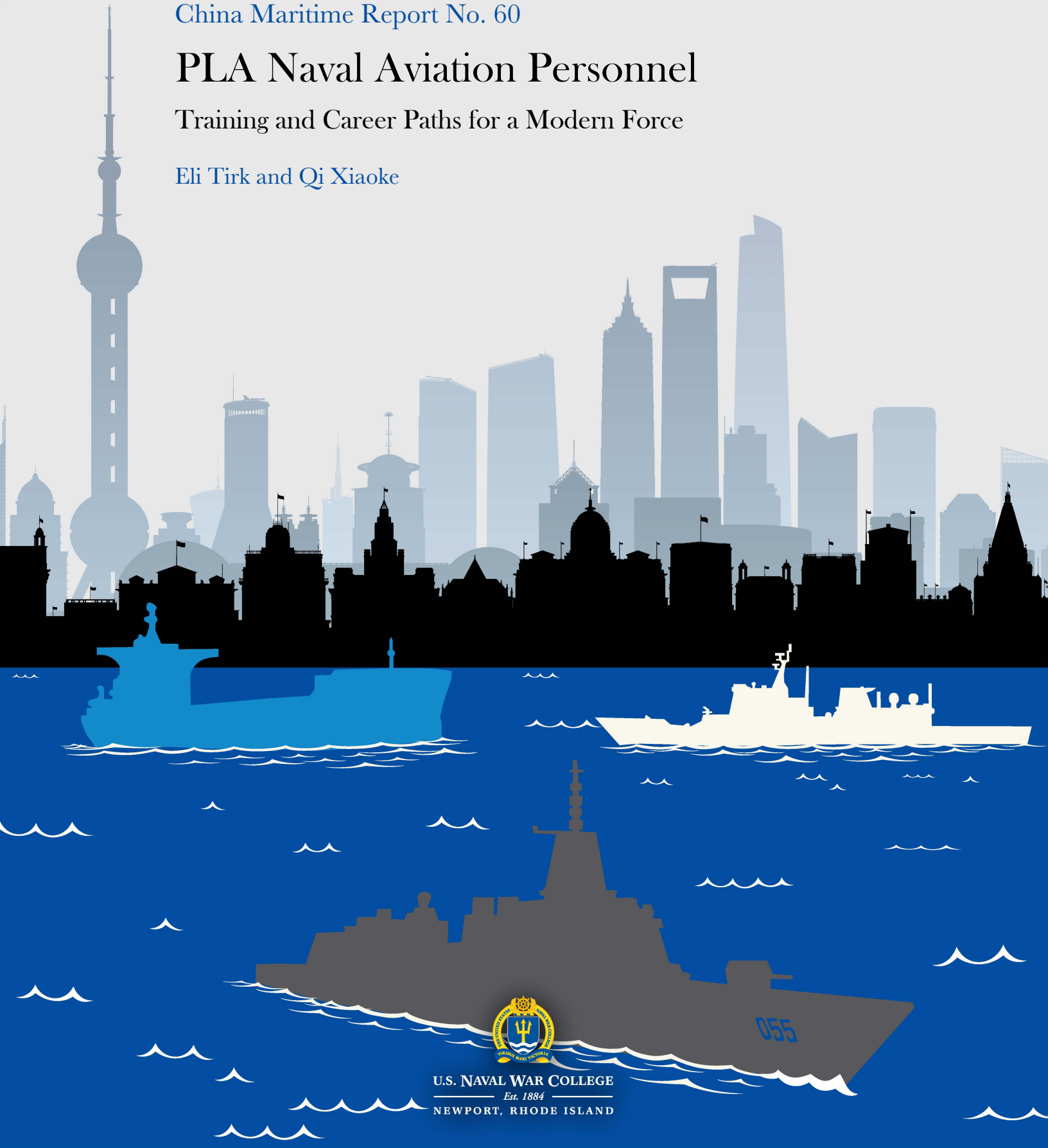
PLA Naval Aviation Personnel

Training and Career Paths for a Modern Force

Eli Tirk and Qi Xiaoke



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Main Findings

- PLA Naval Aviation has undergone substantial institutional transformation over the past two decades. This transformation is driven by the goal of becoming a carrier-based force capable of effective joint operations in the maritime domain.
- This transformation has been accompanied by reforms to pilot education, training, and career management systems, aimed at producing a qualified force capable of conducting long-range maritime operations.
- Despite significant progress, there are still areas that require improvements, particularly the Naval Aviation University.
- The PLAN likely aims to further professionalize pilot education and shorten the carrier pilot training pipeline by equipping Naval Aviation University training units with carrier-capable training aircraft to reduce reliance on operational units.
- PLAN authors have praised the U.S. Navy's tactical training, suggesting the PLAN may seek to incorporate more combat-realistic training content.
- It is likely that the PLA Naval Aviation's transition training phase will continue to improve, building on the initial progress in adoption of complex force-on-force training scenarios.
- Understanding the career progression of officers in this community adds context to the desirability of this career field.
- Close attention to how PLA Naval Aviation grows and changes with the adoption of carrier-based KJ-600s and future land-based systems will be important to understanding how the PLAN will fight.
- Overall, improvements to Naval Aviation pilot training and joint training by the operational force clearly suggest that the PLAN is increasingly providing its aviation branch with the opportunities to develop technical acumen and tactical competencies required to conduct the missions the PLAN has been tasked with.

Introduction

The People's Liberation Army Navy (PLAN) has maintained an independent land-based aviation force for much of its history. The reorganization of PLA Naval Aviation that began in 2023 reshaped the force into one dedicated to supporting carrier aviation, with a significantly smaller shore-based component restricted to special mission aircraft, a small number of transport aircraft, a single J-11 brigade, and shore-based unmanned aerial vehicles (UAVs).[1] This re-organization altered career progression opportunities for naval aviators, increased the demand for joint training to integrate air power, and reduced the overall size of the naval aviation force. Historically, naval aviators enjoyed relatively limited prestige and fewer senior-level promotion opportunities. Nevertheless, the 2023 reorganization, coupled with the expansion of the carrier force as a core component of far seas operations, may increase promotion potential for naval aviators.

Given shifts in the composition of the operational force and the requirement for a more operationally effective force, PLA Naval Aviation educational institutions and training pipelines have undergone substantial reform. These reforms shed old requirements that previously produced pilots whose missions and responsibilities were more akin to those of PLA Air Force (PLAAF) aviators than those of carrier-qualified naval pilots.

[1] Roderick Lee, "PLA Naval Aviation Reorganization 2023," *China Aerospace Studies Institute*, 31 July 2023, https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/PLAN/2023-07-31%20PLAN%20Aviation%20Reorg%202023%20Clean.pdf?ver=N848BtqfMRRjojcS2ThCtw%3d%3d.

This report will first address the path to carrier qualification for J-15 pilots, recent developments in PLAN helicopter pilot training, and changes to special mission aviation pilot training. Next, it will outline modern training trends and requirements that are driving PLAN aviation to be a more effective tool for maritime operations. Then, it will explore PLAN Aviator promotion pathways both prior to and after the changes brought around by the advent of carrier aviation. It will conclude with a discussion of airborne combat support NCOs.

Pilot Education

Personnel development has become a strategic priority for PLA Naval Aviation since the commissioning of the PLAN's first aircraft carrier in 2012. The naval aviation training apparatus is responsible for developing pilot recruits to meet the demands of its shore-based special mission aviation units, shipborne helicopter units, carrier aviation units, and the PLAN's sole shore-based fighter unit. Mirroring reforms undertaken by the PLAAF, the PLAN is abandoning an inefficient pipeline that placed the burden of transition training on operational units.[2] Instead, the PLAN is transitioning to a revised pipeline that incorporates modern training aircraft to facilitate a shorter and more standardized pilot qualification process. This modernization is accompanied by training units that prioritize realism and the development of relevant tactics, techniques, and procedures (TTPs) for engaging the "strong enemy" (强敌), a euphemism for the United States.[3] PLAN sources described recent flight training reform as a direct response to the "self-defeating cycle of three" (三自怪圈). In this closed loop, the PLAN pilot training apparatus operated by self-designing, self-circulating, and self-evaluating its own protocols, which resulted in degraded training standards due to the absence of external validation.[4] This section will provide an overview of the flight training organizations within the PLAN, examine significant recent changes in training schedules, and present an overview of the flight training process.

The PLAN First Aviation School (NFAS) (中国人民解放军海军第一航空学校) was established in 1950. Nonetheless, PLA Naval Aviation remained dependent on the PLAAF for initial pilot training for over six decades. The NFAS trained air and ground support personnel, while fighter pilot training remained under the PLAAF's purview. Built upon the foundation of the NFAS, the PLA Naval Aviation University (NAU) (中国人民解放军海军航空大学) was established in 2012 and tasked with training officers in command, flight, technical, and support roles.[5] The PLA Naval Flight Cadet Recruitment Office (NFCRO) (海军招收飞行学员办公室/海军招飞办), which has recruited flight cadets since 1988, eventually expanded its selection pool to include high school graduates from six provinces and undergraduates from three naval academic institutions.[6]

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[2] 肖文光 [Xiao Wenguang], 李令伟 [Li Lingwei], 梁程奇 [Liang Chengqi], and 刘任丰 [Liu Renfeng], 向战求变, 飞出强军加速度——来自海军航空大学某基地聚焦实战培养飞行人才的新闻观察 ["Seeking Change for War, Accelerating the Development of a Strong Army - News Observation from a Base of the Naval Aviation University Focusing on Actual Combat Training of Flight Talents"], 人民海军 [*People's Navy*], 20 October 2022, p. 4.

[3] 赵树启 [Zhao Shuqi], 找准飞行人才生长"拔节点" ["Find the 'Key Points' for the Growth of Aviation Talents"], 当代海军 [*Navy Today*], no. 5 (May 2021), p 13. Note: 强敌 is a commonly used allusion to the United States.

[4] Xiao et al., "Seeking Change for War, Accelerating the Development of a Strong Army - News Observation from a Base of the Naval Aviation University Focusing on Actual Combat Training of Flight Talents," p 4.

[5] 崔俊华 [Cui Junhua], 黄静 [Huang Jing], 孙奇 [Sun Qi], and 周正 [Zhou Zheng], 中国人民解放军海军航空大学 ["The PLA Naval Aviation University"], 中国军网 [*China Military Online*], 4 June 2017, http://www.81.cn/jwzl/2017-06/04/content_7748184.htm.

[6] Cui Junhua, Huang Jing, Sun Qi, and Zhou Zheng, "The PLA Naval Aviation University", *China Military Online*, 4 June 2017.

