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'Gate Crashing': Chinese Submarines Test New Waters

In November 2004, the Japanese Maritime Self Defence Forces (JMSDF) detected and aggressively tracked a submerged Chinese *Han*-class nuclear submarine that allegedly entered Japan's territorial waters.¹ This article discusses the incident, and places it into a larger context in which submarine officers are newly ascendant within Beijing's naval command. The new generation submarines emerging at a quickening pace from Chinese shipyards are also described in some detail.²

A meticulous description of the incident appeared in the February 2005 issue of the Japanese naval interest journal *Sekai no Kansen*.³ According to this source, Japanese P-3C patrol aircraft first made contact with the submarine using passive sonobuoys late on the evening of 8 November, south of the Sakashima islands (about 150 miles due east of Taiwan). At dawn on 10 November, the submarine turned sharply to the north into the channel between Ishigaki and Miyako islands. Switching to the use of active sonobuoys, the Japanese Navy tracked the submerged *Han* as it purportedly violated Japan's sovereignty and international law in the vicinity of Tarama Island.

For only the second time since the Second World War, Tokyo declared a 'maritime security operation' and vectored two destroyers, *Kurama* and *Yudachi*, to the area.⁴ Their SH-60 anti-submarine warfare (ASW) helicopters established contact at approximately

09:00 on 10 November, by which time the submarine had entered the international waters of the East China Sea. The destroyers, their helicopters and P-3Cs overhead tracked the target submarine until 13:00 on 12 November, perhaps putting 'the nerves of the crew in the submarine...on edge because of the continuous reverberation [for more than 55 hours] of the "ping-ping" tracking sound...[like the] "click, click" of the hammer of a gun pointed at their heads'.⁵ The Japanese government simultaneously took the unusual step of overtly protesting the incursion.

A Larger Pattern

At a strategic level, this incident demonstrates the volatility of contemporary Sino-Japanese relations. Within this complex relationship, maritime issues and disputes are certain to grow in salience. Indeed, the *Han* incursion fits into a larger pattern in which Chinese oceanographic survey vessels have appeared in the waters proximate to Japan with increasing frequency.

The incident highlights the central value for Beijing of the waters east of Taiwan. If China can achieve sea-denial in these waters, it would effectively cut off Taiwan from external assistance. More broadly, China's further development as a maritime power will depend on the ability to egress forces efficiently, safely and often covertly through the first island chain – 'gate crashing', as one Hong Kong commentator described the incident

under discussion.⁶ Finally, some reports suggest that the Chinese submarine had patrolled in the vicinity of Guam and was on its return journey when it ran afoul of the JMSDF.⁷ If these reports are accurate, this sortie represents a bold and perhaps unprecedented probe into America's growing 'hub' for defence of the western Pacific.⁸

On 16 November, the Japanese Ambassador in Beijing was invited to the Foreign Ministry and told that 'China regrets causing this incident', which China attributed to a technical error. The timing of the incident, just a few weeks before a vital meeting between the two national leaders, supports the explanation that this incursion was an accident, rather than a deliberate provocation sanctioned by China's leaders. Moreover, there is some evidence that the Chinese submarine force is developing new underwater navigation systems, which may still have significant glitches.⁹

From an operational standpoint, such a technical error would underline the growing pains of a fleet that is modernizing rapidly. When coupled with the loss of *Ming 361*'s entire crew back in April 2003, this incident may suggest that inexperience continues to plague the Chinese submarine force. But a number of recent serious accidents among other submarine powers reinforce the need for caution about such generalizations.¹⁰

An alternative explanation of this incident holds that the route of the *Han* submarine between Ishigaki and Miyako islands was not an accident. It is plausible that Chinese submarines transit such narrow channels through the first island chain with some regularity – and perhaps even with the intention of discovering which routes are most vulnerable to penetration. The difference in this case may well have been that the Chinese submarine was actually detected. Navigation error, presuming intended transit of unambiguously international waters to the east or west, would be on the order of 70 miles – rather unlikely for a navy that has been operating submarines for more than fifty years. Moreover, the Japanese appear to have been impressed by the ship handling skills of the Chinese commander during the pursuit through the East China Sea. As one

official related: 'No one but the Chinese Navy, which knows the ocean inside out, can navigate like that.'¹¹

The *Han* incident raises the troubling possibility of major civil-military discord between the PLA Navy (PLAN) and China's civilian leadership. Conceivably, Chinese President Hu Jintao was unaware of the *Han* submarine's audacious sortie. Since the intrusion occurred during a sensitive period in Sino-Japanese diplomacy, the incident could have prompted anger toward the Navy, and the submarine force in particular. There is little available evidence of such civil-military discord, however, except possibly for a round of new PLAN appointments announced in January 2005. Significantly, these included the promotion of nuclear submariner Rear Admiral Sun Jianguo to be Chief of Naval Staff.

