

**MUNITIONS EXECUTIVE SUMMIT
FEBRUARY 10, 2005
HYATT REGENCY CAPITOL HILL, WASHINGTON, D.C.**

**THANK YOU FOR THE INTRODUCTION. I WELCOME
THE OPPORTUNITY TO BE HERE AS YOUR INDUSTRY
KEYNOTE SPEAKER.**

**MUNITIONS ALWAYS COME TO THE FOREFRONT IN
TIME OF WAR. OUR INDUSTRY ROLE IN SUPPORT OF
THE WARFIGHTERS IS TO ENSURE THAT WE MEET THE
MILITARY NEEDS --- NOT JUST IN TERMS OF THE
SUPPLY, BUT ALSO IN TERMS OF PERFORMANCE,
QUALITY, RELIABILITY, AND COST. WE NEED TO BE
RESPONSIVE TO CHANGING MILITARY NEEDS BASED
UPON THE CHANGING NATURE OF THE WAR,
BATTLEFIELD CONSUMPTION, AND PRODUCTION
SURGE REQUIREMENTS. ALL OF US HAVE
ENDEAVORED TO DO THIS, PARTICULARLY OVER THE
PAST SEVERAL YEARS.**

THE THEME OF THIS CONFERENCE IS “ADAPTING FOR BATTLEFIELD SUCCESS.” CONSISTENT WITH THAT THEME, I WILL GIVE YOU SOME OF MY OBSERVATIONS AND RECOMMENDATIONS ON THE NEED FOR MODERN MUNITIONS TO ENHANCE OUR CURRENT CAPABILITIES AND RELATE TO YOU SOME OF OUR UNITED DEFENSE PRODUCTION SURGE EXPERIENCES BASED ON THE WAR IN IRAQ AND AFGHANISTAN. ALTHOUGH OUR SURGE EXPERIENCES ARE ON GROUND COMBAT ITEMS, I BELIEVE THAT THESE EXPERIENCES CAN COMPARE AND CONTRAST WITH WHAT MANY MUNITIONS MANUFACTURERS HAVE EXPERIENCED.

FOR THOSE OF YOU NOT FAMILIAR WITH UNITED DEFENSE, WE ARE A COMBAT SYSTEMS PROVIDER. WE DEVELOP AND MANUFACTURE GROUND COMBAT VEHICLES, NAVY GUNS, MISSILE LAUNCHING SYSTEMS, AND MUNITIONS HANDLING SYSTEMS.

**ALL OF OUR FIELDDED COMBAT SYSTEMS WERE
DEPLOYED TO OPERATION IRAQI FREEDOM. UNITED
DEFENSE IS ALSO INVOLVED IN THE DEVELOPMENT OF
GUIDED PROJECTILES AND PRECISION GUIDED
MUNITIONS. UNITED DEFENSE'S WHOLLY OWNED
SUBSIDIARY, UNITED STATES MARINE REPAIR, IS THE
NATION'S LARGEST NON-NUCLEAR SHIP REPAIR
COMPANY.**

**NOW, SOME SUMMARY LEVEL HIGHLIGHTS FROM
THE WAR DRAWN FROM THE PUBLIC DOMAIN. ALL THE
SERVICES, I BELIEVE, HAVE HAD MEANINGFUL
EXPERIENCES FROM THE USE OF BOTH GUIDED AND
UNGUIDED MUNITIONS AND THE FULL ARRAY OF
CONVENTIONAL AMMUNITION.**

