(Greet audience, Introduce briefers)

Today's briefing will introduce you to the Theater Missile defense strategy we are employing on the Korean Peninsula.

The overall classification of this briefing is SECRET RELROK

NEXT SLIDE
This briefing is built around a three-pillared TMD concept that begins with the foundation of C4.

We will then look at how we will detect and warn CFC forces of TBM launches, discuss how PATRIOT will actively defend against incoming missiles, expand upon Attack Operations taking a quick historical look and then presenting how we're applying the lessons learned to today's plan.

NEXT SLIDE
TMD MISSION

“PROTECT AGAINST THEATER MISSILE ATTACK THROUGH AN APPROPRIATE INTEGRATED AND COORDINATED MIX OF PASSIVE DEFENSE, ACTIVE DEFENSE, AND ATTACK OPERATIONS WITH SUPPORTING C4I”

Joint Publication 3-01.5

JP 3-01.5 states the mission of TMD is to protect against theater missile attack through an appropriate integrated and coordinated mix of Passive Defense, Active Defense and Attack Operations with supporting C4I.

The TMD strategy we will present to you today holds to this doctrine.

NEXT SLIDE
THE 3 PILLARS OF TMD ARE SUPPORTED BY A FOUNDATION OF COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS AND INTELLIGENCE (C4I)

A STRONG C4I ARCHITECTURE PROVIDES TMD CLEARLY DEFINED AREAS OF RESPONSIBILITY AND THE CONNECTIVITY (BOTH DATA AND VOICE) TO QUICKLY MOVE INFORMATION IN A COMBINED AND JOINT ENVIRONMENT.

C4I ARCHITECTURE WILL BE STRONGLY INFLUENCED BY DOCTRINE, TACTICS, PROCEDURES, AND THEATER ASSETS

NEXT SLIDE
THERE ARE MANY CONNECTIVITY PATHWAYS SUPPORTING THE TMD PILLARS, AND THE C4I REQUIREMENTS ARE DIFFERENT FOR EACH PILLAR.

PASSIVE DEFENSE MERGES INFORMATION FROM NATIONAL LEVEL SPACE BASED FEEDS (ALERT, TACDAR, JTAGS, SMWC) AND THEATER SENSORS (Linebacker, EMT, AWACS, JSTARS, PATRIOT). THE WARNING IS RECEIVED AND PASSED ALONG VIA A COMBINATION OF DEDICATED DATA, VOICE WARNING (DRSN, DSN, UHF SATCOM), AND DISTRIBUTED DATA SYSTEMS. C4Is PRIMARY CONTRIBUTION TO PASSIVE DEFENSE IS WARNING.

ACTIVE DEFENSE SYSTEMS NOT ONLY RECEIVE INFORMATION, THEY ADD TO IT WITH THEIR SENSORS VIA TADIL A/B/J

FINALLY, ATTACK OPERATIONS IS SUPPORTED WITH CTAPS, SCDL, TADIL A/J, AND UHF/VHF RADIOS

NEXT SLIDE

SCDL = Surveillance & Control Data Link
TADIL = Tactical Digital Information Link
TAC = Tri Service Tactical Communications
THE FIRST PILLAR OF THE TMD STRUCTURE IS PASSIVE DEFENSE.

PASSIVE DEFENSE INCLUDES ALL MEASURES TAKEN TO REDUCE VULNERABILITY, AND MINIMIZE THE EFFECTS OF A TBM ATTACK. THIS INCLUDES: THREAT DETECTION AND WARNING, FORCE PROTECTION, CAMOUFLAGE, CONCEALMENT, AND DECEPTION.

THE CORE OF PASSIVE DEFENSE IS GIVING WARNING TO THE THEATER QUICKLY ENOUGH TO GAIN BENEFIT FROM THE WARNING.

