

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE (DD-MM-YYYY) 04-05-2012		2. REPORT TYPE FINAL		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE The Maritime Dynamic Targeting Gap - An Analysis of Current Joint Targeting Processes in the Maritime Domain				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) LCDR Mitchell S. McCallister, USN Paper Advisor: LtCol Dee S. Rosser, USMC				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Joint Military Operations Department Naval War College 686 Cushing Road Newport, RI 02841-1207				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution Statement A: Approved for public release; Distribution is unlimited.					
13. SUPPLEMENTARY NOTES A paper submitted to the Naval War College faculty in partial satisfaction of the requirements of the Joint Military Operations Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.					
14. ABSTRACT The wars of the last two decades have adapted the Joint Targeting Cycle to be an air-centric solution to land-centric targets. This has largely bound joint targeting processes to the Joint Air Tasking Cycle, resident at the Joint Air Operations Center, which tasks joint air assets to strike theater targets. However, this model will prove to be a less responsive solution to emergent maritime dynamic targets. A conflict in the maritime domain will present targeting challenges that are in stark contrast to those realized in the last twenty years. A less permissive air environment will make diverting Air Tasking Order assigned strike aircraft to dynamic targeting more risky. The highly mobile nature of maritime targets will cause constant target priority flux across the Joint Operations Area. Robust self-defense capabilities of maritime targets will demand larger and more structured dynamic targeting packages than those enabled by current joint targeting processes. If the Joint Force Maritime Component Commander is to provide a responsive solution to the maritime dynamic targeting gap, he must have the capability to integrate and task all joint force providers in order to support his objectives. Additionally, he must be able to command and control these assets at the operational and tactical levels of war. This paper will recommend two solutions to the maritime dynamic targeting gap that, if developed, will give the Navy the operational level voice it needs to affect joint targeting processes in the maritime domain.					
15. SUBJECT TERMS Joint Targeting; Joint Force Maritime Component Commander; Joint Force Air Component Commander; Command and Control; Maritime Tasking Order; Maritime Air Support Operations Center					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 29	19a. NAME OF RESPONSIBLE PERSON Chairman, JMO Dept
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code) 401-841-3556

**NAVAL WAR COLLEGE
Newport, R.I.**

**THE MARITIME DYNAMIC TARGETING GAP – AN ANALYSIS OF CURRENT
JOINT TARGETING PROCESSES IN THE MARITIME DOMAIN**

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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04 May 2012

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Contents

Introduction	1
Background	2
The Joint Targeting Cycle	2
The CENTCOM Model for Joint Targeting	5
The Vehicle for Joint Targeting	7
The Maritime Domain	8
Challenges	8
The Maritime Dynamic Targeting Gap	9
Counterargument	11
Recommendations	13
The Maritime Tasking Order	14
The Maritime Air Support Operations Center	16
Conclusion	18
Endnotes	20
Bibliography	22

List of Illustrations

Figure	Title	Page
1.	The Joint Targeting Cycle	2
2.	Dynamic Targeting Steps	4
3.	The Joint Air Tasking Cycle	6
4.	ATO Production	7
5.	The Maritime Dynamic Targeting Gap	10

List of Terms

AO	Area of Operations
ASOC	Air Support Operations Center
ATO	Air Tasking Order
CAOC	Combined Air Operations Center
CAS	Close Air Support
CCDR	Combatant Commander
CENTCOM	United States Central Command
CJTF	Commander, Joint Task Force
CRC	Control and Reporting Center
CSG	Carrier Strike Group
CWC	Composite Warfare Commander
C2	Command and Control
JAOC	Joint Air Operations Center
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JFLCC	Joint Force Land Component Commander
JFMCC	Joint Force Maritime Component Commander
JIPTL	Joint Integrated Prioritized Target List
JOA	Joint Operations Area
JOPP	Joint Operation Planning Process
JTF	Joint Task Force
MASOC	Maritime Air Support Operations Center

MISREP	Mission Report
MLRS	Multiple Launch Rocket System
MOC	Maritime Operations Center
MPSS	Maritime Planning Support System
MTO	Maritime Tasking Order
SCL	Standard Conventional Load
SOF	Special Operations Forces
TACS	Tactical Aircraft Control System
TLAM	Tomahawk Land Attack Missile

Abstract

The wars of the last two decades have adapted the Joint Targeting Cycle to be an air-centric solution to land-centric targets. This has largely bound joint targeting processes to the Joint Air Tasking Cycle, resident at the Joint Air Operations Center, which tasks joint air assets to strike theater targets. However, this model will prove to be a less responsive solution to emergent maritime dynamic targets.

A conflict in the maritime domain will present targeting challenges that are in stark contrast to those realized in the last twenty years. A less permissive air environment will make diverting Air Tasking Order assigned strike aircraft to dynamic targeting more risky. The highly mobile nature of maritime targets will cause constant target priority flux across the Joint Operations Area. Robust self-defense capabilities of maritime targets will demand larger and more structured dynamic targeting packages than those enabled by current joint targeting processes.

If the Joint Force Maritime Component Commander is to provide a responsive solution to the maritime dynamic targeting gap, he must have the capability to integrate and task all joint force providers in order to support his objectives. Additionally, he must be able to command and control these assets at the operational and tactical levels of war. This paper will recommend two solutions to the maritime dynamic targeting gap that, if developed, will give the Navy the operational level voice it needs to affect joint targeting processes in the maritime domain.