Beginning in 2006, Naval Aviation selected experienced pilots from both the PLAN and PLAAF to transition to the J-15 in preparation for operations on China's first aircraft carrier, the *Liaoning*. Candidates were required to possess over 1,000 flight hours, with at least 500 hours in fourth-generation fighters, and experience flying a minimum of five different types of aircraft.[7] It was not until 2014 that PLAN initiated its first public recruitment of carrier-borne pilots from high schools to address the operational requirements resulting from the commissioning of the aircraft carrier *Liaoning* in 2012.[8]

When the first J-15 unit was established in 2013, most of its pilots were special and first-class pilots drawn from elite PLAAF and PLAN units. These experienced pilots performed J-15 test flights and served as instructors in the early pilot training program. The strategy of selecting from experienced land-based pilots enabled the PLAN to concentrate on carrier-specific skills, such as ski-jump takeoffs and arrested landings, thereby accelerating the development of TTPs for carrier operations. During this transition period, the PLAN utilized the naval version of the JL-9 for ski-jump takeoff and tail hook training on ground-based simulators, alongside two-seat J-15 fighter trainers for carrier landing practice.[9] While transitioning land-based pilots was a temporary solution, it was recognized as unsustainable for the long term, as drawing experienced pilots from other units adversely affected overall combat readiness. As a result, the PLAN reallocated resources to establish a dedicated "grow-up" pipeline.

Admission to NAU was highly competitive when the carrier program first began. In 2012, only 150 cadets were selected from 8,451 qualified applicants (a 1.8 percent acceptance rate). And in 2013, 169 were admitted from 11,250 qualified applicants (a 1.5 percent acceptance rate).[10] After three years of undergraduate study and two years of flight training, only a small number successfully graduated as naval pilots.[11]

NAU was unable to produce sufficient numbers of qualified pilots to meet expanding operational requirements. A confluence of factors necessitated NAU to expand both its recruitment and training capacity, including the advent of the aircraft carrier program, the expansion of non-fighter roles (such as early warning aircraft and electronic warfare aircraft), and the growing demands for naval aviation in the South China Sea. NAU reduced its reliance on the PLAAF for pilot training and established its own system to train bomber, fighter, helicopter, and transport pilots and navigators. By 2017, PLA Naval Aviation had established a comprehensive training system that combined transition training for experienced land-based pilots with a complete training pipeline for new NAU cadets.[12]

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[7] 培养一个战斗机飞行员要花多少钱? 最多可达 10 个亿! ["How Much does it Cost to Train a Fighter Pilot? It could Cost as much as Ten Billion Yuan!"], 军工黑科技-量子防务 [*Military Industry Technology - QDEFENSE*], *WeChat*, 24 September 2021, https://mp.weixin.qq.com/s/wt1v0a2qdK1i4h3FyTPjZQ.

[8] 海军今年首次招收航空母舰舰载机飞行员 ["Navy Launches Its First Recruitment of Carrier-Based Pilots This Year"], 央视网: 中文国际频道 [*CCTV 4: Chinese International Channel*], 28 June 2014, https://tv.cctv.cn/2014/06/28/VIDE1403931061531685.shtml.

[9] Ibid.

[10] 中国海军开始网上招飞, 组建航母舰载机兵团 ["The Chinese Navy Has Started Recruiting Pilots Online to Form an Aircraft Carrier-Based Aircraft Regiment"], 观察者 [*Observer Net*], 11 January 2013, https://www.guancha.cn/politics/2013_01_11_119679.shtml.

[11] Ibid.

[12] 唐驳虎 [Tang Bohu], 舰载机飞行员加速扩编, 要打赢下一场冲突, 3 艘航母还远远不够用 ["The Number of Carrier-Aircraft Pilots is Accelerating. Three Aircraft Carriers are Far from Enough to Win the Next Conflict"], 腾讯网 [*Tencent News*], 17 November 2023, https://news.qq.com/rain/a/20231117A066RD00.

Through 2023, the PLAN relied on two distinct pilot recruitment tracks: the "refit method" (改装模式) to convert experienced shore-based pilots and the "grow-up method" (生长模式) where pilots are trained from scratch. However, the 2023 naval aviation reform likely constrained the refit pipeline due to the decimation of shore-based fighter units in the PLAN. This change possibly drove the decision to broaden the talent pool by opening recruitment to civilian university graduates and women. As of 2021, the "grow-up" method required roughly four years from initial flight training to a first J-15 solo flight and five years to complete the entire program.[13] While older reports suggest "refit" pilots could qualify in roughly one year, NAU likely aims to compress the primary five-year timeline as the training system matures and newer trainer aircraft enter service.[14]

To further expand the talent pipeline, in 2015, the PLAN launched the Naval Teenagers Aviation School (NTAS) (海军青少年航校) in cooperation with the Ministry of Education. This pilot program aimed to cultivate future carrier-based pilots by enrolling junior high school graduates in 14 selected high schools across China.[15] Students in NTAS classes received standard high school education supplemented with additional courses in flight theory, meteorology, and avionics. Prior to graduation, they underwent flight selection evaluations conducted by experienced Naval Aviation pilots and NAU personnel. Although NTAS graduates received admission preference, they were still required to meet standard entrance requirements, with selection results factored in the evaluation.[16]

The PLAN extended pilot recruitment to the rest of the PLA in 2017. Officers from other services could apply to become pilots.[17] Once accepted, officers likely go straight into flight training.[18] The PLAN has also begun allowing fighter pilots who were medically disqualified from flying fighter aircraft to transition to flying transport or special mission aircraft.[19] In the U.S. Military, this is typically done for pilots who are medically disqualified from sustaining high g-forces and the use of ejection seats.

NAU's current carrier-based pilot training system relies on a structured academic pipeline with a three-phase flight curriculum. While most cadets undergo a standard three-year undergraduate program at the NAU, selected high-performance students can participate in a "dual enrollment program."[20] Those first-tier cadets spend three years at civilian institutions like Peking or Tsinghua

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[13] 孙越 [Sun Ye], 我的"飞鲨"之路: 海军航空大学某试训基地飞行学员张宇亮 ["My Journey as a Flying Shark Zhang Yuliang, a Flight Student at a Test Training Base of the Naval Aviation University"], 当代海军 [*Navy Today*], no.1 (January 2021), p 8.

[14] 刘文平 [Liu Wenping], "刀尖舞者"的铁血担当 ["The Iron-Blooded Responsibility of the 'Dancer on the Blade's Edge'"], 当代海军 [*Navy Today*], no. 5 (May 2020), p 27.

[15] 海军青少年航空学校简介 ["Introduction to the Naval Teenager Aviation School"], 海军青少年航空学校 [*Naval Teenager Aviation School*], 22 October 2018, http://hjzf.mil.cn/news/2023/8/5/40288081669a58a701669ae6735d006d.html.

[16] 闫培 [Yan Pei] and 刘玉杰 [Liu Yujie], 海军首次组织青少年航空学校学员进行体验飞行 ["The PLA Navy Organized Naval Teenagers Aviation School Cadets to Experience Flight Training for the First Time"], 解放军报 [*PLA Daily*], 19 July 2018, https://dlib.eastview.com/browse/doc/51504785.

[17] 刘任丰 [Liu Renfeng] and 朱晋荣 [Zhu Jinrong], 从"陆战之王"到"海空雄鹰"—"舒克＆贝塔"的飞行梦 ["King of Land Warfare" to "Eagles of Sea and Air"— The Flying Dream of "Shuk & Beta"], 解放军报 [*PLA Daily*], 13 October 2020, p. 1.

[18] Ibid.

[19] 付康 [Fu Kang], 海军航空大学某团 精准培养改装人才 ["Naval Aviation University Regiment, Precision Training for Conversion Personnel"], 解放军报 [*PLA Daily*], 9 June 2022, p. 2.

[20] 2025 年度海军招收选拔飞行学员简章 ["2025 Navy Recruitment and Selection Guide for Flight Cadets"], 人民海军 [*People's Navy*], WeChat, 25 September 2024, https://mp.weixin.qq.com/s/BkqH1c_qc4PJbZOJd1wT9w.

University before returning to the NAU for their fourth year to join their peers for initial flight training.[21]

The initial training phase emphasizes screening for pilot aptitude and adaptability in the air using the CJ-6 trainer aircraft. The PLAN selected the CJ-6 as the primary platform for all fixed-wing candidates because it is a stable basic trainer suitable for pilots of various types.[22] This training phase includes ground school, simulator instruction, and accompanied sorties prior to the first solo flight. During this phase, NAU introduces basic operational concepts and tactical decision-making during force-on-force training to establish a battlefield mindset.[23] Upon completion, cadets graduate with a bachelor's degree and are commissioned as PLAN second lieutenants.[24]

After graduation from NAU, pilots transition to intermediate and advanced training at the training units attached to NAU. During intermediate and advanced training, pilots are taught the basics of combat maneuvers and tactics and introduced to simulated carrier operations. During the advanced training and operational transition phases, pilot education focuses on low-altitude maneuvering, surface strikes, and air combat. Once pilots report to their combat units, they finalize their carrier qualifications through arrested landings, ski-jump takeoffs, and wave-off procedures.[25] Although the service demonstrated carrier night landings in 2017, NAU instructors did not receive full certification for J-15 landing training, specifically night operations, until 2021.[26]

NAU training units have begun incorporating input from operational units to develop more realistic combined arms training scenarios for transition training. In 2022, the NAU flight training base hosted electronic warfare aircraft, airborne early warning & control (AEW&C) aircraft, a surface combatant, and fighter aircraft to conduct a force-on-force exercise intended to help develop the curriculum of the training base.[27] This effort was supplemented by rotating pilots from operational units across all unit types to help train instructors and adapt curriculum to the needs of operational units, referred to as "Job Rotation + Experience Sharing + Complementary Capabilities" (岗位互换+经验共享+能力

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[21] Kenneth Allen and Lyle J. Morris, "PLA Naval Aviation Training and Operations: Missions, Organizational Structure, and Training (2013-2015)," *China Aerospace Studies Institute*, 26 October 2017, https://www.airuniversity.af.edu/CASI/Display/Article/1400987/pla-naval-aviation-training-and-operations/.

[22] 啸鹰 [Xiao Ying], 难以置信海军航空大学, 竟在用初教-6 练航母起降 ["It is Unbelievable that the Naval Aviation University is Using the CJ-6 to Practice Aircraft Carrier Takeoff and Landing"], 今日头条 [*Daily Headlines*], 28 December 2023, https://www.toutiao.com/article/7317645186287387177/?wid=1744300397878.

[23] 初教-6: 经典永不过时, 开启飞行生涯的第一步,海军航空大学某团新期班飞行学员完成首次单飞 ["The CJ-6: A Classic that Never Goes Out of Style. The First Step in Starting a Flying Career. A Regiment of the Naval Aviation University: New Class of Flight Trainees Completes their First Solo Flight"], 正午国防军事-国防军事 CCTV-7 [*Noon National Defense and Military – National Defense and Military CCTV-7*], 27 December 2023, https://tv.cctv.com/2023/12/27/VIDEnOZsM6l4YIfXcUJDFz47231227.shtml.

[24] Ibid.

