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PLA NAVY AUGMENTS SHIP REPAIR FACILITIES AT YULIN NAVAL BASE, HAINAN

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The PLA Navy's base at Hainan has been growing steadily. While the creation of berthing facilities for aircraft carriers, large combatants as well as nuclear submarines has received much attention, not much has been written about the commensurate enhancement in ship maintenance infrastructure.

Legacy Repair Facilities. Erstwhile, the vast majority of ship maintenance activity at this base was done at the ship repair facility located inside the inner harbor (Fig 1).

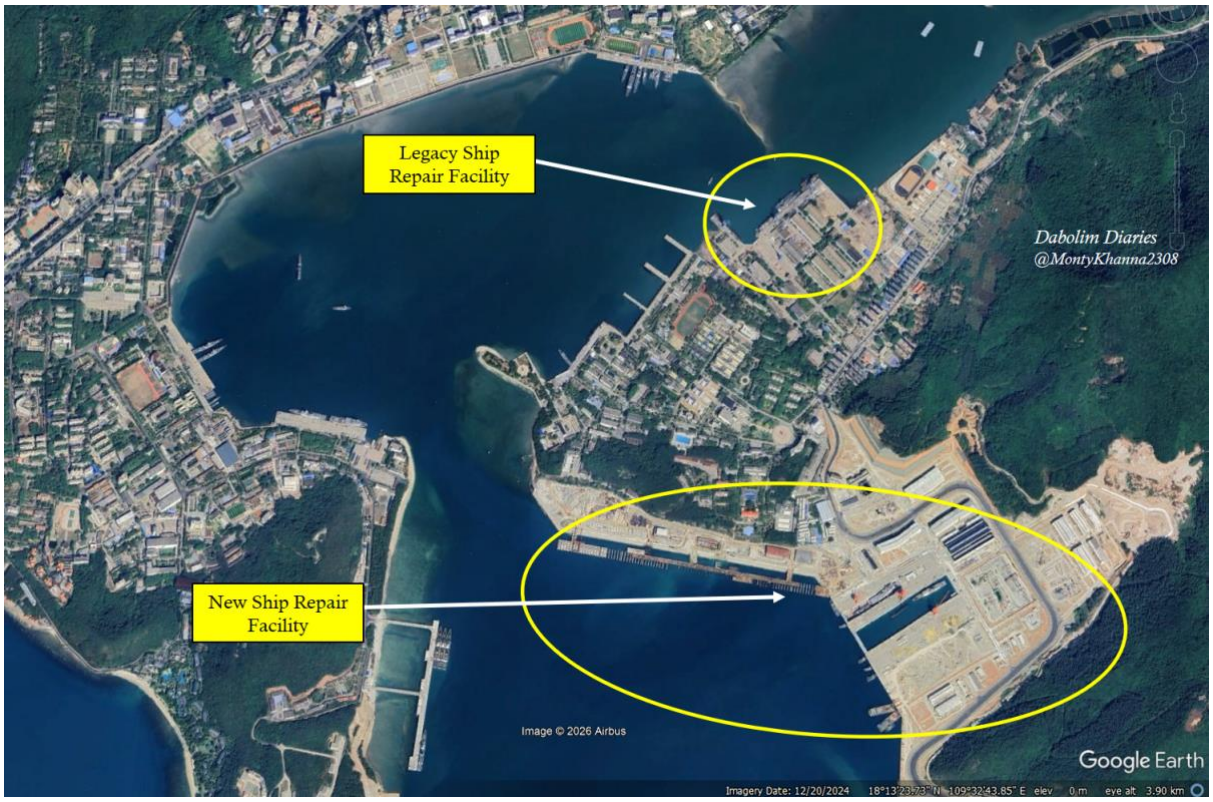

Fig 1: Broad Layout of Maintenance Facilities at Sanya Naval Base

This comprised of two maintenance piers, with Pier 1 primarily being used by conventional submarines, and Pier 2 by other vessels (Fig 2).

