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South Korea and Its F-35 Enabled Light Carrier



October 18, 2020

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South Korea to Add an F-35 Enabled Sea Base: What Does it Mean?

10/07/2020

By Robbin Laird

This summer, the South Koreans revealed that they were going to build a larger amphibious ship, and configure it to operate F-35Bs onboard.

In 2018, the South Korean Navy launched its second 14,500 Dodo-class amphibious ship.

At the time of the launch ceremony in May 2018, the South Korean defense minister noted: “In order to preserve our maritime sovereignty at sea and play a role as a member of the international community, we have to move farther toward greater oceans,” the minister said. “I’m convinced that the Marado will bring honor to the Republic of Korea by contributing northeast Asian and global maritime security.”

According to one source: “The Dokdo-class LPH can carry up to 720 fully equipped marines, 10 tanks, 10 trucks, seven amphibious assault vehicles and three artillery systems. It can sail at a maximum speed of 41 kilometers with a crew of 300 aboard.

“The well deck has a capacity for two landing craft. Below the deck hanger, 15 helicopters, including two V-22s, can fit while the flight deck can simultaneously accommodate up to five helicopters of all types, according to DAPA.” officials.

With this experience under their belt, they are moving on to build a larger ship, once which can operate fast jets. Rather than trying to cram F-35Bs onto a traditional amphibious ship, the South Koreans have decided to build more towards the USS America approach. They will build an aviation oriented ship without a well deck for launching amphibious vehicles.

But why are they building it?

How will it be used?

How does this platform decision presage changes in South Korean strategy?

And how will adding this capability for the South Korean force alter how they would need to think about ship defense and offenses involving a larger deck amphibious ship?

I will deal with these questions in later articles in this series but would first like to review answers to these questions which have been suggested in articles published after the decision became evident.

Let me review those answers.

According to Robert Farley writing in The Diplomat:

South Korea's primarily military problem remains the existence and hostility of North Korea. But with both Japan and China building aircraft carriers, and with the United States no longer a reliable partner, the decision to pursue carriers has a clear strategic logic.

The prominence and novelty of the Japanese and Chinese carrier programs almost certainly mean that considerations of national prestige also play a role.

Still, one or two carriers would have their uses in a military confrontation with Pyongyang, offering South Korea a means of conducting mobile strikes from unpredictable vectors.

For Farley, the South Koreans are doing this because the United States is no longer a reliable partner. The Japanese and Chinese are building carriers, hence South Korea needs to do so. And finally, the amphibious ships with F-35Bs onboard allow mobile strikes from unpredictable vectors.

According to David Axe writing in Forbes, the new capability would provide more options in dealing with the core threat from North Korea

“The Inchon amphibious gambit worked in 1950. It could work again in the 2020s or later. For that reason the United States and South Korea maintain strong amphibious forces on and around the Korean Peninsula...

“Land-based fighters could contribute to the amphibious campaign, of course—as could U.S. Navy fighters from the U.S. Pacific Fleet's supercarriers. But the amphibious group's organic fighters, operating close to the beaches directly in support of the landing force, likely would provide the most effective air support.”

According to Joseph Trevitchik, the F-35B is a key addition in terms of providing force mobility to the South Korean forces/

“No matter what the ship's final configuration might be, it stands to offer the South Korean Navy, and the country's military as a whole, an important new capability in face of a variety of regional threats. Being able to launch F-35Bs from a ship at sea would be invaluable during any conflict with North Korea, when established bases on land would be subjected to heavy attacks. The B model Joint Strike Fighters could also use their vertical takeoff and landing capabilities to operate from fortified roads or simple concrete pads on shore, as well.”

For Kyle Mizokami, the new ship with its F-35Bs onboard are part of an effort to enhance war fighting capabilities against North Korea and are part of South Korean deterrence strategy.

“All of this makes South Korea a maritime country by nature. The threat from North Korea, however, has until recently forced it to invest much of its defense budget in its ground forces.

