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China Maritime Report No. 27: PLA Navy Submarine Leadership - Factors Affecting Operational Performance

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Summary

The way the People's Liberation Army Navy (PLAN) selects and manages its submarine officers increases the likelihood of human performance errors onboard a PLAN submarine. First, PLAN submarine officers are selected from applicants with among the lowest college entrance examinations of any PLA educational institution, suggesting that PLAN submariners are among the service's least talented officers. Second, the Party Committee system at the apex of decision-making aboard PLAN submarines may be less agile than other approaches to command, at least in certain circumstances. Lastly, while the policy of embarking flotilla leaders senior to the submarine captain may reduce some of the negative effects associated with the first two conditions, it could lead to reduced performance when senior leaders are not present. If external events during wartime stressed these factors, the likelihood of human-induced error events in the PLAN submarine force could increase substantially.

Introduction

In the undersea domain, the United States should be seeking to exploit several human factors against the People's Liberation Army Navy (PLAN) in peacetime, contingencies, and wartime. Individual PLAN leaders with a submarine background may have influence on force development and operational planning in peacetime. By understanding who has influence on PLA undersea capabilities and what biases those individuals might have, the United States can shape said peacetime planning decisions in its favor. In contingencies and in wartime, the United States can try to use those same biases to predict or even influence force employment.

The unfortunate reality is that data on PLA senior leadership has grown increasingly scarce, making it difficult to establish a framework for projecting potential influencing factors on senior leadership. The PLA has begun limiting the amount of public exposure that its senior officers receive, and there is even some evidence to suggest the PLA is actively censoring the identity of its flag and general officers. The somewhat opaque decision-making processes of the PLA further complicates the process of determining who within the PLA has influence and how the United States can exploit that influence.

Instead of embarking on a glorified tealeaf reading mission, time is better spent on trying to understand a system that is more rigid and not subject to the whims of individuals. To that end, this report examines who makes up China's submarine officer corps, how they are educated, and how these individuals interact with each other onboard a submarine. Ultimately, this report seeks to understand what exploitable human factors might exist within the PLAN submarine officer corps.

How to Make a Submariner

The PLAN has prioritized the cultivation of submariners almost since its founding in April 1949. As part of the PLAN's overall effort to create a modern naval force that prioritized aviation, submarines, and fast attack torpedo boats, the PLAN had to educate submariners who could lead the development and employment of its future submarine force.¹

¹ 远林 [Yuan Lin], 军史回眸：中国海军的早期潜艇 ["Military History Look Back: The Early Submarines of the Chinese Navy"], 兵器知识 [Weapon Knowledge], 9 November 2001, <http://mil.news.sina.com.cn/2001-11-09/43233.html>.



Northern Theater Command Navy Submarine Captain Tang Chunye.²

The origin story of the PLAN's first submariners is muddled by conflicting narratives. Officially, the PLA highlights April 1951 as the inception date of the PLAN's submarine force.³ However, Russian and American accounts differ. Declassified Central Intelligence Agency reporting indicates that Chinese sailors were present at a Soviet-run submarine training facility in Najin, North Korea in 1950, before the facility moved to Dalian, China in August 1950.⁴ A Russian military history journal also suggests that the PLAN stood up its submarine teaching team (潜艇学习队) in 1950, contrary to the official PLA record of 1951.⁵

This submarine teaching team would become the nucleus of all subsequent PLAN efforts to develop submarine leaders. Although the equipment and training of the submarine force weigh heavily on the

² 孙智英 [Sun Zhiying], “80 后”潜艇艇长 为你讲述潜艇兵的战斗生活 [“A Submarine Captain ‘Born in the 1980s’ Talks About the Life of a Submariner”], 中国军网 [China Military Online], 16 October 2018, https://photo.81.cn/pla/2018-10/16/content_9310794.htm.

³ “黄传会 [Huang Chuanhui], 人民海军第一支潜艇部队诞生记：一瓶酒换来的“密电码”[“The Birth of the First Submarine Forces of the People’s Navy: A Bottle Of Wine In Exchange for the ‘Secret Code’”], 中国人民解放军海军博物馆 [Chinese People’s Liberation Army Naval Museum], WeChat, 24 December 2021, <https://mp.weixin.qq.com/s/boKVgzLu532-HoTehIHPtQ>.

⁴ CIA, “Chinese Communist Naval Personnel, Dairen”, CIA Declassified Library, 25 October 1950, <https://www.cia.gov/readingroom/docs/CIA-RDP82-00457R005900800007-6.pdf>.

⁵ ЗАЙЦЕВ Юрий Михайлович, [Zaitsev Yuri Mikhailovich], Мао Цзэдун: «Чтобы противостоять империалистической агрессии, мы должны строить сильный флот». [“Mao Zedong: ‘In Order To Resist Imperialist Aggression, We Must Build A Strong Fleet’”], Военно-исторического журнала [Military-Historical Magazine], 29 November 2015, <https://history.ric.mil.ru/Stati/item/118581/>.

force's overall combat effectiveness, the knowledge imparted on submariners in the schoolhouse is the foundation of all subsequent efforts. This section aims to identify the state of officer education in the PLAN's submarine force and how it may create exploitable biases.

Historical Sources of Initial Submarine Officer Education

From 1956 until 2003, most PLAN submarine officers attended the PLAN Submarine Academy (originally called the No. 4 Navy School) for the first four years of their military careers. However, during the 13th All-Military Academies Meeting and 11th Navy Military Academies Meeting in 2003, the PLA decided to redesignate the PLAN Submarine Academy to an "intermediate vocational institution" (中级岗位任职教育院校). As such, between 2003 and 2017, the PLAN Submarine Academy acted solely as a vocational institutional and did not issue four-year undergraduate degrees.⁶

As a result of this change, the PLAN needed to source its submarine officers from other institutions. A 2014 breakdown of all PLAN enlisted personnel recruited into PLA academies shows a total of 60 submarine command track officer cadets recruited into the PLAN's Dalian Naval Vessel Academy and PLAN Engineering University (30 each).⁷ Furthermore, 2014 admissions information suggests that civilian high school students could also become submariners through these two schools.⁸

The result is that as of 2023, where a submarine officer received his first four years of military education depends on his or her age. Most current submarine flotilla commanders and flag officers with a submarine background likely came out of the PLAN Submarine Academy, as did the most junior officers in the PLAN submarine officer corps. However, most current submarine captains, executive officers, and department heads attended an academic institution other than the PLAN Submarine Academy.

Initial Officer Education Today

In 2022, the PLAN submarine force recruited an estimated 140 high school students into academic programs that feed into command-track submarine officer positions. Out of those 140, roughly 100 are attending the PLAN Submarine Academy and 40 are attending the PLAN Engineering University. The PLAN supplements these high school student recruits by selecting high-performing enlisted personnel to become officers. In 2014, a total of 60 former enlisted personnel went through an academic program that leads into a submarine officer track.⁹ Given the present-day number of former enlisted personnel that the PLA selects to become officers and estimates of service size, the PLA may continue to allocate 60 former enlisted personnel into submarine officer tracks even today.

⁶ 陈德潮 [Chen Dechao] and 高密 [Gao Mi], 潜艇学院瞄准强军目标推进任职教育转型十年记 ["The Submarine College Aims at the Goal Of Strong Army to Promote the Transition of Ten Years of Education Transformation"], 人民海军 [People's Navy], 27 August 2013, p. 3.

⁷ 安文清 [An Wenqing], 公布 2014 年军队院校招收海军士兵学员专业及数量 ["Announce the Majors and Quantities of Military Soldiers Recruiting Naval Soldiers in 2014"], 人民海军 [People's Navy], 13 May 2014, p. 2.

