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Trex Enterprises
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INTRODUCTION

Thanks Ron – kind and generous introduction – especially good to be with you all tonight. This is actually the first speech I have given out of uniform since I retired from the Navy. Of course people ask me a lot about what it feels like to be retired.

- Last week – Korea and Japan with former SECDEF.
- Week before – San Diego – Washington, DC
- Tonight – well I'm here...Doesn't appear to me I have made a lot of progress in the retirement business!

However, one thing that has changed, when you retire as a 4-star--a lot of things do go away. The car, the boat, the plane and you guessed it--the Speech Writer.

So, if you are expecting a long speech tonight – you may be disappointed.

Actually, I think this transition has gone pretty well – contrary to any rumors, I have not walked out to my driveway and gotten into the backseat of my empty car. But, I do have one confession of sorts to make...I pulled up in front of a restaurant last week and left the car for the valet. About 30 minutes later a guy walked up to the table and said...Adm Fargo – I nodded – Would you mind giving us the keys?

- You know, he probably walked away shaking his head and telling folks the Admiral thought that was his parking spot.

Ron asked me to talk about: Hawaii's Defense Industry and how the University and specifically the College of Engineering – can support this industry. It is a new subject to me and I recognized it was going to take a little thought. For the students in the audience, my first instinct was try one of an old oral interview technique.

- Talk about something you know a lot about for a long time – then slip your best answer in right at the end, just as you are running out of

time. Once again, for the students, there is some evidence in my experience, this works.

- I remember my Chemistry oral at ADM Rickover's Engineering School—we called it charm school. I fielded a difficult question with my best monotone one morning. The professor immediately fell asleep. When he woke up 20 mins later and asked whether I had anything else to add. I said with some enthusiasm. "No, I think I have covered it all pretty thoroughly."

- Hopefully we'll use a different delivery tonight.

Like to start off tonight talking about our current and future Security Interests in Asia.

- This new and dynamic environment really does provide the foundation to answer your question.

- Then spend a few minutes talking to the Defense Industry here in Hawaii and the Pacific.

- And wrap this up with what I believe we should be thinking about in terms of our future and discuss your role.

NEW SECURITY ENVIRONMENT

So let me start by describing this security environment. (Pacific – 5 yrs; Middle East – 2 yrs). I think it's truly striking – really stunning – just how much the world has changed – certainly since the end of the cold War, but also since 9/11 and even in the past year.

Globalization is having profound impact on political, economic, social, and military change, both domestically and internationally. This is exactly what we see in the Pacific.

- Most of this change is good:
 - Communications. Connect everyone instantaneously. (SEC Rumsfeld could have VTC—anywhere in the world, anytime—I think that's good!)

 - Commercial transactions circle the globe at the speed of light.

- Air and sea fleets make every corner of the world available for business and pleasure travel.
- But, there are downsides:
 - Crises affect more people faster.
 - Instability crosses borders quickly
 - 1997 Economic crisis SE Asia – everybody went into tank together.
 - SARS is another good example. (Singapore lost 2-3% GDP)
- So, reduced time to respond. Of course, speed is essential component in today's world (military, business, sports).

And globalization has added momentum to the ongoing transformation of Asia and the Pacific militaries; their force postures and footprints. And for good reason. Consider these facts and trends:

- The world's economic leaders are here:
 - Asia & Pacific & US account for nearly 60% of world's GDP. NEA nearly 50%
- And the fastest growing economies are in Asia (China, India, Vietnam to name a few).
- There's a strong demand for energy.
 - In 2001, more than 60% of the earth's population will be here.
 - By 2050, those figures grow substantially and still lead the world.
 - _____% World's energy Strait of Malacca

Democratization has been a key force in the region over the past decade.

- Today 36 of 43 countries in A-P declare themselves democracies or republics. (Not – Brunei, Burma, China, North Korea, Laos, Vietnam).
- Some as young as 5 years old, like Indonesia.

- As we mentioned, even the non-democratic states like Vietnam and China are moving toward market-based economies.
 - The obvious exception is North Korea.
- In the A-P, we will have 14 elections this year.
 - I mentioned Indonesia, but it's worth repeating: Violence-free, 200M people, 17,000 islands, got the ballots out and determined a result in a week. The folks that live in Florida should stand in awe of that accomplishment.
- This is a good and healthy change – we should embrace it all but...doesn't actually make Foreign Policy or Security arrangements any easier.
 - With Democracy, domestic political concerns more prevalent – (they probably learned that from us) -- makes all this much less tidy.
 - Seeing this play out with Japan and China and South Korea today.
 - But in the long run, democratization leads to a brighter future...and from a Security standpoint.
 - Fundamentally, we have learned democracies don't fight democracies. John Norton Moore

Modern/moderate Islam is another predominant trend.

- Malaysia and PM Abdulla Badawi. Here we have a strong leader with exceptional Islamic credentials who has articulated that Islam is consistent with democracy and a progressive social and economic structure.
 - Proven that democracy, prosperity, moderate Islam can and should co-exist.
- In Indonesia, we worried that in the midst of the election – and in deference to the Islamic parties – the government would back off going after the terrorists. That hasn't been the case.
- By the way – glass half full – Indonesia will be a success story.

