

**SPEECH TO THE WILLIAMS FOUNDATION
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TODAY I WILL PROVIDE AN AUSTRALIAN INDUSTRY PERSPECTIVE ON THIS ESSENTIAL CAPABILITY DEBATE, FOCUSING UPON THE ART OF THE POSSIBLE, THE OPPORTUNITIES, AND THE CHALLENGES IN AIR-SEA INTEGRATION.

IN OPENING, THOUGH, I WOULD LIKE TO CONGRATULATE THE WILLIAMS FOUNDATION FOR ONCE AGAIN REMAINING AT THE FOREFRONT OF CONTEMPORARY AIR POWER THINKING, ESPECIALLY AS IT RELATES TO THE INCREASINGLY IMPORTANT JOINT ENVIRONMENT.

THE NUMBERS AND DIVERSITY OF ATTENDEES AT THIS SESSION, ALONG WITH THE PREVIOUS SEMINAR ON AIR-LAND, DEMONSTRATES THE GROWING APPRECIATION FOR INTEGRATION ACROSS THE WHOLE OF DEFENCE, ACROSS ALL DOMAINS, AND NOT JUST IN THE AIR FORCE COMMUNITY.

AS WE HEARD EARLIER, A HIGHLY INTEGRATED GLOBAL ECONOMY, DRIVEN BY RAPID ADVANCES IN TECHNOLOGY, REQUIRES A MEANS OF ENSURING ONGOING ACCESS TO ITS ENABLING AIR AND SEA LINES OF COMMUNICATION. AND A GREATER UNDERSTANDING OF THE POTENTIAL THREATS TO OUR ECONOMIC AND NATIONAL SECURITY INTERESTS AS THEY EMERGE ACROSS EXTENDED GEOGRAPHICAL AREAS.

OF COURSE, OPERATING IN THE AIR-SEA ENVIRONMENT HOLDS MANY SIMILARITIES TO THE AIR-LAND ENVIRONMENT; HOWEVER, AIR-SEA CAPABILITY INTEGRATION REQUIRES A DIFFERENT APPROACH TO ACHIEVE THE NECESSARY CONTROL OF THE AIR AND THE SEA.

THE WILLIAMS FOUNDATION HAS INVITED INDUSTRY TO CONTRIBUTE TO THE DEBATE ABOUT THE EMERGING, EXTENDED BATTLESPACE BECAUSE WE NOW HAVE AN INCREASINGLY IMPORTANT ROLE TO PLAY IN THE DEVELOPMENT OF AUSTRALIA'S DEFENCE CAPABILITY.

THE OPERATIONAL CONCEPTS WE HEAR ABOUT TODAY ARE HIGHLY SOPHISTICATED EXAMPLES OF HOW OUR DEFENCE TECHNOLOGY NEEDS TO BE ORCHESTRATED AND INTEGRATED TO DEFEAT INCREASINGLY COMPLEX THREATS.

THE CHALLENGE NOW IS TO TRANSLATE THOSE CONCEPTS INTO EXECUTABLE PROGRAMS OF WORK. AND IN A MANNER WHICH ALLOWS INDUSTRY TO GET ON THE FRONT FOOT AND TAKE A MORE ENGAGED, PROBLEM-SOLVING ROLE ALONGSIDE THE COMMONWEALTH.

ONE SUCH INDUSTRY ROLE THAT I WILL FOCUS UPON TODAY IS INTEGRATION, AND THE IMPORTANCE OF AN AUSTRALIAN SOVEREIGN INTEGRATION CAPABILITY IN PROVIDING THE NECESSARY LEVERAGE FOR THE COMMONWEALTH'S SIGNIFICANT INVESTMENT IN MAJOR PLATFORMS AND WEAPON SYSTEMS.

I PROPOSE INTEGRATION SHOULD BE VIEWED FROM THE OUTSET AS AN ESSENTIAL FORCE-MULTIPLIER IN THE AIR-SEA DOMAIN, WITH THE AUSTRALIAN DEFENCE INDUSTRY PLAYING A FUNDAMENTAL ROLE IN SUPPORTING THE DESIGN, BUILDING AND SUSTAINMENT OF A POTENT AND AGILE JOINT FORCE CAPABILITY.