Submariners in Command

While Rear Admiral Sun's promotion could be related to the *Han* incident, there is also significant reason to believe that Hu Jintao is still well disposed toward the PLAN's 'submarine faction'. Indeed, Hu appeared to bolster this faction when he upheld ex-President Jiang Zemin's appointment of Admiral Zhang Dingfa as commander of the PLAN. In fact, Zhang was reportedly the first PLA officer that Hu promoted to the rank of full General (Admiral).¹² More significant for Chinese maritime power was Hu's 2004 decision to put Admiral Zhang (along with the commanders of the Air Force and the Second Artillery) in the Central Military Commission (CMC), China's highest military decision-making body.

As commanders of the PLAN tend to serve lengthy terms, it is worth exploring Admiral Zhang's background in more detail. In step with the accelerated pace of China's military modernization, Zhang has called for a revolution in Chinese technology to support high-tech local wars.¹³ His rapid rise over the past decade has been credited to his technological expertise, specifically in 'integrated three-dimensional operation'.¹⁴ One source claims that Zhang himself has been closely involved in China's development of naval strategic nuclear weapons.¹⁵ PLA experts reportedly believe that as a

member of the PLAN's submarine faction, Zhang advocates 'giving priority to the development of new-generation conventional and nuclear-powered submarines'.¹⁶

After beginning his naval career in torpedo boats, the now sixty-two-year-old Zhang worked through the ranks of the submarine force, serving as submarine commander and later as a submarine squadron commander.¹⁷ From 1985 to 2000, he served in a variety of North Sea Fleet (NSF) senior billets. After being promoted to Rear Admiral in 1991, he became NSF Chief of Staff in 1993 and Deputy NSF Commander in 1995. The following year he assumed command of the North Sea Fleet, and was simultaneously deputy commander of the Jinan Military Region. In 1996, he led the fleet's flagship *Harbin* on an official visit to Vladivostok.¹⁸ Zhang was promoted to Vice-Admiral in 1999, and in 2000 became deputy commander of the PLAN. During 2002-03, Zhang served as President of the PLA Military Academy of Sciences. This academic posting would broaden Admiral Zhang's background in preparation for assuming command of the PLAN in June 2003. He is only the second submariner to lead China's navy.¹⁹

The position of the 'submarine faction' has been recently consolidated with the January 2005 appointment of Rear Admiral Sun Jianguo to be Admiral Zhang's new Chief of Staff. Currently just fifty-three years old, Sun reportedly commanded *Han 403* during a mid-1980s mission that broke the undersea endurance record previously set by USS *Nautilus*.²⁰ In 2003, he served as a delegate to the Tenth National People's Congress.²¹ Beyond Rear Admiral Sun's promotion, a bevy of recent publicity concerning *Song 314* Commander Ma Lixin, suggests that the early identification and cultivation of undersea cadres remains a priority for PLAN leaders.²²

If It Takes 10,000 Years

The common thread in Admirals Zhang and Sun's backgrounds is familiarity with nuclear submarines. As most of China's submarine force is comprised of diesel submarines, these backgrounds are especially distinctive, even within that organization. It is

probably no accident that these naval officers are leading the PLAN as it endeavours to field a second generation of nuclear submarines.

