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INTELLIGENCE SUPPORT TO JOINT TARGETING IN THE A2/AD ENVIRONMENT

by

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Biography

Lt Col Philip Warlick is assigned to the Air War College, Air University, Maxwell AFB, AL. Lt Col Warlick is a distinguished graduate of the US Air Force Academy where he studied Mechanical Engineering. He also holds a Master of Arts in Marriage and Family Counseling and a Master of Arts in Christian Education both from Southwestern Baptist Theological Seminary. Lt Col Warlick is a career intelligence officer with over eight years of active duty experience and more than ten years as an Individual Mobilization Augmentee in the Air Force Reserves. Lt Col Warlick's previous assignments include the Joint Staff, 301st Fighter Wing, USPACOM Joint Intelligence Operations Center, 36th Intelligence Squadron, and 2nd Bomb Wing. In his civilian capacity, Lt Col Warlick has also worked various defense and intelligence related projects.

Abstract

According to the Joint Operational Access Concept (JOAC) published by the United States Department of Defense in 2012, “Events of recent decades have demonstrated the decisive results U.S. joint forces can achieve when allowed to flow combat power into an operational area unimpeded...and U.S. operational access during that period was essentially unopposed.”

However, the next time the nation calls for US military intervention, the operational environment may not be so permissive. Many potential adversaries are developing technologies and tactics to prevent such permissive environments. These anti-access and area denial, or A2/AD, efforts will complicate many aspects of military operations. Joint targeting, including intelligence support critical to targeting, is a key military function that has been largely ignored with regard to the A2/AD discussion. Does current joint targeting and related intelligence doctrine support operations in an A2/AD environment? While the joint targeting cycle does not need to be amended to fit the A2/AD environment, joint doctrine needs to address the application of the cycle in an A2/AD conflict. In addition, capabilities outlined in the JOAC must be pursued even in this time of austere budgets. Finally, the dismal state of targeting personnel training and development must be rectified. These steps must be taken before the United States faces a near-peer adversary employing A2/AD capabilities.

Introduction

According to the Joint Operational Access Concept (JOAC) published by the United States Department of Defense in 2012, “Events of recent decades have demonstrated the decisive results U.S. joint forces can achieve when allowed to flow combat power into an operational area unimpeded...and U.S. operational access during that period was essentially unopposed.”¹ The Center for Strategic and Budgetary Assessment (CSBA) agrees, “US ground, air and naval forces have long been accustomed to operating from sanctuary...”² However, the next time the nation calls for US military intervention, the operational environment may not be so permissive. In fact, due to the success of the US military in conventional roles over the past few decades, many potential adversaries are developing technologies and tactics to prevent such permissive environments. These anti-access and area denial, or A2/AD, efforts will complicate many aspects of military operations, which have been extensively discussed in many articles, reports, and publications including the Joint Operational Access Concept (JOAC), Air Sea Battle (ASB) concept, several Center for Strategic and Budgetary Assessments (CSBA) reports, and at least one book specifically addressing the subject.³ However, joint targeting, including intelligence support critical to targeting, is a key military function that has been largely ignored with regard to the A2/AD discussion. Does current joint targeting doctrine support operations in an A2/AD environment? What impacts will operating in an A2/AD environment have on intelligence support to targeting? This paper will identify shortcomings in joint doctrine with regard to A2/AD impacts and will recommend areas for consideration in future studies. Before detailing

¹ *Joint Operational Access Concept (JOAC)*. United States Department of Defense, 2012, ii.

² Jan Van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas. *AirSea Battle: A Point of Departure Operational Concept*. Washington, DC: Center for Strategic and Budgetary Assessments, 2010, xii.

³ Tangredi, Sam J. *Anti-access Warfare: Countering A2/AD Strategies*. Annapolis, MD: Naval Institute Press, 2013.

these shortcomings and recommendations a brief overview of joint targeting and the A2/AD problem will be provided.