INTEGRATION IS HARD; BUT THAT IS NOT A REASON TO IGNORE IT - IN FACT, QUITE THE OPPOSITE.

AN INTEGRATED FORCE IS A DISCRIMINATOR IN THE MODERN BATTLESPACE, AND SETS APART SOPHISTICATED JOINT FORCES AND THEIR ENABLING INDUSTRIAL BASE, FROM THOSE UNABLE TO GENERATE FORCE OUTCOMES GREATER THAN THE SUM OF THEIR CONSTITUENT PARTS.

WITH AUSTRALIAN INDUSTRY NOW FORMALLY ACKNOWLEDGED AS A FUNDAMENTAL INPUT TO CAPABILITY, THIS PLACES A SIGNIFICANT RESPONSIBILITY UPON US TO SYNCHRONISE WITH COMMONWEALTH INTENT, CONTRIBUTE TO THE DEVELOPMENT OF EFFECTIVE AND EFFICIENT TIME-SENSITIVE SOLUTIONS, AND ACT AS A CO-OPERATIVE AND VALUE-ADDING PARTNER WITHIN THE EMERGING FRAMEWORK OF THE FIRST PRINCIPLES REVIEW.

FOR A VARIETY OF REASONS, NOT LEAST BECAUSE OUR POTENTIAL ADVERSARIES HAVE A VOTE, THERE IS SIMPLY NOT THE TIME TO WAIT FOR THE COMPLEXITY OF THIS ENVIRONMENT TO BE BROKEN DOWN, AND WORK HANDED OUT BY TRADITIONAL MEANS.

IN ORDER TO ADD VALUE WE NEED TO BETTER UNDERSTAND WHY INTEGRATION IS SUCH AN IMPORTANT MEANS TO AN END. AND THAT INTEGRATION WHEN APPLIED ACROSS THE WHOLE FORCE PROVIDES THE NECESSARY LEVERAGE TO MULTIPLY EFFECTS AT EVERY LEVEL OF COMMAND, AND PUT SIMPLY, TO PUNCH ABOVE YOUR WEIGHT.

THIS NEW APPROACH BRINGS A NUMBER OF POSSIBILITIES AND, INEVITABLY, CHALLENGES WHICH NEED TO BE OVERCOME. I WILL ADDRESS A SMALL SELECTION OF THEM IN TURN, BUT FIRST, WHAT DO WE MEAN BY A FORCE MULTIPLIER?

GIVEN THERE WILL ALWAYS BE A FINITE NUMBER OF AIRCRAFT AND SHIPS AND, FRANKLY, DOLLARS, IN ORDER TO IMPROVE EFFECTIVENESS AND EFFICIENCY, INDIVIDUAL PLATFORMS NEED TO FIND THE MEANS OF LEVERAGING OR SCALING-UP.

THIS IS ESPECIALLY SO WHEN OPERATING IN ANTI-ACCESS ENVIRONMENTS ACROSS THE VAST GEOGRAPHICAL AREAS ALLUDED TO EARLIER, WHERE THERE NEVER SEEMS TO BE ENOUGH SENSORS OR SHOOTERS.

IN PURE MILITARY TERMS, A FORCE MULTIPLIER IS A CAPABILITY THAT WHEN ADDED TO A FORCE DRAMATICALLY INCREASES ITS EFFECTIVENESS. YET YOU WILL ALSO RECALL FROM YOUR PHYSICS CLASS, IT ALSO INCREASES EFFICIENCY BY EMPLOYING A LEVER AND PIVOT TO LIFT A HEAVIER LOAD WITH A REDUCED EFFORT.

IN THIS SENSE, THE JOINT FORCE STRUCTURE IS THE PIVOT, AND THE LEVER IS INTEGRATION.

AND THE MULTIPLICATION OF THAT JOINT FORCE IS DIRECTLY PROPORTIONAL TO THE INVESTMENT IN THE SIZE AND STRENGTH OF THAT INTEGRATING LEVER.

MOST IMPORTANTLY, WE SHOULD VIEW IT AS A STRATEGIC INVESTMENT AND RECOGNISE IT WILL REQUIRE AN UPFRONT COMMITMENT TO PROVIDE A RETURN ON INVESTMENT MEASURABLE ACROSS DECADES.