“An aircraft carrier will give South Korea the ability to fly combat missions against North Korea from directions other than over the demilitarized zone. Parked in the Sea of Japan or Yellow Sea, LPX-II will be able to fly F-35Bs into North Korea from the west or east, forcing the totalitarian state to remain vigilant to threats from not only the south, but also the west and east.

“Carrier-based aircraft would also be able to take advantage of blind spots in North Korean air defense system, egressing the country where its aging military infrastructure has created gaps in radar coverage.”

Mizokami also cited the regional prestige argument as well.

“Another likely factor is South Korea’s historical feud with Japan, which once held the Korean peninsula as a colony. In 2018, Japan signaled its intent to transform its two Izumo-class helicopter destroyers into ships capable of carrying fixed-wing aircraft, and announced plans to purchase 42 F-35Bs. Japan’s building of aircraft carriers, which it largely did as a response to China’s building of aircraft carriers, created pressure for South Korea to follow suit.”

To summarize: The South Koreans are building their large deck amphibious ships for prestige reasons; They have built it to provide for new options to deal with the North Korean threat; they are building it because the United States is no longer a reliable partner.

Although the announcement of building a larger amphibious ship was news, the acquisition of F-35B is not so surprising. There is a growing set of nations in the Pacific who have grasped the point that the F-35B provides deployment options crucial in facing an enemy with enhanced strike capability against fixed targets.

But that point deserves further treatment as well.

And the question of how to shape a task force which would operate with such a ship is a significant one as well.

A South Korean F-35B Enabled Light Carrier: What Might be Its Impact?

10/15/2020

By Robbin Laird

The South Korean Air Force has added F-35As to their combat force. They are now on track to add F-35Bs to a sea base.

An aspect of F-35s which is critical to understand is how they communicate and how they hunt as a pack.

With the South Korean wolfpack of F-35s, 8 ship formations (with Block IV software) can hunt as a pack.

This gives the South Koreans the capability to use F-35s from the sea as a separate strike force or operate as part of a land-based strike force.

What it does give is a much wider range of launch points against an adversary.

And with the core allies of South Korea adding significant numbers of F-35s to Pacific operations, the South Koreans can leverage an extensive web of F-35s working as a C2/ISR kill web.

There are security limitations, but with the way security is handled inside the aircraft, it is possible to alter which data is shareable dependent upon policy decisions.

But the core point is that the F-35 has significant reach into a 21st century “big blue blanket.”

As the CO of MAWTS-1, Col. Gillette described it:

“The development is a significant one. It is not only a question of interoperability among the F-35 fleet, it is the ability to have common logistical and support in the region with your allies, flying the same aircraft with the same parts.

“And the big opportunity comes with regard to the information point I made earlier. We are in the early stages of exploiting what the F-35 force can provide in terms of information dominance in the Pacific, but the foundation has been laid.

“Then we highlight the F-35 as the 21st century version of what the World War II Navy called the big blue blanket with the redundancy and the amount of information that could be utilized, it’s pretty astonishing if you think about it.

“The challenge is to work the best ways to sort through the information resident in the F-35 force and then how do you utilize it in an effective and efficient way for the joint force. But the foundation is clearly there.”

Given that a major trajectory of change in the Pacific is the USMC and the US Navy working on enhanced integratability, and given the central role F-35 is and will play in that process, South Korea is joining a dynamic process of change with regard to the evolution of interconnected sea bases.

This means as well that the South Korean sea base can be used either to support operations against North Korea, by providing alternative vectors of operations, or in terms of reaching out into the region to protect their interests and to work with allies in the region.

Clearly, China has and will extend their reach in the region and will do so in part by their maritime power. South Korea has maritime capabilities for sure, but not well tied to regional power presence.

But building out such capabilities with an F-35 enabled sea base is a very effective way to do so.