INTRODUCTION

Joint targeting processes were born out of necessity during World War II when the battlefield acquired a significant vertical dimension. Through the use of aerial bombardment, the Commander was able to employ platforms well outside of the effects of traditional combat in order to weaken the enemy and his support structure. As these fires began to fall ever closer to friendly forces, however, the Soldiers and Marines fighting on the ground realized that close integration with strike aircraft was a must. The Joint Targeting Cycle of today has its roots in this need for integration. The Commanders of ground, naval, and air forces are charged with integrating, deconflicting, and synchronizing their fires in order to ensure the accomplishment of objectives while reducing undesired effects such as fratricide or collateral damage.ⁱ Most importantly, this close integration fosters unity of effort by ensuring lateral communication among Commanders.

The wars of the last two decades seem to show a culminating precision with which the United States military can strike targets as a joint team. Specifically since the watershed coordination event of Operation DESERT STORM, the U. S. Air Force and U. S. Navy seamlessly integrate air assets on a daily basis to support ground forces in both Afghanistan and Iraq. Joint targeting doctrine and procedures have adapted to ensure unity of effort and, ultimately, responsive striking power in these types of wars. However, the wars in Afghanistan and Iraq have been largely two-dimensional when referencing geographic domains and target sets. Dominance of the maritime domain has been undisputed. Operationally, the Navy has been limited to a supporting component and primarily fills the role of force provider. The Navy has rarely coordinated or integrated non-organic members of the joint team at the operational level.ⁱⁱ Additionally, the platform of choice for the Joint

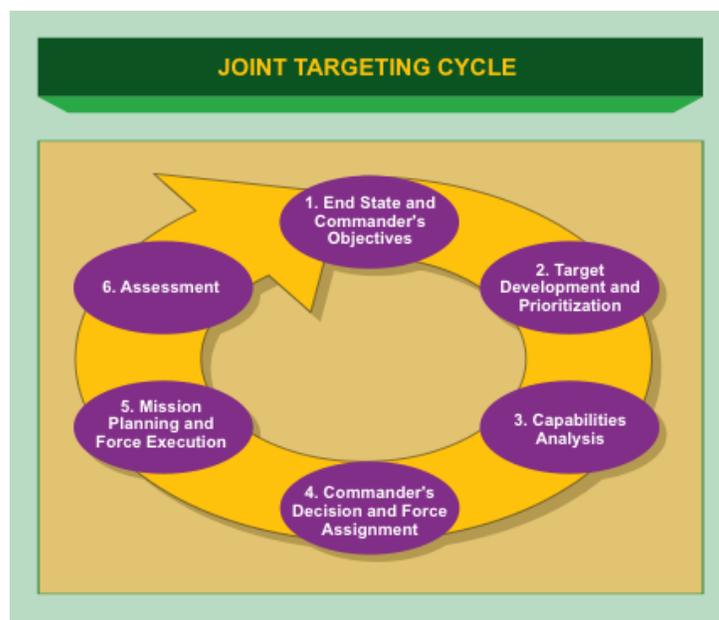
Force Commander (JFC) in the execution of joint fires has been strike aircraft. Thus, for the last twenty years joint targeting has been air-centric. As a result, the Joint Targeting Cycle has adapted to rely on air-centric operations to strike land-based target sets. As the U. S. begins to shift its strategic focus to the Asia Pacific, which is largely characterized by maritime objectives, current joint targeting processes do not provide the capability to swiftly and effectively respond to dynamic maritime targets.

BACKGROUND

The Joint Targeting Cycle

In order to realize the dynamic targeting shortfalls in the maritime domain, an understanding of current targeting processes and their theater application is beneficial. Joint Targeting seems to carry the connotation of execution, but a study of doctrine reveals a much more complex process which is nested in mission analysis and detailed planning. To this end, JP 3-60 *Joint Targeting* details a phased approach to targeting as revealed in the Joint Targeting Cycle, which is shown in Figure 1 below.

Figure 1: The Joint Targeting Cycleⁱⁱⁱ



This chart helps to show the iterative steps that are satisfied either sequentially or concurrently in order to affect successful joint targeting. Phase 1, like all aspects of the Joint Operation Planning Process (JOPP), is rooted in the objective. The Combatant Commander (CCDR) will equate this phase to the desired military end state and theater-strategic objectives. A subordinate JFC, however, is likely more concerned with the operational objective and will use this phase to ensure that joint targeting reflects his or her overall intent.^{iv} Therefore, JP 3-60 describes the goal of Phases 1 through 4 to “collectively produce the commander’s guidance for all targeting, whether deliberate or dynamic”.^v Simply stated, subordinate Component Commanders nominate targets within their Area of Operations (AO) that hold operational and tactical significance. These are then vetted through processes either at the CCDR or JFC level to ensure that they are in line with the commander’s overall intent. With higher headquarters’ approval, these targets are then developed and prioritized in preparation for prosecution. Thus, it becomes evident that the Joint Targeting Cycle breeds close coordination, integration, and synchronization. Hence, the hallmark goal of unity of effort is realized.