- We should support and reinforce these nations.

Which brings me to our three principle Security concerns:

- Miscalculation across Taiwan Strait
- A nuclear North Korea
- Terrorism in Southeast Asia

Hard to talk about A-P future without discussing China's rise.

- You have to be impressed with their diplomatic and economic strategies
 - Soft power strategy -- their investment is everywhere. I have seen it:
 - Soccer stadiums and martial arts training in Fiji
 - Barracks in Tonga
 - Gas deals in Indonesia
 - Energy from Australia
- Message is – we are benign, benevolent and we ask nothing...we should postscript – “for now.”
- We recognize clearly the significant military modernization that is underway.
 - Fueled by 7-10% economic growth
 - 250 4th generation fighters
 - 12 modern diesel and building 2 new classes – nuclear subs (8 more diesel and 3 more nuke subs planned)
 - Sophisticated air defense (Russian)
 - Missiles: at least 500 short-range; unk med-range; over 100 ICMB
 - They have exceeded our expectations in terms of their industrial capacity.

- China is not looking for adversarial relationship with U.S. or India – they can't afford it.
 - Terribly concerned about the potential for internal unrest if they can't expand the "Shanghai miracle" to the "other 1 B Chinese"
- There are a number of shared interests:
 - SLOCS – Energy
 - Nuclear-free Korean Peninsula
 - Countering terrorism

China will be a great power – Guard it along the way to ensure -- as it develops -- it adds to stability in East Asia.

Terrorism presents a threat to our collective peace and stability in Asia and the Pacific. Certainly there is a great deal at stake.

- JI is AQ-affiliated. Responsible for Bali, Marriot and Australian Embassy bombings.
 - Much wider scope than Indonesia. They have a presence in Singapore, Thailand, Malaysia, Philippines, Australia.
 - Goal – create a Pan-Islamic state with Safe Haven in Mindanao in the Philippines).
 - Immediate objective -- to disrupt legitimate democracies of Southeast Asia.
- We recognize we can't win war on terror through attrition alone.
 - Create terrorist more quickly than we can kill or capture
- So we are taking a two-pronged approach:
 - Near term: we have to stop the violence – take the offense. Can't resolve all sources of instability in a peaceful way. But don't see military action as sole or even primary instrument. Intelligence sharing and law enforcement certainly lead much of this effort.
 - Long term: Strengthen democratic institutions and build good governance.

- Much more than poverty; includes economic, political, or social grievances combined with providing adequate mechanisms for their resolution.
- When people value their institutions more than they fear the terrorists, peace will prevail, and we'll reach a tipping point in the war against terrorism.

Toughest challenge – North Korea's nuclear capability.

- Both threat to neighbors – and to the International Community through Proliferation of Nuclear Materials.
- A firm, united ROK, Japanese, U.S. front remains important through 6-Party talks.
- It will take a carrot and stick approach. There is effective diplomacy without some consequences.
- Fundamental question – Is there a deal? (Deng Zhao Ping or Michael Gorbachov)

I've offered you a lot of things to consider...but that's really the point. We no longer face a one-dimensional Cold War security environment. We face a new, complex security environment boosted by globalization and rapid growth in our region. Certainly, new approaches are needed to meet these challenges.

HAWAII AND THE DEFENSE ESTABLISHMENT

So as you survey the Security landscape in Asia you recognize as I do, the importance of Asia to our future – to our prosperity -- and it will only grow. It is easy to see why Hawaii is so important. So it is not surprising that:

- The U.S. Department of Defense is the second major source of revenues to the State. Second only to tourism.
- Hawaii is the second-ranking state in annual per capita federal defense expenditures -- \$3,566 per person.
- Every major defense contractor has local staffing in Hawaii, where defense procurement totals 1.9 billion annually.
- Pearl Harbor Naval Shipyard is the largest industrial employer in Hawaii.

- Pacific Missile Range Facility on Kauai is the largest multi-environment military range in the world.

Just as we see Asia increasing in importance, the Defense investment in Hawaii is increasing.

- Total Defense expenditures 2003 – 4.5 Billion – 13% increase over the previous.
- Defense procurement alone 1.9 Billion – 26% increase
 - All this affects much more than the Defense Establishment. Impacts real estate, construction, Health Services, Retail, Banking, Utilities.
- Add this important effort to bring high technology to Hawaii – which is what I'm working on now with Trex Enterprises.

Lots of jobs now – there will be more in the future.

- In case you are wondering where I got these numbers, they come from the Chamber of Commerce and Hawaii Department of Business, Economic Development and Tourism.
- So you guys out there in the Chamber—we really do read those brochures you print up.

WHERE YOU CAN HELP

- Let me give you the bottom line up front -- WE NEED ENGINEERS

I think you would have to conclude that by any measure, the Defense and Economic health in Hawaii is excellent and certainly the prognosis for the future is particularly bright.