⁸ 海军工程大学 2014 年本科招生专业介绍 ["Introduction to the 2014 Undergraduate Admissions of Naval Engineering University"], 一品高考网 [Yipin College Entrance Examination Network], 28 April 2014, <http://www.gaokw.com/gk/gxk/88011.html>; 海军大连舰艇学院 2014 年招生简章 ["Dalian Naval Vessel Academy 2014 Admissions Chapter"], 中国教育在线 [China Education Online], 26 May 2014, https://gaokao.eol.cn/liao_ning/dongtai/201405/t20140526_1119821.shtml.

⁹ An, "Announce the Majors and Quantities of Military Soldiers Recruiting Naval Soldiers in 2014," p. 2.

However, since the majority of submarine officer cadets likely come directly out of high school, we focus this section on how those officer cadets become officers.

When a Chinese high school student decides to apply to a specific military academy and selects tracks for a specific major, s/he is essentially determining his or her military career for the next decade or so. As previously discussed, PLAN submariners begin their lives at the PLAN Submarine Academy in Qingdao or the PLAN Engineering University in Wuhan. The PLAN Engineering University provides the submarine force with its electromechanical officers, who major in electrical engineering and automation.¹⁰ Virtually all other submarine officers, to include observation and communications (观通), navigation (航海), and operations (作战) officers, attend the PLAN Submarine Academy.¹¹

Between 2020 and 2022, the PLAN Submarine Academy enrolled around 124 high school students each year with approximately 104 of these students going into majors that feed into submarine officer positions.¹² Although students who attended the Submarine Academy prior to 2003 majored in “Submarine Technical Command” (潜艇技术指挥), present-day students enroll in a science or engineering major with a military focus.¹³ The remaining 20 students will go on to serve in diving units or aviation units with an anti-submarine warfare mission. Supplementing these cadets are a total of 42 command track cadets at the PLAN Engineering University enrolled in degrees that feed into submarine officer career tracks.¹⁴ These cadets will receive a degree in electrical engineering, marine engineering, or nuclear engineering.¹⁵

This division of officer sources creates an intellectual divide in the submarine’s junior officer corps. Based on *Gaokao* national college entrance exam scoring information for PLA academic institutions, the PLAN Engineering University on average ranks number two on test scores across PLA academic institutions. Meanwhile, the Submarine Academy consistently ranks among the bottom three of all PLA institutions.¹⁶ Assuming a student’s *Gaokao* score is generally indicative of overall performance

¹⁰ 080601 电气工程及其自动化 [080601 Electrical Engineering and Its Automation], 中国人民解放军海军工程大学招生信息网 [Admissions Information Network Of The Chinese People’s Liberation Army Naval Engineering University], 海军工程大学 [Website of the Naval University of Engineering], 16 June 2022, <http://www.nue.edu.cn/index/document/detail/id/550/cid/13/pid/0.html>.

¹¹ 海军潜艇学院 2022 年招生 [“PLAN Submarine Academy 2022 Admissions”], 海军潜艇学院 [Website of PLAN Submarine Academy], 11 June 2022, <https://www.qtxy.mil.cn/news/gg/2021-05-17/258.html>.

¹² 升学笔记, [Notes on Academic Advancement], 军校之十四海军潜艇学院 | 2022 年军校招生计划及近三年录取分数! ” [“Number 14 Among Military Institutions, the PLAN Submarine Academy | The Admissions Plan for Military Institutions in 2022 and Admission Scores in the Past Three Years!”], 升学笔记小编 [Editorial Note], WeChat, 24 June 2022, <https://mp.weixin.qq.com/s/XCwz4WL-DTNIsH3rcKccoA>.

¹³ 1999 年秋季军网院校面向海军招收 [“Autumn 1999 Military Network College Recruited for the Navy”], 人民海军 [People’s Navy], 27 May 1999, p. 4, Notes on Academic Advancement, “Number 14 Among Military Institutions, the PLAN Submarine Academy.”

¹⁴ 海军工程大学 2022 年招生信息新鲜出炉 [“Naval Engineering University’s Enrollment Information in 2022 Just Released”], 中国人民解放军海军工程大学招生信息网 [Admissions Information Network of the Chinese People’s Liberation Army Naval Engineering University], 11 June 2022, <http://www.nue.edu.cn/index/document/detail/id/467/cid/27/pid/26.html>.

¹⁵ Ibid.

¹⁶ Roderick Lee, “PLA Gaokao 2017-2022 Examination Data”, Author Database, 1 April 2023.

potential, this suggests that PLAN submarine officer cadets tracking towards non-engineering department positions are inferior to their engineering brethren.

This division in officer tracks persists beyond the officer cadet's academic schooling. According to the 2012 *Handbook for Officers and Enlisted of the People's Liberation Army Navy* (hereafter: *PLAN Officer and Enlisted Handbook*), submarine officers must partake in several months of training after graduation.¹⁷ A chart outlining a submarine officer's typical career and educational path highlights that non-engineering cadres must undergo 14 months of training while engineering cadres must only undergo 10 months of additional training. It is unclear whether this additional training takes place prior to an officer cadet becoming a commissioned officer, but video reporting on PLAN submarine training does depict officer cadets present during underway training.¹⁸

Mid-Level Command Training

When a PLAN submarine officer returns to the schoolhouse for his first stint of mid-level professional military education, he will undergo ten months of tactically focused courses and evaluation. The *PLAN Officer and Enlisted Handbook* specifies that prior to assuming a submarine executive officer position, officers should undertake a ten month "submarine tactical command" course at the PLAN Submarine Academy.¹⁹ A review of the PLAN service newspapers suggests that this mid-level education is typically called the "Navy Submarine Intermediate Command" (海军潜艇中级指挥). In 2012, the PLAN Submarine Academy merged its ten-month submarine tactical command course with its master's degree in military science program to streamline officer education.²⁰

Assuming this merger is still in place, we can get a sense of what type of education the PLAN gives to its soon-to-be submarine captains. Admissions information from 2020 and 2021 states that a total of 55 masters students enroll at the PLAN Submarine Academy each year, with only five of these students majoring in submarine-centric "Service Tactics." This major focuses on submarine tactics theory, application, and foreign (and Taiwan) military anti-submarine tactics.²¹ It is possible that an additional 26 students who major in "Military Command" are also completing their mid-career educational requirement, but the "Military Command" focuses more broadly on teaching military command rather than the tactical employment of submarines that submarine commanders might need.

¹⁷ 杜景臣 [Du Jingchen], 中国海军军人手册 [*Handbook for Officers and Enlisted of the People's Liberation Army Navy*], (Beijing: Haichao Publishing House, 2012), p 145.

¹⁸ 刘威 [Liu Wei], 练伟 [Lian Wei], and 胡静 [Hu Jing], 东海基层建设风采录⑨强势围观! "深海尖刀"这样锻造 ["The East China Sea Grass-Roots Construction Style, Strong Onlookers! "Deep Sea Sword" Forged Like This], 东海舰队发布 [East China Sea Fleet Release], WeChat, 6 February 2020, <https://mp.weixin.qq.com/s/OpUQ4pfEJS8nCY76WOoRfA>.

¹⁹ Du, *Handbook for Officers and Enlisted of the People's Liberation Army Navy*, p. 145.

²⁰ 耿绍晋 [Geng Shaojin] and 高密 [Gao Mi], 潜艇学院创新高层次人才培养模式 ["Submarine Academy Innovation and High-Level Talent Training Mode], 人民海军 [*People's Navy*], 10 November 2012, p. 2.

²¹ 王永浩 [Wang Yonghao], 海军潜艇学院 2021 年硕士研究生招生简 ["Naval Submarine Academy 2021 Master's Graduate Admissions], 中国潜院 [Chinese Submarine Academy], WeChat, 17 October 2020, <https://mp.weixin.qq.com/s/EPZ7RzYOowtd6gWpPWRBvA>.