[25] 海军首批生长模式培养的舰载战斗机飞行员完成航母资质认证 ["The First Batch of Carrier-Based Fighter Pilots Trained by the Navy's Growth Model Completed Aircraft Carrier Qualification Certification"], 中国日报网 [*China's Daily*], 6 November 2020, https://cn.chinadaily.com.cn/a/202011/06/WS5fa50e35a3101e7ce972de70.html.

[26] 钱晓虎 [Qian Xiaohu], 海军航空大学某部飞行教官, 取得夜间航母起降资质认证 ["Flight Instructors from the PLA Naval Aviation University Obtained the Qualification Certification for Nighttime Flight Takeoff and Landing on Aircraft Carrier"], 解放军报 [*PLA Daily*], 6 August 2021, https://dlib.eastview.com/browse/doc/69141029.

[27] 海军航空大学着眼转型急需探索走开人才培养新路子 ["Naval Aviation University, Focusing on Transformation, Urgently Needs to Explore New Paths for Talent Cultivation"], 国防军事早报 [*Morning Report on Defense*], 28 December, 2022, https://tv.cctv.com/2022/12/28/VIDEsle9NB58K3vKfRlRhJIF221228.shtml?spm=C52346.PQw42etIf8YI.Edvk0IT63y7, p. 5.

互补).[28] This program applies to fighter pilots, special mission aircraft pilots, transport aircraft pilots, and helicopter pilots. These efforts have yielded results. The NAU Transition Training Base has conducted force-on-force training utilizing operational units from the PLAAF and components of the former Strategic Support Force.[29] This exercise incorporated airborne command posts, contested electromagnetic conditions, and on the spot decision-making driven by combat requirements.[30] Despite being scripted, this exercise is emblematic of NAU's efforts to improve the quality of its training program and reduce transition training burdens on operational units.

The current inventory of training aircraft at NAU limits the effectiveness of this training period. Because existing trainers lack modern fly-by-wire control systems and the capacity for simulated carrier operations, cadets must rotate through multiple platforms to fulfill different portions of the curriculum. The Nanchang JL-8 serves as an intermediate trainer aircraft for land-based takeoff and landing operations, but it is unsuitable for training pilots in carrier takeoff and recovery operations. NAU training units adopted the JL-9H for simulated carrier operations on ground-based decks.[31] The JL-9H is used for teaching air combat with short to medium range air-to-air missiles and is used to teach the fundamentals of air-to-ground (and sea surface) attack with aerial bombs and rockets.[32] The JL-9H can be used to meet tactical training requirements and the needs of fourth-generation fighters, but it cannot support a high angle of attack or train pilots to use fly-by-wire controls required for advanced maneuvering.[33] Consequently, NAU training regiments currently have to use J-15s to train pilots on executing takeoffs and landings on actual aircraft carriers.

NAU is attempting to resolve the constraints posed by its intermediate and advanced training aircraft by adopting a new aircraft, a JL-10 variant. The Hongdu JL-10 was initially adopted by the PLAAF as an advanced trainer aircraft in 2013, and it was subsequently incorporated by NAU in 2018 to train fourth-generation fighter pilot candidates.[34] The identification of 12 JL-10s in an official report indicates that the NAU has transitioned an entire flight regiment to a fourth-generation training curriculum. This transition is intended to "improve the initial, intermediate, and advanced training system" and "increase the efficiency of the PLAN pilot production pipeline."[35] As a supersonic advanced trainer aircraft, the JL-10's technological and performance characteristics enable it to replace both JL-8 and JL-9, allowing pilot candidates to skip intermediate training and spend 30

[28] 钱晓虎 [Qian Xiaohu] and 李高 [Li Gaojian], 健海军航空大学着眼转型急需探索走开人才培养新路子["The Naval Aviation University is Exploring New Approaches to Talent Development to Meet the Urgent Needs of Transformation"], 解放军报 [*PLA Daily*], 21 April 2022, p. 1.

[29] 郭领领 [Guo Lingling] and 李姗 [Li Shan], 海军航空大学某基地 红蓝对抗锤炼实战本领 ["At a Naval Aviation University base, Red-Blue Exercises Hone Combat Readiness"], 解放军报 [*PLA Daily*], 3 January 2023, p. 1.

[30] Ibid.

[31]中国舰载机飞行学员的座驾, 教练-9H "海山鹰"教练机 ["The Trainer Aircraft Used by Chinese Carrier-Based Aircraft Flight Trainees, the JL-9H 'Haishanying' Trainer Aircraft"], 兵工科技 [*Ordnance Industry Science Technology*], 13 August 2024, https://mp.weixin.qq.com/s/tx2PyOq2SdJo3bsh_Z9yGw.

[32] Ibid.

[33] 中国山鹰高教机亮相航展, 具体性能数据大揭密 ["China's Mountain Eagle Advanced Trainer Aircraft Debuts at the Air Show, Detailed Performance Data Revealed"], 军事新闻-央视新闻 [*Military News – CCTV News*], 6 November 2008, https://news.cctv.com/military/20081106/100696.shtml.

[34] 陈国全 [Chen Guoquan], 朱晋荣 [Zhu Jinrong], and 丁小峰 [Ding Xiaofeng], 培养三代战机飞行员, 海军航空大学有"大招" ["The Naval Aviation university has a 'Big Move' to Train Third-Generation Fighter Pilots"], 中国军网 [*China Military Online*], 5 January 2018, http://www.81.cn/jmbl/2018-01/05/content_7897057.htm.

[35] 海军航空大学某团装备教练 10 "猎鹰" ["A Regiment in the Naval Aviation University is Equipped with Jiaolian-10 'Falcon'"], 观察者 [*Observer Net*], 4 August 2018, https://www.guancha.cn/military-affairs/2018_08_04_466848.shtml?web?web.

percent more time on advanced trainer aircraft.[36] Once the "initial-advanced" training system is established, the PLAN anticipates significantly shortening the pilot production pipeline, granting pilots more time to practice with combat aircraft. The JL-10 will enable NAU training units to incorporate more advanced subjects faster and allow pilots to conduct takeoffs and landings on underway aircraft carriers without the need to transition them to the J-15 first. This could free up J-15 fighter aircraft to be used solely for transition training, allowing pilots to get more advanced training at NAU, and familiarity with their operational airframe in training units, prior to being sent to the fleet.

Helicopter Training

In 2019, the PLAN undertook significant changes to its helicopter pilot training program. The PLAN acknowledged that NAU was not adequately preparing cadets for the practical demands of combat units and established feedback mechanisms for operational units to provide advice during the redesign of the NAU training system.[37] The changes to the training program were done to align pilot competencies with modern military standards, to incorporate operational tasks into the training program, and to compress the timeline of the training program.[38]

Following graduation from NAU, trainees face an accelerated operational tempo to complete over 100 flights, night operations, and solo missions within their first year.[39] The training curriculum also introduces complex tactical subjects earlier in the process, including anti-submarine warfare (ASW), reconnaissance, and vertical replenishment.[40] This is a significant change from pre-2019 training, which deferred shipboard landing qualifications and training in operational tasks until pilots had already reported to their assigned fleet.[41] The pipeline now features "actual combat exploration" to fly high-intensity schedules with active-duty units.[42] These changes are likely to significantly reduce the training burden on operational units once pilots reach the fleet.

Special Mission Aviation and Transport Pilot Training

The transport and special mission aircraft pilot training program at NAU underwent an update sometime in 2021. Similar to initiatives to improve helicopter pilot training, NAU instructors worked with operational units to incorporate their requirements and reduce the training burden on those units, with an emphasis on developing independent flight planning skills, combat awareness, and tactical

[36] 教练-10 的作用有多大? 飞行员培训速度加快 30%, 可培训歼 20 飞行员 ["How Useful is the JL-10? The Pilot Training Speed is increased by 30%, and it Can Train J-20 Pilots"], 网易 [*NetEase*], 17 August 2021, https://www.163.com/dy/article/GHJNE3GD0535N260.html.
[37] 肖文光 [Xiao Wenguang], 李令伟 [Li Lingwei], 梁程奇 [Liang Chengqi], and 刘任丰 [Liu Renfeng], 向战求变, 飞出强军加速度——来自海军航空大学某基地聚焦实战培养飞行人才的新闻观察 ["Seeking Change For War, Accelerating The Development Of A Strong Army - News Observation From A Base Of The Naval Aviation University Focusing On Actual Combat Training Of Flight Talents"], 人民海军 [*People's Navy*], 20 October 2022, p. 4.
[38] Ibid.
[39] Ibid.
[40] Ibid.
[41] 李令伟 [Li Lingwei], 肖勇利 [Xiao Yongli], and 刘任丰 [Liu Renfeng], 隼说翼, 风浪扁张——海军航空大学按新模式培养首批舰载直升机飞行员的探索与实践 ["Falcon Speaks of Wings, Wind and Waves Flatten Out - Naval Aviation University's Exploration and Practice Of Training the First Batch of Carrier-Based Helicopter Pilots According to a New Model"], 当代海军 [*Navy Today*], no. 5 (May 2021), p. 6.
[42] Ibid.

skills during pilot training at NAU.[43] This process resulted in basic benchmarks such as the first solo formation flight being shifted to NAU and the adoption of modern aircraft to ensure that pilot and navigator cadets were able to do their first solo flight in an operational airframe at a training unit.[44] Pilot cadets now get more exposure to the operational force during their time at training units through participation in operational unit's training schedules, or through training flights to support operational units. Pilot cadets are being given the opportunity to participate in major exercises during these training experiences. This includes cadet participation in missions during an Eastern Theater Command Navy ASW exercise and transregional transport missions to move operational units around the PRC during exercises as part of an "integrating teaching and combat training" (教战一体) model.[45] Despite these improvements, pilots still undergo a certain amount of training at operational units prior to attaining combat qualification.[46]

These reforms across the fixed-wing and rotary pilot training system indicate that the PLAN has effectively transitioned from an ad-hoc training model to a professionalized, standardized pipeline. The NAU can now produce and sustain a steady flow of pilots better prepared for their duties in combat units.

Training Pilots and Air Crew for Modern Combat

After reaching an operational unit, naval aviators are subjected to a series of new training experiences based on combat readiness standards. Training trends at these operational units align with broader PLA pushes for more realism, focusing on pilot autonomy and flexibility, breaking down barriers that rigid PLA cultural and organization constructs imposed on the force, and aligning training with operational requirements and PLA conceptions of informationized and joint operations.[47] Reforms in PLAN training provide the PLA the opportunity to refine their concepts of operations and TTPs for operations beyond the First Island Chain.

Tactical Aircraft Training

Carrier training operations have come a long way since the first live fire training exercise of the *Liaoning* in December 2016.[48] Carrier training operations now include generating multiple sorties and the rapid recovery and turning of multiple aircraft simultaneously. Coverage of these exercises notes that PLAN aircraft carriers were unable to generate multi-ship formations earlier on in the

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[43] 刘任丰[Liu Renfeng] and 张配铭 [Zhang Peiming], 让学员跟着战机去远航 ["Let Trainees Soar with Fighter Jets"], 解放军报 [*PLA Daily*], 18 May 2021, p. 11.

