

Joint Publication 2-01.1



Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting



9 January 2003



PREFACE

1. Scope

This publication provides joint tactics, techniques, and procedures (JTTP) for joint intelligence organizations to implement the fundamental principles of Joint Publication (JP) 2-0, *Doctrine for Intelligence Support to Joint Operations*, supporting the doctrinal guidance of JP 3-60, *Joint Doctrine for Targeting*, across the range of military operations. This JTTP publication describes the relationships and procedures necessary for intelligence support to joint targeting (including the operations and intelligence relationships) and roles and responsibilities at the national, combatant command, subordinate joint force, and component levels. This publication describes intelligence processes and procedures supporting the joint force commander (JFC) throughout all phases of the targeting cycle.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth doctrine and selected JTTP to govern the joint activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for US military involvement in multinational and interagency operations. It provides military guidance for the exercise of authority by combatant commanders and other JFCs and prescribes doctrine and selected tactics, techniques, and procedures for joint operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

a. Doctrine and selected tactics, techniques, and procedures and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. The guidance in this publication is authoritative; as such, this doctrine (or JTTP) will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures

not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff:

A handwritten signature in black ink, reading "James A. Hawkins". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

JAMES A. HAWKINS
Major General, USAF
Acting Director, Joint Staff

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	vii
CHAPTER I	
INTRODUCTION TO JOINT TARGETING	
• Overview	I-1
• Targeting	I-1
• The Joint Targeting Process	I-1
• Joint Targeting Integration	I-2
• Nuclear Targeting	I-2
• Information Operations	I-3
• Intelligence Organizations and Supporting Agencies	I-4
CHAPTER II	
INTELLIGENCE SUPPORT TO THE COMMANDER’S OBJECTIVES, GUIDANCE, AND INTENT	
• Overview	II-1
• Objectives	II-1
• Guidance	II-1
• Intent	II-2
• Measures of Effectiveness	II-2
• Intelligence Contributions	II-2
CHAPTER III	
INTELLIGENCE ROLE IN TARGET DEVELOPMENT, VALIDATION, NOMINATION, AND PRIORITIZATION	
• Overview	III-1
• Target Development	III-1
• Target Validation	III-7
• Nomination	III-9
• Prioritization	III-9
• Information Operations Considerations for Target Development	III-10

CHAPTER IV

INTELLIGENCE SUPPORT TO CAPABILITIES ANALYSIS AND FORCE
ASSIGNMENT

- Overview IV-1
- Intelligence Role in Capabilities Analysis IV-1
- Intelligence Role in Force Assignment IV-2

CHAPTER V

INTELLIGENCE SUPPORT TO MISSION PLANNING AND FORCE EXECUTION

- Overview V-1
- Mission Planning V-1
- Force Execution at the Operational Level V-3

CHAPTER VI

INTELLIGENCE ROLE IN COMBAT ASSESSMENT

- Overview VI-1
- Battle Damage Assessment VI-2
- Munitions Effectiveness Assessment VI-4
- Reattack Recommendation (or Future Targeting Development) VI-4
- Information Operations Considerations for Combat Assessment VI-4

APPENDIX

- A Targeting Support Services and Products A-1
- B Target Development Example Checklist B-1
- C Weaponing C-1
- D Intelligence Support to Time-Sensitive Targets D-1
- E Battle Damage Assessment Procedures E-1
- F Law of Armed Conflict and Rules of Engagement Considerations in
Targeting F-1
- G Chairman of the Joint Chiefs of Staff Policies on “Sensitive Target Approval
and Review Process” and the Accompanying “Collateral Damage Estimation
and Casualty Estimation Methodology” G-1
- H Precision Engagement Collaboration Process H-1
- J References J-1
- K Administrative Instructions K-1

GLOSSARY

- Part I Abbreviations and Acronyms GL-1
- Part II Terms and Definitions GL-6

FIGURE

I-1	The Intelligence Process	I-2
I-2	Joint Targeting Cycle Phases	I-3
III-1	Target System Components and Elements	III-3
III-2	Refining Components of the Petroleum, Oils, and Lubricants Target System	III-4
III-3	Factors in Target Selection	III-5
III-4	Target Validation	III-8
VI-1	Combat Assessment Process	VI-1
E-1	Battle Damage Assessment Overview	E-2
E-2	Phase 1 E-mail Battle Damage Assessment Report Example	E-19
E-3	Phase 1 United States Message Text Format Battle Damage Assessment Report Example	E-20
E-4	Phase 2 Battle Damage Assessment Report Example	E-21
E-5	Phase 3 Battle Damage Assessment Report Example	E-23
F-1	Emblem for Marking Safety Zones	F-4
F-2	International Medical Symbols	F-5
F-3	Emblem for Cultural Property Under the 1954 Hague Convention	F-6
F-4	International Symbols	F-7
H-1	Sample Organizations Within Virtual Support Groups	H-2
H-2	How Precision Engagement Collaboration Process Organizes Collaborative Targeting	H-3

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EXECUTIVE SUMMARY

COMMANDER'S OVERVIEW

- Discusses the Concept of Joint Targeting
 - Describes the Joint Targeting Cycle
 - Outlines Organization and Structure
 - Describes Intelligence Support to Joint Targeting
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Overview

The joint targeting process is flexible and adaptable to a wide range of circumstances.

Joint targeting must meet specific objectives derived from guidance defined during the planning and execution of a campaign and is applicable at the strategic, operational, and tactical levels of warfare. **Targeting** proceeds from the commander's objectives to an assessment of the results achieved by the executed course of action (COA). **The intelligence process** is a continuous method by which information is converted into intelligence and made available to users. Actionable and predictive intelligence applies to all levels of warfare, and is key to all phases of the joint targeting cycle.

The Joint Targeting Cycle

Targeting is a national-, joint-, and component-level function that selects targets and applies the necessary means to achieve the desired effects.

Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, taking account of operational requirements and capabilities. **The joint targeting cycle** is a continuous six-phase process: 1) Commander's objectives, guidance, and intent; 2) Target development, validation, nomination, and prioritization; 3) Capabilities analysis; 4) Commander's decision and force assignment; 5) Mission planning and force execution; and 6) Combat assessment (CA).