This course's tactical focus is also apparent in the extensive use of operational commanders as exam evaluators. A 2002 edition of *People's Navy* mentions that all ten members for this course's examination board were "first line submarine captains and formation officers."²² It appears that the PLAN had standardized this practice by 2006, with some examinations even taking place at operational submarine units, presumably to make it easier to draw on operational commanders as exam evaluators.²³

Officer Roles on Submarines

The role of various officers on a PLAN submarine is perhaps one of the most misunderstood elements of the submarine force. The existence of political commissars and political officers more generally is an unfamiliar concept to most Western audiences. The notion of shared or even communal command is so contradictory to Western military thought to the point that readers might initially assume that political officers universally degrade a submarine's combat performance.

However, this does not have to be the case. Through a careful evaluation of the role of each officer on a submarine, we can better understand the building blocks of decision-making and control onboard a PLAN submarine. While the boat's captain and political commissar are the two senior-most officers typically aboard, the boat's executive officer, deputy political commissar, and department officers all have crucial roles to play.

Submarine Captain

"When a submarine goes to sea, the lives of the crew and safety of the submarine are handed over to the submarine captain."²⁴ This quote from a November 2022 issue of *People's Navy* perfectly captures the fact that while underway, the captain is the sole authority when it comes to operating the submarine.

Theoretically, the authority of the captain and the political commissar is determined by the submarine's party committee and not by regulation.²⁵ However, PLA press reporting on submarine captains and submarine training overwhelmingly cite that the submarine captain is "in charge of tactical command" (负责战术指挥).²⁶ PLA newspaper articles discussing training events reiterate

²² 刘萍 [Liu Ping], 张继国 [Zhang Jiguo], 王永生 [Wang Yongsheng], and 樊平 [Fan Ping], 海军潜艇学院深化教学改革纪实 ["Documentary of Deepening Teaching Reform of the Navy Submarine Academy"], 人民海军 [*People's Navy*], 27 July 2002, p. 2.

²³ 高密 [Gao Mi] and 刘剑 [Liu Jian], 潜艇学院副师职教员队伍建设侧记 ["Chronicle of the Construction of the Teaching Corps of the Submarine Academy"], 人民海军 [*People's Navy*], 6 April 2012, p. 3.

²⁴ 王冠彪 [Wang Guanbiao], 茆琳 [Miao Lin], and 董存金 [Dong Cunjin], 虎鲸嘴中最锋利的那颗牙 ["The Sharpest Tooth in the Killer Whale Mouth"], 人民海军 [*People's Navy*], 25 November 2022, p. 1.

²⁵ 邓博宇 [Deng Boyu], 黎香朝 [Li Xiangchao], and 周演成 [Zhou Yancheng], 党旗引领, 水下堡垒愈战愈强 ["The Party Flag Is Leading, The Underwater Fortress Is Getting Stronger and Stronger"], 人民海军 [*People's Navy*], 5 February 2021, p. 1.

²⁶ 董存金 [Dong Cunjin], 张利宁 [Zhang Lining], and 茆琳 [Miao Lin], 大洋深处那束“最亮的光” ["The 'Brightest Light' Deep in the Depths of the Ocean"], 人民海军 [*People's Navy*], 28 July 2022, p. 4.

this point and highlight the fact that the captain has the authority to employ force, even against unknown targets assessed to be adversary ships.²⁷

Historically, a PLAN submarine captain's authority could be eroded by the presence of more senior officers onboard. The issue of flotilla level leadership deploying to single-ship formations and "babysitting" ship captains was such an issue for the PLAN surface fleet that the PLAN explicitly prohibited the practice in 2019.²⁸ Although it is impossible to determine how frequently submarine flotilla leadership embarks on underway submarines today, two of the PLAN's most well-known submarine incidents feature extensive flotilla leadership embarked onboard.

A mechanical casualty caused the loss of all 70 personnel embarked onboard Ming-class SS-361 on April 16, 2003.²⁹ In addition to 12 officer cadets from the PLAN Submarine Academy that were embarked, unofficial sources cite that two flotilla leaders were also onboard: 12th Submarine Flotilla deputy commander Cheng Fuming (程福明) and deputy political commissar Xu Lide (徐立德).³⁰ Similarly, during the Kilo-class SS-372 incident in 2014, the 32nd Submarine Flotilla commander, political work department director, deputy chief of staff, and SS-374 submarine captain were all embarked in addition to SS-372's own crew.³¹ In this particular incident, the 32nd Submarine Flotilla commander also acted as the submarine's temporary party committee secretary.

Whether this practice of pushing senior officers onto underway submarines still occurs or if the 2019 PLAN rule that prevents flotilla-level leadership from embarking on single-ship formations also applies to submarines is unclear. However, if this practice is still employed on submarines, it may also continue to erode the typical warfighting authorities of the submarine captain.

Submarine Political Commissar

A submarine's political commissar is the co-commander of a PLAN submarine alongside the submarine captain. However, he does not typically involve himself with tactical decision-making or employment. Instead of dictating how the submarine operates, the political commissar dictates how

²⁷ 邓博宇 [Deng Boyu] and 薛英达 [Xue Yingda], 南部战区海军某潜艇基地某艇艇长张晓鹏 ["Zhang Xiaopeng, A Boat Chief at a Boat Base in the Southern Theater Naval Base"], 人民海军 [People's Navy], 7 October 2022, p. 1; 茆琳 [Miao Lin] and 董存金 [Dong Cunjin], 北部战区海军某支队锚定胜战组织实兵对抗训练 ["The Northern Theater Navy's Detachment Anchors the Victory Organization Real Soldiers Confrontation Training"], 人民海军 [People's Navy], 28 September 2022, p. 1.

²⁸ 侯融 [Hou Rong], 孙国强 [Sun Guoqiang], and 陈国全 [Chen Guoquan], 单舰执行任务还要派机关指导组? 惯例问题如何纠治 [Does The Single Ship Execution Task Also Send An Agency Guidance Group? How To Cure The Issue Of Practice], 中国军网综合 [China Military Network Comprehensive], 16 April 2019, <http://www.81.cn/jpdbf/jwgzR/jwgz/9479135.html>.

²⁹ 我海军一艘常规动力潜艇训练时失事 ["A Conventional Power Submarine In My Navy Crashed During Training"], 人民海军 [People's Navy], 4 May 2003, p. 1.

³⁰ 刘永路, [Liu Yonglu], 361 潜艇牺牲的海军大校、支队副政委徐立德的悲壮人生 ["The Tragic Life Of Xu Lide, The Navy Senior Captain Who Died Aboard Submarine 361 and Deputy Political Commissar of a Submarine Detachment"], 金羽毛文苑 [Golden Feather Wenyan], WeChat, 12 June 2020, <https://mp.weixin.qq.com/s/516Lf0QS9sPbAqyzky0lrw>; 质量及安全管理“三层次”模型故事 ["Quality And Safety Management 'Three -Level' Model Story"], 蓝旗研究院 [Blue Flag Research Institute], WeChat, 4 November 2020, <https://mp.weixin.qq.com/s/T3xZVmRgqMy0WZ-ud666vw>.

³¹ 李忠效, [Li Zhongye], 第三章 水下待命 (二) 《372 潜艇出岛链记》 ["Chapter 3 Underwater Awaiting Orders (2) 'Chronicle of Submarine 372 Exiting the Island Chain'"], 潜战友之家 [House Of Submarine Friends], WeChat, 17 October 2022, <https://mp.weixin.qq.com/s/JzyLA9Xi2d35p7OCWnvvbRg>.

the crew operates. How the political commissar does their job changes slightly between routine operations and heightened readiness periods.

During routine operations or while ashore, the submarine's political commissar is mainly responsible for running the submarine's party committee and overseeing boat-wide political work. In many ways, the political commissar's job is to ensure that the submarine's activities are in alignment with higher-headquarters intent and maintain the personnel readiness of the boat.³² Political work can include anything from managing crew personnel to judging the political sensitivities associated with a plan for attacking an enemy surface ship.³³ While these responsibilities are nowhere near as glamorous as those of the submarine captain, they are just as integral to a well-functioning submarine.

