



HQDA PB 44-95-5

SEPTEMBER-OCTOBER 1995



WINNING THE INFORMATION WAR



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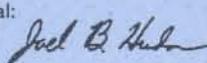
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Intercept Point



Little did I know some 26 years ago when I read my first *Air Defense* magazine (I think it was then *Air Defense Trends*) that I would one day be a "featured columnist" as the chief of Air Defense Artillery. At the outset, let me state that it is certainly an honor for me to take over from Maj. Gen. Jim Cravens, who did a magnificent job leading our branch through some challenging times. He has left some big shoes to fill; however, I know I have a wonderfully talented and capable force of officers, noncommissioned officers, soldiers and civilians who will continue to assist me in leading the branch into the next century.

As your new branch chief, I have had unique opportunities to serve within our branch and to observe it from the "outside." I remain convinced that we, in air defense, have a top quality force that mans the best equipment in the world. Dedicated soldiers and supportive families underpin our success. Your record of achievement speaks for itself and it is a privilege to serve as your chief.

Over the next few years, I will use the pages of this magazine to express my funda-

mental views on soldiering and where we, the branch, are headed. So don't just look at the pictures and throw your issues in File 13. Read and think. I want to encourage an open dialogue in the pages of this great publication. Let's discuss issues, problems and good ideas so we collectively can benefit from each other's experiences.

I am a simple soldier. Throughout my tenure, you will find me emphasizing some recurrent themes. One is stated in my command philosophy (A to B). More on that at a later time (for those of you who have served with me, it has not changed). Basics and standards are very important to me, because without them, all our high-tech weapons are for naught. The other theme is the importance of a trained and disciplined force. No branch or Army will be successful on any battlefield if it lacks training and discipline. As we move into Force XXI, these factors will become even more critical.

This issue of *ADA* magazine focuses on command and control improvements that will allow a trained and disciplined force to be even more capable than it is today. This digital information technology that allows the Army to pass essential information to all levels is the linchpin to Force XXI and Air Defense Artillery is a leader in this field. I strongly recommend you read this publication of *ADA* magazine to give you an understanding of where we are going as a branch.

In closing, I again want to tell you what a privilege it is to be the new Air Defense Artillery branch chief. I am looking forward to working for you and the branch in the future.

Maj. Gen. John Costello
Chief, Air Defense Artillery

Digital links between the air defense radar operators and the task force Stingers allowed TF 1-70 to triple the number of "enemy" aircraft killed. Regular units lose an average of 28 weapon systems to enemy aircraft per NTC rotation; TF 1-70 lost 1.7.

— Soldiers, April 1995

Digitization will allow us to pass near-real-time command, control and intelligence information from theater, corps and division assets to brigades, battalions, companies, aircraft and individual fighting vehicles, and will reduce battlefield transmissions to short bursts of data to frustrate enemy direction-finding and intercept equipment. Improved situational awareness and the capability to issue rapid command will allow commanders to operate inside the enemy's decision cycle and disrupt his operations throughout the width and depth of the battlefield. We will outthink, outshoot and outmaneuver them.

— Lt. Gen. Paul E. Blackwell,
Deputy Chief of Staff for
Operations and Plans

ADA's Role in Winning the Information War

by Lt. Col. Frank J. Caravella, Director, ADA Battle Lab

Desert Storm and recent operations irrefutably demonstrated that the nature of military operations has changed dramatically through use of information technology. This revolutionizing aspect of warfare will change forever how modern military organizations will conduct and fight wars. The key to this revolution in warfare is battlespace control — the key to battlespace control is information.

The Changing Military Environment

Today's weapons technology requires an even greater dispersion of forces to the point where contiguous battle lines are vulnerable to massed fires and high tempo maneuvers. In this era of "distributed operations," widely scattered forces are increasingly reliant on remote command and control (C²) systems, mainly space-based, to maneuver and to locate and attack targets. This reliance also presents a critical vulnerability. An information advantage permits planning further into the future with greater certainty, maneuvering without being detected, and striking without being struck.

An information advantage can be acquired by attacking an adversary's decision makers, processors, communications and sensors while concurrently enhancing and protecting friendly C² assets. Successful disruption of an adversary's C² system provides the attacking force with an overwhelming edge in initiative, agility, depth, synchronization and versatility. Such attacks achieve decisive victory with minimal friendly casualties.

The following excerpt from the November 1993 issue of *Army* magazine illustrates the power in controlling information on the next battlefield.

The task force began to converge in width and depth with its trail vehicles speeding up as it came on line to deliver fires. Movement was coordinated instantaneously between vehicles through automatic exchange of digital information and progress controlled using the integrated position/navigation (POSNAV) capabilities of each vehicle.

Battlespace situation information exchange was automatic — C²V knew precisely where everything was and where it was supposed to be — and the weapons platforms also knew — there was no guessing or mistaken identity.

The defender was alert, well armed and ready. New training technologies, long-range, precision antitank (AT) weapons and specially armored tanks had given him confidence.

Friendly artillery was being fired with pinpoint accuracy from the recently acquired advanced field artillery system guns, with each enemy position taking a "burst" of four of the advanced projectiles in a time-on-target. Overhead circled two of the smaller UAVs, providing real-time targeting, adjustment of fire, and battle damage assessment. These miniature aircraft were loaded with weight-reduced, imaging infrared, millimeter wave

and optical correlators designed to exchange information with the other members of the combined arms team. One of the UAVs was "tethered" by a fiberoptic cable to one of the C²Vs providing a jam-proof view of the battlefield.

The defender was no match for the violent assaulting force. What he saw must have seemed like pure magic: not a battle, but an almost instantaneous blanket of destruction directed with pinpoint accuracy across his entire force. His dug-in tanks and AT weapons were taken out with one-shot, one-kill precision strikes by the tanks and APCs in a wave of firing lasting from 10 to 15 seconds, which completely destroyed his direct-fire defense.

His reaction force held in defilade was simultaneously destroyed as the UAV combination acquired and struck. The obstacle belts placed to hold an attacker in place were hardly slowing the task force as it converged fluidly toward a breach lane opened by two of the engineer assault vehicles using liquid explosion insertion techniques.

It was over in a few minutes as the infantry dismounted, rounded up stunned groups of prisoners, and in total darkness with virtually no sound swept through buildings, hangars and into the underground facilities — each man equipped with a soldier integrated protection ensemble, which provided him

with communications, position location, thermal imagery target acquisition, and identification, friend or foe (IFF) necessary to safely conduct dismounted assault and clearing operations at night. His advanced clothing and microclimate subsystems provided modular load-bearing support and ballistic protection—technology overmatch again.

Army Information Operations

The objective of the Army's information operations is to enable, enhance and protect the friendly decision cycle while influencing an opponent's throughout the full range of military operations and at all levels of command. The initial strategic focus is on achieving national and alliance objectives through deterrence prior to the eruption of hostilities. At the operational level, the commander formulates his information operations plan with the same care as he does the traditional ground, air and sea operations plans to restrict the size of the adversary's battlespace while creating the largest battlespace possible for his own forces. At the tactical level, the commander accomplishes the mission through simultaneous operations designed to disrupt or destroy enemy C² systems that degrade the enemy's effectiveness.

All potential adversaries will possess improved information technology that will better enable enemy commanders to engage our forces quickly and decisively. Enemy reconnaissance, intelligence, surveillance and target acquisition (RISTA) means will improve as well.

Regional RISTA Trends

As in past wars, human intelligence will again play a vital role in the outcome of the next conflict. However, the Gulf War clearly illustrated another valuable information device—the reconnaissance unmanned aerodynamic vehicle (UAV). Recon UAVs provide an effective alternative to manned assets

in gathering sensitive information, accomplishing specific missions or providing mission support in high threat areas where pilot risk is unacceptable. The primary UAV threat is RISTA; secondary UAV threats are attack class followed by deception platforms. This trend will remain true for the foreseeable future.

UAVs are highly survivable on the modern battlefield and can be configured to perform a variety of missions. Their low cost

and reduced operational requirements make them a very attractive option for many armed forces. It can be expected that UAVs will be the poor man's air force of the 21st century.

ADA Contributions to Information Operations

If the U.S. Army goal on the "next" battlefield is land force dominance with minimum casualties, then protecting the force and winning the information war is crucial to success. During all phases—early entry to decisive operations—Army air defense forces must counter a variety of aerial threats such as UAVs, ballistic and cruise missiles, and rotary- and fixed-wing aircraft.

Of grave concern is the synergy between the enemy RISTA UAV and other aerial attack means that provide potential adversaries with a deep attack capability that could carry weapons of mass destruction. It is imperative that friendly forces break the synergistic link between the enemy UAV and its commander to not only help win the information war, but to provide a large payoff in protecting the force during all phases of an operation.

During early entry and lodgement operations, the joint commander must build up combat power and protect the force. Conducting a counter-UAV RISTA mission, ADA orients a large portion of forces toward accomplishing this task.

High-altitude air defense units concurrently protect the force from enemy long-range attack means such as ballistic and cruise missiles.

The decisive operations phase requires ADA to focus its ef-

forts on force and asset protection; however, the counter-RISTA mission remains and may be paramount in some areas of the battlefield to successfully execute the joint commander's plan.

ADA also enhances the friendly commander's decision cycle by providing third dimension situational awareness to all echelons through a combination of sensors and digital communications. Joint sensors alone will not provide the real-time third dimension information necessary for situational awareness and sensor-to-shooter synergy. ADA currently has the programs in place that provide critical awareness and sensor-to-shooter synergy against all third-dimension threats.

The Army has decided that **winning the information war protects the force, and countering the RISTA UAV** is paramount to accomplishing both battlefield imperatives.

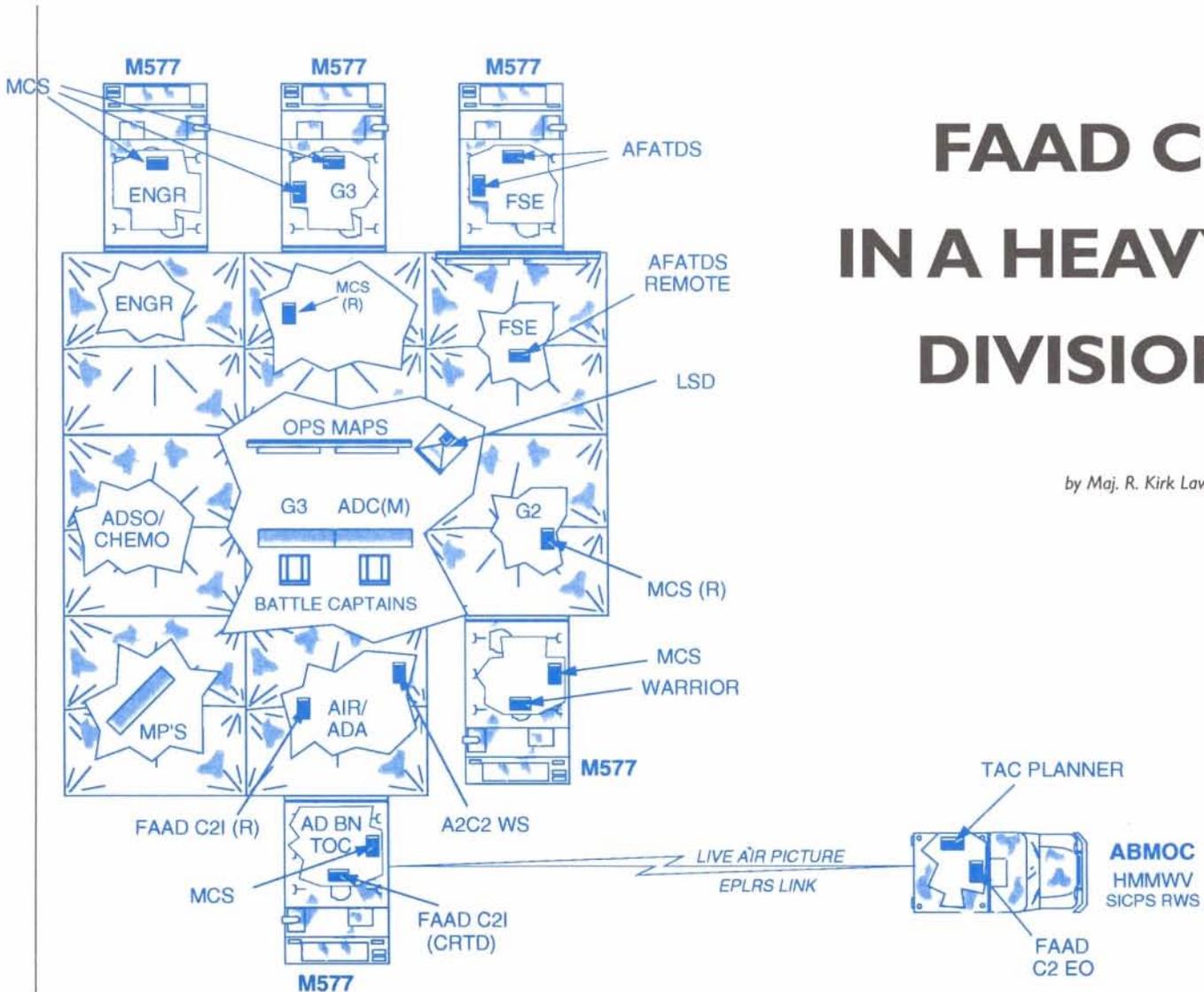
In accomplishing these imperatives, the *First to Fire* branch stands ready to play its unique role in supporting information operations, enabling the force to win quickly and decisively with minimum casualties.