Phase 5 of the Joint Targeting Cycle begins with a collection of JFC-approved targets that are listed in priority on the Joint Integrated Prioritized Target List (JIPTL) and associated tasking orders. At this point, detailed mission planning commences which will culminate in mission execution against JIPTL targets.^{vi} Phase 5, however, is not as simple as it sounds. The preceding characterization of the process aptly describes the steps taken to strike deliberate targets. Deliberate targets are those target sets that are typically fixed and well understood. Therefore, they require less responsiveness. These targets largely represent those prosecuted during the initial kinetic phase of an operation. Dynamic targets, however,

describe those target sets that are not fixed, and in some cases are emergent and therefore unknown. For this reason, Phase 5 contains an additional process known as F2T2EA (find, fix, track, target, engage, and assess) in an effort to achieve responsive effects against dynamic targets that usually present fleeting opportunities for engagement.^{vii} The Dynamic Targeting Steps are identified in Figure 2 below.

Figure 2: Dynamic Targeting Steps^{viii}



The Dynamic Targeting Steps, sometimes known as the “kill chain”, are intended to provide the capability to quickly respond to emerging targets within the Joint Operations Area (JOA). During the last two decades, the location of deliberate and dynamic targets, in concert with the airborne platforms that routinely strike them, have made the Joint Force Air

Component Commander's (JFACC) Joint Air Operations Center (JAOC) the residence for the Joint Targeting Cycle.^{ix}

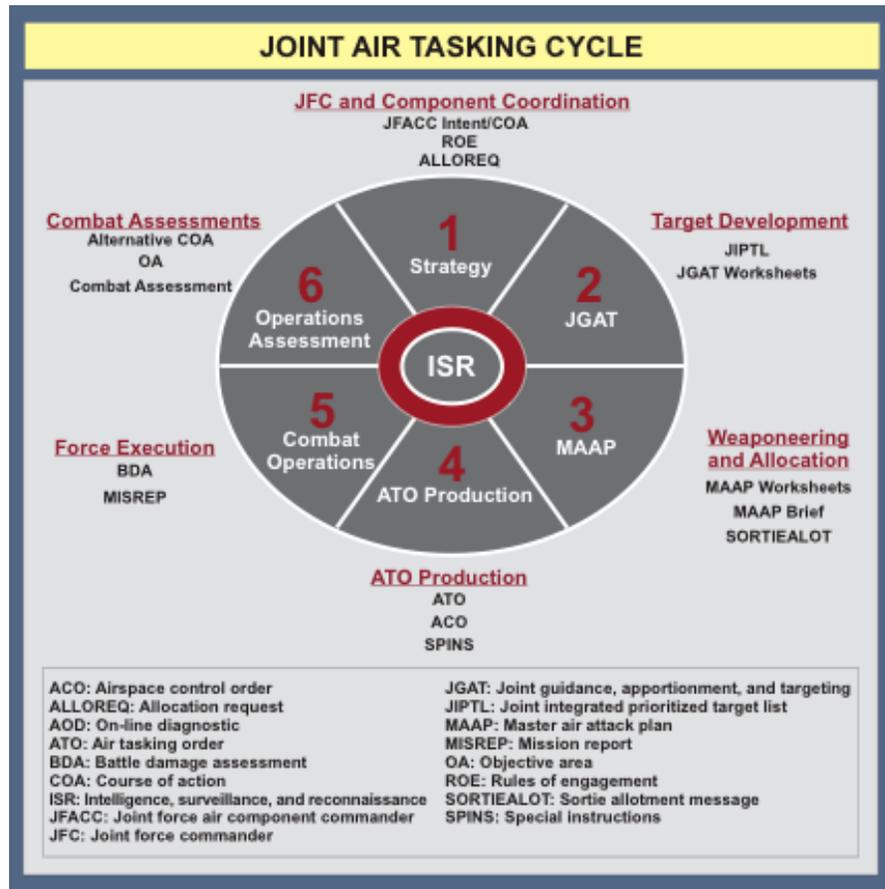
The CENTCOM model for Joint Targeting

The challenges of coordinating air assets across the United States Central Command (CENTCOM) has continued to validate the role of the JFACC, which was first exercised during Operation DESERT STORM. However with the commencement of Operations ENDURING FREEDOM and IRAQI FREEDOM (OEF and OIF respectively), the Air Force succeeded in making the JFACC a theater-level component commander, both in practice and doctrine.^x The primary reason for the theater JFACC was the arrival of two JOA's within one theater, which made joint air assets high demand, but low density platforms. The JFACC was now charged with supporting JFC's in both Afghanistan and Iraq with limited air assets.^{xi}

As previously discussed, joint targeting in CENTCOM has been air-centric. Therefore, the theater JFACC has played a significant role in the allocation of joint air assets to achieve targeting goals. A responsibility of the JFACC is to recommend to the CCDR or JFC the proper allocation of joint air assets within the theater of operations.^{xii} As a result, the Joint Force Maritime Component Commander (JFMCC) and the JFACC work closely to determine the Naval Aviation assets that will be made available for JFACC tasking. Specifically, the JFMCC will determine the amount of organic air assets, typically within a Carrier Strike Group (CSG), that he or she will need to support maritime operations. Any excess sorties will be made available to the JFACC. These allocated air assets will then be used in the Joint Air Tasking Cycle in order to fuse platforms with targeting guidance.^{xiii} The Joint Air Tasking Cycle, depicted below in Figure 3, is an iterative process that occurs in

close coordination with the Joint Targeting Cycle in order to produce the Air Tasking Order (ATO). The ATO is the ultimate product of the Joint Air Tasking Cycle and provides tasking to joint air assets made available to the JFACC.