- **THE PAVEWAY LASER-GUIDED BOMB WAS THE MOST COMMONLY USED PRECISION WEAPON OF THE WAR. THE JOINT DIRECT ATTACK MUNITION, JDAM, WAS THE SECOND MOST USED PRECISION WEAPON.**
- **IN NOVEMBER 2004 THE NAVY ANNOUNCED THAT AN F/A-18 HORNET DROPPED THE 500 LB. JDAMs. THIS WAS THE FIRST TIME THE NAVY DROPPED THE NEW JDAM IN COMBAT.**
- **DURING A 30 DAY PERIOD, FROM 19 MARCH 2003 TO 18 APRIL, IN THE CLOSING DAYS OF OPERATION IRAQI FREEDOM, U.S. CENTRAL COMMAND AIR FORCE REPORTED THAT MUNITIONS EMPLOYED WERE 68% GUIDED AND 32% UNGUIDED WEAPONS. THE GUIDED WEAPONS INCLUDED JDAMs, TOMAHAWK LAND ATTACK MISSILES, WIND-CORRECTED MUNITIONS DELIVERY SYSTEMS,**

**LASER GUIDED BOMBS, MAVERICKS, AND OTHERS.
SOME WEAPON COMBAT FIRSTS WERE: CBU-105
SENSOR FUZED WEAPON; CBU-107 WIND
CORRECTED MUNITIONS; AGM-86D CONVENTIONAL
AIR-LAUNCHED CRUISE MISSILE HARD TARGET
PENETRATOR; JDAM DELIVERED BY F-14D; AND
MK-82's DELIVERED BY B-2.**

- **ACCORDING TO A THIRD INFANTRY DIVISION AFTER
ACTION REPORT, THE SADARM PRECISION GUIDED
155MM ARTILLERY MUNITION (QUOTE) "EXCEEDED
EXPECTATIONS AND BECAME THE PREFERRED
PRECISION MUNITION FOR THE FIELD ARTILLERY
BATTALIONS AND THEIR SUPPORTED MANEUVER
COMMANDERS" (UNQUOTE).**

**THE SADARM MUNITION WAS MORE LETHAL THAN
ORIGINALLY THOUGHT, AND SADARM DEFEATED
ALL KNOWN ARMOR AND ARTILLERY TARGETS ON
THE BATTLEFIELD.**

- **MEANWHILE, IN FALLUJAH AND ELSEWHERE, WE SAW THE EXTENSIVE USE OF CONVENTIONAL FIREPOWER – BOTH INDIRECT AND DIRECT FIRES. FALLUJAH WAS A GOOD EXAMPLE OF JOINT FORCE CONVENTIONAL MUNITIONS SUPPORT IN THAT KEY BATTLE – ARMY PALADINS SUPPORTED A MARINE CORPS REGIMENTAL COMBAT TEAM; ALSO 120MM AND 81MM MORTARS, AND C-130 GUNSHIPS WERE USED ALONG WITH OTHER CLOSE AIR SUPPORT. DURING THE COURSE OF THIS SINGLE BATTLE, MORE THAN 2000 ARTILLERY AND MORTAR ROUNDS WERE FIRED, AND MORE THAN 10 TONS OF PRECISION AIR FORCE MUNITIONS WERE DROPPED. INCLUDED WERE 925 ARTILLERY ROUNDS WITH A MIX OF HIGH EXPLOSIVE, ILLUMINATION, WHITE PHOSPHOROUS, AND VARIOUS FUZES USED. PROXIMITY-FUZED ARTILLERY WAS EFFECTIVE AGAINST ROOFTOP**

THREATS, AND DANGER CLOSE MISSIONS WERE THE RULE AND NOT THE EXCEPTION -- THE 155MM AND 120MM FIRES ROUTINELY WERE WITHIN 200 METERS OF FRIENDLY FORCES. THE OUTCOME SUPPORTS THE THESIS THAT CONVENTIONAL MUNITIONS ARE STILL VALUED AND HAVE A PLACE WITH PRECISION IN TODAY'S BATTLEFIELD.