THIS IS ACCOMPLISHED THROUGH A COMBINATION OF DEDICATED DATA FEEDS, VOICE WARNING, AND DISTRIBUTED DATA FEEDS

NEXT SLIDE
(8) WARNING TIMES FOR THE KOREAN THEATER ARE EXTREMELY SHORT. A TBM LAUNCHED FROM THE SCUD BELT WILL IMPACT OSAN IN ONLY . IT TAKES BETWEEN TO DETECT THE TBM AND TO DISSEMINATE THE WARNING. THIS ONLY LEAVES TO TAKE ADVANTAGE OF THE WARNING.

SAVING SECONDS IS IMPORTANT

WARNING IS DISSEMINATED BY 3 METHODS: DEDICATED DATA, DISTRIBUTED DATA, AND VOICE WARNING

Exemption 1
DEDICATED DATA IS THE FASTEST METHOD OF WARNING
DEDICATED MISSILE WARNING DATA IS TRANSMITTED VIA
COMPUTER GENERATED TDDS/TIBS MESSAGES ORIGINATING
FROM THE TES ELEMENTS, OR IT IS INSERTED INTO THE CTP
BY A TADIL-J PLAYER.

THE THEATER EVENTS SYSTEM (TES) PROVIDES MISSILE
WARNING FROM THREE SATELLITE GROUND STATIONS: TWO IN
THE UNITED STATES AND JTAGS PAC AT OSAN

PRIVATE USE ONLY

THIS THEATER WILL INCORPORATE A TADIL J CAPABILITY FOR
THE TRANSMISSION OF DATA WARNING IN AUGUST 99.
DISTRIBUTED DATA WARNING IS ACCOMPLISHED BY INSERTING THE TIBS/TDDS DATA MESSAGES ONTO THE GCCS AND GCCS-K LANS. IT IS THEN AVAILABLE ON ANY COP SYSTEM. USERS RECEIVE A VOICE GENERATED ALERT AND MISSILE LAUNCH AND IMPACT ELLIPSES PLOTTED ON A MAP.

THE ADVANTAGE OF SUCH AS SYSTEM IS THE LARGE AUDIENCE IT CAN REACH.

THE DISADVANTAGES ARE UNPREDICTABLE LATENCY AND GENERAL COMPUTER NETWORK SUSCEPTIBILITIES.

MATT RADIO - TDDS RECEIVER
RADIANT MERCURY - MULTILEVEL SECURITY DEVICE
THE FUTURE OF VOICE WARNING IN THIS THEATER IS SATCOM. SATCOM VOICE WARNING IS CURRENTLY INITIATED BY JTAGS. ANY SATCOM RADIO IN THEATER CAN RECEIVE THIS VOICE WARNING ON THE CINC 1 NET.

THE THEATER IS FIELDING 27 DEDICATED UHF SATCOM RADIOS AT KEY LOCATIONS FOR VOICE MISSILE WARNING. SATCOM VOICE MISSILE WARNING WILL PROVIDE QUICKER DISSEMINATION AND MORE RELIABILITY THAN DSN.

New procedures to incorporate local sensor reporting is required. We propose that local sensors (EMT, AEGIS, TPS 59 etc) only report a launch is occurring, not projected impact times, locations and azimuths. JTAGS/TES will be designated reporting element for that information. This will avoid confusion on which launches have already been reported.
These warning zones are used in our theater. By dividing the country into warning zones we can warn specific zones and allow unaffected zones to resume normal operations quickly.

The larger launch and impact ellipses (red) are examples generated by national system data. The smaller ellipses are examples of local sensor data, such as from SPY-1 or EMT.

An expert missile tracker (or EMT) uses radars to detect a missile as soon as it comes over the horizon, reducing detection time from...

The correlated tracks from the two radars decrease the launch ellipse to...

Tracking the missile in its terminal phase reduces the impact ellipse to as narrow as...

More refined information lets us get more warfighters out of chemical gear and back to work.
PASSIVE DEFENSE PROVIDES US WITH DETECTION AND WARNING OF TBM LAUNCHES

ACTIVE DEFENSE IN THE KOREAN THEATER USES PATRIOT TO ENGAGE INCOMING MISSILES

NEXT SLIDE
In Korea, there are two different PATRIOT Command Relationships, Echelon Above Corps (EAC) and Corps. This diagram depicts EAC.

