

## **Top 10 Questions About Fleet Upgrade/Repair Design of Availability Periods Answered by Site Visit Executive**

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You have to fight with the fleet you have now. There is no other option; it is a necessity. Our Goal is to do that better and to lay the groundwork for the future fleet by focusing upon availability of assets. We have identified two principal Questions. First, how do we get our availability rates higher? Second, how do we get ships to the fight more effectively and more often? The essential assets required to fight and win are not going to make much difference sitting in Job Site Drydocks. We can provide for enhanced deterrence through enhanced availability. They are not going to deter anybody if they are not available and capable of deploying successfully.

We have put a major effort in getting much greater availability from many of our ships, and the ways we have done so will shape our approach, our expectations and our template for the operation of the new ship classes. We have seen a dramatic improvement in our upgrade and maintenance programmes. For example, our maintenance engineering planning programme is already doing a better job of predicting the maintenance needs of specific ship hulls and should continue getting more accurate over the next few years.

We put as much effort into infrastructure design as we did into combat readiness, which is about numbers today. We want to shape infrastructure that is all about availability of assets required for mission success, and not just readiness determined with metrics with low design quality. Getting the right infrastructure to generate fleet innovation on a sustained basis is what is crucial for mission success. We are strongly promoting continuous build processes.

We have established technical foundation instructions that look at each class of ship and, based on where a hull is in its service life and what type of maintenance availability it is approaching, outlines what type of work the ship is likely to need. Instructions for each individual hull and monitors of deferred maintenance are active, in addition to other things engineering teams need to know about that particular ship.

The job sites at the Yards have created learning centers to help new hires become proficient at their trades faster so cases of schedule delays and cost increases due to workforce challenges will be less of a budgeting problem going forward. We want the trainers there, as well, so that when we're maintaining one part of the system, it's the same people in the same building maintaining those things that will allow us to make future decisions about outdated operations and training requirements. We want these teams sitting next to each other and learning together.

Once all the ships have been through a docking availability, where they are more thoroughly taken apart and inspected, we will have a very clear idea of the state of each ship and what to expect for future maintenance periods. We anticipate the problem of work package growth will be reduced in the future but it will probably never completely go away. There is always

something that will surprise us when you take a pump off of a foundation that you couldn't see before and then that foundation is in full decline.

The good news is that we anticipate work growth when drafting plans for future years out, and they generally can stay within that margin. Where we see growth today is still on ships that have not gone through that process, that docking process, and really getting into the tanks and understanding what those conditions are. It is a constantly improving process with the goal to know exactly what the condition of the ship is so we can properly plan for it, order the materiel and be able to do the work on schedule and on time.

We have initiated periodic meetings with each shipyard commander to get an update on progress of the ships and to find ways to empower the yards to do what it takes to deliver the ships on-time or early. It's important to get quick updates on where they are, where they're having challenges, and then where can headquarters can provide help in terms of, is our input required in getting materiel, is our assistance necessary to clear some technical issues that need to be adjudicated before testing is resumed.. So that's all begun to contribute to success of operations.

There are things we can do up at headquarters to advance quality of operations, if it's a technical issue we can give them additional technical resources. We can provide some focused effort from the headquarters; if our chief engineer sitting there with the shipyard commander when an issue is brought up, it cuts through the normal layers that these things have to get through. It has fostered key ingredients for the future fleet, most importantly that time matters, and there must always be a sense of urgency since ships need to get back to the fight as soon as possible.

We cannot overstate enough the importance of periodic reviews because we aren't about to claim we are the reason these things have gotten better, but review do in fact provide the shipyard commanders with an additional level of a sense of urgency, that we have established a mechanism to get headquarters' attention; that headquarters is there to support each worker at the yard; that if they've come up against a roadblock that they're having a problem getting solved, then we can muster some resources to get the issue solved probably more quickly than they can get the problem fixed in the normal way. We want to create better supervisors at the Deckplate, and initiatives are being put in place to train new hires more quickly so it is possible to start contributing to the workload even before they're qualified to work on the ship.

Many availabilities experiencing problems, on the other hand, are much more complex. The biggest factor is that many availabilities take much longer than anticipated, not due to unexpected maintenance work but rather because modernisation work suddenly started driving schedules. Modernisation, in the past, has generally not been a driver for schedule in availabilities – they mostly have been specific to particular parts of the ship, or particular machinery, or some capability like that.