Targeting

According to United States joint doctrine, targeting is “the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.”⁴ Targeteers take commander’s guidance and analyze target systems and individual targets to determine which targets and target elements may be acted upon to meet the commander’s objectives. They then conduct detailed target development and weaponeering to determine optimal weapon-target pairs, or asset target interactions, while minimizing risk to non-combatants. Next, targeting options are presented to the commander for final approval and forces are assigned to prosecute the approved targets. Tactical units then plan and execute the missions against the targets and a multi-layered assessment of mission results and effects on the target and target system is conducted. These actions are broken into the six phases of the joint targeting cycle as described in Joint Publication (JP) 3-60, Joint Targeting:

Phase 1 – End state and commander’s objectives

Phase 2 – Target development and prioritization

Phase 3 – Capabilities analysis

Phase 4 – Commander’s decision and force assignment

Phase 5 – Mission planning and force execution

Phase 6 – Assessment

Each phase will be summarized in the context of an A2/AD adversary later in this paper.

⁴ *Joint Publication 3-60: Joint Targeting*. United States Department of Defense, January 31, 2013, I-1

According to JP 3-60, “Targeting links intelligence, plans, and operations across all levels of command and phases of operations.”⁵ Intelligence, surveillance, and reconnaissance (ISR) is critical to targeting. Doctrine explains that joint intelligence preparation of the operational environment (JIPOE), typically produced by the combatant command or joint task force staff, and country/threat assessments, typically produced by the Defense Intelligence Agency, “set the stage for detailed targeting within the joint targeting cycle.”⁶ In fact, all phases of the joint targeting cycle rely on ISR collection, analysis, and finished products.

The focus of this paper is the joint targeting cycle and ISR support to targeting in the A2/AD environment. Despite its importance to joint operations, targeting is hardly mentioned in A2/AD literature. Before continuing the discussion of targeting by summarizing the six phases of the joint targeting cycle and how operations in a denied environment will impact them, a more complete description of A2/AD is warranted.

The A2/AD Problem

In his book focused on A2/AD, Sam Tangredi argues that A2/AD is not a new construct. The ASB concept summary agrees.⁷ Throughout history militaries have worked to deny their enemies access to basing and operations in or near their borders. Tangredi describes anti-access and area denial as “modern terms referring to warfighting strategies focused on preventing an opponent from operating military forces near, into, or within a contested region.”⁸ The JOAC formally defines both terms: “...*antiaccess* refers to those actions and capabilities, usually long-range, designed to prevent an opposing force from entering an operational area. *Area-denial*

⁵ Ibid, I-6.

⁶ Ibid, II-1

⁷ Air Sea Battle Office. "Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges." *Defense.gov*. May 2013. <http://www.defense.gov/Portals/1/Documents/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf> (accessed December 11, 2015), 2.

⁸ Tangredi, 1.

refers to those actions and capabilities, usually of shorter range, designed not to keep an opposing force out, but to limit its freedom of action within the operational area.”⁹ The JOAC goes on to summarize the issue well when it says, “The essential access challenge for future joint forces is to be able to project military force into an operational area and sustain it in the face of armed opposition by increasingly capable enemies...”¹⁰

The JOAC lists “dramatic improvement and proliferation of weapons and other technologies capable of denying access to or freedom of action within an operational area” as one of the key trends which have led to the A2/AD problem.¹¹ For example, ballistic and cruise missile threats hinder deployment of forces to fixed land bases in the theater of a potential adversary with A2/AD capabilities.¹² In addition, advanced surface-to-air missiles systems, electronic jammers, fourth and fifth generation fighters, anti-ship weapons, and counter-space and counter-cyber capabilities deny the ability for friendly forces to operate in the contested area.

Finally, the ASB Problem Statement provides a succinct summary:

*Adversary capabilities to deny access and areas to U.S. forces are becoming increasingly advanced and adaptive. These A2/AD capabilities challenge U.S. freedom of action by causing U.S. forces to operate with higher levels of risk and at greater distance from areas of interest. U.S. forces must maintain freedom of action by shaping the A2/AD environment to enable concurrent or follow-on operations.*¹³

Targeting and supporting ISR are key to projecting military force at the appropriate time and place to reduce or eliminate enemy capabilities and meet the commander’s objectives.

ISR & Targeting in A2/AD Environments

Not only are attempts to deny access to adversaries common throughout history, but, according to Tangredi, “the criticality of information and intelligence” is also common to both

⁹ JOAC, 6.

¹⁰ JOAC, ii.

¹¹ JOAC, 9.

¹² Tangredi, 41.

¹³ ASB Office, 3.

