

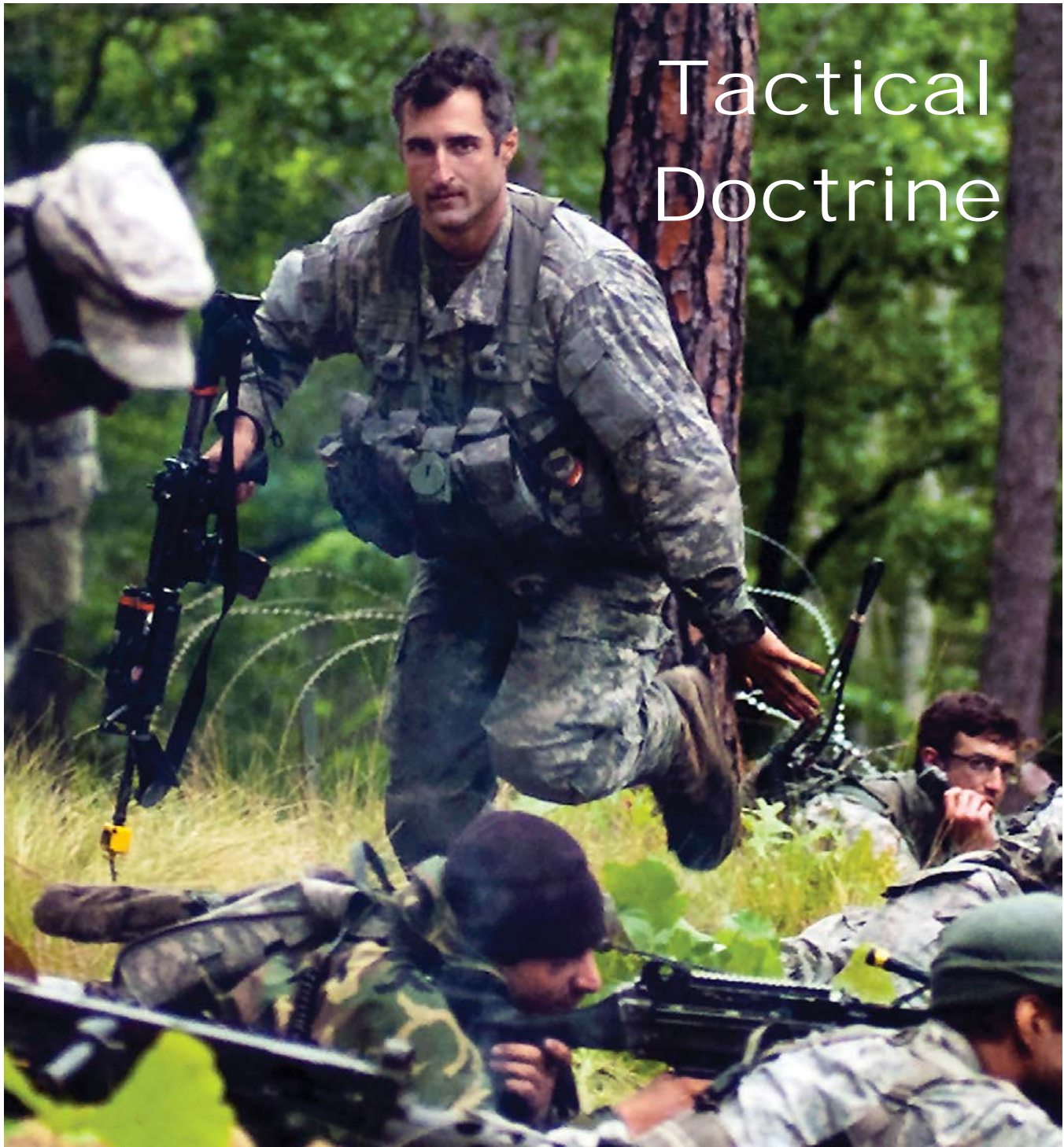
# AIR LAND SEA BULLETIN



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**Purpose:** The ALSA Center publishes the *ALSB* three times a year. ALSA is a multi-Service DOD field agency sponsored by the US Army Training and Doctrine Command (TRADOC), Marine Corps Combat Development Command (MCCDC), Navy Warfare Development Command (NWDC), and Curtis E. LeMay Center for Doctrine Development and Education (LeMay Center). This periodical is governed by Army Regulation 25-30, Chapter 10. The *ALSB* is a vehicle to "spread the word" on recent developments in warfighting concepts, issues, and Service interoperability. The intent is to provide a cross-Service flow of information among readers around the globe.

**Disclaimer:** Since the *ALSB* is an open forum, the articles, letters, and opinions expressed or implied herein should not be construed as the official position of TRADOC, MCCDC, NWDC, Lemay Center, or ALSA Center.

**Submissions:** We solicit articles and reader's comments. Contributions of 1,500 words or less are ideal. Submit contributions, double-spaced in MS Word. Include the author's name, title, complete unit address, telephone number, and email address. Graphics can appear in an article, but a **separate computer file for each graphic and photograph (photos must be 300 dpi) must be provided.** Send email submissions to [alsadirector@langley.af.mil](mailto:alsadirector@langley.af.mil). The ALSA Center reserves the right to edit content to meet space limitations and conform to the *ALSB* style and format.

**Next issue: May 2012; Submission DEADLINE: COB 1 March 2012.** The theme of this issue is "Airspace Control".

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Cover photo—US Army Soldiers attending the Special Forces Qualification Course conduct tactical combat skills training at The US Army John F. Kennedy Special Warfare Center and School, Fort Bragg, NC. In the Tactical Combat Skills phase of the course, Soldiers practice advanced marksmanship, mounted operations and Special Forces common tasks, regardless of their specialty. The center conducts the SFQC year-round. (Photo by SSG. Russell Klika, USA)

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## DIRECTOR'S COMMENTS

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On behalf of the Air Land Sea Application (ALSA) Center, I thank our readers for their continued support as we transition from a printed product to a completely digital format.

Currently the ALSA publication library includes 35 multi-Service tactics, techniques, and procedures (MTTP) publications which are updated on a three-year cycle. Meeting the immediate needs of the Warfighter remains our number one priority.

As fiscal constraints continue to impact the military, ALSA is doing its best to continue providing a quality product combined with ease of access via the web. I want to reaffirm our commitment to address multi-Service interoperability issues with multi-Service solutions.

In fiscal year 2012, ALSA is working towards publishing 14 revised and two new publications (Integrated Monetary Aid Shaping Operations, and Engagement Teams) for a publication total of 16 MTTP publications.

This issue of the Air Land Sea Bulletin (ALSB) is themed "Tactical Doctrine in Support of Operations". It contains diverse articles that present new ideas for tactical doctrine, the way ahead for Service doctrine and showcases lessons learned from the thought-provoking viewpoints and flexibility of Service men and women in the US Armed Forces. The first article is authored by CAPT Samuel Paparo and CDR Joseph Finn who articulate the need for a maritime air support operations center and present a unique perspective on how it can achieve joint tactical command and control. The next article from the Army Doctrine Center outlines the way ahead for Army Doctrine 2015.

The third article, by Captains Morleh So-Kargbo and Joshua McCarty, demonstrates how essential it is to understand what a high-demand, low-density asset

such as JSTARS brings to the fight and how codifying its multi-Service approach allows the ground commander a more comprehensive level of situational awareness.

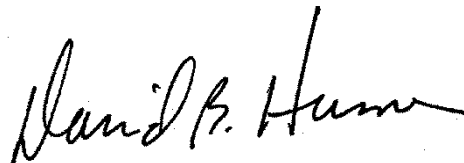
The fourth article shows how a simple computer chat program can be the vital link between troops on the battlefield and the commander. Although internet relay chat is not new to the Warfighter's tool box, it has become an essential part of how we conduct business in the combatant theaters. Tactical chat is constantly evolving, ensuring that it continues to meet the need of warfighters on the ground all the way up to the commander.

The final article discusses the success of the MTTP process in creating MTTP Offensive and Defensive Tactics. This publication combines FM 3-90 and MCWP 3-10 into a tactics publication for the Army and the Marines Corps.

During the past few months, we have had changes to the ALSA staff. In December, we said goodbye to CDR Cindy Dieterly, who worked in the command and control branch, and welcomed LCDR Christian Goodman from VAW-121 (E-2C Squadron in Norfolk, VA).

Finally, the theme for our May 2012 ALSB is "Airspace Control." If you have an article you would like us to consider publishing, please email it to [alsaa@langley.af.mil](mailto:alsaa@langley.af.mil) no later than 1 March. For more information about any of our products visit <http://www.alsa.mil>.

As always, we value your feedback on our ALSBs, the new digital format and our MTTPs. Do not hesitate to let us know how we are doing!



DAVID B. HUME, Colonel, USAF  
Director

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## MASOC CAN PROVIDE TACTICAL C2 OF JOINT ASSETS IN THE MARITIME DOMAIN

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A B-52 Stratofortress leads a formation of Air Force and Navy F-16 Fighting Falcons, F-15 Eagles, and F-18 Hornets over the USS Kitty Hawk (CV 63), USS Nimitz (CVN 68), and USS John C. Stennis (CVN 75) Strike Groups during Exercise Valiant Shield 14 Aug. 2007 in the Pacific. (Photo by Mass Communication Specialist 2nd Class Jarod Hodge, USN)

**By**  
**CAPT Samuel J. Paparo, USN and**  
**CDR Joseph F. Finn, USN**

*Uproar 11 is a flight of two F/A-18E Super Hornet aircraft that launch from a US aircraft carrier. Their mission is to provide close air support and non-traditional intelligence, surveillance and joint tactical air strike request to an infantry company conducting a key leader engagement (KLE) in Regional Command East in Afghanistan. They have been on station in support of Operation ENDURING FREEDOM and the International Security Assistance Force (ISAF) in Afghanistan. They proceed approximately 600-1,000 nautical miles through Pakistan to their initial refueling track.*

*Upon crossing the Afghan border, the flight checks in with a control and reporting center (CRC). The CRCs deconflict airspace and fires from the air, minimizing the risk of a mid-air collision between flights of aircraft working in proximity while supporting separate ground-force commanders. This effort meets the needs*

*of the ISAF Joint Command (IJC), the joint operational commander in charge of day-to-day operations in Afghanistan.*

*The Uproar 11 flight flies to establish itself over its objective. Crewmembers check in with their joint terminal attack controller (JTAC). They pass their mission number, position and weapons, and details. The JTAC builds the flight's situational awareness of conditions on the battlefield. The flight begins providing effects by using its sensors to maintain overwatch of the company as it moves toward its KLE site.*

*The company conducts and completes its KLE. Upon exfiltration of the KLE site, the infantry company comes under fire from enemy fighters hiding in a tree line. The enemy employs small arms fire and rocket propelled grenades. The ground-force commander takes stock of the tactical situation and the rules of engagement, and makes quick collateral damage estimates. He decides the best option to return his company to its fire-base is precision fires from the Uproar flight. His JTAC starts the nine-line coord-*

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The JTAC builds the flight's situational awareness of conditions on the battlefield.

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dination brief to pass essential information for a successful employment of precision weapons.

*With precise targeting information, the pilots of Uproar 11 fix sensors on the target. The JTAC confirms the correct target and clears Uproar 11, "hot." Uproar 11 releases a precision munition that guides to the enemy's position. The JTAC calls, "good effects." The infantry company, now safe in its firebase, calls "mission complete."*

*Uproar 11 executes a rendezvous with its tanker and refuels for its long journey to the carrier. Upon checkout from JTAC frequency to CRC frequency, Uproar 11 passes a mission report detailing the mission particulars. Following the long flight back to the North Arabian Sea, Uproar 11 checks in with the Fleet Air Defense Identification Zone controller, "Red Crown." Uproar 11 flies a solid approach and lands aboard the aircraft carrier, mission complete.*

In this fictional vignette, naval forces under the operational control of Commander, US Fifth Fleet launched aircraft providing direct support to the International Security Assistance Force (ISAF) in Afghanistan. Navy forces integrated into the US Air Force's Tactical Aircraft Control System (TACS), providing forces to the supported commander. For decades, naval forces have operated this way, launching from the relative sanctuary of the sea and supporting the coalition forces' land component commander (CFLCC) or combined forces air component commander (CFACC), components with mature command and control (C2) systems that span from strategic to operational and tactical levels. These are well-evolved systems that enable forces to integrate into the joint fight. In recent years, Navy forces have worked hard to establish maritime operations centers (MOCs), providing numbered fleets the ability to C2 their battlespace at the operational level.<sup>1</sup> At the tactical level, our composite warfare commander (CWC) system is well equipped to provide C2 of naval forces in the maritime domain. But in the future, the Navy

must evolve C2 to fully integrate joint assets against the highly dynamic target set we can expect in the maritime domain.