While underway and not under a combat alert status, the political commissar of the submarine appears to spend a significant amount of time roaming the submarine to monitor the crew's mental readiness.³⁴ Crew stress is prevalent across all submarine crews, and the PLA's use of two-year conscripts to fill at least some positions onboard a submarines poses a constant challenge to personnel psychological readiness. Political commissars are in place to ensure crew members perform up to standards. While doing so, political commissars are trained to take immediate command when responding to shipboard emergencies.³⁵

During heightened readiness periods, the role of a submarine political commissar is to supervise all combat positions to ensure orders are followed in a timely manner while the submarine captain takes on tactical command.³⁶ This task is apparently accomplished by the political commissar remaining in the command position and not by roaming the submarine.³⁷ Presumably, this implies that the political commissar's task is to maintain awareness of crew performance and watch for any potential faults that could put the boat at risk.

Some if not all submarine political commissars are also trained to have the same abilities as a submarine "first deputy captain," implying that political commissars can take on tactical command authorities if needed.³⁸ This aligns with the fact that political commissars occasionally train to take over command of submarines if the submarine captain is incapacitated.

³² 陈泽生 [Chen Zesheng], 徐巍 [Xu Wei], and 丁斐煜, [Ding Feiyu], 勇士冲锋, 豪情比海深 ["Warriors Charge, Deeper Than The Sea"], 人民海军 [People's Navy], 14 October 2021, p. 3.

³³ 隋明波 [Sui Mingbo] and 茆琳, [Miao Lin], 急潜, 向打赢进击 ["Urgent Dive, To Win Attack"], 人民海军 [People's Navy], 31 July 2018, p. 4; 刘伟东 [Liu Weidong] and 李涛 [Li Tao], 强化制度落实 构建群防网络 ["Strengthen The System To Build A Group Defense Network"], 人民海军 [People's Navy], 7 May 2018, p. 3.

³⁴ 茆琳 [Miao Lin] and 董存金, [Dong Cunjin], 好风凭借力 助我打胜仗 ["Good Morale Helps To Win Battles"], 人民海军 [People's Navy], 25 October 2022, p. 4.

³⁵ Deng, Li, and Zhou, "The Party Flag Is Leading, The Underwater Fortress Is Getting Stronger and Stronger," p. 1.

³⁶ Dong, Zhang, and Ji, "The 'Brightest Light' Deep in the Depths of the Ocean," p. 4.

³⁷ Deng, Li, and Zhou, "The Party Flag Is Leading, The Underwater Fortress Is Getting Stronger and Stronger," p. 1.

³⁸ 刘亚迅 [Liu Yaxun], 方立华 [Fang Lihua], 代宗锋 [Dai Zongfeng], and 张恒 [Zhang Heng], 聚焦打仗, 校准政治干部的"时代坐标"——东海舰队"三强"政治干部岗位练兵比武闻思录 ["Focus on Fighting and Calibrate the 'Era Coordinates' of Political Cadres—The East Sea Fleet's 'Three Strong' Political Cadres' Post Training"], 人民海军 [People's Navy], 23 December 2016, p. 2.

A submarine crew likely does not view the submarine's political officer complement, to include the political commissar, as outsiders. Most if not all political officers onboard PLAN submarines are submariners themselves who began their careers as junior officers or even enlisted filling a military affairs position. In fact, a 2017 *PLA Daily* article explicitly notes that while there is a division of labor between military and political track officers in the submarine force, this does not mean “separation” (分家). This article further states that the basic military qualifications are the same for both and that political cadres are firstly submariners.³⁹



The captain and political commissar of a PLAN submarine hold discussions with senior noncommissioned officers.⁴⁰

Deputy Captains and Deputy Political Commissars

Assisting the submarine captain and political commissar are the submarine's deputy captains and deputy political commissars. These officers act as the left and right hand of the submarine captain and commissar. Although they are all generally capable of commanding the submarine in emergencies, their role is predominantly to coordinate rather than lead.

Although there are two deputy captains, typically of equal grade, there is a clear hierarchy onboard. PLA press routinely refers to the position of “first deputy captain” (第一副艇长) onboard PLAN

³⁹ 段江山 [Duan Jiangshan], 政工干部只有懂军事, 方能讲到官兵心坎里 [“Political Workers Can Only Speak to the Hearts of Officers and Enlisted If They Understand Military Affairs”], 解放军报 [*PLA Daily*], WeChat, 9 November 2017, <https://mp.weixin.qq.com/s/pbntAvFsXx0WwEHgSDoTlw>.

⁴⁰ 潜艇兵的“龙宫”十二时辰 [“The Twelve Hours of the Submarine ‘Dragon Palace’”], 中国网 [China Online], 20 November 2019, http://military.china.com.cn/2019-11/20/content_75427583_26.htm.

submarines, implying that one of the deputy captains is senior to the other.⁴¹ One of the two deputy captains typically oversees leading boat-wide training.⁴² This includes overseeing the development of submarine training documents and execution of actual training iterations.⁴³ The other submarine deputy captain appears to have a more operational role.⁴⁴ Tasks for the operationally focused deputy captain include submarine-wide equipment readiness.⁴⁵

During at-sea operations, the deputy captain does provide “decision-making assistance” to the submarine captain, but PLA press does not clarify what this “assistance” entails.⁴⁶ Instead, the deputy captain’s primary role during operations appears to be that of a coordinating element.⁴⁷ This may include leading multiple combat stations or departments to execute the captain’s orders or provide the captain with updated information based on multiple reports across the submarine. In essence, they act as intermediaries between the captain and individual departments and stations to ensure the transmission of tactical information and execution of orders.

Submarine deputy political commissars play a similar role to submarine deputy captains, albeit in the realm of political work. PLA press coverage of submarine deputy political commissars is sporadic, but there does appear to be a division of labor between a submarine’s two deputy commissars. During routine operations and while pier-side, deputy commissars oversee propaganda work, personnel management, morale, and other typical political work functions. Specific examples include managing a submarine’s newsletter, conducting crew inspections, and helping individual sailors acclimate to life aboard a submarine.⁴⁸ However, much like a submarine’s political commissar, submarine deputy political commissars are also submariners first. Although the PLA does not openly discuss what specific military qualifications a submarine deputy political commissar must have, the

⁴¹ 曹学军 [Cao Xuejun], 李义保 [Li Yibao], and 曹结余, [Cao Jieyu], 东海舰队某潜艇支队艇长群体风采录 [“The Chiefs of the Division of a Submarine Detachment of the East China Sea Fleet”], 人民海军 [People’s Navy], 20 September 2010, p. 3.

⁴² 曹结余 [Cao Jieyu] and 方立华 [Fang Lihua], 大洋深处趟新路 [“Tour the New Road Deep in the Ocean”], 人民海军 [People’s Navy], 30 April 2008, p. 2.

⁴³ 代宗锋 [Dai Zongfeng] and 宛敏武, [Wan Minwu], 如何实现最大化恢复艇员体能和发挥潜艇遂行作战效能? 某潜艇支队探索“N+1”轮管轮训模式 [“How To Maximize the Physical Fitness of the Recovery of the Boatman and Use the Submarine To Fight for Combat Effectiveness? A Submarine Detachment Explores The “N+1” Rotational Training Mode”], 人民海军 [People’s Navy], 14 February 2017, p. 2; 宋尚武 [Song Shangwu], 洪利峰 [Hong Lifeng], and 邱浩翰 [Qiu Haohan], 北海舰队某潜艇支队节日备战备航 [“North Sea Fleet’s Submarine Detachment Preparation for Sailing During the Holiday”], 人民海军 [People’s Navy], 6 February 2017, p. 1.