Currently under armisest, 1-43 ADA is the only PATRIOT BN on the peninsula. They are under the Command Responsibility of 6th CAV Bde and under the control of EUSA JTOC - essentially an ADA BDE with the TOC. The Commander, Air Component Command (CACC) is the Area Defense Commander (AADC), and as the AADC he exercises Positive and Procedural Control over EAC PATRIOT thru the EUSA JTOC. The CINC/CFO/UNC retains Positioning Authority over EAC PATRIOT. NEXT SLIDE.

Once C-Day is declared, the AADC appoints two Theater Air Defense Advisors (TADA), one for Air Breathing Threats (ABT) and one for TMD. TADA for ABT will be a ROK General Officer and acts as the Theater Air Defense Coordinator (TADCOORD). The TADA for TMD is a US Command Officer and acts as the Theater Missile Defense Coordinator (TMDCOORD). NEXT SLIDE.

During Contingency, personnel fro EAC PATRIOT BDE will arrive and fall in on the EUSA JTOC, essentially absorbing its personnel and equipment. This frees up some JTOC personnel and allow them to fall in on the Battleground Coordination Detachment (BCC). The EAC BDE will take over Command Responsibility from 6th CAV BDE and Control Responsibility from EUSA JTOC. NEXT SLIDE.

Also, the AAMDC Commander and a small contingent (10 personnel - 5 staff and 5 LNO) will arrive at the earliest time. The AAMDC Commander becomes triple hatted: Acts as TADA for TMD, TMDCOORD, and Commander of AAMDC. This contingency also assumes the role of principal Command and Control element for all EAC PATRIOTS. The LNOs will provide coordination with the ACC/TMD cell in the HTACC (Hardened Theater Air Control Center). Once the main body and equipment of the AAMDC arrive the AAMDC will fall under EUSA. NEXT SLIDE.

Any recommended theater repositioning, which affects EAC PATRIOT positioning, will be coordinated through a positioning board chaired by the TMDCOORD. This board consists of representatives from all components. A recommendation for re-positioning will be reached and presented to the CACC by the TMDCOORD. The CACC will validate the recommendation and forward it to the CINC for approval.

During armistice and contingency, CINC retains positioning authority and CACC retains Positive and Procedural Control.
The CORPS Brigade follows a distinctly different Chain of Command. The CORPS Commander establishes CORPS ADA TMD priorities and coordinates these with the CFC/USFK priorities. This coordination occurs between the CORPS ADA Element and the TMDCOORD.

The Corps PATRIOTS are there to protect Corps assets and are under the Command of the Corps ADA BDE Commander; however, they do fall under the Positive & Procedural control of the CACC as the AADC (with the exception of SOR/ESI states – Readiness/Emission).

The CORPS BDE receives its Positive & Procedural Control direction (determined by the AADC) directly from the MCRC via automated means (such as CTAPS & ADST) into the Brigade TOC.

Once coordination is complete, the CORPS ADA Brigade Commander will position the CORPS Batteries.

NEXT SLIDE

MCRC - Mission Control & Reporting Center
The challenge for active defense is matching limited resources to the threat.

There are currently [redacted] which have increased range and effectiveness over those used in Desert Storm.

Exemption 1
This lists the current priorities as identified by the CFC.

This list is not stagnant, but rather changes to reflect shifts in the CINC’s priorities.

NEXT SLIDE
This slide shows the TMD PATRIOT positioning priorities at C+2.

These priorities will continue to change as the situation develops.

NEXT SLIDE

SPOD = Sea Port of Debarkation
APOD = Aerial Port of Debarkation
PGM = Precision Guided Munitions

Exemption 1
Exemption 1
With leaks being an obvious concern, the Defense Threat Reduction Agency (DTRA) produced the following series of slides.

Their modeling shows how many leaks the North Koreans would have to get through our Patriot defense in order to have a reasonable probability of contaminating an airbase.

With these assumptions in mind, this particular slide addresses the Scud B.
This slide addresses the Scud C.
THE NEXT PILLAR IS ATTACK OPERATIONS--TAKING THE WAR TO THE ENEMY, THE FOCUS OF CFC'S TMD STRATEGY.