## **C2**

At the operational level of war, operational C2 nodes, such as the numbered fleet MOCs and the US Air Force's Combined Air and Space Operations Centers, assign tasks, provide logistical support, and monitor and adjust tactical operations to ensure the connection and alignment of strategic objectives of the joint force commander and the tactical objectives and actions of the tactical commander. At the tactical level, commanders execute tasking locally, applying assigned forces against tasks.

Rules of engagement and authorities to employ kinetic and non-kinetic effects are closely tied to the operational and tactical levels of war. In granting engagement authority, the joint force or operational level commander balances the intensity of conflict, exigency of engagement, situational awareness (SA) of commanders, and ability to control multiple engagements to find the right mix of centralized execution and decentralized control ensuring the warfighter at each level of war is making engagement decisions at the appropriate level. Considerations include the swift and correct application of force or effects, risk management of consequences and mastery of the information domain.

## **THE MARITIME DOMAIN**

Joint Publication 3-32, Command and Control for Joint Maritime Operations, defines the maritime domain as "the oceans, seas, estuaries, islands coastal areas and the airspace above these including the littorals."<sup>2</sup>

Since World War II, the US Navy has enjoyed relative sanctuary within this domain (the Tanker War with Iran from May 1987 to April 1989 is an exception). The Navy has

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Rules of engagement and authorities to employ kinetic and non-kinetic effects are closely tied to the operational and tactical levels of war.

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launched forces to support component commanders in the Korean War from the Sea of Japan; the Vietnam War from Yankee and Dixie Stations; Operation DESERT STORM in the Red Sea and Arabian Gulf; and in the Balkans; and South and Southwest Asia.

One must not assume it will always be so. The command of the seas the US Navy has mostly enjoyed is not guaranteed in the future. There are threats, symmetric and asymmetric, to key waterways throughout the world. Keeping those waterways open, some of which are fairly confined, is a key responsibility of the Navy.

Presumably, just as naval forces are designed to integrate into the tactical C2 systems of the other components, the US Navy's tactical C2 must accommodate the contribution of joint and coalition forces.

Joint Publication 3-52, Joint Airspace Control, states, "In joint maritime operations, specific control and defensive measures may differ from those used in a land-based operation. The maritime commander may be designated the control authority for a specific airspace control area or sector for the accomplishment of a specific mission."<sup>3</sup>

The Navy's CWC concept predates the evolution in joint employment. Its tenets include responsibilities for functions delegated to subordinate commanders. Among those functions are air defense, antisubmarine warfare, sea combat, and strike warfare. In execution over the last two decades, the system has involved the development and approval of preplanned responses, planning cycles for operations, and pre-planned apportionment of forces. Often in training and operation, multi-mission platforms are obligated against single tasks in support of warfare commanders. This is a function of the simplicity

of the scenarios, the luxury of having enough assets to obligate forces to specific missions in advance or as a result of the organizational inertia of having individual commanders who command a certain function, and their demand for dedicated forces. The system has worked well, given the protection of a relatively permissive vital area and our explicit support of another component commander such as the CFACC or CFLCC.

The Navy's NWP 3-56, Revision A, Operational Command/Control, states: "CWC doctrine was an effective C2 structure for open ocean operations against the global threat presented by the Soviet Union during the Cold War. The focus of the doctrine was defensive because the need was for a decentralized C2 methodology that could defend successfully against a large, capable threat at sea."<sup>4</sup>

"...Air, surface, subsurface, and littoral threats facing our navy forces have continued to grow" Now, "the primary threats may be regional rather than global, and operations often are in littoral instead of open-ocean areas."<sup>5</sup>

"Littoral areas may be, and often are, confined. The shorter distances induce, by the laws of physics, shorter warning and response times. We need something faster and more responsive; something that will allow decision making at the level of the most competent warfighter. Our system of pre-planned apportionment is no longer sufficient. We must be ready to dynamically assign large numbers of air and support assets in a fast paced, high-threat environment against a large number of dynamic targets."<sup>6</sup> Similarly, the Navy needs to adapt to something that will be cognitively consistent with its joint and coalition partners to prepare to be the supported commander.

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The command of the seas the US Navy has mostly enjoyed is not guaranteed in the future.

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## THREATS AND OBJECTIVES

The vignette describes the situation in Afghanistan. It features a highly decentralized and disaggregated enemy. The coalition's fires approach is to widely distribute intelligence, surveillance and reconnaissance (ISR) assets and tactical air (TACAIR) to support ISAF's distributed operation. An enemy in the maritime domain could resemble the enemy in Afghanistan in its disaggregation and decentralization. A difference is threats could come from land, sea or air. Threats within the maritime domain could come in the form of highly disaggregated small boat attacks, mine-laying vessels (many of which could be disguised as civilian fishing vessels), from coastal sites, as well as air threats and ballistic missiles.

Another consideration is the objectives of the force. The maritime battlespace may be intended as a secure battlespace from which to launch power projection or to keep sea lines of communication open in a vital sea lane. There are historic examples of each. One example occurred during Operations PRAYING MANTIS and EARNEST WILL in the Arabian Gulf from May 1987 to April 1989. The scenarios described in this article may require long-term persistence (as in EARNEST WILL, which lasted 23 months). The objectives may change over the course of operations, shifting from deterrence to power projection to stabilization and maritime security.

The need for dominance of the maritime battlespace will not change. The objectives will be joint objectives and the force will be a joint force, potentially consisting of multiple carrier strike groups and USAF forces.

## THE MARITIME AIR SUPPORT OPERATIONS CENTER (MASOC)

Joint Publication 3-52 states, in "joint operations composed of adjacent maritime and land environ-

ments, specific control and defensive measures may be a composite of those measures normally employed in each environment."<sup>7</sup> In the future, threats may be diffuse, dynamic and ambiguous. CFACC or CFLCC forces may be in support of the combined force maritime component commander. This was the case with Operations PRAYING MANTIS and EARNEST WILL.<sup>8</sup> As a result, the tactical C2 structure must also fit into the cognitive style of joint partners. A composite structure is needed.

The USAF's TACAIR control system, as promulgated by Air Force Doctrine Document 2, Operations and Organization, includes C2 nodes spanning from the operational to tactical levels. In accordance with Air Force Instruction 13-1AOCV3, Operational Procedures—Air and Space Operations Center, the combined air and space operations centers provide operational C2. Air support operations centers (ASOCs) are distributed in theater and embedded in ground force's tactical operations centers to enable forces on the ground to avail them to air power. Control and reporting centers (CRCs) connect forces in the air with forces on the ground in accordance with the ASOC's direction. They also collect and disseminate voice reports of missions for initial reports of action. Finally, terminal controllers direct aircraft to objectives on the battlefield.

The Navy's C2 should adapt to accommodate contributing forces that would act in direct support to naval forces (i.e., joint forces in support of a tactical naval commander in the maritime domain). It should be readily adaptable to the threat, be flexible enough to move with alacrity to symmetric and asymmetric dynamic targets that are scalable to operations as their objectives expand and contract, and be cognitively familiar to joint partners.

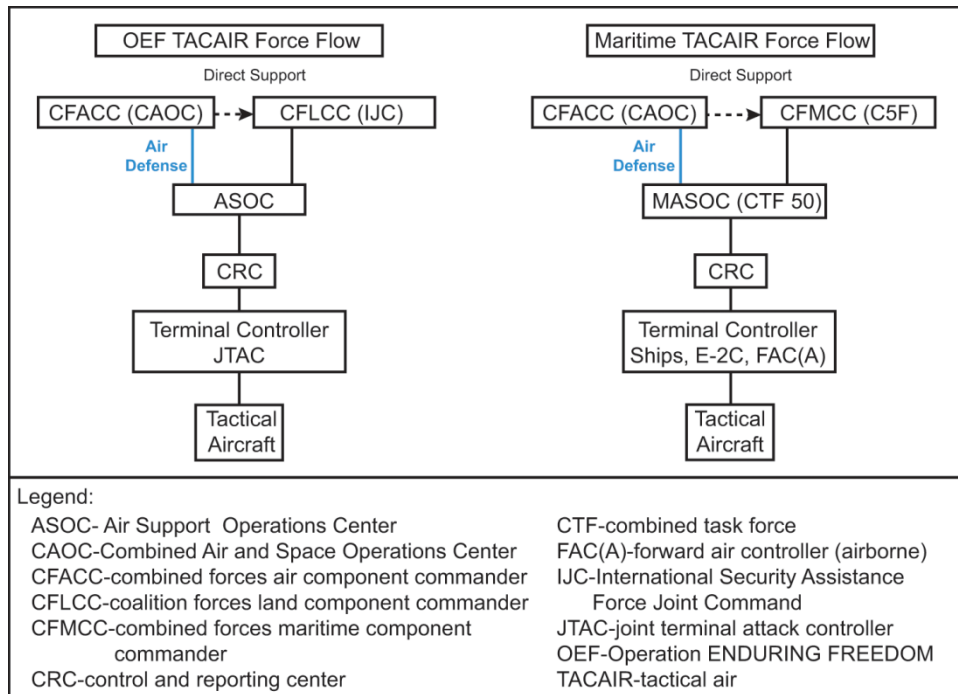
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The Navy's C2 should adapt to accommodate contributing forces that would act in direct support to naval forces...

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**Current and Proposed Terminal Attack Controller Systems**

As in the USAF TACS on land, the Navy must take the ASOC to sea through the MASOC.

As in the USAF TACS on land, the Navy must take the ASOC to sea through the MASOC. The MASOC would provide a means by which multi-role aircraft could leverage their inherent flexibility to meet highly dynamic targets. It would provide both dynamic mission assignment of aircraft and fires deconfliction between engagements. Terminal controllers and CRCs would continue to provide fires deconfliction within engagements locally by responding to warfare commander priorities. The MASOC would not supplant the duties, responsibilities or authorities of the warfare commanders, but, provide a C2 agency that could quickly assign flexible, multi-mission capable air forces to tasks. The MASOC concept would not negate the need for mission planning and apportionment of platforms against tasks. The MASOC would ensure the appropriate aircraft could be tasked or retasked to higher warfighting priorities, and be done within the time and distance constraints that tight littoral waterways present.

Each naval warfare commander would have a representative within the MASOC to whom he or

she makes his or her requests. In situations where resources were unconstrained, the MASOC could initially respond quickly. In cases where hard choices would be required, the CWC, on scene tactical commander, and a flag officer, would have the SA to make the right tactical choice against potentially great numbers of highly dynamic and disaggregated targets. The MASOC would rectify the CWC concept to a joint and dynamic battlespace. Most importantly, it would ensure the right asset is used against the right target at the right time, with no idle or wasted assets.

The flow of air forces into the maritime domain and in support of maritime commanders is depicted in the Current and Proposed Terminal Attack Controller Systems in the figure above. It shows forces moving among control and coordination centers and agencies. Note the alignment of flow between the current TACS system as executed in Afghanistan and as proposed, MASOC manning would align with USAF ASOCs with positions aligned along functional lines representing naval warfare commanders in a carrier strike group. Warfare areas

(i.e., strike, air defense, surface combat, intelligence) would be represented by “air-minded” officers with competencies in those areas. Initial manning in crisis would draw from an embarked air wing. Augments from other embarked air wings, staffs, and CONUS-based staffs could follow.

**COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE CHALLENGES**

Armed with an intellectual approach to rectifying CWC to the littorals and the joint contributions of the fellow services, there remain technological improvements the Navy must make. The unmanned aircraft system (UAS) has revolutionized ISR. UASs have blurred the seams between intelligence and operations by tightening the joint targeting cycle of find, fix, track, target, engage and assess. The data walls for in-theater UASs maintain links for dozens of UAS feeds. At the current bandwidth afforded carriers (the flagships of carrier task forces, in general) there

is only enough bandwidth for about five feeds and the download time and latency are onerous. This degrades the value of the information and presents unnecessary challenges to the maritime dynamic targeting process. The Navy must find sufficient bandwidth to leverage UASs. Moore’s Law states, the density of memory doubles every two years. A US military corollary to Moore’s Law could be the DOD demand for bandwidth to triple every two years.

Once armed with the necessary bandwidth, the Navy must control its seemingly insatiable appetite for bandwidth to preserve it for mission needs.

Recent quantum leaps in information technology have enabled higher headquarters greater SA in the battlespace. In dialectic to the need to better manage that technology, is the need to maintain the ability for forces in the field to act quickly and correctly. It is quite

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A US military corollary to Moore’s Law could be the DOD demand for bandwidth to triple every two years.

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The Nimitz-class aircraft carriers USS John C. Stennis (CVN 74) and USS George H. W. Bush (CVN 77) steam alongside one another in the Straits of Hormuz. John C. Stennis is deployed to the US 5th Fleet area of responsibility, conducting maritime security operations and support missions as part of Operations ENDURING FREEDOM and NEW DAWN. (Photo by Mass Communication Specialist 3rd Class Kenneth Abbate, USN)

conceivable the command of the information domain could be degraded by a would-be adversary in the maritime battlespace of the future. Hence, the US doctrinal focus is on decentralizing decision responsibilities to the lowest levels feasible. This is the essence of centralized control and decentralized execution.

One may assume future conflicts may be contested in a satellite-denied environment for reasons ranging from technical failure to malign behavior by adversaries. The ability to achieve decision superiority is as much governed by our mastery of technology as our mastery of the human decision pathways and communication of a commander's intent to the people executing the mission.

MASOCs and the warfare concepts they support must be adaptable to degraded communications situations. Mastering the technology is one matter—we can manage the various communications media and spectra. What is equally critical is enabling the operators, who will fight and work in this domain, to build the brain chemistry to enable people to make decisions and feel empowered to do so. This is achieved by a great deal of training and trusting commanders who will tolerate mistakes and leverage them to teach generations of operators.<sup>9</sup>

## CONCLUSION

We must prepare for greater joint contributions inside the maritime battlespace. Air-sea battle is here. There are potential threats to American and allied interests throughout the world. American or

allied objectives may be defensive or offensive in nature; either maintaining the status quo or responding to aggression with offensive options. Forces supporting naval objectives in important waterways will include joint forces. The development of the MASOC will rectify CWC to our joint operating constructs, leverage tactical assets against highly dynamic targets and position US forces for operational and tactical success in the future.

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## END NOTES

<sup>1</sup> John C. Harvey. "Readiness Enhancer Q & A: Delivering Trained Forces Ready for Tasking to Combatant Commanders" *Military Training Technology*, Vol 15, Issue 3 (May 2010): pg 26.

<sup>2</sup> U.S. Government. Joint Publication 3-32 (Ch. 1): I-2

<sup>3</sup> U.S. Government. Joint Publication 3-52: xiv

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Dynamic Targets: "Targets of opportunity are targets identified too late, or not selected for action in time, to be included in deliberate targeting that, when detected or located, meet criteria specific to achieving objectives." U.S. Government. Joint Publication 3-60: I-7 c.

<sup>7</sup> U.S. Government. Joint Publication 3-52: xv

<sup>8</sup> It was during these operations that insufficient C2 structures contributed to tragic results. For a full analysis see Lee Allen Zartarain. *Tanker War*. Philadelphia: Casemate, 2008.

<sup>9</sup>For a superb explication of this concept, see: Katharine K. Shobe and Wally Wulfeck. "Decision Superiority: Putting the Emphasis Back on the Warfighter," Proceedings of the 14<sup>th</sup> International Command and Control Research and Technology Symposium. Jun 15-17, 2009

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**CAPT Paparo is Commander, Carrier Air Wing SEVEN**

**CDR Finn is the Director of C4I Training, Operations Directorate Strike Force Training Command, Atlantic**

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MASOCs and the warfare concepts they support must be adaptable to degraded communications situations.

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# DOCTRINE 2015

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By  
MAJ Paul J. Fradejas, USA

*“What resonated most clearly was the shared agreement that in order to increase rigor, maintain relevancy, and prevail in the competitive learning environment, we have to change. Our current models have not kept pace with the rapid pace of change, the demands of Soldiers rotating in and out of the fight and a continuous influx of Soldiers with significant ‘digital literacy’.”*

– GEN Martin E. Dempsey, blog posted by TRADOC live in Army Training Concept on 24 MAR 2010

## BACKGROUND

Prior to the doctrine reengineering program, in early 2009, the Army maintained 625 publications on the Army Publishing Directorate website and the Reimer Digital Library. Many of these manuals remained unchanged for years. So, the TRADOC

commander directed a reengineering of doctrine. The primary goals of the reengineering project were to reduce the number of field manuals (FMs), standardize the content of manuals to less than 200 pages, and establish a more efficient doctrine management program. One of the outcomes of this project was the development of the Army tactics, techniques, and procedures (ATTPs) manuals. ATTPs differed from the other tactics, techniques, and procedures manuals from sister Services because a digital component was added for immediate user revisions using Wiki technology. Wiki technology would make doctrine more accessible and open to editing by the user. The ATTPs on the Wiki would remain in draft form and be used as feeder documents for the normal cycle for revision of the authenticated manuals housed on the Army Publishing Directorate website.

## DOCTRINE TODAY

The average lifecycle of a manual is about three years. Once proponent authors begin revising it, the revision process takes from three to 24 months to complete, depending on the needs of the field. The current cycle has come a long way in adjusting to the needs in theater; however, when a rapid change is required, the system requires significant time to update the manual. The current method is viewed by many as cumbersome, slow, and unable to keep up with rapidly changing unified land operations.

## DOCTRINE 2015

The 2009 doctrine reengineering project was a good start. However, a closer examination of doctrine development timelines and the needs of the community indicated some shortcomings in the 2009 reengineering process. As

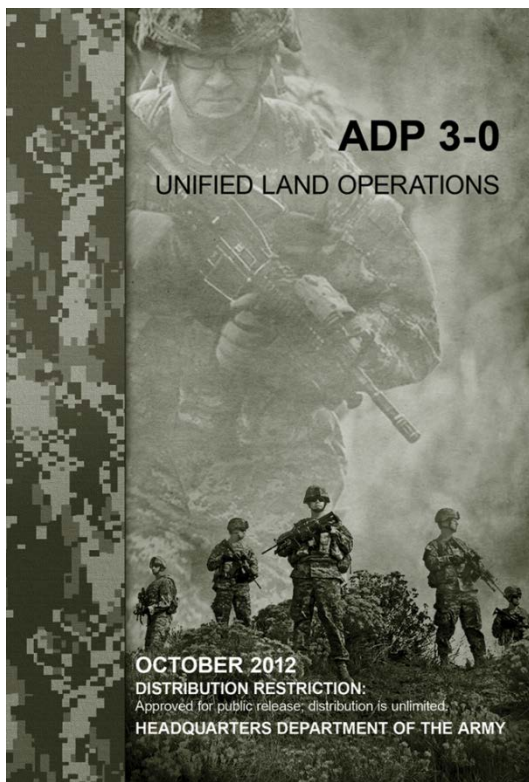
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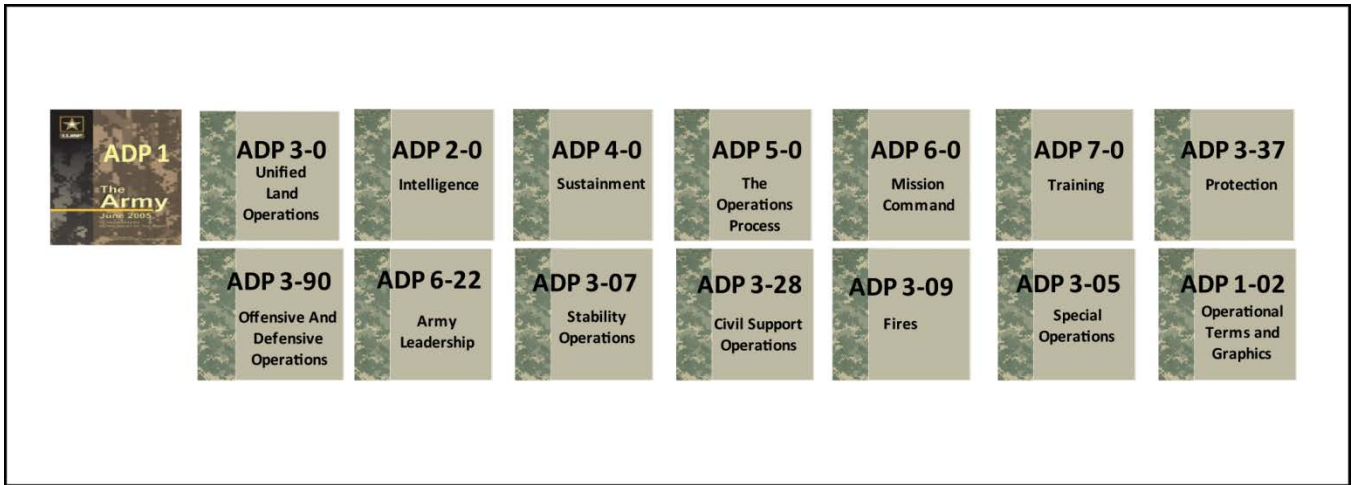
The current method is viewed by many as cumbersome, slow, and unable to keep up with rapidly changing unified land operations.

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ADP 3-0 Unified Land Operations Publication Cover

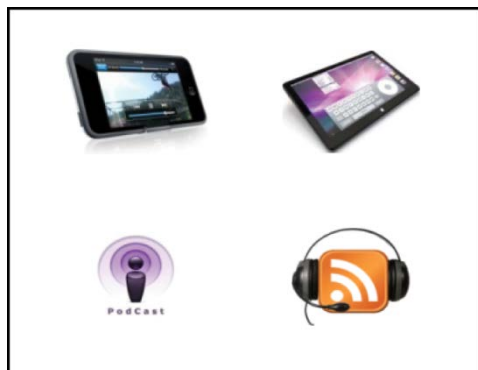


**Titles of Proposed Army Doctrine Publications (ADPs)**

of May 2011, further reengineering was required, and this led to the development of Doctrine 2015.

The primary focus of Doctrine 2015 is to produce a body of knowledge related to the conduct of operations that uses technology to leverage and incorporate leader input, especially on mission essential tasks. Doctrine 2015 will integrate this knowledge rapidly into the professional military education system. Doctrine development will become faster, and the system will create fewer publications which will be shorter, clearer, and more digitally accessible, than the current system.

Doctrine 2015 will be broken down into its components, making revisions quicker, without losing enduring principles. Doctrine 2015



**Media Examples for Digital Doctrine of the Future**

will have four categories of operational knowledge: Army doctrine publications (ADPs), Army doctrine reference publications (ADRP), FMs, and Army techniques publications (ATPs). In addition, digital applications (APPs) will be developed that enable Soldiers to access doctrine information in a repository through a digital device (e.g., a smart phone or tablet).

