

GK'S FINAL

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'CHANGE MONUMENTALLY, NOT MARGINALLY'

-- JUNE 29, 2010 --

THANK YOU EVERYONE AND GOOD MORNING!

IT'S A PLEASURE TO BE HERE AND TO TALK ABOUT SOMETHING THAT'S NOT ONLY DEAR TO MY HEART, BUT IMPERATIVE TO OUR FUTURE IN THE MARITIME INDUSTRY -- RESEARCH. AND NOT JUST ANY OLD RESEARCH. NOT CHANGE-FOR-CHANGE SAKE RESEARCH ... BUT GAME CHANGING RESEARCH.

RESEARCH THAT RECOGNIZES THE UNPRECEDENTED PROBLEMS FACING, NOT ONLY THE MARITIME INDUSTRY, BUT OUR ENTIRE PLANET. RESEARCH THAT WILL MOVE US LIKE NEVER BEFORE AND ENABLE US TO ACCOMPLISH WHAT WE NEED TO ACCOMPLISH FASTER, CLEANER, SAFER AND CHEAPER.

ONE REASON I'M INSPIRED TO TALK ABOUT THIS IS BECAUSE I SEE SO MUCH PROMISE. BUT – AS I'M SURE MANY OF YOU WILL AGREE -- WHILE THERE'S PROMISE, WE'RE NOT YET SEEING RESULTS AT THE PACE WE NEED. BUT THE VISION IS SURELY OUT THERE ...

FOR EXAMPLE, JUST A FEW WEEKS AGO I WAS LUCKY ENOUGH TO BE INVITED BY DOT TO THE OECD'S MEETING OF THE EUROPEAN TRANSPORT MINISTERS IN LEIPZIG, GERMANY, I HEARD A PRESENTATION BY BERTRAND PICCARD.

BERTRAND IS THE GUY WHO WENT NON-STOP AROUND THE WORLD IN A HOT AIR BALLOON. HE NOW PLANS TO CIRCUMNAVIGATE THE GLOBE NON-STOP IN A SOLAR-POWERED AIRPLANE IN 2013.

EVEN THOUGH THERE WAS NO MENTION OF IT IN HIS INTRODUCTION, AS HE SPOKE I BEGAN WONDERING IF THIS BERTRAND PICCARD WAS RELATED TO THE GREAT MARINE EXPLORER JACQUES PICCARD?

FOR THOSE OF YOU WHO'VE NEVER HEARD OF JACQUES PICCARD, ON JANUARY 23, 1960 HE, ALONG WITH DON WALSH WENT DOWN IN THE TRIESTE, BECAME THE FIRST SUBMARINERS TO EVER REACH THE DEEPEST PART OF THE OCEAN FLOOR IN THE MARIANAS TRENCH. FOR THE RECORD, THAT WAS TO A DEPTH OF 35,797 FEET.

KIND OF MAKES THE BP DEEPWATER HORIZON SEEM LIKE IT'S SOMEWHERE DOWN IN THE KIDDIE POOL ...

ANYWAY, HE GAVE A FASCINATING TALK AND AFTERWARDS I WENT UP, INTRODUCED MYSELF, AND ASKED MONSIEUR BERTRAND IF HE HAPPENED TO BE RELATED TO JACQUES PICCARD. HIS EYES LIT UP AND SAID, "YES, HE'S MY FATHER!"

AND I IMMEDIATELY WANTED TO SHAKE THE GUY! AS A PORT DIRECTOR I'M THINKING, *"BERTRAND, WHAT KIND OF MARINER'S SON ARE YOU? YOU'RE SUPPOSED TO BE FOLLOWING IN THE FOOTSTEPS OF YOUR FATHER. FORGET AVIATION, THINK MARINE. GET ME A SHIP THAT CAN GO AROUND THE WORLD ON SOLAR POWER!!"*

(PAUSE)

MY POINT IN SHARING THIS STORY IS THAT WE HAVE PROBLEMS IN NEED OF SOLUTIONS. AND BECAUSE OUR PROBLEMS ARE BIG, WE CAN NO LONGER AFFORD TO THINK MARGINALLY. WE NEED TO THINK MONUMENTALLY!

AND WHETHER THE SOLUTIONS COME FROM FEDERAL INVESTMENT IN RESEARCH, OR ARE SOLVED BY SOME VERY BRIGHT INNOVATIVE ENTREPRENEURS, IT DOESN'T REALLY MATTER.

SO THE POINT I REALLY WANT TO MAKE THIS MORNING IS THAT GETTING THE KIND OF FAST RESPONSE TO PROBLEMS FACING US TODAY REQUIRES FRESH AND FUNDAMENTAL CHANGES IN OUR OVERALL RESEARCH AGENDA AND PHILOSOPHY.

HOW DO WE DO IT? WE DO IT BY CHANGING THE WAY WE APPROACH RESEARCH AND DEVELOPMENT.

FOR EXAMPLE, I'M SURE MANY OF YOU KNOW THE TERM, "DESIGN-BUILD." FOR THOSE WHO DON'T, IT'S A WAY OF GETTING MAJOR CONSTRUCTION PROJECTS ACCOMPLISHED MORE EXPEDIENTLY BY SELECTING CONTRACTORS THAT CAN DESIGN AND BUILD THE PROJECT CONCURRENTLY, AS OPPOSED TO THE TRADITIONAL, LINEAR, MORE-LENGTHY "BID-DESIGN, BID-BUILD" PROCESS. THE ONE WHERE WE DEVELOP PLANS AND THEN GO FIND A CONTRACTOR TO BID IT, SCHEDULE IT ... DELAY IT OF COURSE ... AND THEN ACTUALLY BUILD IT.

