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STUDY
PROJECT

THE ROLE OF THE
ARMY TACTICAL MISSILE SYSTEM
IN JOINT WARFARE

BY

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93-10543



93 5 11 2 10

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION

Unclassified

1b. RESTRICTIVE MARKINGS

2a. SECURITY CLASSIFICATION AUTHORITY

3. DISTRIBUTION/AVAILABILITY OF REPORT
Approved for public release
Distribution is unlimited.

2b. DECLASSIFICATION/DOWNGRADING SCHEDULE

Distribution Statement A

4. PERFORMING ORGANIZATION REPORT NUMBER(S)

5. MONITORING ORGANIZATION REPORT NUMBER(S)

6a. NAME OF PERFORMING ORGANIZATION

U.S. Army War College

6b. OFFICE SYMBOL
(If applicable)

7a. NAME OF MONITORING ORGANIZATION

6c. ADDRESS (City, State, and ZIP Code)

Root Hall, Building 122
Carlisle, PA 17013-5050

7b. ADDRESS (City, State, and ZIP Code)

8a. NAME OF FUNDING/SPONSORING
ORGANIZATION8b. OFFICE SYMBOL
(If applicable)

9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

8c. ADDRESS (City, State, and ZIP Code)

10. SOURCE OF FUNDING NUMBERS

PROGRAM
ELEMENT NO.PROJECT
NO.TASK
NO.WORK UNIT
ACCESSION NO.

11. TITLE (Include Security Classification)

The Role of the Army Tactical Missile System in Joint Warfare

12. PERSONAL AUTHOR(S)

LTC Philip O. White

13a. TYPE OF REPORT

Study Project

13b. TIME COVERED

FROM _____ TO _____

14. DATE OF REPORT (Year, Month, Day)

1993 April 15

15. PAGE COUNT

39

16. SUPPLEMENTARY NOTATION

17. COSATI CODES

FIELD GROUP SUB-GROUP

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT

☐ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION

Unclassified

22a. NAME OF RESPONSIBLE INDIVIDUAL

COL(R) Michael J. Morin, DAA

22b. TELEPHONE (Include Area Code) | 22c. OFFICE SYMBOL

717-245-3457

AWCA-CD

ABSTRACT

AUTHOR: Philip O. White, LTC, USA
TITLE: The Role of the Army Tactical Missile System
In Joint Warfare
FORMAT: Individual Study Project
DATE: 15 April 1993 **PAGES:** 37 **CLASSIFICATION:** Unclassified

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USAWC MILITARY STUDIES PROGRAM PAPER

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THE ROLE OF THE ARMY TACTICAL MISSILE SYSTEM
IN JOINT WARFARE

AN INDIVIDUAL STUDY PROJECT

by

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THE ROLE OF THE ARMY TACTICAL MISSILE SYSTEM IN JOINT WARFARE

INTRODUCTION

"Joint warfare is team warfare." Thus begins a message from the Chairman, Joint Chiefs of Staff, as introduction to the new Joint Pub 1, Joint Warfare of the US Armed Forces, dated 11 November 1991. As the capstone publication upon which all other evolving joint doctrine publications will be keyed, its emphasis on such central themes as unity of effort and complementary capabilities among the Services is extremely important. The Persian Gulf War clearly demonstrated the effectiveness of well planned and orchestrated joint operations. It is very difficult to envision a realistic scenario for future warfare involving only a single Service. But as surely as the Gulf War was the catalyst for molding a truly joint team among the Services, so the intervening period of bureaucratic "warfare" has been the catalyst for dissolving that unity of purpose.

With the Department of Defense budget poised for a nose dive of as yet unknown proportions and with intense Congressional scrutiny of Service roles and missions, there was little doubt as to the inevitability of the digression to parochial Service-oriented (versus joint) viewpoints. Much attention has been devoted in recent months to an informal Air Force proposal to take over the Army's long-range and high altitude air defense missions. Not receiving as much fanfare, but also included from the beginning, was a corresponding Air Force proposal to take

over the Army's deep fires mission (also known as deep attack). In exchange for these two Army missions, the Air Force Chief of Staff indicated he was willing to give up the traditional close air support (CAS) mission. Although cumbersome and lacking the glamour of other Air Force missions, CAS is of vital importance to Army commanders. But the Army Chief of Staff rejected the Air Force proposal. It has been reported that Army leaders viewed the Air Force proposal as "a major power play that would confine the Army to the close-in battle -- and in the process limit the Army's role in future conflicts."¹

This paper will first examine the current and future roles of the Army Tactical Missile System (ATACMS), the Army's primary deep fires weapon. With this background, the primary purpose of the paper is to analyze the ongoing struggle between the Army and the Air Force for control of the deep fires mission and to suggest refinements in emerging joint doctrine which has a bearing on that struggle. In particular, a 23 November 1992 doctrinal paper from the Chairman of the Joint Chiefs of Staff merits special attention. It is entitled "A Doctrinal Statement of Selected Joint Operational Concepts." It was intended to resolve many of the long-simmering issues between the Services. But has it?