THAT IS PERHAPS AN OVERLY SIMPLISTIC VIEW; HOWEVER, WE NEED TO START SOMEWHERE, AND PREFERABLY ON THE SAME PAGE. BECAUSE NEW, JOINED-UP THINKING IS REQUIRED ACROSS OUR COMMUNITY IF WE ARE TO LEVERAGE THE WEIGHT OF THE ENTIRE JOINT FORCE, AND NOT JUST THOSE PLATFORMS IN TRADITIONAL COMBAT OR TACTICAL ROLES.

FOR EXAMPLE, I SPENT MOST OF MY EARLY FLYING CAREER VIEWING AIRCRAFT SUCH AS THE AIR-TO-AIR REFUELLING TANKER, AS A FORCE MULTIPLIER IN THE CONTEXT OF SIMPLY PROVIDING FUEL TO A FORMATION OF FIGHTERS PROTECTING, SAY, A SURFACE FLEET.

THE TANKER EXTENDED THE TIME THE FIGHTERS COULD SPEND ON A COMBAT AIR PATROL, AND HENCE INCREASED THEIR OVERALL EFFECTIVENESS AND EFFICIENCY.

HOWEVER, WITH THE ARRIVAL OF NEW TECHNOLOGY IN THE FORM OF TACTICAL DATA LINKS AND IMPROVED STRATEGIC COMMUNICATIONS, THOSE TANKERS THEMSELVES BECAME AN INTEGRATED PART OF THE WHOLE FORCE WHEN THEY BECAME A NODE IN THE NETWORK, AND A MEANS OF ENABLING COMMAND AND CONTROL OVER THE HORIZON.

MOST IMPORTANTLY, THOUGH, THIS CONNECTIVITY CHANGED THE ATTITUDES OF BOTH THE FIGHTER AND TANKER CREWS WHICH IN TURN GENERATED A MORE COHESIVE, EFFECTIVE AND EFFICIENT FIGHTING FORCE.

IT WAS INTEGRATION - ON A NUMBER OF LEVELS - BUT MAINLY CHARACTERISED BY PEOPLE, PROCESS, AND TOOLS - WHICH CREATED THE CHANGE IN MINDSET. IT ENERGISED THE WHOLE TEAM TO ENGAGE IN ADDRESSING THE REALLY IMPORTANT PROBLEMS THAT MATTER TO EVERYONE.

HIGHER ORDER CHALLENGES, SUCH AS COMPRESSING THE DECISION-MAKING PROCESS AND KILLS CHAINS, AND ADDING DENSITY AND BUILDING RESILIENCE INTO THE NETWORKS.

WE NOW HAD THE WHOLE FORCE BEING MULTIPLIED BY NEW THINKING - NOT JUST THE FIGHTERS.

NOW FAST FORWARD A FEW YEARS TO TODAY. WITH ADVANCEMENTS IN OPERATIONAL CONCEPTS, TECHNOLOGY, TRAINING, AND SUSTAINMENT, WE ARE SEEING A FAR MORE SOPHISTICATED VERSION OF EVENTS BEING PLAYED OUT BY THE ROYAL AUSTRALIAN AIR FORCE ON OPERATION OKRA IN THE MIDDLE EAST.

BY CONTRIBUTING AN INTEGRATED AIR TASK GROUP TO COALITION OPERATIONS, RATHER THAN INDIVIDUAL FIGHTER, TANKER, AND COMMAND AND CONTROL

PLATFORMS, DEFENCE HAS GENERATED A CAPABILITY FAR GREATER THAN THE SUM OF ITS INDIVIDUAL PARTS.

IT HAS BEEN AN INCREDIBLY SUCCESSFUL APPROACH WHEREBY INTEGRATION HAS ENABLED A POWERFUL AND SUSTAINABLE AIR TASK GROUP WITH STRATEGIC WEIGHT, REACH AND EFFECT.

IT HAS ALSO CREATED A LARGELY SELF-CONTAINED CAPABILITY BUILDING BLOCK, WHICH IS SCALABLE, AGILE, AND EASY TO VISUALISE FOR THE LAY PERSON. THIS IS IMPORTANT BECAUSE AIR POWER CONCEPTS ARE OFTEN VERY DIFFICULT TO EXPLAIN.