*Protecting the force has
taken on critical importance
in Army doctrine.
Information operations are
central to protecting the
force.*

— *Information Operations Concept,
February 1994*

FAAD C³I IN A HEAVY DIVISION

by Maj. R. Kirk Lawrence



In agreement with the project manager-air defense command and control systems, 4th Battalion, 5th Air Defense Artillery, 1st Cavalry Division, has been exploring doctrinal applications and developing tactics, techniques and procedures involving forward area air defense command, control, communications and intelligence (FAAD C³I) since April 1994. Limited by availability of equipment, namely the ground-based sensor and simplified handheld terminal units, our mission was to best determine how to enhance ADA operations horizontally between division command posts and brigade command posts instead of focusing on "sensor-to-shooter" capabilities. Initially equipped with an Army airspace command and control station and an air battle management operations center (ABMOC), the battalion focused its efforts on enhancing air defense com-

mand and control and early warning to the 1st Cavalry Division as a whole. Our first two command post exercises centered around FAAD C³I in the division main command post (DMAIN). Continually refining our focus, we recognized the potential to expand our capabilities to the division tactical command post (DTAC) (shown above), division rear command post (DREAR) and, ultimately, the maneuver brigade command posts. Due to 1st Cav's aggressive use of a tactical local area network for reporting and message trafficking, and our redundant system of passing early warning over both the AM early warning net and the FM command nets, we determined that force-operations terminals used primarily to interconnect into the Army tactical command and control system (ATCCS) network were not essential to our operations. Additionally,

since ATCCS and FAAD C³I operate off common user hardware, the project manager helped us convert these force-operations terminals into engagement-operations workstations and expand our capabilities to reach out to brigade level.

These developments caused us to examine doctrinal implications of ADA command and control in a heavy division. With the ability to bring a real-time early warning/intelligence source into the division command post architecture, we saw a need to modify our internal battalion operations. As a result, we eventually developed a split-base operations concept. To maximize the battalion commander's ability to monitor and influence the close fight, while using the minimum amount of manpower, we consolidated our battalion tactical operations center (TOC) into the ADA cell in the DTAC — replacing the previous liaison team of one first lieutenant, two NCOs and a specialist with a more robust five-man-per-shift cell from the S-3 and S-2 shops. This includes the S-3 and the S-2. The ABMOC collocates in the vicinity of the DTAC under the supervision of the S-3 and the early warning platoon leader. All FAAD C³I data is distributed between command posts via the enhanced position location reporting system (EPLRS). All operational reports from the batteries flow into the TOC via the tactical local area network (using 486 laptop computers) and FM radio, ensuring real-time information into the DTAC, DMAIN and DREAR. As a result, the information comes

directly into the division command posts responsible for the close, deep and rear area fights.

Division Tactical Command Post

By collocating the S-3 in the DTAC with the division G-3 and the assistant division commander for maneuver, the battalion commander ensures that his most senior tactician (a major) is involved with the close battle rather than a junior officer who normally acts only as a liaison. The S-2 works directly with the division deputy G-2 to provide real-time intelligence enemy air analysis based on information received from the ABMOC (track histories, possible enemy air bases, targeting information, etc.). Both officers provide intelligence and operations summaries to the ADA batteries and other divisional command posts from the DTAC, where they have access to the most recent battle information through FAAD C³I and G-3 operations.

Division Main Command Post

Future and deep operations and Army airspace command and control functions are performed at the DMAIN (shown on the following page) by the assistant division air defense officer (ADADO), a major. He serves as the ADA planner on the general staff and coordinates future operations and task organization issues with the S-3, who is tied in with close fight and current unit status at the DTAC.

FAAD C³I ROAD TO SUCCESS . . .

Operation Electric Horseman (February 1994)

- First use in division-level tactical command post exercise (CBS air picture).
- One EO terminal provided picture to DMAIN (replicated Army airspace command and control operations).
- Projected onto large screen TV for viewing by command group.

Roving Sands '94 (May 1994)

- First use in division/corps level operational exercise.
- First use of live HIMAD/AWACS feed to DMAIN via TADIL-B link.
- First use of prototype tactical mission planner (commander's real-time tactical display).

Operation Phantom Sabre (August 1994)

- First use of EPLRS to distribute air picture.
- CBS simulated air picture sent more than 250 kilometers from Fort Hood SimCenter to DMAIN in San Angelo, Texas.
- Four tactical moves of command post back to Fort Hood — and never lost the air picture.
- Developed split-based operations concept.

Operation Horse Soldier/Operation First Team Strike (October 1994)

- First use of split-based operations.
- First fully integrated air picture sent to DMAIN, DREAR and DTAC during live deep operations involving AH-64s and F-111s. Low-altitude early warning out to 50 kilometers via ground-based sensor (EPLRS). High-altitude long-range early warning out to 150 kilometers by Patriot via TADIL-B link.
- Air picture sent via local area network to commander's real-time tactical display. Operational graphics and air tracks displayed over digitized 1:250,000 map.
- Air picture down to battery command posts collocated with maneuver brigades.

... PAVED WITH ARMY AND ADA "FIRSTS"

1st Cavalry Division Semiannual Train Brief to III Corps Commanding General (January 1995)

- Division commander Maj. Gen. Eric K. Shinseki states, "Of all the ATTCS systems being fielded and tested in the 1st Cav, FAAD C³I is the most successful and has the most potential — it was invaluable during First Team Strike."

Operation Pegasus Fury (BCTP Ramp-up, February 1995)

- Further refinement of tactics, techniques and procedures involving early warning down to platoon.
- Further refinement of split-based operations and reporting procedures.
- Second battalion tactical standing operating procedures revision.

Operation Agile Warrior (BCTP April 1995)

- Formal evaluation of battalion operations within a division command post exercise.
- Validation of split-based operations ("best air defense operation we've ever seen") BCTP observer-controllers for the DTAC.
- Validation of FAAD C³I contribution to combat operations command and control.
- Validation of FAAD C³I as a targeting enhancer/multiplier. During the first day of the BCTP evaluation, ABMOC operators identified a possible enemy air base from track histories on the EO workstation. White cell observer-controllers would not allow the division fire support element to shoot the target with ATACMS because we would potentially destroy OPFOR's fixed-wing capabilities before they ever had the opportunity to employ them.

Division Rear Command Post

D Battery (Avenger) collocates their command post within the DREAR complex and provides command and control and early warning for all ADA general support assets and the division rear area. The D Battery commander, equipped with an EO workstation, receives real-time early warning via FAAD C³I and provides liaison to the assistant division commander for support.

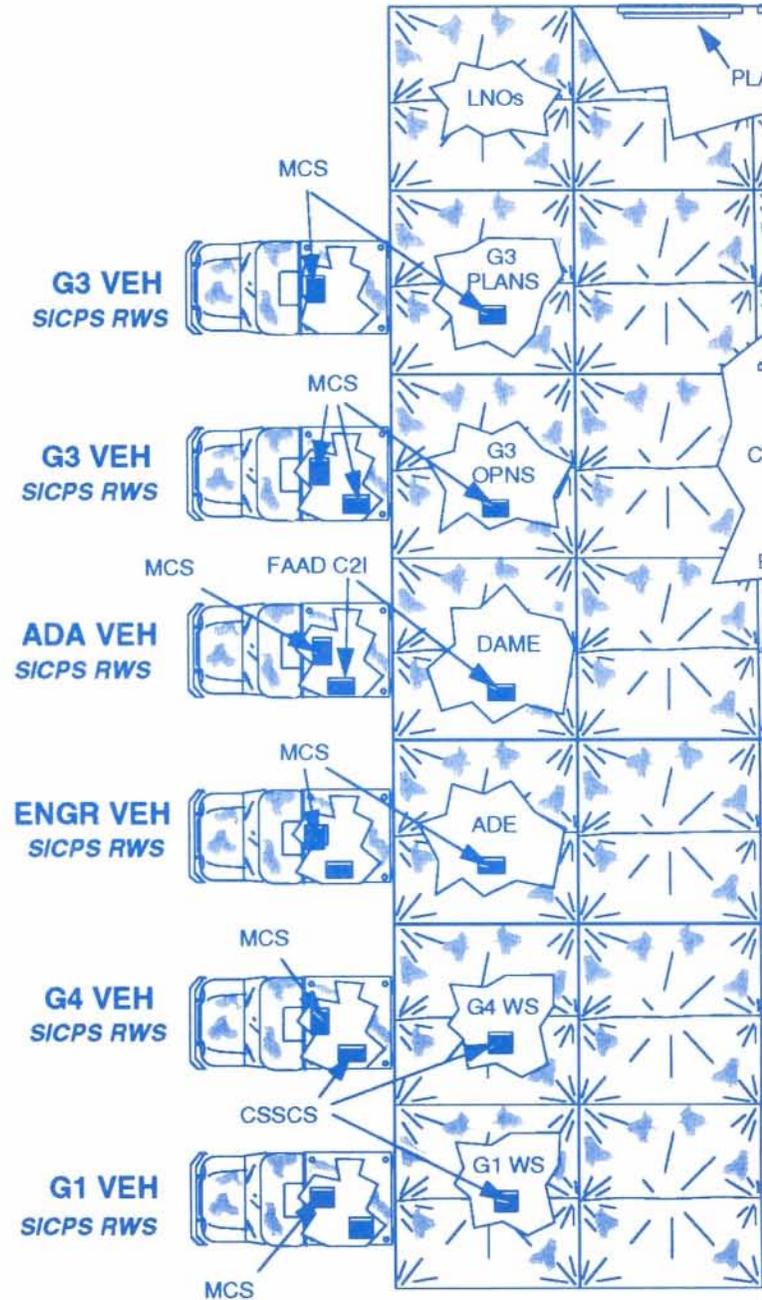
Maneuver Brigade Tactical Operations Centers