ATACMS DESCRIPTION AND CAPABILITIES

The official Army acronym for Army Tactical Missile System is Army TACMS instead of ATACMS, but for brevity ATACMS will be used throughout this paper. ATACMS is an inertially guided surface-to-surface missile fired from the Multiple Launch Rocket

System (MLRS) launcher. It is designed to use the pre-existing MLRS force structure with no increase. Its range is well in excess of 100 kilometers. ATACMS is the replacement for the conventional LANCE missile system and during development ATACMS was prohibited by law from carrying a nuclear warhead. The warhead for the currently fielded Block I configuration consists of approximately 950 M74 antipersonnel/antimateriel (APAM) bomblets, which produce an extremely lethal and destructive spray of tungsten fragments over a large target area. Block I is designed to engage high-priority soft (unarmored) targets throughout the corps and echelons-above-corps (EAC) assigned operating areas. Key target sets include air defense missile sites, surface-to-surface rocket and missile sites, logistics elements, and command, control, and communications complexes.

ATACMS has many attractive characteristics and capabilities that allow it to be responsive to a joint commander's priorities. It has all-weather and day/night capability; all that is needed is a target grid coordinate from any sensor or intelligence source that might be available. It is not encumbered with the need for digital terrain and elevation data as cruise missiles and some aircraft are. It is highly survivable versus known and projected threat missile defense systems due to its high velocity and low radar cross section. It has much shorter time of flight than a cruise missile and quicker reaction than aircraft on runway or deck alert. It offers immediate deployability to immature theaters having little pre-existing infrastructure; the MLRS launcher is deployable by C141 and the missiles by C130.

Perhaps the most significant characteristic of ATACMS for the Joint Force Commander (JFC) is that it offers an option to putting expensive aircraft and pilots at risk. The primary vulnerability of all manned aircraft is the man. Depending on the situation, the risk of a pilot becoming a **hostage** poses a national security concern of **strategic** importance. During mission planning, pilot safety is always a primary concern. This point was highlighted by Pentagon spokesman Pete Williams during the 13 January 1993 Cable News Network coverage of Air Force participation in coalition air strikes on Iraqi surface-to-air missile sites within United Nations sanctioned no-fly zones. Situations like these are where the JFC can take advantage of complementary capabilities among the services. Joint Pub 3-03, Doctrine for Joint Interdiction Operations, states that "The JFC is responsible for ensuring that diverse component capabilities complement each other to achieve the desired results."² Why risk a pilot or an expensive aircraft in situations where enemy air defenses pose a significant threat if that same target can be taken out by unmanned weapons like ATACMS or the Navy's Tomahawk?

ATACMS DEVELOPMENT HISTORY

The original requirement for ATACMS was focused on a Block II configuration carrying "smart" antiarmor submunitions for attacking large formations of armored combat vehicles at long ranges. In fact, the roots of the current controversy with the Air Force can be traced to the Defense Advanced Research Project Agency's "Assault Breaker" program of the early 1980s. This

program, which also gave birth to the Joint Surveillance Target Attack Radar System (JSTARS), was focused on the need to provide North Atlantic Treaty Organization (NATO) forces a means to slow the pace of overwhelming Soviet armored attacks in accordance with the now defunct doctrine of Follow On Forces Attack (FOFA). These developments "served to blur traditional roles and missions by giving ground commanders the ability to find (using JSTARS) and attack (with ATACMS) targets at far greater depths than they had previously,"³ depths that were the exclusive domain of the Air Force until that time.

With the successful conclusion of the Assault Breaker program, a Joint Tactical Missile System (JTACMS) project office was formed with both Army and Air Force participation. But the requirements development process for a common missile to be launched from the ground or the air proved to be too constraining for the Air Force and they pulled out to go their own way after a year or so. The Army approved the original Required Operational Capabilities (ROC) document for "JTACMS-Army" in 1985. One of the Army's current problems in the joint arena is a holdover from this original ROC. Although it was updated as the ATACMS ROC in 1989 (i.e., after the 1986 Goldwater-Nichols Act which emphasized jointness), the revised document continues to focus on ATACMS as the Corps Commander's weapon, with little attention to EAC, or joint utilization of ATACMS. As a result, doctrinal development for the employment of ATACMS as a complementary weapon for joint force utilization has remained relatively immature.

After pulling out of the JTACMS program, the Air Force eventually formed and took the lead in the current Tri-Service

Stand-off Attack Missile (TSSAM) program, a stealthy cruise missile. The Army version of TSSAM is designed to carry BAT Brilliant Antiarmor Submunitions, and, assuming TSSAM's successful development, it would replace ATACMS Block II for the antiarmor role. But the assumption of success for TSSAM may be a bit presumptuous. It has been plagued with technical difficulties and cost overruns. Another serious consideration for Army officials is that the unit cost projection for TSSAM is about three times that of ATACMS. With declining budgets for all Services, the Army in December 1992 attempted to cut its losses and withdraw from the program, but on 11 January 1993, was ordered by the Under Secretary of Defense for Acquisition to remain in the program.⁴ However, an Army proposal to pursue use of an extended range ATACMS for the antiarmor role spurred direction for a Defense Acquisition Board (DAB) review of all related programs. Needless to say, friction between the Army and the Air Force has not been reduced by these circumstances.

ATACMS PERFORMANCE IN THE PERSIAN GULF WAR

Initial fielding of ATACMS was scheduled for September 1990 in Germany. Instead, the first battalion equipped was immediately deployed to Saudi Arabia during late August 1990. Only two of the battalion's three MLRS batteries had been converted to the deep attack capable configuration. One of these went to battle with VIIth Corps and the other with XVIIIth Airborne Corps. The ATACMS program was in low rate initial production when Iraq invaded Kuwait. Production was accelerated

soon after the crisis began. Of the 105 missiles eventually shipped to the theater, only 32 were fired, primarily because they were considered to be precious assets due to their limited availability and so they were used conservatively during the air campaign due to the uncertainty of the duration of the ground war. Airspace coordination difficulties for this newly fielded system further contributed to its limited use.