With the USMC and the United Kingdom following similar trajectories with regard to how to operate F-35B enabled sea bases, there are allies whom the South Koreans could work with directly in shaping their con-ops as well.

Despite historic rivalries and challenges with Japan and Singapore operating F-35Bs, it can be expected that cross learning and cross operations are on the table.

That then raises the question of the task force in which the F-35B enabled sea base would operate.

What organic capabilities do the South Koreans need to consider onboard to operate most effectively and to be effective building blocks for either the national or allied deterrent structures?

South Korea Builds an F-35-Enabled Amphibious Ship: How to Shape a Task Force?

10/18/2020

By Robbin Laird

The South Koreans have announced that they will build an F-35B enabled light carrier.

The LPX-11 is expected to displace around 40,000 tons fully loaded. An original design concept had a ski jump like the Queen Elizabeth carrier, but the latest rendition does not have this feature. The ship is projected to become the flagship of a task force.

The question of how it would work as the lead of a task force poses significant questions with regard to how South Korea will configure the ship and work integrability with its fleet and those of its allies. In 2019, the South Koreans released their Navy Vision 2045 plan. In addition to the light carrier, the plan envisaged a 5,000-ton weapons barge which is visualized in the graphic below.



The South Korean Navy is building out its submarine capabilities as well its KDX-III destroyers.

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Figure 1 Naval programs of the Ministry of National Defense, 2021-2025, Mid-term Acquisition Plan.

Currently, there are only two operational models with regard to how to do so.

The first is being developed by the Queen Elizabeth carrier, but it is a much larger ship and is being built around its ability to work with both the surface and subsurface fleet being developed by the Royal Navy.

In my visit to Portsmouth in 2018, I discussed how the Royal Navy was thinking through the nature of a Queen Elizabeth led task force. A clear element of this effort is to shape a carrier led maritime task force for blue water operations, and secondarily, as an amphibious led task force operational template.

This is currently being seen in the Atlantic as the HMS Queen Elizabeth is leading a carrier strike group. A clear challenge in the decade ahead will be adding the supporting capabilities needed to make full use of carrier strike.

A key element of the UK approach relevant to South Korea, clearly is the expectation that the F-35s onboard the UK carrier will be able to work with land-based Typhoons and other air delivered assets to get the full impact from carrier led operations.

But the size of this carrier, and the weapons load outs which it can carry as well as the number of F-35s is much higher than the South Korean light carrier.

More relevant is the case of the USS America class both in terms of numbers of F-35s and the amphibious and carrier strike mix to be carried onboard and the approach to shaping an amphibious strike group.

It is to the USMC that the more relevant case will be for South Korea. If that is the case, then the dynamics of change going on with regard to USMC and US Naval integration is significant as well as the changes underway which can enable the evolution of how the amphibious task force can deliver more capability in the maritime domain.

During my visit to MAWTS-1 this past month, the CO of MAWTS-1, Col. Gillette laid on how he saw the transition.

He addressed two key questions during the visit: “How is the Marine Corps going to contribute most effectively to the Pacific mission in terms of Sea Control and Sea Denial? And how to best contribute to the defensive and offensive operations affecting the SLOCs?

This is the question I asked him and his response.

Question: Ever since the revival of the Bold Alligator exercises, I have focused on how the amphibious fleet can shift from its greyhound bus role to shaping a task force capable of operating in terms of sea denial and sea control. With the new America-class ships in the fleet, this clearly is the case.

How do you view the revamping of the amphibious fleet in terms of providing new for the USMC and the US Navy to deliver sea control and sea denial?

Col. Gillette: “The traditional approach for the amphibious force is move force to an area of interest. Now we need to look at the entire maritime combat space, and ask how we can contribute to that combat space, and not simply move force from A to B.