A2/AD and counter-A2/AD forces throughout history.¹⁴ The JOAC supports the importance of ISR as well. According to the concept, “Another critical and continuous effort to improve access conditions in advance will be on-going intelligence, surveillance, and reconnaissance activities to improve situational awareness...”¹⁵ Further supporting the importance of ISR, one of eleven Operational Access Precepts described in the JOAC is to “Disrupt enemy reconnaissance and surveillance efforts while protecting friendly efforts.”¹⁶ However, the JOAC admits that ISR will be a significant challenge unlike the permissive environments of current and recent conflicts. In a denied environment, “the joint force likely will start at an intelligence disadvantage... The joint force will require a major intelligence, reconnaissance, and surveillance effort applied aggressively, to include fighting for information, to overcome those disadvantages.”¹⁷ Tangredi agrees, “Counter-anti-access forces must operate under the assumption that they will face much fog.”¹⁸

Due to the disadvantage in ISR, targeting will be at a disadvantage as well. Tangredi is correct in saying, “...few if any of the tactical operations in an anti-access or counter-anti-access campaign can be conducted without very detailed information and intelligence and the resulting targeting information.”¹⁹ The JOAC also acknowledges the inherent risk associated with limited targeting information:

“The concept’s reliance on deep, precise strikes to neutralize enemy antiaccess and area-denial weapons before they can inflict significant losses may be unrealistic in the time frame of the concept. Locating, targeting and defeating such systems effectively from a distance remains a very difficult challenge, from the perspectives of both target intelligence and weaponeering. If

¹⁴ Tangredi, 13.

¹⁵ JOAC, 19.

¹⁶ JOAC, 22.

¹⁷ JOAC, 23.

¹⁸ Tangredi. 244.

¹⁹ Tangredi, 101.

such hostile systems cannot be neutralized, the successful execution of the concept could be at risk."²⁰

Based on the acknowledged limits in ISR and targeting, joint doctrine should account for these limits and provide strategies for dealing with them. However, as Andrew Marvin claims in his *Joint Forces Quarterly* article, "the thinking about ISR employment in an A2/AD environment is not mature."²¹

A2/AD in Joint Concepts and Targeting Doctrine

To address the A2/AD problem, then Secretary of Defense Robert Gates directed the US Air Force and US Navy to develop the Air Sea Battle concept starting in 2009.²² According to the JOAC, "The intent of Air-Sea Battle is to improve integration of air, land, naval, space, and cyberspace forces to provide combatant commanders the capabilities needed to deter and, if necessary, defeat an adversary employing sophisticated antiaccess/area-denial capabilities."²³ In early 2015 "the four service chiefs reevaluated the "ASB Concept" and agreed that the concept should be revised into an authoritative joint concept, in support of and subordinate to the JOAC."²⁴ The name was changed to the Joint Concept for Access and Maneuver in the Global Commons, or JAM-GC, but the new concept had not been published by mid-February 2016.²⁵ According to *The National Interest*, a foreign policy advocacy group, the revision of the Air Sea Battle concept into JAM-GC "should reflect ... how various joint capabilities should be

²⁰ JOAC, 37.

²¹ Andrew Robert Marvin, "ISR Support to Operational Access: Winning Initiative in Antiaccess and Area-denial Environments." *Joint Forces Quarterly* (NDU Press), no. 71 (4th Quarter 2013): 53-57, 54.

²² ASB Office, 1.

²³ JOAC, 4.

²⁴ Terry S. Morris, Martha VanDriel, Bill Dries, Jason C. Perdew, Richard H. Schulz, and Kristin E. Jacobsen. "Securing Operational Access: Evolving the Air-Sea Battle Concept." *The National Interest*. February 11, 2015. <http://www.nationalinterest.org/feature/securing-operational-access-evolving-the-air-sea-battle-12219?page=show> (accessed December 11, 2015).

²⁵ US Naval Institute. "Document: Air Sea Battle Name Change Memo." *USNI News*. January 20, 2015. <http://news.usni.org/2015/01/20/document-air-sea-battle-name-change-memo> (accessed December 10, 2015).

operationally applied to address the A2/AD problem set.”²⁶ However, based on a review of unclassified sources, joint targeting and the intelligence processes and products required to support it are not well represented in the ASB concept, and, according to the office responsible for joint targeting intelligence policy in the Joint Staff Directorate of Intelligence (J-2), their input was not sought for ASB and has not been requested in the development of JAM-GC.²⁷