- But I should add – except where it isn't.
- That may sound like the second line in one of Dr Seuss' books. For the students in the room who weren't raised on Dr Seuss stories like the Cat and the Hat or The Places you Go, hopefully one of your professors will help you out here or just call me.

The problem very simply is that we are not producing enough citizens with Engineering and Technical foundations to ensure our National Defense technical needs will be met.

As you heard from the introduction, I spent the early part of my career as a nuclear submariner. Commanded a submarine and was the Engineer Officer on a nuclear submarine. Now that doesn't really qualify me as an Engineer—actually, I'm a math major.

But like all of us of that generation, we were raised by the Navy's pre-eminent Engineer, ADM Hyman Rickover. Also called the Father of the Nuclear Navy.

- As a junior officer, I noticed he was also called a few other things.
- But one thing for sure, we all became disciples of ADM Rickover's philosophy on Education, and Training and Engineering.
- As you look back some 50 years later, you can say that he ran the most successful program in the Navy and that continues today.

ADM Rickover was the champion of a technical education.

- He believed – as I do – that it was a prerequisite to the sound operation of any sophisticated organization – and especially the Navy – which he recognized would only be successful with well-designed, technically superior ships and sound operators to go with them.
- He sounded the alarm in the late 60's and early 70's when he felt the country frankly wasn't producing enough college graduates with science and engineering backgrounds.
- And he made a difference as we strengthened the academic programs at the Naval Academy and the requirements of our ROTC programs at universities throughout the country.

With my apologies to the Business School, ADM Rickover had a certain distain for Management Programs because I'm sure he felt they create an illusion that you could compensate for what you didn't understand, with the latest management technique.

- I remember one speech where he said: "Management systems are as endemic to the Government as the Black Plague was in Medieval Europe". Brochure after brochure crosses my desk offering seminars and courses in Management. Usually they are aimed at Government officials. Details vary, but the substance is the same. For a substantial fee, paid by the Government, and for a few days spent in pleasant surroundings, those attending the seminars will be taught management. Usually the agenda contains

numbers—seven trends of management, five differences between a leader and a manager, four functions of a leader, or five ideas for improving human relations.

- Sounds familiar – that was 1974.

But ADM Rickover's point was that you can't run a very technical and complex ship with people that don't understand the systems. And all of our ships, aircraft and submarines are complex and technical and thanks to American industry's, --- leading edge. In Rickover's words:

- "Management systems cannot help when the difficulties are technical" or more to the point.
- "Young officers today must be able to understand the technical details of their equipment and they cannot do this without learning the fundamentals of engineering and science."

So in the 1970s/1980s, we worked hard to ramp up the number of officers with solid Science and Engineering foundations to command our ships and lead our Navy.

The requirement is every bit as important today as technology advances in leaps and bounds – but I would argue the problem is different and may be more severe in terms of our National Security. Let me tell you why – and it is simple.

- If we don't do something now, there will not be a sufficient number of U.S. citizens with Bachelor's degrees and advanced degrees in defense related Science and Engineering disciplines to meet the 21st Century needs of our country's defense and intelligence communities.
- There is lots of evidence—you and I would call it data to support this conclusion.
 - From 1994 to 2001, the number of graduate students in Defense related sciences who were U.S. citizens (or permanent resident aliens) fell 19% -- taking Physics, Chemistry, Math.
 - Alien (w/temporary Visa) grew 3% -- that's not a bad thing but more often these folks are not staying in the U.S.—and if they were, they have great difficulty getting a security clearance.
 - It gets worse – while the U.S. citizen computer science group grew by 14% in this same time frame, the alien computer science cohort group grew by 143%.

- Here is some good news – at least for the students. Although the economy as a whole is expected to provide 15% more jobs over this decade, employment opportunities for Science and Engineering jobs are expected to increase by about 47%.

I have a lot more data, but I'll spare you the pain...but circling back to the start of this speech and to put this into context of what is happening in China.

- At Fudan University in Shanghai where I spoke two years ago, the President of the University told us they were working to increase the population that had graduated college by 1% a year to reach 20% by 2010.
 - Told you I was a math major -- 20% of 1.5 Billion is a large number – maybe larger than the population of U.S.
- In 2003, PRC produced over 1.6 Million college and university graduates with science and technology degrees.
 - That is four times the U.S. rate.

So the answer to your question in a straight-forward way.

- Our country, our community and this University need to continue to fortify the work of groups like we have here tonight to recruit and educate the best of our citizens in the discipline of Science and Engineering.
- Both the prosperity and security of our nation depend upon it.

Thanks for the opportunity to talk to your tonight. We have both exciting times and a few challenges ahead but I have great confidence we will address it directly and urgently.

- It is much as Ralph Waldo Emerson wrote: “Whatever you do, you need courage. Whatever course you decide upon, there is always someone to tell you that you are wrong. There are always difficulties arising that tempt you to believe your critics are right. To map out a course of action and follow it to an end requires some of the same courage that a soldier needs. Peace has its victories, but it takes brave men and women to win them.”

THANK-YOU AND GOD BLESS YOU ALL.