- **IN DECEMBER 2004, IN A SESSION WITH REPORTERS, AIR FORCE CHIEF OF STAFF GENERAL JOHN JUMPER STATED THAT AIR FORCE, NAVY AND MARINE CORPS AIRCRAFT SUPPORTED SOLDIERS AND MARINES ON THE GROUND IN FALLUJAH WITH UNPRECEDENTED PRECISION. THERE WERE (QUOTE) "MANY ACCOUNTS OF OUR GLOBAL POSITIONING SYSTEM-GUIDED WEAPONS PLUCKING BUILDINGS OUT OF THE MIDDLE OF VERY POPULATED AREAS". (UNQUOTE) THOSE PRECISION GUIDED WEAPONS INCLUDED THE**

NEWLY FIELDDED 500-POUND JDAM – AS THE SMALLEST JDAM TO BE FIELDDED SO FAR. THAT WEAPON CAUSED SIGNIFICANTLY LESS COLLATERAL DAMAGE THAN EITHER THE 2,000-POUND OR 1,000-POUND VERSIONS. GENERAL JUMPER ALSO STATED THAT PREDATOR UNMANNED AERIAL VEHICLES EQUIPPED WITH HELLFIRE MISSILES WERE USED DOZENS OF TIMES IN THE BATTLE FOR FALLUJAH.

- **WE ALSO KNOW OF THE HIGH DEMANDS GENERATED DURING THE WAR FOR MORTAR AND SMALL CALIBER AMMUNITION. DEPOTS HAVE SHIPPED OVER 80,000 TONS OF AMMUNITION IN SUPPORT OF OPERATION IRAQI FREEDOM, INCLUDING OVER 500 MILLION ROUNDS OF SMALL ARMS AND 2000 MLRS PODS. FOR SMALL CALIBER AMMUNITION, WHERE CONSUMPTION INCREASED**

NOT ONLY DUE TO COMBAT BUT ALSO FOR TRAINING, PRODUCTION HAS SURGED, AND CAPACITY HAS BEEN TAXED.

CERTAINLY, THE FINAL LESSONS LEARNED FROM THE WAR IN IRAQ AND AFGHANISTAN ARE YET TO COME, AND WE MUST CONTINUE TO ASSESS THE NEED FOR MODERN MUNITIONS TO ENHANCE OUR CURRENT CAPABILITIES. HOWEVER, I WOULD LIKE

**TO GIVE YOU MY INITIAL OBSERVATIONS AND
RECOMMENDATIONS -- IN PART AS AN INDUSTRY
PARTICIPANT IN MUNITIONS DEVELOPMENT AND IN
PART AS A DEFENSE INDUSTRY PROVIDER OF
COMBAT SYSTEMS.**

**MY FIRST OBSERVATION ON MODERN MUNITIONS
TO ENHANCE CURRENT CAPABILITIES IS THAT THE
AIR FORCE AND THE NAVY HAVE MANY MORE, AND
HAVE USED MUCH MORE MODERN GUIDED
MUNITIONS THAN THE ARMY. WE CERTAINLY SAW
THE TREND TOWARD PRECISION IN THE AIR FORCE
DURING THE FIRST GULF WAR -- AND IN TODAY'S
SATELLITE-GUIDED AND OTHER AIR-LAUNCHED
PRECISION GUIDED MUNITIONS -- RANGING FROM
LASER GUIDED BOMBS TO SENSOR FUZED
WEAPONS, HARD PENETRATORS, AND JDAMs.**

- **THE ARMY IS BEGINNING TO FOLLOW THE TREND REFERENCE PRECISION MUNITIONS.**
 - **THE ARMY HAS THE EXCALIBUR PROGRAM IN PLACE AND IT HAS OUTSTANDING PERFORMANCE. DURING RECENT TESTS, A 20KM SHOT LANDED 11 FEET FROM THE TARGET. THE ARMY HAS DECIDED TO ACCELERATE FIELDING.**
 - **THE FULL POTENTIAL FOR A SADARM-LIKE CAPABILITY MUST BE REALIZED IN THE FUTURE. THE TECHNOLOGY HAS BEEN PROVEN. GIVEN THE DEMONSTRATED EFFECTIVENESS, I BELIEVE THE ARMY NEEDS TO FOLLOW THROUGH ON ITS PLAN TO TEST AND QUALIFY EXISTING SADARM-LIKE SENSOR FUSED MUNITIONS AND PLACE THEM INTO INVENTORY.**