A thorough search of joint doctrine also revealed very little discussion of targeting or ISR operations in denied environments. There is no mention of denied or contested environments or A2/AD concepts in JP 2-0, Joint Intelligence, JP 3-60, or the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3370.01A, Target Development Standards. JP 2-01.3, JIPOE, published in May 2014, includes a short section on countering asymmetric approaches which includes recommendations for conducting JIPOE against adversary measures to avoid detection and exploit the information environment. “...the contribution of the JIPOE effort to countering asymmetric approaches requires techniques and products that are specifically tailored to the types of joint operations capable of defending against and defeating asymmetric threats.”²⁸ These asymmetric approaches will assuredly be aspects of an A2/AD strategy, but they are far from an exhaustive treatment of JIPOE in an A2/AD conflict, and they do not address the impacts on targeting in a denied environment.

In addition to the JOAC and the Air Sea Battle concept, contested or denied environments are mentioned in the DoD Quadrennial Defense Review 2014 and some service documents such as the Air Force Future Operating Concept which was published in 2015. However, direct language about targeting for counter-A2/AD operations is very limited. In addition, there is still no direct discussion of targeting or ISR support to targeting for denied

²⁶ Morris.

²⁷ Carlton Reed Smith. E-mail to the author: "RE: Air Sea Battle/JAM-GC and targeting." February 8, 2016.

²⁸ JP 2.01-3, xviii.

environments in joint doctrine despite the high level emphasis of A2/AD since at least 2009 and the direct call to “incorporate ASB and counter-A2/AD ideas into Joint and Service doctrine.”²⁹ Without doctrine to guide them, how are US forces denied access and unable to operate safely in an area supposed to conduct joint targeting?

The Joint Targeting Cycle in A2/AD

To partially answer the question posed at the end of the previous section, the following sub-sections briefly define and describe the six phases of the joint targeting cycle and include considerations for each phase in an A2/AD environment. Each section begins with a description of the joint targeting cycle phase as described in JP 3-60, unless sourced otherwise, followed by discussion of A2/AD considerations for the phase.

Phase 1 – End state and commander’s objectives

“Understanding the JFC’s guidance, CONOPS, and intent is the most important and first activity of joint targeting because they document the set of outcomes relevant to the present situation and set the course for all that follows.”³⁰ The importance of this phase cannot be overstated. Without clear guidance targeteers are limited to making broad assumptions and likely wasting limited resources. Commander’s guidance is the foundation of the joint targeting cycle as all other phases of the cycle base their analysis and activities on the end state and objectives provided by the commander.

Targeting for an A2/AD environment does not diminish the importance of this step. On the contrary, because of the increased threat and limited access to targets clear guidance is even more important. Commander’s will likely have to provide detailed guidance to define specific,

²⁹ ASB Office, 12.

³⁰ JP 3-60, II-4.

limited objectives which can be achieved by the counter-A2/AD force until the adversary's A2/AD capabilities are degraded or destroyed.

Phase 2 – Target development and prioritization

“Target development is the analysis, assessment, and documentation processes to identify and characterize potential targets that, when successfully engaged, support the achievement of the commander’s objectives.”³¹ This phase consists of target systems analysis (TSA), entity-level target development, and target list management. TSA and target development are largely dependent on JIPOE products and other finished intelligence products (e.g. dynamic threat assessments, country assessments).³² This step also includes the vetting of proposed targets by the intelligence community (IC) to assess the accuracy of the intelligence about the target.³³

According to the JOAC, “Characterizing an adversary is a continuous activity, commencing years before hostilities begin and continuing during and after those hostilities.”³⁴ For an adversary with A2/AD capabilities, characterizing the adversary and developing the finished intelligence and JIPOE products required for this phase are more difficult. “JIPOE support to ISR is designed to optimize the employment of ISR and target acquisition assets by forecasting the times and locations of anticipated adversary activity.”³⁵ ISR collection against an A2/AD adversary will likely be limited to space and cyber assets and whatever limited human intelligence and other clandestine sources are available. In a conflict with a near-peer adversary, space will also be contested, and cyber is already regularly contested today. As discussed previously, US forces will be at an intelligence disadvantage at the beginning of a conflict with an A2/AD adversary which means target systems analysis and target development will also be at

³¹ Ibid, II-5.

³² Ibid, II-6.

³³ Ibid, II-11.

³⁴ JOAC, 29.