The two paragraphs on ATACMS performance from the Title V Report to Congress are quoted below in their entirety:

"ATACMS apparently silenced targeted air defense sites; electronic emissions ceased soon after sites were attacked by ATACMS. Coalition aircraft flying through flight corridors cleared by ATACMS strikes reported no enemy air defense radar activities. Based on demonstrated performance during suppression of enemy air defense missions, Army Component, Central Command requested all available ATACMS assets for use in the ground offensive.

ATACMS was a highly responsive system. A-10 pilots requested a short notice ATACMS strike on an air defense site and ATACMS responded within minutes, completely destroying the target. During one ATACMS strike, more than 200 unarmored vehicles were destroyed as they attempted to cross a bridge."⁵

The commander, VIIth Corps Artillery, sent a message back to the Commandant, U.S. Army Field Artillery School, during the war and stated that ATACMS was "working great!"

ATACMS EXTENDED RANGE

The only shortcoming noted in the Title V report was that "ground commanders desired....even greater range"⁶ in order to increase the likelihood that ATACMS would be able to reach high payoff enemy targets such as SCUD launch and reload sites. Development of an Extended Range version of ATACMS was initiated based on this shortcoming. By reducing the number of bomblets in

the warhead from 950 to 275, thus making the missile much lighter, a maximum range in excess of 300 kilometers is achievable. The lighter missile has the additional benefit of increased speed and shorter time of flight to the current maximum range. To attain the required accuracy at extended ranges, a Global Positioning System (GPS) receiver will be integrated with the existing inertial navigation system. The very precise accuracy of GPS allows the missile to maintain satisfactory lethality with the much lighter payload.

Of note here, the Navy has recently initiated a program to modify and demonstrate ATACMS in a ship-to-shore role.⁷ This is made possible by the integration of GPS in the missile to compensate for the constant position variation inherent in a floating launch platform. There is also a proposal to the Air Force from the ATACMS prime contractor for an air-launched version of ATACMS which incorporates GPS. If affordability or technical problems eventually force the cancellation of TSSAM, it would be ironic if the name Army Tactical Missile System eventually changes back to Joint Tactical Missile System.

DEEP FIRES LINK TO AIR DEFENSE

To fully understand the issues surrounding ATACMS' role in deep fires, it is helpful to examine how the deep fires mission is linked to air defense. At first glance it might appear that the motivation for the Air Force proposal on mission transfers discussed in the Introduction to this paper was simply (and innocently) to provide both services with a clean delineation of responsibility for the "close-in" battle area (Army), and

everything beyond that (Air Force). But a closer look suggests that other factors may have influenced the proposal.

"Air defense," as intended in the Air Force proposal, actually consists of three distinct elements: theater air defense (TAD), theater missile defense (TMD), and national missile defense (NMD). (In the interest of brevity here, the following explanation is necessarily over-simplified.) TAD essentially means the current Patriot and Hawk systems in the antiaircraft role. NMD is a spin-off from the Strategic Defense Initiative and is envisioned to be (i.e., now in development) a ground-based ballistic missile interceptor system located in Grand Forks, North Dakota.

TMD, at least in concept, consists of three developmental "pillars" and a command, control, communications, computers and intelligence (C4I) "foundation." The three pillars are Active Defense, Passive Defense and Attack Operations (sometimes referred to as Counter-Force). Active Defense, which has received the vast preponderance of prior TMD funding (funneled to the Army Space and Strategic Defense Command through the Strategic Defense Initiative Organization), essentially means development of an upgraded Patriot (for the antimissile role) and the new Theater High Altitude Air Defense (THAAD) system. Passive Defense is a series of non-lethal protective measures, such as camouflage and early warning systems, in the event that enemy missiles penetrate the active defense umbrella.

The Attack Operations pillar of TMD is where the link between "air defense" and deep fires occurs. The premise of

Attack Operations is to find and destroy elements of the enemy surface-to-surface missile system either pre- or post-launch, preferably at a reload site where multiple missiles or support equipment may be taken out by collateral damage. A recently completed "Attack Operations Requirements Study" conducted by the U.S. Army Field Artillery School (USAFAS) concluded that the Extended Range variant of ATACMS would provide "an achievable near-term solution to the Attack Operations problem."⁸ More on this shortly.

TMD and NMD are both multi-billion dollar programs which have enjoyed strong Congressional support spurred by memories of the Iraqi SCUD launches during Operation Desert Storm. Force structure (manpower) requirements for these programs and the existing Patriot program would be enormous, perhaps "tens of thousands" by one estimate.⁹ The Army currently has the lead in both TMD and NMD. With budget and manpower cuts hitting all the Services hard, the Air Force would obviously gain much more than a clean delineation of battlefield responsibilities if they are successful in taking over "air defense" from the Army.

SCUD HUNTING IN THE 21ST CENTURY

One of the glaring deficiencies for U.S. forces during the Persian Gulf War was the inability to effectively counter SCUD attacks. The much debated question of Patriot's effectiveness is immaterial. It does not take the proverbial rocket scientist to figure out that in a war of attrition, where the enemy has cheap weapons (like SCUD) and we have expensive weapons (like Patriot), the most ~~cost~~-effective way to deal with the threat is to

eliminate his ability to launch. SCUDs may be cheap and plentiful, but their launchers and supporting infrastructure are not. This is where the Attack Operations pillar of TMD becomes extremely important.