BUT MOST PEOPLE APPEAR TO UNDERSTAND THE BASIC CHARACTERISTICS AND BENEFITS OF THIS INTEGRATED AIR TASK GROUP, AND WHY IT NEEDS TO BE CONSIDERED AS A WHOLE RATHER THAN ITS INDIVIDUAL PARTS.

IN FUTURE OPERATIONS IN AN AIR-SEA ENVIRONMENT, THE TASK GROUP WILL NOT BE SO AIR FORCE-CENTRIC, BUT IT SHOULD BE EASY TO VISUALISE THE ADDITION OF OUR NEW SURFACE AND SUB-SURFACE COMBATANTS INTO AN EXPANSION OF THIS BASIC, SCALABLE FRAMEWORK.

A JOINT FRAMEWORK WITH THE E-7 WEDGETAIL AND HOBART CLASS AIR WARFARE DESTROYERS NOW IN AN ORCHESTRATING ROLE FOR A DISTRIBUTED, CO-OPERATIVE, COMMAND AND CONTROL MODEL.

THE ROYAL AUSTRALIAN NAVY HAS, OF COURSE, ALSO ACQUIRED A SIGNIFICANT AMOUNT OF OPERATIONAL EXPERIENCE IN COALITION TASK GROUPS OVER THE PAST DECADE OR SO.

FURTHERMORE, IT IS IMPOSSIBLE TO ENVISAGE A PREDOMINANTLY AIR-SEA SCENARIO THAT DOES NOT INVOLVE AT LEAST AN ELEMENT OF THE LAND COMPONENT, LAND BASED EXPEDITIONARY COMMAND SYSTEMS, OR GROUND BASED AIR DEFENCE, ALL UNDERSCORED BY THE PROGRESSIVE AIR-LAND THINKING HIGHLIGHTED AT THE LAST SEMINAR.

CONTEXTUALLY, THEREFORE, THE NEW APPROACH TO AIR-SEA INTEGRATION WE ARE TALKING ABOUT TODAY, WILL NOT HAPPEN IN ISOLATION.

WHAT IT WILL DO, THOUGH, IS REAP REWARDS WHEN FUTURE DECISIONS NEED TO BE MADE ABOUT THE PRIORITISATION OF NEW SENSORS, KINETIC AND NON-KINETIC WEAPONS, READINESS LEVELS, AND TRAINING.

IT ALSO HELPS GUIDE INDUSTRY TO TARGET INVESTMENT IN AREAS WHICH REALLY MATTER TO THE COMMONWEALTH, SUCH AS SYSTEMS INTEGRATION LABORATORIES, OPERATIONAL ANALYSIS, AND NETWORK CONNECTIVITY EXPERIMENTS.

WE HAVE SEEN SOME GREAT EXAMPLES OF THAT TYPE OF ACTIVITY RECENTLY IN SUPPORT OF PLAN JERICHO.

FURTHERMORE, AUSTRALIA WILL NOT DEVELOP AN INTEGRATED AIR-SEA CAPABILITY IN DOMESTIC ISOLATION. THIS INTERNATIONAL CONTEXT WILL BRING COMPLEXITY AND CHALLENGES.

I THINK WE ALL AGREE INTEGRATION IS A GOOD THING, BUT AS I MENTIONED EARLIER, INTEGRATION ISN'T EASY, AND IT REQUIRES SYNCHRONISATION ACROSS ALL THE FUNDAMENTAL INPUTS TO CAPABILITY, ACROSS DOMAINS, AND NOT JUST WITHIN THE MAJOR SYSTEMS.

AS A SIMPLE OPERATOR, I QUICKLY LEARNED FROM MY TIME IN THE MILITARY, AND NOW IN DEFENCE INDUSTRY, TO LISTEN VERY CAREFULLY TO THE ENGINEERS.

I THINK WE ALL HAVE A GENERAL UNDERSTANDING OF WHAT IS MEANT BY 'PLUG AND PLAY' OR MORE APPROPRIATELY 'PLUG AND FIGHT'; BUT WE SHOULD BE VERY CAREFUL NOT TO UNDERESTIMATE THE NECESSARY ENGINEERING AND TECHNICAL EXPERTISE AND EFFORT INVOLVED IN GETTING TO THAT POINT.