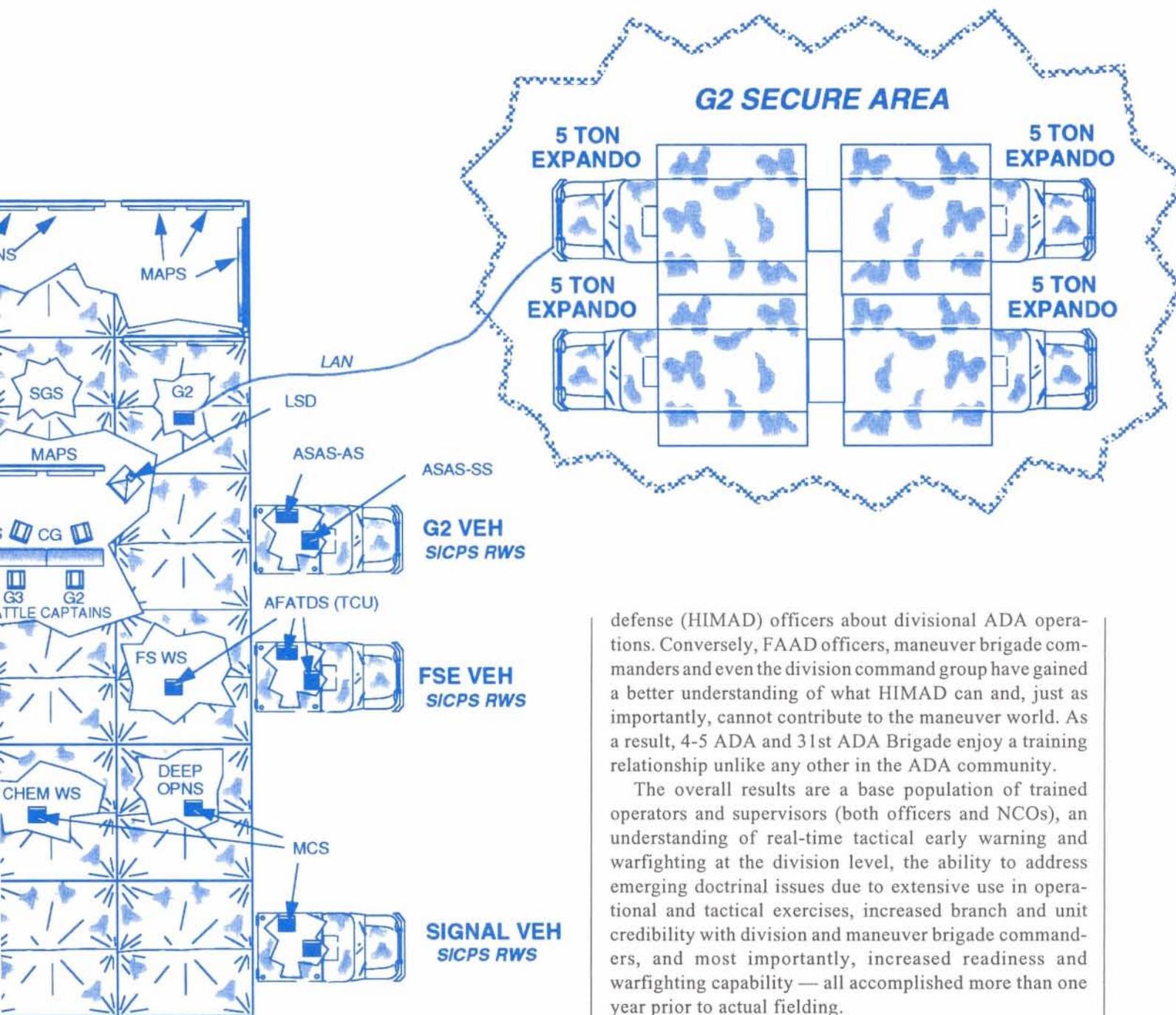
A, B and C Batteries (BSFV/Stinger) are each equipped with an EO workstation and collocate with the maneuver brigade TOCs. Battery command posts are actually part of the maneuver brigade TOC (along with the Aviation and Air Force liaison officers). This allows the battery com-

mander to provide early warning and Army airspace command and control to the brigade.

ADA Battalion Administration/Logistics Center

Under the supervision of the battalion executive officer, S-1, S-4 and maintenance operations occur in the ALOC,





which is usually collocated with Headquarters and Headquarters Battery in the vicinity of the DMAIN.

Our location at Fort Hood, Texas, allows us to take advantage of training opportunities with the 31st ADA Brigade, exercising downlinks from Patriot and airborne warning and control systems during both joint and tactical operations. These opportunities give us valuable experience when refining our tactics, techniques and procedures, and simultaneously educate high- to medium-altitude air

defense (HIMAD) officers about divisional ADA operations. Conversely, FAAD officers, maneuver brigade commanders and even the division command group have gained a better understanding of what HIMAD can and, just as importantly, cannot contribute to the maneuver world. As a result, 4-5 ADA and 31st ADA Brigade enjoy a training relationship unlike any other in the ADA community.

The overall results are a base population of trained operators and supervisors (both officers and NCOs), an understanding of real-time tactical early warning and warfighting at the division level, the ability to address emerging doctrinal issues due to extensive use in operational and tactical exercises, increased branch and unit credibility with division and maneuver brigade commanders, and most importantly, increased readiness and warfighting capability — all accomplished more than one year prior to actual fielding.

Maj. R. Kirk Lawrence, previously the battalion S-3, is now the executive officer of 4th Battalion, 5th Air Defense Artillery, 1st Cavalry Division, Fort Hood, Texas.



ENHANCING FORCE PROTECTION IN THE AIR ASSAULT DIVISION

by Maj.(P) Jerry P. Thomason

In September 1993, the 2nd Battalion, 44th Air Defense Artillery, became the first Army unit equipped with the forward area air defense command, control, communications and intelligence (FAAD C³I) system. Since that time, soldiers of the "Strike Fear" battalion have spent two years experimenting with and refining FAAD C³I tactics, techniques and procedures. They have demonstrated the system's dramatic effectiveness as a combat multiplier in a variety of combat scenarios. Although the FAAD C³I system's potential has only been partially tapped, one thing is already abundantly clear: thanks to FAAD C³I, Force XXI can rely on Air Defense Artillery to help the Army of the 21st century win the information war.

The 101st Airborne Division (Air Assault) is a unique unit that provides the XVIII Airborne Corps and the warfighting commanders in chief one of the key force projection capabilities available in our national arsenal: an operational ground force capable of attacking directly into the enemy's vulnerable rear area. It fights according to the proven tenets of Army

operations. Its organization and tactics significantly differ from its armored and light infantry counterparts. The unique organization and tactics employed by the division present 2-44 ADA with a significant force-protection challenge. To understand this challenge we must first examine the division's organization.

The 101st Airborne Division (Air Assault) uses helicopters to provide enhanced combat power and tactical mobility to infantry, artillery, combat support and combat service support units. The enhanced combat power is provided by three AH-64-equipped attack helicopter battalions and one air cavalry squadron. Three assault helicopter battalions and one medium assault battalion provide combat lift aircraft for troops and equipment. Three assault infantry brigades, each consisting of a headquarters and headquarters company and three assault infantry battalions, serve as the division's close-combat units with the mission to close with and destroy the enemy and to seize and hold terrain.

The division artillery consists of a headquarters and headquarters battery and three towed-howitzer battalions with organic countermortar radars. Division artillery provides fire support to the division's maneuver elements.

The division support command provides combat service support to the division with its five assigned units: the headquarters and headquarters company (which includes the material management center, movement control center and medical operations center); three forward-support battalions to provide medical, supply and maintenance support to the maneuver brigades; one main support battalion that provides the above services and truck transportation support throughout the division; and the only aviation intermediate maintenance battalion assigned to a division to repair the division's aircraft. When committed, a corps support group is normally allocated to the division to provide additional combat service support capabilities for sustained operations. An ADA battalion, engineer battalion, signal battalion, military intelligence battalion, chemical company and a military police company round out the division's organization.

The air assault division is the largest, most powerful "light" division in today's Army. In truth, the 101st bears no more resemblance to the standard light division than it does to a mechanized or an armored division. Its rate of march, sustained operational speed, method of deployment, ability to conduct forced entry operations and rapid exploitation without significant augmentation make it a force unequaled on the modern battlefield.

The division is capable of air assaulting a brigade task force 150 kilometers every 24 hours while attack aviation battalions simultaneously conduct deep strikes into the enemy's rear areas to protect the operation. This nonlinear area of operations, often exceeding 400 kilometers in depth and 100 kilometers in width, is difficult to support and protect. It is this combination of unique organization, method of deployment and nonlinear area of operations that presents the "Strike Fear" battalion its force-protection challenge.

Until Sept. 30, 1993, 2-44 ADA soldiers had to meet this challenge with only "guys with binoculars" to provide early warning. That all changed as the "Strike Fear" battalion became the Army's first unit equipped with the FAAD C³I system.

As the name implies, FAAD C³I provides more than early warning to the battalion's 93 shooting systems. It also assists the commander in the areas of command, control, communications, intelligence and air battle management. FAAD weapon systems in the 101st Airborne Division are the Avenger and Stinger. These systems are integrated by the FAAD C³I suite of subsystems. FAAD C³I integrates data from a multitude of organic and external sensor platforms to provide responsive, near-real-time track-location data and cueing to air defense weapon systems. The C³I architecture also completes the

three-dimensional battlefield picture, providing real-time data above the battlefield.

Over the last 20 months, 2-44 ADA soldiers have used the FAAD C³I system to enhance force protection in the division. They have accomplished this through hard work, initiative, innovation and "trial and error." They have developed and refined tactics, techniques and procedures during numerous joint, field and command post exercises, combat training center rotations and a division battle command training program. So, what does a FAAD C³I-equipped 2-44 ADA bring to the battlefield? The ability to locate the enemy.

The first step in killing the enemy with any weapon system is locating him. The "Strike Fear" battalion accomplishes this with the FAAD C³I system. This is done in two ways: by identifying active enemy airfields and air avenues of approach, and by verifying intelligence already obtained from other sources.

During the division's battle command training program warfighter exercise, the battalion S-2 and S-3 analyzed the FAAD C³I track data daily. The daily track analysis enabled the battalion to identify an enemy airfield not previously targeted by the division. At the battalion commander's insistence, the airfield was placed on the division's high payoff target list. The target was hit with tactical missiles, destroying numerous fixed-wing aircraft and a large amount of fuel. The S-2 also successfully identified an enemy forward arming and refueling point through track analysis. The analysis of the track data indicated that numerous helicopters landed at a specific location over a two-day period. Again this information was passed to division, and the 2-17th Cavalry went out to take a look. The result was 22 enemy helicopters destroyed on the ground. This was significant not only because of the destruction of enemy helicopters, but also because the forward arming and refueling point was destroyed. We took the enemy's legs away and forced him to use other assets to attack the division. These are only two examples of how 2-44 ADA was able to identify enemy locations using the FAAD C³I system.

The system is also used to verify and update intelligence. The battalion S-2 assists the division G-2 with the air intelligence preparation of the battlefield (air IPB). Once an operation is underway, the battalion uses the FAAD C³I system to validate, update or change the initial air IPB. During the most recent Joint Readiness Training Center (JRTC) rotation, the A Battery commander was able to verify the location of enemy supply bases by monitoring their aircraft with the light and special division interim sensor (LSDIS). Verifying air routes, active airfields and supply bases leads us to the second step in killing enemy aircraft — setting the conditions.

Once we have identified where the enemy aircraft are and what air routes they are flying, we can set the conditions to kill them. Setting the conditions may range from defense design

to sending out ADA ambushes. The FAAD C³I system has proven an invaluable tool to the battalion in the area of condition setting. We use the tactical planner in conjunction with the joint tactical information distribution system (JTIDS) and LSDIS air picture to assist us in defense design, LSDIS coverage design and terrain management.

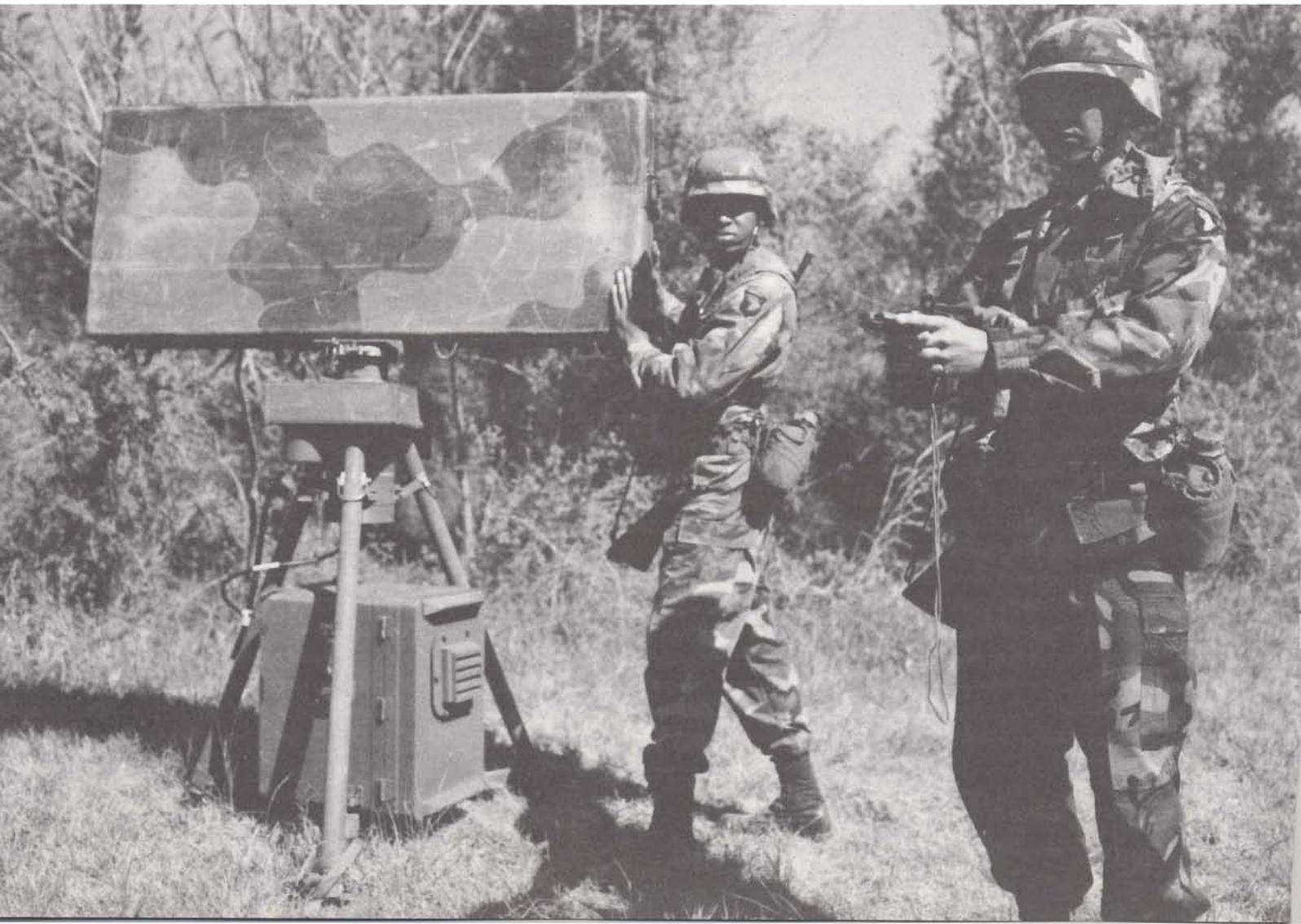
Again, through track analysis, the battalion commander and operations officer assist battery commanders in designing their defense of a specific asset and ensure that the overall air defense coverage is tied in and provides force protection to the division as a whole. Because enemy air avenues of approach have been identified and verified by the FAAD C³I system, we are able to weight the air defense coverage and provide defense in depth with far more confidence. This enhances our ability to defend assets with the minimum number of weapons systems required, thus ensuring economy of force and allowing air defense coverage for more of the division's critical assets.