During 1991, the new Director of Defense Research and Engineering in the Office of the Secretary of Defense established seven Technology Thrusts to focus scarce funds on developments for high payoff areas. The "Attack Operations Requirements Study" by USAFAS describes how two of those Technology Thrusts, "Precision Strike" and "Global Surveillance and Target Acquisition," can be tied together with a sophisticated C4I network to make an objective Attack Operations system work.

Using the ATACMS Extended Range missile and the JSTARS imagery intelligence aircraft as the basic components of the objective system, general target location or cue of an enemy missile launch may come from a variety of sensors including national assets (i.e., satellites). A problem here is dealing with intelligence information that is highly classified because of the source. To protect the source, the U.S. Army Missile Command has developed the Tactical Information Broadcast Service (TIBS) which essentially acts as a collector and buffer between multiple sources of intelligence and the warfighters who use the intelligence. TIBS relays the launch information in near-real-time via ultra high frequency (UHF) satellite communications to an airborne net control aircraft such as Rivet Joint, a signals intelligence platform.

Rivet Joint alerts a standby MLRS battalion to be ready and simultaneously directs JSTARS to search the launch area for a

moving target. (With planned engagement areas, JSTARS also may independently detect targets, thus eliminating the need for the foregoing sequence starting with the satellite launch cue.) JSTARS tracks the launcher to its reload site and sends those coordinates to the MLRS battalion by way of the Ground Station Module. As soon as the coordinates are transferred and the MLRS launcher is layed accordingly, the ATACMS missile is fired.

Attacking the reload site instead of an individual SCUD launcher has the advantage of destroying multiple SCUD missiles, the launcher (or launchers if others are present), the reload equipment, and any other equipment or supplies involved in the reload operation. The objective timeline for this entire process, from satellite cue to missile on target, is less than 10 minutes. The "Attack Operations Requirements Study" confirms that this is feasible.¹⁰ The net result is a quick reaction, long range, Precision Strike capability for the Army, the joint team and the Combatant Commanders.

THE DOCTRINAL DEBATE

The debate over the Air Force proposal to divide battlefield responsibilities at the close-in battle area centers on issues involving the Fire Support Coordination Line (FSCL) and the outer boundary of the ground force commander's area of responsibility (AOR).

The FSCL is defined in the Department of Defense Dictionary of Military and Associated Terms (Joint Pub 1-02) as:

"A line established by the appropriate ground commander to insure coordination of fire not under his control but which may

affect current tactical operations. The (FSCL) is used to coordinate fires of air, ground or sea weapons systems using any type of ammunition against surface targets...Supporting elements may attack targets forward of the (FSCL) without prior coordination with the ground force commander, provided the attack will not produce adverse surface effects on, or to the rear of, the line. Attacks against surface targets behind this line must be coordinated with the appropriate ground force commander."

During the Persian Gulf War, the rules of engagement allowed the Air Force to attack targets beyond the FSCL without coordinating with ground maneuver commanders. But close air support missions, inside the FSCL, had to be placed under the control of ground observers. These actions were in consonance with the definition above. It was ATACMS, a weapon system under the ground commander's control, with its ability to hit deep targets far beyond the FSCL, that posed the problem and stirred up the controversy over the FSCL. Launching ATACMS required prior coordination with the Air Force for airspace deconfliction, coordination which was greatly complicated by the complex centrally controlled air campaign priorities and the daily air tasking order for coalition aircraft. Even for a short range shot well within the ground commander's AOR, the maximum altitude of ATACMS, measured in double-digit kilometers, meant that coordination with the Air Force was always necessary. Both Army and Air Force leaders were confounded by the dilemma. Ground commanders were frustrated by their inability to use an organic weapon to shape the battle at a time and place of their own choosing. Air Force planners, however, were reluctant to operate on the "big sky, little bullet" theory.¹¹

The FSCL has traditionally been at or near the maximum range of tube artillery. But the MLRS rockets already out-range tube

artillery and an Extended Range Rocket is now in development which will extend the range from approximately 32 kilometers to more than 45 kilometers.¹² At any rate, the solution of simply extending the FSCL to the maximum range of the ground commander's fire support systems breaks down when ATACMS is considered, especially the Extended Range variant with a maximum range in excess of 300 kilometers. Some of the potential operating areas within theaters, as constrained by national boundaries, may not be much deeper than that. The theater inventory of ATACMS cannot possibly be large enough to accommodate all potential targets in a battlefield area of that size. So a sharing of targets by the Army and the Air Force between the FSCL and the outer boundary of the ground commander's AOR is essential.

The Army and the Air Force have different perspectives on what "deep" means. In comparison to the current ATACMS missile with a range of over 100 kilometers, or the ATACMS Extended Range missile with a range of over 300 kilometers, Air Force tactical fighter aircraft used for interdiction missions typically have a range between 500 and 1000 miles (without in-flight refueling). Strategic bombers have a range of several thousand miles. So while ATACMS fires beyond the FSCL, or even beyond the ground commander's AOR, may be deep in relationship to the close battle, they may not be deep at all in comparison to the depth of Air Force interdiction or strategic attack missions within the theater. However, the ability of ATACMS to attack targets at operational as well as tactical depths complements the Air Force capabilities and enhances the joint force ability to conduct

simultaneous attack of targets throughout the depth of the battlefield.