- **WHILE THE AIR FORCE, NAVY, AND MARINE CORPS HAVE THE CAPABILITY TO DELIVER JDAMs TO PROVIDE ACCURACY AND PRECISION TO DUMB BOMBS, THERE IS NO COMPARABLE CAPABILITY FOR THE ARMY TO PROVIDE BETTER ACCURACY AND PRECISION FOR ITS HUGE INVENTORY OF BALLISTIC PROJECTILES. FOR A NUMBER OF YEARS, THERE WAS AN ARGUMENT THAT THE FUNDING FOR A COURSE CORRECTING FUZE WOULD JEOPARDIZE THE FUNDING OF EXCALIBUR. WITH RECENT INITIATIVES, THE OUTLOOK THAT THERE WILL BE A PRECISION GUIDANCE KIT FOR BALLISTIC PROJECTILES LOOKS PROMISING. ON THE INDUSTRY SIDE, I BELIEVE WE MUST STEP-UP TO THE CHALLENGE OF**

DEVELOPING A CAPABLE, COST-EFFECTIVE COURSE CORRECTING FUZE. ON THE GOVERNMENT SIDE, I BELIEVE THE GOVERNMENT NEEDS TO STABILIZE A SET OF REASONABLE REQUIREMENTS FOR THE COURSE CORRECTING FUZE AND TO ESTABLISH A VIABLE PROGRAM TO PROVIDE FOR THE PRECISION ENHANCEMENT OF THE HUGE INVENTORY OF BALLISTIC PROJECTILES. THERE WILL ALWAYS BE A NEED TO HAVE A MIX OF GUIDED AND UNGUIDED MUNITIONS. FOR THE ARMY, THIS MEANS A MIX OF BALLISTIC PROJECTILES, PRECISION GUIDED MUNITIONS, SMART MUNITIONS, AND PRECISION GUIDANCE KITS THAT ENHANCE BALLISTIC PROJECTILES.

MY SECOND OBSERVATION ON MODERN MUNITIONS TO IMPROVE OUR CURRENT CAPABILITIES IS BASED UPON MY OBSERVATION OF THE U.S. NAVY ON THEIR GUN WEAPON SYSTEM APPROACH TO THE DD (X) ADVANCED GUN SYSTEM AND ITS MUNITIONS. THIS GUN WEAPON SYSTEM APPROACH HAS NOT BEEN THE TRADITIONAL APPROACH IN WHICH THE U.S. NAVY AND THE U.S. ARMY HAVE ACQUIRED GUNS AND MUNITIONS. IN THE PAST, THE TRADITIONAL PROCESS IS FOR GUNS TO BE SEPARATELY DESIGNED, DEVELOPED AND PRODUCED. TYPICALLY, PROJECTILES, PAYLOADS, FUZES, AND PROPELLANTS ARE SEPARATELY DESIGNED, DEVELOPED AND PRODUCED TO BE COMPATIBLE WITH SPECIFICATIONS FOR THE GUN. THEY ARE OFTEN ACQUIRED ON DIFFERENT AND NON-INTEGRATED TIMELINES.

ALL THIS IS PREDICATED ON A GOOD UNDERSTANDING OF INTERFACES AND COMPATIBILITIES OF THE RESPECTIVE SUBSYSTEMS. BUT, THIS CLASSIC, TRADITIONAL PROCESS RESULTS IN PREMATURE SUB-OPTIMIZATION OF THE MUNITION AND/OR THE GUN WEAPON SYSTEM.