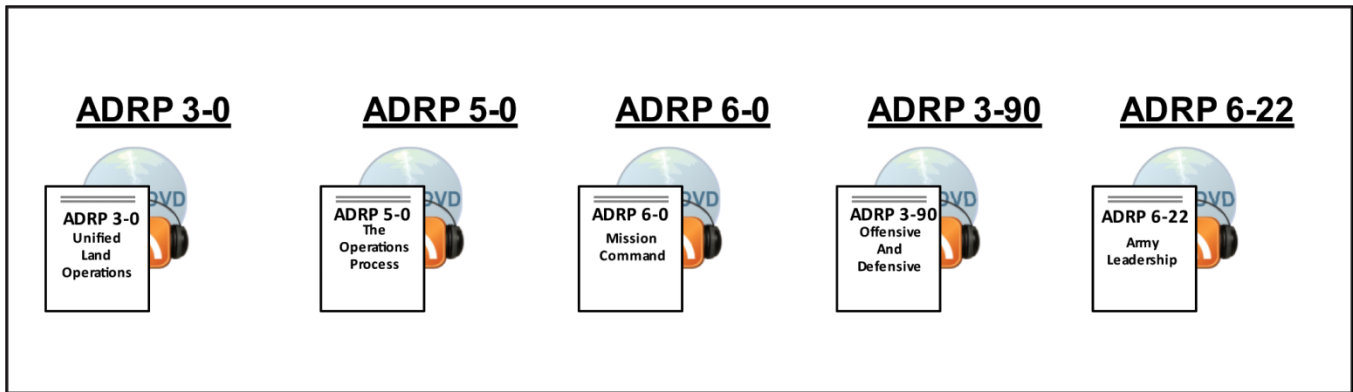
ADPs will contain the fundamental principles that guide the actions of military forces and explain how they support national objectives. These ADPs will be authoritative in nature, but they will require judgment in application. ADPs will provide the intellectual underpinnings that explain how the Army operates. They will be published in 6x9 inch printed formats, and will be limited to the 15 publications shown above.

ADRP will be Department of the Army publications approved by the Commanding General of the Combined Arms Center (CAC) who is the proponent for Army doctrine. The information contained in these publications will provide more detailed explanations of the principles presented in the ADPs. To ensure the needs of the force are met, ADRP will be staffed Army-wide in the same way current doctrine is staffed. The professional military educational

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Doctrine 2015 will be broken down into its components, making revisions quicker, without losing enduring principles.

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**Titles of Proposed Army Doctrine Reference Publications (ADRP)**

community that teaches these concepts will be included in the staffing. ADRPs will also be found in digital media formats for use on digital devices. To ensure conciseness, the content of these publications will be restricted to about 100 pages. Doctrine 2015 FMs will embody the core knowledge of Army tactics and FMs will be retained, but their content will change. They will describe tactics and procedures. FMs will be approved by the Commanding General of the CAC. Most of the content in FMs will describe how the Army and its organizations train for and conduct operations described in ADPs. Maintaining a standard for conciseness, FMs will be restricted to not more than 200 pages. They will explain tactics –“the employment and ordered arrangement of forces in relation to each other (JP 1-02)” and procedures, but they will present this knowledge using a streamlined approach that focuses on functions. There will be only 50 FMs in the Doctrine 2015 library, and the titles of those manuals are shown in the figure below. Reducing the total number of FMs will make research faster and information easier to find.

ATPs will be departmental publications and contain “non-prescriptive ways or methods used to perform missions, functions, or tasks (JP 1-02).” Each authenticated ATP will have a draft version on a Wiki site managed in coordination with the Center for Army Lessons Learned. The Wiki version will allow

direct input from the field and host collaborative forums to rapidly change approved publications. The doctrine proponent will be responsible for obtaining input, monitoring contributions, and determining the version of the authenticated publication using collaborative input from the field. Unlike the other publications, ATPs will not have a content length restriction. The decentralized approval process will make ATPs a nearly fluid media that can rapidly receive changes from the field and quickly update and adapt those changes to published manuals.

As the window on real-world operations and actual combat knowledge starts to close, the drive to capture the lessons from over a decade of persistent conflict is strong. Doctrine 2015 will be the vehicle for gaining and capturing that knowledge and transmitting it to the Army of the future. By breaking up doctrine into its basic components, the Army will be able to make revisions faster, retain enduring concepts, and gain lessons from battlefield experienced warriors. Using Wiki, all Soldiers with combat experience and knowledge will be able to shape doctrine for the future force. The addition of digital collaboration to the doctrine production process will draw the recently deployed forces and the Army educational centers closer together than ever before by giving a voice to the true experts, the Soldiers themselves.

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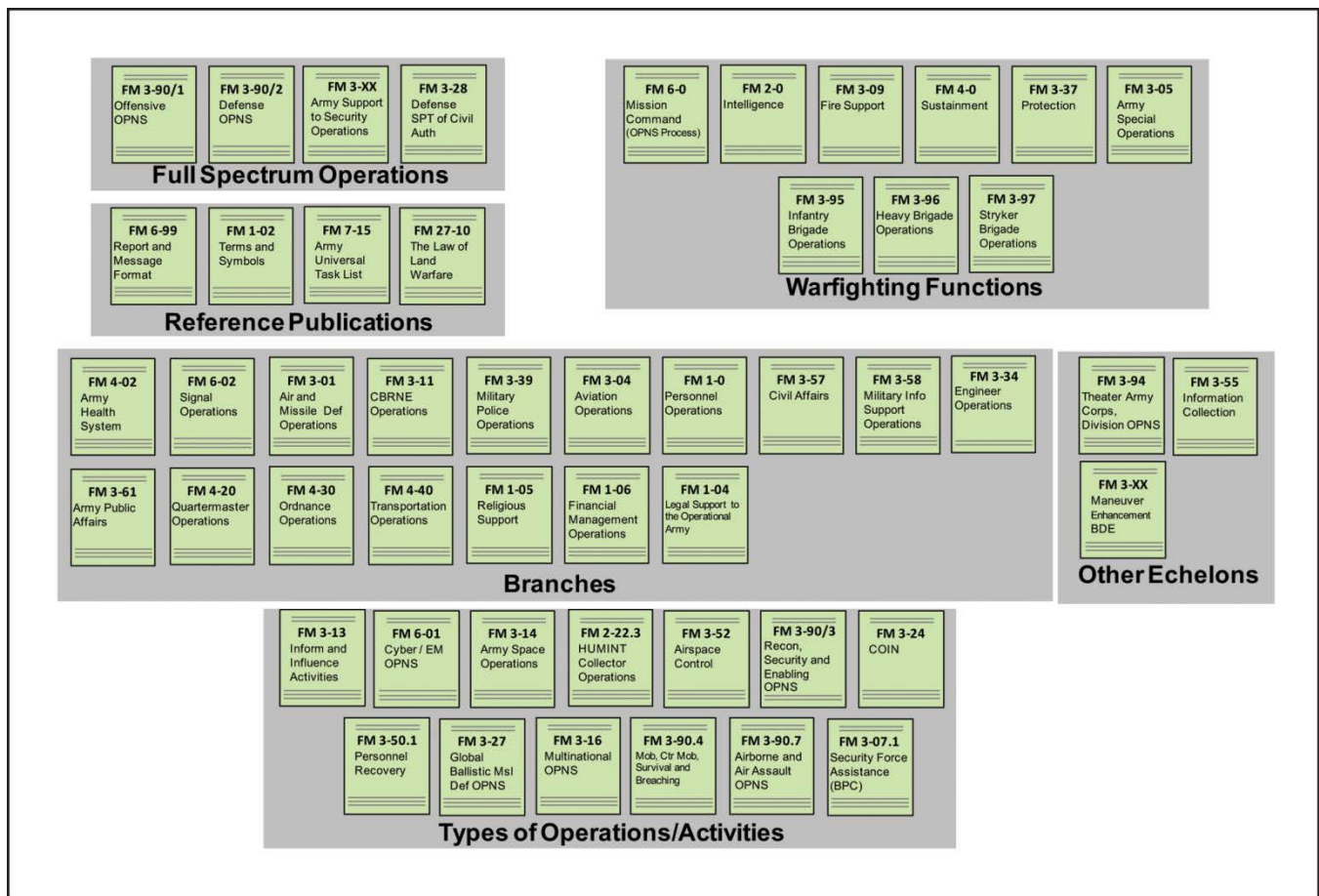
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By breaking up doctrine into its basic components, the Army will be able to make revisions faster, retain enduring concepts, and gain lessons from battlefield experienced warriors.

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Fifty FM Titles

Doctrines 2015 is a significant departure from the way doctrine has been developed in the past.

Doctrines 2015 is a significant departure from the way doctrine has been developed in the past. Changing times, technical advances, demands from the field, and the ever changing battlefield environment prompted these significant and necessary changes. The Army’s need to teach both enduring lessons and new concepts remains constant. It will be how the Army obtains and delivers information that must change. The Doctrines 2015 system will allow this change to happen. As the TRADOC commander explained:

*“Doctrines 2015 affords the Army well defined enduring principles, tactics, and standard procedures – the basics of our profession. Additionally, through the creative use of technologies, we will rapidly update techniques due to the changing conditions of the operational environment and the needs of operationally deployed forces.”*

GEN Robert W. Cone  
 TRADOC Commander  
 Doctrines 2015 Guidance  
 Memorandum, dated 23 AUG 2011

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## CODIFYING LESSONS LEARNED TEACHES SOMETHING FUNDAMENTAL ABOUT WAR

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US Air Force Capt James Bourgeault (right), 7th Expeditionary Air Command and Control Squadron, Joint Surveillance Target Attack Radar System senior director, and US Army MAJ George Whittenburg, deputy mission crew commander manage the operations of a JSTARS crew, 18 Dec 2009. Both are stationed at Robins Air Force Base, GA and deployed to Southwest Asia. One way to manage the operation is by collecting data of suspicious moving targets and reporting them to troops on the ground. (Photo by Staff Sgt Angelita Lawrence, USAF)

### **By Capt Morleh So-Kargbo, USAF and Capt Joshua McCarty, USAF**

The Joint Surveillance Target and Attack Radar System (JSTARS) was the first aircraft to require a standalone multi-Service tactics, techniques, and procedures (MTTP) publication. At its inception, JSTARS was a poorly understood capability due to several unique elements. The system was created as a wide-area, ground-target-generating machine to feed the overwhelming conventional superiority demanded by 1980s air-land doctrine. Today, this low density-high demand asset is used in areas ranging from large-scale, linear battle to the irregular, non-linear battlefields. Due to new technologies,

changing requirements, and new lessons learned, the JSTARS MTTP is in need of another revision. The human capability of the system is derived from a two-Service, 20-person crew made of 14 different specialties. Examples of jointly crewed, manned aircraft, in the battlespace with line-of-sight communications to the battlefield, are still rare. Added to this unique human capability is a one-of-a-kind radar with early active electronically scanned array technology; mounted on a 707 airframe with a communication suite that amounts to a flying Internet café for war. The combined “jointness”, new technology, and communication capacity made JSTARS difficult to understand across DoD.

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Due to new technologies, changing requirements, and new lessons learned, the JSTARS MTTP is in need of another revision.