[44]齐呈荣 [Qi Chengrong], 杨洁瑜 [Yang Jieyu], and 李姗 [Li Shan], "雏鹰组合"奋飞蓝天: 海军航空大学某团探索飞行学员培养新链路 ["Eaglets Soar Through the Skies: A Naval Aviation University Regiment Pioneers New Flight Cadet Training Pathways"], 解放军报 [*PLA Daily*], 1 November 2022, p. 11; and 刘任丰 [Liu Renfeng], 杨洁瑜 [Yang Jieyu], and 朱晋荣 [Zhu Jinrong], 2 平方米内外: 海军航空大学某团从"面壁"到"破壁" ["Within 2 Square Meters: A Naval Aviation University Regiment Transforms from 'Wall-Facing' to 'Wall-Breaking'"], 解放军报 [*PLA Daily*], 21 July 2022, www.81.cn/jx_208569/10172416.html.

[45] Ibid.

[46] 付康 [Fu Kang], 海军航空大学某团 精准培养改装人才 ["Naval Aviation University Regiment, Precision Training for Conversion Personnel"], 解放军报 [*PLA Daily*], 9 June 2022, p. 2.

[47] Sugiura Yasuyuki, "NIDS China Security Report 2022: The PLA's Pursuit of Enhanced Joint Operations Capabilities," *National Institute for Defense Studies*, 2021, p. 68.

[48] 张军社 [Zhang Junshe], 中国海军航母编队体系化训练逐步常态化 ["China's Naval Aircraft Carrier Fleet Systematization Training Gradually Normalized, Zhang Junshe, Contemporary Navy"], 当代海军 [*Navy Today*], no. 1 (January 2017), Number 1, p. 12.

development of the carrier force.[49] As of 2023, the *Shandong* was able to generate 620 sorties between 7-24 April 2023.[50] The ability to do so suggests that the repetitions generated by the *Liaoning* and *Shandong* are undoubtedly generating informative experiences that will influence the TTPs for the next generation of PLAN aircraft and more capable aircraft like the J-35.

While in the air, pilots train both on air interdiction and the striking of maritime targets. In interviews, pilots remark how they have changed their focus from training how to safely and effectively fly from carriers to focusing on integrating their schoolhouse experiences with the training requirements of their operational units, noting that they are more focused on exchanging air combat experiences and techniques with each other. This could reflect a larger emphasis on carrier takeoff and landing training in early phases of their training or a potential dearth of combat fundamentals in early training.[51] Articles discussing U.S. Navy carrier pilot training programs published by the China State Shipbuilding Corporation note that USN pilot training focuses more on tactical training and less on basic fighter maneuvers, potentially reinforcing this assessment.[52]

Carrier aviation training also focuses on coordination between helicopter operations and fighter operations, ensuring ASW missions have appropriate coordination with defensive combat air patrols.[53] This increased training tempo and attention to an array of training subjects have resulted in the development of TTPs that have reportedly resulted in a 20 percent decrease in the time it takes for carriers to launch aircraft.[54] Carrier fighter pilots are training to conduct operations in concert with surface combatant escorts of their carriers, integrating efforts to make far seas operations more effective.[55] This increasing realism and expanding training tempo build on existing training models. Coverage of earlier carrier operations and training highlights J-15 formations conducting coordinated attacks against BLUFOR surface combatants, both within and beyond the First Island Chain, to test and develop the "comprehensive offensive capabilities of a carrier battle group in the far seas" (航母编队远海综合攻防能力).[56] Since 2018, these activities have been incorporated in the PLAN's annual training plan.[57]

According to PLA media, naval aviation pilots are flying more long-duration training sorties which, while stressing its maintenance personnel, have resulted in increased safety and maintenance

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[49] 赵星全 [Zhao Xingquan] and 杨学强 [Yang Xueqiang], 潜心砺剑, 飞出胜战新航迹—讲述北部战区海军航空兵某舰载航空兵基地破解战斗力建设难题的故事 ["Sharpening the Sword With Heart And Soul, Flying a New Path of Victory - Telling the Story of a Carrier-Based Aviation Base of the Northern Theater Command Naval Aviation Force Solving the Problem of Combat Effectiveness Construction"], 人民海军 [*People's Navy*], 20 February 2023, p. 3.

[50] Bonny Lin, Brian Hart, Samantha Lu, Hannah, Price, and Matthew Slade, "Analyzing China's Escalation After Taiwan President Tsai's Transit Through the United States," *CSIS*, 29 June 2023, https://www.csis.org/analysis/analyzing-chinas-escalation-after-taiwan-president-tsais-transit-through-united-states.

[51] Ibid.

[52] 李熠 [Li Yi], 刘盾 [Liu Dun], 鲍春宇[Bao Chunyu] and 彭修[Peng Xiuquan], 全美海军固定翼舰载机飞行员培训模式分析文 ["Analysis of the Training Model for Fixed-Wing Carrier-Based Aircraft Pilots in the U.S. Navy"], 舰船知识 [*Naval & Merchant Ships*], no.5 (2020), p. 41.

[53] Zhao Xingquan and Yang Xueqiang, "Sharpening the Sword with Heart and Soul: Flying a New Path of Victory - Telling the Story of a Carrier-Based Aviation Base of the Northern Theater Command Naval Aviation Force Solving the Problem of Combat Effectiveness Construction," p. 3.

[54] Ibid.

[55] Ibid.

[56] 陈国全 [Chen Guoquan] and 段江山 [Duan Jiangshan], 海军航母编队在西太平洋海域开展远海作战运用演练 ["The Navy's Aircraft Carrier Formation Conducts a Long-Distance Combat Exercise in the Western Pacific"], 解放军报 [*PLA Daily*], 22 April 2018, p. 1.

[57] Ibid.

standards.[58] While this might appear incongruous with recent events, such as the J-15 crash on Hainan Island in March 2025, accidents happen in all militaries that have high training tempos.[59] To maximize the benefit of this increased training tempo, naval aviators are conducting more after action reviews, including video reviews of training sorties.[60] At a minimum, PLAN aviators are conducting more complex training and more substantive after action reviews, which have begun to yield measurable improvements.

Airborne Early Warning and Control

Naval Aviation has encountered PLA cultural and organizational barriers to joint and combined arms training, which can interfere with pilots and other flight personnel, preventing them from effectively doing their jobs. Coverage of training involving AEW&C platforms demonstrates attempts to overcome the challenges to effective collaboration and coordination across chains of command in the PLA. The PLAN is regularizing its joint training with the PLAAF to conduct maritime operations. Coverage of a training exercise in 2025 indicates that PLAN AEW&C aircraft are issuing targets and intelligence to PLAAF fighters engaging enemy fighters and surface combatants. This exercise included shore-based, surface-to-air missile units in the red force.[61]

This type of training is critical for refining the use of airborne command posts to conduct tactical command and control. With the expansion of air operations beyond the First Island Chain, such training will be crucial for executing joint multi-domain attacks against enemy formations. The coverage of this exercise suggests joint combined arms training occurs more regularly, employs more opposition forces, and features training content that is increasingly complex.[62] Furthermore, this 2025 training exercise indicates that content no longer includes pre-ordained scenarios and scripts. This would suggest that, at least in this example, the PLAN and PLAAF are making progress in refining their ability to conduct joint operations. If true, this lack of scripting for more complex joint training scenarios may represent a concerning breakthrough, as this is an area where the PLA has traditionally struggled. If the PLA is able to regularize non-scripted joint training, it would mark a significant improvement that could lead to a more operationally effective PLA.

Aside from integrating AEW&C platforms into more realistic and useful training scenarios, the PLAN has developed new methods to improve the ability of AEW&C platforms to act as joint enablers. The Northern Theater Navy (NTN) 2nd Aviation Division has pilots and mission cabin personnel fly training sorties where they observe each other perform their duties to better understand

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[58] 文鹏 [Wen Peng], 多机出动, 风险不增效率不减-南部战区海军航空兵某团严守规章流程把牢安全关口 ["Multiple Aircraft Dispatched, No Increase in Risk and No Reduction in Efficiency - A Regiment of the Southern Theater Command Naval Aviation Strictly Abides by Regulations and Procedures to Ensure Safety"], 人民海军 [*People's Navy*], 27 July 2023, p. 2.

[59] Staff Writers with AFP, "Chinese Military Jet Crashes, Pilot Safely Ejects," *The Defense Post*, 16 March 2025, https://thedefensepost.com/2025/03/16/chinese-military-jet-crashes/.

[60] 王莉莉 [Wang Lili], 王硕 [Wang Shuo] and 鑫宇 [Xin Yu], 复杂气象,课目不变标准不降-东部战区海军航空兵某师加强天气研判确保飞行安全 ["Complex Weather, No Changes in Subjects or Standards - a Certain Division of the Eastern Theater Command Naval Aviation Force Strengthens Weather Analysis to Ensure Flight Safety"], 人民海军 [*People's Navy*], 27 July 2023, p. 2.

[61] 攥指成拳体系制胜北部战区空军某部: 聚合"联"的力量释放"抗"的质效 ["The System of Clenching Fingers Into a Fist Wins the Battle in a Certain Unit of the Northern Theater Air Force: Aggregating the Power of 'Unification' to Release the Quality and Effectiveness of 'Resistance'"], CCTV7 正午国防军事 [*CCTV7 Noon National Defense and Military*], 20 March 2025. Note: in the PLA context red forces are friendly forces, blue forces are aggressors.

[62] Ibid.

the requirements of their respective jobs with the intention of getting them to work together more effectively.[63] This division is considered a model unit for developing operational concepts for the joint force, and it collaborates with the PLAAF regularly to spread the training methods it develops.[64] This unit holds competitions for "airborne combat support personnel" (空中战勤) and regularly incorporate members of the radar and electronic warfare communities from other elements of the joint force.[65] The PLAN likely presents this information to show other units what they should aspire to and represents a small pocket of excellence. Expanded cooperation between special mission aviation units, radar units, and other elements of the joint force would suggest broader efforts by the PLAN to more effectively employ these critical enabling platforms.

Helicopter Training

PLAN helicopter pilots have been subjected to increasingly demanding training schedules that incorporate similar levels of realism. Helicopter training exercises are incorporating what the PLA refers to as "hot pitting" (refueling and rearming while an aircraft is running).[66] Coverage of helicopter training focuses on how pilots are required to plan their own flight routes and must fly under a variety of conditions, including dangerous weather conditions.[67] Additionally, during exercises, commanders will issue random simulated mechanical faults or new conditions for pilots to adapt to on the fly.[68] Because PLA flight training used to be highly scripted, this shift likely has had a significant impact and improved aviator quality.

