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Who Will Command China's New SSBN Fleet?

How will China use its fledgling ballistic missile submarine fleet?

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China's ongoing nuclear modernization program is significantly altering the size and character of its nuclear arsenal. For decades following its first successful nuclear test in October 1964, China deployed only a few dozen nuclear weapons, most of which were affixed atop unsophisticated and vulnerable land-based missiles. Over the last decade, the country's nuclear modernization program has seen a significant expansion in the size of its deployed arsenal. Credible public estimates put China's deployed warheads at between 160 and 260.

The modernization program's qualitative changes have been more significant than its quantitative changes. China's arsenal has gradually shifted from unsophisticated liquid-fueled, silo-based missiles to road-mobile, solid-fueled ones. In 2015, the Pentagon assessed that, for the first time, China equipped some missiles with multiple independently-targetable reentry vehicles (MIRVs).

One of the most significant of these qualitative changes to China's nuclear arsenal is the development and deployment of the country's first credible ballistic missile submarine (SSBN) force, the *Jin*-class submarines. China's nascent sea-based deterrent will present new challenges to longstanding nuclear practices. Among these will be how to structure command and control for the new SSBN fleet to maintain an appropriate balance between positive control (the ability to always launch when desired) and negative control (to never launch when not desired). In a

new report for the National Defense University, I analyze potential choices for Chinese command and control of its SSBN force and the implications for strategic stability with the United States.

Current Command and Control

In the nuclear domain, China has traditionally prioritized strict political control over operational flexibility and historically maintained a comparatively restrained nuclear posture. Beijing reportedly keeps warheads unmated from delivery systems and stored in separate locations. The Central Military Commission, the highest military decision-making body in the country, is the only organization that can order a nuclear strike. The country has yet to develop a mature and dedicated early-warning system. Its SSBN force, however, could change these practices.

Public details on command and control of China's SSBNs are scarce but some American experts and Chinese observers have already predicted that China's SSBNs will come under the control of the recently formed PLA Rocket Force, the predecessor to the former Second Artillery. However, both official Chinese writings and the current command and control arrangements of the Rocket Force suggest this is unlikely.

First, as pointed out by one Chinese expert, references to the country's nuclear forces in official Chinese documents suggest command and control of the sea-based deterrent has traditionally been assigned to the PLA Navy. China's 2013 Defense White Paper attributed only the land-based Dongfeng ballistic missiles and Changjian cruise missiles to the then-Second Artillery. Reference to the country's Julang submarine-launched ballistic missiles (SLBMs) were conspicuously missing from the section. In addition, the 2013 edition of *The Science of Military Strategy*, a PLA textbook vetted by military leadership and believed to represent the strategic thinking of the Chinese military, explicitly directed the Navy to prepare the country's SSBN fleet.

Second, the Rocket Force appears to lack the organization and capabilities for commanding a fleet of nuclear submarines. While the recent spate of military reforms sought to increase "jointness" between the PLA Army, Navy, and Air Force, the command structures of the Rocket Force remain apart from both the other services and the newly formed Theater Commands. There is no evidence of Rocket Force curriculum or command tracks for sea-based platforms and there is no evidence of the service operating the requisite physical assets, such as very low frequency (VLF) radio stations for communicating with submerged vessels.

By contrast, there is an institutional logic to PLA Navy control of China's SSBNs. Though the previous generation *Xia*-class vessel never conducted a deterrent patrol, it did put out to sea, presumably with a PLA Navy crew. The Navy's submarine academy in Qingdao appears to have one-year majors associated with nuclear missile submarines and faculty at the academy regularly publish on SSBN-related issues. In short, Rocket Force control of SSBNs does not appear likely either in the past or in the near future.

Notional Command and Control Structures

Nevertheless, China's leadership might see the introduction of the country's first credible sea-based nuclear deterrent as an opportunity to fundamentally restructure nuclear command and control arrangements. In general, China might pursue one of three notional command and control structures, each of which would allocate differing degrees of command authority to the Navy or to the Rocket Force. Each model also implies the need to establish new bureaucratic or technical capabilities within the services.