QUOTING PLUG AND PLAY MUST NOT BE AN EASY WAY OUT A DIFFICULT CONVERSATION.

FURTHERMORE, WE SHOULD ALSO ENSURE THAT OUR VALUABLE INTEGRATING RESOURCES ARE FOCUSED ON THOSE AREAS WHICH DELIVER THE GREATEST STRATEGIC, FORCE-LEVEL EFFECTS. AND NOT SIMPLY CONNECTING PLATFORMS AND SYSTEMS BASED UPON THE CONVENIENCE OF PROGRAMMATIC BOUNDARIES, AND LEGACY BUDGETARY ARRANGEMENTS.

INTEGRATION NEEDS TO BE TARGETTED, OUTCOME FOCUSED AND START WITH THE QUESTION - WHY? IT NEEDS TO BE CONSIDERED ACROSS THE ENTERPRISE WITH A CLEAR UNDERSTANDING OF HOW EVERYTHING NEEDS TO WORK TOGETHER, AND IN DOING SO, PRIORITISED TO AVOID THE UNINTENDED CONSEQUENCES OF MAKING INTEGRATION DECISIONS IN A VACUUM.

THIS WHOLE PROCESS STARTS WITH THE ALIGNMENT OF OPERATING CONCEPTS, AND GOOD IDEAS TO ESTABLISH THE ALL IMPORTANT ARCHITECTURES, AS HIGHLIGHTED IN PREVIOUS PRESENTATIONS. THIS ARCHITECTURE NEEDS TO BE FLEXIBLE AND ACCOMMODATE BOTH NATIVE AND COALITION INTERFACES CRITICAL TO ALLOWING CO-OPERATIVE ENGAGEMENT, AND SYSTEM EVOLUTION, AMONG OTHER THINGS.

THIS ACTIVITY NEEDS TO ESTABLISH THE CORE INTEGRATING TECHNOLOGIES, STANDARDS, AND INTERFACES WHICH ENABLE AIR-SEA INTEGRATION NOT JUST WITHIN THE AUSTRALIAN DEFENCE FORCE, BUT ALSO WITHIN THE CONTEXT OF BEING INTEGRATED WITH OUR MOST LIKELY, SENIOR COALITION PARTNER, THE UNITED STATES NAVY.

SOME OF THAT TECHNOLOGY ALREADY COMES WITH OUR NEW AIR AND NAVAL PLATFORMS; HOWEVER, SOME DOES NOT.

FUTURE TECHNOLOGIES WILL SEE INCREASING LEVELS OF MACHINE-TO-MACHINE LEVEL INTERACTION, AUTOMATION, AND MAN-MACHINE TEAMING, IN ORDER TO MEET THE REQUIREMENTS DRIVEN BY AN INCREASINGLY SOPHISTICATED THREAT.

AND YES, WE WILL NEED NEW PRODUCTS AND WEAPON SYSTEMS; BUT WE ALSO NEED INTEGRATION IF WE ARE TO MULTIPLY THE CAPABILITY OF OUR FORCE AND EXPLOIT THE NEW TECHNOLOGY. THIS IS A CRITICAL BALANCE OF INVESTMENT DECISION AND IT NEEDS A LEVEL OF ANALYSIS AND COMMITMENT BEYOND SIMPLY CLAIMING IT WILL ALL 'PLUG AND PLAY'.

ANOTHER CHALLENGE WE FACE IS MANY OF THE GUIDING CONCEPTS, SUCH AS NIF-CA AND ELECTROMAGNETIC MANOEUVRE WARFARE, ARE NOT PROGRAMS PER SE. THEY ARE BRILLIANT IDEAS AND DESCRIBE CLEARLY HOW TO APPROACH THE FIGHT.

HOWEVER, I ASSUME THERE IS A SIGNIFICANT LEVEL OF INTERNAL COORDINATION AND COOPERATION REQUIRED ACROSS UNITED STATES GOVERNMENT DEPARTMENTS AND PROGRAMS TO PRIORITISE THE FUNDING AND EXECUTION OF THE INTEGRATION.