The joint targeting process integrates military force to achieve the joint force commander's (JFC's) objectives, guidance, and intent. With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Subordinate component commanders identify high-value targets and high-payoff targets for acquisition and attack, employing their forces in accordance with the JFC's guidance to achieve missions and objectives assigned by the JFC.

Intelligence Support to Commander's Objectives, Guidance, and Intent

Commander's objectives, guidance, and intent steer the joint targeting process, and therefore they should be clear and well defined.

The development of commander's objectives, guidance, and intent is the first step in the joint targeting cycle and identifies what is to be achieved and under what conditions. The process begins at the national level as broad concepts and should end with well-defined mission objectives at the appropriate command level. **The commander must provide the direction necessary for the effective conduct of intelligence activities.** Intelligence assets are rarely sufficient to satisfy every requirement. Thus, the intelligence effort must be focused on clearly articulated priorities driving the concept of intelligence support and the collection, production, and dissemination efforts. The commander provides this focus through the articulation of the commander's objectives, guidance, intent, and the commander's critical information requirements.

Intelligence Role in Target Development, Validation, Nomination, and Prioritization

Target development, validation, nomination, and prioritization is phase two of the targeting cycle.

In phase two of the targeting cycle, the JFC's objectives are translated into a joint integrated prioritized target list. It begins with **target development**, which entails the systematic examination of potential target systems — and their components, individual targets, and even elements of targets — to determine the necessary type and duration of the action that must be exerted on each target to generate an effect that is consistent with the commander's specific objectives. Intelligence provides the basis for the target system analysis upon which effective target development is based. Integral to target development is **target validation**. This process determines whether a target remains a viable element of the target system, and whether it is a lawful target under the law of armed conflict and rules of engagement. Once potential targets are identified and validated, they are **nominated**, through the proper channels, for approval. Targets are **prioritized** based on the JFC's objectives and guidance.

Intelligence Support to Capabilities Analysis and Force Assignment

The capabilities analysis phase involves the estimation of the most likely outcome resulting from the use of lethal or nonlethal capabilities against specific targets to achieve desired effects.

The purpose of the capabilities analysis phase is to **weigh the relative efficacy of the available forces/systems as an aid to facilitating the JFC's decision regarding which COAs to employ in operations.** These estimates build upon the analyses performed in target development. In particular, they expand on the information characterizing the physical and functional vulnerability of the target with a connecting thread of logic to the JFC's objectives, guidance, and intent. The intelligence community, including federated partners, plays a role in capabilities assessment by ensuring the target materials they

provide include the estimative analyses required to make valid assessments. The intelligence provided in this phase is also used to refine collection requirements.

The force assignment process integrates previous phases of the targeting cycle and fuses capabilities analysis with available forces, sensors, and weapons systems.

Force assignment is primarily an operations function, but requires considerable intelligence support to ensure intelligence, surveillance, and reconnaissance (ISR) assets are integrated into the operation plan. Matching the components' available forces/systems and ISR assets to the approved targets prioritized on the joint integrated prioritized target list is at the heart of total force assignment. Thus the **force assignment process provides the vital link between theoretical planning and actual operations.**

There are five general steps in the force assignment process:

(1) Consolidate the results of target development, battle damage assessment (BDA), and capabilities analysis; (2) Assemble data on friendly force status, factoring in operational constraints and current apportionment guidance; (3) Assign forces to specific targets and supporting missions; (4) Present the joint targeting recommendations to the JFC for approval; (5) Issue tasking orders to the forces.

Intelligence Support to Mission Planning and Force Execution

The mission planning and force execution phase of the Joint Targeting Cycle begins after the component commander approves force execution of the targeting plan, developed during the force assignment phase.

Mission planning begins after the component commander directs force execution, and is based upon missions directed in the component commander's published tasking order. Once force execution is directed, intelligence provides accurate and complete target intelligence data to the responsible planners; supplies the tasked unit with the target data necessary to execute the mission; and ensures CA preparations are made at appropriate levels.

During **force execution**, targeting personnel on the component commander's staff monitor ongoing operations, attack results, identify emerging targets or time-sensitive targets in accordance with JFC guidance/priorities, and reattack requirements. Targeting personnel within the current operations cell must **maintain situational awareness of targets being attacked as well as the status and position of friendly forces.** They must also coordinate to ensure that appropriate ISR assets are integrated into the operation. In conjunction with this, targeting personnel must understand the objectives of the ongoing operation, the commander's intent, the scheme of maneuver, and be fully cognizant of the capabilities and unique operational requirements of all the components.

Intelligence Support to Mission Planning and Force Execution

Combat assessment is the determination of the overall effectiveness of force employment during military operations.

CA helps the geographic combatant commander, the subordinate JFC, and subordinate commanders understand how the campaign is progressing and shape future operations. **CA consists of BDA, munitions effectiveness assessment (MEA), and results in reattack recommendations (RR).** Final products include assessment of success in meeting JFC objectives and recommendations to modify objectives or guidance, if needed. Planning for CA should begin prior to force employment.

To determine the effectiveness of an operation, three questions need to be answered. First, were the desired outcomes achieved with the target and with respect to the larger target system (BDA)? Second, did the assigned forces perform as expected (MEA)? Finally, what should be done if the desired outcomes were not achieved (RR)?

CONCLUSION

This publication provides joint tactics, techniques, and procedures (JTTP) for joint intelligence organizations to implement the fundamental principles of Joint Publication (JP) 2-0, *Doctrine for Intelligence Support to Joint Operations*, supporting the doctrinal guidance of JP 3-60, *Joint Doctrine for Targeting*, across the range of military operations. This JTTP publication describes the relationships and procedures necessary for intelligence support to joint targeting (including the operations and intelligence relationships) and roles and responsibilities at the national, combatant command, subordinate joint force, and component levels. This publication describes intelligence processes and procedures supporting the JFC throughout all phases of the targeting cycle.

CHAPTER I

INTRODUCTION TO JOINT TARGETING

“Separate ground, sea, and air warfare is gone forever. If ever again we should be involved in war, we will fight it in all elements, with all services as one single concentrated effort.”