Career Paths for Naval Aviators

There are relatively limited pathways for naval aviators to reach senior leadership positions within theater commands or higher. PLAN headquarters retains control over the man, train, and equip functions for Naval Aviation. The CMC's elimination of the Naval Aviation Headquarters in 2003 ended a pinnacle of Naval Aviation promotion potential.[69] Thenceforth PLAN aviators promoted to senior leadership positions within the PLAN and the theater commands via competition with officers from the other branches of the PLAN. While the PLAAF tends to promote fighter pilots to senior leadership positions, the PLAN prioritizes the promotions of officers with a diverse set of backgrounds. Within Naval Aviation, there appears to be a cadre of fighter pilots reaching the most senior positions in the PLAN and the Theater Commands. Eight of the ten senior leaders identified below are fighter pilots. While aviators from the special mission aviation community have reached this echelon, they do not appear to be represented in comparable numbers.

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[63] 杨凯凯 [Yang Kaikai] and 孙飞 [Sun Fei], 云海茫茫, "鲲鹏"展翅织天网——亲历北航某师跨昼夜实兵训练 ["The Sea of Clouds is Vast, and 'Kunpeng' Spreads Its Wings to Weave a Skynet - Witnessing the Day-and-Night Live-Fire Training of a Division of Beihang University"], 人民海军 [*People's Navy*], 12 April 2019, p. 1.
[64] Ibid.
[65] Ibid.
[66] 陈琳 [Chen Lin] and 李恒江 [Li Hengjiang], 战鹰鏖战击夜空- 东部战区海军航空兵某团跨昼夜大强度训练见闻 ["Fighting Eagles Fight in the Night Sky - a Report on the High-Intensity Training of a Certain Regiment of the Eastern Theater Command Naval Aviation Force Across the Day and Night"], 当代海军 [*Navy Today*], no. 12 (December 2021), p. 47.
[67] Ibid.
[68] Ibid.
[69] 中国海军航空兵简介 ["Brief Introduction to Chinese Naval Aviation"], 海军招飞网 [*PLA Navy Pilot Recruitment Portal*], 29 September 2018, http://www.hjzf.mil.cn/news/2019/1/9/5491eb28d2a911e8a774e8611f204f1b.html.

Biographies of Senior PLAN Aviators

The two highest ranking naval aviators in the PLA are both fighter pilots. They reached the theater command deputy leader grade.

Cui Yuzhong (崔玉忠), currently a PLAN Deputy Commander, promoted up through North Sea Fleet (NSF) Aviation via the Shanhaiguan Training Base and became an assistant to the PLAN Staff Department director (海军参谋长助理) in 2014.[70] From this position, Cui became the commander of Eastern Theater Command Navy Aviation in March 2016 and concurrently served as a Eastern Theater Navy deputy commander.[71] Cui was then promoted in April 2020 to deputy director of the PLAN Staff Department. In December 2020, Cui was promoted in grade. Later that year, he was appointed as a PLAN deputy commander.[72] The details of Cui's background in naval aviation are unclear, but it is probable that he was a fighter pilot. Indeed, he purportedly served as an instructor to noted PLAN Aviator Wang Wei, who was lost at sea after piloting his J-8 into a U.S. Navy EP-3 on 1 April 2001.[73] As of November 2025, Cui is currently active in his role as deputy PLAN commander, and he may have been given increased responsibilities given ongoing purges.[74]

The director of the Central Theater Command Staff Department VADM Wang Changjiang (王长江) has his roots in Naval Aviation. Wang began his career in East Sea Fleet Aviation and eventually rose to become the commander of the 10th Air Regiment, the 4th Air Division, which was later redesignated as the PLAAF's 804th Brigade.[75] Wang is credited as having flown for 32 years, despite serving in staff and headquarters jobs from 1977 to 2009.[76] Wang was eventually promoted to the deputy director of the PLAN Equipment Department, where he served between 2009 and 2013. While at PLAN headquarters, Wang was promoted to deputy director of the staff department, a corps leader grade position. Wang eventually was promoted to deputy commander of the South Sea Fleet (SSF) and commander of SSF Naval Aviation. After serving on Hainan Island, Wang was promoted to deputy commander of the Northern Theater Command sometime around 2016.[77] In 2019, Wang was promoted to serve as the director of the Central Theater Command Staff Department and was

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[70]汲古知新 [Learn from the Past to Understand the Present], 海军副司令崔玉忠 ["Deputy Navy Commander Cui Yuzhong"], 网易 [*NetEase*], 24 March 2025, https://www.163.com/dy/article/JRE847RD05563DJA.html; and *2015 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2015, p. 44, and *2013 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2013, p. 46.

[71] Ibid.

[72] Ibid.

[73] 沙志亮 [Sha Zhiliang] and 崔伟光 [Cui Weiguang], 一: 雏鹰展翅翔海天--飞向海天 ["1. the Young Eagle Spreads its Wings and Flies to the Sea and Sky"], 新浪军事 [*Sina Military*], 30 March 2002, https://mil.news.sina.com.cn/2002-03-30/60744.html?from=wap.

[74] [视频]我国第一艘电磁弹射型航空母舰入列 习近平出席入列授旗仪式并登舰视察 ["[Video] China's First Electromagnetic Catapult Aircraft Carrier Enters Service; Xi Jinping Attends the Commissioning Ceremony and Inspects the Ship"], CCTV 新闻联播 [*CCTV Xinwen Lianbo*], 7 November 2025, https://tv.cctv.com/2025/11/07/VIDEhg0rKeFMc8CMRuNOVk7W251107.shtml.

[75] 岳怀让 [Yue Huairang], 海军原参谋长助理崔玉忠转任南海舰队副司令员兼南航司令员 ["Cui Yuzhong, Former Assistant to the Navy Chief of Staff, Was Transferred to Serve as Deputy Commander of the South China Sea Fleet and Commander of the South China Air Force"], 澎湃新闻 [*The Paper*], 23 July 2016, https://www.thepaper.cn/newsDetail_forward_1503107.

[76] 王长江中将调任中部战区傅斯年零增势海军飞行员 ["Lieutenant General Wang Changjiang was Transferred to the Central Theater Command to Serve as a Naval Pilot"], 新京报 [*The Beijing News*], 5 August 2019, https://baike.baidu.com/reference/16751138/533aYdO6cr3_z3kATKWPyPn2ZyvGYtqu7LXUBONzzqIP0XOpRYfpFIY398Rx7f5pFUXIv5UsY9haleCjVBpa7PcRePA1SqgimGmrDGDfkOavu4pk2IxMpIpGWaUQmbKp8hmg.

[77] *2016 Directory of PRC Military Personalities March 2016*, U.S. Department of Defense, March 2016, p. 99.

concurrently the deputy theater commander.[78] As of 2024, Wang was still active in his position, but would have been at his retirement age of 65.[79]

Historically, other Naval Aviators have culminated their careers as corps leader grade officers who worked in Navy headquarters. RADM Wang Weiming (王维明) came up through the NSF's 5th Air Division (a fighter unit) and ultimately served as a deputy chief of the PLAN Staff Department.[80] RADM Xu Weibing (徐卫兵) began his career at the Shanghaiguan Naval Aviation Training Base in the NSF and ultimately served as the director of the PLAN Logistics Department.[81] Xu's appears to have focused on training fighter pilots.[82] While he was active in this position in 2019, this would make him 59 years old, one year short of mandatory retirement.[83] RADM Sui Hongdi (隋洪地) was a naval aviator with the 2nd Aviation Division under the NSF and ultimately promoted to a corps deputy leader grade officer as a deputy chief of the NTN Staff Department, and possibly retired sometime around 2019 given his age.[84] Anecdotally, it appears that while fighter pilots and special mission aviation officers can promote to higher echelons of leadership, helicopter pilots do not.

Ding Yi (丁毅), a former PLAN deputy commander, has a resume similar to his fellow theater command deputy leader grade naval fighter pilots. Ding was the commander of the regiment that tested the JH-7s, placing him in at the 16th Air Regiment of the 6th Air Division under ESF Aviation.[85] Ding moved up his chain of command within the ESF until he became a corps deputy leader grade officer as the deputy director of the NSF Staff Department.[86] From this staff job, Ding was promoted to deputy commander of the NSF and commander of NSF Aviation in or around 2010.[87] In 2013, Ding was promoted to a deputy theater commander grade officer and the same year became a deputy commander of the PLAN.[88] In 2017, Ding was referenced as the commander of the *Liaoning* Aircraft Carrier Group during its port call to Hong Kong.[89] It is possible that during this early phase of the carrier program Ding was sent down to manage the cruise; such a position is

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[78] *2022 Directory of PRC Military Personalities March 2022*, U.S. Department of Defense, March 2022, p. 152.
[79] *Military and Security Developments Involving the People's Republic of China 2024,* U.S. Department of Defense, 18 December 2024, p. 124.
[80] Jeffery Becker, David Liebenberg, and Peter Mackenzie, "Behind the Periscope: Leadership in China's Navy," *CNA*, December 2013, p. 153.
[81] Becker, Liebenberg, and Mackenzie, "Behind the Periscope: Leadership in China's Navy," p. 164.
[82] 容桂阳 沙志亮 海航某团 99 号机主轮迫降成功纪实（图文）26 October 2000, https://mil.news.sina.com.cn/2000-10-26/7036.html
[83] 兰州军区原政委苗华履新海军政委, 数月前职务刚调整 ["Miao Hua, Former Political Commissar of the Lanzhou Military Region, Took Up the New Post of Political Commissar of the Navy. His Position was Just Adjusted a Few Months Ago"], 澎湃新闻 [*The Paper*], 25 December 2019, https://m.thepaper.cn/wifiKey_detail.jsp?contid=1288814&from=wifiKey#.
[84] Becker, Liebenberg, and Mackenzie, "Behind the Periscope: Leadership in China's Navy," p. 187.
[85] 海军副司令员丁毅, 东海舰队政委王华勇晋升中将军衔 ["Navy Deputy Commander Ding Yi and East China Sea Fleet Political Commissar Wang Huayong were Promoted to the Rank of Lieutenant General"], 澎湃新闻 [*The Paper*], 12 July 2024, https://m.thepaper.cn/kuaibao_detail.jsp?contid=1255488&from=kuaibao.
[86] Ibid.
[87] *2013 Directory of PRC Military Personalities March 2013,* U.S. Department of Defense, p. 45.
[88] 2014 Directory of PRC Military Personalities March 2014, U.S. Department of Defense, p. 43; and 海军副司令员丁毅、东海舰队政委王华勇晋升中将军衔 ["Navy Deputy Commander Ding Yi and East China Sea Fleet Political Commissar Wang Huayong were Promoted to the Rank of Lieutenant General"], 澎湃新闻 [*The Paper*], 12 July 2024.
[89] 連錦添 [Lian Jintian], 張慶波 [Zhang Qingbo], and 陳然[Chen Ran], 遼寧艦停靠引發香江熱潮: 千帆萬桅不如你 ["The *Liaoning* aircraft carrier's docking sparked a frenzy in Hong Kong: 'A thousand sails and ten thousand masts are not as good as you!'"], 人民網-人民日報海外版 [*People's Daily Overseas Edition*], 10 July 2017, http://military.people.com.cn/BIG5/n1/2017/0710/c1011-29394328.html/

typically held by a corps deputy leader grade officer. Ding's education experience appears to be relatively unique for combined arms service. He attended the Dalian Naval Vessel Academy for his initial officer training.[90] Ding is old enough to have gone through his initial officer and pilot training in the PLAAF prior to joining his first unit in the PLAN.[91] It is possible that Ding's education at the Dalian Naval Vessel Academy was part of some experimentation by the PLAN intended to convert aviators to surface warfare officers. The PLAN later conducted an experiment to re-educate pilots into surface warfare officers in 1987.[92]

This experiment sent a small class of pilots from the PLAN and the PLAAF to attend the Guangzhou Naval Vessel Academy to become surface combatant commanders.[93] The program only ran one class of officers, but it produced a significant number of naval aviation pilots who were promoted to positions of operational import over the past ten years, including leadership in theater command navies and theater commands headquarters. Of the ten officers who participated in this program, nine graduated and went on to serve as surface warfare officers. This class was composed of a variety of aviators who had served as flight instructors for fighters, special mission aircraft, and transport aircraft.