Reports claim that over the last two years a pair of 093-class SSNs and one 094 SSBN have been launched from Huludao shipyard, with more under construction.²³ These vessels are certain to be significant improvements over their *Han* and *Xia*-class predecessors, which were designed during the Cultural Revolution. China's second generation nuclear submarines will have benefited substantially from the intervening three decades' improvements in supporting technology and indigenous manufacturing skills, and, equally importantly, from extensive Russian design assistance. The advent of the 093 SSN, estimated previously by US intelligence to be the acoustic equivalent of the Soviet *Victor III*-class submarine, heralds a new era for Chinese open ocean aspirations.²⁴

At the same time, there are numerous indicators that Beijing is serious about developing the sea-leg of its nuclear forces. As noted above, Admiral Zhang might have experience with China's SSBN programme. In addition, enhancing 'nuclear counter-attacks' capability was mentioned prominently in the recent PLA White Paper discussion of naval operations.²⁵ One recent analysis of the prospects for China's sea deterrent asserts that in contrast to Russia, China plans to base half of its strategic warheads at sea.²⁶ Such a force of potent nuclear submarines is still years away, though the profiled promotions are strong indicators that nuclear propulsion will have an increased stature within the PLAN.

At present, however, the PLAN has already amassed considerable striking power in its fleet of diesel submarines. This fleet is not only probably already sufficient to coerce Taipei, but also poses a real threat to the more advanced forces of Japan and the United States, should they intervene to support Taiwan.²⁷

Like Sausages

The indigenously designed and manufactured *Song*-class, now in accelerated production, is becoming

the backbone of this force in the near term. The first *Song* was launched in 1994 from Wuhan's Wuchang shipyard, and was reportedly equipped with German diesel engines, a French sonar system, a single, state-of-the-art seven blade, highly skewed propeller and the ability to launch anti-ship cruise missiles (ASCM) while submerged – a significant first for the PLAN.²⁸ Five years passed before the launch of the next *Song*, during which time many observers speculated that the submarine might be a failure. Time has proven such speculation premature, and now at least ten *Songs* are either in commission, on sea trials or in the final stages of being fitted out, with seven of these submarines reportedly built since 2003.²⁹ 2004 was a banner year for the *Song*, with two vessels sliding down the ways from Wuchang shipyard, and, for the first time, two more being constructed and launched at Shanghai's Jiangnan shipyard.³⁰ An abundance of unclassified Internet photographs confirm that the *Song* is probably at least the equivalent of a mid-1980s western diesel submarine, featuring sophisticated periscope electronics such as laser rangefinders and night vision enhancement, digital sonar displays and fire control screens, advanced electronic navigation tools and sound dampening anechoic rubber tiles enveloping the hull.

Analysts were surprised in June 2004 when Wuchang shipyard launched an unanticipated new type of diesel submarine – the *Yuan*.³¹ Like the *Song*, the *Yuan* has diving planes on the sail and a vertical dorsal rudder. Like a Russian *Kilo* diesel submarine, however, of which the PLAN owns and currently operates four, the *Yuan* has a circular hull, a two over four torpedo tube arrangement and a pronounced hump along the top of its hull. It is not yet known if the *Yuan* features air independent propulsion, but a lack of confirmed prototypes of this advanced feature in any previous Chinese submarine, along with the relatively short length of its hull, suggest it probably does not. It is also not yet known if the existing *Yuan* is an early prototype, or if instead the PLAN has begun serial production of this vessel. The *Yuan* will likely carry sophisticated anti-submarine and anti-surface ship torpedoes as well as cruise missiles and mines.

China is also taking delivery of the first of eight new, improved Project 636 Kilo-class submarines from Russia, augmenting the two Project 877 and two Project 636 *Kilos* it purchased in the late 1990s. In addition to being some of the most quiet submarines ever built, these new vessels are capable of firing sophisticated wire-guided and wake-homing torpedoes, and, unlike their earlier predecessors, will reportedly carry the fearsome 200 km supersonic 3M54E ASCM.³² Reports from Russia state that the first two *Kilos* were launched in the summer of 2004, with two more ready for launch and delivery in 2005.³³ Thus, it appears that Russia will deliver all eight *Kilos* by 2007, on schedule.