Dwight D. Eisenhower

1. Overview

a. Joint targeting must meet specific objectives derived from guidance defined during the planning and execution of a campaign and is applicable at the strategic, operational, and tactical levels of warfare. **Targeting proceeds from the commander’s objectives to an assessment of the results achieved by the executed course of action (COA).** The joint targeting process is flexible and adaptable to a wide range of circumstances. Teamwork must exist between the intelligence and operations directorates/divisions at all levels from joint staff to unit level in order to effectively and efficiently achieve the joint force commander’s (JFC’s) objectives.

b. **The intelligence process** is a continuous method by which information is converted into intelligence and made available to users. Actionable and predictive intelligence applies to all levels of warfare, and is key to all phases of the joint targeting cycle. Figure I-1 provides a simplified model of the intelligence process and how its six phases are interrelated. Integration of these phases provides timely and relevant intelligence support to the joint targeting process.

2. Targeting

a. **Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, taking account of operational requirements and capabilities.** Targeting is a national-, joint-, and component-level function that selects targets and applies the necessary means to achieve the desired effects.

b. A target is an area, complex, installation, force, equipment, capability, function, or behavior identified for possible action to support the commander’s objectives, guidance, and intent. **A target is not critical in and of itself; rather, its importance is derived from its potential contribution to achieving the commander’s military objective(s).** Targets fall into two general categories: planned and immediate. Planned targets are those known to exist in an operational area with actions scheduled against them to generate the effects desired to achieve JFC objectives. Immediate targets are those that have been identified too late, or not selected for action in time to be included in the normal targeting process, and therefore have not been scheduled.

3. The Joint Targeting Process

The joint targeting cycle (see Figure I-2) is a **six-phased process** developed to logically present the steps completed during joint targeting. Circumstances may dictate that steps be



Figure I-1. The Intelligence Process

accomplished concurrently or even out of order. Intelligence personnel interact across all phases of the targeting process, using information and analysis from all its elements.

For additional information, see Joint Publication (JP) 3-60, Joint Doctrine for Targeting.

4. Joint Targeting Integration

The joint targeting process **integrates military force to achieve the JFC's objectives, guidance, and intent**. With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Subordinate component commanders identify high-value targets (HVTs) and high-payoff targets for acquisition and attack, employing their forces in accordance with the JFC's guidance to achieve missions and objectives assigned by the JFC.

5. Nuclear Targeting

The employment of US nuclear weapons requires the explicit decision of the President. United States Strategic Command (USSTRATCOM) is primarily responsible for developing and maintaining the Single Integrated Operational Plan, the nation's strategic nuclear warfighting plan. **USSTRATCOM supports combatant commanders throughout deliberate and crisis action planning** by developing tailored nuclear support annexes to theater operation plans (OPLANs) and operation plans in concept format (CONPLANs) as well as procedures for the

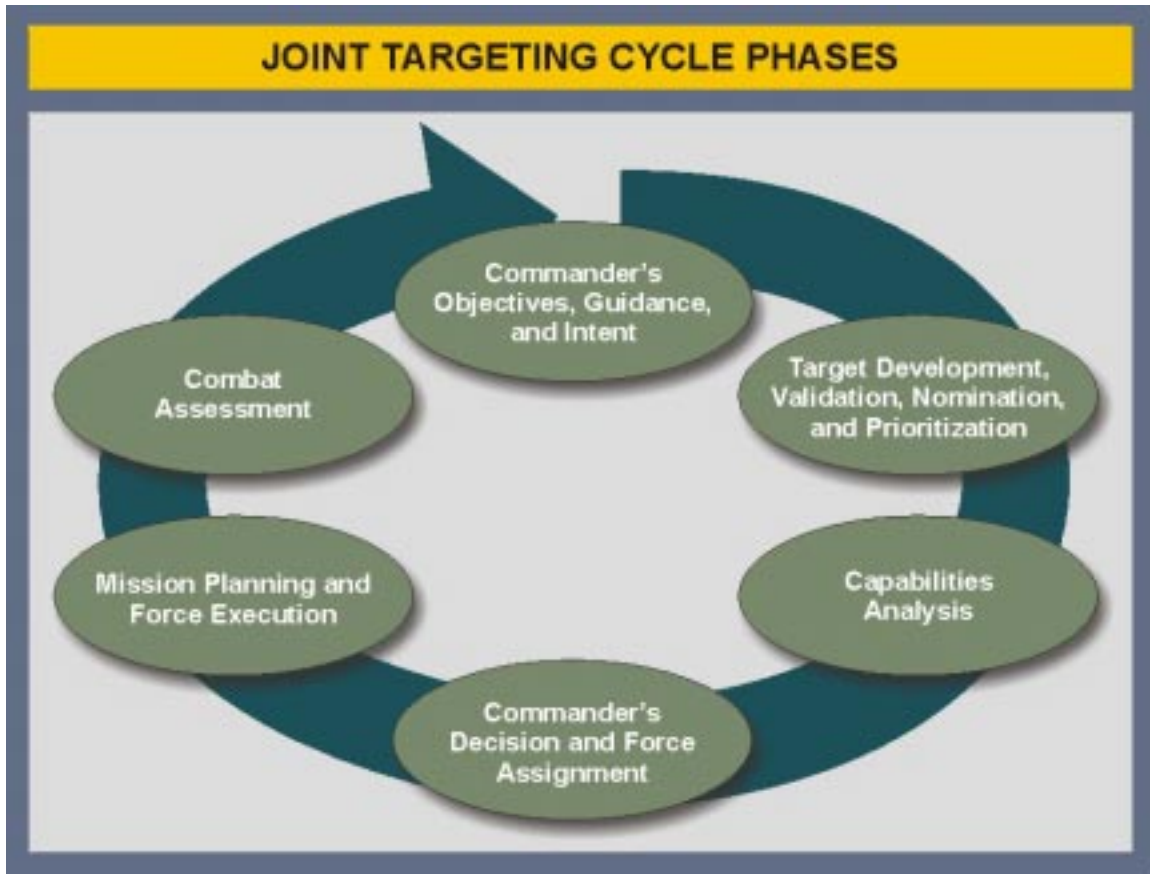


Figure I-2. Joint Targeting Cycle Phases

storage, security, movement, deployment, and employment of nuclear weapons. The JFC will normally have the opportunity to recommend objectives, guidance, and the desired effects of the requested nuclear strikes provided there is sufficient time during preparation.

For additional information see JP 3-12, Doctrine for Joint Nuclear Operations.