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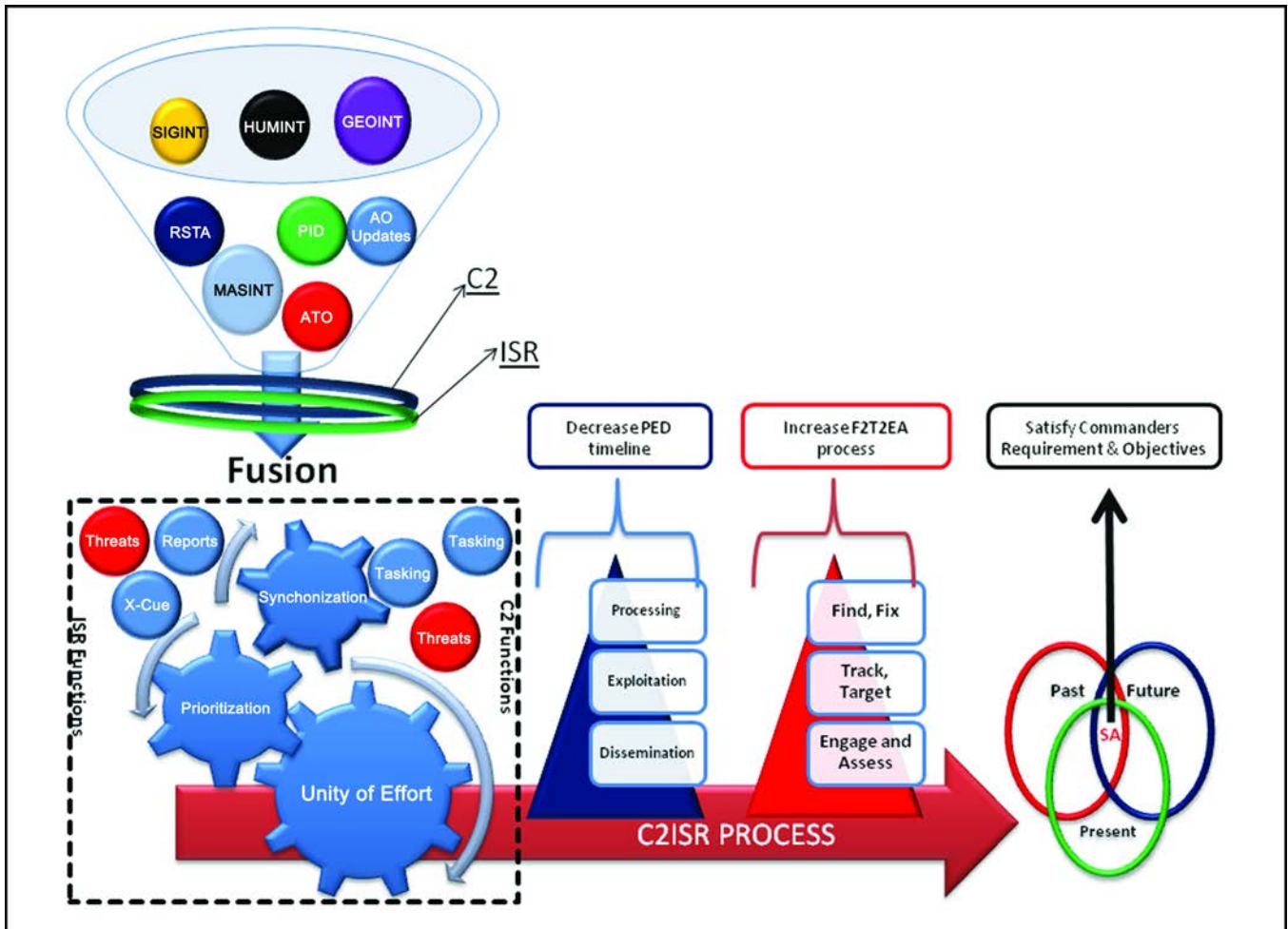
...radar produces a unique type of intelligence called moving target indicator (MTI)...

Another complication to fully understanding this system, is that the radar produces a unique type of intelligence called moving target indicator (MTI), which does not fall into conventional categories. To this day, people debate, whether it is imagery, geospatial, or totally unique wide-area movement intelligence. Lacking an unclassified publication for the masses further complicated the integration of JSTARS into the joint arena. Thus, over ten years ago, senior Army leaders at JSTARS persuaded the Air Land Sea Application Center to shatter the confusion with an MTTP.

Since then, MTI technologies have expanded to several platforms which in turn demand an expanded MTTP which keeps with the times. Yet, even as MTI platforms multiply, the integration of airborne resources, human capability and communications

power of JSTARS has taught us something about fusing operations and intelligence in the actual battlespace at a deep, functional level.

The combatant commander's requirement for accurate, reliable, and current intelligence is provided by many platforms. However, few other platforms can fuse various forms of intelligence functions with command and control (C2) in order to provide wide-area, line of sight situational awareness (SA) to operators, on the ground and in the air. For example, unmanned aircraft systems can provide greater endurance and additional capabilities not readily available on JSTARS; Rivet Joint contributes enormous intelligence collection not inherent on JSTARS. One thing these systems do not supply is integration of C2 and intelligence, surveillance, and



Operations and Intelligence Fusion on JSTARS

reconnaissance (ISR) in a single platform with multiple, joint problem solvers actively applying their minds to analyze the fog of war.

JSTARS provision of this military necessity, coupled with the six C2 functions closes the loop on one of the most fleeting and precious commodities in battle: SA.

As depicted in the illustration Operations and Intelligence Fusion on JSTARS, JSTARS operators help execute ISR and C2 functions in war. Intelligence operators fulfill functions of intelligence to contribute to effective and successful operations. C2 operators use principles such as synchronization and collaboration, unity of effort, prioritization, agility and fusion, to orient and pair aviation fire while solving problems as they arise. JSTARS has the unique capacities to significantly shorten the find, fix, track, target, engage and assess kill chain, by combining the two functions in one joint platform. JSTARS can identify the nature of the battle, help visualize and understand the operational environment, and anticipate the battle with immediate predictive assessment (e.g., SA).

JSTARS use of intelligence to synchronize with operations to dynamically satisfy intelligence requirements in support of the ground commander's objectives is a unique capability. The integral role of intelligence within JSTARS allows it to leverage intelligence disciplines such as imagery, geospatial, human, signal, measurement and signature and even open source to fuse with C2 operators, allowing for intelligence products to be fully integrated into the decision making and execution processes where time is of the essence. Furthermore, the unique role of intelligence on JSTARS allows for maximum leverage of all intelligence assets at every level of the operational battlespace which contributes to successful operations. Operations/

intelligence integration can facilitate cross-cue synchronization with other ISR tools ranging from organic to national assets.

JSTARS maximizes the unity of effort by coordination through cooperation and shared common interests to accomplish the mission at hand. With its crew trained across multiple career fields, the human interaction on JSTARS ensures all members have a clear understanding and common acceptance of the overall commander's objectives and end state. Also, this human interaction ensures reliable solutions are presented as multiple interpretations and perspectives of the same event are required to make sound decisions. JSTARS maximizes intelligence support by facilitating information sharing among crewmembers through crew resource management. This coordination between intelligence and C2 operators ensures trust and cooperation thereby reducing unnecessary redundancies in intelligence collection and operation execution. Furthermore, through persistent presence, wide field of view and robust radio suites, the operations/intelligence interaction allows for seamless support to multiple operational forces at the same time. This is made possible by the flexibility and adaptability of the platform and crewmembers adjusting to dynamic situations on the ground. This unity of effort, coupled with platform and crew agility, allows the ground operators to effectively control the battlespace and gain superior SA.

Given the overwhelming need for intelligence and the limited availability of assets, effective prioritization is vital in the interaction between intelligence and C2 operators. Prioritization on JSTARS is highly dependent on coordination between intelligence and operations sections of the aircraft. This is evident in the ability for JSTARS to influence the execution of the

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JSTARS has the unique capacities to significantly shorten the find, fix, track, target, engage and assess kill chain, by combining the two functions in one joint platform.

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collection deck involving priority intelligence requirements and essential elements of information to develop an effective pattern of life for supported units. Operations/intelligence interaction optimizes the allocation of limited radar time to execute the collection deck. Without close interaction between C2 and intelligence operators, effective prioritization takes on extraneous challenges. For example, when an intelligence operator receives indications from off-board sources of an error ellipse 0.7 miles by 1.4 miles with a heading of 245, this intelligence could very well lead to faster identification of the track, reducing the time to navigate through the kill chain process by providing greater fidelity on track identification.

The interaction of C2 and intelligence operators on JSTARS is most useful in a paradoxical seam in war—the “now” battle that demands the predictive sphere of SA. With movement history, current movement on top of fused intelligence, where things are going next can be seen in the dots (i.e., MTI). The airborne intelligence (AI) analyst uses the intelligence process of evaluation, through analysis and assessment, and synchronizes raw information from multiple intelligence sources to produce reports reflecting the enemy’s capabilities and limitations. Nonetheless, the AI analysts, in conjunction with the surveillance section on the platform, can predict the relative probability of enemy intentions and immediate future courses of action. Prediction of immediate enemy intentions rapidly passed onto C2 operators ensures enemy tracking efficiency and shortens the kill chain. Coordination among the various types and levels of intelligence operations, and the dynamic integration of the overall intelligence process with operations, renders JSTARS a unique resource in military operations.

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Throughout the course of JSTARS’ history, a seamless relationship between intelligence operators from the Army and Air Force and trained C2 operators, has been vital. Military necessity has dictated tactics, techniques, and procedures (TTPs) be developed for how to best utilize this force multiplier called JSTARS. However, its multi-role function in the battlespace has made it difficult to define and determine its job. The JSTARS task of supporting C2 and ISR equally makes it one of a few C2ISR platforms in the military. As such, performing one mission set and neglecting the other is counter-productive. Though TTPs are forthcoming, incorporating lessons learned from multiple areas of responsibility, it is hard to characterize cross cueing with external platforms and agencies and how they affect C2 operators on JSTARS. At its most basic level, JSTARS provides what no other platform can: C2 operators trained in controlling aircraft and the kill chain associated with employing ordnance on ground targets, and intelligence personnel that know how to reach out and pull information from various assets that can use JSTARS personnel’s expertise in directing aircraft to targets, and providing updates to air and ground players as needed.

The wars that ensued after 9/11 forged eight substantial TTP innovations since the original JSTARS MTTP publication was developed. Irregular warfare targets demanded advanced radar procedures for finding small radar cross-section profiles. JSTARS interoperability with special operations forces was greatly advanced by marrying a wide-area search capability with elite raid forces. C2 of close air support operations were furthered through the creation of an “Air support operation center/direct air support center Extension Task Menu” which allows ground C2 nodes to tailor JSTARS operations to ground requirements on the fly. Control

procedures were resurrected from the old Airborne Battlefield Command and Control Center and then disseminated Air Force-wide in AFTTP 3-1, General Planning. C2 interaction with fighter/bombers was improved with new, multi-model design series vetted, “phases of the interdiction and CAS intercepts”. JSTARS utility over water resulted in aircraft modifications and TTPs for maritime operations. The meaning of C2 was further articulated in doctrine through JSTARS with the advent of six C2 functions, associated tasks to accomplish the functions, and sixteen decentralized authorities to accomplish those tasks. Finally, ground moving target indicator forensics were only an idea when the original publication was created whereas now it is its own category of new intelligence.

As the DOD expands MTI platforms a simple truth about war is revealed. All fighting is comprised of the triad containing shooting, moving, and communicating (or fires, maneuver, and C2). The JSTARS platform significantly contributes to all pieces of the triad and an updated publication would greatly aid the effective use of this unique resource.

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**Capt Morleh So-Kargbo is a Ranger-qualified, USAF Airborne Intelligence Officer on JSTARS.**

**Capt Joshua McCarty is dual-qualified Air Weapons Officer (controller) and Sensor Management Officer on JSTARS.**

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1st Lt Nathan Sukolsky, an E-8C Joint Surveillance Target Attack Radar System weapons officer with the 7th Expeditionary Air Combat and Control Squadron at an air base in Southwest Asia, tracks suspected movements on radar during a mission over Iraq. (Photo by Staff Sgt Aaron Allmon II, USAF)

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## MILITARY TEXT CHAT IS 'COMMUNICATION AT THE EDGE'

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A 2nd Brigade, 1st Armored Division soldier demonstrates Warfighter Information Network-Tactical Increment 2 and Mission Command on-the-Move applications during the Network Integration Evaluation 12.1. (US Army photo by Claire Schwerin).

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Text chat provides a reliable and persistent record of an information exchange...

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By  
**Dr. LorRaine T. Duffy, CIV, USN**  
and **Ms. Emily W. Medina, CIV,**  
**USN**

### **TACTICAL CHAT: A PRIMARY COMMUNICATIONS PATH**

Distributed tactical operations often occur in areas of the world without reliable connectivity. Therefore, reliance on complex, full-featured, internet-capable audio/ video/text applications can often be fruitless. However, text chat, a low bandwidth, persistent communications application, is becoming the primary tactical "comms" path, having supplanted voice communications as the primary means of common operational picture (COP) updating in support of situational awareness.