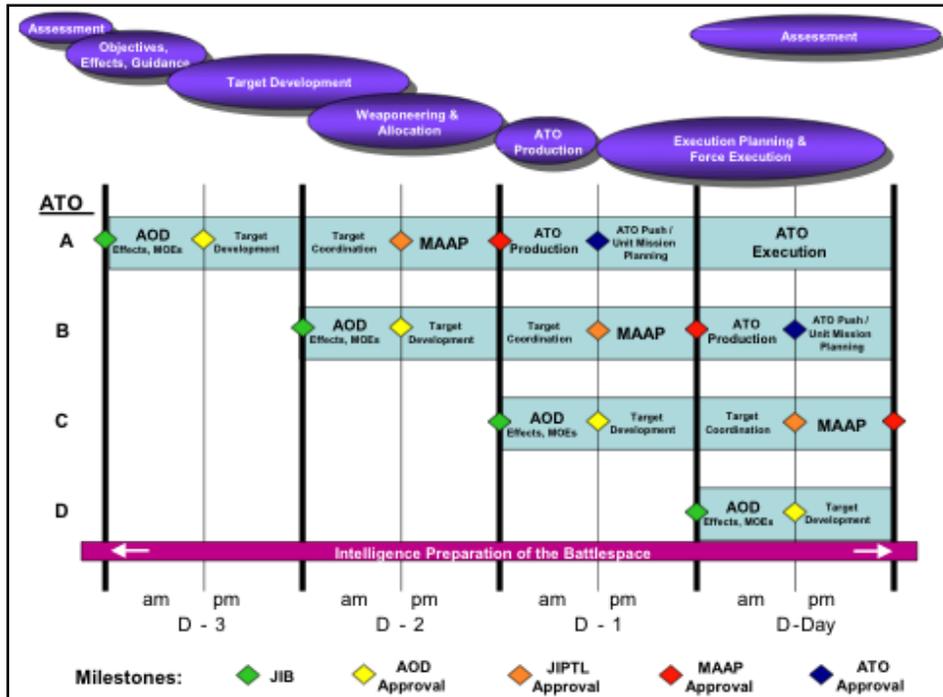
Figure 3: The Joint Air Tasking Cycle^{xiv}



Each ATO tasks air assets for a required period of time, as directed by the JFC. For each force provider, the ATO will delineate numbers of sorties, mission details, mission times, and targets for the period of time covered by the ATO. The CENTCOM ATO is typically 24 hours in length. However, there are multiple layers of planning involved in ATO production. The detailed planning for each ATO typically begins 72 hours prior to execution.^{xv} Therefore, at any given moment there are not less than three and as many as

five ATO's in development. Figure 4 is a graphical representation of four ATO's that are being developed within the Joint Air Tasking Cycle.

Figure 4: ATO Production^{xvi}



The Vehicle for Joint Targeting

Regarding them as distinct entities misses the central insight that they must work together as an integrated whole if targeting and tasking are to be most effective. Targeting and ATO production are essential to the tasking cycle. Although the targeting and tasking cycles perform separate and distinct functions, they are highly intertwined and require close coordination between them and they run almost exactly in parallel once a daily battle rhythm is established. *Air Force Doctrine Document 3-60*

The Joint Air Tasking Cycle serves as the battle rhythm for the Combined Air Operations Center (CAOC) in CENTCOM. The constant cycle of target development and ATO production describes the day-to-day work of planners, as ATO execution is managed on the operations floor. This realization, in concert with a comparison of figure 2 and 3, show how the Joint Air Tasking Cycle has become the vehicle for the Joint Targeting Cycle. At least 72 hours of in-depth target analysis allows for the successful allocation of air assets to

strike deliberate targets. One may, however, call into question the responsiveness of the 72-hour Joint Air Tasking Cycle in prosecuting fleeting dynamic targets. The practice of diverting ATO air assets to emerging targets has proven the successful mitigation for this. If a target enters into the Dynamic Targeting Steps, a forward-positioned Air Support Operations Center (ASOC) can divert aircraft from a lower priority mission in order to position them for quick prosecution of the target. This is simplified in CENTCOM by the standard conventional loads (SCL) carried by ATO-assigned close air support (CAS) sorties being suitable for striking most land-based dynamic targets. Additionally, the number of dynamic targets is relatively low in comparison to the number of ATO sorties with deliberate target tasking. When these adapted targeting processes are viewed within the framework of a maritime-centric theater, however, they will prove to be a static solution and will fall short of the responsive support that will be required by the JFMCC in order to achieve his objectives.

THE MARITIME DOMAIN

Challenges

A maritime theater will differ in some key aspects from the theater experienced in the last two decades. The focus AO will no longer be undisputed and operations there will be Navy-centric. The realization that the JFMCC will be the supported commander within his AO is not revolutionary, however success will hinge on his ability to effectively task and command and control (C2) both organic and joint assets at the operational level. The last twenty years have provided few opportunities for this and there are questions about feasibility.^{xvii} Joint force integration for the Navy has mostly been limited to aviation. And again, JFACC and JFMCC integration of air assets has largely been unidirectional.