IT'S PRUDENT. IT'S PRACTICAL. AND, ALL TOO OFTEN, IT'S PONDEROUS AND TIME-CONSUMING. "DESIGN-BUILD" CAN BE CONSIDERABLY FASTER AND, WHEN DONE RIGHT, LESS COSTLY. AND THE IMPORTANT PART THE END PRODUCT STARTS GENERATING RESULTS MUCH MORE QUICKLY.

SO, HOW ABOUT TAKING THE "DESIGN-BUILD" CONCEPT AND APPLYING IT TO RESEARCH? IN FACT, LET'S GET AWAY FROM TALKING ABOUT RESEARCH AND DEVELOPMENT ON IT'S OWN AND TALK ABOUT "**RESEARCH-DEPLOYMENT.**" IT'S THE ENTREPRENEURIAL EQUIVALENT OF "DESIGN-BUILD."

I KNOW THIS IS A FOREIGN CONCEPT TO MANY RESEARCHERS WHERE INITIAL WORK TENDS TO BE DONE IN GOVERNMENT OR ACADEMIC ENVIRONMENTS FAR REMOVED FROM THE PHYSICAL LOCALES WHERE ACTUAL DEPLOYMENT WILL ONE DAY TAKE PLACE. SO, I'D LIKE TO OFFER THIS ...

WHAT ABOUT MOVING MORE TRANSPORTATION RESEARCH TO ACTUAL DEPLOYMENT SITES? HOW ABOUT BRINGING THE HORSE TO THE WATER, SO TO SPEAK? IN THIS CASE, THE WATER BEING AMERICA'S PORTS.

I MAY BE BIASED WHEN IT COMES TO PORTS – ACTUALLY I KNOW I AM -- BUT WHERE ELSE CAN RESEARCHERS FIND SO MANY DIFFERENT TYPES OF TRANSPORTATION MODES TOGETHER IN ONE PLACE UNDER THE CONTROL OF ONE ORGANIZATION? THINK ABOUT IT—ALL MODES UNDER CONTROL OF ONE AGENCY? AND SORRY, BUT THE ANSWER IS NOT THE FEDERAL D.O.T! THE ANSWER IS AT AMERICA'S PORTS!

GOT TRANSPORTATION? HECK YEAH WE DO!

WE'VE GOT CARGO SHIPS AND CRUISE LINERS. WE'VE GOT TUGS, BARGES, BOATS AND FERRIES. WE'VE GOT TRAINS AND CARS AND EVERY KIND OF TRUCK YOU CAN IMAGINE. SOME PORTS HAVE PLANES AND HELICOPTERS. WE'VE GOT ROADS, BRIDGES, TUNNELS AND CHANNELS. WE'VE GOT STAFF. WE'VE GOT SPACE. WE GOT NOX, SOX, CO-2 AND PRETTY SOON WE MIGHT EVEN HAVE SEA LEVEL RISE!

BUT IF THAT'S NOT A LIVING LABORATORY READY FOR "RESEARCH-DEPLOYMENT" THEN I DON'T KNOW WHAT IS!!

MY POINT IS THAT RESEARCHERS EVERYWHERE NEED TO THINK OF PORTS -- NOT SIMPLY AS THE PLACES THAT DELIVER NISSANS, NIKES AND NITROUS OXIDE -- BUT AS LIVING LABORATORIES WITH VALAUBLE ASSETS AND TREMENDOUS INFRASTRUCTURE WHERE RESEARCH BECOMES REALITY AND DEPLOYMENT IS DIRECT AND MEASURABLE.

(SHORT PAUSE)

I OBVIOUSLY FEEL VERY STRONGLY ABOUT THIS BECAUSE, AT THE PORT OF LOS ANGELES, WE'VE ALREADY PROVEN THAT THE CONCEPT WORKS.

IN 2006, THE PORTS OF L.A. AND LONG BEACH CREATED A TECHNOLOGY ADVANCEMENT PROGRAM – ALSO KNOWN AS TAP.

THROUGH THE TAP, WE FUND THE TESTING OF RESEARCH AND NEW TECHNOLOGIES THAT ULTIMATELY IMPROVE OPERATIONS, REDUCE COSTS AND MOVE US TOWARD OUR ULTIMATE GOAL OF BECOMING A MORE ENVIRONMENTAL SUSTAINABLE PORT AND AN EMISSIONS-FREE PORT.

FOR EXAMPLE, IN PARTNERSHIP WITH A LOCAL COMPANY CALLED BALQUON, WE TOOK A CONCEPT FOR AN ELECTRIC DRAYAGE TRUCK FROM THE BACK-OF- A-NAPKIN TO PRODUCTION IN ABOUT TWO YEARS.

FROM A RESEARCH STANDPOINT, WE DETERMINED THAT IF ALL THE DIESEL DRAYAGE VEHICLES WERE REPLACED WITH ELECTRICS, WE COULD PULL 427 TONS OF NITROGEN OXIDE OUT OF THE AIR EACH YEAR, 168 TONS OF CARBON AND 35 THOUSAND TONS OF CO-2. A HUGE REDUCTION!