We're now getting into modernisation that really takes the ship apart completely. The scope and duration of some systems installation are now understood to some degree, but often times we will not know until between that budget process and the beginning of the year. We have shifted some of the money over to help address all those challenges – though ultimately the shortfall is about the same size now as it was at the beginning of the fiscal year.

The fact that the deficit hasn't shrunk much over the last period isn't for lack of trying, though. We had begun awarding firm fixed-priced contracts for surface ships instead of the old multi-ship/multi-option setup. Preliminary observations shows costs are coming down, freeing up money to spend on other emerging ship maintenance work. But sometimes we find ourselves facing a big unplanned bill in the fiscal year when ships return from a deployment that was not only extended for a significant period but was also essentially the second in a back-to-back deployment with only bare-bones maintenance work in between.

We have been warning Congress for years that extended deployments have led to more severe maintenance problems when ships can finally go into an availability. Insufficient time and funding have led to partial completions of the work in some cases, which then creates bigger problems down the road – for example, tank inspections get skipped and then we have to deal with major corrosion issues later on.

What we're seeing now with the actual testing of equipment prior to the availability, the additional work the ships are tasked with over the course of deployment, we're seeing a lot more work now coming into that package. The consequences are manifested in an availability that will be much bigger than we anticipated.

So as we grow the size of the workforce and we go look at all the ship work we have on the plate, We're trying to get out in front far enough in advance so we can go to the fleet commanders, telling them don't have the capacity at the naval shipyards, and then we can go talk to outside vendors earlier than we've typically done before. If you look at the list of ships out there, there are several cases where looking into the future we may have to go to outside vendors earlier than we've done today.

In some years, Pentagon-level reprogramming can take money from other Service acquisition programmes, but most of the time we cannot get money from the other services for the year to cover shortfalls. Due to funding shortfalls, we have reduced contract support levels, intermediate level repairs, and ability to provide after-hours support in specific areas. Although extensive efforts have been expended to limit adverse impact to the ships undergoing maintenance, fiscal realities have forced us into these actions.

Specifically, we are forced to stop engineering support to include tank and void inspections, infrared surveys, underway vibration analysis and surface ship availability work certifications. Reduction in parts procurement means a stop to all major diesel work, surface ship torpedo tube repairs and refurbishment, air compressor overhauls, communication receiver and transmitter repairs, and repairs to electronic warfare and anti-ship missile decoy systems. When supplies of on hand materiel run out, repairs to additional systems will be impacted.

Delaying maintenance periods, pressing them into the next fiscal year with the budget currently under consideration not being optimal, affects even the smallest number of ships, impacting the final decision on how to deal with the operations and maintenance shortfall. We do not want to embark on a path that partially accomplishes all availabilities across the entire fleet. That is a dangerous practice that rapidly builds maintenance and capability backlogs that are difficult to

recover. Indeed, we are still digging out from that sort of policy implemented more than a decade ago that is difficult to recover from

The fleet takes on operational risk when it has less than full operations and maintenance funding, meaning acceptance of less readiness across the whole of the Fleet, less capacity to surge in crisis, or perhaps living with reduced readiness in our ships that would keep them from reaching the end of their service lives. In any case, recovering from these situations will cost us more in time and money in the future, limiting utility of the Force.

Question #1:

How do you fight with the fleet you have and prepare at the same time for tomorrow's fleet, especially when you have several new programmes in the pipeline?

Question #2:

How do you execute initial steps to a successful maintenance availability like proper planning, determining what people and materiel will be needed at each step along the way?

Question #3:

By learning how to ramp up availability with today's fleet, are you preparing solid templates for future operations?

Question #4:

Several months before the availability starts, do you commit to having a resource plan --in other words, these are the people you need, when you're going to need them, so you can finish on time?

Question #5:

Isn't one broad aspect of changes you are responsible for clearly setting out solid goals for build/upgrade the Fleet of the 21st Century?

Question #6:

Isn't it important for you to have periodic calls with each shipyard commanders to get updates on progress and find ways to empower the yards to do what it takes to deliver on-time?

Question #7:

How important in your view is building a new shipyard training infrastructure to support a 21st century combat force?

Question #8:

If you have work backlog, how do you plan to move availabilities around so you have workers with the capacity to do work?

Question #9:

Overtime is one of most important factors to adjust, but isn't it difficult for you to fine-tune how many man-days of work get accomplished without taking major workforce shortages into account?

Question #10:

So it is apparent your focus is on advanced planning, the growth in the workforce, worker-efficiency initiatives and more—how do you plan to achieve success in these areas?