⁴⁴ 吴浩东 [Wu Haodong], 严把考核关 选出好苗子 [“Strictly Control Evaluations and Select Good Seedlings”], 人民海军 [People’s Navy], 6 June 2022, p. 2.

⁴⁵ Song, Hong, and Qiu, “North Sea Fleet’s Submarine Detachment Preparation for Sailing During the Holiday,” p. 1.

⁴⁶ Wu, “Strictly Control Evaluations and Select Good Seedlings,” p. 1.

⁴⁷ Dong, Zhang, and Ji, “The ‘Brightest Light’ Deep in the Depths of the Ocean,” p. 4.

⁴⁸ 董存金 [Dong Cunjin] and 茆琳 [Mao Lin], 深海里有碗暖心面 [“There Is a Bowl of Warm Heart in the Deep Sea”], 人民海军 [People’s Navy], 9 December 2020, p. 2; 茆琳 [Mao Lin], 洪利峰 [Hong Lifeng], 张淼 [Zhang Miao], 于海涛 [Yu Haitou], 周演成 [Zhou Yancheng], 耿绍晋 [Geng Shaojin], 吴奔 [Wu Ben], 陈道龙 [Chen Daolong], and 尚磊 [Shang Lei], 龙宫文化: 深海中的一首铿锵战歌 [“Dragon Palace Culture: A Song in the Deep Sea”], 人民海军 [People’s Navy], 12 April 2017, p. 4; 高密 [Gao Mi] and 刘剑 [Liu Jian], 潜艇学院建成一级 学科博士学位授权单位 [Submarine Academy Built a Doctorate Degree Authorized Unit of First -Level Disciplines], 人民海军 [People’s Navy], 17 May 2011, p. 1.

examination for becoming a submarine deputy commissar has a military affairs component.⁴⁹ Failing this component of the examination also results in failing the examination as a whole and thus rejection as a deputy commissar candidate.

Submarine Department Leadership

PLAN submarine crews are organized into multiple functional departments, with each being run by a department head and multiple deputies. Unfortunately, the way the way that the PLAN organizes each department has changed several times since 2015. This combined with already sporadic reporting about what each submarine department does limits the extent to which we can identify discrete roles for submarine department heads and deputies.

By 2021, it appears that all PLAN submarines had an operations department (作战部门) and electromechanical department (机电部门).⁵⁰ However, there is significant variation at this point. Today, it appears that some submarines have a dedicated navigation department (航海部门) as well as observations and communications department (观通部门).⁵¹ However, other submarines appear to have a merged navigation and communications department (航通部门).⁵² It is unclear what leads to a submarine having one or the other type of arrangement or if the merged navigation and communication department takes on the responsibility of both predecessor departments. Ballistic missile submarines may also have a separate “missile department” (导弹部门).⁵³

The operations department oversees the submarine’s weapons and associated systems.⁵⁴ It appears that this department took over many of the functions of the former torpedo department.⁵⁵ This shift

⁴⁹ 方立华 [Fang Lihua] and 代宗锋 [Dai Zongfeng], 这支潜艇部队在练随时“海上转战” [“This Submarine Force is Practicing the ‘Turn To The Sea At Any Time’”], 东海舰队发布 [East China Sea Fleet Release], WeChat, 30 March 2017, <https://mp.weixin.qq.com/s/I6RQg3C7DGFGrPaQTHlmgg>.

⁵⁰ 林永超 [Lin Yongchao] and 王洋 [Wang Yang], 预任者，以何担当大任 [“Director, How It Can Be a Great Responsibility”], 人民海军 [People’s Navy], 22 June 2021, p. 3; 吴春辉 [Wu Chunhui] and 张东杰 [Zhang Dongjie], 挑战极限，锤炼救援硬功 [“Challenge the Limit, Refine the Hard Work Of Rescue”], 人民海军 [People’s Navy], 5 November 2021, p. 1.

⁵¹ Wang, Miao, and Dong, “The Sharpest Tooth in the Killer Whale Mouth,” p. 1; 谢成林 [Xie Chenglin], 张宸熙 [Zhang Yixi], and 张宸熙 [Zhang Yixi], 群众性自我启发式教育触动兵心，“蓝鲸小课堂”第一课开讲啦！ [“The Masses’ Self-Inspiration Education Touched the Soldiers, And the First Lesson of ‘Blue Whale Class’ Was Given!”], 南海舰队 [South China Sea Fleet], WeChat, 9 February 2022, <https://mp.weixin.qq.com/s/Em56V2sQ0XD09-IGxoMBRg>.

⁵² 曾宁宁 [Zeng Ningning] and 徐巍 [Xu Wei], 某潜艇支队紧扣实战组织战术作业比武竞赛 [“A Submarine Detachment Close to the Practical Organization Tactical Operation Competition Competition”], 人民海军 [People’s Navy], 16 August 2022, p. 1.

⁵³ 张罗灿 [Zhang Luocan], 昌卫华 [Chang Weihui], and 马俊 [Ma Jun], 南海舰队某基地 41 艇员队党委探索科学发展之路纪实 [“The South China Sea Fleet’s Base 41 Boat Team Party Committee to Explore the Road of Scientific Development”], 人民海军 [People’s Navy], 18 November 2011, p. 3; 张惊天 [Zhang Jingtian] and 周启青 [Zhou Qiqing], 十九大代表杨省根“龙宫”话使命——时刻绷紧当兵打仗这根弦 [“Yang Shenggen, Representative to the 19th Party Congress, Talks about ‘Dragon Palace’ Mission—Always Tighten the String of the Soldiers to Fight”], 人民海军 [People’s Navy], 10 November 2017, p. 2.

⁵⁴ 董存金 [Dong Cunjin], 张利宁 [Zhang Lining], and 茆琳 [Mao Lin], 为“蓝鲸”强筋健骨 [“For ‘Blue Whale’ Strong Bones”], 人民海军 [People’s Navy], 13 June 2022, p. 2.

⁵⁵ 柴潇 [Chai Xiao] and 李景璇 [Li Jingxuan], 北部战区海军某潜艇：积极发挥“深海堡垒”的澎湃动能 [“A Submarine in the Northern Theater: Actively Give Play to the Surging Kinetic Energy of the ‘Deep Sea Fortress’”], 34 号军事室 [No.

from submarines having a torpedo department to having an operations department likely took place in 2017, which was the last time *People's Navy* made a substantive reference to a torpedo department.⁵⁶ This was also roughly the same time references to a submarine operations department appeared in the same newspaper.⁵⁷

According to one *People's Navy* article, the electromechanical department head is in charge of more than half of the equipment on any given PLAN submarine.⁵⁸ This includes onboard fuel, water, mechanical, and propulsion systems. Even though the electromechanical department head is equivalent in name to other department heads, there is limited evidence that suggests they are treated similarly to a submarine deputy captain and deputy political commissar.⁵⁹ The possibility that the electromechanical department head is treated as a separate career path that does not lead directly into the position of submarine deputy captain also lends credence to unofficial claims that submarine electromechanical department heads tend to go on to submarine political officer roles.⁶⁰

Based on the academic training that navigation department officers receive and unofficial media reports, a PLAN submarine navigation department oversees all administrative and operational functions related to a submarine being able to transit while underway. This includes shipboard equipment like steering, rudders, periscopes, and inertial navigation systems.⁶¹ Because navigation department officers are constantly working even when the submarine is conducting routine underway operations, unofficial media suggests that navigation department officers rarely fulfill duty officer roles while underway.⁶² When separate from the navigation department, a PLAN submarine observations and communications department oversees a submarine's electronic support, sonar, radar, and communications systems.⁶³ In instances when the two departments are merged, it is

34 Military Room], WeChat, 3 July 2022, https://mp.weixin.qq.com/s/QB7_EyEIMH2mv7oMqEPGQ; 潜艇鱼雷部门长 ["Director of the Torpedo Department of the Submarine"], 大榭集结号 [Daxie Collection Number], WeChat, 30 January 2018, https://mp.weixin.qq.com/s/1so6mk3zY4Ta_nxgtgtvdw.