In the maritime domain, it can also be expected that the air-centric nature of joint fires will give way to the full spectrum of joint force capabilities. Surface and sub-surface naval platforms will use Tomahawk Land Attack Missiles (TLAM) to strike littoral targets where an adversary practices area denial. Highly capable JFLCC rocket artillery, such as the Multiple Launch Rocket System (MLRS), will also likely service targets within the littorals. Special Operations Forces (SOF) may infiltrate adversary port facilities to conduct lethal and non-lethal fires.

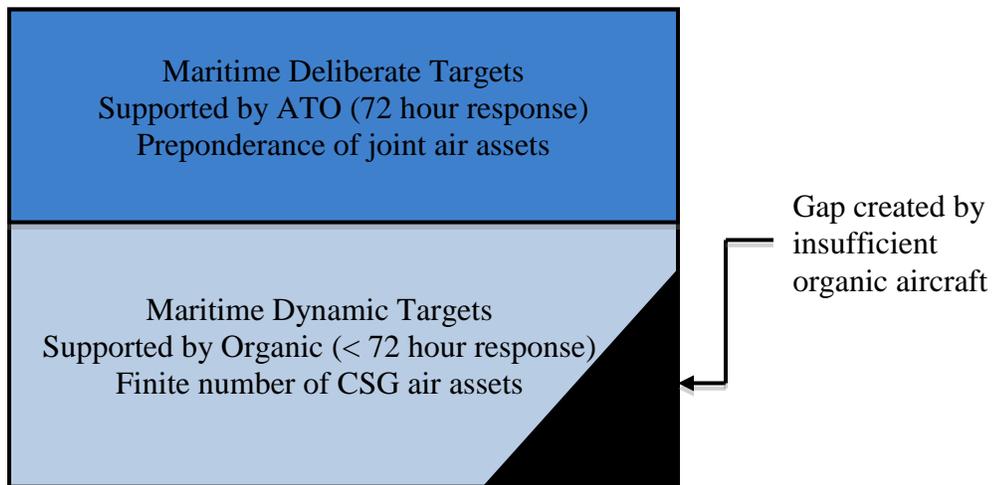
Perhaps the most acute differences that the maritime theater will present are the target sets. Targets that can be categorized as deliberate will now be the exception to the rule. Relatively fixed land targets will yield to highly mobile maritime targets.^{xviii} Therefore, targets may be known but not fixed. Additionally, it can be expected that targets will emerge that were not previously known. An example of this could be the asymmetric threat of fishing vessels engaging in mine warfare.^{xix} The characteristics of maritime targets will further complicate current joint targeting practices by creating priority flux. Due to the high mobility of adversary ships, target priorities will be more fluid than the relatively rigid list found on current JIPTL's. Specifically, target priorities will significantly shift throughout the 72-hour Joint Air Tasking Cycle, creating an ATO that is not an effective current solution. All of these challenges within the maritime domain will make highly responsive dynamic targeting practices the key to successfully securing maritime objectives.

The Maritime Dynamic Targeting Gap

As has been previously discussed, the coordination of joint air assets between the JFACC and JFMCC has traditionally been weighted almost exclusively toward the JFACC. This reality will prove problematic in the maritime theater. The JFMCC will continue to

allocate excess sorties to the JFACC for tasking. However, excess sorties will be difficult to assess, given the fluid nature of maritime targets and threats. The very real prospect of fleet defense against dynamic targets will be a complex undertaking. Therefore, the JFMCC will likely maintain the majority of his air assets in order to accomplish his objectives and protect Navy units, while allocating a smaller portion to the JFACC. The time-constrained ATO cycle will best serve as the less responsive means of striking known and predictable targets. For targets that emerge inside of the ATO cycle, the JFMCC will rely heavily on his own Naval Aviation assets from embarked CSG's in order to operate inside of the adversary's decision cycle.^{xx} However, a study of Figure 5 below proposes a dynamic targeting gap that will be realized when there are insufficient Naval Aviation assets to respond to dynamic target tasking.

Figure 5: The Maritime Dynamic Targeting Gap^{xxi}



As figure 5 suggests, the JFMCC will reach the point where he can no longer assign organic air assets to prosecute dynamic targets without exhausting his limited aircraft or accepting vulnerability in fleet defense. How does the JFMCC reach back to ATO-tasked joint air

assets to fill this gap? Additionally, how does he task other joint force providers in an effort to bring the full spectrum of joint fires to bear on the enemy? Currently, there are no responsive processes in place to adequately answer these questions.

COUNTERARGUMENT

While it is acknowledged that targeting requirements will to some extent be JOA-specific, many of the core targeting processes will remain the same or be similar. For joint forces to achieve unity of effort there will always be a need to synchronize JFMCC targeting efforts with those of other components and the CJTF*. *Joint Fires and Targeting Handbook*

Some may argue that the solution to the maritime dynamic targeting gap is already resident within the current execution of the Joint Targeting Cycle. They will contend that the Dynamic Targeting Steps found within Phase 5, in concert with the practice of diverting ATO air assets, will provide for responsive dynamic targeting in the maritime domain. As emergent targets require action, aircraft supporting lower priority missions will be contacted and rapidly positioned to prosecute dynamic targets. Therefore, current practices will be equally effective in a maritime-centric theater. Thus, the proposed maritime dynamic targeting gap does not really exist.