AND IT ALSO MAKES GOOD BUSINESS SENSE. TRADITIONAL DIESEL-POWERED YARD TRACTORS COST CLOSE TO TWO DOLLARS PER MILE TO OPERATE AND HAVE A FIVE-YEAR LIFE SPAN. THESE NEW ELECTRICS WILL COST JUST TWENTY CENTS PER MILE TO RUN AND LAST UP TO FIFTEEN YEARS.

I'M EXCITED ABOUT OUR ELECTRIC TRUCKS FOR MANY REASONS. NOT ONLY DO WE GET A ROYALTY FOR EVERY ONE SOLD WORLDWIDE, BUT SINCE I FOUND I COULD DRIVE THE THINGS MYSELF, NO STICK SHIFT AND I'VE GOT SOMETHING TO FALL BACK ON IN CASE THIS PORT DIRECTOR GIG DOESN'T PAN OUT.

ANOTHER EXAMPLE. FOSS MARITIME CAME TO US AND SAID, "*WE THINK WE CAN TAKE A LOCOMOTIVE GEN-SET ENGINE AND BANKS OF BATTERIES AND CREATE THE WORLD'S FIRST DIESEL-ELECTRIC HYBRID TUGBOAT.*"

THEY DID IT AND THE ABILITY TO SHUT DOWN A TUGBOAT'S DIESEL ENGINE DURING LOW POWER DEMAND FUNCTIONS REDUCES THE DIESEL ENGINE RUN TIME BY SEVENTY PERCENT! WE FUNDED THE

PROTOTYPE AND THE FIRST “*PRIUS OF THE SEAS*” IS NOW HARD AT WORK EVERYDAY.

AND NEXT UP, WITH LOS ANGELES-BASED VISION INDUSTRIES, WE’RE GOING TO TEST A ZERO EMISSION CLASS 8 HYDROGEN FUEL CELL ELECTRIC TRUCK -- ONE OF ONLY A HANDFUL OF HYBRID BIG RIGS OPERATING ANYWHERE IN THE WORLD TODAY. WE ALSO TEAMED WITH SEIMENS TO BUILD THE FIRST EVER ELECTRIC TOUR BOAT. SOME OF YOU HAVE BEEN ON ANGELENA.

THAT’S WHAT CAN HAPPEN TO RESEARCH IN A PORT ENVIRONMENT --CONCEPTS CAN TURN INTO REALITY VERY QUICKLY!

BUT THESE ACCOMPLISHMENTS – WHILE ADMIRABLE -- ARE STILL ONLY MARGINAL. REDUCING DIESEL BURN IS DILIGENT. IT’S NOBLE. IT’S HELPFUL. BUT IT’S NOT ENOUGH. WE NEED TO SEE MONUMENTAL REDUCTIONS IN FRIEGHT MOVEMENT AND SHIP EMISSIONS GLOBALLY.

AT THE SAN PEDRO BAY PORT COMPLEX, CONTAINER SHIPS ARE THE SOURCE FOR FORTY THREE PERCENT OF ALL DIESEL PARTICULATE MATTER, THIRTY EIGHT PERCENT OF ALL NITROUS DIOXIDES AND NINETY NINE PERCENT OF ALL SULFER DIOXIDES!

AS MANY OF YOU MAY KNOW, IN 2004 WE BECAME THE FIRST MAJOR PORT IN THE U.S. TO DEVELOP COLD IRONING FOR CONTAINER SHIPS, WHICH IS HOOKING VESSELS AT BERTH UP TO SHORESIDE

ELECTRICAL POWER. THROUGH COLD IRONING – ALSO CALLED ALTERNATIVE MARITIME POWER OR AMP -- WE ELIMINATE THE RELEASE OF UP TO ONE TON OF DIESEL EMISSIONS PER DAY, PER SHIP. ONE TON!

AND WHEN IT COMES TO RENEWABLE POWER SOURCES, WE'VE ALREADY EMBARKED ON THE FIRST PHASE OF A MAJOR SOLAR POWER PROJECT THAT, IN THE COMING YEARS, WILL GENERATE TEN MEGAWATTS OF ELECTRICITY THROUGH OVER ONE MILLION SQUARE FEET OF SOLAR PANELS THROUGHOUT OUR PORT COMPLEX.

AS PART OF THE FIRST PHASE, WE'RE INSTALLING OVER SEVENTY THOUSAND SQUARE FEET OF SOLAR PANELS ON OUR WORLD CRUISE CENTER ROOFTOP – ENOUGH TO GENERATE NEARLY ALL THE ELECTRICAL POWER THE CRUISE CENTER NEEDS. AND ANY EXCESS POWER WILL BE FED BACK INTO THE CITY GRID. WE ALL NEED MAJOR ADVANCEMENT IN SOLAR PANEL EFFICIENCY.

SO WE'VE PROVEN THAT WE CAN DELIVER. AS A LOCAL ENTITY, WE'RE NIMBLE. WE CAN TAKE CONCEPTS – LIKE HYDROGEN FUEL CELLS, INDUSTRIAL BATTERY APPLICATIONS, SHIP-TO-SHORE ELECTIC POWER SYSTEMS, SOLAR -- AND APPLY THEM IN REAL WORLD APPLICATIONS FASTER, IN MANY CASES, THAN MOST GOVERNMENT TEST LABS OR ACADEMIC INSTITUTIONS.