Another way to accomplish economy of force and receive a high payoff is through the ADA ambush. The FAAD C³I system can help planners determine the best location for an ambush to go in. During one exercise, the S-2 noted enemy

aircraft from several different airfields converging on a specific point and then turning south to attack into the division's forward operating base. The division G-2 confirmed that there was a navigation beacon located in the vicinity of the turning point. The battalion staff planned to insert an ADA ambush and division was prepared to provide the assets necessary, but the mission did not go because of other operational requirements.

The battalion uses the tactical planner to assist in defense design. The operations officer plans Avenger and Stinger coverage by inputting system parameters and fire unit locations into the tactical planner. By moving the fire unit locations, the battalion can pass the battery commander possible grid locations that would improve coverage. This feature also helps identify the best location for the LSDIS radars.

Having located the enemy and set the conditions, it is now time to kill him. The FAAD C³I system also enhances the Strike Fear soldiers' ability to kill the enemy. Primarily, the FAAD C³I system provides the unit with vastly improved early warning. With the airborne warning and control system (AWACS), the battalion can receive early warning at distances out to 400 kilometers, and the LSDIS provides early



warning out to 20 kilometers. The increased and more reliable early warning provided by the FAAD C³I system also alerts and cues the Avenger and Stinger gunners. The number of aircraft kills during field training exercises and combat training center rotations has increased significantly since the fielding of the system. The crews are ready for the attacking aircraft and are not in a react mode.

The battalion also developed a concept that we call the "light LSDIS." Under this concept, the LSDIS radar is separated from the sensor vehicle. The crew goes in with the radar, a simplified handheld terminal unit (SHTU) and a support vehicle. The crew can then pass voice early warning to fire units in the forward area of operations. This technique allows the battery to get early warning forward and requires only one UH-60 to insert the team. The light LSDIS concept has proven especially well-suited for the JRTC. When fielded with the enhanced computer interface unit later this fiscal year, voice tracks will be replaced with digital information sent directly from the LSDIS radar to fire unit SHTUs.

The increased early warning capabilities provided by the FAAD C³I system also contribute to force protection by allowing the battalion to call local air defense warnings in the threatened area, and with the system's time to closest approach feature, they can even tell the maneuver force how soon (in minutes) the aircraft will reach the protected asset. This feature allows the force within the threatened area to take appropriate protective measures and has improved the survivability of forces at the JRTC.

The large numbers of helicopters operating within the division area of operations make Army airspace command and control (A²C²) measures vitally important in controlling aircraft and preventing fratricide. The FAAD C³I system assists the division in A²C² by electronically transmitting and displaying procedural A²C² measures. This function allows the battalion to tentatively identify aircraft as suspect hostiles, thus increasing the alerting of Avenger and Stinger crews. During the division battle command training program warfighting exercise and again during the aviation brigade's Destiny Warrior field training exercise, the FAAD C³I system was an invaluable tool, allowing the division to monitor both deep attacks and brigade air assaults.

During Destiny Warrior II, D Battery sent a LSDIS radar forward with the air defense package to protect the aviation brigade's forward area refueling and rearming point. The radar was used not only to provide early warning for the Avengers protecting the point, but also to help control the flow of helicopters into the congested airspace.

"Strike Fear" soldiers have been forced to be innovative in developing tactics, techniques and procedures for the FAAD C³I system. Early on, the battalion discovered the need for three JTIDS terminals in the division. This need is based on two critical factors. First, the nonlinear battlefield requires the battalion to fight two, and sometimes three, distinct air battles.

This makes the AWACS downlink critical to ensure early warning is available across the entire battlefield. The second reason the division needs three JTIDS terminals is because the system was fielded with the single channel ground and airborne radio system (SINCGARS) rather than the enhanced position location reporting system radios to pass digital information across the FAAD C³I system. SINCGARS range limitations preclude the air picture from being passed across the battlefield without the additional terminal.

Three JTIDS allow the battalion to provide an air picture to the critical point on the battlefield. Habitually, one JTIDS terminal is located in the battalion air defense tactical operations center, one in the air defense coordination van at the division main command post, and the third in the jump sensor at the assault command post. This provides the division commander at the main command post an air picture and assists the assistant division air defense officer in battle tracking and air defense planning. The assistant division commander for operations, located at the assault command post, uses his terminal to track the close battle and provide early warning to the forward brigade task force. The battalion commander and the operations officer, located at the air defense tactical operations center, use their terminal to provide early warning, conduct analysis, provide command and control, and plan future air defense designs. Depending on mission, enemy, terrain, troops, time available and available aircraft, a JTIDS terminal may be pulled from one of the above locations and air assaulted forward in a jump sensor configuration to support a forward-deployed brigade task force. This was the plan during Vigilant Warrior (Persian Gulf contingency). A jump sensor with a JTIDS terminal was manifested to deploy early by air to provide early warning and air battle tracking.

The FAAD C³I system is by no means perfect; however, we are convinced it provides the battalion a much-needed and much-improved capability. We have advanced a long way since September 1993, but we recognize the journey has just begun. The Strike Fear battalion and the 101st Airborne Division (Air Assault) continue to refine the tactics, techniques and procedures for the FAAD C³I system. It is a proven combat multiplier, and an essential part of a combat-ready team.

*Maj.(P) Jerry D. Thomason is the executive officer of
2nd Battalion, 44th Air Defense Artillery,
101st Airborne Division (Air Assault), Fort Campbell, Ky.*

Column Write



FAAD C³I. Clearing the fog of battle. Winning the information war. Situational awareness.

These terms abound on the pages of ADA magazine, head chapters in doctrinal manuals and leap off the pages of contractor's pamphlets. But the ADA NCO can sum up the effects these terms describe very simply: because of FAAD C³I, even the rank-and-file soldier knows what's happening on today's battlefield.

NCOs have always been the soldiers in the trenches, the ones who fire the bullets — who take the bullets — but rarely were they involved in or knowledgeable about the overall campaign. FAAD C³I has changed that. Today's ADA NCO probably knows more about the total battlefield situation than a field general of Napoleon's time.

Soldiers of World Wars I and II had no more awareness of the overall battlefield situation than the enemy to be killed over the next hill. Air defenders emplaced and prepared to defeat enemy air. They were unexposed to, and usually ignorant of, the actions of the infantry and cavalry soldiers

fighting alongside them. Their only concern was to kill incoming hostile aircraft. Air defenders at Clark Field, for example, had no idea of how many aircraft had been downed by air defenders on Corregidor. Our air defenders performed superbly, but one order at a time was the order of the day.

In Vietnam we had trouble figuring out where we were, much less where the enemy was. We learned that the terrain features of the mountains made position location easier there than in the open desert, but position location is no longer an issue. In fact, locating the enemy is rarely an issue. We now have instruments that plot not only our location, but pinpoint the enemy's location as well.

This modern technology has tremendously broadened the ADA NCO's view of the battlefield. An Avenger crew member, using computers and communications available through FAAD C³I, has almost instant access to information that, in generations past, was only available at the highest echelons. Because of FAAD C³I technology, a Stinger team inserted behind enemy lines is never really alone.

ADA NCOs rely on this modern technology to gain an edge over the enemy, and may begin to think they're invincible. Do not make this mistake! Automation is fine, and FAAD C³I is indeed our path to the future, but NCOs must still maintain proficiency in basic battle skills.

When the equipment fails, when the communications have been disrupted, you must still be able to determine your position and to locate, identify and destroy the enemy. Your training and individual battle skills, not your computers, will ultimately ensure your survival.

James E. Walthes
Command Sergeant Major

The man is the first weapon of battle.
— Charles Ardant du Picq

NCOs have the primary role in training and developing individual soldiers skills.

— FM 25-100

The best form of "welfare" for the troops is first-class training.
— Field Marshal Erwin Rommel

The CSMS, first sergeants, and other senior NCOs at every echelon coach junior NCOs to master a wide range of individual tasks.

—FM 25-100

Depend on none but yourself.
— Emperor Charles V

ADA DIGEST

COMBAT TRAINING CENTERS



JRTC Trends

Before I discuss some forward area air defense command, control, communications and intelligence (FAAD C³I), I'll introduce myself as the new senior observer-controller and provide some insight into my focus for ADA units at the Joint Readiness Training Center. Having recently served as the air defense coordination officer and executive officer for 3-62 ADA, 10th Mountain Division, I have a firm grasp of the challenges air defenders in light and special divisions face as they execute standard and nonstandard missions. JRTC is the desired environment in which to execute the tactics, techniques and procedures (TTP) associated with such missions. My responsibility is to ensure that ADA units receive the opportunity to exercise new and refined TTP within the framework of existing doctrine. In short, my focus is on providing a training environment where ADA units feel comfortable in applying new and innovative procedures in a threat-free environment.

The FAAD C³I force modernization program, while moving Air Defense Artillery out of the binocular era, has simultaneously increased the complexity of ADA operations at the battery level. Factors such as airborne warning and control system (AWACS) connectivity; light and special division interim sensor (LSDIS) task organization,

positioning and survivability; and simplified hand-held terminal unit (SHTU) operations are planning considerations that must be efficiently integrated into the overall battery scheme of maneuver.

Rotation 95-7 was the first attempt to integrate the AWACS/FAAD C³I link during a JRTC rotation. Plans are now being made to ensure AWACS play in future rotations that include a FAAD C³I modernized battery. Lessons learned during Rotation 95-7 re-emphasize the detailed coordination and integration required between the FAAD battery and the AWACS unit. Keys to successful execution of this complex mission include periodic exercises with AWACS, detailed knowledge of joint tactical information distribution system (JTIDS) operation, and face-to-face coordination during actual operations.

The arrival of LSDIS radars has added yet another asset that the FAAD battery commander must ensure is deployed

and employed efficiently. Task organization of the radars is a critical first step in a successful employment. While mission, enemy, terrain, troops and time available will obviously impact on selection of the appropriate command/support relationship, the goal of maintaining maximum flexibility is best met by keeping the LSDIS radars in a general support role. A general support role provides the battery commander the requisite flexibility to rapidly re-adjust coverage to compensate for battle losses. General support also provides the flexibility to position LSDIS assets to achieve not only the most effective acquisition coverage but also the maximum amount of survivability.

The final and perhaps most critical aspect of FAAD C³I employment is found at the team level with the SHTU. Trends here at JRTC indicate that operation of the SHTU is a very perishable skill. Teams must ensure that adequate training effort is focused on their capability to rapidly achieve and maintain linkup.