Since the Air Force proposals on mission transfers were informal (between the two Service Chiefs of Staff), it is not at all clear, despite several articles written to date which suggest otherwise, that the intent was for an actual mission transfer of ATACMS to the Air Force. About the same time as the proposals, August 1992, the Deputy Chief of Staff, Plans and Operations, Headquarters, U.S. Air Force, published the "JFACC Primer," a pamphlet covering "current thinking on joint air operations."¹³ (JFACC is short for Joint Force Air Component Commander.) Under the broad heading of "Air Force Issues" in the JFACC Primer is the subject of "Interdiction". Because of its significance to the doctrinal debate and the overall purpose of this paper, as well as its applicability to the current question of whether a mission transfer was intended, the issue is quoted here in its entirety (editing errors included):

"ISSUE: Who should have responsibility for integration of component assets normally tasked in support of the theater interdiction effort.

-- As ground commanders gain longer range weapons such as (ATACMS) and the ability to see deeper with systems like (JSTARS) their interest in influencing the battlefield at greater ranges increases.

--- Army desires Corps Commander have responsibility for controlling the effects of all "deep fires" within their area of responsibility.

-- "Deep fires" is a term that the Army proposed for joint doctrine in the final draft of Joint Pub 3-09, "Doctrine for Joint Fire Support" as: "The employment of weapons systems (individually or collectively) against targets to achieve desired results."

-- "Deep fires" is another name for interdiction.

-- This draft attempts to expand scope of fire support from the tactical level to the operational level; to encompass all means of applying fire power, including interdiction under the direction of the Joint Force Fires Coordinator (JFFC).

-- These concepts are inconsistent with Joint Pub 3-03, "Interdiction Operations" which allows that the JFACC normally controls interdiction.

-- AF feels that responsibility for synchronizing theater interdiction attack assets should be vested in the commander who has the preponderance of attack assets and C2 capability to conduct (operations); for these attacks it is normally the JFACC.

- Just as synchronization of all attack assets is critical to the land component commander (LCC) for all fires inside the FSCL, so it is critical to the Air Component Commander for all attacks beyond the FSCL.

CONCLUSION: All operations beyond the FSCL should be under the purview of the JFACC."¹⁴

The foregoing Air Force viewpoint does not sound like a plea for a mission transfer. Rather, it presents a reasonable argument for controlling deep fires under a central air tasking order. The Army viewpoint, of course, is that the ground commander should at least be able to control his own organic assets within his AOR. Without control of his own organic assets, the ground commander has no way of independently shaping the battlefield beyond the FSCL.

Within the interdiction issue quoted above, the definition for deep fires, attributed to the final draft of Joint Pub 3-09, is actually a definition for the more generic term "fires." Surprisingly, deep fires is not defined in Joint Pub 3-09. In Joint Pub 1-02, the DOD Dictionary, deep fires again is not found but "deep supporting fire" is defined as:

"Fire directed on objectives not in the immediate vicinity of our forces, for neutralizing and destroying enemy reserves and weapons, and interfering with enemy command, supply, communications and observations."

Contrasted with this definition is the definition of "interdiction," also from the DOD Dictionary:

"An action to divert, disrupt, delay or destroy the enemy's surface military potential before it can be used effectively against friendly forces."

Although these two definitions use different words, it is clear that an overlap exists and a common purpose is shared between them. Likewise, whether it is called deep fires or interdiction, and whether it is controlled by the JFFC or the JFACC, ATACMS is capable of **sharing** deep attack missions with the Air Force to achieve a common purpose.

The final draft of Joint Pub 3-09 (dated June 1991) states that the primary concern of some JFCs will be divided between interdiction and joint fire support, which includes such attack resources as cannons, rockets, missiles, naval gunfire and electronic warfare, as well as fixed and rotary winged aircraft. The JFFC is proposed to ensure unity of purpose due to the diversity of these systems, their command and control systems and the logistics systems that support them.¹⁵

In defining the JFACC, the DOD Dictionary specifies that the JFACC "derives his authority from the Joint Force Commander who has the authority to exercise operational control, assign missions, direct coordination among his subordinate commanders, redirect and organize his forces to ensure unity of effort in the accomplishment of his overall mission." There can be no doubt that if the JFC wants deep fires, either inside or outside the Army's AOR, controlled by the JFACC, then the Army will have no choice but to comply. However, the JFACC may not always be an Air Force officer.¹⁶ Depending on the theater, the JFACC might

also be a Navy officer. So a mission transfer of ATACMS from Army to Air Force would not be justified on this basis.

Two key problems come to mind immediately to mitigate against an actual mission transfer of ATACMS to the Air Force. First is the MLRS launcher which is required to fire ATACMS. No launchers are dedicated solely to ATACMS. All launchers fire both rockets and missiles interchangeably. So taking out some "ATACMS launchers" for the Air Force has the direct result of reducing MLRS rocket launching force structure. And just as with the case of transferring CAS to the Army, it is not just the MLRS launchers or A-10 aircraft that must go, but the entire supporting infrastructure to include maintenance facilities and equipment, repair parts, the training base, etc. The second problem mitigating against a mission transfer is that the procurement objective for ATACMS is already far short of the current threat-based requirement for missiles. Adding quantities to account for an increase in Air Force driven requirements, assuming the Air Force would still service all valid Army requirements, would be intolerable for either Service when the realities of declining budget priorities are considered.

