Good afternoon, distinguished guests, ladies, and gentlemen. It's a pleasure for me to be here and an honor to address such a diverse and professional group of people who are committed to improving the war fighting and the peace-keeping capability of our service members.

Before I start, I would like to qualify the voracity and some of the emotion that may seep out at times during my remarks.   I am anxious to work toward a solution – one that I think is elementally quite simple – one that I think is also quite necessary if we're to minimize the risk while delivering the requisite, proven capability in the most dynamic case of revolutionary concept development, experimentation, evaluation and fielding process within the DOD - when I use the word "we", I mean "WE" – all of us.   I'm also need to understand the answer to the following question: Do you see OT&E as program risk or reduction and why. And, do we understand the difference between "test" and "performance test"?

I have been in the Navy for 29 years, during which I have deployed overseas 14 times – some of those times have been with some of you sitting in this room like my dear friend Admiral Bert Johnston from NAVAIR., and Larrie Cable who taught me all I know about DT and RADM Jack Zerr who served as an Air Wing Commander while I was a lowly battle group staff puke. I remember on more than one occasion, sitting in my aircraft on the flight deck, or on the Bridge of my ship, staring into the expanse in disbelief trying to get a new "state-of-the-art" system to function properly, and asking: "What knuckle head allowed this to get to the Fleet?" I never want someone to point to me and say "There's the knuckle head". I doubt seriously that any of us want that moniker hung around our necks, but sub-par systems, or should I say, systems that are not as good as they could be when they get to the field, still make it to the war fighter due to a lack of serious team coordination which I think results in a lack of comprehensive understanding of a program's dynamics or the priorities and difficulties that exists in the various tribal camps– something that can truly be avoided - that often times results in a deficient universal understanding of the requirement and capability necessary. The DOD acquisition process is undergoing administrative change, yet I think the process itself has allowed all of us to lose our way in producing capability for our war fighters. There is some good news – there is some promise embedded in the new DOD 5000 and CJCS Joint Capability Integration and Development System – but it still will take an internal, more personal realignment of the real, actual processes that deliver product to our customers where we are encouraged to contribute together, early and continuously for the benefit of the young men and women standing harm's way this very day.

A process, such as this, will be as good as we make it. Nothing that I've seen to date embraces risk management as I've learned it as a centric tool to achieving full success – if it did, I'm not sure how we could deliver systems to the fleet untested yet, we do. The result is chaos as each of us react to what we think is the plan, but he with the biggest hammer rules that day and makes up his or her own team and claims success. Question for emphasis of point – what is an IPT? Who sits on it? What decisions come out of it? Does it have potential to fulfill useful purposes, or does it just sound sexy?! I always thought I was part of the team – what I have found is that this comes to fruition only when I make it happen or by accident. I always thought that industry should be part of this team. Yet to date, the process has been flawed and inconsistent and no one wants to admit authorship of the architecture that navigates us to some

sort of solution at some undetermined cost and delivery date – exacerbated further when thrust into an environment that is almost unachievable if you want to support rapid technology insertion and that the real problems lie in an unsustained funding profile and unresponsive requirements generation.

All of you want to deliver the best product to the fleet. I think that there are some out there quite honestly who also game the system– I mean, industry must know how disjointed we are, how inefficient we can be, and there is a business case to be built that depends on these inefficiencies and a strategy that derives tremendous benefit from playing within the seams – this business case gives spiral development a bad name. I have seen it in weapon system software development and other rapid technology insertion programs that lead to system problems and a backed up technology insertion pattern for many complex systems, some where there are 13 iterations of software/hardware deployed simultaneously without baseline test – nobody here ought to want that to happen if you care about these service men and women on the pointy end of the spear.   We all recognize the pressures: the financial pressures of staying in business, and the financial pressure of DOD paying for the product and getting it delivered results in a lowering of expectations in the form of altered requirements that become more achievable.