NOT ALL COUNTRIES FOLLOW THIS TRADITIONAL PROCESS. FOR EXAMPLE, SWEDEN, THROUGH ITS ARMAMENTS CONTRACTOR, BOFORS DEFENCE, HAS A LONG HERITAGE IN EFFECTS-BASED ARMAMENTS, AS WELL AS A GUN WEAPON SYSTEM APPROACH. THE EFFECTS-BASED APPROACH FOCUSES ON ACHIEVING THE TERMINAL EFFECTS AT THE TARGET AREA, THEN WORKING BACKWARD TO THE DELIVERY PLATFORM. THE FOCUS ON WORKING BACKWARDS FROM THE TARGET INVOLVES REDUCING TARGET LOCATION ERROR, SOLVING THE FIRE CONTROL

SOLUTION, AND ACHIEVING NETWORK-CENTRIC SYNERGIES. THE GUN WEAPON APPROACH ADDRESSES THE OPTIMIZATION OF THE GUN SYSTEM, TO INCLUDE MUNITIONS OR PRECISION MUNITIONS AND THE ABILITY TO WORK TRADES ASSOCIATED WITH THE CANNON TUBE, PROJECTILE, AND PROPELLANT.

IN MANY SITUATIONS, PROGRAMS ARE CONSTRAINED – WHERE A NEW GUN MIGHT HAVE TO BE BACKWARD COMPATIBLE WITH EXISTING AMMUNITION. OR, THE PROGRAM MIGHT BE CONSTRAINED BECAUSE IT INVOLVES USING AN EXISTING GUN AND THEN DEVELOPING A NEW FAMILY OF MUNITIONS OR A PRECISION MUNITION FOR THE GUN. IN THESE EXAMPLES, IT WOULD BE DIFFICULT TO IMPLEMENT A GUN WEAPON SYSTEM APPROACH. ANOTHER CONSTRAINT IN THE INTERNATIONAL AREA MIGHT BE THE NEED TO BE

COMPLIANT TO INTEROPERABILITY NEEDS, SUCH AS REFLECTED IN THE JOINT BALLISTICS MEMORANDUM OF UNDERSTANDING. UNLESS OTHERWISE CONSTRAINED, FOR MOST EUROPEAN COUNTRIES, THE GUN WEAPON SYSTEM APPROACH IS USED. NOTE THE COMPANIES INVOLVED, ROYAL ORDNANCE/BAE, GIAT, RHEINMETALL, AND BOFORS DEFENCE ALL DO GUNS AND THE AMMUNITION.

SWEDEN IS ALSO KNOWN FOR SHOULDER-LAUNCHED WEAPONS. IN THEIR WEAPONS, THEY USE THE TOTAL WEAPON SYSTEM APPROACH IN DESIGN OF THE LAUNCHER OR PLATFORM, MUNITION, AND FIRE CONTROL.

ANOTHER OFFSHORE EXAMPLE OF THE GUN WEAPON SYSTEM APPROACH IS CTA INTERNATIONAL, A JOINT UK/FRENCH COMPANY, DEVELOPING THE 40MM MEDIUM CALIBER GUN WITH CASE TELESCOPE AMMUNITION. BECAUSE OF THE

**NEED TO DESIGN THE GUN TO ACCOMMODATE THE
CASE TELESCOPED AMMUNITION, THE
DEVELOPMENT FOLLOWS THE GUN WEAPON SYSTEM
APPROACH.**

**IN THE CASE OF THE NAVY'S ADVANCED GUN
SYSTEM, UNITED DEFENSE IS RESPONSIBLE FOR THE
DESIGN AND DEVELOPMENT OF THE GUN SYSTEM, TO
INCLUDE THE GUN, MAGAZINE, LONG RANGE LAND
ATTACK PROJECTILE, PROPELLANT, AND FIRE
CONTROL. BY HAVING THIS GUN WEAPON SYSTEM
APPROACH, WE WERE ABLE TO MAKE SYSTEM
PERFORMANCE TRADE-OFFS AND SIZING DECISIONS
FOR THE GUN, MAGAZINE, PROJECTILE, AND
PROPELLANT, RESULTING IN A MORE OPTIMIZED
DESIGN, AS OPPOSED TO TYPICALLY OPERATING
WITH SPECIFIED WEIGHT, SIZE AND VOLUME
PARAMETERS. AS PART OF OUR RESPONSIBILITY WE
ALSO RAN THE COMPETITION AND SELECTED THE**