CJCS JOINT OPERATIONAL CONCEPTS PAPER

In an attempt to resolve many of the joint doctrinal issues upon which the Services have been divided, the Chairman of the Joint Chiefs of Staff (CJCS) on 23 November 1992 issued a document entitled "A Doctrinal Statement of Selected Joint Operational Concepts." Throughout its development this concepts

paper was known to all those who participated in the review and coordination process simply as "Full Dimensional Operations" (from Joint Pub 1). This important document is to be used as the "authoritative baseline" for developing or revising other key joint publications on the subject of integrating interdiction and operational maneuver. According to its preface, these include Joint Pubs 3-0, Doctrine for Joint Operations, 3-03, Doctrine for Joint Interdiction Operations, and 3-09, Doctrine for Joint Fire Support.

The CJCS concepts paper establishes principles for the organization and employment of fire and maneuver by joint forces. Among the critical issues it addresses are the role of the JFACC, supported versus supporting command relationships, synchronizing maneuver and interdiction, procedures for the fire support coordination line, and the joint targeting process. Based on several months of research in this field, my assessment is that the concepts paper goes a long way toward resolving many of the sticky issues hampering unity of effort among the Services. However, in some areas it simply does not go far enough, while in others it goes too far.

A section entitled "Organizational Concepts" contains the following passage as a focal point for the concepts paper:

"The first principle in joint force organization is that Joint Force Commanders organize forces to accomplish the mission based on their vision and concept of the operation. Unity of effort, centralized planning, and decentralized execution are key considerations."¹⁷

To enhance unity of effort, a flexible range of command relationships based on delegated authority is available. These include combatant command (COCOM), operational control (OPCON),

tactical control (TACON), and support. The supported/supporting relationship is where concern arises. Joint Pub 0-2, Unified Action Armed Forces (UNAAF), specifies that the supported commander "will have the authority to exercise general direction of the supporting effort. General direction includes the designation of targets or objectives, timing, and duration of the supporting action."¹⁸ If the definition stopped here, the supported and supporting relationship would have a firm foundation. But it goes on to specify that "The supporting commander has the responsibility to ascertain the needs of the supported force and take such action to fulfill them as is within existing capabilities, consistent with priorities and requirements of other assigned tasks." It is this last phrase which causes concern when considering the JFACC in a supporting role to the land force commander.

Note that "land force commander" is a generic term used without abbreviation throughout the CJCS concepts paper. For brevity, LFC will be used throughout the remainder of this paper.

The Joint Force Commander (JFC) normally designates a JFACC "whose authority and responsibilities are defined by the establishing JFC based on the JFC's estimate of the situation."¹⁹ The JFACC is normally designated as the supported commander for counterair, air superiority, and strategic attack operations.²⁰ In addition, the JFACC is (not "normally," but always) the supported commander for the JFC's overall air interdiction efforts.²¹ Other duties which the JFC may assign to the JFACC include airspace coordination authority (ACA), area air defense commander (AADC), and, as a subset of AADC, joint theater missile

defense (JTMD) coordinator.²² With all these responsibilities and missions, the JFACC has ample opportunity to become a victim of conflicting priorities and requirements.

Within the geographical boundaries, or area of responsibility (AOR), assigned to the LFC by the JFC, the LFC "will be designated the **supported** commander and will be responsible for the synchronization of maneuver, fires, and interdiction through target priority, effects, and timing of interdiction operations."²³ The foregoing statement is found in a section of the concept paper entitled "Synchronizing Maneuver and Interdiction." Taken in isolation, this statement seems to give the LFC exactly the authority he needs to ensure that he can influence his own destiny by shaping the battlefield within his AOR in accordance with the JFC's concept of operations and the LFC's scheme of maneuver. The JFACC, if we stop here, is clearly in the **supporting** role for interdiction within the LFC's AOR.

Or is he? Remember that the JFACC is the **supported** commander for the JFC's overall air interdiction efforts. So, depending upon the situation, the LFC and JFACC may find themselves competing for scarce interdiction assets while both function as **supported** commanders, one inside the AOR and the other outside the AOR. So who is in charge? Reading on,

"Interdiction target priorities within the land or naval force boundaries will be considered along with theater-wide interdiction priorities by the Joint Force Commander and reflected in the apportionment decision. The JFACC will use these priorities to plan and execute the theater-wide interdiction effort."²⁴

Clearly the JFC is in charge. It is incumbent upon the LFC to ensure that the JFC and the JFACC fully understand his needs.

Ultimately, what really counts is where the LFC's interdiction target priorities stack up against the theater-wide interdiction target priorities as determined by the JFC in the apportionment decision. It must also be kept in mind that overall interdiction target priorities may be diluted by **strategic** target priorities.