Text chat provides a reliable and persistent record of an information exchange, especially under distributed, intermittent, low bandwidth (DIL) conditions. This is particularly important in situations with (1) large numbers of distributed warfighters, (2) those required to frequently jump onto and off of a network, (3) coordination with coalition partners who do not have access to our COP, and (4) those requiring shift changes among watchstanders. Text chat provides persistency in situational understanding between those leaving and those assuming command watch duties. Also, there are widely accepted, but undocumented, examples of text chat driving tactical targeting operations between land-based reconnaissance teams and close air support vehicles.

## **MIGRATION FROM LEGACY TO NEWER CHAT SYSTEMS**

Because of the Services' slowly evolving acceptance and ubiquitous use of chat (it was first used in the early 90's as a software engineering support capability, with tactical use exploding during Operation DESERT STORM), text chat could not benefit from focused invention, transition, or reasoned management. Therefore, it has no centralized, service-specific programs of record; much less, articulated policies, procedures, standards, or maintenance plans. Transition plans (among and between the Services) for migrating thousands of users to modern protocols and cloud-computing integration has been late arriving, with the Navy having an articulated plan for migration of large numbers of persistent chat users to a transitional software and hardware architecture. The Defense Information Systems Agency (DISA), on the other hand, has focused on providing extensible message and presence protocol (XMPP) instant messaging (IM) via their defense connect online Internet environment, with an acknowledgment accommodating tactical needs that will have to be addressed beyond chat use in multinational operations.

Migration involves literally changing the chat software for thousands of classified users, from legacy chat software (e.g, Internet Relay Chat [IRC] which is popular under tactical conditions), to currently commercial IM protocols, such as XMPP. However, this not only involves client software changes, but also changes the manner in which the federation of servers are designed for secure DIL environments. Add to that, the critical issue of preservation of chat content at the point of transition, since much of that content is fires-control related, and the transition is much more complicated than previously imagined. The current Internet standard protocol, XMPP,

is preferred for modern IM, providing more robust security, but less persistency. Its ability to take advantage of extensible markup language tagging provides a method for meta data handling, allowing better user authentication and encryption of content. However, XMPP continues to have a weak, and inflexible distributed architecture; it is simply not ready for "prime time" tactical use. But, leaving the infrastructure as it is weakens the safety and accuracy of tactical operations.

The Air Land Sea Application (ALSA) Center has made the first widespread attempt to capture and publish standards for tactical chat usage across the services through the Tactical Chat multi-Service tactics, techniques and procedures (MTTP) publication, first disseminated in 2009. Its engagement with the tactical chat community allows a unique perspective into the usefulness of chat to tactical warfighters.

The MTTP has provided a common language and platform for comparison and improvement of use among the Services. ALSA has assisted in the discovery of a lack of doctrinal alignment among the services in their use of chat. For example: is it a legal record of the battle, or is it mandated under certain battle conditions who actually owns the content, particularly if it is "battle sensitive?" Less significant, but no less troublesome are the practices that ensure smooth operation (i.e., consistent naming conventions for rooms, people, and battle roles and activities; archival agreements among multiple user communities, particularly if content includes "call for fires;" content maintenance agreements, consistent validation and verification of commonly accessible content, etc.). ALSA has taken the first step in documenting the practice and process of chat use. It is up to the community at large to take the next steps.

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The MTTP has provided a common language and platform for comparison and improvement of use among the Services.

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## NEXT STEPS IN THE EVOLUTION OF TACTICAL CHAT USE

There are several things that need to be done before we can move into a maintenance-centric acquisition mode. First, taking the Navy's lead, each Service should articulate its transition roadmap from legacy to newer chat protocols. The choice of a modern chat system is independent of an articulated transition strategy. Second, DISA should resurrect its set of joint classified tactical chat requirements and promulgate that list to adopt each Services' variant. This will lead to a clearer path for individual and group acquisition strategies. The assumption that one chat system will serve them all (paraphrase) has been rejected on all levels, as noted in eight years of Joint Chat Systems Conference information gathering. Tactical units have their unique chat requirements that need to be addressed, not subverted to a generic business model of chat.

Third, the chat community will need to actually spend money to address the XMPP distributed architecture issue rather than rely on a nameless, and faceless, international open source community, which simply has no monetary incentive to meet military standards of flexibility and safety. Fourth, a maintenance-centric acquisition mode implies a robust intraservice test and evaluation (T&E) infrastructure. As it is, there are no standards for chat T&E and each service does its own novel and unique evaluation. There is no current way to validate vendor claims without buying and vetting a chat system used in the context of thousands of (different) users.

Fifth, if an investment is going into supporting chat systems, funding

for chat system improvement will need to be secured. Research into several areas is imminent: the effectiveness of different communications architectures; use of idioms ("leet speak" and jargon) and conventions for communicating the context of the battlefield via text; the robustness of translation features in multi-lingual chat, as well as multimedia chat. (Our laboratory is researching the translation of physical gestures and iconic language from the tactical battlefield into a traditional chat-room.) Also, research into display management of chatrooms, cognitive load given a more complex battlefield with unmanned systems, the management of chat in cyberwarfare, etc., make the list quite endless.

Tactical chat is important, particularly considering distributed battlefields; the current transition from legacy to newer chat systems (especially with the onset of cloud computing); and the need for action to institutionalize the community and the requirement for next-generation research.

Tactical chat is complex and caution must be taken, so "battle management by PowerPoint" does not happen again. To wit, PowerPoint was so useful, battle managers changed their process to accommodate the tool's features.

Chat systems should be grown to meet the tactical warfighter's requirements and process, not the other way around. Our world has become more complex and less forgiving of errors in judgment. The requirement to accurately articulate and disseminate battlefield information has never been more important, or more in need of proper control.

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Tactical chat is important, particularly considering distributed battlefields...

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## MULTI-SERVICE SUCCESS STORY IN OFFENSIVE AND DEFENSIVE TACTICS

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An unidentified Marine, right, checks his compass to ensure he is on the right course while on patrol at Camp Fuji, Japan, 14 Nov. 2011. The Marines are from 3rd Battalion, 12th Marine Regiment, 3rd Marine Division, III Marine Expeditionary Force. Artillery Marines practice patrolling tactics because in combat operations, they provide their own security and quick reaction force to protect their gun positions. (Photo by USMC Lance Cpl. Erik Brooks)

**By**  
**Mr. Douglas Darling, CIV, USA**

### BACKGROUND

Between January and March 2012, the Army and Marine Corps plan to publish Field Manual (FM) 3-90/Marine Corps Warfighting Publication (MCWP) 3-10, Offensive and Defensive Tactics, as a multi-Service publication. The eighteen chapters and three appendices of FM 3-90/MCWP 3-10 focus on the tactics used to employ available means to win in combat (offensive- and defensive-centric operations) and constitute the Army's and Marine Corps' collective view of how they conduct prompt and sustained tactical offensive and defensive operations on land. It is the common reference point for all students of the tactical

art and is an update of the 2001 edition of the Army's FM 3-90, Tactics.

This manual provides the fundamental doctrinal principles for offense and defense just as FM 3-07, Stability Operations, and FM 3-28, Civil Support Operations, provide the fundamental doctrinal principles for those elements. FM 3-90/MCWP 3-10 intentionally does not address stability operations or defense support to civil authorities' elements in any real depth. This is because there must be a manual that articulates the basics of each element. These elements are best absorbed and understood in isolation, but must be applied simultaneously during the conduct of operations. It is also the manual that addresses the Army's movement and maneuver, and Marine Corps' maneuver warfighting functions.

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...and constitute the Army's and Marine Corps' collective view of how they conduct prompt and sustained tactical offensive and defensive operations on land.

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Tactics require judgment in application. FM 3-90/MCWP 3-10 provides a common discussion of how commanders from the company or battalion level, through the corps echelon, conduct tactical offensive and defensive operations and their supporting tactical enabling operations. This manual is not prescriptive, but it is authoritative. It is divided as follows.

- Part One establishes the context of the art and science of tactics and defines common tactical concepts and graphic control measures.
- Part Two addresses offensive operations.
- Part Three addresses defensive operations.
- Part Four addresses those tactical shaping operations not addressed in separate field manuals. These include security operations, reconnaissance operations, troop movement, relief in place, passage of lines, encirclement operations, and vertical envelopment operations.
- The three appendices address Army branches and tactical echelons, and Army tactical mission tasks; and, provide Soldiers an introduction to the Marine Corps.

Each chapter is built around organizational considerations, control measures, planning, preparation, and execution considerations for the tasks to be accomplished. These considerations are largely grouped by warfighting or joint function. Chapter 2 contains graphic control measures that apply to both offensive and defensive operations. Chapter 3 contains general information on the offense. Chapter 8 contains general information on the defense. Information contained in these two general chapters is not repeated in other chapters to avoid lengthening

the manual. For example, chapter 3 addresses the sustainment function in the offense. That information applies to all four offensive tasks, so it is not repeated in chapters 4 through 7.

The tactics, techniques, and procedures discussed in this manual are only examples of a way to conduct a specific offensive or defensive task. Collectively they provide a set of tools that tacticians can employ in accordance with the exact tactical situation they face at any given time. The tactical situation is defined as variables of mission, enemy, terrain and weather, troops and support available, time available, and civil considerations.

Tactical shaping operations and special environments discussed in other manuals are not repeated in FM 3-90/MCWP 3-10. That is why FM 3-90/MCWP 3-10 does not discuss mission command (FM 5-0 and FM 6-0), information operations (FM 3-13/MCWP 3-40.4), combined arms mobility operations (FM 3-90.4/MCWP 3-17.8), improvised explosive device (IED) defeat operations (FM 3-90.119/MCIP 3-17.01), and echelon support/rear area security (FM 3-37/MCRP 3-41.1A) in Part Four of this manual.

For the Army, the 2012 edition of FM 3-90/MCWP 3-10 is slated to be replaced with four publications. This is required by the Army's adoption of its Doctrine 2015 construct. Implementation of Doctrine 2015 will require this manual to be split into: ADP 3-90, Offensive and Defensive Tactics; ADRP 3-90, Offensive and Defensive Tactics; and FM 3-90/MCWP 3-10, Offensive and Defensive Tactics, Volumes I and II. ADP 3-90 and ADRP 3-90 should be published by the end of FY 2012. FM 3-90/MCWP 3-10, Volumes I and II are projected to be published by the end of FY 2013. The Marine Corps has not signed on to the Army's Doctrine 2015 efforts.

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Tactical shaping operations and special environments discussed in other manuals are not repeated in FM 3-90/MCWP 3-10.

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The offensive and defensive tactics described in FM 3-90/MCWP 3-10 are only the starting points for tacticians. The tactician must continue studying military history. However, the authors urge American tacticians to widen their areas of study of the military profession to include other armies and precedents from classical, medieval, and contemporary (e.g., 30 Years War and later) historical periods, in addition to Army and Marine Corps recent experiences in Iraq and Afghanistan. Military professionals also should study politics and diplomacy, economics, and ways of influencing others—the other instruments of national power. While history never exactly repeats itself, on many

occasions it seems to rhyme, and current events seem to closely parallel previous developments. In addition, war remains a human endeavor. What motivated or influenced our military forbearers will probably motivate or influence today's Soldiers and Marines to one degree or another, once adjustments are made to account for technological and social changes.

The tactician must temper this study with a variety of relevant, practical experiences. That is how an individual's tactical skills evolve. The more experience the tactician gains from conducting training exercises and actual operations under a variety of conditions, the greater the probability the tactician is able to master the art of tactics.

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The tactician must temper this study with a variety of relevant, practical experiences.