⁵⁶ 以英模为榜样,汇聚建设强大海军的磅礴力量 ["Taking The British Model As An Example, Gather the Strength to Build a Strong Navy"], 人民海军 [People's Navy], 11 August 2017, p. 3.

⁵⁷ 刘谦 [Liu Qian] and 吴奔 [Wu Ben], 内外兼修立身为旗 ["Internal and External Cultivation and Standing as a Flag"], 人民海军 [People's Navy], 14 July 2017, p. 3.

⁵⁸ 代宗锋 [Dai Zongfeng] and 宛敏武 [Wan Minwu], 选择潜艇就意味选择奉献, 驭鲸蹈海甘当幕后英雄。某艇机电长吴夏阳 ["Choosing a Submarine Means Choosing to Dedicate, And Control the Whale and the Heroes Behind the Scenes. Wu Xiayang, The Chief of Electromechanical and Electrical"], 人民海军 [People's Navy], 15 August 2016, p. 2.

⁵⁹ 王宏博 [Wang Hongbo], 代宗锋 [Dai Zongfeng], and 李涛 [Li Tao], 虎虎生威 锐不可当 ["Inspiring Awe Like a Tiger, Unstoppable"], 人民海军 [People's Navy], 27 September 2017, p. 1.

⁶⁰ 一艘常规潜艇通常分为三个部门, 即 (续三) ["A Conventional Submarine Is Usually Divided Into Three Departments, That Is, (Continued)"], 大榭集结号 [Daxie Collection Number], WeChat, 2 July 2018, <https://mp.weixin.qq.com/s/GqbQGGHBNMqFJG6I1xrvhQ>.

⁶¹ Dong, Zhang, and Ji, "The 'Brightest Light' Deep in the Depths of the Ocean," p. 4; Notes on Academic Advancement, "Number 14 Among Military Institutions, the PLAN Submarine Academy | The Admissions Plan for Military Institutions in 2022 and Admission Scores in the Past Three Years!"; 潜艇的航海长 ["Submarine Navigator"], 大榭集结号 [Daxie Collection Number], WeChat, 5 February 2018, <https://mp.weixin.qq.com/s/ye4pIJWLl4dnQpSBwLYM6A>.

⁶² 潜艇鱼雷部门长 ["Director of the Torpedo Department of the Submarine"], 大榭集结号 [Daxie Collection Number], WeChat, 30 January 2018, https://mp.weixin.qq.com/s/1so6mk3zY4Ta_nxgtgtvdw.

⁶³ Notes on Academic Advancement, "Number 14 Among Military Institutions, the PLAN Submarine Academy | The Admissions Plan for Military Institutions in 2022 and Admission Scores in the Past Three Years!"

unclear whether the crew unifies all functions under a single “navigation and communications department.” There is in fact limited evidence suggesting that submarine operations departments may gain sonar systems.⁶⁴

For the PLAN’s ballistic missile submarines, there is also a missile department.⁶⁵ Although the PLA rarely discusses the role of this department, they likely still exist as of 2023 given that the PLAN’s Submarine Academy has a dedicated weapon systems engineering degree that feeds to “nuclear powered submarine missile department command.”⁶⁶ Presumably this department manages a ballistic missile submarine’s ballistic missile inventory and supporting systems.

Changes to Department Leadership Career Tracks

Prior to the rank reform, PLA submariners could expect to become a battalion-grade department head of a conventional submarine around the age of 30. This meant that any given submarine officer would have nine years of experience before they found themselves in charge of a submarine department. However, the 2021 PLA rank reform changed this pattern. With the newly reformed career track, PLAN submarine officers may be slightly more experienced in their career field when they first assume the role of submarine department head.

Officially, the PLA’s regulations for military officers states that the average time between rank promotions is typically four years after the rank of lieutenant junior grade (中尉).⁶⁷ Because the rank of ensign (少尉) essentially did not exist prior to the PLA’s 2021 rank reform, it is implied that submarine officers would reach the rank of lieutenant (上尉) by the age of 26, lieutenant commander (少校) by the age of 30, commander (中校) by the age of 34, and captain (上校) by the age of 38.⁶⁸ By correlating these rank benchmarks to grade-based assignments and using select submarine officer career data, it appears that most PLAN submarine officers will spend upwards of nine years as a deputy department head (部门副长). Inherently, this results in most if not all submarine departments having multiple deputy department heads at various stages in their careers.

It remains unclear how the PLAN’s 2021 rank reform might disrupt this stage of a submariner’s career. The new appointment regulations indicate that second lieutenants or ensigns at the platoon level must work at the “lieutenant level” for nine years before promoting to major or lieutenant

⁶⁴ 王兴勇 [Wang Xingyong], 张淼 [Zhang Miao], and 吴登峰 [Wu Dengfeng], 这位被习主席点赞的潜艇声纳兵, 到底有多牛? [“How Awesome Is This Submarine Sonar Tech That Was Praised by Chairman Xi?”], 人民日报 [People’s Daily], WeChat, 17 July 2018, <https://mp.weixin.qq.com/s/4YYWXzhD9gt3n92AOICQhg>.

⁶⁵ Zhang and Zhou, “Yang Shenggen, Representative to the 19th Party Congress, Talks about ‘Dragon Palace’ Mission—Always Tighten the String of the Soldiers to Fight,” p. 2.

⁶⁶ Notes on Academic Advancement, “Number 14 Among Military Institutions, the PLAN Submarine Academy | The Admissions Plan for Military Institutions in 2022 and Admission Scores in the Past Three Years!”

⁶⁷ 中国人民解放军军官军衔条例 [“Regulations On Rank Of Military Officers Of The Chinese People’s Liberation Army”], 中央政府门户网站 [Central Government Portal Website], 15 September 2005, http://www.gov.cn/banshi/gm/content_63642.htm.

⁶⁸ 徐平 [Xu Ping] and 董玥 [Dong Yue], 我军两次实行军衔制有哪些不同, 少尉升至大校平均要多少年? [“What are the Differences in Our Military Rank System Twice? How Many Years Does it Take to Go from Second Lieutenant to Senior Colonel?”], 中国军网微信 [China Military Network WeChat], 25 May 2018, http://www.81.cn/jwsj/2018-05/24/content_8040815_5.htm.

commander.⁶⁹ Furthermore, during that tenure, officers should spend two years at a grassroots level and two years at a brigade or regiment level staff to improve their chances of promotion.⁷⁰ It also appears that officer cadets now spend three to six months at operational units after their graduation and before officially commissioning as a second lieutenant or ensign.⁷¹

This shift partially accomplishes one of the intended purposes of the rank reform, i.e., to slow down the promotion pace for officers below the rank of senior colonel and thus improve the skills of junior and field grade officers.⁷² Therefore, future PLA submariners may expect to spend an additional year or two as a deputy department head, thus resulting in a new submarine department head having ten to eleven years of experience as opposed to nine.

Submarine Party Committees

Although individual officers onboard a submarine are responsible for leading the execution of submarine-wide functions, it is the submarine's party committee that is responsible for true decision-making. It determines weapons release authorities, rules of engagement, and how to act upon higher-headquarters intent. A well-run submarine party committee results in a PLAN submarine that can operate alone and unafraid for weeks on end. A poorly-run party committee results in a PLAN submarine that is unable to act decisively when it is most needed. Given the critical importance this system plays, it is vital to understand what it is and how it functions.