These realizations make it even more important to resolve the question of who controls deep fires/interdiction assets organic to land forces. Is it the LFC or the JFACC? If the LFC has interdiction requirements inside his AOR and the JFACC has equal or higher priority requirements outside the AOR, what "rules of precedence" apply to the utilization of the LFC's assets by the JFACC? The concepts paper specifies no less than 10 categories of weapons or forces which have interdiction capabilities; everything from ground maneuver forces to satellite systems.²⁵ In particular, if the JFACC wants to routinely incorporate ATACMS into the air tasking order (and Army generals from the Pentagon have indicated that the Air Force definitely **does** want this)²⁶, what is to prevent the JFACC from doing the same with attack helicopters or special operations forces? All of these, according to the concepts paper, are "interdiction capable forces," and the JFACC is the supported commander for the overall interdiction effort. In fact, during Operation Desert Storm all three of these non-air assets were incorporated, at one point or another, into the JFACC's air tasking order.²⁷

By now it should be clear that the joint targeting process and the JFC's apportionment decision process are extremely

critical for both the JFACC and the LFC. However, the concepts paper fails to unambiguously designate the responsible individual (other than the JFC himself) in the development of prioritized target listings and apportionment recommendations. The responsibility for the apportionment recommendation to the JFC was previously assigned to the JFACC in Joint Pub 1-02 (the DOD Dictionary), Joint Pub 3-03 (Joint Interdiction Operations), and the JFACC Primer. Under the major heading of "Targeting" and the sub-heading of "Campaign Planning", the concepts paper states that JFCs typically organize Joint Targeting Coordination Boards (JTCBs), which may be either integrating centers or JFC-level review mechanisms. Either way, the emphasis is on joint, "with representatives from the (JFC) staff, all components, and, if required, their subordinate units." Further, "the JTCB reviews target information, develops target guidance and priorities, and may prepare and refine joint target lists."²⁸ Immediately following this last quote is a reference to Joint Pub 5-00.2, Joint Task Force Planning Guidance and Procedures, which states that "the JTCB is normally chaired by the J3 or his representative."²⁹ But the concepts paper itself does not specify any particular individual to be in charge of the broad targeting oversight function. It only states that the JFC "may task an organization within (his) staff ... or may delegate the responsibility to a subordinate commander."³⁰

Still under the major heading of "Targeting," but under the sub-heading of "Execution Planning," the concepts paper states that JFCs "will normally delegate the authority to conduct execution planning, coordination and deconfliction associated

with targeting," again emphasizing a joint effort. Further, "whoever is designated this responsibility must possess a sufficient command and control infrastructure, adequate facilities and ready availability of joint planning expertise."³¹ This section hints that the JFACC, who does meet those criteria, might also be the JFC's choice to head up the JTCB.

The Army's concern, as expressed by key action officers in the joint doctrine development process, is the need for impartiality in the targeting and apportionment process.³² If the JFACC chaired the JTCB, the perception is that there would be no "honest broker" to look out for the LFC's best interests in the apportionment recommendation to the JFC. The J3 might be impartial, but would be unlikely to carry sufficient influence to counterbalance the JFACC when the apportionment recommendation is presented to the JFC. An acceptable alternative from the Army's perspective would be for the Deputy JFC to chair the JTCB. This is precisely what the Commanders in Chief, U.S. Atlantic Command and U.S. Pacific Command have mutually agreed to in a recent joint warfighting document.³³ This document includes a Joint Targeting Steering Group (JTSG) at the CINC level as well as the JTCB at the subordinate JFC level. The purpose of the JTSG is to conduct strategic planning outside the JFC's AOR.

Regardless of who chairs the JTCB, the LFC must look out for his own best interests and stay constantly involved in the targeting and apportionment process. During Operation Desert Storm the apportionment decision was updated daily along with the air tasking order. Present at these daily updates with the

CINC were both the JFACC and the LFC, as represented by the Deputy CINC. (GEN Schwarzkopf designated LTG Waller, Deputy CINC, as Land Component Commander for purposes of the targeting and apportionment process beginning on 9 February 1991, approximately two weeks prior to the ground war.)³⁴

The final area of concern from the CJCS concepts paper has to do with procedures for the fire support coordination line (FSCL). The FSCL is "a permissive fire support coordination measure used to expedite fires. Its greatest utility is in facilitating the attack of time-sensitive targets of opportunity while reducing the possibility of friendly casualties."³⁵ The FSCL may be established by the LFC, but must be "coordinated with the JFACC and other supporting elements."³⁶ Further, "the location and movement of the FSCL are determined in consultation with superior, subordinate, supporting, and affected commanders."³⁷

The first issue involving the FSCL is with the definition of "coordinate," since it is not in the DOD Dictionary. If its use essentially means "inform," there should be no problem from the Army perspective. However, if it means "reach mutual agreement," the LFC could find himself at odds with the JFACC over the depth of the FSCL, and perhaps other features. An 8 January 1993 message from the Deputy Chief of Staff for Operations and Plans, Headquarters, Department of the Army, addresses the CJCS concepts paper and states that a depth of 100-150 kilometers between the forward line of own troops (FLOT) and the FSCL is viewed as reasonable, "especially when (land force)

operations include fast-paced air and land maneuver." Further, "we believe that an FSCL at tube artillery range is normally inappropriate in that it limits the rapid maneuver of land forces."³⁸ A depth of 100-150 kilometers for the FSCL is significant since this is in the ballpark of the current maximum range for ATACMS, but it definitely conflicts with depths previously considered by the Air Force to be exclusively within the domain of air interdiction.

The second issue related to the FSCL involves another definition problem. Concerning fires beyond the FSCL, the concepts paper states:

"The FSCL allows the land force and supporting forces to attack expeditiously targets of opportunity beyond the FSCL. Forces attacking targets beyond the FSCL must inform all other affected commanders in sufficient time to allow necessary reaction to avoid friendly casualties. In exceptional circumstances, the inability to do so will not preclude the attack of targets beyond the FSCL."³⁹

"Exceptional circumstances" are not defined, and no examples are given. This oversight could leave too much room for interpretation, either too restrictive or too lenient. Also left unstated but implied is that "beyond the FSCL" means within the LFC's AOR, an important distinction considering the range capability of ATACMS.