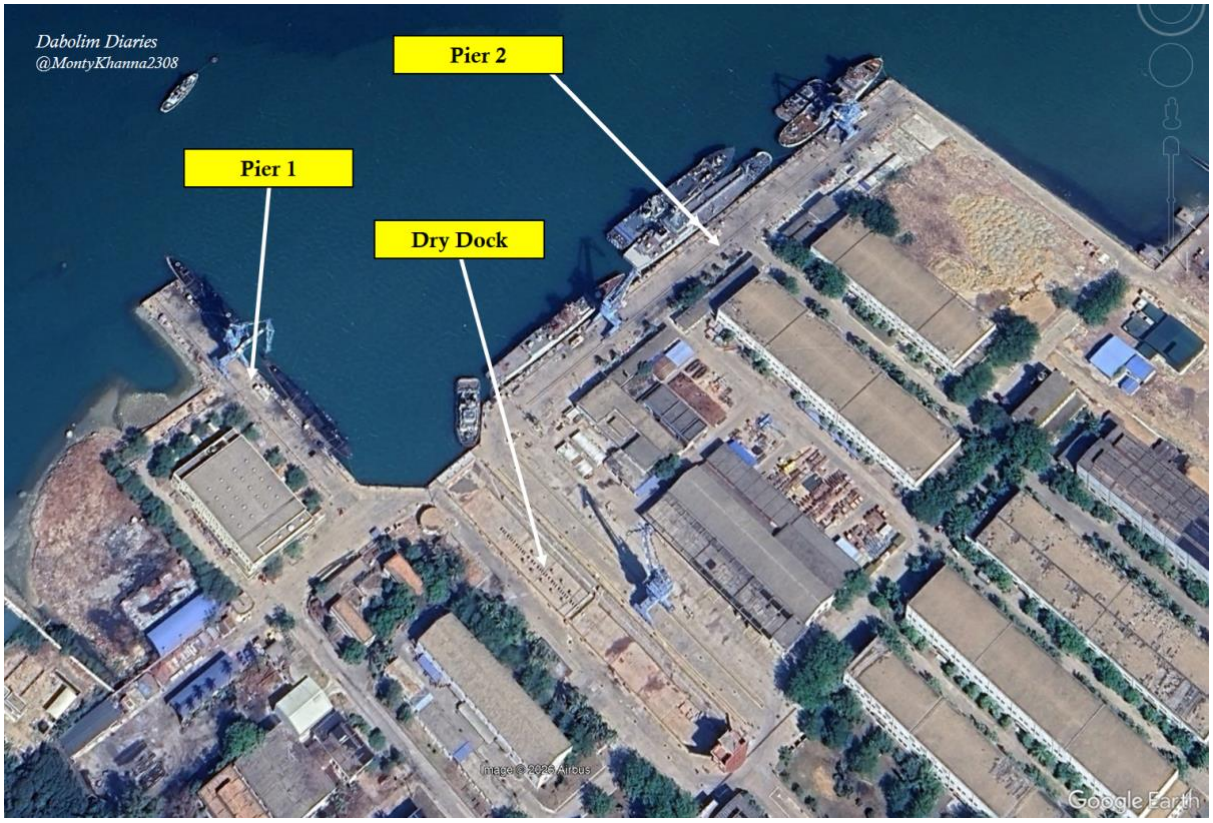

Fig 2: Layout of Maintenance Facilities at Legacy Ship Repair Yard

It also has a graving dock (165 m x 20 m) which could be partitioned into two segments of each roughly 82 m long, thereby improving flexibility in its utility (Fig 3).

Fig 3: Graving Dry-Dock at Legacy Ship Repair Yard

This facility was primarily used by conventional submarines as well as vessels up to the size of frigates. Insofar as nuclear submarines are concerned, it is probable that deep maintenance facilities including a dry dock were created inside the tunnel complex.

Recent Expansion. With the exponential increase in ships being based in Hainan, including the creation (and now expansion) of aircraft carrier berths, it became imperative to significantly increase the ship repair facilities. This appears to have been done in phases.

Phase I. This involved the creation of a docking complex with two dry-docks. The smaller of these is 215 m long and 35 m wide while the larger is 375 m long and 80 m wide (Fig 4).

Fig 4: Dry-Docks at New Ship Repair Facility

Work at this facility started in 2016 and completed in 2022 (Fig 5).

Fig 5: Time Sequence Images of New Ship Repair Facility

Left (09 Oct 2016), Center (21 Feb 2020), Right (19 Sep 2022)

A significant milestone was achieved in January 2026 with the maiden docking of an aircraft carrier (CNS Shandong) at this facility (Fig 6).