MAJ. MICHAEL HENCHEN



NTC Trends

The ability of air defense units deployed to the National Training Center to effectively provide timely early warning of enemy air attack continues to improve. Units are passing directed early warning on command nets in a format that maneu-

ver commanders and soldiers can understand. As a result, commanders at all levels are becoming more aware of the enemy air threat and the benefits of receiving timely early warning of impending air attacks. Units that have a strong, effective early warning system are, in most cases, more adept at assisting air defenders through the use of combined arms for air defense. The air defense units most effective at passing this vital information are the units

that have coordinated with the brigade to have a member of the ADA battery headquarters personally transmit the early warning on the brigade command net. We find that units that pass the early warning to a battle captain to rebroadcast lose much of their timeliness and effectiveness. On many occasions, especially in the "heat of battle," this important information is lost or misinterpreted because the battle captain is overcome by other events taking place on the battlefield. Also, by passing the information to another cell within the brigade tactical operations center (TOC), the units lose precious time in getting the information down to the lowest level. Although there has been continual improvement, work still needs to be done to ensure that timely early warning is received at company team level and at combat support and combat service support elements.

Seeing the Enemy

Air defense commanders, platoon leaders and liaison officers are not doing a good job in the planning process of taking the brigade or task force S-2's products and using them to develop the air defense plan to effectively maneuver on the battlefield and counter the enemy air threat. Although the S-2s work diligently to template where they believe the enemy will defend from, attack, emplace obstacles and fire his special munitions, many air defense leaders do not use this information to plan fire unit locations and routes to get to and from those locations. The usual result is that air defense units are not able to mass fires at the critical place on the battlefield to allow maneuver forces the freedom to destroy the enemy without intervention from enemy air assets.

ADA commanders, platoon leaders and liaison officers need to plan their piece of the fight in more detail, using products that enhance their ability to be at the critical place with sufficient combat power to support the brigade. In an offensive operation, the S-2 will template where he believes the enemy will defend from and set up his obstacle belt. Armed with this



The ability of air defense units deployed to the NTC to effectively provide timely early warning of enemy air attack continues to improve.

information, the templated air avenues of approach into the sector and knowledge of the ordnance release line of the suspected threat aircraft, the air defender can then plot fire unit positions that destroy the aircraft prior to ordnance release on friendly forces at the breach site.

Throughout the preparation phase of the operation, the S-2 will use information passed from reconnaissance assets to confirm or deny the validity of his templated obstacle locations. This is usually passed to members of the brigade combat team, to include the air defense units, through the use of intelligence summaries. However, most air defense units are not using these summaries to refine their plan.

Although battery commanders and liaison officers are usually aware of the templated enemy locations, this information rarely makes it down to squad leaders, section sergeants or team chiefs. Thus, even though these areas were initially templated by the S-2 and later confirmed, many valuable air defense assets drive directly into these special munitions and are destroyed.

TOC Operations

Air defense TOCs are not doing a good job of tracking the battle for the

commander. All too often the battery commander, who is forward with the main effort, is the only one in the battery headquarters who has a "feel" for what is happening in the fight. Platoon leaders supporting a task force are usually so wrapped up in retaining communications with the supported unit that they don't make time to pass information to the battery TOC. Also, many executive officers wait on the information to come to them instead of pulling the information from the platoons. As a result, most air defense TOCs do not plot fire unit locations, track fuel and ammunition status, or track the locations and movements of the supported forces. Because of this the TOC cannot provide recommendations to the battery commander on courses of action based upon mission changes, attrition or gaps in coverage. In units with strong reporting procedures and good communications with all key players, the commander uses recommendations from his TOC to rapidly make decisions and continue to fight an integrated battery fight.

CAPT.(P) TODD MORROW

3-4 ADA Jumps Stinger Missiles

The Stinger missile jump pack (SMJP) is airborne air defense in its truest form. It is the most rapid method of providing forward area air defense (FAAD) in a forced entry operation. 3-4 ADA frequently proves the use of the SMJP. As the 82nd Airborne Division's air defense battalion, 3-4 ADA is very familiar with forced entry operations. The SMJP is 82nd Airborne's staple air defense delivery system.

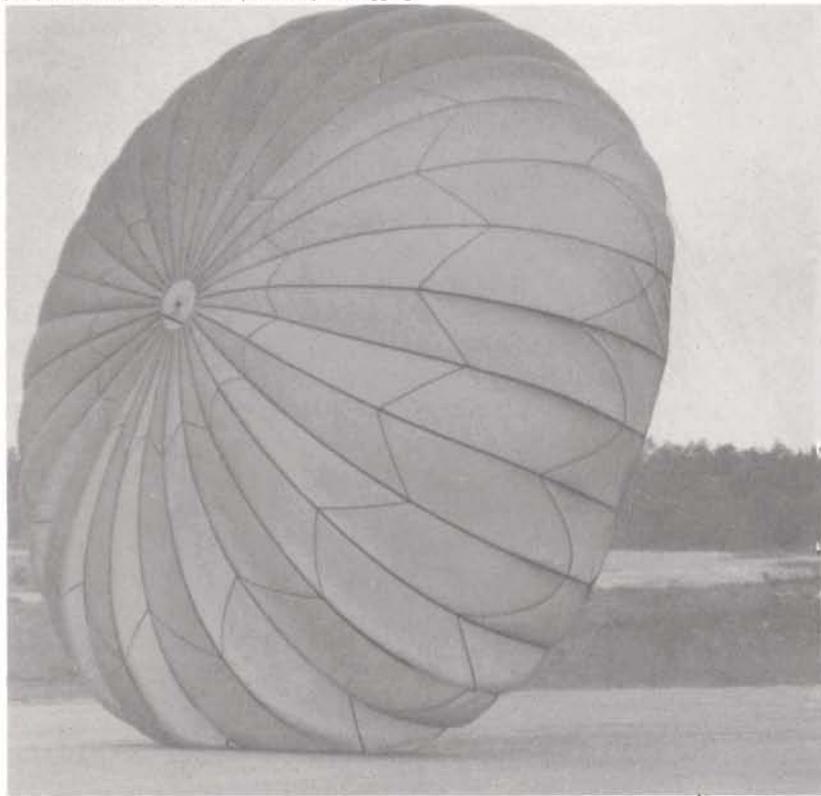
In November 1993, while supporting an airborne task force during a National Training Center rotation, C/3-4 ADA was called to provide air defense of an airfield seizure. Three SMJP-equipped Stinger teams were tactically cross-loaded in the assault package. Within three minutes of time over target, two F-16s simulating MiG-21s attacked the airborne force. While the task force was in the vulnerable air-

borne assembly stage, the Stinger teams destroyed both enemy aircraft. The survival of the task force was completely dependent upon the use of the SMJP.

Other methods of delivering air defense to the hostile drop zone cannot compete with the SMJP's rapid response. Door bundles can provide a greater supply of Stinger missiles; however, air-dropped bundles must be located on the ground and derigged by the Stinger gunners. Additionally, door bundles burn valuable seconds, or "green light," over drop zones and run the risk of being hung in the paratroop door. Heavy-dropping complete Stinger vehicles provides teams with increased mobility and a basic load of missiles,



A paratrooper hands his static line to a safety a split second before exiting a C-130 Hercules with a SMJP at an altitude of 1,250 feet. Below, a 3-4 ADA paratrooper hits Fort Bragg's Rhine Luzon drop zone. At right, a 3-4 ADA jumpmaster checks a fellow paratrooper's rigging.



and heavy dropping the new airborne Avenger places the capabilities of the most advanced FAAD systems in theater. Yet both heavy drops must be located and derigged. The 15-minute standard for derigging the Avenger far exceeds the SMJP jumpers' response time. Therefore, the brave young paratrooper who straps a Stinger missile to his body and exits an aircraft while in flight provides the most efficient air defense during airborne assembly.

Specifications of the SMJP intimidate the most seasoned paratrooper. When rigged with one missile round, each SMJP weighs close to 40 pounds, is five feet and seven inches in height and varies from five to 11 inches in width. The SMJP is jumped in addition to the paratrooper's normal combat load and is extremely cumbersome. In effect, it splints the paratrooper's body when

properly rigged. It is essential that the jumper lower his SMJP prior to making contact with the ground.

Air defense paratroopers must maintain above-average proficiency in airborne operations. Jumping the SMJP is more complicated than a normal combat load. During a normal airborne operation, SMJP jumpers are dispersed throughout one or more lifts on several

chalks. The 82nd Airborne's procedures dictate that no more than two SMJPs may be aboard any aircraft, and they must jump in the first and second positions of the right door. The jumpmasters and safeties from other battalions are not always familiar with rigging the SMJP. Air defense leaders are usually cross-loaded with battalion and brigade assault command posts and are unable



to assist their own paratroopers. The majority of tactical airborne operations are conducted at night, 800 feet above ground level. A normal airborne operation is not the time for a paratrooper to make his "cherry" SMJP jump.

The 82nd's airborne standing operating procedures establish regulatory guidelines that contribute to the safety of air defense paratroopers jumping the Stinger. Jumpers must be at least five feet eight inches tall to jump the SMJP, and must have 12 static line jumps. Prior to exiting an aircraft with a SMJP, a paratrooper must twice demonstrate his ability to conduct a proper exit on a 34-foot tower, and must repeat this demonstration if he exceeds six months between SMJP jumps.

Stingers may not be jumped from UH-1 or UH-60 helicopters, since these platforms require the jumper to exit the aircraft from a seated position. The SMJP jumper may not jump with the M-1950 weapons case, thus he must jump with his M-16 exposed. Gripstocks are placed in the alicepack. In addition, the guidelines provide extremely detailed instructions on the proper rigging of the SMJP.

3-4 ADA batteries rotate command of SMJP training jumps to ensure the safety of the airborne air defenders. These jumps train and qualify Stinger gunners to jump the SMJP. This instills in Stinger gunners a level of proficiency

and confidence to overcome the challenges of normal task force jumps. Currently, air defense jumpmasters reinforce their skills while having the unique opportunity to jumpmaster their own soldiers.

SMJP training jumps differ from other jumps in several ways: they usually involve multiple lifts with multiple passes, and block times can exceed three hours. The jump altitude can be increased to 2,000 feet to allow SMJP jumpers more time to overcome difficulties in lowering their equipment. No more than two SMJP jumpers may exit from the same aircraft, providing a two-second separation from other jumpers. Usually no more than 10 SMJPs will exit per pass, but all still exit from the right door to prevent the missile (rigged to the jumper's left side) from being caught on the trail edge of the paratroop door. SMJP training jumps are always conducted during daylight.

SMJP jumps are a great morale builder, the only time that 3-4 ADA, as a battalion, jumps together. Paratroopers witness their jumpmaster-qualified officers and NCOs demonstrating their proficiency. This builds an extremely strong soldier-leader bond. And even though one or two jumpers can't walk off the drop zone, SMJP training jumps are an event paratroopers wouldn't miss.

SPEC. JOHN G. VALCEANU

tion in force that has placed many distinguished regiments on the inactive rolls. The Army hopes to retain a connection to its distinguished heritage by realigning its regimental units, along with the upcoming inactivation of two division headquarters and the move of two other division headquarters. The plan involves 172 reflaggings and captures the essence of the Army by aligning regiments historically and by keeping as many as possible of its oldest and most distinguished colors in the 10-division force. In so doing, the Army will retain most of its historic regiments.

In directing the Center of Military History to formulate a reflagging plan, Army Chief of Staff Gen. Gordon R. Sullivan offered the following guidance: retain as many regimental flags as possible in active service, take into account traditional division assignments, minimize turbulence, preserve as many regimental colors as possible and retain the regiments and battalions with the most honors. Army historians ranked regiments using the "Collins methodology." The methodology assigns regiments five points for each regimental Presidential Unit Citation, four points for each regimental Valorous Unit Award and three points for each regimental Meritorious Unit Commendation, Navy Unit Commendation and Air Force Outstanding Unit Award. It also assigns two points for each regimental campaign, two points for each regimental Army Superior Unit Award and foreign unit decoration, and one point for each year of existence since initial organization.

The realignment, limited to Air Defense Artillery, Armor, Aviation, Cavalry, Field Artillery and Infantry regiments, will reflag about 31 percent (103 of 338) of the Army's combat arms units, and approximately 34 percent (69 of 201) of its divisional base elements. It affects seven ADA battalions.

ESPRIT DE CORPS

Army Reflagging Plan Comes Together

Air Defense Artillery will gain, rather than lose, regiments under the Army's soon-to-be-executed Regimental Reflagging Plan. The 4th ADA and 52nd ADA will be reactivated; how-

ever, the plan "reflags" seven ADA battalions.