IN TURN, TRANSLATING THESE INTERNATIONALLY-BORN CONCEPTS INTO EXECUTABLE PROGRAMS OF WORK, WITH THE NECESSARY BUDGETS IN PLACE, HERE IN AUSTRALIA WILL TAKE SOME SKILL. IT WILL INVOLVE MULTIPLE CONTRACTUAL AND INTELLECTUAL PROPERTY BOUNDARIES AND, OF COURSE, SECURITY.

THE DEFENCE INDUSTRY AS A WHOLE HAS AN OBLIGATION TO ENSURE WE DON'T UNDERESTIMATE THE ONGOING INVESTMENT NECESSARY TO INTEGRATE AT A FORCE LEVEL. THIS ALSO APPLIES TO THE NEED FOR THE AIR-SEA CAPABILITY TO CO-EVOLVE IN STEP WITH OUR MOST LIKELY COALITION PARTNERS.

BUT ENOUGH OF THE CHALLENGES FOR NOW - WHAT OF THE POSSIBILITIES?

AUSTRALIAN INDUSTRY IS EXTREMELY WELL-PLACED TO PLAY OUR PART. WE HAVE COMPANIES WHO HAVE INVESTED SIGNIFICANTLY FOR WELL OVER A DECADE IN THE PEOPLE, PROCESSES AND TOOLS NECESSARY TO INTEGRATE COMPLEX PROGRAMS RIGHT HERE IN AUSTRALIA.

THIS EXPERIENCE COVERS BOTH AIR AND MARITIME INTEGRATION PROGRAMS WITH MANY OF THE SKILLS READILY TRANSFERABLE ACROSS DOMAINS.

A LOCAL, HIGHLY RESPONSIVE INDUSTRIAL FOOTPRINT IS CRITICAL IF WE ARE TO SUPPORT THE INCREASINGLY TIME-SENSITIVE NATURE OF MODERN WARFIGHTING.

THE GOOD NEWS IS UPGRADING OUR NEW FLEET OF ADVANCED SHIPS AND AIRCRAFT IS A MUCH EASIER PROPOSITION THAN WORKING ON LEGACY PLATFORMS WHEN ADDING NEW SENSORS OR WEAPON TECHNOLOGY.

THE POSSIBILITY OF ADDING COMPLEMENTARY NETWORKED SENSORS, TARGETING SYSTEMS, KINETIC AND NON-KINETIC WEAPONS TO AS MANY OF THESE NEW PLATFORMS AS POSSIBLE ADDS SIGNIFICANT DENSITY AND RESILIENCE TO THE 'KILL WEB' DESCRIBED EARLIER BY ADMIRAL MANAZIR.

WITH A STRONG AUSTRALIAN INDUSTRIAL BASE, ENABLED BY EFFICIENT INTERNATIONAL SUPPLY CHAINS, WE ARE ABLE TO INTEGRATE THESE NEW SYSTEMS SWIFTLY INTO OUR ENVIRONMENT, AS WELL AS KEEPING THEIR ALL IMPORTANT TRAINING SYSTEMS IN LOCK-STEP.

HOWEVER, THE CROSS-PLATFORM, SYSTEM OF SYSTEMS, HORIZONTAL INTEGRATION WILL BE MORE COMPLEX, AND CERTAINLY NOT AS SIMPLE AS PLUG AND PLAY. IT WILL NEED TO ENSURE PROGRAMS ARE INCENTIVISED TO COLLABORATE FOR THE GREATER GOOD OF THE WHOLE FORCE ESPECIALLY AS THEY RELATE TO THE INTRODUCTION OF TRANSFORMATIONAL NEW SYSTEMS.

FOR EXAMPLE, THE FUTURE AIR-SEA ENVIRONMENT WILL BE INCREASINGLY INFLUENCED BY ACTIVITY ACROSS THE WHOLE OF THE ELECTROMAGNETIC SPECTRUM. NON-KINETIC EFFECTS, GENERATED BY THE GROWLER AND OTHERS, WILL REQUIRE CAREFUL DECONFLICTION AND MANAGEMENT.