"Targeting is the intersection of intelligence and operations."

Gen. Hap Arnold, 1945

6. Information Operations

Information operations (IO) is an important discipline bringing new targeting options which should be integrated and deconflicted with traditional targeting efforts. **IO affects adversary decision makers, their information and information systems, and achieves or promotes specific objectives.** IO is composed of five core capabilities, electronic warfare (EW), computer network operations, psychological operations, military deception, and operations security. Counterintelligence, physical attack, physical security, and information assurance are supporting capabilities to IO, while public affairs and civil affairs are capabilities closely related to IO. **Critical aspects of IO planning are the development of measures of effectiveness (MOEs)**

to assist in the targeting phases of IO, the utilization of the JFC's joint targeting process, and adherence to the established organizational framework for targeting operations. Failure to integrate IO and conventional target planning efforts will lead to inefficient and disjointed force application and possible delays in attaining commander's objectives.

For further guidance on IO, see JP 3-13, Joint Doctrine for Information Operations.

7. Intelligence Organizations and Supporting Agencies

a. Numerous intelligence organizations and supporting agencies support the joint targeting process. **The joint force targeting staff maintains close working relationships with national level intelligence community (IC), theater-wide intelligence organizations,** including the joint intelligence center (JIC) or its equivalent, and Service intelligence organizations. A JFC may request national-level intelligence (e.g., National Intelligence Support Teams [NISTs] and United States Joint Forces Command [USJFCOM] quick reaction teams [QRTs]) or operational support from Department of Defense (DOD) or non-DOD organizations or agencies. This support is normally coordinated by the Joint Staff (JS) intelligence directorate (J-2) via the combatant command J-2.

See JP 2-01, Joint and National Intelligence Support to Military Operations.

b. JFC collaboration with theater and national level resources may take the form of **federated intelligence support** in which the authority to perform specific intelligence functions is delegated by the supported combatant commander to other combatant commands or supporting agencies. This federation provides significant support to the JFC and component commanders throughout the joint targeting cycle. The supported combatant commander J-2 works in conjunction with the JS J-2 Deputy Directorate for Crisis Operations (J-2O) to establish federated partnerships. The JS J-2 normally ensures federated targeting support requirements are addressed in the Chairman of the Joint Chiefs of Staff (CJCS) planning orders (PLANORDs), warning orders (WARNORDs), and execute orders. **Even if targeting functions are federated, the combatant commander maintains final control of the targeting effort.** In a federated environment, control is essential, and a single point of contact for records and accountability must be established by the supported combatant commander. Careful administration of such a system can maximize the use of analytical and productive resources available to support joint force targeting.

See JP 2-01, Joint and National Intelligence Support to Military Operations.

c. **Joint targeting must meet specific objectives** derived from guidance defined during the planning and execution of a campaign or operation, and is applicable at the strategic, operational, and tactical levels of war.

d. **The following organizations can potentially support targeting,** either in direct support to the JFC or through intelligence federation partnerships. It is not all-inclusive, nor will all of these organizations necessarily support every combat operation.

(1) **DOD Organizations**

(a) **JS J-2.** The JS J-2 is a unique organization in that it is a major component of the Defense Intelligence Agency (DIA), a combat support agency, as well as a fully integrated element of the JS. JS J-2 targeting related responsibilities include:

1. Providing the CJCS and JS operations directorate (J-3) with joint crisis and contingency targeting, battle damage assessment (BDA), and technical planning support;
2. Providing the combatant commands (if requested and validated) with IC target development and analytic support through all phases of the targeting cycle;
3. Managing the National Military Joint Intelligence Center (NMJIC), which is the primary conduit through which national-level intelligence support is provided to the combatant commands and subordinate joint forces;
4. Assisting the combatant commands in establishing and coordinating, or supporting federated intelligence operations to include target development and BDA;
5. Coordinating target vetting with the IC; and
6. Providing functional expertise on targeting and targeting-related issues undergoing JS, Office of the Secretary of Defense (SecDef), and Office of the President review. This includes, but is not limited to, command target lists, PLANORDs, WARNORDs, and Sensitive Target Approval and Reviews (STARs). The J-2 Deputy Directorate for Targets (J-2T) is the lead agent for providing and coordinating national-level intelligence support to joint targeting.

(b) **Other combatant commands** have valuable resources that can be brought to bear on intelligence support requests submitted by the supported combatant commander through the process specified in the JS J-2 *Crisis Intelligence Federation Concept of Operations (CONOPS)*, and JP 2-01, *Joint and National Intelligence Support to Military Operations*. Supporting combatant commands may provide target system analyses (TSAs), construct electronic target folders (ETFs), assist in intelligence preparation of the battlespace (IPB), derive mensurated coordinates, support federated BDA assessments, or provide other federated targeting support.

(c) **USJFCOM QRT.** The QRT is a rapidly deployable team of targeteers and collections managers designed to provide immediate crisis support to combatant commands. They can deploy from USJFCOM within 24-hours at the request of a combatant commander via JS J-2. They are trained analysts, but must be integrated into existing theater intelligence organizations as they deploy with no organic automated data processing or communications support. The supported combatant commander determines the team's in-theater location (headquarters [HQ], JIC/Joint Analyst Center [JAC], joint task force [JTF], or component command) based on assessed needs. The QRT is not a permanent targeting or collection

augmentation and should be returned to national control as mobilization and/or individual augmentation arrive to support the combatant commander's requirements.

(d) **Defense Intelligence Agency.** The DIA provides significant all-source intelligence resources on a broad array of targeting problems. Analysts directly support targeting efforts by consolidating all-source target development, material production and TSA development. DIA plays an important role in collecting target intelligence in support of combat commands across the range of military operations.

1. DIA's Defense Human Intelligence (HUMINT) Service (DHS) provides a dedicated DOD HUMINT capability, while the Joint Counterintelligence Center (DAC-1B/J2CI) provides a dedicated DOD counterintelligence capability that facilitates identification of the link/fusion between terrorist and foreign intelligence and security services.

2. Central Measurement and Signature Intelligence (MASINT) Organization (CMO) is a component of DIA. MASINT enables all phases of the targeting cycle and contributes directly to target development and combat assessment (CA). Additionally, MASINT training support can be provided to assist the Chairman of the Joint Chiefs of Staff, combatant commanders, subordinate JFCs, and Service component commanders. CMO operates the MASINT Operations Coordination Center as the primary interface with warfighters for MASINT products and support.