However, current dynamic targeting practices do not adequately address the changed target sets described in the maritime theater. The current practice of diverting ATO aircraft to higher priority targets assumes a relatively permissive environment for joint air assets. Air superiority within the JOA is a key to the success of this practice. In the wars of the last two decades, this was accomplished in rapid fashion to allow the air-centric practice of joint targeting with limited risk. A conflict in a maritime theater such as the Pacific, however, will make air superiority as slow and contentious as sea control. The vast size of a maritime JOA

*CJTF: Commander, Joint Task Force

will make local air superiority the only realistic goal, vice JOA-wide. Additionally, many maritime dynamic targets will exhibit robust self-defense capabilities. This is in stark contrast to the dynamic targets currently prosecuted by the Joint Targeting Cycle. The notion that any ATO-tasked tactical aircraft could flex to maritime dynamic targeting and succeed with low risk is shortsighted. The model of two strike aircraft responding to a target in CENTCOM will yield to complex strike packages requiring many aircraft with aerial refueling, electronic attack, counter air, and standoff capabilities in order to successfully strike robust maritime dynamic targets while mitigating risk.

Additionally, the SCL of diverted ATO air assets will not have the overarching capability enjoyed against land-centric dynamic targets. The “one size fits all” practice of ordnance carriage will significantly stymie the JFMCC’s ability to successfully destroy maritime dynamic targets. Each unique target will require more complicated weapons pairing in order to provide the best effects while ensuring the requisite standoff from highly capable naval surface-to-air missile systems. In short, a rapidly emerging maritime dynamic target will elicit the need for dynamic force and weapons adjustments inside of the ATO window.

Another key to the success of diverting ATO joint air assets for dynamic targeting is the ability to C2 these assets. A maritime theater will likely not lend itself to forward ASOC elements linking the JAOC to joint air assets. As with air superiority, another permissive assumption of current dynamic targeting processes is the network-enabled joint force. However, a conflict with a robust adversary in the maritime domain could occur in a network-denied environment. Attacks on friendly communications and data link capabilities

will render diverted ATO assets ineffective as they seek dynamic targeting guidance in real time.

Finally, this counterargument assumes no change to the overall authority for coordinating joint targeting within a Joint Task Force (JTF). Current doctrine seems to acknowledge that the JFMCC could be the CJTF's executive agent for joint targeting within a theater, however it is not likely.^{xxii} The Joint Targeting Cycle should continue to function in its current state, with the JFACC being the CJTF's executive agent for joint targeting and his staff conducting overall targeting coordination. In short, the status quo would remain with the Joint Targeting Cycle being tied to the Joint Air Tasking Cycle. This ultimately infers that the Joint Air Tasking Cycle is the JFMCC's avenue to receiving air-centric joint fires platforms for emerging targets within his AO. There is currently no other tasking order to fulfill these needs for the JFMCC. It is not a reach, therefore, to assume that the battle rhythm of the JFMCC will be largely dictated by the ATO. The realization of the previously discussed dynamic targeting limitations will force him to rely on limited organic air assets to continue operating inside of the adversary commander's decision cycle as target priorities change. The requirement for large strike packages to effectively counter the capabilities of maritime dynamic targets, however, will rapidly dwindle the forces available to the JFMCC.

RECOMMENDATIONS

Formerly, strike groups would bring their command and control with them as a near-autonomous capability, in a virtual "bubble" of situational awareness and C2. Today, because of the long reach of naval weapons and sensors, the diversity and mobility of afloat forces, and their increasing criticality to other joint commanders for application across a wide range of missions, that bubble must be expanded and integrated into a joint doctrinal and C2 "blanket" that extends over and across regions. Rear Admiral J. L. Shuford, USN, *Naval War College Review* 61.4

In a maritime theater, the current joint targeting processes that are lashed to the Joint Air Tasking Cycle will prove to be the static solution to joint targeting. This is not a parochial stalemate, but a simple realization of service capabilities and lagging doctrine. In order for the U. S. Navy to best posture itself to meet the challenges of targeting in the maritime domain, two key operational level concepts should be developed as the Maritime Operations Center (MOC) continues to evolve. To bridge the maritime dynamic targeting gap, the Navy needs a new product and a new process.

The Maritime Tasking Order

Joint Doctrine emphasizes the need for targeting mechanisms within each component in order to develop and nominate targets to the CJTF so that they can be prioritized, deconflicted, and synchronized.^{xxiii} Navy doctrine responds to this charge with the Maritime Prioritized Target List and the Maritime Target Nomination List. The former delineates those targets to be serviced by organic assets. The latter will serve to nominate maritime targets for inclusion in the JIPTL, and thus to be serviced by joint air assets.^{xxiv} Therefore, those targets that cannot be neutralized by organic assets alone will be at the mercy of the Joint Air Tasking Cycle. In order for the JFMCC to successfully seize and maintain the initiative, the MOC battle rhythm must be oriented to the objectives within the maritime AO and not be reliant on the battle rhythm of the JAOC. The MOC should therefore produce a Maritime Tasking Order (MTO) whose process suits the battle rhythm of the JFMCC and provides for the full spectrum of joint fires platforms necessary to meet maritime dynamic targets.^{xxv}