³⁵ JP 2.01-3, VII-16.

a disadvantage. Factors in target evaluation (criticality and vulnerability) will be much harder to assess.³⁶ Either target vetting standards will have to be reduced or fewer targets will pass through the vetting process with favorable recommendations.

Phase 3 – Capabilities Analysis

“This phase of the joint targeting cycle involves evaluating all available capabilities against targets’ critical elements to determine the appropriate options available to the commander for target engagement.”³⁷ This phase includes lethal and non-lethal, kinetic and non-kinetic capabilities in the analysis. Two aspects of this phase are weaponeering, the detailed analysis of weapons effects against the targeted elements, and collateral damage estimation (CDE), an assessment of risk to other entities in the targeted area including non-combatants. Weaponeering and CDE are accomplished for all kinetic and some non-kinetic capabilities.

In an A2/AD environment available capabilities will be more limited. For example, according to the JOAC, “...joint forces attacking a prepared antiaccess/area-denial defense often will lack the precise targeting information required to justify [precision guided munition (PGM)] expenditure.”³⁸ If commanders choose to proceed despite limited targeting information the risk of collateral damage increases significantly. Even if precise targeting information is available the number of PGMs with the range, accuracy, and survivability to be effective in a denied environment is likely to be severely limited. These limits will create a greater reliance on offensive cyber capabilities, other non-kinetic means, or advanced weapons to achieve the commander’s objectives.

³⁶ JP 3-60, II-9.

³⁷ Ibid, II-13.

³⁸ JOAC, 30.

Phase 4 – Commander’s decision and force assignment

“The force assignment process integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems.”³⁹ While phase 3 focused on weapons and CDE, phase 4 focuses on the commander validating the targets, their priorities, and weapon selection and then planners matching targets and weapons to the delivery platforms and support assets required to deliver the effects in the time and place desired. The following caution is also included, “Operational limitations may require modification to targeter’s initial recommendations.”⁴⁰

The impacts of an A2/AD environment are most prevalent in this and the next phase of the joint targeting cycle. First, A2/AD impacts on basing will be a primary consideration. If most US forces are unable to flow into theater initial targets will be limited to long range strike options, offensive cyber operations, and other capabilities which can either create effects from outside the adversary’s defenses or survive within them. The higher risk to friendly forces attempting to operate within the threat range of enemy systems will be a major consideration for commanders.

Phase 5 – Mission planning and force execution

“Combat operations are dynamic. During execution, the operational environment changes as a result of actions from the joint force, adversary, and other actors. The joint targeting process monitors these changes in order to allow commanders to decisively use joint force capabilities to seize and maintain the initiative. These dynamic changes require particular attention to positive identification (PID), combat identification (CID), and target validation.”⁴¹ Phase 5 includes the

³⁹ JP 3-60, II-16.

⁴⁰ Ibid, II-19.

⁴¹ Ibid, II-20 - II-21.

Positive Identification: (U) (DOD) An identification derived from observation and analysis of target characteristics

planning and execution of missions against deliberate targets and the prosecution of dynamic targets.⁴²

PID, CID, and target validation will be more difficult in A2/AD environments due to ISR limitations, jamming, and increased range. According to the JOAC, “While the Joint Combat Concept (JCC) emphasizes the need for discrimination, commanders at every echelon will need to reconcile that requirement with the significant threat posed by a capable antiaccess/area denial system.”⁴³ With decreased situational awareness due to increased stand-off ranges of ISR and command and control assets, rules of engagement regarding target discrimination may have to be tailored for the A2/AD environment. In addition, for dynamic targeting, often described as find, fix, track, target, engage, assess (F2T2EA), “the find, fix, track, and assess steps tend to be ISR-intensive” which will be limited.⁴⁴ In addition, the impacts to basing and higher risk to friendly forces described in the previous section apply to phase 5 as well.

Phase 6 – Assessment

“The targeting assessment phase is a continuous process that assesses the effectiveness of the activities that occurred during the first five phases of the joint targeting cycle. The targeting assessment process helps the commander and staff determine if the ends, ways, and means of the joint targeting have resulted in progress toward accomplishing a task, creating an effect, or

including visual recognition, electronic support systems, non-cooperative target recognition techniques, identification friend or foe systems, or other physics-based identification techniques. Source: JP 3-01
Combat Identification: (U) (DOD) The process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision. Also called CID. Source: JP 3-09
Target Validation: (U) (DOD) 2. A part of target development that ensures all vetted targets meet the objectives and criteria outlined in the commander's guidance and ensures compliance with the law of war and rules of engagement. Source: JP 3-60

⁴² Ibid, II-1 – II-2.