WE WILL DISCUSS ATTACK OPERATIONS IN TERMS OF HISTORY, INTELLIGENCE, AND APPLICATION OF EFFORT.

NEXT SLIDE
When developing our attack strategy, we first look at an historical perspective. Specifically the V1 and V2 campaign of World War II. With over 23,000 missiles launched at allied positions, it was the most intense missile battle ever fought.

A significant amount of allied resources were applied to the problem, but the campaign was mostly unsuccessful where the majority of effort was spent targeting individual launchers.

There were, however, two notable instances where allied bombing had a pronounced effect on German Theater Ballistic Missiles.

NEXT SLIDE
The Germans were using the caves at St. Leu as a forward operating base for the V-1. Allied heavy bomber raids completely destroyed this facility. For a ten day period following these raids, there was a significant drop in the V-1 launch rate as the nazis struggled to recover their losses.

NEXT SLIDE.
The second example took place in a wooded park just outside the Hague that was being used for V-2 operations. Fighter command executed a concentrated attack on the area, destroying a transload area. Once the ready rounds were used, V-2 Launches from The Hague were suspended for two days.

NEXT SLIDE
What we saw in Operation Crossbow and as recently as Desert Storm, that despite advances in our weapon systems, the launcher remains the most difficult target to hit.

Also, the launcher may not yield the highest payoff. *(may not be the most effective way to limit their operations)*

The infrastructure associated with missile reload and launch operations, however has a larger signature and a more significant impact on the missile system.

**NEXT SLIDE**
In order to identify these key pieces, we apply Intelligence Preparation of the Battlespace (IPB).

TMD IPB is a continuous, methodical process used to identify facts and assumptions about the battlespace environment and threat missile forces. It provides the basis for intelligence collection and the synchronization of the attack operations plan.
The first step is to identify the area of interest and then consider the effects of natural and man-made features.

Terrain is evaluated to focus our efforts on more likely operating areas. C2 nodes are identified and lines of communication are overlayed.

Although the MAZ 543 (the SCUD TEL) is a rugged 8-wheel drive vehicle, the support equipment is tied to an established road network.

NEXT SLIDE
Exemption 1
3. EVALUATE THE ADVERSARY:
OPERATIONAL TIMELINES

- Transload
  - Approximately 45 min/TEL
  - 3-5 vehicles (Crane, TELs, Missile Carriers, Command Vehicle)

- Launch
  - 30+ Minutes Pre-Surveyed Site
  - Depart within 2 minutes

- Transload sites are more lucrative targets

We look at what the enemy has, where is has it, and then how he will employ it.

Here are two steps in the missile lifecycle.

The transload area is one of the key pieces we are looking to attack. It may be vulnerable for a 2-4 hour period. And, as discussed earlier, has a more pronounced impact on later launches.

The launch, on the other hand, is a moment in time. Although vulnerable during setup, we do not know where to look until the launch occurs. At that point, it is too late to strike since the TEL will be gone from the area within 2 minutes.

NEXT SLIDE
4. DETERMINE COURSES OF ACTION: TBM STRATEGIC COAS

- Attack CFC Airpower Center of Gravity
- Attack CFC Reinforcement Center of Gravity
- Attack CFC Rear Area Military Assets
- Attack Population Centers
- Attack US Facilities in Japan

The final step is determining the enemy's courses of action, both on a strategic and tactical level.

We expect the North Koreans to target our fighter bases in order to disrupt prosecution of the ITO process,

Target our sea and aerial ports to stop the flow of reinforcements into the theater

And possibly attempt a redirection of our political effort if they choose to target civilian areas

NEXT SLIDE.
On a more operational level, the strategy and tactics they use will likely be an attempt to overcome our defended assets, take advantage of the environment, and minimize their visibility.
One option available is exclusive use of the UGFs. Missile preparation and loading will be conducted underground and out of sight. Employment could be as simple as the SCUD TEL driving out the adit to fire and immediately returning to the UGF. This option allows the NKs to make use of their hardened facilities for centralization and protection, but makes the targeting process easier for us since they remain at known locations.
Another option is for the technical support to leave the UGF with warheads, missiles, and all essential equipment. They meet the TEL at a transload site and complete the reload cycle. After reload, the TELs return to hide sites and wait for the next launch sequence.