“I think the first leap is to think of the amphibious task force, as you call it, to become a key as pieces on the chess board. As with any piece, they have strengths and weaknesses. Some of the weaknesses are clear, such as the need for a common operational picture, a command and control suite to where the assets that provide data feeds to a carrier strike group are also incorporated onto L-Class shipping. We’re working on those things right now, in order to bring the situational awareness of those types of ships up to speed with the rest of the Naval fleet.”

The F-35s onboard the South Korean light carrier could leverage weapons onboard the destroyers or the projected arsenal ship, but a key question is how best to shape a task force that can defend that ship as the lead element of sea denial or sea control force. The ability to tap into other weapons carriers, and to do third party targeting, which the F-35 is very good at doing is clearly part of it.

Also part of it is to focus on the kind of rotorcraft integrability which the task force carries as well. And here there is a new innovative opportunity for the South Koreans to consider. The Romeos provide a significant ASW and Anti-surface warfare capability, but with the Vipers becoming Link-16 and full-motion video capable next year, the ability to operate Romeo and Viper packages in ship defense is a key capability for the amphibious task force.

In any case, having a maritized helicopter on board which can provide for significant strike capabilities against maritime, land and air capabilities would be a solid addition to the amphibious task force.

As argued in an earlier article:

As the US Navy reworks how it is operating as a distributed maritime force, which is being reshaped around the capability to operate a kill web force, the question of how best to leverage and evolve the amphibious force is a key part of that transition itself.

This is a work in progress, and one in which a determination of various paths to the future are in evolution and will be subject to debate as well.

Part of that evolution are changes in other elements of the amphibious task force which can over time play roles different from how various “legacy” platforms can be reworked to provide for new or expanded capabilities for the US Navy overall.

A case in point is how the Viper attack aircraft can evolve its roles AT SEA with the addition of key elements being generated by the digital interoperability effort, as well as adding a new weapons capability to the Viper, namely, the replacement for the Hellfire missile by the JAGM.

What this means is that the Viper can be a key part of the defense of the fleet while embarked on a variety of ships operating either independently, or as part of an amphibious task force.

Because the Viper can land on and operate from of a wide range of ships, thus enabling operational and logistical flexibility, and with integration of Link 16 and full motion wave forms as part of digital interoperability improvements, the Viper can become a key member of the kill web force at sea.

Additionally, with digital interoperability enablement, the Viper can be reimaged in terms of how it might work with other members of the at sea task force.

A key example would be how it might work with the Seahawks operating from the L Class ships as well.

As argued in [an earlier article](#):

My interviews with [NAWDC](#) have underscored how the Navy is working through the question of how the integratable air wing will change when the MQ-25 joins the fleet, and working ways for the Romeo to work with MQ-25 and Advanced Hawkeye will inform Romeo as part of its fleet defense function.

“The Romeo community is already looking at how having sensors onboard the MQ-25 can expand the reach and range of what the Romeo’s onboard sensors can accomplish for the maritime distributed force.

“It is also the case that as sensor demands currently made on the Romeo can be shifted elsewhere.

“The Romeo can refocus its task priorities and enhance its contributions to broader mission sets such as ASW and to focus on contributing capabilities that other platforms within the strike group are not prioritized to perform.”

Clearly, integrating Romeos which fly onboard the amphibious class ships with the Viper would provide a significant enhancement of the flank defense capabilities for the amphibious task force.

And working a Romeo/Viper package would affect as well the evolution of the Romeos that would fly off of the L class ships as well.

And all of this, frees up other surface elements to support other missions at sea, rather than having to focus on defending the amphibians as greyhound buses.

As the South Koreans build out their maritime strike force, they might think through how to best build out an amphibious task force which best deliver its ability to operate as an offensive-defensive strike capability in the region.

And if the South Koreans choose the Leonardo ASW helicopter, the question of working with the Viper still makes sense.

In an amphibious task force, the point is not to simply to carry the attack helicopter to its launch point for land attack; it is to be available as a strike asset at sea or ashore.

And to do so being able to operate across the fleet as needed as well.

This the Viper can do very well for sure.