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Rows of Mine Resistant Ambush Protected vehicles are lined up on Contingency Operating Base Adder as the 2nd Squadron, 183rd Cavalry Regiment, Virginia Army National Guard, prepares for its final convoy out of Iraq, 2 Dec 2011. (Photo by Spc. Anthony Zane, ANG)

# CURRENT ALSA MTTP PUBLICATIONS

AIR BRANCH – POC [alsaa@langley.af.mil](mailto:alsaa@langley.af.mil)

TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>AIRSPACE CONTROL</b> <i>Multi-Service Tactics, Techniques, and Procedures for Airspace Control</i> <b>Distribution Restricted</b>	22 MAY 09	FM 3-52.1 AFTTP 3-2.78	Description: This MTTP publication is a tactical-level document, which helps synchronize and integrate airspace command and control functions and serves as a single-source reference for planners and commanders at all levels. Status: <b>Assessment</b>
<b>AOMSW</b> <i>Multi-Service Tactics, Techniques, and Procedures for Air Operations in Maritime Surface Warfare</i> <b>Distribution Restricted</b>	17 NOV 08	NTTP 3-20.8 AFTTP 3-2.74	Description: This publication consolidates Service doctrine, TTP, and lessons earned from current operations and exercises to maximize the effectiveness of "air attacks on enemy surface vessels". Status: <b>Current</b>
<b>AVIATION URBAN OPERATIONS</b> <i>Multi-Service Tactics, Techniques, and Procedures for Aviation Urban Operations</i> <b>Distribution Restricted</b>	9 JUL 05	FM 3-06.1 MCRP 3-35.3A NTTP 3-01.04 AFTTP 3-2.29	Description: This publication provides MTTP for tactical-level planning and execution of fixed- and rotary-wing aviation urban operations. Status: <b>Revision</b>
<b>IADS</b> <i>Multi-Service Tactics, Techniques, and Procedures for an Integrated Air Defense System</i> <b>Distribution Restricted</b>	1 MAY 09	FM 3-01.15 MCRP 3-25E NTTP 3-01.8 AFTTP 3-2.31	Description: This publication provides joint planners with a consolidated reference on Service air defense systems, processes, and structures to include integration procedures. Status: <b>Current</b>
<b>JFIRE</b> <i>Multi-Service Procedures for the Joint Application of Firepower</i> <b>Distribution Restricted</b>	20 DEC 07	FM 3-09.32 MCRP 3-16.6A NTTP 3-09.2 AFTTP 3-2.6	Description: A pocket-sized guide of procedures for calls for fire, CAS, and naval gunfire. Provides tactics for joint operations between attack helicopters and fixed-wing aircraft performing integrated battlefield operations. Status: <b>Revision</b>
<b>JSEAD / ARM</b> <i>Multi-Service Tactics, Techniques, and Procedures for the Suppression of Enemy Air Defenses in a Joint Environment</i> <b>Classified SECRET</b>	28 MAY 04	FM 3-01.4 MCRP 3-22.2A NTTP 3-01.42 AFTTP 3-2.28	Description: This publication contributes to Service interoperability by providing the Joint Task Force and subordinate commanders, their staffs, and SEAD operators a single, consolidated reference. Status: <b>Revision</b>
<b>JSTARS (ATCARS)</b> <i>Multi-Service Tactics, Techniques, and Procedures for the Joint Surveillance Target Attack Radar System</i> <b>Distribution Restricted</b>	16 NOV 06	FM 3-55.6 MCRP 2-24A NTTP 3-55.13 AFTTP 3-2.2	Description: This publication provides procedures for employing JSTARS in dedicated support to the Joint Force Commander. Describes multi-Service TTP for consideration and use during planning and employment of JSTARS. Status: <b>Revision</b>
<b>KILL BOX</b> <i>Multi-Service Tactics, Techniques, and Procedures for Kill Box Employment</i> <b>Distribution Restricted</b>	4 AUG 09	FM 3-09.34 MCRP 3-25H NTTP 3-09.2.1 AFTTP 3-2.59	Description: This publication assists the Services and Joint Force Commanders in developing, establishing, and executing Kill Box procedures to allow rapid target engagement. Describes timely, effective multi-Service solutions to FSCMs, ACMs, and maneuver control measures with respect to Kill Box operations. Status: <b>Current</b>
<b>SCAR</b> <i>Multi-Service Tactics, Techniques, and Procedures for Strike Coordination and Reconnaissance</i> <b>Distribution Restricted</b>	26 NOV 08	FM 3-60.2 MCRP 3-23C NTTP 3-03.4.3 AFTTP 3-2.72	Description: This publication provides strike coordination and reconnaissance (SCAR) MTTP to the military Services for conducting air interdiction against targets of opportunity. Status: <b>Revision</b>
<b>SURVIVAL, EVASION, AND RECOVERY</b> <i>Multi-Service Tactics, Techniques, and Procedures for Survival, Evasion, and Recovery</i> <b>Distribution Restricted</b>	20 MAR 07	FM 3-50.3 NTTP 3-50.3 AFTTP 3-2.26	Description: This publication provides a weather-proof, pocket-sized, quick reference guide of basic survival information to assist Service members in a survival situation regardless of geographic location. Status: <b>Revision</b>
<b>TAGS</b> <i>Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System</i> <b>Distribution Restricted/ REL ABCA</b>	10 APR 07	FM 3-52.2 NTTP 3-56.2 AFTTP 3-2.17	Description: This publication promotes Service awareness regarding the role of airpower in support of the Joint Force Commander's campaign plan, increases understanding of the air-ground system, and provides planning considerations for conducting air-to-ground ops. Status: <b>Revision</b>

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TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>TST (DYNAMIC TARGETING)</b> <i>Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets</i> <b>Distribution Restricted</b>	20 APR 04	FM 3-60.1 MCRP 3-16D NTTP 3-60.1 AFTTP 3-2.3	Description: This publication provides the Joint Force Commander, the operational staff, and components MTTP to coordinate, de-conflict, synchronize, and prosecute TSTs within any area of responsibility. Includes lessons learned, multinational and other government agency considerations. Status: <b>Revision</b>
<b>UAS</b> <i>Multi-Service Tactics, Techniques, and Procedures for Tactical Employment of Unmanned Aircraft Systems</i> <b>Distribution Restricted</b>	21 SEP 11	FM 3-04.15 NTTP 3-55.14 AFTTP 3-2.64	Description: Establishes MTTP for UAS addressing tactical and operational considerations; system capabilities; payloads; mission planning; logistics; and, most importantly, multi-Service execution. Status: <b>Current</b>

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TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>ADVISING</b> <i>Multi-Service Tactics, Techniques, and Procedures for Advising Foreign Forces</i> <b>Distribution Restricted</b>	10 SEP 09	FM 3-07.10 MCRP 3-33.8A NTTP 3-07.5 AFTTP 3-2.76	Description: This publication serves as a reference to ensure coordinated multi-Service operations for planners and operators preparing for, and conducting, advisor team missions. It is intended to provide units and personnel scheduled to advise foreign forces with viable TTP so they can successfully plan, train for, and carry out their mission. Status: <b>Current</b>
<b>AIRFIELD OPENING</b> <i>Multi-Service Tactics, Techniques, and Procedures for Airfield Opening</i> <b>Distribution Restricted</b>	15 MAY 07	FM 3-17.2 NTTP 3-02.18 AFTTP 3-2.68	Description: This is a quick-reference guide to opening an airfield in accordance with MTTP. It contains planning considerations, airfield layout, and logistical requirements for opening an airfield. Status: <b>Revision</b>
<b>CF/SOF</b> <i>Multi-Service Tactics, Techniques, and Procedures for Conventional Forces and Special Operations Forces Integration and Interoperability</i> <b>Distribution Restricted</b>	17 MAR 10	FM 6-03.05 MCWP 3-36.1 NTTP 3-05.19 AFTTP 3-2.73 USSOCOM Pub 3-33V.3	Description: This publication assists in planning and executing operations where conventional forces and special operations forces (CF/SOF) occupy the same operational environment. Status: <b>Assessment</b>
<b>CORDON AND SEARCH</b> <i>Multi-Service Tactics, Techniques, and Procedures for Cordon and Search Operations</i> <b>Distribution Restricted</b>	25 APR 06	FM 3-06.20 MCRP 3-31.4B NTTP 3-05.8 AFTTP 3-2.62	Description: This publication consolidates the Services' best TTP used in cordon and search operations. This publication provides MTTP for planning and executing cordon and search operations at the tactical level of war. Status: <b>Revision</b>
<b>EOD</b> <i>Multi-Service Tactics, Techniques, and Procedures for Explosive Ordnance Disposal in a Joint Environment</i> <b>Approved for Public Release</b>	20 SEP 11	FM 4-30.16 MCRP 3-17.2C NTTP 3-02.5 AFTTP 3-2.32	Description: Provides guidance and procedures for employing a joint EOD force. It assists commanders and planners in understanding the EOD capabilities of each Service. Status: <b>Current</b>
<b>Military Diving Operations (MDO)</b> <i>Multi-Service Tactics, Techniques, and Procedures for Military Diving Operations</i> <b>Approved for Public Release</b>	12 JAN 11	ATTP 3-34.84 MCRP 3-35.9A NTTP 3-07.7 AFTTP 3-2.80 CG COMDTINST 3-07.7	Description: This MTTP publication describes US Military dive mission areas (DMA) as well as the force structure, equipment, and primary missions each Service could provide to a JTF commander. Status: <b>Current</b>
<b>MILITARY DECEPTION</b> <i>Multi-Service Tactics, Techniques, and Procedures for Military Deception</i> <b>Classified SECRET</b>	12 APR 07	MCRP 3-40.4A NTTP 3-58.1 AFTTP 3-2.66	Description: This MTTP facilitates integrating, synchronizing, planning, and executing of MILDEC operations. It serves as a "one stop" reference for service MILDEC planners to plan and execute multi-service MILDEC operations. Status: <b>Revision</b>
<b>NLW</b> <i>Multi-Service Tactics, Techniques, and Procedures for the Tactical Employment of Nonlethal Weapons</i> <b>Approved for Public Release</b>	24 OCT 07	FM 3-22.40 MCWP 3-15.8 NTTP 3-07.3.2 AFTTP 3-2.45	Description: This publication provides a single-source, consolidated reference on the tactical employment of NLWs and offers commanders and their staff guidance for NLW employment and planning. Commanders and staffs can use this publication to aid in the tactical employment of NLW during exercises and contingencies. Status: <b>Revision</b>
<b>PEACE OPS</b> <i>Multi-Service Tactics, Techniques, and Procedures for Conducting Peace Operations</i> <b>Approved for Public Release</b>	20 OCT 03 Change 1 incorporated 14 APR 09	FM 3-07.31 MCWP 3-33.8 AFTTP 3-2.40	Description: This publication provides tactical-level guidance to the warfighter for conducting peace operations. Status: <b>Current with Change 1</b>

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TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>TACTICAL CONVOY OPERATIONS</b> <i>Multi-Service Tactics, Techniques, and Procedures for Tactical Convoy Operations</i> <b>Distribution Restricted</b>	13 JAN 09	FM 4-01.45 MCRP 4-11.3H NTTP 4-01.3 AFTTP 3-2.58	Description: Consolidates the Services' best TTP used in convoy operations into a single multi-Service TTP. It provides a quick reference guide for convoy commanders and subordinates on how to plan, train, and conduct tactical convoy operations in the contemporary operating environment.  Status: <b>Assessment</b>
<b>TECHINT</b> <i>Multi-Service Tactics, Techniques, and Procedures for Technical Intelligence Operations</i> <b>Approved for Public Release</b>	9 JUN 06	FM 2-22.401 NTTP 2-01.4 AFTTP 3-2.63	Description: This publication provides a common set of MTTP for technical intelligence operations. It serves as a reference for Service technical intelligence planners and operators.  Status: <b>Revision</b>
<b>UXO</b> <i>Multi-Service Tactics, Techniques, and Procedures for Unexploded Explosive Ordnance Operations</i> <b>Approved for Public Release</b>	20 SEP 11	FM 3-100.38 MCRP 3-17.2B NTTP 3-02.4.1 AFTTP 3-2.12	Description: This MTTP describes hazards of UXO submunitions to land operations, addresses UXO planning considerations, and describes the architecture for reporting and tracking UXO during combat and post conflict.  Status: <b>Current</b>