RADM Li Xiaoyan (李晓岩) transitioned to the PLAN from the PLAAF, where he served as a fighter pilot and instructor pilot.[94] Li would go on to serve as a deputy commander and commander of several destroyers and frigates. He studied abroad in Russia, commanded the 13th Naval Escort Task Force (NETF), and served as the deputy leader of the staff department of the 9th destroyer flotilla. In 2015, he was promoted to deputy chief of the staff department of the South Sea Fleet. Li would likely have retired in this position due to his age and grade.[95] Li's career, while long, did not progress beyond the corps deputy leader grade. Li was considered as a candidate to be the first commander of a PLAN aircraft carrier battle group, but ultimately this role went to then RADM Wang Hai (王海), a surface warfare officer. One would assume that Li would have been an ideal candidate for commanding a carrier battle group, but this situation is emblematic of the hit-and-miss successes of the individuals who graduated as part of this transition program.

RADM Bai Yaoping (柏耀平) flew J-6s and J-7s in the ESF's 4th Air Division, 12th Air Regiment prior to enrolling in the Guangzhou Naval Vessel Academy as part of this transition program. After graduation, Bai would go on to command numerous surface combatants between 1991 and 1998.[96] After time spent commanding surface combatants, Bai attended an academic program in Russia and returned to become the deputy commander of the 3rd destroyer flotilla. From this position, Bai became the deputy director of the Dalian Vessel Academy. In 2016, Bai was promoted to rear

[90] Becker, Liebenberg and Mackenzie, "Behind the Periscope: Leadership in China's Navy," p. 19.
[91] Ibid, p. 181.
[92] Ibid, p. 215.
[93] Ibid, p. 215.
[94] 史座 [History], 李晓岩: 我国首位非正式航母舰长, 辽宁号服役前 6 个月遗憾被调离 ["Li Xiaoyan: China's First Unofficial Aircraft Carrier Captain. He was Unfortunately Transferred Away Six Months Before the *Liaoning* Entering Service"], 今日头条 [*Today's Headlines*], 14 April 2022, https://www.toutiao.com/article/7086286060699140647/.
[95] Becker, Liebenberg, and Mackenzie, "Behind the Periscope: Leadership in China's Navy," p. 215.
[96] 他曾是辽宁舰舰长的热门人选, 入围却最终落选, 老部下为其圆梦 ["He was Once a Top Candidate to Become Captain of the *Liaoning*, But Despite Making the Shortlist, He was Ultimately Not Selected — It Was a Former Subordinate Who Helped Fulfill His Dream"], *WeChat*, 13 June 2024, https://mp.weixin.qq.com/s/aAhJRQmgJ_MdK3hM2SYzEg and 巡天蹈海-柏耀平 ["Patroling the Skies and Treading the Seas – Bai Yaoping"], *WeChat*, 7 July 2024, https://mp.weixin.qq.com/s/xsMxzCG9ewEYEOm9EbdGnQ.

admiral and a deputy corps leader grade officer as a deputy chief of the NSF staff department.[97] Bai would later serve the deputy commander of the Eastern Theater Command Navy in 2017. He ultimately moved to become deputy commander of the Northern Theater Command Navy in 2019, where he would end his career in 2024. Bai's movement to the corps leader grade echelon marks significant progress in his career, but as he lacked certain experiences of his classmates who promoted to higher grade positions, such as commanding a Gulf of Aden naval escort task force or a PLAN contingent in a large scale multi-national exercise, it is possible that his promotion potential was limited.

RADM Wang Dazhi (王大忠) was the most successful graduate of the transition program. Wang flew in the NSF's 2nd Division 6th Regiment, likely as a pilot of transport aircraft or H-6 variants.[98] Wang appears to be an outlier in this respect. After graduating, Wang served as the deputy commander and commander of several destroyers, before becoming the commander of the 1st Destroyer Flotilla.[99] In 2013, Wang commanded the PLAN contingent during the 2013 Sino-Russian exercise "Joint Sea 2013" (海上联合-2013).[100] Subsequently, Wang was promoted to serve as an assistant to the chief of the PLAN Staff Department in 2015, a corps deputy leader grade position, and became a deputy chief of the PLAN Staff Department.[101] From this headquarters position, Wang was put on a different career track from his classmates. Instead of returning to a Theater Command Navy position, Wang was promoted to a theater command deputy leader grade officer and then promoted to be a deputy director of the CMC Logistics Support Department.[102] Three years later, in 2021, Wang was promoted to serve as the commander of the NTN and a concurrent deputy theater commander, a position in which he still serves. Wang's work on the CMC clearly set him apart from his classmates with the resulting promotion in grade, which opened up further career prospects for him.

The only other member of his class to reach a deputy theater command grade billet was RADM Wang Zhongcai (王仲才), who had an even more remarkable career. He began his career as an instructor pilot prior to starting the program at the Guangzhou naval Vessel Academy. Like his classmates, Wang would go on to be the deputy commander and commander of various surface combatants before becoming the deputy commander of the 3rd Destroyer Flotilla of the East Sea Fleet (ESF). Wang would then become commander of the Xiamen Naval District and serve in a division leader grade capacity, before becoming the deputy chief of the staff department of the ESF.[103] Wang then became the deputy chief of the ESF Staff Department in 2016, during which time he would command the 26th NETF.[104] Wang then became the commander of the China Coast Guard in 2018, after which he became the commander of the ETN and concurrent deputy theater commander in 2022.[105] The other aviators who enrolled in this program were not nearly as successful as Wang

[97] Ibid.
[98] 王大忠履新解放军北部战区海军司令员 ["Wang Dazhong Takes Up New Post as the Commander of the PLA Northern Theater Navy"], 联合早报 [*Lianhe Zaobao*], 14 March 2022, https://www.zaobao.com.sg/realtime/china/story20220314-1252079.
[99] Ibid.
[100] Ibid.
[101] *2016 Directory of PRC Military Personalities*, p. 157.
[102] "Wang Dazhong Takes Up New Post as the Commander of the PLA Northern Theater Navy."
[103] 又一名将亮相东海: 王仲才中将已任东部战区海军司令员 ["Another General Appeared in the East China Sea: Lieutenant General Wang Zhongcai has Been Appointed as the Commander of the Eastern Theater Command Navy"], 扬子晚报 [*Yangze Evening Post*], 4 August 2022, https://www.yzwb.net/zncontent/2389845.html.
[104] Ibid.
[105] *2022 Directory of PRC Military Personalities,* p. 71

Dazhi, Wang Zhongcai, Bai Yaoping, and Li Xiaoyan. The rest of the class did not promote beyond division deputy leader grade.

Today, such a program could be a sign that the PLAN felt its current crop of prospects for the command of carrier battlegroups is unprepared for the job. However, the 1987 class was the only iteration of this program. By passing over Li Xiaoyan for the job of the first carrier battle group commander, the PLAN clearly prioritized qualifications other than an aviation and surface warfare background. Given the PLA's inability to offer joint PME for officers below the corps leader grade level, career transition programs like the one described above could indicate an intent to develop division leader or division deputy leader grade officers with suitable aviation experience to effectively lead joint operations in the far seas. However, it is possible that a shortage of pilots and the mixed success of the program prevented any further iterations of that course of instruction. The wholesale transfer of the majority of shore-based Naval Aviation to the PLAAF leaves a shrinking pool of pilots to pull from for a program such as this and is unlikely to ever be repeated.

Carrier Pilot Promotion Pathways

Carrier fighter pilots in the PLAN have a clear career path that keeps them within the aviation community but does allow them to reach the corps deputy leader grade echelon of command. RADM Dai Mingmeng (戴明盟) is both the torch bearer for carrier aviation within the PLAN, as well as the highest achieving individual among his peer group. Dai, similar to Wang Dazhi, Li Xiaoyan, and Bai Yaoping, studied abroad in Russia in 2003, with a focus on carrier aviation operations.[106] By 2006, Dai had over 1000 flying hours, with more than half of them in fourth-generation aircraft.[107] In September 2006, Dai began his transition training to become a carrier pilot. Dai was the first to land a J-15 on the *Liaoning* on 23 November 2012. He became certified as a landing signal officer (LSO) in 2013, the first officer to attain that certification. This certification appears to be a promotion criterion for commanding officers, as the experiences of other officers will show. Dai was then promoted to a division deputy leader grade officer as the deputy commander of the "Carrier-borne Aviation Force" (舰载航空兵部队).[108] Sometime in 2015, Dai promoted to a division leader grade officer and commander of the Carrier-borne Aviation Force.[109] By 2019, Dai moved to a corps deputy leader grade position as the deputy commander of Southern Theater Navy (STN) aviation.[110] Sometime in 2021, Dai became the commander of the *Shandong* Aircraft Carrier Battle Group.[111]

Interrogating the career histories of other important carrier pilots at the time of Dai's rise to leadership reveals similar promotion pathways. Commander Zhang Shaobing (张少兵) was the

[106]梁伟 [Liang Wei], 戴明盟 中国舰载机的"超级猛士" ["Dai Mingmeng: China's Carrier-Based Aircraft 'Super Warrior'"], 中国共产党新闻网 [*CCP Online*], 16 September 2014, http://cpc.com.cn/n/2014/0916/c68742-25670850.html.
[107]王东明 [Wang Dongming] and 吴登峰 [Wu Dengfeng], 带领舰载机受阅的"航母战斗机英雄试飞员"戴明盟 ["Dai Mingmeng, the 'Heroic Test Pilot of Aircraft Carrier Fighter Jets' Who Led the Carrier-Based Aircraft in the Parade, People's Liberation Army Daily"], 解放军报 [*PLA Daily*], 22 September 2015, http://www.81.cn/jwzl/2015-09/22/content_6691823.html.
[108] 航母着舰第一人戴明盟升任南部战区海军航空兵副司令员 ["Dai Mingmeng, the First Person to Land an Aircraft Carrier, was Promoted to the Deputy Commander of the Southern Theater Command Naval Aviation Force"], 澎湃新闻 [*The Paper*], 27 May 2019, https://news.ifeng.com/c/7mDn4ocyUbk; *2015 Directory of PRC Military Personalities*, p. 47.
[109] *2016 Directory of PRC Military Personalities*, p. 159.
[110] "Dai Mingmeng, the First Person to Land an Aircraft Carrier, was Promoted to the Deputy Commander of the Southern Theater Command Naval Aviation Force."
[111] "Roderick Lee," *Tweet*, 11 November 2021, https://x.com/roderick_s_lee/status/1458875561212792850.

commander of the *Liaoning* in 2013 and had a background as a test pilot.[112] Zhang moved to become the commander of the Carrier-borne Aviation Force that year, before eventually moving up to a position as the assistant to the chief of the PLAN Staff Department.[113] Zhang promoted to rear admiral in 2018. Sometime after this, he promoted to a deputy commander of the Southern Theater Command Air Force, a corps leader grade appointment.[114] This transfer seems to make some sense given Zhang's aviation background and the organizational importance of the PLAN in the Southern Theater Command in general. This promotion still appears to be a rarity in a PLA that is still finding new ways to create more joint-ness in a theater that has a significant maritime mission set.