(e) **National Security Agency (NSA).** NSA provides critical intelligence support to operational targeting. This may include analysis of communications networks or other aspects of the information infrastructure, as well as operational signals intelligence (SIGINT) valuable through all phases of the targeting cycle (including, in some cases, actionable communications-derived geolocation). NSA is responsible for providing the combatant command and JS J-2 with the IC's intelligence gain/loss (IGL) assessment, an evaluation of the quantity and quality of intelligence lost versus potential gain should a particular target be attacked. For non-kinetic attacks, NSA provides additional inputs when appropriate to feed into the planning and BDA processes.

(f) **National Imagery and Mapping Agency (NIMA).** NIMA provides support to targeting including imagery exploitation, production of digital and physical maps and charts, and training support to the Chairman of the Joint Chiefs of Staff, combatant commands, and subordinate joint forces. NIMA's digital point positioning database (DPPDB) and the mensuration of precise aimpoints for coordinate-seeking weapons are among the most important resources available to operational targeting personnel. NIMA's imagery analysts can be valuable in federated target development and BDA processes.

For additional details, see JP 2-03, Joint Tactics, Techniques, and Procedures for Geospatial Information and Services Support to Joint Operations.

(g) **Joint Information Operations Center (JIOC).** The JIOC, a subordinate functional component of USSTRATCOM, provides federated support, including intelligence, to combatant commanders, and can be tasked directly by the chain of command. JIOC supports

several IO capabilities, including operations security, computer network attack (CNA), military deception, EW, and kinetic destruction. Intelligence support can be tailored for integration into TSAs.

(h) **Joint Warfare Analysis Center (JWAC).** The JWAC, an element of USJFCOM, provides analysis of engineering, scientific, and intelligence data and the integration of these disciplines with combatant commander requirements for target system analysis. JWAC has specific expertise in the analysis of civilian infrastructure including electric power, telecommunications, petroleum, oils, and lubricants (POL), lines of communications, commodities, critical industries, military logistics, and strategic assessments and impacts. JWAC can be a valuable resource during target development, target system assessment, BDA, unique weaponeering cases, and collateral damage analysis.

(i) **Defense Threat Reduction Agency (DTRA).** DTRA maintains special tools and expertise for analyzing potential weapons of mass destruction targets and providing plume hazard projections based on destruction of targets storing hazardous material including biological, radiological and chemical agents. DTRA also provides target characterization and high fidelity weapons effects modeling to support physical and functional defeat of hardened and deeply buried targets. DTRA also verifies existing foreign controls of stockpiles of nuclear-related equipment and materials.

(j) **Service-supporting organizations.** The Service intelligence organizations include the Army's National Ground Intelligence Center, the Office of Naval Intelligence, Marine Corps Intelligence Activity, and the National Air Intelligence Center (NAIC). In addition, the Services each have non-intelligence organizations that can also provide support to the supported commander.

(2) **Non-DOD Organizations**

(a) **Central Intelligence Agency (CIA).** The CIA has a targeting support group (TSG) located within its Office of Military Affairs that can provide valuable support by directing and coordinating all aspects of CIA support to US military targeting. Specifically, TSG provides information and expertise in support of military target planning and processes formal requests for target nominations (review and approval by CIA's leadership) to add CIA selected targets to a military attack plan. TSG also manages, within the CIA, all military special technical operations (STO) and Special Access Program compartments, as well as the deconfliction of military targeting with CIA operational equities.

(b) **Department of State (DOS).** DOS, with its worldwide network of diplomatic missions and posts staffed with representatives of numerous national agencies, can be a key source of information and can provide valuable information dealing with potential no-strike/restricted targets and nongovernmental issues. The central point of contact within the DOS for intelligence, analysis, and research is the Bureau of Intelligence and Research (INR). INR produces intelligence studies and analyses, which have provided valuable information in support of targeting. Additionally, all-source reporting via Foreign Service channels at American

embassies or consular posts is useful, particularly during the objectives, guidance, and intent, target development, and CA phases of the joint targeting cycle.

(c) **Department of Energy (DOE).** DOE, through its national laboratories, provides significant chemical, biological, radiological, and nuclear process analysis data related to counterproliferation facilities and installations. Additionally, DOE has resources to assist in consequence analysis prediction.

(d) **Other national organizations,** such as the Federal Bureau of Investigation, the Department of Commerce, the Department of Transportation, Department of the Treasury, and other organizations may offer additional support to the joint force targeting effort. These agencies may provide valuable information and support for various missions such as counterterrorism targeting efforts, homeland defense, and money laundering activities associated with those activities.

For further information, see JP 2-01, Joint and National Intelligence Support to Military Operations.

CHAPTER II

INTELLIGENCE SUPPORT TO THE COMMANDER'S OBJECTIVES, GUIDANCE, AND INTENT

"In all history, there is no instance of a country having benefited from prolonged warfare. Only one who knows the disastrous effects of a long war can realize the supreme importance of rapidity in bringing it to a close. It is only one who is thoroughly acquainted with the evils of war who can thoroughly understand the profitable way of carrying it on."

Sun Tzu
The Art of War (c. 500 BC)

1. Overview

a. The development of commander's objectives, guidance, and intent is the first step in the joint targeting cycle and identifies what is to be achieved and under what conditions. The process begins at the national level as broad concepts and should end with well-defined mission objectives at the appropriate command level. **Commander's objectives, guidance, and intent steer the joint targeting process, and therefore they should be clear and well defined.**

b. The commander must provide the direction necessary for the effective conduct of intelligence activities. Intelligence assets are rarely sufficient to satisfy every requirement. Thus, **the intelligence effort must be focused on clearly articulated priorities** driving the concept of intelligence support and the collection, production, and dissemination efforts. The commander provides this focus through the articulation of the commander's objectives, guidance, intent, and the commander's critical information requirements.

c. Timely and relevant intelligence through collection, exploitation, and production cells in the targeting effort assists the commander in developing objectives and guidance. Due to the fundamental role of objectives and guidance in the targeting process, both operations and intelligence personnel engaged in the targeting process must continually monitor for changes in the strategic, operational, and tactical situations; and adjust accordingly. Theater objectives are constantly reviewed to ensure they accurately reflect national strategic objectives and political constraints.