MOREOVER, IT WILL REQUIRE ALL PARTICIPANTS IN THE ENVISIONED NETWORKED BATTLESPACE TO BE ALIVE TO THE NEW WORLD OF POSSIBILITIES PROVIDED BY NON-KINETIC WEAPON SYSTEMS.

WE HAVE ALL GROWN USED TO THE BOMBS AND MISSILES WHICH CHARACTERISE KINETIC SYSTEMS, AND UNDERSTAND THEY REQUIRE THEIR OWN ENABLERS SUCH AS PLANNING, TRAINING, TEST AND EXPERIMENTATION, AND LOGISTICS SUPPORT SYSTEMS.

AND IN THAT SENSE, NON-KINETIC SYSTEMS ARE NO DIFFERENT.

BUT INTEGRATING THESE ELEMENTS ACROSS AIR AND SEA PLATFORMS WILL REQUIRE SOPHISTICATION BEYOND A BASIC WORKING KNOWLEDGE OF ELECTRONIC WARFARE. IT WILL CERTAINLY NOT BE JUST PLUG AND PLAY.

YET THE BENEFITS OF AN INTEGRATED AIR--SEA-----SPECTRUM CAPABILITY WILL GENERATE TANGIBLE, STRATEGIC FORCE MULTIPLYING EFFECTS. THE WHOLE PACKAGE WILL DELIVER UNPRECEDENTED CHOICE AND OPTIONS TO A COMMANDER, ESPECIALLY IN TERMS OF ESCALATION AND DE-ESCALATION OF OPERATIONS, PROPORTIONALITY, PRECISION, REACH AND, OF COURSE, SPEED OF RESPONSE.

SPEED AND TIME ARE IMPORTANT TO THE COMMANDER. JUST AS CRITICAL AS CONTROL OF THE AIR, AND CONTROL OF THE SEA, IS CONTROL OF THE CLOCK.

AS A FUNDAMENTAL INPUT TO CAPABILITY, AUSTRALIAN INDUSTRY NEEDS TO UNDERSTAND TIME IS BECOMING INCREASINGLY VALUABLE TO OUR CUSTOMER IN

FIGHTING THE FUTURE AIR-SEA BATTLE, AND THE TIME IMPERATIVE WILL REACH ALL THE WAY BACK INTO THE ACQUISITION AND SUSTAINMENT METHODOLOGY.

OUR FORCE-MULTIPLYING INTEGRATION ACTIVITIES NEED TO SPEED THINGS UP ACROSS THE BOARD.

AND ON THAT THEME, I WILL LEAVE YOU WITH A FEW FINAL THOUGHTS:

NOTWITHSTANDING THE FACT MOST OF THE PLATFORM DECISIONS HAVE ALREADY BEEN MADE, THE COMMONWEALTH IS, OF COURSE, GOING TO BE EXTREMELY BUSY IN THE NEXT FEW YEARS BRINGING THEM INTO SERVICE.

BUT WE CANNOT WAIT FOR THEM ALL TO BED-DOWN BEFORE WE TURN OUR ATTENTION TO THE ALL-IMPORTANT CROSS DOMAIN, ENVIRONMENTAL INTEGRATION, WHICH ENABLES THE OPERATIONAL CONCEPTS HIGHLIGHTED TODAY.

ELEMENTS OF OUR INDUSTRY NEED TO BE READY TO SUPPORT AN INCREASING FOCUS ON THOSE INTEGRATING ACTIVITIES AND THE ENABLERS WHICH PROVIDE THE FORCE-MULTIPLYING LEVERAGE MENTIONED EARLIER.

TIGHT AND RESPONSIVE RELATIONSHIPS WITH SUPPLIERS AND OEMS WILL INCREASINGLY BECOME THE NORM IN FUTURE SMART BUYER MODELS, AND THAT IS RIGHTLY SO.

YET THIS PRINCIPLE WILL NEED TO EXTEND FROM THE PLATFORM INTO THE ENABLING DOMAIN, AND THE SO-CALLED INTEGRATING 'GLUE PROGRAMS' WHICH PLAY SUCH A CENTRAL ROLE IN THE NEW INTEGRATED INVESTMENT PROGRAM, AND WHICH QUICKLY MOVE THE CAPABILITY NEEDLE ACROSS THE WHOLE FORCE.