Following Dai to become the commander of the Carrier-borne Aviation Force was Commander Xu Hanjun (徐汉军). Xu moved from the commander of the NTN aviation regiment that composes the air wing for the *Liaoning* and was promoted to command the Carrier-borne Aviation Force sometime in 2018.[115] Sometime during his promotion process, Xu became an LSO.[116] Xu's promotion from leader of the Carrier-borne Aviation Force is unclear.

During Xu's time in command, the chief of the staff department of the Carrier-borne Aviation Force was Lu Chaohui (卢朝辉).[117] Lu was a regimental deputy commander in 2016 flying off aircraft carriers, and by sometime around 2019 had become a regimental commander of the NTN J-15 unit.[118] Lu also attained LSO certification at some point in his career.[119]

Commander Zhang Ye (张叶) also moved up through the ranks of carrier J-15 pilots, following the same path and attaining an LSO certificate, but he was promoted to lead the PLAN Carrier Aviation Test and Training Base sometime around 2022.[120] The reasons for Zhang's deviation from the rest of his comrades is unclear.

The promotion pathway to leadership for carrier pilots appears to be up through their regiment, becoming an LSO and becoming a staff department leader, and up through PLAN headquarters once they promote to the division leader grade level, and to have time leading the Carrier-borne Aviation

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[112] 张少兵少将履新, 吴利军正式执掌光大集团 ["Major General Zhang Shaobing Takes Up New Post, Wu Lijun Officially Takes Charge of Everbright Group"], 鲁中晨报 *[Luzhong Chenbao*], 25 September 2023, https://mbd.baidu.com/newspage/data/landingsuper?context=%7B%22nid%22%3A%22news_9642183488949897316%22%7D&n_type=-1&p_from=-1.

[113] *2017 Directory of PRC Military Personalities,* U.S. Department of Defense, March 2017, p. 42.

[114] "Major General Zhang Shaobing Takes Up New Post, Wu Lijun Officially Takes Charge of Everbright Group."

[115] *2019 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2019, p. 47.

[116] 卢朝辉 [Lu Chaohui], 着舰指挥是一门艺术 ["Landing Command is Art"], 解放军报 [*PLA Daily*], 3 April 2020, p 5.

[117] *2020 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2020, p. 43.

[118] 王东 [Wang Dong] and 明孙飞 [Ming Sunfei], 张超生前所在部队组织悬挂全军挂像英模画像仪式 ["The Unit Where Zhang Chao Served During His Lifetime Organized a Ceremony to Hang Portraits of Heroes and Models for the Entire Army"], 中华人民共和国国防部 [*PRC Ministry of Defense*], 13 January 2019, http://www.mod.gov.cn/gfbw/gfjy_index/4834441.html; and 登峰 [Deng Feng], 中国海军辽宁舰编队赴西太平洋海域开展远海训练 ["The Chinese Navy's *Liaoning* Aircraft Carrier Group has Headed to the Western Pacific to Conduct Open-Sea Training"], 中国经济网 [*China Economy Online*], 24 December 2016, http://www.ce.cn/xwzx/gnsz/gdxw/201612/24/t20161224_19079574.shtml.

[119] 梅世雄 [Mei Shixiong], 奋飞在新时代的海天——海军某舰载航空兵部队备战打仗记事 ["Flying in the Sea and Sky of the New Era – a Record of a Naval Carrier-Based Aviation Unit Preparing for War"], 新华社 [*Xinhua*], 2 September 2020, http://www.xinhuanet.com/politics/2020-09/02/c_1126445342.htm.

[120] 钱晓虎 [Qian Xiaohu], 朱为俊 [Zhu Weijun] and 赵星全 [Zhao Xingquan], 跃升奋飞 砺剑海天——回访海军舰载航空兵某基地飞行员群体 ["Soaring High and Sharpening the Sword in the Sea and Sky - a Visit to the Pilot Group of a Certain Base of the Navy Carrier-Based Aviation"], 解放军报 [*PLA Daily*], 20 June 2022, p 1.

Forces. So far, the majority of naval aviators to have promoted to the highest ranks of the PLA were officers who transitioned to serve as surface warfare officers. As this force expands, more opportunities for leadership will open to naval aviators, and leadership of carrier battle groups may prove a prestige experience.

Special Mission Aviation Pilot Career Paths

Special mission aviation pilot career promotion pathways appear to be constrained by the size of their specific component of the PLAN, the dominance of PLAN fighter pilots at the corps deputy leader grade position and above, and competition with other PLAN officers from other branches for positions beyond the division leader grade. Of the senior PLAN leaders identified in this report, only two promoted beyond the corps grade. The careers of Chen Luhai (陈陆海) and Zhang Huikun (张辉琨), affiliated with the NTN 2nd Air Division and its subordinate regiments, show that these pilots tend to promote up through their chain of command. Chen was a regimental commander in 2007, promoted to become the chief of the staff department of the 2nd Air Division by 2011, and was promoted to become the commander of the division by 2015.[121] Zhang, born in 1971, was the deputy chief of the staff department for the 6th Air Regiment sometime around 2006. And by 2011, he had been promoted to the regimental commander.[122] From this position, Zhang was promoted to become the chief of the staff department of the 2nd Air Division.[123] He became the commander sometime around 2017, and would reach retirement age in six years as a division leader grade officer.[124] Zhang is credited as flying a KJ-200 sortie into the Western Pacific in 2013.[125] It is also possible for officers to promote up to division leader grade positions via a promotion to a deputy division commander position or move between divisions.

Given the three divisions and six subordinate regiments of special mission aviation units within Naval Aviation, it is possible for pilots to promote between different units. Chen Gang (陈刚) joined the PLA in 1992 and would serve in the then North Sea Fleet and Southern Theater Command Navy special mission aviation divisions. Chen began his career in the 2nd Air Division's 4th Regiment, moved to the 6th Regiment in Liaoning in 2008, and transferred to the 3rd Air Division or a subordinate component in 2015.[126] In the intervening years, Chen would become the deputy commander of the 3rd Air Division and the commander of the division by 2021.[127]

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[121] *2013 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2013, p 46 and *2016 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2016, p. 115.

[122] 杨凯凯 [Yuan Kaikai] and 王晶 [Wang Jing], 打赢路上, 强兵先强将 ["To Win the Tattle, a Strong Army Must Have Strong Commanders"], 中国共产党新闻网 [CPC News], 28 August 2014, https://cpc.people.com.cn/n/2014/0828/c83083-25556878.html; 张继文 [Zhang Jiwen] and 陈天恩 [Chen Tian'en], 无般战场无形剑— 北航某飞行团转变战斗力生成模式侧记 ["Formless Sword on the Battlefield Without Borders— A Sidelight on the Transformation of Combat Capability Generation Models in a Flight Regiment at Beihang University"], 人民海军 [*People's Navy*], 31 August 2011, p 3;光荣榜 [Honor Roll], 人民海军 [*People's Navy*], 28 March 2006, p. 2.

[123] *2016 Directory of PRC Military Personalities*, U.S. Department of Defense, March 2016, p. 115.

[124] 杨凯凯 [Yuan Kaikai] and 王晶 [Wang Jing], 打赢路上, 强兵先强将 ["To Win the Tattle, a Strong Army Must Have Strong Commanders"].

[125] Ibid.

[126] 海南省双拥办 [Hainan Provincial Office for Supporting the Military and Caring for Veterans], 2022 年度海南省"最美拥军人物"黄燕 ["Huang Yan, 2022 Hainan Province's 'Most Beautiful Military Supporter'"], 政务网 [*Zhengwuwang*], 17 February 2023, http://zw.china.com.cn/2023-02/17/content_85112794.html.

[127] 柳刚 [Liu Gang], 费士廷 [Fei Shiting], and 王天益 [Wang Tianyi], 跟随海军航空兵某师战机巡逻: 飞向祖国最南端 ["Accompanying Fighter Jets From a Naval Aviation Brigade on Patrol: Flying to the Southernmost Tip of the Motherland"], 国防部 [*Ministry of Defense*], http://www.mod.gov.cn/gfbw/wzll/kj/4859878.html; and 邓博宇 [Deng

Key milestones met during special mission aviators' career progression include: becoming a flight leader with 8-10 years' experience and 3000 flight hours, reaching first grade pilot status by the time they reach regiment deputy leader grade positions, flying at least 4,000 hours by the time they reach division deputy leader grade billets, and reaching special grade pilot sometime around becoming a regimental grade commander.[128]

Critical Senior Enlisted Roles

The increasing ranges at which the PLA's air components will operate as part of "informationized" and "intelligentized" joint maritime operations will increase pilot reliance on PLAN or PLAAF airborne enablers. NCOs will play critical roles as they operate computer terminals and feed information to the officers in AEW&C and anti-submarine warfare aircraft. The information available on these roles suggests why the PLAN retained its shore-based special mission aircraft. It is essential to understand the different roles in the "mission cabin" (任务舱), who fills those roles, and how the PLA enables airborne command and control given its adherence to the grade structure when it comes to issuing and accepting orders. As a service that will operate at the edge of the span of control from a centralized command structure, the PLAN could be at the leading edge of this issue.

Media coverage of PLAN AEW&C shows that the operators of these platforms are critical to a variety of mission sets. Reports indicate that AEW&C aircraft are used for both vectoring pilots to engage air targets, as well as providing data to strike surface combatant targets.[129] In the back of the aircraft, there are at least five types of positions: electronic reconnaissance (电子侦察), radar operators (雷达员), command and guidance personnel (指挥引导员), electronic countermeasures personnel (电子对抗员) and commanders (指挥员).[130] Naval Aviation divisions are described as having over 100 NCOs dedicated to performing these tasks.[131] Generally speaking, the air crew working in the back of special mission aircraft are referred to as "airborne combat support" (空中战

Boyu], 南部战区海军官兵认真学习党的十九届六中全会精神 ["Officers and Sailors of the Southern Theater Command Navy Earnestly Study the Spirit of the Sixth Plenary Session of the 19th CPC Central Committee"], 南海舰队 [South Sea Fleet],18 November 2021, https://mp.weixin.qq.com/s/TjwL2ap2m2sGhjz_Hdc93A.