AND BECAUSE OF THE SCOPE AND TREMENDOUS SIZE OF OUR

PORT, WE CAN IMPLEMENT CHANGES THAT CAN RIPPLE THROUGH AND BENEFIT THE ENTIRE TRANSPORTATION INDUSTRY.

(PAUSE)

SO, ALONG WITH THE ECONOMY – AND IF ANYONE HERE CAN FIX THAT, WE'D GREATLY APPRECIATE IT -- HERE ARE THREE BIG PROBLEMS ...WE FACE, WHERE WE NEED RESEARCH TO DELIVER ANSWERS.

FIRST, WE UPDATED OUR CLEAN AIR PLAN AND ACTUALLY SET AN EMISSION STANDARD AND A HEALTH STANDARD FOR THE PORT. PRETTY SCARY STUFF. OUR HEALTH STANDARD GOALS CALL FOR AN EIGHTY-FIVE PERCENT REDUCTION IN HEALTH RISK BY 2023. THIS IS A STRETCH GOAL BECAUSE WE PRESENTLY CAN ONLY FIGURE OUT HOW TO REACH A SEVENTY-FOUR PERCENT HEALTH RISK REDUCTION.

WE DON'T KNOW WHAT EXACT COMBINATION OF TECHNOLOGIES OR NEW TECHNOLOGY WILL HELP US CLOSE THAT LAST TEN-PERCENT GAP. BUT OUR TECHNOLOGY ADVANCEMENT PROGRAM, ZERO EMISSIONS CONTAINER MOVEMENT SYSTEM OPPORTUNITIES, AND COLLABORATIVE PROGRAMS WITH INDUSTRY AND AGENCIES WILL HELP LAY THE PATH.

SECOND, WE CAN'T MEET THE NO_x STANDARD OUR LOCAL AIR QUALITY DISTRICT IS TARGETING FOR 2014 -- MAINLY BECAUSE OF

SHIPS. WE'VE ALREADY ACHIEVED A FIFTY ONE-PERCENT REDUCTION IN PM AND A FIFTY-FIVE-PERCENT REDUCTION IN SO_x FROM OCEAN GOING VESSELS, BUT ONLY A TWENTY-SEVEN-PERCENT REDUCTION IN NO_x FROM SHIPS, FROM OUR BASE YEAR OF 2005—BUT WE WILL STILL FALL SHORT OF THE NO_x STANDARD.

AND THIRD, THIS IS A BIG ONE, IN ORDER TO MEET THE CALIFORNIA 2020 STANDARD FOR GREENHOUSE GASES -- ASSUMING WE DON'T BUY TRADEOFFS -- OUR ENTIRE PORT COMPLEX NEEDS TO BE NON-FOSSIL-FUEL POWERED BY 2020 AND 100% OF LOCAL TRUCK TRIPS MUST BE EMISSION FREE AND 30% OF REGIONAL TRIPS MUST BE EMISSION FREE.

SO, OUR RESEARCH AGENDA IS ONE QUESTION – HOW THE HECK DO WE DO THIS?

SO FAR WE'VE ONLY COME UP WITH MARGINAL SOLUTIONS. THEY'RE HELPFUL. THEY'RE INNOVATIVE. WE'RE PROUD OF THEM, BUT THEY'RE NOT ENOUGH.

AND WITH THE GROWING ENVIRONMENTAL PRESSURES THAT ARE GOING TO CONTINUE TO COME AT US IN THE FUTURE, ELIMINATING FOSSIL FUEL CONSUMPTION AND ELECTRIFYING OUR OPERATIONS, COUPLED WITH GREEN POWER PRODUCTION IS A PROBLEM THAT WE ALL SHARE. NOT JUST AT THE PORT OF L.A. ... NOT JUST IN THE MARITIME INDUSTRY ... BUT IN EVERY FACET OF THE TRANSPORTATION INDUSTRY.

TO EVEN BETTER UNDERSTAND MY SENSE OF URGENCY, LET ME SHARE SOME DATA FROM A REPORT PUBLISHED THIS PAST APRIL BY THE SAN BERNARDINO ASSOCIATED GOVERNMENTS. THIS REPORT ON “INTER-RELATED REGIONAL PLANNING CHALLENGES” FORECAST POPULATION GROWTH IN SOUTHERN CALIFORNIA TO INCREASE TWENTY EIGHT PERCENT IN THE NEXT TWENTY-FIVE YEARS! TWENTY EIGHT PERCENT!!

THAT’S THE EQUIVALENT OF ADDING CHICAGO AND HOUSTON TO THE NEIGHBORHOOD. IT DOESN’T TAKE A PH.D. IN URBAN PLANNING TO FIGURE OUT THAT CALTRANS CAN ADD ALL THE CARPOOL LANES IT WANTS, BUT BY THE TIME 2035 ROLLS AROUND, NOT HAVING ENOUGH FREEWAY LANES IS GOING TO BE THE LEAST OF OUR PROBLEMS.