SOURCE FOR THE LONG RANGE LAND ATTACK PROJECTILE. OUR EXPERIENCE ON THIS PROGRAM HAS VALIDATED THIS GUN WEAPON SYSTEM APPROACH, AND OUR CUSTOMER LOOKS TO US FOR THE TOTAL SYSTEM PERFORMANCE OF THE GUN SYSTEM AND MUNITIONS. DEVELOPMENT HAS MET SUCCESS – THE DD(X) NATIONAL TEAM AND THE NAVY CONDUCTED A SUCCESSFUL GUIDED FLIGHT TEST OF THE LONG RANGE LAND ATTACK PROJECTILE LAST MONTH ON JANUARY 27 AT POINT MUGU, CALIFORNIA. THE PROJECTILE SUCCESSFULLY ACQUIRED GLOBAL POSITIONING SYSTEM INPUT AND EXECUTED GUIDED FLIGHT TO THE TARGET AIMPOINT. PRELIMINARY RESULTS INDICATED THAT ALL TEST OBJECTIVES WERE COMPLETED AS PLANNED.

I RECOMMEND THAT FUTURE NEW GUN SYSTEM DEVELOPMENTS STRONGLY CONSIDER THIS GUN

WEAPON SYSTEM APPROACH. I AM GLAD TO SEE THAT THE U.S. ARMY'S LIGHTWEIGHT MACHINE GUN AND AMMUNITION PROGRAM IS AN EXAMPLE OF THE WEAPON SYSTEM APPROACH. THEY CALL THEIR APPROACH THE "CLEAN SLATE" – DROPPING THE CONSTRAINTS OF THE CURRENT AMMUNITION AND WEAPONS, THE PROGRAM AIMS TO REDUCE WEAPON WEIGHT BY 35% AND AMMUNITION WEIGHT BY 40%, WHILE TAKING UP LESS VOLUME. ANOTHER U.S. ARMY EXAMPLE OF THE GUN WEAPON SYSTEM APPROACH IS THE ADVANCED CREW SERVED WEAPON, XM 307, WHICH USES 25MM AIRBURST AMMUNITION. THUS, I AM HEARTENED WITH THESE IMPLEMENTATIONS OF THE GUN WEAPON SYSTEM APPROACH.

NOW, WITH RESPECT TO OBSERVATIONS AND COMMENTS BASED UPON THE CHANGING NATURE OF

THE WAR -- THE USE OF ARTILLERY, BOMBS, AND MISSILES HAS BEEN LESS THAN ANTICIPATED. WHILE USE OF MORTAR AND SMALL ARMS AMMUNITIONS HAVE BEEN HIGHER THAN ANTICIPATED. I BELIEVE THAT EVERYONE HERE IS AWARE THAT ADDITIONAL CAPACITY IS NEEDED FOR SMALL CALIBER AMMUNITION, AS THERE IS BUT A SINGLE GOVERNMENT-OWNED FACILITY IN THE U.S. -- THE LAKE CITY ARMY AMMUNITION PLANT -- FOR THE PRODUCTION OF MILITARY SPECIFICATION SMALL CALIBER AMMUNITION. SIMILARLY, SOME GROUND COMBAT ITEMS HAVE HAD PRODUCTION SURGES.

- I'D LIKE TO RELATE TO YOU OUR EXPERIENCE ON TRACK SHOE BODIES FOR M113, BRADLEY FIGHTING VEHICLES, AND ABRAMS TANKS.**

UNITED DEFENSE'S STEEL PRODUCTS DIVISION IS A MAJOR SUPPLIER OF TRACK SHOE BODIES. DURING CALENDAR YEAR 2001 THE AVERAGE

MONTHLY PRODUCTION OF TRACK SHOE BODIES WAS AT ABOUT 30,000 A MONTH.