A Failure of Dissuasion

Secretary of Defense Donald Rumsfeld recently highlighted his concerns about the growth trajectory of the Chinese Navy in testimony before Congress in February 2005. Possibly hinting at the November 2004 *Han* incident, he noted that '[The PLAN is] increasingly moving their navy further distances from their shores in various types of exercises and activities. And that's a reality.' He further observed that the PLA continues to purchase 'a great deal' of equipment from Russia, but was now also itself 'making an increasing amount of equipment...[that] is more advanced technologically.'³⁴

The Secretary's comments demonstrate that the United States is closely attuned to China's increasing maritime power, but also underscore a flaw in current policy. Undersea warfare represents an important case study for the apparent failure of the earlier Pentagon strategy of dissuasion.³⁵ It was thought that US military dominance and well-targeted strategy and policy would dissuade other countries from initiating military competitions. Significant reductions in Navy warship production following the Iraq War – not to mention decreased training for sea control missions – have no doubt been closely watched in Beijing. Of course, these reductions in force levels and shifts in mission emphasis represent a troubling acceleration of trends extant since the end of the Cold War. This may explain why Beijing has not been dissuaded from building a potent submarine force.³⁶

Moreover, it would be a fundamental misreading of the PLAN's development trajectory if US and Japanese leaders were to examine the *Han* incident described above and emerge with excessive confidence vis-à-vis the Chinese submarine force. True, the JMSDF has a strong ASW reputation, as supported by the aforementioned events. Nevertheless, it is certainly worth noting that the *Han*-class submarine involved is one of the PLAN's most obsolete, noisy vessels. It seems likely that Beijing is not eager to show its strongest hand, preferring instead to keep the acoustic signatures of its most modern submarines a state secret – and thus increasing their potential combat efficiency in wartime.

Andrew Erickson, Lyle Goldstein and William Murray

Andrew Erickson is a PhD candidate specializing in Chinese Politics in the Department of Politics at Princeton University, Lyle Goldstein is Associate Professor in the Strategic Research Department at the US Naval War College and William Murray, a retired submarine officer, is Associate Professor in the War Gaming Department at the US Naval War College.

NOTES

1 Special thanks to Peter Dutton CDR, USN for his guidance on maritime legal issues.

2 Here we update the more comprehensive analysis published in Lyle Goldstein and William Murray, 'Undersea Dragons,' *International Security*, Vol. 29, no. 2, Fall 2004, pp. 161-196.

3 This paragraph and the next are largely drawn from Shunji Taoka, 'Intentional' or 'Navigational Error'? — Examining the Violation of Japan's Territorial Waters by a Chinese Nuclear Submarine,' *Sekai no Kansen*, 1 February 2005, FBIS document no. JPP20050131000040.

4 The other instance occurred in March 1999 when the Japanese Coast Guard pursued a North Korean spy ship.

5 Ibid.

6 Tien P'ing, 'Is Japan Using the Submarine Incident as an Excuse?' *Hsiang Kang Shang Pao*, 12 November 2004, FBIS document no. CPP20041112000056.

7 See, for example, 'China Sub Tracked by U.S. Off Guam Before Japan Intrusion,' *Japan Times*, 17 November 2004; 'Gov't Sources Say US Planes Tracked Chinese Submarine From Guam to Japan,' *Kyodo World Service*, 16 November 2004, FBIS document no. JPP20041116000090.

8 China is observing with great interest the U.S. buildup of nuclear submarines and other assets on Guam. See for example 'U.S. Stations Massive Forces on Guam,' *People's Daily*, 19 February

2001, available at www.xinhuanet.com.cn; and Huang Mingjun, 'Guam is Becoming America's Hegemonic Bargaining Chip,' *Military Prospect*, June 2002, pp. 58-59.

9 See 'Deep Sea Conqueror – the Yuan Class,' *World Outlook*, September 2004, No. 17, pp. 11-12. This conclusion is based on information concerning the work of a professor at the Qingdao submarine academy cited in this article.

10 In the U.S. submarine force, recent accidents have included the undersea grounding by the *San Francisco* in January 2005, the near loss of the *Dolphin* due to flooding in May 2002, and the sinking of a Japanese training vessel by the *Greenville* in February 2001. Among foreign states, recent submarine accidents include the loss of the Russian Kursk in August 2000 and a fatal electrical fire aboard the Canadian submarine *Chicoutimi* in October 2004.

11 Kentaro Kurihara, 'Japan, China to Assess Aftermath of Submarine Intrusion,' *Asahi Shimbun*, 13 November 2004, FBIS document no. JPP20041115000001. A similar observation is made in Taoka, 'Intentional or Navigational Error?'