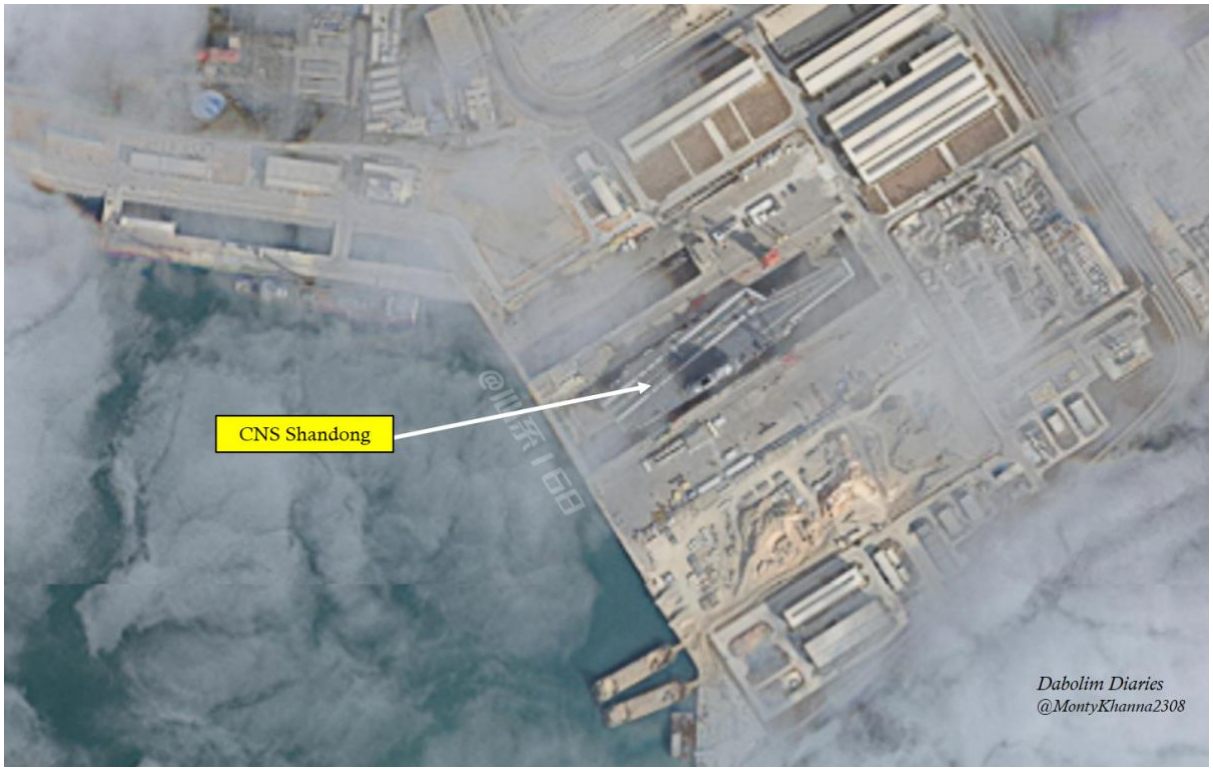

Fig 6: Maiden Docking of Aircraft Carrier at New Ship Repair Facility

Phase 2. Work on an outfitting/repair jetty commenced in early 2023 and completed in December 2025. The jetty has a length of 945 m and is fitted with two rail mounted portal cranes (Fig 7).

Fig 7: Oufitting Jetty at New Ship Repair Facility Under Construction

Work on this facility completed in December 2025 with a Jan 2026 image showing three ships berthed on the jetty (Fig 8).

Fig 8: Completed Outfitting Jetty at New Ship Repair Facility

The assessment that this jetty is part of the ship repair facility is based on its proximity to the dry-dock complex as well as by the presence of the rail mounted cranes. In the PLA Navy, operational jetties (with the exception of those used by aircraft carriers) are not fitted with such cranes.

Phase 3. Fresh excavation activity is now being seen to the south of the dry-dock complex. The length of this is 380 m and width 120 m (Fig 9).