The details of the plan were announced as the Army nears the end of an 18-division to a 10-division reduc-

4-43 ADA and 4-7 ADA, which had the lowest points within their regiments, will be reflagged to 1st ADA. Reflagging the two Patriot battalions permitted the Army to activate the 1st ADA, which ranked fourth highest in regimental points.

1-5 ADA will be reflagged to 3rd ADA. The change will preserve the traditional association between divisions and regiments when the 24th Infantry Division, Fort Stewart, Ga., becomes the 3rd Infantry Division.

2-5 ADA will be reflagged to 1-44 ADA. The reactivated 1-44 ADA has the highest historical points among inactive battalions and a historical link with the 4th Infantry Division, which is to be headquartered at Fort Hood. 2-5 ADA is currently located at Fort Hood. The reflagging gives 44th ADA two battalions.

5-3 ADA, which had fewer points than 4-3 ADA and 1-3 ADA, will be reflagged to 52nd ADA. The reflagging gives the 52nd ADA two battalions.

2-7 ADA, which had fewer points than 1-7 ADA and 5-7 ADA, will be reflagged to the reactivated 52nd ADA. The reflagging gives the 52nd ADA two battalions.

6-43 ADA, which had lower points than 1-43 ADA, 2-43 ADA and 3-43 ADA, will be reflagged, along with 2-7 ADA, to the reactivated 52nd ADA.

The U.S. Army Regimental System, an extension of the Combat Arms Regimental System adopted in 1957, is designed to enhance combat effectiveness through a framework of regiments that provides soldiers with an opportunity for affiliation, develops loyalty and commitment, fosters an extended sense of belonging, improves units' esprit de corps and institutionalizes the warfighting ethos.

The reflagging effort should be completed by May 1996. Under the plan, all infantry and armor regiments in the active Army since 1965 have been preserved. Neither units nor soldiers will be moved to accomplish this

change; only regimental colors are being moved. A genuine effort has been made to ensure that changes in unit designation are made in such a way as to support cohesion in units and avoid unnecessary costs.

"America's Army has undergone — and continues to undergo — a profound and necessary transformation," said Sullivan. "As we have grown smaller, we have worked hard to nurture and protect the essence of the Army. Regimental designations represent a continuity in the force, our link to the past. Therefore, reflagging is a part of our transformation to a smaller force that retains our connection to our distinguished heritage.

"The Regimental Reflagging Plan captures the essence of the Army by realigning regiments historically and by keeping as many as possible of our oldest and most distinguished colors in the 10-division active force," Sullivan continued.

"Reflagging regiments is an emotional issue for veterans as well as serving soldiers," he added. "Achieving balance in the face of many competing requirements was difficult. I believe this Reflagging Plan preserves the finest traditions of the Army and reflects the selfless service to the nation of the units affected."

MSGT. ISAAC L. CLARK

5th Army NCO of the Year

Sgt. 1st Class Albert W. Moats, a readiness NCO with Headquarters and Headquarters Battery, 1-233 ADA, Booneville, Ark., has been named 5th Army Noncommissioned Officer of the Year.

Moats is the first National Guard member ever to win the competition, which includes Arkansas, Texas, Oklahoma, Louisiana, Missouri, New Mexico, Kansas and Nebraska.

Moats, an 11-year veteran, credits his coworkers for the support he needed to win.

"The recognition of a non-commissioned officer comes first from the soldiers under him. I wouldn't be here without their support."



AVENGER AT PUTLOS

1st Armored Division's Newest Weapon System Proves Its Lethality During Aerial Gunnery

by 1st Lts. Christopher D. Swenson and Charles B. Parker

Smoke trails led from Avengers to explosions in the sky and the 25mm guns of Bradley Stinger Fighting Vehicles (BSFVs) roared as 5-3 ADA soldiers ushered in the newly fielded Avenger into aerial gunnery. D Battery, 5-3 ADA's Avenger battery, continued to pioneer new standards as they demonstrated the lethality of the Avenger weapon system during their recent aerial gunnery in Putlos, Germany.

5-3 ADA soldiers took the lead and demonstrated the Avenger's capabilities in realistic combat scenarios, showing the combat power and "synergy" produced by the integration of the Avenger with the BSFV on the battlefield. Planning for the exercise began at home station on McCully Barracks in Wackernheim, Germany. A battalion effort produced a plan that would enable the transformation of the Avenger and BSFV live fire concept into reality. The live fire would test several Avenger capabilities to include its shoot-on-the-move flexibility, remote firing accu-

PFC Daniel Heuerman, an Avenger gunner with D/5-3 ADA, loads a live Stinger missile into the right side pod of his turret (photo by 1st Lt. Christopher D. Swenson). At top right, a 5-3 ADA Avenger becomes the first Avenger airmobiled in U.S. Army Europe.





racy, multiple engagement capability, turret defilade defensibility, limited adverse weather and night vision capabilities, and air assault mobility.

Preparation for the deployment to Avenger aerial gunnery was extensive. NCOs from Fort Bliss, Texas, trained more than 100 5-3 ADA soldiers and NCOs at home station during new equipment training, which was completed Aug. 22, 1994. The following five weeks were spent fielding the new weapon system and honing soldier battle skills in preparation for the upcoming aerial gunnery event. Before firing commenced on Sept. 19, 1994, detailed re-

hearsals were conducted on the range with the Avenger crews, the BSFV crews and the battalion master gunner, as well as the respective commanders of each battery.

The battalion received extensive resource support from several sources: V Corps, 4th Aviation Brigade, 123rd Main Support Battalion, and incredible internal support from all of the organic batteries. The resources on site included six Avengers, five BSFVs, one CH-47 Chinook (V Corps), one OH-58C Kiowa (4th Brigade, 1st Armored Division), 19 Stinger missiles, one missile maintenance team (123rd Main Support Bat-

talion) and one explosive ordnance disposal team.

“Combat scenarios were executed in the most realistic and safe way,” said the battalion master gunner. Given the small amount of time on the Avenger, the complicated and untested scenarios, and live Stinger missiles mixed with 25mm ammunition — safety was our first priority. Avengers and BSFVs were used simultaneously to create a realistic combat training environment and to demonstrate the integration and synergy of air defense as a vital battlefield operating system in today’s modern Army. The Avenger’s capabilities were tested us-



This D/5-3 ADA Avenger gunner, emplaced in a hasty fighting position on the Putlos firing range, is ready to remotely engage the next aerial target with a live Stinger missile (photo by 1st Lt. Christopher D. Swenson).

ing three basic scenarios: offensive, defensive and air assault.

The defensive scenario consisted of the Avenger crew emplacing the remote control unit (RCU) into a team fighting position while the Avenger was emplaced in turret defilade in a nearby battle position. The team then fired from the fighting position as the ballistic aerial target (BAT) flew across its sector. To complicate the scenario, a system failure was simulated, and one team was required to remove the Stinger missile from the Avenger missile pod, attach a gripstock, and fire the missile from the shoulder.

The offensive scenario began with an Avenger and two BSFVs moving downrange in a well-orchestrated set of engagements. Attacking by both day

and night, one BSFV maneuvered down each side of the range, engaging ground targets with the 25mm Bushmaster that included dismounts and personnel carriers, while the Avenger trailed, waiting patiently for its chance to engage a BAT as it streaked across the sky at more than 400 miles per hour. Additionally, two BATs were fired, with the Avenger engaging the first BAT on the move and the second BAT from a secure, stationary position. The only thing more incredible than red tracer rounds streaking down a dark range is the sight of a Stinger missile soaring to its target and exploding on contact in the darkness overhead.

The air assault offered another scenario to demonstrate how the BSFV and Avenger could operate effectively

while deployed in a forward battle-field scenario. BSFVs stormed downrange, engaging ground targets on both sides of the range, to seize and secure the landing zone. Once the landing zone was secure, the CH-47 Chinook air assaulted the Avenger into position. As the crew dismounted the Chinook to prepare the Avenger, reports of multiple targets squawked out over the early warning net. The BSFVs suddenly engaged remote controlled miniature aerial targets (RCMATs) while the Avenger engaged the screaming BAT in an awesome display of firepower. After destruction of the aerial targets was complete, the BSFVs escorted the Avenger back to an assembly area.

The battalion master gunnery conducted detailed after action reviews with each Avenger fire team, BSFV crew, air assault team, BAT team and RCMAT team. The input and insights gained will help make the next Avenger aerial gunnery even more realistic and challenging.

The soldiers of 5-3 ADA were excited about fielding the Avenger and optimistic about its capabilities before gunnery. Now 5-3 ADA "Iron Soldiers" have complete confidence in the division's newest weapon system's capabilities while executing realistic combat situations. A new level of pride shows in the crews as they talk of the Avenger's numerous capabilities. "This is a state-of-the-art system that can do it all," boasted PFC Jason M. Tuck of D Battery, after a successful engagement. "We proved it! I Strike!"

During the Avenger aerial gunnery, Maj. Gen. William G. Carter III, commanding general of the 1st Armored Division, proudly observed his ADA battalion as they executed the operation with great success. The Armed Forces Network news was present, interviewing and videotaping the "I Strike" soldiers in action and broadcasting their new victory throughout U.S. Army Europe.

HELL SHIPS OF WORLD WAR II

by Patricia M. Rhodes

Fifty years ago the final chapters were written in the tragic story of the American prisoners of war taken by Japan in the early days of World War II. Nearly forgotten now are the "hell ships," one of the saddest aspects of that story.

A few hours after their attack on Pearl Harbor in December 1941, Japanese forces launched attacks throughout the Pacific area, including the Philippine Islands. About 120,000 troops, of whom 25,000 were Americans and the rest Filipino, protected the Philippines.

Among the defending units were the 59th and 60th Coast Artillery regiments, positioned on Corregidor Island to defend Manila Bay, and the 200th Coast Artillery (Anti-Aircraft), a New Mexico National Guard unit. The 200th had been hastily called up and trained in 1941, and had arrived in the Philippines only a few months before to defend Clark Field. Selected batteries from the 91st and 92nd Coast Artillery also performed an anti-aircraft mission.

The Japanese Army, better fed, better equipped, and often better trained, had expected to conquer the Philippines in just a few days, but they encountered a stubborn resistance that lengthened that time to several months. When the inevitable surrender finally came, enormous numbers of Americans and Filipinos became prisoners of war. These were "the battling bastards of Bataan" and the heroic defenders of Corregidor, the men who had fought a desperate holding action. With no relief forces available, living on quarter rations and beset by disease, many had fought from Clark Field through Manila and down into the Bataan peninsula, where they were forced to surrender on April 9, 1942. Others on Corregidor and throughout the

rest of the Philippines were overwhelmed by the Japanese on May 6, 1942.

Those who surrendered in April were led on a 145-mile forced march — the Bataan Death March — to Camp O'Donnell. The Japanese had not expected to take so many prisoners, and did not have adequate food and medicines. Moreover, their own military code stressed that death was infinitely preferable to surrender; not only were they unprepared for so many prisoners, but they viewed their captives as dishonored men, unworthy of dignity or respect. Conditions at O'Donnell were so grim that in one month alone, June 1942, 1,500 American POWs died there.

The later group of prisoners, who surrendered in May, fared somewhat better, as they were spared the forced march and were treated more humanely. Still, their death rate also was high, and most of them suffered from malnutrition as well as from malaria, dysentery, beri-beri or other diseases. In the summer of 1942, the Japanese paroled most of the Filipino POWs, allowing them to return to their homes on the condition that they would not fight against the Japanese again. The prisoners now were predominantly Americans, along with some American allies, including British, Dutch, Canadian and Australian soldiers, sailors and airmen.

Late in 1942 the Japanese began to transport some POWs out of the Philippines to camps in Japan and in territories Japan had conquered and occupied: Formosa, Korea, Burma, Thailand and Manchuria. The primary reason for this was to provide slave labor for industry, farming and mining. The trips were made on Japanese ships under miserable conditions. The prisoners usually traveled not on troop ships or passenger ships, but on freighters. The Japanese ignored the Geneva Convention requirement that ships conveying POWs be marked with a large red cross. These vessels were old and slow moving, and lacked facilities for carrying large numbers of passengers. The prisoners were herded on board like cattle and were quartered in the cargo holds, often with crates and bags of cargo. The holds were dark, hot, crowded, poorly ventilated and thoroughly uncomfortable.

Usually the POWs were allowed up on deck, to get a little fresh air and use the primitive latrine facilities, for only a short while each day. The POWs were in poor physical condition after their months of captivity, and most suffered from malnutrition and one or more diseases. Food was meager and often spoiled, and only limited amounts of drinking water were available. The freighters moved so sluggishly that the trip generally took a month or more, and

it was not uncommon for a few prisoners to die during the trip.