THEY ARE CHALLENGING TO EXECUTE, SINCE MANY OF THESE GLUE PROGRAMS INVOLVE THE BRINGING TOGETHER OF MULTIPLE SUPPLIERS AND INTELLECTUAL PROPERTY BOUNDARIES.

HOWEVER, THE GOOD NEWS IS THAT OPERATIONALLY MATURE FORCE-MULTIPLYING CAPABILITIES, SUCH AS EXPEDITIONARY COMMAND AND INTELLIGENCE SYSTEMS, AND INTEGRATED FIRE CONTROL SYSTEMS ARE READY NOW.

THEY PROVIDE THE MEANS OF SIGNIFICANTLY MULTIPLYING THE JOINT FORCE, AND AS A BY-PRODUCT, FURTHER BUILD THE SOVEREIGN INTEGRATING CAPACITY NECESSARY TO SUPPORT OUR FUTURE WARFIGHTERS.

THESE ENABLING CAPABILITIES CAN GROW ALONGSIDE OUR PLATFORMS AND ALLOW US TO CONTRIBUTE TO THE HIGH-LEVEL CONCEPTS, SUCH AS NIF-CA, AS A PARTNER ON A ROAD MAP, NOT MERELY AS AN AFTERTHOUGHT.

THERE WILL ALWAYS BE A CYCLE OF PLATFORM RENEWAL; HOWEVER, WITHOUT A COMPLEMENTARY, STANDING, CROSS-PLATFORM INTEGRATION CAPABILITY PROVIDING ENVIRONMENTAL RENEWAL, WE WILL NOT BE ABLE TO SUPPORT THE MORE STRESSING, EXTENDED OPERATIONAL SCENARIOS WHICH UNDERPIN FORCE PLANNING.

IN THE MIDDLE OF THOSE PROTRACTED OPERATIONS YOU HAVE THE PLATFORMS YOU ARE GIVEN; IT IS INTEGRATION WHICH ALLOWS YOU TO BE INCREASINGLY AGILE AND POTENT.

YOU CANNOT SET UP AN INTEGRATION CAPABILITY OVERNIGHT AND, SURELY, IT WOULD BE UNWISE TO HEAVILY RELY ON AN OFFSHORE CAPABILITY WHEN THERE IS SO MUCH RELIANCE ON INTEGRATION IN OUR FUTURE WAR FIGHTING APPROACH.

IN CLOSING, I RETURN TO THE EXAM QUESTION.

THE ART OF THE POSSIBLE IS AN INTEGRATED, SCALABLE, JOINT AIR-SEA TASK GROUP ABLE TO OPERATE AT RANGE FROM AUSTRALIA WITH STRATEGIC REACH INTO THE BROADER REGION, AND ABLE TO DELIVER BOTH KINETIC AND NON-KINETIC EFFECTS.

IT WILL BE DESIGNED AROUND A FLEXIBLE ARCHITECTURE TO ACCOMMODATE BOTH THE NATIVE, AND THE CRITICAL COALITION INTERFACES, WITH THE COMMONWEALTH'S MOST LIKELY PARTNER IN A COMPLEX AIR-SEA OPERATION, THE US NAVY.

THIS WILL ALL REQUIRE PRODUCTS AND NEW TECHNOLOGY; BUT IT WILL ALSO NEED A SOVEREIGN, FORCE-MULTIPLYING, INTEGRATION CAPABILITY AS THE ALL-IMPORTANT MEANS TO THE END.

AND FINALLY, IN KEEPING WITH TODAY'S NAUTICAL THEME, I WILL LEAVE YOU WITH A QUOTE FROM JOHN F KENNEDY WHO, IN 1963, SAID: 'A RISING TIDE LIFTS ALL BOATS'.

IN THE AIR-SEA DOMAIN, IT IS INTEGRATION THAT REPRESENTS THE RISING TIDE, PROVIDING A STRATEGIC FORCE MULTIPLIER ENTIRELY WITHIN THE CONTROL OF THE COMMONWEALTH, AS WELL AS A LIFT ACROSS THE BOARD FOR THE AUSTRALIAN DEFENCE INDUSTRY.

A GENUINE WIN-WIN.