Fleet Battle Problem Juliet, in July and August 2002, investigated a proof of concept of using a prototype technology known as the Maritime Planning Support System (MPSS) in

order to produce a MTO. Then as now, JFMCC air assets were allocated either to the JFACC for inclusion in the ATO or reserved for organic use and tasked by the Air Plan of a CSG. The MTO sought to replace the Air Plan with a net-centric system aimed at improving information sharing.^{xxvi} This is important in achieving unity of effort between the multiple CSG's that would be present in a maritime theater of operations. The focus of this MTO, however, remained on coordinating organic assets and stopped short of joint force inclusion. The recommended MTO should provide the JFMCC with the ability to task supporting assets beyond the current air-centric bounds of the ATO. As the supported commander, the JFMCC should use the MTO to task supporting joint forces in prosecuting JIPTL targets and emergent targets in accordance with his established battle rhythm. To this end, a MTO production cell within the MOC should have the capability to task units well inside of 72 hours to execution. This would allow for maritime target re-prioritization in the hours leading up to MTO execution. The time allotted for mission planning and force allocation would be condensed when compared to the Joint Air Tasking Cycle, but would provide the most current and detailed target information, which would prove critical in a network-denied environment.

Additionally, the MTO would allow the JFMCC to realize his supported role by the JFACC with respect to air asset allocation. The JFMCC would be more likely to allocate organic air assets to the ATO if he had the ability to gain support in kind by tasking joint air assets via the MTO. More robust dynamic targeting air assets in the maritime domain, in contrast to diverted ATO assets, are perhaps the greatest argument for the production of a MTO. Therefore, the JFMCC should utilize a MTO to task unique joint platforms needed to generate dynamic target strike packages with the ability to lethally respond to emergent

threats with the appropriate weapons systems and necessary support platforms. However, if the MTO becomes the dynamic solution for joint targeting by tasking joint assets in the maritime domain, the JFMCC will incur the responsibility of carrying out the operational function of C2 over these assets. Though the advent of the MOC seeks to bridge the Navy's operational level C2 gap, a key process is missing to effectively coordinate responsive maritime dynamic targeting assets.

The Maritime Air Support Operations Center

The U. S. Air Force's Tactical Aircraft Control System (TACS), which is comprised of the JAOC and forward-deployed ASOCs, has proven to be very capable in coordinating and tasking joint air assets at the operational and tactical levels of war. This system has been proven over the last two decades as the Navy routinely integrates aviation assets to support ground forces in Afghanistan and Iraq. Realizing the operational level gap of deployed naval forces, the Navy has followed suit and worked to evolve the MOC concept in order to change numbered fleets from major tactical units to operational level commands. However, the Navy's tactical C2 systems remain relics of the Cold War. The Composite Warfare Commander (CWC) system still maintains a maritime focus and does not uniformly integrate all aspects of the joint force.^{xxvii} In January of 2012, Captain Samuel Paparo, USN and Commander Joseph Finn, USN published an article in the Air Land and Sea Bulletin proposing a Maritime Air Support Operations Center (MASOC) in order to provide tactical C2 of joint assets in the maritime domain. The Navy should research and develop this capability in an effort to complete the evolutionary partnership at the operational and tactical levels of war that began with the advent of the MOC.

Joint targeting is closely tied to the operational and tactical levels. At the operational level, it has been shown that targets are developed within the scope of the commander's overall intent and assigned to joint force providers via the ATO. At the tactical level, these targets are ultimately struck and emergent targets are pushed back to the operational level for consideration and nomination. There is currently a credible gap between the MOC and both naval and joint units at the tactical level. In a maritime theater, the Navy cannot rely on TACS to link joint assets to the JFMCC's operational center. The ability to have forward ASOC's in the maritime AO is a large assumption that lacks depth. If the JFMCC seeks to task joint assets via the MTO, he must have the ability to C2 them.

MASOC units should be resident within each Naval Task Force deployed in the JOA. This will provide vast maritime AO C2 coverage, in addition to situational awareness resident with each forward Naval Task Force's MASOC. As maritime dynamic targets emerge, joint air controllers resident in the MASOC can provide the mission critical information to MTO and ATO assets in order to effectively respond to targets in accordance with the JFMCC's guidance and with minimal delay. In theory, the force requirements to strike a maritime target will be provided by the MOC to the MASOC. Controllers at the MASOC will then contact the airborne joint assets dynamically tasked by the MOC in order to rapidly structure a strike package, to include required supporting aircraft. As the MTO-tasked joint strike package successfully rendezvous, they will complete aerial refueling with support aircraft provided by the MASOC and receive final mission details as they proceed to execution. The strike package will then be switched to the frequency of an additional tactical C2 platform, such as the E-2C Hawkeye, for air intercept control in order to maintain situational awareness to air threats during dynamic targeting.

MASOC units will also work with Control and Reporting Centers (CRC) to establish airspace and vital area deconfliction between joint air assets. The MASOC will be critical to avoiding fratricide within a cluttered maritime environment as joint air assets seek highly mobile vessels that can be difficult to distinguish. The situational awareness to friendly naval units resident within the MOC will be provided to dynamic targeting platforms by the MASOC. This rapid link between the MASOC and the MOC will also provide for the timely assessment of dynamic strikes. As joint strike packages egress from a target area, they will provide a mission report (MISREP) to the MASOC with details of execution to include overall success and re-strike recommendations.