When 1942 ended, about 3,500 Americans had been shipped out of the Philippines, another 13,250 remained there, and the rest of the original 25,000 had died in captivity. In 1943, about 1,300 POWs were transported to Japan. In the first half of 1944, several thousand more made the trip.

By mid-1944, the fortunes of war were changing. Japan no longer had free rein in the Pacific. American forces had fought across the Pacific island by island and were now poised to invade the Philippines. American submarines patrolled the South China Sea, and American bombers targeted Japanese warships, freighters and tankers.

In Japan, the labor shortage was becoming critical. Most able-bodied Japanese men were in the army, and hundreds of the prisoners sent to Japan earlier had died in labor camps. The Japanese stepped up the pace of POW shipments, and their treatment of the POWs became even crueller, harsher, more inhumane. The era of what would come to be known as the "hell ships" had arrived.

On Sept. 5, 1944, in a southern Philippine port, the Japanese loaded 750 Americans onto the freighter *Shinyo Maru*. It was part of a five-ship convoy escorted by two destroyers; none of the ships in the convoy had any markings to indicate the presence of POWs. At dusk two days later, the convoy was headed north, off the west coast of Mindanao, when it was sighted by a U.S. submarine. The sub fired four torpedoes, with two of them tearing into the *Shinyo Maru*. The prisoners, packed in the cargo hold, felt the ship shudder, and then steel beams and hatch covers crashed down into the hold. Many men were killed immediately, and others knocked unconscious.

As the ship listed to its port side, POWs scrambled to the hatches and climbed onto the deck, where Japanese soldiers shot at them. Dodging bullets, some prisoners dove into the water and swam away. One of them was Capt. Morris L. Shoss, 91st Coast Artillery. There were hundreds of men in the water, some swimming toward lifeboats being lowered from other ships in the convoy. But the lifeboats picked up only Japanese and drove the Americans away with gunfire.

In a few minutes the *Shinyo Maru* slipped beneath the surface, taking about 500 Americans down with her. Some of the surviving POWs swam toward the Philippine coast, but a Japanese tanker in the convoy opened fire on them, and the churning waters turned crimson with blood. Later, under cover of darkness, Shoss and several dozen other half-drowned men made it to shore and were rescued by Filipino guerilla fighters. After a few days of hiding in the jungle to rest and recuperate, they eventually made their way to Australia and to freedom. Of the 750 Americans on the *Shinyo Maru*, 82 survived.

On Oct. 1, in Manila, the Japanese herded another 1,000 Americans onto the *Haro Maru*, a small vessel normally used for carrying coal and livestock. The prisoners were squeezed into two small holds, one partially loaded with coal and the other with manure. For three days the ship remained in port, and the POWs were not allowed on deck, but were confined in the oppressively hot, foul-smelling holds. They were issued only small rations of water and maggot-infested rice each day, and the latrine facilities consisted of four buckets in each hold. Most of the men suffered from dysentery and other diseases.

The *Haro Maru* finally left port in a convoy of 18 ships. During the voyage several other ships in the convoy were sunk by American torpedoes, but the *Haro Maru* made it through. About 40 POWs had starved to death, or died of disease, during the trip.

Long before the *Haro Maru* completed its voyage, the next POW ship was underway. This was the *Arisan Maru*, a freighter that left Manila on Oct. 11 with 1,800 Americans on board. Besides Japanese soldiers and crew members, the ship also carried several hundred Japanese civilian travelers. The POWs were crammed into holds so crowded that most men were forced to stand, and movement was virtually impossible. Dysentery and malaria still plagued most of the men, and rough seas made many of them seasick.

Prisoners later reported that the temperature in the holds sometimes reached 120 degrees, and that the air "soon became fouled with the stench of unwashed bodies and human waste." Each man received two meals of rice and one canteen of water per day.

The *Arisan Maru* spent several days sailing between Philippine ports, then headed out for Japan on Oct. 20. Over the next few days some prisoners died from disease, dehydration or heat exhaustion, and their bodies were thrown overboard. On Oct. 24, about 225 miles east of Hong Kong, three American torpedoes slammed into the ship. Hundreds of men died instantly in a tremendous explosion. The *Arisan Maru* broke in half, but somehow both halves remained afloat for almost two hours. Before getting into lifeboats and leaving the sinking ship, Japanese guards actually closed and secured the hatches to the holds.

With strength born of desperation, the prisoners forced open the hatches and clambered from the stinking holds onto the deck. Many decided to stay with the ship, but others, including Sgt. Calvin Graef of New Mexico's 200th Coast Artillery, jumped into the water. They could see other ships in the convoy taking the Japanese from the lifeboats, so they swam toward those ships. But none of the POWs were picked up; in fact, Japanese crewmen used long poles to push the struggling Americans under. A pole struck and injured Graef, but he was able to swim away and cling to floating debris from the *Arisan Maru*.



When the inevitable surrender finally came, enormous numbers of Americans and Filipinos became prisoners of war. These were the "battling bastards of Bataan."

Sometime during the night, Graef and four other men came upon a lifeboat from the sunken ship. They drifted in it for two days, suffering greatly from hunger, thirst and exposure, and then were picked up by a Chinese fishing boat. The fishermen took them ashore and delivered them to friendly Chinese civilians, who fed and clothed them. By early November the five Americans had made their way to an American air base in the interior of China, and from there they were flown home to the United States. (They reported their experiences to military authorities in the United States, but the news was not made public for fear that the enemy would retaliate by executing American POWs.) Two other Americans from the *Arisan Maru* floated on wreckage for several days and then were picked up by

a Japanese ship and turned over to the Japanese Army, becoming prisoners again. These seven were the only survivors among the 1,800 POWs who had been put aboard the *Arisan Maru* in Manila.

During these months some of the POW ships actually evaded torpedoes and bombs and arrived safely in Japan. But one last voyage, arguably the one most deserving to be called a trip on a hell ship, had yet to take place. On Dec.

13, another long line of ragged, emaciated men lined up on the pier in Manila. The *Oryoku Maru* was a relatively new passenger ship, now fitted with anti-aircraft guns. Like its predecessors, it had no markings to indicate that it would carry prisoners of war. The total number of Japanese on board, including passengers, crew and soldiers, was about 2,000.

All but 300 of the 1,619 POWs were Americans; the others were from Allied nations. They were guided into three cargo holds below deck. Each hold was about 60 feet wide and 100 feet long with a ceiling height of about eight feet. Around all four sides of each hold was a shelf, four feet from the floor. Men on the shelf, or below it, had to crouch and crawl, as there was not enough clearance for them to stand up or walk.

After the space on and under the shelves was filled, the rest of the prisoners had to stand in the center of the hold, packed so tightly that there was not room to sit or lie down. One hatch in each hold, about 20 feet square, was the only source of light and air. One of the POWs was Maj. John M. Wright Jr. of the 91st Coast Artillery. After the war he wrote a book about the experience, which he likened to "a horrible spectacle that would make the Black Hole of Calcutta look like an oasis."

Soon after entering the holds, while other prisoners were still descending the ladders, men began fainting from the lack of air and intense heat. Japanese soldiers, trying to speed up the loading process, began to push men down the ladders, and then to knock them off the ladders with rifle butts and shovels. By early evening all of the POWs were aboard and received the evening meal. The Japanese simply lowered the food into the hold in bulk, and it was up to the POWs to apportion it. The men got a bit less than a cup apiece of steamed rice and about a cup of stewed seaweed. Along with this meal the Japanese also issued another quantity of steamed rice for the next morning's breakfast, amounting to about another half cup of rice for each man. There was enough water for the men to each have a few spoonfuls. As it turned out, this was to be the only food ration ever distributed on the *Oryoku Maru*.

There were no provisions whatsoever for latrine facilities in the holds, an especially cruel deprivation because so many of the prisoners suffered from dysentery and diarrhea. In response to repeated pleas from the POWs, the guards finally lowered four five-gallon buckets into each hold. Within a short time these were overflowing. By midnight the floors were awash in human waste. A couple of hours later the Japanese closed the hatch covers, cutting off all fresh air to the prisoners.

A year later, after the war had ended, the U.S. government took sworn testimony from some of the POWs. One document said, "Repeated requests were made for permission to bring the most aggravated cases of heat prostration

and dehydration on deck where they would at least be able to get some air. All these requests were denied . . . men became deranged and would wander about the hold stepping on other prisoners, screaming for water and air. Some became violent to the extent that they lashed out with canteens or striking with their fists or feet at anyone with whom they came in contact. It was pitch black in the holds. In this chaos there was no possibility for much-needed sleep. On this first night about 40 or 50 men went out of their minds."

A survivor later wrote, "It wasn't until the dim light of the following morning that we were able to assess what went on during the night. Some men, crazed by thirst, became vampires and slashed others and attempted to drink their blood. Some drank their own urine. Some murdered to satisfy their lust for liquid." This, before the ship had even weighed anchor!

In the pre-dawn hours of Dec. 14, the *Oryoku Maru* left Manila and sailed out into the China Sea. Early that morning the Japanese finally opened the hatches, allowing in some light and air. With daylight the prisoners saw that several dozen of their number had died during the night.

Around 9:00 a.m. the POWs heard the sound of American bombers approaching. The *Oryoku Maru's* anti-aircraft guns went into action, and the American planes rained fire down upon the ship. Ricocheting bullets tore into the holds and killed several men there. Within a few minutes an American bomb hit and damaged—but did not sink—the ship. The crew maneuvered her into Subic Bay and ran her aground. All day long the air raids continued.

Wright later recalled that the prisoners offered "prayers that God would give us the courage to face death like men, prayers for our loved ones, prayers for America, and prayers for the protection of those gallant American pilots who were diving through a solid umbrella of steel to deliver the bombs that would sink the ship. I am sure that it is correct to say that every American on board felt that since it was a Japanese ship, it had to be sunk. It was our misfortune to be aboard, but there was no resentment or bitterness toward the men who were doing their best to blast every Japanese ship off the sea." Many POWs reflected that death might be a welcome respite from the suffering they had endured for so long.

Night fell again, and the American bombers retreated for the night. The crew evacuated Japanese passengers, but the hapless POWs still huddled in the sweltering cargo holds. They had been without drinking water for 24 hours. As had happened the night before, men went berserk in the darkness. The holds were bedlam, the air torn by screams and sobs. There were suicides and murders, and there were men suffocated from the sheer press of bodies against each other. Wright recalled that "the raving of the insane was an



Those who surrendered in April of 1942 were led on a 145-mile forced march — the Bataan Death March — to Camp O'Donnell. Conditions in the camp were so grim that in June 1942, 1,500 American POWs died there.

invitation to the sane to let themselves go, to relax the feeble grip with which some still held to a precariously balanced rationality.”

He observed that, “. . . it was not a particular type of individual who lost control of himself. It did not matter whether a man was a West Point graduate or . . . had not been through high school. Regular officers and reserve officers, professional soldiers and draftees, physical giants and weaklings, rich men and poor men, all might react in the same way under this strain.” But some men kept their heads, and friends took care of one other. In fact, it seemed that those who fared best were the ones who formed buddy systems and helped each other. Wright and his friends tried to maintain their sanity by talking of normal things — of

their homes and of their hopes that the war would end soon and their long ordeal would be over.

Finally, at dawn on Dec. 15, the order was given to the prisoners to evacuate the ship. However, there were no lifeboats available, so the guards ordered all POWs to take off their shoes, leave whatever belongings they had with them, and swim for shore. Just as they were leaving the ship, another American bomb scored a direct hit, this time

setting the vessel on fire. Men trampled each other to get off the blazing ship. Panicky guards began shooting at the POWs, killing some of them in the water.

Once on land, the prisoners were assembled on a tennis court at what had once been a U.S. naval base. Of the original group of 1,619 prisoners, 1,340 were still alive, but many were wounded or desperately sick. There was one water tap near the tennis court, and the men could get their first drink since Dec. 13, though they had to stand in line for as long as six hours for it. Lt. Col. Dwight D. Edison of the 59th Coast Artillery was a friend of Wright's. He had somehow obtained some sugar, which he mixed with water. Though Edison was quite ill, he offered a bit of this nourishing treasure to Wright, a generosity the latter never forgot.