2. Objectives

Objectives are clearly defined, decisive, and attainable goals towards which every military operation should be directed. They provide direction for target selection and prioritization, and they set the criteria for measuring mission success.

3. Guidance

Guidance provided with the objectives **stipulates particular conditions related to the execution of operations.** Guidance sets the limits or boundaries on objectives and how they are

attained. Specific guidance is essential for determining the best targeting alternative for a given situation. Guidance includes, but is not limited to, rules of engagement (ROE), limits for collateral damage, etc.

4. Intent

Taken together, the objectives and guidance embody the commander's intent for military operations. The commander's intent is a concise expression of the purpose of the operation and the desired end state that serves as the initial impetus for the planning process. It may also include the commander's assessment of the adversary COAs and an assessment of where and how much risk is acceptable during the operation. The focus of the commander's intent is always to create a change in the adversary's behavior that turns both the tactical situation and, ultimately, the strategic outcomes to a US advantage.

5. Measures of Effectiveness

a. MOEs are **tools used to measure results achieved in the overall mission and execution of assigned tasks.** MOEs are a prerequisite to the performance of CA. All objectives should have one or more associated MOEs, which are developed during the first phases of the targeting cycle.

b. To be useful as a gauge of combat effectiveness, a MOE **must be meaningful, reliable, and observable.** A meaningful MOE must be tied to achievement of the operational and strategic objectives. A reliable MOE must accurately express the intended effect. In other words, what does a 50 percent reduction in combat potential **mean** in terms of the conflict's objectives? Quantitative measures must reliably convey the intended effect. An observable MOE must be measurable by existing intelligence collection methods.

6. Intelligence Contributions

a. **Objectives.** Once targets are approved by the commander, the J-2 and J-3 must continuously review them with respect to the adversary and the changing situation to ensure they remain relevant to the commander's intent. Intelligence provides the commander with an understanding of the adversary in terms of probable intent, objectives, strengths, weaknesses, probable COAs, most dangerous COA, and critical factors. **Critical factors include adversary critical capabilities, critical requirements, critical vulnerabilities, and centers of gravity.** Intelligence and target analysts also identify potential collateral damage concerns, such as the presence of noncombatants, proximity of historical, cultural, and religious structures, and the proximity of facilities that contain hazardous material such as chemical plants or nuclear power plants. Intelligence support to objective development assists in answering the following questions:

(1) **Whose Behavior Do We Want to Modify?** Identify the specific people, groups, or organizations whose behavior we wish to change. For example, do we wish to modify the behavior of the political leader, military forces, the civilian population, or a combination of these three?

(2) **What Do We Want to Make Them Do?** Identify the behavior to be affected, changed, or modified.

(3) **How Do We Want to Affect the Targets?** There is a wide variety of means at the disposal of the JFC, both lethal and nonlethal. However, the systems available and the situation may limit the JFC's options to achieve a desired targeting objective.

(4) **When and For How Long Do We Want to Affect the Targets?** Four principal timing factors must be considered in formulating an attack: timing of the attack, timing of the impact on adversary operations due to the strike, synchronization of the attack(s), and recuperation or reconstitution time of the target or target system.

(5) **Where Do We Want to Affect the Adversary Activity?** The specific location where the activity should be modified is a significant part of targeting. By stating "where," the workload of the targeting personnel can be greatly simplified, (e.g., "nation-wide," "the eastern sector," the "xxx city") and the resulting analysis more relevant to operational requirements.

(6) **Why Do We Want to Affect the Target?** There is always a "why." National strategy and desired end states drive JFC objectives, guidance, and intent. In turn, each component commander formulates supporting objectives. Unfortunately, the "why" frequently has not been thought out, is poorly stated, or is misunderstood. Not understanding "why" may result in analysis and/or recommendations that, at best, do not lead to the desired effect or, at worst, lead to undesirable and possibly catastrophic consequences. Consequently, each intelligence analyst involved in the targeting process is responsible for knowing the commander's objectives and seeking clarification to resolve any ambiguities, inconsistencies, or lack of detail.

(7) **How Much (To What Degree) Do We Want to Affect Adversary Activity?** The criteria against which progress and success will be measured must be clearly stated. Criteria must use quantifiable terms, be realistic and identifiable. Criteria should assist in understanding objectives by providing a performance measure.

b. There are **limits imposed on operations and targeting**, and those limits are identified in the law of armed conflict (LOAC) and the ROE. Based on these limits, intelligence personnel assist in developing no strike lists. Intelligence personnel also assist in developing restricted target lists (RTLs) based on factors such as LOAC, ROE, and commander's guidance

c. **MOEs.** Intelligence analysts help planners write MOEs. Not only do they have insight into adversary behavior and intent, but they also have specialized knowledge of intelligence capabilities — they can tell planners what can and cannot be accurately measured, collected, and reported within required timelines. Intelligence analysts must thoroughly understand each MOE, since they can be tasked to obtain the data required to make each measurement.

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CHAPTER III

INTELLIGENCE ROLE IN TARGET DEVELOPMENT, VALIDATION, NOMINATION, AND PRIORITIZATION

“Knowledge of the country is to a general what a musket is to an infantryman and what the rules of arithmetic are to a geometrician. If he does not know the country, he will do nothing but make gross mistakes.”

**Frederick the Great
Instructions for his Generals, 1747**

1. Overview

In this phase of the targeting cycle, **the JFC’s objectives are translated into a joint integrated prioritized target list (JIPTL)**. It begins with **target development**, which entails the systematic examination of potential target systems — and their components, individual targets, and even elements of targets — to determine the necessary type and duration of the action that must be exerted on each target to generate an effect that is consistent with the commander’s specific objectives. Intelligence provides the basis for the target system analysis upon which effective target development is based. The IO target development follows the traditional methodology of identifying target systems, components, and their critical elements using a broader IPB scope that accounts for information systems that might be new to the target analyst. The expanded concept of target systems calls for an increase in the quality and fidelity of intelligence collection that pushes the targeteer’s analysis and production in new directions. **Integral to target development is target validation.** This process determines whether a target remains a viable element of the target system, and whether it is a lawful target under LOAC and ROE. In this process, the potential benefit of striking a target is weighted against the potential costs. **Once potential targets are identified and validated, they are nominated**, through the proper channels, for approval. **Targets are prioritized based on the JFC’s objectives and guidance.**

2. Target Development

Target development includes functions such as target analysis, documentation, and identification (ID) of collection and exploitation requirements. **Target development results in four products: lists of targets; target folders characterizing the target and its surroundings, containing detailed analysis, relevant target materials, and modeling/simulation products; collection and exploitation requirements; and target briefs.** Detailed analysis should characterize the function, criticality, and vulnerabilities of each potential target and link JFC objectives to the specific action that is taken against a particular target. MOEs are then developed for judging the results of attacks. One of the keys to successful target development is to understand the **relationships** between and within target systems in order to uncover **vulnerabilities** and identify **critical elements** for targeting. Target analysts must **include the impact of** and **adversary reliance on** information in investigating these relationships.