⁴³ JOAC, 30.

⁴⁴ JP 3-60, II-21.

achieving the objective.”⁴⁵ Assessment is the feedback loop for targeting. Commanders must know the results of missions and the effects achieved in the operational environment to understand progress toward their objectives and decide next steps.

Assessment is largely dependent on ISR. While all means available, including open source information, should be used to assess operations, ISR assets are unlikely to be available and the limited assets will likely be allocated to higher priority tasks like finding mobile missiles threatening US forces. In the A2/AD environment not only will ISR be limited, but communications will likely be limited as well. Commanders may not receive timely reporting of mission results from the forces conducting them due to communications degradation, limited bandwidth, and dispersed forces.

Challenges to ISR Support to Targeting in A2/AD

As mentioned in the previous sections, targeting relies on ISR. This dependence is further magnified in the A2/AD environment. According to the JOAC, “Given the increased lethality, precision, and accuracy of antiaccess and area-denial systems, the joint force requires the ability to collect, fuse, and share accurate, timely, and detailed intelligence across all domains.”⁴⁶ This requirement is more broad than just targeting, but the sentiment remains true in the targeting context. There are two primary concerns related to ISR support to targeting, 1) the dependence on overhead collection and cyber, and 2) requirements for prosecuting dynamic targets.

According to Tangredi, “the criticality of information and intelligence puts a premium on cyberwarfare but even more so on space warfare.”⁴⁷ The CSBA also discusses the dependence on space and cyber for ISR and communications.⁴⁸ Based on the numerous cyber attacks

⁴⁵ Ibid, II-31.

⁴⁶ JOAC, 29.

⁴⁷ Tangredi, 106.

⁴⁸ Van Tol, xii.

reported in the media over the past several years, it is not a stretch to say that the cyber domain will be heavily contested in a conflict against almost any future adversary. However, the assumption of space as largely a domain of sanctuary is no longer valid either. China and Russia have anti-satellite programs.⁴⁹ While the full counter-space capabilities of particular adversaries may not be known, any near-peer adversary is likely to understand the dependence of US forces on space for ISR, communications, and precision navigation and timing. Will US forces be able to develop targets without space-based or cyber-enabled ISR? Do US forces have the capability to execute missions with limited or no space or cyber capabilities?

With or without space and cyber capabilities, the biggest concern for ISR support to targeting is in the prosecution of dynamic targets. The JOAC describes the challenge well. “Target acquisition must be rapid and accurate, and procedures must be developed to minimize the latency or delay between identification and engagement of potentially fleeting critical targets.”⁵⁰ JP 3-60 also identifies the need for rapid decision making. “Successful engagement of [time sensitive targets] TSTs may require a very compressed decision cycle...”⁵¹ However, with limited ISR, degraded communications, and long standoff ranges required for most assets, dynamic targeting timelines are likely to increase in an A2/AD environment, not decrease.

Focusing on ISR, as discussed in phase 5 of the joint targeting cycle, prosecution of dynamic targets requires PID, CID, and target validation. Target validation requires sensors to collect targetable data, processing, exploitation, and dissemination of the information, and the information presented to a decision maker to validate, or approve, the target. If validated, the targetable data, including precise location information, must be provided to an asset, or group of

⁴⁹ Weeden, Brian. "Anti-satellite Tests in Space—The Case of China." *Secure World Foundation*. August 16, 2013. http://swfound.org/media/115643/china_asat_testing_fact_sheet_aug_2013.pdf (accessed December 12, 2015), 1.

⁵⁰ JOAC, 29.

⁵¹ JP 3-60, II-33.

assets, capable of identifying the target and then delivering an effect against it. The asset or assets must then get into a position or state to deliver the effect. Lastly, sensors are needed to verify the desired effect was achieved. For mobile targets, which are the bulk of dynamic targets, this chain must be constantly updated as the target relocates. Any break in custody of the target requires PID/CID to be reestablished. US forces have been prosecuting dynamic targets very effectively for many years in Iraq and Afghanistan. However, their expertise has been built in completely permissive environments with abundant ISR resources available. The following section will outline several recommendations to expand the discussion of targeting in the A2/AD environment.