As we sit here today, within the confines of this beautiful hotel, in this most wonderful city of Victoria, there are over 170 Navy ships (seven CVNs!!) and over 77 thousand sailors deployed preparing to do battle in what can only be described as uncertain conditions – both militarily and politically. On each and every one of those ship are sailors and marines working day and night, in good weather and bad, on flight decks, in command and control centers, in aircraft and aboard submarines to operate and maintain the systems WE provide. Ask yourself, would I stake my life on my system performing correctly in combat? Have you asked; has anyone provided feedback based upon metrics that mean something to a system user? Are the metrics that are being used to measure performance or reliability the right ones that tell the war fighter what he or she really has (Ao discussion)? Ask yourself also, could we have done better – you and me? If you start out in you answer "Yeah but,", then what have we done - each of us - in our respective positions to fix it? Can we treat it as a DOD-only problem? I don't think so. Can we in DOD expect industry to suck up sunk cost in a program that is stifling for lack of a capability document or other clear sense of direction? Is there a reason we see an overestimation of capability or lack of fidelity in the initial spiral planning? Is there a reason that what the FYDP shows as a funding profile does not match up with what a contractor thinks it is going to cost minus the overruns that get included to account for predicted inefficiencies? Is this not the time to honestly look each other in the eye and decide amongst ourselves that a program needs to be euthanized now vice waiting for SECDEF to engage when we have already sunk hundreds of millions of dollars into a program, resulting in a prescribed conclusion? Would anyone here really prefer that these same systems not be tested in an environment representative such as where they are right now, and depend to a much larger extent on the controlled environment of laboratory testing cus we're not sure first what the environment is, or what might change given a reasonable man's opinion of the changing environment and/or threat?

There are a plethora of examples out there. I won't soil specific naval laundry, because I am convinced that the OT community needs to do more to solve these inefficiencies. I'm also convinced that every service has similar problems. The recent examples address the C4I world,

weapons system software development, weapon systems critical to their warfare areas and numerous other IT examples. And let us not lose focus on our customer – the war fighter, and the peace-keeper. It is our job to develop the processes that deliver the capability to these men and women – not just hardware ladies and gentlemen, but comprehensible documentation, acceptable maintainability and reliability, and a logistics pipeline that supports all of the above..

My background, both as a requirements officer and as a Navy Test Pilot – one which I thoroughly enjoyed the other not quite so much (I'll leave that for you to figure out) – have given me a good appreciation for the requisite relationship that must exist with industry if we're to play well together. And while I always thought that my "operational" brain was fully engaged, even when I was flying purely for validation of technical compliance. I never appreciated the necessity for OT until I came to this job.   This is the guts of what we do – what we bring to this dynamic, camellian relationship - operational testers, irregardless of service -: we test under realistic combat conditions - any item or key component of a weapon system, equipment, or munitions for the purpose of determining the effectiveness and suitability for use in combat by "typical" military users under typical operational conditions using real operational tactics. PERIOD!   We test to the real threat, and if it changes over the ten years that it often takes to get a program deployed, then so does our test because the rules of war do not preclude our adversaries from changing their tactics or upgrading their capability.

Now I know you've probably heard that OT mission mantra innumerable times before, but I'll ask you to think about what I said. Think about how detailed that statutory statement is. Think about how important it is.   Think about how little you know about it as you start developing a concept based upon maybe a mission-need statement. I have very little latitude in how that mission is accomplished. It doesn't say, use modeling and simulation to predict system performance, although there is tremendous opportunity to use this technology to reduce cost and expedite various phases of test if we properly address simulations and models and their applicability and credibility; it doesn't say extrapolate maintainability data from contractor estimates or reliability from projected growth curves. It doesn't presume that white room laboratory results will translate into an accurate portrayal of real environment conditions, because in my entire Navy life, it never has. It is my responsibility, one that I take very seriously, one that I am emotionally engaged in to the very root of my Navy soul - to make a determination if a system will be effective, that it will do what the war fighter needs it to do and if it will be supportable in actual combat. Working with a system groomed for inspection, I must make a projection on how well every other installation of that system will perform when placed in combat and possibly casualty degraded. Add on to that the cumulative affect of each of the risk acceptance decisions made by everyone else prior to my evaluation, often without opportunity of open dialogue with all of the team players , and how all of those decisions compound the complexity of my decision. In my experience, industry and the acquisition community dialogue more often without our presence – it is natural to see an unknown as a risk. Many of you know that we are trying to break this paradigm, but I need your help – you can engage me too; challenge me; inquire as to what we think a requirement or capabilities document means.