Appendix B, “Target Development Example Checklist,” provides an example Target Development Checklist.

a. **Target Analysis.** Target analysis is an all-source examination of potential targets to **determine relevance to stated objectives, military importance, and priority of attack.** It is an open-ended analytic process produced through the intelligence production process using national and theater validated requirements as a foundation. Typical products include TSA and nodal system analysis studies generally used as a baseline for target selection. In CNA planning, for example, TSA uses an expanded methodology to examine all aspects of information flow to expose interrelationships and criticality. Targeting personnel use these products to identify target systems and system components supporting JFC objectives. Planners use the results of iterative target analysis throughout the campaign and in all phases of the joint targeting cycle to update objectives, guidance, and assessments. While target analysts look at all aspects of the target system, **the joint targeting process emphasizes functional system activity and components.** By determining which activity must be modified or affected by friendly forces in order to achieve the objectives, key target systems and critical components are identified and nominated as targets. Target analysis consists of Target System Identification and Target System Component Identification.

(1) **Target System Identification.** The first step is identifying those target system(s) supporting adversary activity. While a single target may be significant because of its own characteristics, **the target's real importance lies in its relationship to other targets within an operational system.** Target systems are usually complex, with interdependent components (see Figure III-1), and contribute to a wide variety of activities directed toward pursuit of system goals. Examples of target systems are an adversary's command, control, communication, computers, and intelligence (C4I) structure, ground forces and facilities, and POL industry (see Figure III-2).

(2) **Target System Components Identification.** A target component is a set of targets within a target system performing a similar function. **Emphasis is shifted from the system to the specific activities,** such as industries and basic utilities involved in producing parts of an end product. The same general analytic process applies for non-industrial target systems. For example, the components of a theater ballistic missile target system might include: missile transporter erector launchers, re-supply vehicles, command and control (C2) nodes, meteorological radars, missile fuel storage sites and/or shelters, deployment areas, and the supporting road transportation network. Targeting personnel should consider the two broad categories of criticality and vulnerability when examining target system components (see Figure III-3).

(a) **Criticality.** Criticality is derived from a component's contribution to a target system's larger function and is a **measure of the relative importance of these components within a system.** For this reason, target development focuses on identifying critical nodes within key target systems to satisfy targeting objectives, as well as conformance with JFC guidance. There are four factors that contribute to criticality:

1. **Value measures the system's importance:** to the adversary's ability to conduct operations; to the friendly force's ability to achieve a mission or objective; and as a measure of significance to the adversary. Significance is the degree of concern for an activity or resource in excess of the value assigned during its normal performance. The value measurement

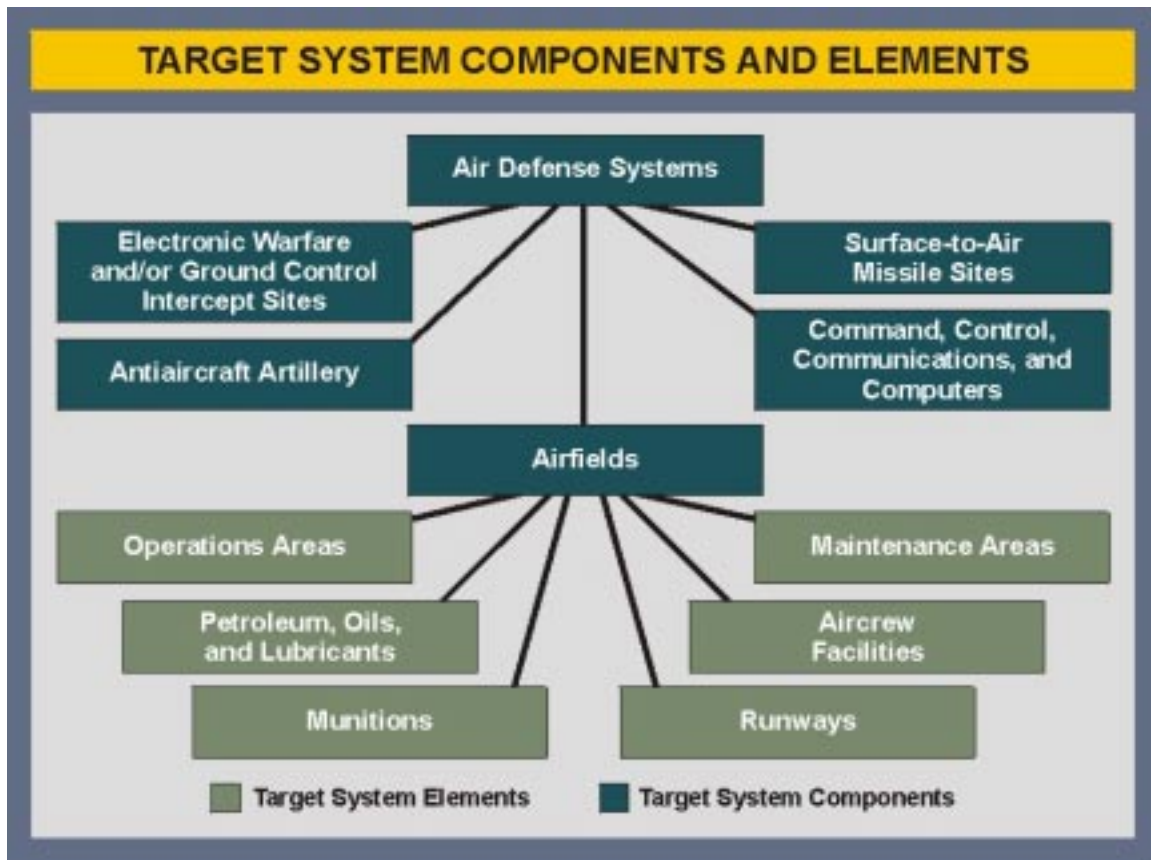


Figure III-1. Target System Components and Elements

may reflect military, economic, political, psychological, informational, environmental, or geographic significance. Psychological significance assigned to a system reflects the thought processes of the adversary. For example, the birthplace of a political, religious, or cultural leader may fall into this category.