RAMP-UPS STARTED TO OCCUR IN 2002 WITH A PEAK IN NOVEMBER 2002 OF 60,000, AND THEN IN SEPTEMBER 2003 IT REACHED 130,000. OVER A YEAR LATER IN NOVEMBER 2004, THE PEAK PRODUCTION WAS 190,000. TO RAMP-UP TRACK PRODUCTION FROM AN AVERAGE OF 30,000 TO 180,000 PER MONTH, WE TOOK THE FOLLOWING ACTIONS:

- 1ST -- PERSONNEL ADDITIONS**
- 2ND -- WORK SCHEDULE: 24 HOURS A DAY/7 DAYS A WEEK SINCE MARCH 2003**
- 3RD – FORTUNATELY PRIOR TO THE RAMP UP, WE IMPLEMENTED TQM AND SIX SIGMA PROJECTS TO REDUCE COST AND IMPROVE EFFICIENCY. SIX EMPLOYEES COMPLETED SIX SIGMA BLACK BELT TRAINING;**

**PROJECTS WERE CONDUCTED ON CYCLE
TIME REDUCTION, DOWNTIME REDUCTION,
SCRAP AND REWORK REDUCTION, AND
NUMEROUS ADMINISTRATIVE LEAN
PROJECTS, ALL RESULTING IN INCREASED
EFFECTIVE CAPACITY.**

- 4TH -- WE SET-UP A STRATEGIC RESERVE OF
TRACK FORGINGS TO OFFSET POTENTIAL
INTERNAL FORGING TROUBLES**
- WE RAMPED-UP PRODUCTION BY 600%,
WITH A REDUCTION IN COST TO OUR
CUSTOMER IN SPITE OF STEEL COST
INCREASES. AS PART OF GETTING TO THAT
SURGE CAPABILITY, WE MADE A BUSINESS
DECISION TO INVEST OVER \$6M FOR
ADDITIONAL FORGE AND MACHINING
EQUIPMENT, AS WELL AS FOR LONG LEAD
SPARE PARTS FOR KEY CAPITAL ASSETS.**

- **IN ANOTHER PART OF OUR BUSINESS -- CERCOM, A CERAMIC ARMOR COMPANY, ALSO UNDERWENT PRODUCTION SURGE FOR PROTECTIVE ARMOR INSERTS.**

IN THAT CASE, CERCOM ALSO INCREASED CAPACITY BY THE COMBINATION OF CAPITAL INVESTMENT, STREAMLINING OPERATIONS AND QUALITY IMPROVEMENTS. ONE MAJOR COMPETITOR INCREASED THEIR CAPACITY SIX-FOLD FROM THE FALL OF 2003. CURRENT TOTAL ARMY PROCUREMENT IS ABOUT 50,000 PLATES PER MONTH AND THIS IS EXPECTED TO CONTINUE THROUGH FY 07. THIS COMPARES TO 15,000 TO 20,000 PLATES PER MONTH IN THE SPRING OF 2003. THE ARMY ALSO RELAXED THE WEIGHT REQUIREMENT FOR CERTAIN PLATES, AND THIS BROUGHT IN SIGNIFICANT CERAMIC CAPACITY FROM OTHER INDUSTRIES.

THUS, IN LOOKING AT HOW TO ACCOMMODATE CHANGING MILITARY NEEDS DUE TO COMBAT CONSUMPTION REQUIREMENTS AND SURGE, I BELIEVE THAT THE DEPARTMENT OF DEFENSE CERTAINLY NEEDS TO DETERMINE CRITICAL NEEDS AND PLAN FOR PRODUCTION SURGE CONTINGENCIES. THE MORE DIFFICULT MATTER WILL BE TO OBTAIN SUFFICIENT FUNDING FOR THE ACTIONS NEEDED. I DON'T THINK WE CAN PRESCRIBE A SOLUTION THAT APPLIES TO ALL MATERIEL. BASED ON OUR EXPERIENCE, I BELIEVE THERE NEEDS TO BE A MENU OF ALTERNATIVES RANGING FROM THE FOLLOWING:

- STOCKPILING THE ITEM**
- STOCKPILING CRITICAL COMPONENTS AND RAW MATERIALS**
- MAINTAINING UNDERUTILIZED EQUIPMENT**

- **INCREASING CAPACITY, AND**
- **MAINTAINING ECONOMIC SUSTAINING RATES**

MOST IMPORTANTLY, I BELIEVE THAT THERE NEEDS TO BE A CONTINUAL DIALOG BETWEEN THE GOVERNMENT AND SUPPLIERS ON PLANNING FOR SURGE. BEFORE SURGE THE GOVERNMENT SHOULD WORK WITH INDUSTRY TO ESTABLISH AND MAINTAIN ECONOMIC SUSTAINING RATES FOR CRITICAL MATERIALS SUFFICIENT FOR INDUSTRY TO MODERNIZE AND IMPROVE EQUIPMENT AND PROCESSES. REFERENCE TRACK PRODUCTION, UNITED DEFENSE WAS VERY FORTUNATE. TACOM WORKED WITH US DURING THE LEAN YEARS BETWEEN WARS TO ENSURE THAT WE HAD MINIMAL VOLUMES OF BUSINESS AND THOUGHT THROUGH WHAT SURGE REQUIREMENTS MIGHT BE NEEDED. THIS CLEARLY PAID OFF IN THE END. AFTER SURGE,

IT WOULD BE EXPECTED THAT EQUIPMENT WOULD BE OVERDUE FOR MAJOR OVERHAUL OR REBUILD, BUT WITH REDUCED VOLUME, FINANCIAL JUSTIFICATION FOR THIS OVERHAUL OR REBUILD WOULD BE DIFFICULT. THUS, SOME SORT OF “INDUSTRY RESET” SHOULD BE PLANNED. THE GOVERNMENT ALSO NEEDS TO ENSURE THAT THE RIGHT CONTRACT MECHANISMS AND CONTRACT PROVISIONS ARE IN PLACE. A KEY FOR IMPROVING PROCUREMENT WOULD BE FOR THE GOVERNMENT TO COMMIT TO LONGER TERM FIRM QUANTITY CONTRACTS, RATHER THAN THE INDEFINITE QUANTITY CONTRACTS THAT THEY FAVOR. FOR SOME CRITICAL ITEMS WHERE THE CONTRACT TYPE MIGHT BE AN INDEFINITE ORDER AND INDEFINITE QUANTITY, CONTRACTORS WOULD BE MORE WILLING TO INVEST BASED ON MULTI-YEAR OR DEFINITIVE QUANTITY CONTRACTS.

IN CLOSING, I WOULD SAY THAT THE NEED FOR MODERN MUNITIONS DEVELOPMENT AND FIELDING TO IMPROVE CURRENT CAPABILITIES IS IMMEDIATE IN OUR ARMY. THE AIR FORCE AND NAVY HAVE A SIGNIFICANT LEAD IN TERMS OF POSSESSING AND FIELDING PRECISION GUIDED MUNITIONS AND SMART MUNITIONS. WITH RESPECT TO RESPONDING TO CHANGING MILITARY NEEDS AND PRODUCTION SURGE NEEDS, I BELIEVE THAT DOD CAN IMPROVE BY THE EARLY IDENTIFICATION OF CRITICAL COMBAT ITEMS, AND THEN CONDUCT SURGE PLANNING ALTERNATIVES, WHILE MAINTAINING A CONTINUAL DIALOG WITH SUPPLIERS AND HAVE CONTRACT MECHANISMS THAT FACILITATE AND MOTIVATE CONTRACTORS TO RESPOND TO SURGE.

THE STRENGTH OF OUR DEFENSE INDUSTRIAL BASE AND OUR ABILITY TO RESPOND TO PRODUCTION SURGE DEPEND UPON SOUND

**PLANNING, KNOWLEDGE OF THE CRITICAL ITEMS
NEEDED TO WAGE THE WAR, AND THE CONTINUAL
DIALOG AND COOPERATION BETWEEN GOVERNMENT
AND INDUSTRY.**

**ONCE AGAIN, I EXPRESS MY GRATITUDE TO NDIA
FOR GIVING ME THE OPPORTUNITY TO SPEAK TO YOU
TODAY AND THANK YOU FOR YOUR ATTENTION.**