I fully realize that T&E is part of the risk equation and that some of this could easily come back at me – but I am willing to take that chance, [pause] in the hope that honest debate

can follow from here. That some acknowledgement arises out of the administrative morass (the new 5000 series instructions) that still exists within DOD that makes life tough on those of us who have the purest of intentions of equipping our service people with the very best we can. Here are my frustrations with the new instructions: The process as proposed does not lend itself to timely execution. Requirements documents routed in today's process take an incredibly long time to get approved – I do not see this changing. What is changed about the new process, with three distinct capabilities documents (ICD, CDD, and CPD), that will be more responsive to the acquisition community? The new process does nothing to address acquisition contracting timelines that result in a focus on funding pressure vice performance. Incremental development and fielding can result in significant capabilities differences to the war fighter using the same "system." The process is only as good as its execution. The process doesn't clearly identify all stakeholders as members of the OIPT leaving it open for interpretation.

All of this, all that covers so many different topics and scratches so many different surfaces, is why I believe it is important for us to talk today as a united group of acquisition, test, and industry professionals about the singular most important initiative. That initiative is "early and continuous involvement". Those words are rather amorphous and don't mean much on their own merit, so let me tell you what I mean by "early and <u>continuous</u> involvement" – and how, through better communication and coordinated effort, we, [pause] you and I, all of us, [pause] Test and Evaluation, Acquisition, Manufacturing [pause] or The TEAM, can get the war fighter what they need faster and better.

We have worked hard to convince our acquisition friends that earlier involvement is risk reduction, yet some still defer OT as far right as possible – the trend is changing and that is good (LCS and JSF). We are continuing to work at getting smarter, through assertive communication and proactive participation in a much wider area of activity. As Jack Zerr was known to say when he was at OPTEVFOR, "We can be independent without being arrogant." We know we don't know it all, and we're willing to learn, and so should all of you. For my part, I have followed in the wake of Admiral Zerr for a good part of my Navy career, and have always respected his views – he and I had a discussion on this topic a few months ago. I'd like to say that we have leaned even a bit further forward – independent we have to be at the appropriate time, but always, always team players first.

As with any complex process, one of the key ingredients, key performance parameter if you will, for success in early involvement is communication, talking AND listening, with all the players, for the life of the program. In my mind, this starts the day a <u>concept</u> is conceived that has potential for the Navy to do its job better either in a service, joint, or coalition context. This means that the program executives, the DT and OT testers and industry all sit down together to begin developing a road map for program execution, so that we are operating off the same sheet of music. We <u>ARE</u> part of the Navy team, and though some may dispute it, we work hard to help every program succeed. Early, frequent, honest and open communication and coordination, at all levels, can go a long way toward ensuring the successful outcome we all want to see.

Early involvement, again from my perspective, is <u>risk reduction</u>, NOT RISK ADDITION [pause] for the program manager, the contractor and the war fighter. In my view, the risk we are talking about is that the system will not

provide the capability it's purported to have when employed in combat, where it matters, because each of us had a different interpretation of the requirements (if there are any) as we were unrealistic in what technology had to offer, or we have not engaged on the risks of evolving technology in the context of getting where we want to be by a certain time in the life of a program. My understanding is that from an acquisition and industry perspective, the results of T&E, and particularly Operational T&E, ADDS risk to the funding. This concern is diminished if we go after problems together early – because it is rare to see a small problem just disappear on its own. This is not an OT-only problem by any stretch of one's, as I have heard some senior officials infer!! The sooner all of us get involved, not just in programs of record but also in experiments, the better we can perform and more efficiently transition an idea into a capability. I mean you can cut OT cost as suggested by my Secretary, but 10 percent of .05 percent is a much smaller number than 10 percent of 100 percent.

Now, you may be asking, "How early is early?" If you noticed, I just mentioned the word experiments. As an example of early involvement, my staff is working with the Naval Warfare Development Command looking at the conceptual stages of system capability offered by Fleet Battle Experiments. We have teamed with the acquisition community, NWDC and N7 on Littoral Combat Ship, but I am not convinced that we have kept industry as tight in the loop as possible. We're not trying to take over the experiment. We're not trying to kidnap the requirements process – we're trying to translate the requirement into measurable metrics that make sense. Let me assure you, we have no intention of bringing our statutory and regulatory baggage to the experiment environment. Experimentation allows us to look inside the Navy's conceptual development processes and perhaps assist in generating an initial capability statement, or a set of initial operational issues. It allows us to understand where we want to go on all levels of warfare – tactical to operational to strategic. We are not trying to take these processes over, but rather support the process and hopefully learn a few ways to improve OT&E. We want to see the spin-offs that have the most potential to develop and succeed, at minimum cost and time until Fleet introduction. I would also make the case, that if we take this argument to a legitimate extreme, that industry ought to be engaged from day one as well, in as open a forum as possible. The sooner the testers get involved, not just in programs but also in experiments and other events that could lead to fielding combat capability , through not only test venues but also decision and planning meetings, the sooner we can identify potential issues and concerns, and ALL work to eliminate them.