PLA academic material consistently reiterates the importance of a unit party committee, not just to exercise Party control over the military, but in leading operations and training.⁷³ The emphasis that party committees lead units is also apparent in PLAN press reporting on submarine units. A 2022 *People's Navy* article states that the party committee of a submarine interprets higher headquarters intent, judges the situation, determines tasks, and unifies thinking.⁷⁴

The Role of Submarine Party Committees

Historically, only PLAN nuclear-powered submarines had party committees, with conventionally powered submarines only having a party branch that reported to the submarine flotilla's party committee. However, in 2020 the PLAN modified its political regulations to mandate that conventional submarines also have party committees.⁷⁵ As a result of this reform, all PLAN submarines now have a party committee that exercises leadership over the submarine. Furthermore,

⁶⁹ 少尉, 授衔! ["Lieutenant, Grant Title!"], 一号哨位 [No. 1 Post], WeChat, 3 January 2022, <https://mp.weixin.qq.com/s/Ksmm2AU59gN7WhA637o3JA>.

⁷⁰ Ibid.

⁷¹ 陈游峰 [Chen Youfeng], 文禧 [Wen Xi], 蔡群 [Cai Qun], and 王茂霖 [Wang Maolin], 淬火“一道杠”, 新排长来报到! ["After Quenching 'A Bar,' The New Platoon Leader Is Reporting!"], 八一青春方阵 [Bayi Youth Square Array], WeChat, 18 October 2022, <https://mp.weixin.qq.com/s/e5eg5syPvGxrmP49zS4r-A>.

⁷² 军官新政, 13 条制度! ["Military Officer New Policy, 13 Systems!"], 联勤保障部队第 967 医院 [JLSF 967 Hospital], WeChat, 22 March 2022, <https://mp.weixin.qq.com/s/A6MH7E9WKFRn9qyMVerE3Q>.

⁷³ 战玉 [Zhan Yu] and 杨宝有 [Yang Baoyou], 部队演习学 [Science of Unit Training], (Beijing: Military Science Press, 2009), p 364.

⁷⁴ 高先千 [Gao Xianqian], 乔梓航 [Qiao Zhihang], 刘声 [Liu Sheng], 赞颂新成就•奋进新时代 ["Eulogizing New Achievements and Endeavoring To Advance in the New Era"], 人民海军 [People's Navy], 15 June 2022, p. 3.

⁷⁵ Dong, Zhang, and Ji, "The 'Brightest Light' Deep in the Depths of the Ocean," p. 4.

per Chinese Communist Party regulation, each department now has a party branch with limited decision-making authority over a department's administration and day-to-day activities.⁷⁶

Deciding on the division of labor onboard a submarine is arguably one of the most crucial tasks for the submarine party committee in wartime. While the submarine captain is typically in charge of military affairs and the political commissar is typically in charge of political work, the specific details of “Who does what” is up to the submarine party committee.⁷⁷ Conceivably, a poorly-run party committee could provide ambiguous guidance regarding the division of labor before a deployment, which could in turn lead to significant confusion about tactical decisions while underway. However, a well-run party committee that provides clear guidance can likely avoid any significant pitfalls that might place sound and rapid tactical decision-making at risk.

Like the task of defining the division of labor between the submarine captain and political commissar, a submarine party committee may also be responsible for ensuring that a submarine implements “mission command”—i.e., the principle that commanders exercise authority by issuing mission-type orders to enable initiative among subordinate elements. This contrasts with orders that detail what each subordinate element will do during an operation step by step. Specifically, a November 2021 article in *People's Navy* states that a submarine party committee conducted a “practical exploration of integrating party committee decision-making and mission command” (探索实践党委决策链与任务指挥链深度融合机制).⁷⁸ This is one of a handful of references to “mission command” in authoritative PLA press, but suggests that the overarching decisions made by a submarine's party committee provides only broad mission intent, while the division of labor allows for senior leaders on a submarine to exercise “mission command” within their respective lanes.

Temporary At-Sea Committees

Should the PLA opt to embark senior personnel onboard a submarine, the PLA will replace the submarine's normal party committee with a temporary at-sea party committee. While the role of the temporary committee is the same, its composition depends on who is embarked. This construct is especially important when it comes to major training, testing, or operational deployments and likely will come into play when PLAN nuclear-powered ballistic missile submarines conduct at-sea deterrent patrols.

The PLAN regularly references “temporary at-sea committees” (海上临时党委) running high-importance submarine operations or other at-sea activities that require additional senior personnel to embark upon the submarine. China's first 90-day nuclear-powered submarine patrol, submarine patrols to the Gulf of Aden, and many long-distance combat readiness patrols were all led by a temporary at-sea party committee.⁷⁹ In most cases, the senior embarked personnel serve on the

⁷⁶ Ibid. Previously, a PLAN conventionally powered submarine's then-party branch would have been responsible for all tasks now delegated to each of the department party branches.

⁷⁷ Deng, Li, and Zhou, “The Party Flag Is Leading, The Underwater Fortress Is Getting Stronger and Stronger,” p. 1.

⁷⁸ 锻造忠诚可靠的深海铁拳 [“Forge a Loyal and Reliable Deep-Sea Iron Fist”], 人民海军 [*People's Navy*], 1 November 2021, p. 2.

⁷⁹ 于晓泉 [Yu Xiaoquan], 黄超 [Huang Chao], 宋春丹 [Song Chundan], 陈万军 [Chen Wanjun], 李宣良 [Li Xuanliang], and 吴登峰 [Wu Dengfeng], 走近神秘的中国核潜艇部队 [“Close To The Mysterious Chinese Nuclear Submarine Force”], 第一读者 [First Reader], WeChat, 5 January 2019, <https://mp.weixin.qq.com/s/XYFOsQvKbluRj2VYUBr2zg>; 吴寒月 [Wu Hanyue] and 曹结余 [Cao Jieyu], 东海舰队某潜艇支队用主题主线引领远航中思想政治工作纪实 [“A Submarine Detachment of the East China Sea Fleet Uses the Theme Main Line to Lead the Ideological and Political Work

committee with the submarine captain and political commissar being the only actual submarine crewmembers that are members of the party committee.

This construct provides a means to exercise centralized and potentially even skip-echelon command over highly sensitive operations. Notably, such a construct seems like the most feasible option to exercise command over PLAN at-sea deterrent patrols. By utilizing a temporary at-sea committee, the PLA could push senior PLAN or even PLA Central Military Commission leaders onboard to provide on-site authorities. Having such authorities present may be extremely desirable for the PLA to ensure that when a submarine receives higher-headquarters orders to execute strategic strikes, that the submarine properly interprets the mission intent and executes the orders correctly.

Conclusion

There are no clear and glaring flaws in how the PLAN leads its submarine force. Although its educational system underwent some turmoil in the beginning of the 21st century and continues to encounter challenges today, these challenges do not appear to be substantial enough to dramatically affect operational performance. Likewise, although the interactions of leaders onboard a submarine have the potential to create uncertainty or erode confidence, the structure itself does not present inherent flaws. That said, the PLAN's leadership approach does possess a few characteristics that may be exploitable both in peacetime and wartime. Doing so could help degrade the PLAN's ability to employ submarines in an optimal manner. These efforts should mainly focus on increasing the likelihood of human error occurring onboard a PLAN submarine.

The Department of Energy's *Human Performance Improvement Handbook* serves as a useful framework to understand how one can mitigate the likelihood and effects of errors associated with human performance. It also offers insights into how one might increase the likelihood of said errors. This document specifies that an error-likely event is "a work situation in which there is greater chance for error when performing a specific action or task in the presence of error precursors."⁸⁰ Defined as "conditions that provoke error," error precursors can be categorized into tasks demands, individual capabilities, work environment, and human nature.⁸¹ See Table 1 below.

of the Distant Voyage"], 人民海军 [*People's Navy*], 9 January 2012, p. 3; 魏宏宽 [Wei Hongkuan] and 韩红月 [Han Hongyue], 爱洒海疆万里春 ["Love to Spread Ten Thousand Miles on the Oceanic Frontier"], 人民海军 [*People's Navy*], 6 February 2016, p. 1.