Recommendations

Sam Tangredi claims “the JP 5.0 Phasing Model, which is the basis for joint planning, can be modified to fit the anti-access scenario, but it is not an exact fit.”⁵² On the contrary, the joint targeting cycle does not require any modification to fit an anti-access scenario. The phases of the joint targeting cycle and the steps within each phase do not need to change for an A2/AD conflict. However, joint doctrine needs more discussion on the application of the joint targeting cycle in an A2/AD environment and the impacts of that type of environment on ISR support to targeting. As previously mentioned, the ASB concept implementation action to include A2/AD concepts in joint doctrine needs to include targeting and ISR. These changes may be coming over the course of the next few years as JAM-GC is developed and A2/AD concepts mature through each of the services. However, the dearth of targeting-related discussion at the concept level is not a positive trend for the future of doctrine.

⁵² Tangredi, 106.

In addition to doctrine development, improved capabilities are also needed to conduct joint targeting in a denied environment. The JOAC lists the following required capabilities related to targeting:

Intelligence

JOA-007. The ability to conduct timely and accurate cross-domain allsource intelligence fusion in an opposed access situation.

JOA-008. The ability to develop all categories of intelligence in any necessary domain in the context of opposed access.

Fires

JOA-009. The ability to locate, target, and suppress or neutralize hostile antiaccess and area-denial capabilities in complex terrain with the necessary range, precision, responsiveness and reversible and permanent effects while limiting collateral damage.

JOA-010. The ability to leverage cross-domain cueing to detect and engage in-depth to delay, disrupt or destroy enemy systems.⁵³

These broad capabilities must be further refined into specific capabilities provided by the services. The ASB concept and JAM-GC development likely add more detail to these capabilities, but these classified sources are beyond the scope of this paper. These capabilities must be pursued with all phases of the joint targeting cycle in mind.

According to a former Air Force Deputy Chief of Staff for ISR, “The Air Force must rebuild its ability to select and prioritize targets so it can attack with precision munitions in a high-end air campaign.”⁵⁴ While he was speaking for the Air Force, the sentiment applies for all US forces. A recent lessons learned study by the Air Force that used 14 service and joint studies conducted over the past ten years concluded:

“Low intensity CT and COIN operations over the last decade have taken a toll on AF and Joint force ability to conduct deliberate targeting against peer or near-peer adversaries for major combat operations. The AF and the Joint force must deliberately invest in developing and

⁵³ JOAC, 34.

⁵⁴ ACC/A2. *Air Force Targeting Roadmap: Reinvigorating Air Force Targeting*. Langley AFB, VA: Air Combat Command, 2012, 4.

*training personnel, institutionalizing processes, and improving tools to provide the target information needed during major combat operations with a peer or near-peer adversary.”*⁵⁵

All services would be wise to heed this recommendation. Of particular concern is the need for trained personnel. According to the same report, “the vast majority of interviewees believe that DOD targeting analysis personnel capacity has atrophied to the point that DOD’s ability to effectively execute an operation against a near-peer adversary in a high-end conventional fight is at risk.”⁵⁶ More specifically, “One hundred percent of the non-GO [general officer] interviewees agree that the targeting enterprise at large (AF, joint, IC) is not ready in any theater to face a near-peer adversary today.”⁵⁷ Targeting training and career management across the joint force must be improved or no amount of investment in tools and ISR capabilities will help.

Conclusion

“As a global power with global interests, the United States must maintain the credible capability to project military force into any region of the world in support of those interests.”⁵⁸ Joint targeting is a key military function required to project force. However, despite all of the discussion and published concepts and reports regarding the challenge of anti-access and area denial environments, targeting has largely been ignored. While the joint targeting cycle does not need to be amended to fit the A2/AD environment joint doctrine does need to address the application of the cycle in an A2/AD conflict. In addition, capabilities outlined in the JOAC must be pursued even in this time of austere budgets. Finally, the dismal state of targeting personnel

⁵⁵ Air Force Lessons Learned. *The United States Air Force Targeting Enterprise at the Operational Level*. Maxwell AFB, AL: Curtis E. Lemay Center for Doctrine and Development, 2015, 41.

⁵⁶ *Ibid*, 16.

⁵⁷ *Ibid*. 16.

⁵⁸ JOAC, i.

training and development must be rectified. These steps must be taken before the United States faces a near-peer adversary employing A2/AD capabilities.

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