This option leaves them considerably more vulnerable, but complicates our targeting solution greatly as we try to pinpoint their location.
Perhaps the most likely course of action is a combination of the two where the UGFs are used for initial operations and later resupply, flushing much out into the field.

They may pre-position equipment and missiles prior to hostilities, allowing them extended operations without having to return to the UGF.

NEXT SLIDE
Next we look to identify infrastructure and areas that may support missile operations.

We consider areas that may be used for hide sites or transloads and identify key points that may be vulnerable to countermobility operations.

NEXT SLIDE
Once these suspect areas are identified, collection assets are requested to provide information on enemy activity.

Imagery from various sources is critical to catching the enemy in the act.

Moving Target Indicator (MTI) is also a crucial piece of the puzzle and is used to track movement to and from operating areas.

Due to significant terrain masking, Combined Unconventional Task Force (CUWTF) teams are our most valuable asset to give eyes-on reporting of NK courses of action.

NEXT SLIDE
IPB is central to intelligence activity. Many sources are required to feed the process.

Collection requests leave the cell, and once satisfied, are rolled back into the process.

Finally a target recommendation is developed and sent through the Attack Operations cycle.

NEXT SLIDE
ATTACK OPERATIONS

"...the ability to delay, disrupt, and destroy the enemy's ability to conduct theater missile operations."

- JP 3-01.5

The joint pub covering theater missile defense (JP 3-01.5) defines the attack operations pillar as being (read the quote)

To accomplish this, the CFC strategy for Attack Operations is a three-phased plan

NEXT SLIDE
ATTACK OPERATIONS

- PHASE I: FIXED SITE ATTACK
- PHASE II: COUNTERMOBILITY
- PHASE III: SYSTEMATIC DESTRUCTION

The ultimate effect of these attacks will depend upon the state of the enemy's deployment to the field.

The next two phases do not necessarily happen in order. Countermobility operations will begin to disrupt and localize the enemy. From this chaos we expect to use our multiple collection assets to generate bonafide targets. These may be sudden pop-up targets or overnight denial chokepoints.

As the enemy's pattern of operation is learned so will the number of targets isolated increase.

NEXT SLIDE
Exemption 1
As mentioned previously, phases 2 and 3 will not necessarily occur in order. It is expected that counter-mobility operations will continue throughout the remainder of the campaign and that phase 3 destruction opportunities will begin at some slow pace and increase over time.

The intent is to learn the pattern of the enemy’s operations and therefore to predict where targets may be in the future. The goal is to focus collection efforts and then to harvest the results. In this process, we are also achieving our simultaneous goals of delaying and disrupting the enemy’s ability to launch coordinated volleys.

NEXT SLIDE
The Pre-I TO already has these specific counter-mobility targets included. If early intelligence shows the enemy to be operating elsewhere, we may have the opportunity to re-target these sorties.

The follow on counter-mobility campaign will be guided by the then current pattern of enemy operations.

NEXT SLIDE

Exemption 1
After the first three days of pre-planned operations, we now begin a different process. The TMD targeting process begins with target recommendations by the TMD intelligence cell to the Combined Targeting Board (CTB).

The CTB will assign a specific number of TMD XINT missions for TMD targets. This process has a 36 hour lead-time requirement.

The good news is that TMD XINT missions are, by design, flexible and re-targetable towards targets that may have emerged within this 36 hour cycle.

As Time Critical Targets (TCT’s) are identified, an asset reallocation process is initiated. The process is managed on the Execution Cell floor.

The first option for servicing the TCT is to re-target from TMD XINT missions. If no TMD XINT is available then a re-role from another mission area is an option.

The Director of Combat Operations (DCO) has the final say on every reallocation – a re-target, re-role, or quickfires with Army ATACMS.