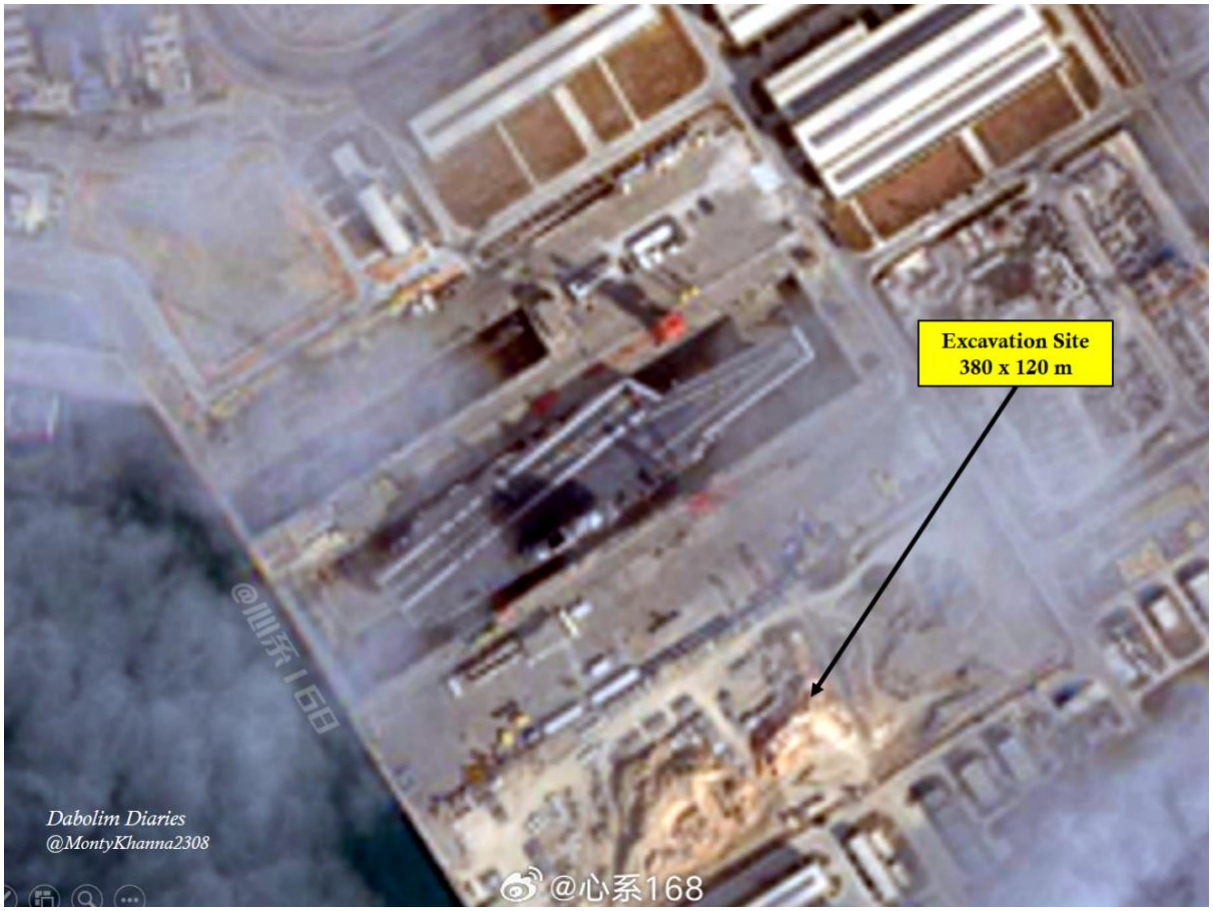

Fig 9: Excavation for Possible Wet Basin/Dry-Dock at New Ship Repair Facility

This could either be for the creation of a yet another large dry-dock or for a wet basin, similar to those that have been created on Changxing Island (Shanghai) by the JNCX and HDZH shipyards. A clearer picture will emerge in a few months with regards to this.

New Wharfs. Along with the excavation activity, two finger jetty complexes are also being built in the close vicinity. One of these has five wharfs, each about 620 m long and the other has three, each about 250 m long. Both of these are likely to have operation functions, with the latter one possibly being used to berth the growing fleet of nuclear submarines. This will be reassessed subsequently (Fig 10).

Fig 10: Wharfs Under Construction Adjacent to New Ship Repair Facility

Assessment. The PLA Navy's growth has picked up significantly since 2012 with the rapid construction of Type 056 corvettes, Type 54A frigates and Type 55 and 52D destroyers in addition to aircraft carriers, expeditionary and support assets. The PLAN has ensured that support infrastructure in the form of berthing and repair facilities have either kept pace or more often than not, even preceded the construction and commissioning of ships. The growing investment into integral repair facilities also signifies the importance that the service attaches to reducing its dependence on commercial yards for the maintenance of its assets. Creation of excess capacities also leads one to the inference that the PLAN is yet to plateau in the number of assets it possesses and this will continue to grow in the near future.