IT’S NOT THE SOLUTION WE NEED FOR GETTING AROUND. NOT FOR THE AIR WE BREATHE. NOT FOR DELIVERING THE IMMENSE AMOUNT OF ADDITIONAL CARGO THAT WILL BE REQUIRED TO SUPPORT A POPULATION OF TWENTY FOUR MILLION GRIDLOCKED AND VERY CRANKY PEOPLE.

THE ONLY GOOD NEWS IS THAT WE’LL PROBABLY BE BIG ENOUGH BY THEN TO FINALLY GET AN NFL TEAM.

OBVIOUSLY, THIS KIND OF GROWTH REQUIRES PLANNING, RESEARCH, AND DEPLOYMENT ON A MONUMENTAL SCALE. SO THAT REPORT DEFINITELY GOT MY ATTENTION.

AND IN EFFORT TO REDUCE GREENHOUSE GAS EMISSION TO THE LEVELS MANDATED BY CALIFORNIA AB32 -- THE GLOBAL WARMING SOLUTIONS ACT -- WE CANNOT SIMPLY CONTINUE MAKING MARGINAL IMPROVEMENTS TO DIESEL TECHNOLOGY.

THE OTHER THING THAT IS CONCERNING TO ME – I HAVE A BIT OF A GRIPE- ARE RECENT GRANT DECISIONS MADE BY THE U.S. DEPARTMENT OF ENERGY AND THE CALIFORNIA ENERGY COMMISSION.

I ACTUALLY THOUGHT ABOUT BRINGING A BOUQUET OF FLOWERS SO I COULD STAND UP HERE AND SAY ... *“WHOA IS ME, ALWAYS THE BRIDESMAID, NEVER THE BRIDE.”* I DIDN'T BRING FLOWERS BUT THAT'S HOW I FEEL.

REMEMBER, OUR VISION IS TO BECOME AN EMISSIONS FREE PORT BY GOING ELECTRIC VIA BATTERY, SOLAR, AND OTHER GREEN ENERGY SOURCES. ZERO EMISSIONS IS OUR VISION AND ELECTRIC IS OUR STRATEGY.

SO, AS PART OF THE AMERICAN RECOVERY AND REINVESTMENT ACT, THE D.O.E. WAS MAKING AVAILABLE 2.4 BILLION DOLLARS FOCUSED SPECIFICALLY ON ACCELERATING THE MANUFACTURE

AND DEPLOYMENT OF ELECTRIC VEHICLES, BATTERIES AND COMPONENTS DEVELOPED HERE IN THE U.S.

WE THOUGHT, *“THIS IS PERFECT!”* HERE’S A GREAT WAY TO FURTHER FUND OUR ELECTRIC TRUCK INITIATIVE. WE BROUGHT PORTS TOGETHER FROM AROUND THE COUNTRY IN ONE GRANT APPLICATION- TO DEPLOY HEAVY DUTY ALL ELECTRIC VEHICLES AROUND THE NATION. SO HELP US OUT D.O.E., AND YOU’LL SEE YOUR MONEY PUT TO WORK RIGHT NOW WITH A MEASURABLE FINANCIAL RETURN ON YOUR INVESTMENT!

TO ME IT’S A NO BRAINER AND I’M SINGING *“GET ME TO THE CHURCH ON TIME”* RIGHT? THAT IS, UNTIL THE GRANT AWARDS ARE ANNOUNCED. GM, CHRYSLER AND FORD RECEIVED MORE THAN FOUR HUNDRED MILLION DOLLARS. THE UNIVERSITY OF MICHIGAN, WAYNE STATE UNIVERSITY IN MICHIGAN AND MICHIGAN TECHNOLOGICAL UNIVERSITY RECEIVED MILLIONS MORE FOR RESEARCH.

THE PORTS OF AMERICA RECEIVED NOTHING. OKAY, I GET IT, DRAYAGE AIN’T SEXY. BUT SURELY WE’D GET SOME LOVE HERE AT HOME FROM THE CALIFORNIA ENERGY COMMISSION, RIGHT?

EARLIER THIS YEAR, THE C.E.C WAS OFFERING MILLIONS OF DOLLARS UNDER A GRANT PACKAGE ENTITLED *“MEDIUM AND HEAVY DUTY ADVANCED VEHICLE TECHNOLOGY.”*

I THOUGHT, “NOW THAT’S US FOR SURE! WHERE’S MY VEIL AND SATIN SHOES!?!” BUT ONCE AGAIN – EVEN THOUGH WE HAVE THE NEED, THE INRASTRUCTURE, THE TECHNOLOGY PARTNERS, AND A PROVEN TRACK RECORD FOR TAKING TECHNOLOGY FROM CONCEPT TO DEPLOYMENT, WE CATCH THE BOUQUET AND NOTHING ELSE.

(PAUSE)

I’M NOT SAYING THE ORGANIZATIONS THAT RECEIVED GRANT MONEY AREN’T GOING TO DO FINE THINGS WITH IT. BUT WHAT I SAW WAS “PASSING OVER REAL LIFE LABORATORIES”- THE PORTS. IT’S UNDERSTANDABLE; WE ARE NOT YOUR TYPICAL RESEARCH ORGANIZATION.

MY POINT IS THAT, FOR MANY OF THE MOST CUTTING-EDGE, INDUSTRIAL-SIZED SOLUTIONS WE ARE CONTEMPLATING, WHAT COULD BE MORE IDEAL -- MORE PRAGMATIC -- THAN TESTING IN A REAL INDUSTRIAL ENVIRONMENT.