The prisoners remained here for the better part of a week — more than 1,300 men jammed onto a tennis court! They received no food at all during the first two days, but late on the third day were issued one sack of uncooked rice, which gave each man about two tablespoons full. The same amount was issued on the following two days, and as there were no cooking facilities available, the POWs ate the rice raw. On Dec. 20 the ration increased to about four tablespoons per man. During the time at the tennis court the men had only the clothes on their backs, no shoes and no shelter or blankets. The tropical sun burned them by day, and at night they shivered as they slept on the concrete. Several men died and were buried near the tennis court.

On Dec. 20 and 21 the POWs were marched to a nearby town, and on Dec. 23 the Japanese soldiers informed them that they would soon be boarding another ship to Japan. A Coast Artillery Corps officer, Lt. Col. Carl Engelhart, was fluent in Japanese and often acted as an interpreter. The guards told him to order the senior American officers to select men who were too sick to travel, and they would be hospitalized. Fifteen of the most seriously wounded or ill prisoners were chosen. Senior among them was Edison, who had shared his sugar water with Wright. While most of the POWs were being marched to a railroad siding, these 15 were placed in a truck to be taken to the hospital. (Not until after the war did the other prisoners learn that instead of going to a hospital, the truck took those 15 men to a cemetery, where Japanese soldiers bayoneted and decapitated all of them.)

Loaded into boxcars, the POWs found themselves even more crowded than they had been on the *Oryoku Maru*, and men began to pass out. They were so packed in that fainting men remained upright. Wright was jammed against two friends from the 91st Coast Artillery Corps, Capt. Philip Lehr and Capt. John H. Davis. Davis lapsed in and out of consciousness, but Lehr and Wright fanned him and revived him.

Very early on Christmas morning, the train arrived at the town of San Fernando, on Lingayen Gulf. Here the prisoners were unloaded from the train and were able to get a drink of water, their first meal in two days, and to sit down for the first time in 22 hours. That night the prisoners were marched to a beach, where they remained for two days and nights.

At dawn on Dec. 27 they moved from the beach to a pier, and 240 of them were put on an old freighter, the *Brazil Maru*. The rest of them, 1,074 men, boarded a newer freighter, the *Enoura Maru*. All of them were stuffed into just one hold, and again there were no latrine facilities. Food issues were meager. Wright recalled that as soon as the rice was served, it “lost its white appearance under a blanket of flies. We tried to pretend that our rice had raisins in it, and tried to make ourselves believe that maybe a fly had some protein in it.”

Actually, of course, the flies spread dysentery, and more and more POWs fell ill. Morale sank lower, and on New Year's Eve the POWs rioted during food distribution. Wright said, “Starving men forget discipline, forget honor, forget self-respect. The only thing that matters is food, food, food. And the other man's ration always looks bigger than one's own.” The riot was short-lived, as Japanese soldiers fired into the holds and killed several people. It was also on New Year's Eve that the ships reached a Formosan port, Takao. Sixteen men on the *Enoura Maru* had died during the voyage and had been buried at sea. Among them were Wright's friends, Lehr and Davis. On the *Brazil Maru*, five men had died.

The ships remained at anchor in Takao harbor for nearly a week, and all the while there were frequent American air raids. The POWs were kept in the holds the entire time. On Jan. 6, 1945, the 235 surviving POWs from the *Brazil Maru* were moved over to the *Enoura Maru*, which overcrowded the hold even more. The ship lay in port for several more days, and each day there were more dead, who were taken ashore and buried in a mass grave. On Jan. 9, American bombers struck again. The *Enoura Maru* sustained heavy damage, and about 300 prisoners were killed or wounded.

Inexplicably, the Japanese soldiers now refused permission to remove the dead from the hold. An American Army document, written in 1946 for war crimes trials, described the scene aboard the ship as like Dante's inferno: “. . . dark, but one could see wraith-like figures wandering dazedly through a maze of stacked corpses. It was not uncommon, prior to the removal of the dead, [for men] to sit on the dead and eat meals, due to the overcrowded conditions. Items of salvageable clothing that could be removed from the dead were removed. Many of the bodies were in various stages of decomposition when they were finally removed.” Permission to remove the dead finally came on Jan. 12.



Just as the prisoners were leaving the Oryoku Maru at dawn on Dec. 15, 1944, another American bomb scored a direct hit, this time setting the Japanese passenger ship on fire.

Because of the damage to the ship, the next day the Japanese decreed yet another move for the 900 surviving prisoners — this time, back to the smaller *Brazil Maru*. This leg of the journey, from Takao to Moji, Japan, lasted 16 days. There were two issues of cooked rice each day, amounting to about a cupful for every three men. For the first two days no water or liquid of any kind was issued. Thereafter, dirty, brackish water was issued twice each day, with each man receiving a few spoonfuls.

As the ship moved farther north, tropical heat gave way to freezing cold. Barefoot and dressed only in the ragged remnants of their clothes from the Philippines, men began dying in ever greater numbers. At first, about 15 died each

night. Later in the voyage, that number increased to about 40 deaths per night.

Documents used later in the war crimes trials said, “When the prisoners died aboard the *Brazil Maru* they were stacked like cordwood and all of them presented a uniform appearance: lips were drawn back, exposing teeth in a half snarl due to skin contraction, ribs seemed to be bursting out

of the bodies, and where the stomach would be was a hollow, legs and arms were pipe stems. A combination of cold and rigor mortis gave them a rigid unreal appearance. The eyes were sunken. Most of them were stripped nude and all of them gave a definite appearance of starvation.”

This seemingly endless trip finally was over when the ship arrived in Moji on Jan. 29. It was bitterly cold, and at last the Japanese issued some clothing to their shivering captives. Food and water were also issued, but many men were too sick to eat. Trial documents related that “when the men disembarked from the ship they were walking skeletons. . . . There were shocked expressions on the faces of the people of Moji as the prisoners were walked through the streets. Men shuffled, and some walked with the support of others. The men were infested with lice and had not shaved since 13 December.” Of the 1,619 men who had begun the trip on that date, about 450 still lived.

From Moji, the POWs were distributed to various prison and labor camps throughout Japan. For some, it was too late for their ravaged systems to recover from the ordeal; too sick to eat, lying in their own waste and filled with despair, many died within the next few weeks of starvation, dysentery, tuberculosis, pneumonia or enteritis. Only about 300 of the POWs who had been on the *Oryoku Maru* lived to see the end of the war.

There were no more hell ships. By January of 1945, Gen. Douglas MacArthur and the liberating Allied forces were making good on MacArthur’s promise to return to the Philippines. As rapidly as they could, invading American troops reached the prison camps and liberated the prisoners. Later, in his memoirs, MacArthur wrote, “Here was all that was left of my men of Bataan and Corregidor. The only sound was the occasional snuffle of a grown man who could not fight back the tears. As I passed slowly down the scrawny, suffering column, a murmur accompanied me as each man, speaking barely above a whisper, said, ‘You’re back,’ or ‘You made it,’ or ‘God bless you.’ I could only reply, ‘I’m a little late, but we finally came.’ I passed out of the barracks compound and looked around at the debris that was no longer important to those inside: the tin cans they had eaten from; the dirty old bottles they had drunk from. It made me ill just to look at them.”

By spring most of the POWs in the Philippines were home or on their way there. But for the nearly 5,000 of their comrades in Japan, there would be a wait of a few more months, until Hiroshima and Nagasaki finally brought an end to the war. Among the factors that influenced President Harry Truman to decide that the United States would use atomic bombs on those two cities, without the “demonstration before use” that some people advised, was the fear that if the Japanese were forewarned, they would massacre the POWs.



After the formal surrender in early September 1945, Allied military personnel and International Red Cross workers began seeking out and liberating the POWs in Japan.

If the liberators had been shocked by the condition of the POWs in the Philippines, they were appalled by what they found in Japan. Now, for the first time, the United States learned how many POW deaths had occurred when Americans bombed and torpedoed unmarked Japanese ships.



By January 1945, Gen. Douglas MacArthur and the liberating Allied forces made good on MacArthur's promise to return to the Philippines. "I'm a little late," said MacArthur, "but we finally came."

Now, the full story of the unimaginable horror of the hell ships was revealed and made public. The roster of the dead, and the manner of their deaths, were heartbreaking. Among those who had died were hundreds of anti-aircraft artillerymen.

In 1946 and 1947, the victorious Allied nations conducted war crimes trials of Japanese military and civilians accused of committing atrocities. For some reason, these never attracted the same amount of attention as the trials of

Nazi war criminals in Nuremberg, and today few Americans remember or realize that such trials took place.

Some survivors of the prison camps and the hell ships were called to testify. Many were convinced that they had endured



The 1946 and 1947 war crimes trials of Japanese military and civilians accused of committing atrocities sentenced many of the accused to death by hanging — among them some officers from the hell ships.

only because of their determination that they would live to bear witness against their tormentors. Their testimony helped convict many of the accused. A number of Japanese were sentenced to death by hanging — among them some officers from the hell ships — and many more received life or long-term sentences. The latter group included the soldiers respon-

sible for beheading the 15 sick Americans in the cemetery in the Philippines.

The survivors of the hell ships could never forget what they had been through. Many had suffered permanent injury, and the life span of most was shortened. Some, however, recovered their health and are still alive today — men who experienced hell and lived to tell about it.

Patricia M. Rhodes, the ADA branch historian, works at the U.S. Army Air Defense Artillery School, Fort Bliss, Texas.

ADA Association

by Maj. Gen. (Ret.) John B. Oblinger

The 1995 Force Protection Symposium at Fort Bliss, Texas, provided an excellent opportunity for the ADA Association to hold a general membership meeting. Col. Charles W. Hurd, executive director, called the meeting to order in the foyer of Soldier Hall and introduced the chief of Air Defense Artillery, Maj. Gen. James J. Cravens Jr., who welcomed the group. Cravens carded the group by holding up his ADA Association membership card and challenged all present with the importance of association membership. He then commended CSM Mark Avery, commandant of the NCO Academy, and his staff for signing up 715 new association members from the Army Noncommissioned Officers Course classes.

Hurd then presented the following slate of officers for election for the coming year: Col. Charles W. Hurd Jr. as executive director and Col. (Ret.) Mike DiGennaro, Lt. Col. Steve Baldwin, Lt. Col. Mike Wilson, Lt. Col. (Ret.) James Mullett, Capt. James Leary, CWO 4 (Ret.) Sam Pignatella, CSM Mark Avery, 1st Sgt. Ben LeBron and Mr. Don Shank as board members. The association members unanimously accepted the new slate of officers.

Hurd introduced Brig. Gen. (Ret.) Ernie Roberts, association president and chairman of the new museum capital campaign, to outline the importance of gaining success through the fund-raising activity. He emphasized the importance of active duty membership and fund-raising by pointing out that he must be able to report strong support from the active ADA community when he asks potential major donors for financial support. He also outlined revitalized efforts to reach more and more potential donors. These efforts include forming a Publicity Committee headed by Maj. Gen. (Ret.) John Oblinger and a Naming Opportunities Committee headed by Col. (Ret.) Mike DiGennaro. The highlights of the Publicity Committee action plan are to tell the ADA Association and new museum stories

through multimedia outlets on a frequent and persistent long-term basis. The recommendations of the Naming Opportunities Committee will be submitted for council approval at the next regular council meeting. At this meeting, the contribution amounts necessary to have name recognition for various rooms and areas in the new museum will then be announced. Roberts thanked those who have provided support and challenged everyone to step up the pace of their support and donations.

Lt. Col. Dave Casmus, commander of 2-44 ADA at Fort Campbell, Ky., issued a further challenge to other commanders to match or exceed his battalion's donation of \$500 to the building fund. He presented Roberts with a crisp \$100 bill as the first installment.

The association is proud to announce that other commanders have begun to answer the challenge. Col. Stan Green, commander of the 31st ADA Brigade, presented a check to the association for \$383 from the Fort Hood ADA Association membership, after announcing that each member at the February 1995 Fort Hood ADA Ball had volunteered to contribute one dollar toward the new museum capital fund. Green and his battalion commanders (Lt. Col. Richard E. Bedwell, 2-2 ADA; Lt. Col. James E. Ward, 2-5 ADA; Lt. Col. Jack E. Faires; 4-5 ADA and Lt. Col. Austin D. Bell III, 4-43 ADA) plan to ask the membership attending the December 1995 Fort Hood ADA Ball to again volunteer contributions for the new museum fund.

Hurd reminded all the members that packets are available containing information on current association assets, the museum fund campaign and Saint Barbara and Molly Pitcher awards. A limited number of packets are left over from the meeting and may be obtained by contacting Mrs. Edith Fanning, ADA Association secretary, at (915) 568-2711 or DSN 978-5412.



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