NEXT SLIDE
CTB = Combined Targeting Board
The current ITO is a 37 hour process. We are going to a 40 hour process.
DCO = Director of Combat Operations
TMD XINT is slightly different than the standard XINT missions. The utilization of the kill boxes remains the same, however when they take off, they have been designated to target TMD related targets only.

If no TMD targets arise while airborne, then their back-up targets will be either fixed site locations or counter-mobility targets to further degrade enemy movements of TMD assets.

The bottomline for these TMD XINT missions is that they expect to have updates either before or after takeoff to strike evolving target opportunities (ie a transload activity) that could have a greater impact on the enemy's TMD operations.

NEXT SLIDE
Launch points, detected by any means, are not targets. The ability of a TEL to hide after a launch is far too rapid.

Instead of directing attack assets to a set of launch coordinates where the TEL was, we expect to systematically use the IPB process and available collection assets.

What we will do is first attempt to track the TEL with JSTARS (if available) as it leaves the launch location and moves to a hide site or Transload area. Further, the TEL’s past motion history may hold valuable clues as to the enemy’s pattern of operations.

Ultimately, any collection asset available should be used to cross-cue and further refine the available picture. Only upon this level of cross-cueing an application of IPB-driven decision-making can attack operations be directed.

The enemy’s ability to wage a TMD battle can be best affected by destruction of the TEL’s supporting infrastructure. Destruction of a TEL is certainly desirable... it’s difficult to pass up a ripe target. The point is, we are not searching for individual TELs to destroy. We are searching for the greatest warfighting impact and that is to destroy the TMD infrastructure.

NEXT SLIDE

JSTARS = Joint Surveillance Target Attack Radar System
This slide represents the simulation based, measured capability of an Attack Ops cell to operate and affect enemy operations ... given minimal training, no dedicated UAV and no countemobility campaign.

NEXT SLIDE

Exemption 1
With the addition of specific sensors, a dedicated countermobility campaign and focused TMD Intel Cell training, the effectiveness numbers change significantly.

NEXT SLIDE
This graph reveals the impact we feel attack operations will have on the nK total daily launch capabilities (historical look).

We will assume the enemy has 40 TELs which can launch twice a day.

The **Red** line indicates a baseline 90% mission capable rate based on attrition due to maintenance/operations failures and delays.

The **Blue** line (worst case) indicates 10% attrition which would come from time-critical targeting only.

The **Green** line (best case) indicates the impact Attack Ops will have assuming all the nK SCUD support assets are located in the FOBs.

The **Yellow** line is what we believe the impact of Attack Ops will be if the nK use the FOBs for 60% of their TBM assets and locate the other 40% in field locations we have not identified.

These are not actual predicted numbers. They are stated to make clear the relative differences between enemy courses of action. This leads to the next slide.

**NEXT SLIDE**
This slide intends to show that Attack Operations can have a significant impact on Active defense mission effectiveness. As mentioned under the active defense pillar, specific volley sizes and total missile numbers directly affect numbers of leakers and the resources remaining for active defense.

Attack Operations' ability to disrupt enemy launches and keep them from coordinating large volleys in small time windows will have a direct effect on the number of leakers. Any impact from attack operations on delaying sequential launches has the direct effect of extending the available inventory of active defense assets.

The following assumptions were made in this example:

With the earliest PATRIOT missile resupply being as shown, the need for effectively conserving this resource becomes obvious.

The inventory numbers in this example are tied to the previous effectiveness slide and its expectations of enemy behavior and attack operations effectiveness.

NEXT SLIDE

AMCON = Army Material Command  ASW=
Attack Operations have evolved over time. Based on a thoughtful analysis of the enemy's strengths and vulnerabilities, we expect to be a legitimate threat to his TMD operations.

Further, the fruits of delaying and disrupting his pattern of operation serves not only attack ops directly, but active defense just as well.

THE GOAL IS TO MINIMIZE THE ENEMY'S CAPABILITY TO INFLUENCE THE OUTCOME OF ANY CONFLICT IN KOREA.
This concludes the briefing. Are there any questions?