(PAUSE)

SO, HOW ELSE DO WE SPEED THINGS UP?

WELL, AS RESEARCHERS, ADMINISTRATORS AND POLICYMAKERS, WE NEED TO UNDERSTAND THAT MOVING FROM MARGINAL CHANGE TO MONUMENTAL CHANGE REQUIRES REVOLUTIONARY

ADVANCEMENT. THE KIND OF ADVANCEMENT THAT'S SEEN MOST COMMONLY TODAY IN EMERGING NATIONS THROUGH THE CONCEPT OF "**LEAPFROGGING.**"

LEAPFROGGING IS BASED ON AUSTRIAN BORN HARVARD ECONOMIST JOSEPH SHUMPETER'S NOTION OF '*GALES OF CREATIVE DESTRUCTION*' PUBLISHED ALL THE WAY BACK IN 1942. HIS HYPOTHESIS WAS THAT COMPANIES HOLDING MONOPOLIES BASED ON INCUMBENT TECHNOLOGIES HAVE LESS INCENTIVE TO INNOVATE THAN THEIR RIVALS.

THINK THE U.S. DREDGING INDUSTRY FOR EXAMPLE -- OOPS I PROMISED JOEDY I WOULDN'T DIVERGE INTO JONES ACT GRIPES! SORRY, JOEDY.

AS A RESULT, INCUMBENTS EVENTUALLY LOSE THEIR LEADERSHIP ROLE WHEN NEW RADICAL INNOVATIONS ARE ADOPTED BY OTHERS READY TO TAKE THE RISKS. (IN DREDGING- THE DUTCH AND BELGIAN) WHEN THOSE INNOVATIONS EVENTUALLY BECOME THE NEW PARADIGM, THOSE VISIONARY COMPANIES "LEAPFROG" AHEAD OF THE FORMER LEADING FIRMS.

REMEMBER THE WALKMAN? WITH THE I-POD, APPLE LEAPFROGGED OVER SONY. WITH IT'S GRAPHICAL USER INTERFACE – WINDOWS -- MICROSOFT LEAPFROGGED OVER IBM. WITH ITS UNIQUE APPROACH TO WEB SEARCHING, GOOGLE LEAPFROGGED OVER YAHOO. WITH

ITS FOCUS ON QUALITY AND ECONOMY, THE JAPANESE AUTO INDUSTRY ESSENTIALLY LEAPFROGGED OVER OURS IN LESS THAN A DECADE.

TODAY, THE CONCEPT OF LEAPFROGGING IS BEST SEEN IN HOW DEVELOPING COUNTRIES ACCELERATE ADVANCEMENT BY SKIPPING INFERIOR, LESS EFFICIENT, OR MORE POLLUTING TECHNOLOGIES AND MOVING DIRECTLY TO MORE ADVANCED ONES.

A WELL-KNOWN EXAMPLE OF LEAPFROGGING IS THE ADOPTION OF MOBILE PHONES IN THE DEVELOPING WORLD. IT'S EASIER, FASTER AND CHEAPER TO PUT CELL TOWERS IN RURAL AREAS THAN TO INSTALL LAND LINES. AS A RESULT, CELLULAR IS EXPLODING IN DEVELOPING NATIONS. MOBILE PHONE USE ALREADY FAR EXCEEDS LAND LINE USE IN INDIA.

WHEN IT COMES TO ENERGY, BY LEAPFROGGING, DEVELOPING COUNTRIES DON'T NEED TO FOLLOW THE POLLUTION PATH THAT INDUSTRIALIZED COUNTRIES FOLLOWED OUT OF NECESSITY. THEY CAN AVOID ENVIRONMENTALLY HARMFUL STAGES OF DEVELOPMENT ALTOGETHER.

THE ADOPTION OF SOLAR ENERGY IS A PRIME EXAMPLE OF WHERE DEVELOPING COUNTRIES AREN'T REPEATING OUR HISTORY OF BUILDING AN ENERGY INFRASTRUCTURE BASED ON FOSSIL FUELS.

THEY WILL "LEAPFROG" DIRECTLY INTO THE SOLAR AGE. SOLAR POWER IN PAKISTAN FOR EXAMPLE, IS BOOMING.

BUT IN THE U.S., WE'VE LEANED FORWARD BUT WE HAVEN'T LEAPT – ALTHOUGH WE'VE CERTAINLY HAD OUR OPPORTUNITIES.

BACK IN THE SEVENTIES WE HAD A SEVERE ENERGY CRISIS, GAS RATIONING, AND A LOT OF TALK HERE IN THE L.A. REGION ABOUT A TRULY INTEGRATED MASS TRANSIT SYSTEM. BUT WE DIDN'T LEAP. WE LEANED FORWARD A LITTLE, DID A FEW SYMBOLIC THINGS AND HOPED THAT THE CRISIS WOULD PASS.

IN THE NINETIES, WE LEANED FORWARD A LITTLE AGAIN, BUILT A LIMITED SUBWAY SYSTEM AND EXPANDED COMMUTER RAIL. AND HERE WE WERE WHEN GAS WAS \$4 A GALLON THINKING, "*GEE -- WISH WE HAD THAT RAIL SYSTEM BUILT.*" AND THE RESULT --L.A. CONTINUES TO HOLD THE TITLE OF AMERICA'S MOST GRIDLOCKED CITY.