Overall, the concepts paper makes significant progress in improving unity of effort among the Services. Fine tuning the areas cited, especially the supported/supporting command relationships, would eliminate unnecessary ambiguity and inter-Service frictions.

C4I COMPATIBILITY

The key to successful joint operations, whether for deep fires, air or missile defense, or whatever, appears to lie in effective communications. Specifically, C4I compatibility between and within the Services would eliminate the majority of problems currently hampering mission effectiveness. The JFACC Primer highlights the current incompatibilities in Service devices for passing and displaying air target information and air tasking orders. It states that "Improvised solutions are the rule, not the exception."⁴⁰ Likewise, the Title V Report to Congress on the Persian Gulf War lists as "Shortcomings":

"A comprehensive C3 (command, control and communications) interoperability plan between Services and other defense agencies had to be constructed with many workarounds."

"The ATO (air tasking order) transmission process was slow and cumbersome because of inadequate interoperability."⁴¹

The Title V report also lists as "Issues":

"Intelligence requirements grew to unprecedented levels, exceeding the communications capacity allocated to the intelligence agencies and functions. Deployment of service-unique systems for intelligence dissemination exacerbated this problem due to a lack of interoperability."

"There is a need for a comprehensive joint architecture from which supporting communications architecture can be built and interoperability issues resolved."⁴²

These C4I compatibility problems are of fundamental concern for commanders employing ATACMS because its effectiveness is directly tied to the accuracy and timeliness of targeting information as well as the efficiency of airspace deconfliction procedures. Joint Pub 3-03, Doctrine for Joint Interdiction Operations, emphasizes the need for near-real-time exchange of essential information among the JFC and subordinate commanders

possessing interdiction capabilities, especially when engaging moving targets. It acknowledges the necessity of "interoperability among friendly C3 systems," but concedes that "realistically, full compatibility is unlikely." Further,

"Differences in C3 equipment among the Services increase the need for coordination. Commanders must develop modifications, procedures, and methods to achieve maximum interoperability among systems."⁴³

Along this line, the ATACMS and MLRS Project Offices are working to develop a special application software package for ATACMS flight trajectory information. This information, reflecting both three-dimensional space and time, will go a long way toward resolving some of the airspace coordination difficulties encountered during Operation Desert Storm. But it will only be as useful as the compatibility of C4I devices of the Services allows it to be. With the assumption of fully compatible C4I systems, or an efficient workaround, the critical information on an ATACMS launch could be passed in near-real-time to pilots who might be close to the "danger zones" near the launch point and impact point for the flight. But the time consuming task of clearing an entire air corridor, as occurred during Operation Desert Storm, would be totally unnecessary due to the altitude of ATACMS, far above theater aircraft for the major portion of the flight. It is this kind of smart C4I development, and ensuring that all Services can efficiently communicate with one another, that is needed, not a continuing debate on mission transfers. In other words, if interoperability among the Services is efficient, it should not matter who possesses the equipment or has responsibility for the mission.

CONCLUSIONS AND RECOMMENDATIONS

ATACMS provides the Joint Force Commander with a combat proven weapon system that has tremendous capability to complement, not compete with, the weapon systems of other Services on the joint team. Its accurate, lethal, long range, all-weather, quick reaction and high survivability characteristics offer the JFC and his subordinates great flexibility in attacking a wide array of targets at tactical, operational and perhaps even strategic depths, depending on the depth of the operating area. In particular, when pilots and expensive aircraft might be put at significant risk, ATACMS offers the JFC the option to avoid a potential hostage situation and save critical air assets.

The 23 November 1992 doctrinal concepts paper from the Chairman of the Joint Chiefs of Staff is a major step in the direction of unity of effort among the Services. It has resolved many of the long-standing issues hampering joint doctrine development. Undoubtedly, parochial Service arguments based on differing interpretations of specific aspects of the concepts paper will have to be resolved before complete unity of effort can exist.

This study has pointed out that harmonious solutions, based on the need for simultaneous and integrated deep fires, should be codified within the doctrinal debate. To this end, the ongoing revision of Joint Pub 3-0, Doctrine for Unified and Joint Operations, should be used as the mechanism to clear up the remaining ambiguities in the CJCS concepts paper. In particular,

Joint Pub 3-0 should be definitive on supported versus supporting command relationships; who makes the apportionment recommendation to the JFC and who participates in the apportionment recommendation process; who establishes a JTCC and who is in charge of it; what criteria is used to prioritize interdiction within the LFC's AOR versus theater-wide priorities; and who controls deep fires assets organic to land forces for targets outside the LFC's AOR.

For the moment, the question of who will control ATACMS on the battlefield can only be answered with absolute certainty by the Joint Force Commander. The Army should consider assigning ATACMS assets at the senior Army commander level because he works directly with the JFACC in developing target priorities and building the apportionment recommendation for the JFC. But a mission transfer of the Army's premier deep fires system to the Air Force or any other Service makes little sense. What makes imminently good sense is for all Services to immediately focus on those actions necessary to improve the compatibility and efficiency of C4I networks, thus improving interoperability for the joint team.

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