Ultimately, the MASOC will empower the JFMCC's dynamic targeting solution of the MTO by providing tactical C2 to the highly responsive joint fires platforms that are allocated. The MOC is expected to have the highest degree of situational awareness among component operational centers in a maritime theater. The MASOC will provide the bond between the operational and tactical levels of command to ensure that situational awareness contributions flow up and down the chain of command.

CONCLUSION

The Joint Targeting Cycle and associated processes have indeed allowed for unity of effort and responsive dynamic targeting during the wars of recent history. This was enabled, however, by the driven pursuit of a joint partnership by the Air Force and Army beginning with Operation DESERT STORM. In contrast, the Navy has been slow to re-invent itself from an independent Cold War service to joint force integrator. Though the relatively new MOC concept has given a maritime voice to the operational level of war, the Navy must not stop short of true "jointness". The ability to effectively integrate the joint force will give the

Navy the credibility it needs to affect Joint Targeting and ensure the necessary degree of responsiveness in the maritime domain.

Both the MTO and MASOC are conceptual, and thus have not been put into practice. Responsive dynamic targeting in a maritime theater will be most successful with the JFMCC exercising increased authority over joint targeting processes JOA-wide. If the MOC can work toward a joint tasking cycle that produces a MTO, in concert with the MASOC to C2 joint assets, the JFMCC can make the case for being the CCDR or JFC's executive agent for joint targeting in a maritime theater. Continued reliance on joint targeting processes adapted to land-centric warfare will leave the Navy with a static solution in the face of a much more dynamic type of warfare.

ENDNOTES

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- ⁱ Chairman, U. S. Joint Chiefs of Staff, *Joint Targeting*, Joint Publication (JP) 3-60, (Washington, DC: CJCS, 13 April 2007), I-6.
- ⁱⁱ David P. Polatty, “JFMCC Command and Control of Air Operations – Effective Integration with JFACC”, (research paper, U.S. Naval War College, Joint Military Operations Department, Newport, RI, 2006), 4.
- ⁱⁱⁱ JP 3-60, *Joint Targeting*, II-3.
- ^{iv} Ibid.
- ^v Ibid., ix.
- ^{vi} Ibid., II-11.
- ^{vii} Ibid., II-12.
- ^{viii} Ibid., II-14.
- ^{ix} U. S. Air Force Doctrine Center, *Targeting*, Air Force Doctrine Document (AFDD) 3-60, (Washington, DC: Department of the Air Force, 8 June 2006, incorporating Change 1, 28 July 2011), 9-10.
- ^x U. S. Air Force Doctrine Center, *Air Force Basic Doctrine, Organization, and Command*, Air Force Doctrine Document (AFDD) 1, (Washington, DC: Department of the Air Force, 14 October 2011), 95.
- ^{xi} Gary Luck and Mike Findlay, “Air Component Integration in the Joint Force – Focus Paper #6”, (Joint Warfighting Center, United States Joint Forces Command, Norfolk, VA, 20 March 2009), 3.
- ^{xii} AFDD 1, *Air Force Basic Doctrine, Organization, and Command*, 91.
- ^{xiii} AFDD 3-60, *Targeting*, 10.
- ^{xiv} JP 3-60, *Joint Targeting*, B-5.
- ^{xv} AFDD 3-60, *Targeting*, 26.
- ^{xvi} Ibid., 28.
- ^{xvii} James Murray and David Polatty (Naval War College Professors and instructors at the Maritime Staff Operators Course), in discussion with the author, 12 March 2012.

^{xviii} Chief of Naval Operations, *Maritime Operations Center*, Navy Tactics, Techniques, and Procedures (NTTP) 3-32.1, (Washington, DC: Department of the Navy, CNO, October 2008), 4-12.

^{xix} James Murray (Naval War College Professor and instructor at the Maritime Staff Operators Course), in discussion with the author, 2 April 2012.

^{xx} Chief of Naval Operations, *Maritime Operations at the Operational Level of War*, Navy Warfare Publication (NWP) 3-32, (Washington, DC: Department of the Navy, CNO, October 2008), 7-17 and 18.

^{xxi} Murray, discussion.

^{xxii} U. S. Joint Forces Command, *Joint Fires and Targeting Handbook*, (Norfolk, VA and Suffolk, VA: Joint Capability Development, Director, and Joint Warfighting Center, Commander, 19 October 2007), II-24.

^{xxiii} JP 3-60, *Joint Targeting*, B-8.

^{xxiv} NTTP 3-32.1, *Maritime Operations Center*, 3-5.

^{xxv} Murray, discussion.

^{xxvi} Sheldon Gardner, Joseph Prestipino, and Lawrence Filippelli, “Maritime Planning Support System (MPSS) for Fleet Battle Experiment Juliet (FBE-J)”, (research paper, Naval Research Laboratory, Washington, DC, 2002), 1-7, accessed 22 April 2012, <http://www.dtic.mil>. Available as Defense Technical Information Center Report (DTIC) ADA458838.

^{xxvii} Samuel Paparo and Joseph Finn, “MASOC Can Provide Tactical C2 of Joint Assets in the Maritime Domain”, *Air Land and Sea Bulletin* 2012-1 (January 2012), <http://www.alsa.mil/library/alsb/ALSB%202012-1.pdf>.

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