⁸⁰ U.S. Department of Energy, *Human Performance Improvement Handbook*, (U.S. Department of Energy, 2009), p. 2-30.

⁸¹ *Ibid.*, p. 2-32.

Table 1. Common Error Precursors⁸²

Task Demands	Individual Capabilities
Time pressure (in a hurry)	Unfamiliar with task, first time, non-routine
High workload, mental pressure	Lack of knowledge or proficiency
Simultaneous, multiple actions, multi-tasking	New techniques not used before
Repetitive actions, mundane, monotony	Poor communication
Irreversible actions (not necessarily a precursor, but often overlooked)	Poor problem solving skills
Interpretation requirements, vague procedures, unclear procedures	Unsafe attitudes
Unclear goals, roles, responsibilities	Illness or fatigue, general poor health, injury
Lack of or unclear standards	Inability to handle stress
Work Environment	Human Nature
Distractions and interruptions	Stress
Changes from the routine	Habits
Confusing displays, controls, signage	Assumptions
Work-arounds	Complacency or overconfidence
Unexpected equipment conditions or response	Mind-set (intentions)
Personality conflicts	Inaccurate risk perceptions
Environmental factors (e.g., noise, temperature, lighting)	Mental shortcuts or biases
	Limited short-term memory

First, the PLAN submarine force appears inherently more susceptible to error-likely events due to “individual capabilities” error precursors since it appears that the submarine force draws its leaders from some of the worst-performing officer cadets. Even if the *Gaokao* score is not indicative of overall human performance, it does reflect some level of intelligence and individual dedication. The PLAN submarine force must therefore rely on its least talented officers to lead forces that may be cut off for days if not weeks at a time. This may make PLAN submarine officers more likely to suffer from the error precursors of poor proficiency, poor problem-solving skills, inappropriate attitudes towards tasks, imprecise communication habits, and inability to handle stress. See Table 2 below. These factors are internal to the force and are not inherently exploitable but create a lower threshold for error-likely events.

⁸² This table is adapted from Ibid.

Table 2. Error Precursors Likely Associated with Lower Test Scores (highlighted)

Task Demands	Individual Capabilities
Time pressure (in a hurry)	Unfamiliar with task, first time, non-routine
High workload, mental pressure	Lack of knowledge or proficiency
Simultaneous, multiple actions, multi-tasking	New techniques not used before
Repetitive actions, mundane, monotony	Poor communication
Irreversible actions (not necessarily a precursor, but often overlooked)	Poor problem solving skills
Interpretation requirements, vague procedures, unclear procedures	Unsafe attitudes
Unclear goals, roles, responsibilities	Illness or fatigue, general poor health, injury
Lack of or unclear standards	Inability to handle stress
Work Environment	Human Nature
Distractions and interruptions	Stress
Changes from the routine	Habits
Confusing displays, controls, signage	Assumptions
Work-arounds	Complacency or overconfidence
Unexpected equipment conditions or response	Mind-set (intentions)
Personality conflicts	Inaccurate risk perceptions
Environmental factors (e.g., noise, temperature, lighting)	Mental shortcuts or biases
	Limited short-term memory

Second, although the party committee leadership and division of labor between submarine leaders does not appear to create inherent delays in decision-making, it does pose risks. If the submarine party committee clearly delineates the division of labor between captain and commissar in every foreseeable scenario, then there should be no risk of ambiguity about who oversees making certain decisions. However, decisions that deliberately skirt the line between the two lanes of responsibility could create temporary uncertainty as the submarine party committee attempts to provide supplementary guidance. This can create the condition for multiple task demand error precursors. See Table 3 below.

Table 3. Error Precursors Likely Associated with the Party Committee System (highlighted)

Task Demands	Individual Capabilities
Time pressure (in a hurry)	Unfamiliar with task, first time, non-routine
High workload, mental pressure	Lack of knowledge or proficiency
Simultaneous, multiple actions, multi-tasking	New techniques not used before
Repetitive actions, mundane, monotony	Poor communication
Irreversible actions (not necessarily a precursor, but often overlooked)	Poor problem solving skills
Interpretation requirements, vague procedures, unclear procedures	Unsafe attitudes
Unclear goals, roles, responsibilities	Illness or fatigue, general poor health, injury
Lack of or unclear standards	Inability to handle stress
Work Environment	Human Nature
Distractions and interruptions	Stress
Changes from the routine	Habits
Confusing displays, controls, signage	Assumptions
Work-arounds	Complacency or overconfidence
Unexpected equipment conditions or response	Mind-set (intentions)
Personality conflicts	Inaccurate risk perceptions
Environmental factors (e.g., noise, temperature, lighting)	Mental shortcuts or biases
	Limited short-term memory

Unfortunately, such indecision may only come into play for non-critical units. Higher priority missions may have senior personnel conducting in-place centralized command over operations through a temporary at-sea committee. Although such instances may erode the authorities of the submarine captain and political commissar, this construct also lowers the risk of indecision or poor interpretation of higher-echelon orders. However, the presence of seniors may also drive the submarine's typical leadership to defer virtually all decisions to embarked senior personnel. This in turn poses its own risk that decision-making when senior personnel are off-duty is temporarily hampered by the duty officer's unwillingness to immediately act without approvals. This adds additional conditions for work environment error precursors. See Table 4 below.

Table 4. Error Precursors Likely Associated with No Embarked Senior Personnel (highlighted)

Task Demands	Individual Capabilities
Time pressure (in a hurry)	Unfamiliar with task, first time, non-routine
High workload, mental pressure	Lack of knowledge or proficiency
Simultaneous, multiple actions, multi-tasking	New techniques not used before
Repetitive actions, mundane, monotony	Poor communication
Irreversible actions (not necessarily a precursor, but often overlooked)	Poor problem solving skills
Interpretation requirements, vague procedures, unclear procedures	Unsafe attitudes
Unclear goals, roles, responsibilities	Illness or fatigue, general poor health, injury
Lack of or unclear standards	Inability to handle stress
Work Environment	Human Nature
Distractions and interruptions	Stress
Changes from the routine	Habits
Confusing displays, controls, signage	Assumptions
Work-arounds	Complacency or overconfidence
Unexpected equipment conditions or response	Mind-set (intentions)
Personality conflicts	Inaccurate risk perceptions
Environmental factors (e.g., noise, temperature, lighting)	Mental shortcuts or biases
	Limited short-term memory

When combined, these three issues within the PLAN submarine force create the potential for error precursors to emerge in the following areas in addition to inherent issues associated with human nature:

Table 5. All Error Precursors Likely Associated with PLAN Submarine Leadership (highlighted)

Task Demands	Individual Capabilities
Time pressure (in a hurry)	Unfamiliar with task, first time, non-routine
High workload, mental pressure	Lack of knowledge or proficiency
Simultaneous, multiple actions, multi-tasking	New techniques not used before
Repetitive actions, mundane, monotony	Poor communication
Irreversible actions (not necessarily a precursor, but often overlooked)	Poor problem solving skills
Interpretation requirements, vague procedures, unclear procedures	Unsafe attitudes
Unclear goals, roles, responsibilities	Illness or fatigue, general poor health, injury
Lack of or unclear standards	Inability to handle stress
Work Environment	Human Nature
Distractions and interruptions	Stress
Changes from the routine	Habits
Confusing displays, controls, signage	Assumptions
Work-arounds	Complacency or overconfidence
Unexpected equipment conditions or response	Mind-set (intentions)
Personality conflicts	Inaccurate risk perceptions
Environmental factors (e.g., noise, temperature, lighting)	Mental shortcuts or biases
	Limited short-term memory

These factors all provide opportunities for exploitation, but they only create temporary vulnerabilities that could last just minutes to hours. Temporary shocks at the right time and place likely can create paralysis, but the resilience of the party committee system and onboard command authorities lends itself to self-regulation over longer periods of time.

About the Author

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