[128] 杨雷 [Yang Lei] , 揭秘海军航空兵部队：在南海曾遭别国军机跟踪 距二三十米 ["Unveiling the Naval Aviation Forces: Tracked by Foreign Military Aircraft in the South China Sea at a Distance of 20 to 30 Meters"], 新华网 [*Xinhua Net*], 26 June 2015, https://www.xinhuanet.com//mil/2015-06/26/c_127953738_2.htm; and 2022 年度海南省"最美拥军人物"黄燕 ["Huang Yan, 2022 Hainan Province's 'Most Beautiful Military Supporter'"], 政务网 [*Zhengwuwang*], and 打赢路上, 强兵先强将 ["To Win the Tattle, a Strong Army Must Have Strong Commanders"], 中国共产党新闻网 [CPC News], 28 August 2014.

[129] 歼击机护航 预警机指挥水面舰配合南部战区海军航空兵某团轰炸机远海演练打击水面目标 ["Fighter Escort, Early Warning Aircraft Command, Surface Ships Cooperate, Bombers of a Regiment of the Southern Theater Command Naval Aviation Conduct a Drill to Strike Surface Targets in the Far Sea"], 解放军报 [*PLA Daily*], 15 March 2020, p. 2.

[130] 高宏伟 [Gao Hongwei], 傅金泉[Fu Jinquan] and 张通 [Zhang Tong], 昼夜鏖战, "鹰群"凌厉出击——直击南部战区海军航空兵部队导弹实射训练 ["Fighting Day and Night, the 'Eagle Group' Strikes Fiercely - Direct Attack on the Missile Live-Fire Training of the Southern Theater Command Naval Aviation Force"], 解放军报 [*PLA Daily*], 26 August 2022, p 2; "海天猎鹰"探海巡天——北部战区海军航空兵某师长航时跨昼夜飞行训练速写 ["'Sea and Sky Falcon' Explores the Sea and Patrols the Sky - a Sketch of a Division-Long Flight Time and Cross-Day and Night Flight Training of the Northern Theater Command Naval Aviation Force"], 解放军报 [*PLA Daily*], 26 April 2020, p. 1; 傅琳 [Fu Lin] and 罗陈 [Luo Chenjian], 建海军航空兵某师引导官兵强化协同作战能力——淬砺海空利剑 ["Establishing a Naval Aviation Division to Guide Officers and Soldiers to Strengthen Their Ability to Coordinate Combat Operations - Sharpening the Sword of Sea and Air"], 解放军报 [*PLA Daily*], 20 February 2025, p. 2.

[131] 赵怡然 [Zhao Yiran] and 谭海麟 [Tan Hailin], 空中战勤士官何玉平紧盯实战精武强能海空巡猎当先锋 ["Aerial operations NCO He Yuping Stays Focused on Real-Combat Readiness, Hones Elite Skills, and Takes the Lead in Joint Sea-Air Patrol Missions"], 人民海军 [*People's Navy*], 3 November 2020, p. 3.

勤) personnel. NCOs are frequently described in these reports as being responsible for operating the sensors and systems in mission cabins, while officers serve as the commanders in the rear of these cabins. In 2020, a group leader (大队长) of an unidentified PLAN aviation division was described as the airborne commander who relays requirements to the pilot of his aircraft. The pilot then adjusts his orbit and routing to optimize the aircraft's position for continuous tracking.[132] This implies mission cabin commanders possess the authority to not only pass targeting information to fighter pilots, but also the authority to direct his own aircraft.

NCOs are trusted to help with the development of new TTPs to more effectively perform their jobs. For example, an NCO in the ETN special mission aviation division developed a new application to better run through trouble shooting procedures and share data between air crew personnel.[133] Clearly, these NCOs will play an increasingly important role in combat operations, and they will be required to work both with their immediate commanders and pilots to conduct effective joint operations.

In 2017, the first female crew member was certified on an unidentified AEW&C platform.[134] Opening up this critical career field to women is notable, as the PLA generally restricts women to all-female units. The exception to this rule is allowed for specialized career fields, such as pilots, where it is not economical to maintain a separate woman-only unit.

In 2019, PLA authors identified the AEW&C career field as requiring new retention and recruitment policies, particularly for NCOs.[135] NCOs were coming from a variety of recruitment pipelines, driving the need for new policies. Due to the lack of qualified manpower, NCOs from ground-based radar units had the opportunity to transfer to work on what were probably KJ-500s between 2010 and 2018.[136] The AEW&C career field appears to require, or at least target, individuals with undergraduate degrees.[137] Since 2010, airborne combat support positions have been open to direct recruit NCOs. Sources are unclear about the number of directly recruited NCOs that constitute this community.[138] Candidates are sent for technical training before returning to their assigned units to complete transition training, including on-board internships and flight instruction.[139] Reports indicate

[132] Ibid.
[133] 周易 [Zhou Yi], 张鼎一 [Zhang Dingyi], and 王莉莉 [Wang Lili], 跃动鼓角争鸣的文化音符——东航某师紧贴使命任务打造"猎鹰文化"系列品牌纪实 ["The Cultural Notes of the Vibrating Drums and Horns - a Documentary of a Division of Eastern Airlines Closely Following Its Mission to Create a Series of 'Falcon Culture' Brands"], 人民海军 [*People's Navy*], 28 September 2021, p. 4.
[134] Ibid.
[135] 陈国全 [Chen Guoquan], 李唐 [Li Tang], 侯融 [Hou Rong] and 顾亚根 [Gu Yagen], 深蓝航道挺立新的"龙骨脊梁" ["The Deep Blue Waterway has a New 'Keel Beam'"], 当代海军 [*Navy Today*], no. 8 (August 2019), p. 43.
[136] 王鑫彪 [Wang Xinbiao], 胡坤 [Hu Kun], 卢毅 [Lu Yi], and 孙飞 [Sun Fei], 先后参加 20 余项重大演练务, 荣立三等功 1 次, 荣获全军士官慨人才茫親多麵平北舰鮮路上的"金鼸官" ["He has Participated in More Than 20 Major Exercises, Won the Third-Class Merit Once, and was Awarded the 'Golden Officer' on the Road of the Whole Army's Non-Commissioned Officers"], 人民海军 [*People's Navy*], 29 August 2018, p. 2.
[137] 薛飞 [Xue Fei], 战勤士官, 展翅蓝天亮剑锋 ["Combat Sergeant, Spread Your Wings and Wield Your Sword in the Blue Sky"], 当代海军 [*Navy Today*], no. 11 (November 2019), p. 36.
[138] Wang et al., "He has Participated in More Than 20 Major Exercises, Won the Third-Class Merit Once, and was Awarded the 'Golden Officer' on the Road of the Whole Army's Non-Commissioned Officers."
[139] "海航某师空勤士官实战化改装训练, 操作预警机 [PLAN Aviation Division Aircrew NCOs Undergo Combat-Oriented Transition Training on AEW&C Aircraft]," 解放军报 – 中国新闻网 [*PLA Daily – China News*], May 26, 2014, https://www.chinanews.com/mil/2014/05-26/6210797.shtml.

that the NSF implemented programs to retain experienced ground crew NCOs as aircrew.[140] PLAN places higher priority over technical NCOs within combat units, particularly those considered professional backbone personnel within aviation units. These NCOs consequently have a higher probability for retention and promotion to senior NCO ranks compared to those stationed at administrative headquarters.[141]

Conclusion

PLA Naval Aviation has undergone substantial institutional transformation over the past two decades. This transformation is driven by the goal of becoming a primarily carrier-based force heavily reliant on "informationized" systems and operational concepts for effective joint operations in the maritime domain. This transformation has been accompanied by reforms to pilot education, training, and career management systems to produce a qualified force capable of conducting carrier-centered, long-range maritime operations. Despite this progress, there are still areas that require improvements, particularly NAU. The PLAN likely aims to further professionalize pilot education and shorten the carrier pilot training pipeline by equipping NAU training units with carrier-capable training aircraft to reduce reliance on operational units.

PLAN authors have praised USN tactical training, suggesting the PLAN may seek to incorporate more combat-realistic training contents.[142] It is likely that the transition training phase will continue to improve, building on the initial progress in adoption of complex force-on-force training scenarios. Overall, improvements to Naval Aviation initial pilot training and joint training clearly suggest that the PLAN is increasingly providing its aviation branch with the opportunities to develop the technical acumen and tactical competencies required to conduct the missions the PLAN has been tasked with.

More work is needed to address gaps in our understanding of PLA Naval Aviation's training pipeline. Additional accounting of the training pipeline for junior officers who play crucial roles in the mission cabin would help paint a more comprehensive picture of the extent to which the PLA is comfortable decentralizing authorities. Understanding career progression of officers in this community adds context to the desirability of this career field. This is a vital air domain function of Naval Aviation, and close attention to how this community grows and changes with the adoption of carrier-based KJ-600s and future land-based systems will be important to understanding how the PLAN will fight.

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About the Authors

Mr. Eli Tirk is a Researcher at the China Aerospace Studies Institute (CASI). His main research areas include the PLA Air Force, PLA naval aviation, and the PRC defense industry. Eli has been at CASI since 2021. Prior to joining CASI, Eli was an analyst at Exovera's Center for Intelligence, Research, and Analysis (CIRA). Eli holds a BA from the George Washington University and an MA from the Hopkins-Nanjing Center, a joint degree granting program of Johns Hopkins SAIS and Nanjing University. From 2017–18, Eli was a National Security Education Program David L. Boren Fellow to China.

Ms. Xiaoke Qi is a research analyst at the China Aerospace Studies Institute (CASI), Air University, specializing in PLA Training and Personnel. Her work focuses on analyzing the PLA's evolving training doctrine, force development, and personnel policies. Before joining CASI, Xiaoke served as a language specialist on the Chinese Counterintelligence Team at the Federal Bureau of Investigation (FBI) and the National Virtual Translation Center (NVTC) from 2022 to 2024. Prior to that, she worked as a research specialist for the Drug Enforcement Administration (DEA) from 2021 to 2022. From 2011 to 2020, she served in the U.S. Army as an intelligence analyst, supporting U.S. Northern Command (NORTHCOM) and Central Command (CENTCOM). She currently serves in the U.S. Army Reserve as an intelligence operations officer with a focus on U.S. Army Africa Command (AFRICOM). Born and raised in Hebei, China, Xiaoke moved to the United States in 2010. She earned a Bachelor of Science in Physics and Nuclear Science from the University of Colorado and is currently pursuing graduate studies in Applied Physics at Johns Hopkins University.

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