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TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>BREVITY</b> <i>Multi-Service Brevity Codes</i> <b>Distribution Restricted</b>	7 APR 10	FM 1-02.1 MCRP 3-25B NTTP 6-02.1 AFTTP 3-2.5	Description: This publication defines multi-Service brevity which standardizes air-to-air, air-to-surface, surface-to-air, and surface-to-surface brevity code words in multi-Service operations.  Status: <b>Revision</b>
<b>CIVIL SUPPORT (DSCA)</b> <i>Multi-Service Tactics, Techniques, and Procedures for Civil Support Operations</i> <b>Distribution Restricted</b>	3 DEC 07	FM 3-28.1 NTTP 3-57.2 AFTTP 3-2.67	Description: The DSCA publication fills the Civil Support Operations MTTP void and assists JTF commanders in organizing and employing Multi-Service Task Force support to civil authorities in response to domestic crisis.  Status: <b>Revision</b>
<b>COMCAM</b> <i>Multi-Service Tactics, Techniques, and Procedures for Joint Combat Camera Operations</i> <b>Approved for Public Release</b>	24 MAY 07	FM 3-55.12 MCRP 3-33.7A NTTP 3-13.12 AFTTP 3-2.41	Description: This publication fills the void that exists regarding combat camera doctrine and assists JTF commanders in structuring and employing combat camera assets as an effective operational planning tool.  Status: <b>Revision</b>
<b>HAVE QUICK</b> <i>Multi-Service Tactics, Techniques, and Procedures for HAVE QUICK Radios</i> <b>Distribution Restricted</b>	7 MAY 04	FM 6-02.771 MCRP 3-40.3F NTTP 6-02.7 AFTTP 3-2.49	Description: This publication simplifies planning and coordination of HAVE QUICK radio procedures. It provides operators information on multi-Service HAVE QUICK communication systems while conducting home station training or in preparation for interoperability training.  Status: <b>Revision</b>
<b>HF-ALE</b> <i>Multi-Service Tactics, Techniques, and Procedures for the High Frequency-Automatic Link Establishment (HF-ALE) Radios</i> <b>Distribution Restricted</b>	20 NOV 07	FM 6-02.74 MCRP 3-40.3E NTTP 6-02.6 AFTTP 3-2.48	Description: This MTTP standardizes high power and low power HF-ALE operations across the Services and enables joint forces to use HF radio as a supplement / alternative to overburdened SATCOM systems for over-the-horizon communications.  Status: <b>Revision</b>
<b>JATC</b> <i>Multi-Service Tactics, Techniques, and Procedures for Joint Air Traffic Control</i> <b>Distribution Restricted</b>	23 JUL 09	FM 3-52.3 MCRP 3-25A NTTP 3-56.3 AFTTP 3-2.23	Description: This publication provides guidance on ATC responsibilities, procedures, and employment in a joint environment. It discusses JATC employment and Service relationships for initial, transition, and sustained ATC operations across the spectrum of joint operations within the theater or AOR.  Status: <b>Current</b>
<b>EW REPROGRAMMING</b> <i>Multi-Service Tactics, Techniques, and Procedures for the Reprogramming of Electronic Warfare and Target Sensing Systems</i> <b>Distribution Restricted</b>	01 FEB 11	ATTP 3-13.10 MCRP 3-40.5A NTTP 3-51.2 AFTTP 3-2.7	Description: This publication supports the JTF staff in planning, coordinating, and executing reprogramming of electronic warfare and target sensing systems as part of joint force command and control warfare operations.  Status: <b>Current</b>
<b>TACTICAL CHAT</b> <i>Multi-Service Tactics, Techniques, and Procedures for Internet Tactical Chat in Support of Operations</i> <b>Distribution Restricted</b>	7 JUL 09	FM 6-02.73 MCRP 3-40.2B NTTP 6-02.8 AFTTP 3-2.77	Description: This publication provides MTTP to standardize and describe the use of internet tactical chat (TC) in support of operations. It provides commanders and their units with guidelines to facilitate coordination and integration of TC when conducting multi-Service and joint force operations.  Status: <b>Current</b>

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TITLE	DATE	PUB #	DESCRIPTION / STATUS
<b>TACTICAL RADIOS</b> <i>Multi-Service Communications Procedures for Tactical Radios in a Joint Environment</i> Approved for Public Release	14 JUN 02	FM 6-02.72 MCRP 3-40.3A NTTP 6-02.2 AFTTP 3-2.18	Description: This publication standardizes joint operational procedures for SINGARS and provides an overview of the multi-Service applications of EPLRS. Status: <b>Revision</b>
<b>UHF TACSAT/DAMA</b> <i>Multi-Service Tactics, Techniques, and Procedures Package for Ultra High Frequency Tactical Satellite and Demand Assigned Multiple Access Operations</i> Approved for Public Release	31 AUG 04	FM 6-02.90 MCRP 3-40.3G NTTP 6-02.9 AFTTP 3-2.53	Description: This publication documents TTP that will improve efficiency at the planner and user levels. (Recent operations at the JTF level have demonstrated difficulties in managing a limited number of UHF TACSAT frequencies.) Status: <b>Revision</b>

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## May 2012 Air Land Sea Bulletin (ALSB)

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# *We want your input!*

The Air Land Sea Application (ALSA) Center develops multi-Service tactics, techniques, and procedures (MTTPs) with the goal of meeting the needs of the warfighter. In addition to developing MTTPs, ALSA provides the ALSB forum to facilitate tactical and operationally relevant information exchanges among warfighters of all Services.

There is no better resource for information than the people doing the jobs. Personal experiences, studies and individual research lead to inspirational and educational articles. Therefore, we invite our readers to share their experiences and possibly have them published in an upcoming ALSB. The topic for the May 2012 ALSB is "Airspace Control."

We want to take your lessons learned from Operations IRAQI FREEDOM, ENDURING FREEDOM, NEW DAWN or any other multi-Service missions you have been involved in and spread that knowledge to others. Get published by sharing your experiences and expertise. With the focus on Airspace Control, what can be done to make combat air space safer and more productive? Your article could concentrate on ground fires, air traffic control, terminal control, close combat attack, close air support, unmanned vehicles or any other venue of airspace use.

## Airspace Control

### Submissions must:

- Be 1500 words or less
- Be double spaced
- Be in the MS Word format
- Include the author's name, unit address, telephone numbers, and email address
- Include high-resolution, 300 dpi (minimum), original photographs and graphics

**Note: Article submissions and photos are due no later than 1 March 2012 for publication in the May 2012 issue.**

**Early submissions are highly encouraged.**

Contact ALSA's Air Branch's at:

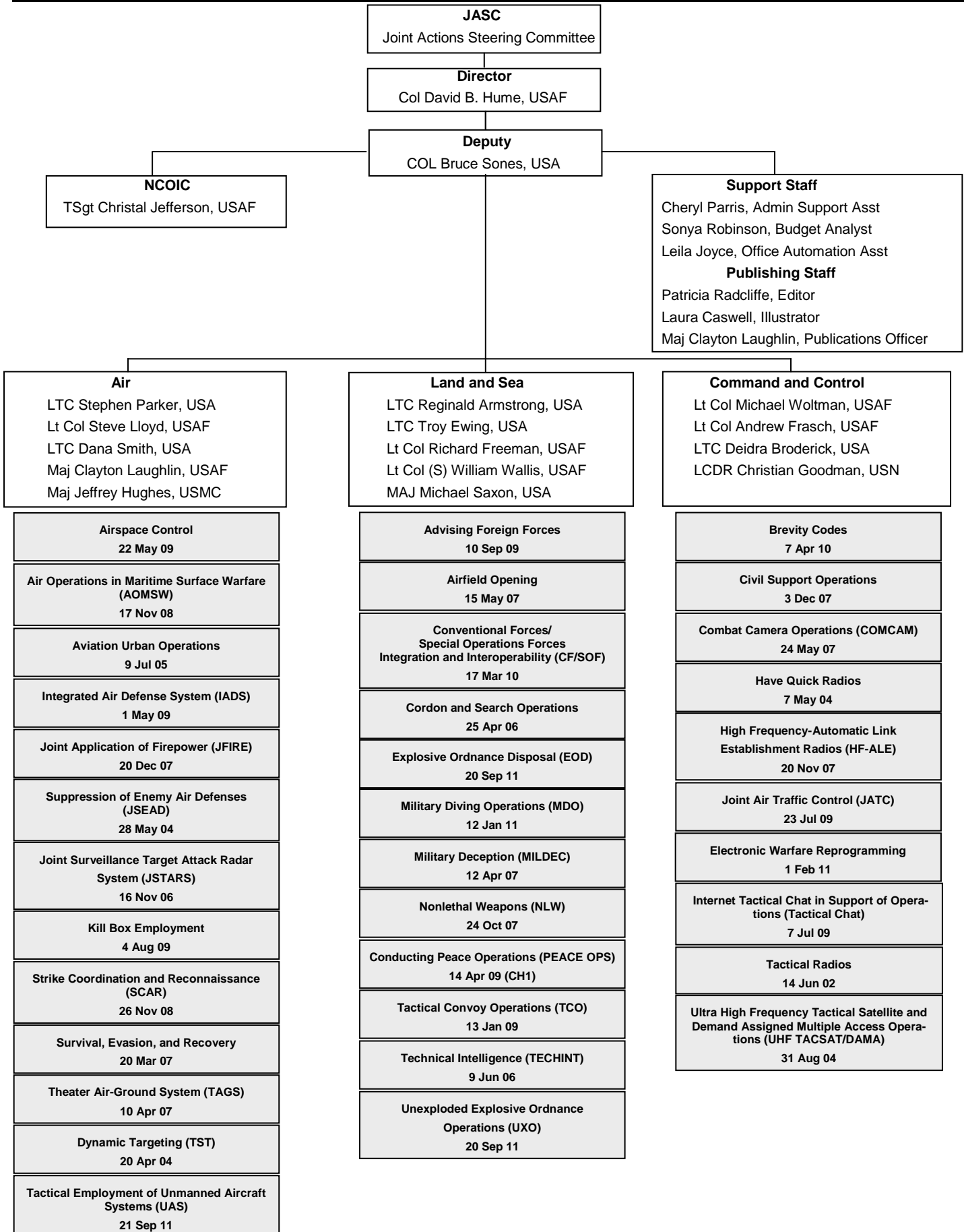
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# ALSA ORGANIZATION



# MISSION



ALSA's mission is to rapidly and responsively develop multi-Service tactics, techniques and procedures (MTTP), studies, and other like solutions across the entire military spectrum to meet the immediate needs of the warfighter.

ALSA is a joint organization chartered by a memorandum of agreement under the authority of the Commanders of the, US Army Training and Doctrine Command (TRADOC), Marine Corps Combat Development Command (MCCDC), Navy Warfare Development Command (NWDC), and Headquarters, Curtis E. LeMay Center for Doctrine Development and Education. ALSA is governed by a Joint Actions Steering Committee (JASC) consisting of four voting and three nonvoting members.

## Voting JASC Members



Maj Gen Thomas K. Andersen

Commander, Curtis E. LeMay Center for Doctrine Development and Education



RDML Terry B. Kraft

Commander, Navy Warfare Development Command



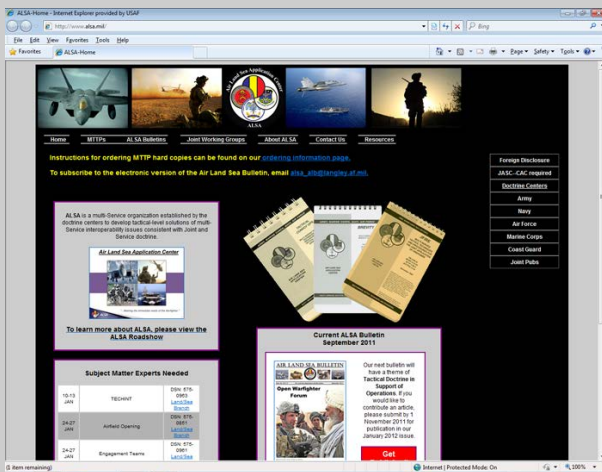
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