12 Chin Chien-li, 'PLA Navy Commander Zhang Dingfa Profiled,' *Chien Shao*, 1 November 2004, FBIS document no. CPP20041122000009.

13 Zhang Dingfa, 'Basic trends in Carrying Forward and Advancing Chinese Military Science in the New Century,' *China Military Science*, Vol. 17, no. 3, 2004, p. 1.

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15 Chi Hsiao-hua, 'High-level Shuffle in the Navy is Not Aimed at the Taiwan Strait,' *Sing Tao Jih Pao*, 8 January 2005, p. A30, FBIS document no. CPP20050108000049.

16 Chin Chien-li, 'PLA Navy Commander...'

17 Unless otherwise indicated, data in this paragraph are derived from 'China Vitae: Zhang Dingfa,' www.chinavitae.com/biography_display.php?id=2239, accessed on 14 February 2005.

18 'New Personalities' Backgrounds Attract Close Attention,' filed as 'HK Report Profiles PRC Navy's New Commander, Political Commissar,' *Hsiang Kang Shang Pao*, 13 June 2003, B1, FBIS document no. CPP20030613000058.

19 The first submariner to lead China's Navy was Zhang Lianzhong from 1988 to 1996.

20 Huang Caihong, Han Yu, Nuclear Submarines, (Beijing: People's Press, 1996), p. 91, Caltech Chinese Association online library at <http://caltechc.caltech.edu/~caltechc/clibrary/CD%20056/ts056058.pdf>, accessed on 1 March 2005.

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22 Zou Qingjing, Xu Hongming, Yu Zifu, 'Ma Lixin: The Dragon Cruises the Ocean Depths,' *People's Navy*, 5 February 2005, pp. 1, 3.

23 On the 094 SSBN see Bill Gertz, 'China Tests

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25 PRC Ministry of Defense, 'China's National Defense in 2004,' http://www.chinadaily.com.cn/english/doc/2004-12/28/content_403913_4.htm, accessed on 14 February 2004.

26 Lin Zhang Sheng, 'Our Country's Nuclear Submarines' Combat Power', *World Aerospace Survey*, September 2004, No. 103, p. 27.

27 See, Goldstein and Murray, 'Undersea Dragons,' pp. 179 - 187.

28 U.S. Department of Defense, 2002 *Annual Report on the Military Power of the People's Republic of China*, Report to Congress Pursuant to the FY 2000 National Defense Authorization Act, <http://www.defenselink.mil/news/jul2002/d20020712china.pdf>, p.21, accessed on 27 February 2005.

29 See, for example, 'Type 039 (Song Class) Diesel-Electric Submarine' at <http://sinodefence.com/navy/sub/039.asp>, accessed on 24 February 2005.

30 Photographs on BLOGs such as the one at <http://www.centurychina.com/plaboard/forum.shtml> regularly chronicle the launch and fitting out of submarines at Wuchang and Jiangnan shipyards.

31 Bill Gertz, 'Chinese Produce New Type of Sub,' *Washington Times*, July 16 2004, p. 1.

32 See *Jane's Sentinel Security Assessment - China and Northeast Asia*, 7 January 2005 at <http://www.janes.com>; Project 877EKM/636 (Kilo Class) Diesel-Electric Submarine' at <http://sinodefence.com/navy/sub/kilo.asp>, both cites accessed on 17 February 2005.

33 See 'Russia: Chinese Navy To Receive Two Submarines From Severodvinsk Firm in 2005,' Agentstvo Voyennoykh Novostey, December 31, 2004, FBIS document no. CEP20041231000033; 'Russian Shipbuilder Launches Second of Five Submarines Headed for China,' *Interfax*, August 27 2004, FBIS document no. CEP20040827000339.

34 Eric Schmitt, 'Rumsfeld Warns of Concern About Expansion of China's Navy,' *New York Times*, 18 February 2004, p. A6.

35 U.S. Department of Defense, 2001 *Quadrennial Defense Review Report*, <http://www.defenselink.mil/pubs/qdr2001.pdf>, p. 12, accessed on 3 March 2005

36 See, for example, Bryan Bender, 'Navy to Cut Orders; Job Losses Seen,' *Boston Globe*, 7 February 2005, p. 1.