IN SPITE OF THE OBSTACLES, LEAPFROGGING IS AN IMPORTANT CONCEPT TO KEEP IN MIND WHEN THINKING ABOUT THE KIND OF TRANSFORMATIONAL CHANGE THAT WE NEED TO MAKE IN ORDER TO MEET OUR FUTURE NEEDS. BUT CAN WE REALLY LEAPFROG HERE? AND IF SO, WHAT CAN WE DO?

WELL, IN JUNE 2009, THE PORTS OF L.A. AND LONG BEACH, IN CONJUNCTION WITH THE ALAMEDA CORRIDOR TRANSPORTATION

AUTHORITY, ISSUED A REQUEST FOR CONCEPTS AND SOLUTION FOR A PUBLIC-PRIVATE PARTNERSHIP TO DESIGN, BUILD, FINANCE AND OPERATE A ZERO EMISSION CONTAINER MOVEMENT SYSTEM.

IN THIS CASE, THE LEAPFROG TECHNOLOGY ENVISIONED WAS SOME KIND OF ELECTRIC RAIL, AKIN TO MAGLEV – OR ELECTRIC INDUCTION. THIS METHOD HAS THE POTENTIAL TO BE FASTER, QUIETER AND SMOOTHER THAN ANY WHEELED TRANSIT SYSTEM. AND, OF COURSE, VIRTUALLY EMISSIONS FREE.

CALIFORNIA CRAZY? PIE-IN-THE-SKY? NOT AT ALL. IN FACT, PROPOSALS FROM BOMBARDIER, GENERAL ATOMICS AND OTHER COMPANIES WITH EITHER MAGLEV OR SIMILAR CONCEPTS RUNNING ON EXISTING RAIL INFRASTRUCTURE CONFIRMED THAT THESE CONCEPTS ARE WELL WITHIN THE REALM OF FEASIBILITY AND THAT CORE TECHNOLOGIES ALREADY EXIST.

DID THE PROPOSALS MEET ALL THE READINESS REQUIREMENTS? NO. TESTING-TO-DATE HAS NOT PROVEN THAT MAGLEV IS READY FOR THE HEAVY WEIGHT REQUIREMENTS NEEDED IN TODAY'S INTERMODAL PORT ENVIRONMENTS.

BUT THAT WASN'T THE DEALBREAKER. THE TECHNOLOGY CAN ADVANCE AND BE APPLIED TO CONTAINER PORTS – NO QUESTION ABOUT IT.

THE REAL OBSTACLE WAS CHANGE ITSELF. THE RFP MADE IT CLEAR THAT THE ZERO EMISSION SYSTEM WOULD BE IN DIRECT COMPETITION WITH THE EXISTING TRUCKING AND RAIL SYSTEM, SO IT HAD TO MATCH OR IMPROVE THE TOTAL ECONOMIC FRAMEWORK. AND IT WAS CLEAR THAT THE LARGE CAPITAL INVESTMENT INVOLVED COULD NOT COMPETE ECONOMICALLY WITH THE CURRENT INFRASTRUCTURE.

THE CURRENT STRUCTURE IS THE BALLAST THAT'S HOLDING US DOWN. WHAT BERTRAND PICCARD TOLD THE WORLD'S TRANSPORT MINISTERS IS "DROP YOUR BALLAST." LET GO YOUR CONVENTIONS, BUT OUR LONG HELD CONVENTIONS HELD US BACK.

WHILE ENVIRONMENTALISTS MIGHT GET BEHIND THE ZERO EMISSIONS PLAN, TODAY'S TRUCKING INDUSTRY WON'T.

THAT'S ANOTHER KEY REASON WHY LEAPFROGGING HERE IS MORE DIFFICULT THAN IN DEVELOPING COUNTRIES. BUT THIS IS THE KIND OF TRANSFORMATIONAL CHANGE THAT PLANNERS AND POLICYMAKERS ALIKE NEED TO BE AWARE OF AND EMBRACE.

CAN WE FIND A WAY TO FOLD THE EXISTING TRUCKING INDUSTRY INTO A NEW INTERMODAL SYSTEM? I BET THAT WE CAN. CAN WE AFFORD TO LEAPFROG HERE? I THINK THE REAL QUESTION IS -- WITH THE HUGE CHALLENGES THAT LIE AHEAD OF US -- CAN WE AFFORD NOT TO?

(PAUSE)

WITH THAT IN MIND, WHEN IT COMES TO APPLYING RESEARCH TO REAL WORLD APPLICATIONS, IT'S NEVER BEEN EASY TO BUILD BRIDGES FROM THE ACADEMIC COMMUNITY TO THE COMMERCIAL ONE. THERE IS A LOT OF SCIENCE THAT GOES UNUSED BECAUSE IT'S NOT ACCESSIBLE TO THE POLICY MAKER. IN THE NINETIES, NOAA MADE A GREAT EFFORT TO DO THAT BY ESTABLISHING A NETWORK OF SEAPORT SPECIALISTS FROM ACADEMIC INSTITUTIONS ON EVERY U.S. COASTLINE, BUT THE CONCEPT NEVER REALLY TOOK OFF.