In order to accomplish the goal of effective early involvement I have been focusing on opening more lines of communication. I have been working to provide the very same level of operational test input to the ASN offices as well as the Navy program executive officers and sponsors with frequent updates on program issues, but this HAS to become more of a 2-way street, and the internal DOD processes must encourage this more. If this is not institutionalized from the top down, we'll have to do as we do now – reinvent the initial relationships on each program and reintroduce ourselves to our counterparts and hope that it works as well as it has on Littoral Combat Ship and not as poorly as it has on others. I believe a close cooperative

relationship is imperative to transforming the test and evaluation portion of the acquisition process and obviate some of the risks I've mentioned thus far.

We MUST become more efficient and effective in the development and coordination of test and evaluation activities into the other aspects of the acquisition process if we are to achieve the goal of getting the system to the Fleet faster and on budget. An example of this is the Air Force approach called seamless verification testing – it is nothing new in my mind. But, it is the way we should have been doing business years ago, and we may have reached that goal in the era of the old Navy Material Command. Of all of the services, I think the Army has it right, one command to conduct both developmental and operational test and evaluation. The primary principle of seamless verification is that the operational tester is closely involved in all aspects of a program from requirements or capability development, to funding, contracts, acquisition strategies, [pause] everything.
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I had previously touched upon modeling and simulation. We haven't been able to integrate M&S as well as we could into many, if any, of our processes. We, DOD, don't know how to do it, plain and simple. We don't know what we want, how to get it or what to do with it if we do get it. M&S is NOT an inherently government function. Give the job to those who are developing the systems that we want to model anyway, [pause] industry. Make M&S a contracted deliverable. We contract for training simulators as part of the system, why not testing simulations? I urge you to give serious thought to that, I do.

I know we can go a long way to achieving complementary solutions with a TEAM approach, open communication and collaboration at all levels but, our primary customer is the Fleet war fighter and when that war fighter gets a new system or weapon, they must have the confidence it will work as advertised when needed, in combat. Operational Test and Evaluation is the single point through which most Navy programs pass, or at least should pass, before going to the Fleet, regardless of who the developer is or the acquisition category. This provides us with a singularly unique view to compare acquisition strategies and approaches, to witness what failed and what worked. And trust me, we've seen it all, but those that are the most successful are the ones that make open and conscious decisions. Test and evaluation was once referred to as the "conscience of acquisition." And testers may sometimes feel to the developer like a nagging conscience, but I advise you to listen to that conscience as it really is trying to help you.

If you disagree with me, great! I welcome your comments and please come find me and we can discuss this further. Better yet, bring your questions to the government/industry crossfire panel tomorrow. But, let's be vocal about this. If this goes no further than discussion about the crazy guy in the blue suit, consider the real risk if we do not do this right.: systems that rely on systems don't develop to capacity or on schedule; cost increases, what we deliver finally no longer adequately meets the threat; most importantly, we disenfranchise our young service people. In our world, yours and mine, two wrongs do not make a right. Moreover, often times, these two wrongs compound into innumerable more wrongs and we never get it right and people die.

Heh, I know the world is not perfect. And I know that maybe I'm wrong here – maybe - prove it to me. But here is what I know for sure. Every day, when I walk into my office, I look

at a copy of the sailor's creed that was handed to me at Great Lakes RTC. It is simple, but as powerful in its essence as it is one of the first things these young men and women embrace.

> "I am a United states sailor. I will support and defend the constitution of the United States of America, and I will obey the orders of those appointed over me. I represent the fighting spirit of the US Navy and all those who have gone before me to defend freedom and democracy around the world. I proudly serve my Navy combat team with honor, courage and commitment. I am committed to excellence and the fair treatment of all"

– so we need to give this same commitment and ensure that they have the tools to do what they need to do.

Thank you.