In the first structure, Chinese leadership might give the Navy full command and control of SSBNs. PLA Navy leadership might argue that their experience operating submarines — including the *Xia* — qualifies it to control the country's SSBNs. In this model, the Navy would staff and operate both the vessels and their missiles. This model would require the creation of new bureaucratic and technical capabilities within the Navy. For example, Navy control would require the creation of a personnel reliability program for that service, something which the PLA was slow to develop for its land-based nuclear forces. The PLA would also need to develop a mechanism for coordinating targeting between Navy and Rocket Force.

In the second command structure, Chinese SSBNs would be assigned exclusively to the Rocket Force. While the Rocket Force has no experience operating submarines, it is better prepared for the nuclear mission, including handling and safeguarding warheads and vetting key personnel. In this model, the Navy would exercise administrative control of the vessels and its crew but operational authority would be granted to the Rocket Force. This model might require the construction of Rocket Force VLF facilities and the establishment of structures to facilitate coordination between Rocket Force SSBNs and the Navy's other vessels.

In a third, hybrid model, command and control would be shared by both the Navy and the Rocket Force. A hybrid model could take several forms, for example by entrusting control of the vessels to the Navy and the missiles to the Rocket Force or by instituting a dual-command authority for nuclear launches which would require assent of both the SSBN's Navy commander and specially assigned Rocket Force personnel. Though such a hybrid model would be unusual, there is a precedent for some level of joint or bifurcated control in the nuclear enterprises of other countries. On Soviet subs, the launch of a nuclear missile required the consent of both the operational commander and the political commissar. At the highest level, U.S. Strategic Command, which controls the country's nuclear weapons, is a formally joint command.

China's choices about SSBN command and control will be mediated by several operational, bureaucratic, and political considerations. Operationally, China's SSBNs, no matter what service controls them, will likely require substantial assistance from other Navy assets given the vessels' high acoustic signatures and China's distinctively unfavorable maritime geography. Experts have debated whether China would opt for a bastion or open sea deployment strategy. Each practice would require Navy escorts, either to protect SSBNs deployed close to home or to ferry them past dangerous choke points to the safety of the open ocean.

Bureaucratic forces, including inter-service rivalry, will also shape command and control choices. In an era of slower economic growth and similar slowdowns in military spending, the

SSBN fleet may appear to be a valuable new source of funding and prestige. At the same time, China's historically restrained approach to nuclear weapons might suggest the nuclear domain is not a significant "growth opportunity." It is unclear to what extent the two services have institutional preferences for the conventional or nuclear mission set. Within the Rocket Force, a disproportionate number of senior leaders have come up through missile bases dominated by conventional units, while Chinese Navy leadership is comprised largely of surface warfare officers.

Finally, China's political and strategic emphasis on negative control of its nuclear weapons will guide command decisions and could motivate a desire to decentralize command in ways which decrease the likelihood of an accidental or injudicious launch. Such a preference might argue for a hybrid-type of command structure.

Implications for Strategic Stability

China's choices about how to structure command and control will have important implications for strategic nuclear stability with the United States.

Maintaining strategic stability often depends on a secure second-strike capability and on maintaining a proper balance between positive and negative control. To the extent that the hybrid model increases negative control of China's nuclear weapons, increases redundancy in command and control infrastructure, and reduces the possibility of entanglement with conventional assets, it would contribute positively to strategic nuclear stability.

Regardless of what kind of macro-level command structure China opts for, there are additional measures it can take to enhance strategic stability. First, China should ensure that all personnel who work on its SSBN program undergo a thorough reliability vetting program. Second, to decrease the chances of misidentification and misperception, China should attempt to erect an operational firewall between its SSBN force and other vessels, especially its conventional attack submarines. This could include establishing parallel communications systems and separate basing schemes. Third, China should adopt an appropriately cautious approach to its SSBN fleet. Until it can ensure the survivability of its SSBNs, it should avoid emphasizing their role in deterrent operations.