I RECENTLY RAN INTO AN ENGINEERING PROFESSOR WHO TOLD ME THAT, AFTER AN EXHAUSTIVE TWO YEAR SEARCH, HE JUST SECURED A COMMERCIAL SHIP WHERE HE COULD TEST HIS NEW EMISSIONS CONTROL DEVICE. AND I'M THINKING, "TWO YEARS??" WE COULD HAVE MADE A FEW CALLS AND LINED UP A SHIP A WHOLE LOT FASTER THAN THAT! ? IMAGINE IF ALL THE SHIPS TRANSITING THE OCEANS FROM OUR PORTS WERE COLLECTING CLIMATE CHANGE DATA ALONG THE WAY?

AT THE PORT OF L.A., WE'RE DOING EVERYTHING WE CAN TO MAKE THAT "FROG LEAP."

FOR OVER FIFTY YEARS, SOME OF THE BEST MARINE RESEARCH HAS BEEN TAKING PLACE RIGHT HERE AT THE PORT. HECK I CAN

REMEMBER SOME OF THE RESEARCH VESSELS THAT USED TO COME INTO THE PORT IN THE SEVENTIES -- WELL, RESEARCH-SPY VESSELS. I READ CLIVE CUSSLER NOVELS SO I CAN FIND SOMETHING HE REFERS TO FROM THE PORT OF LOS ANGELES.

BUT AT THE PORT OF L.A., WE'RE GOING TO DO EVERYTHING WE CAN TO CHANGE THAT. WE WANT TO CHANGE THE PACE OF RESEARCH AND DEPLOYMENT AND WE'RE GOING TO DEVOTE A 28 ACRE PIER ON DEEPWATER WITH HIGH CLEAR SPAN WAREHOUSE SPACE FOR RESEARCH-DEPLOYMENT. SO HOPEFULLY IN A FEW YEARS WHEN YOU ARE BACK HERE WE CAN TAKE YOU TO OUR RESEARCH-REPLOYMENT MARINE RESEARCH CENTER. TODAY THE LOS ANGELES ACADEMIC INSTITUTIONS WITH MARINE AND MARITIME BASED RESEARCH DON'T HAVE A WATERSIDE FACILITY ON PAR WITH THE WORLD-CLASS RESEARCH THEY'VE BEEN DOING AND CERTAINLY NOT FOR WHAT LIES AHEAD.

(PAUSE)

ON ITS WEBSITE, THE MISSION OF THE TRANSPORTATION RESEARCH BOARD READS -- *"TO PROVIDE LEADERSHIP IN TRANSPORTATION, INNOVATION AND PROGRESS THROUGH RESEARCH AND INFORMATION EXCHANGE, CONDUCTED WITHIN A SETTING THAT IS OBJECTIVE, INTERDISCIPLINARY AND MULTI-MODAL."*

THAT SOUNDS GOOD AND I'D LIKE TO OFFER THIS ADDENDUM: *“AND USE PORTS AS LIVING LABORATORIES TO DEVELOP REVOLUTIONARY CHANGES AND ACCELERATE THE DEPLOYMENT OF NEW TECHNOLOGIES FOR THE ENTIRE U.S. TRANSPORTATION SYSTEM.”*

I SUGGEST THIS BECAUSE I HAVE SO MUCH FAITH IN THE VISION, DESIRE AND CAPABILITY OF TODAY'S PORT LEADERS.

I ENCOURAGE YOU TO REACH OUT TO PORT DIRECTORS AND RE-DOUBLE YOUR EFFORTS TO BETTER UNDERSTAND -- NOT ONLY OUR CHALLENGES -- BUT ALSO THE TREMENDOUS TWENTY FIRST CENTURY OPPORTUNITIES THAT EXIST TO CREATE TRULY MONUMENTAL PROGRESS IN TODAY'S FREIGHT TRANSPORTION SYSTEM. PROGRESS THAT CAN ENHANCE CORE NEEDS AND VALUES THAT ARE FUNDAMENTAL TO WHO WE ARE AS A COUNTRY – COMMERCE, EMPLOYMENT, ENVIRONMENT, SECURITY AND HEALTH.

THE WORLD IS SPINNING FASTER TODAY THAN EVER BEFORE AND WE CAN'T AFFORD TO ACCEPT PROGRESS THAT IS MARGINAL, NOMINAL, OR SYMBOLIC. WITH KNOWLEDGE COMES RESPONSIBILITY. AND IT'S OUR RESPONSIBILITY, AS LEADERS IN THE INDUSTRY THAT MOVES THE STUFF THAT FUELS OUR ECONOMY, TO DO IT FASTER, CLEANER, SAFER AND CHEAPER.

PORTS ARE THE PLACE WHERE IT ALL COMES TOGETHER. WE'RE NOT ONLY FIXTURES ALONG EVERY COASTAL AND INLAND

WATERWAY, WE'RE LIVING LABORATORIES, READY FOR BUSINESS AND ANXIOUS TO DELIVER THE KIND OF FUTURE THAT OUR COUNTRY WANTS AND TRULY NEEDS.

THANK YOU ALL VERY MUCH FOR YOUR TIME AND ATTENTION! I HOPE YOU HAVE A GREAT MEETING.—YOU HEARD ABOUT FOOD HOW FUN.

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