2. Depth is a measure of the time required before disruption of a component's activity affects the system output. Average depth is a time concept designed to measure the average interval between the time the production of an item begins and the time the finished product appears in use by a tactical unit. In general, computation of depth is important to measure the time available to the adversary to organize substitute consumption, alternate production, or procurement before the system suffers degradation.

3. Recuperation is a measurement of the time and cost required for a system to regain the ability to function after being disrupted. By assigning each type of target a reconstitution or recuperation time factor, such as days required to rebuild the facility or perform the original function again, the amount of target value restored each day can be estimated. The target analyst can then determine the timing or necessity for a reattack.

4. Capacity is defined as either current or maximum output. Current output may be represented by plant production based on the present labor force, economy of the

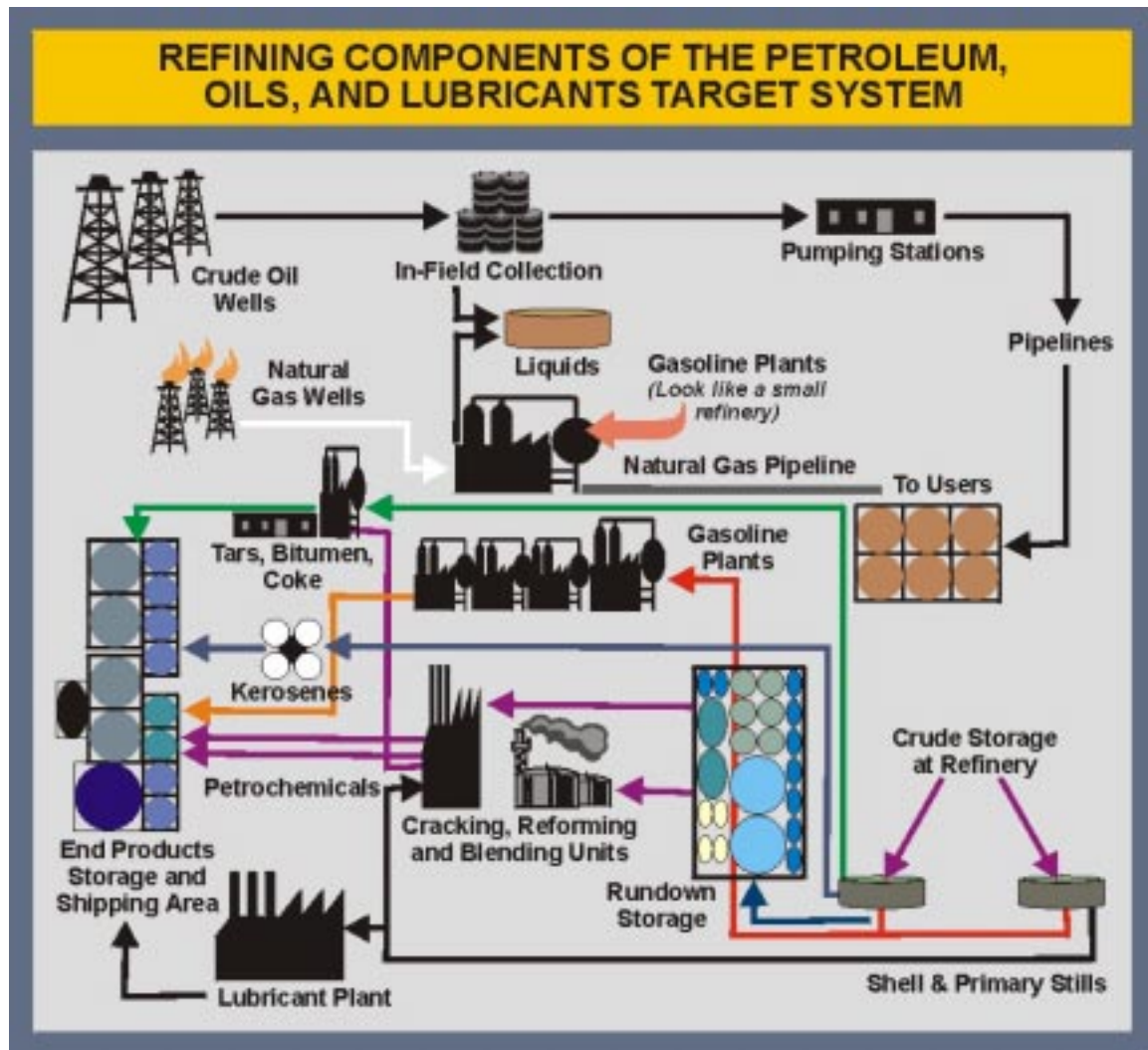


Figure III-2. Refining Components of the Petroleum, Oils, and Lubricants Target System

country, current demand for the product, and demonstrated production over the past two or three years. Maximum output may be represented by full capacity production based upon existing equipment and continuous operation over a 24-hour day.

(b) **Vulnerability.** A target's vulnerability refers to the **physical susceptibility to damage or cause disruption**. An installation's or facility's vulnerability refers to the physical susceptibility to damage or disruption. Vulnerability affects the size and types of force required to damage or disrupt a target, in addition to munitions and fuzing requirements. There are six characteristics that contribute to a target's vulnerability:

1. Cushion is a measure of the extent to which a single component or system can absorb a disruptive influence and continue to produce or provide the required product or service. Viewed from another aspect, cushion is that portion of the adversary's system which must be affected in order to achieve desired outcomes. Determining this point for an industry or a military activity requires detailed analysis of a system's operation, including idle plant capacity, replacement substitution and expansion capacity, civilian production use, the

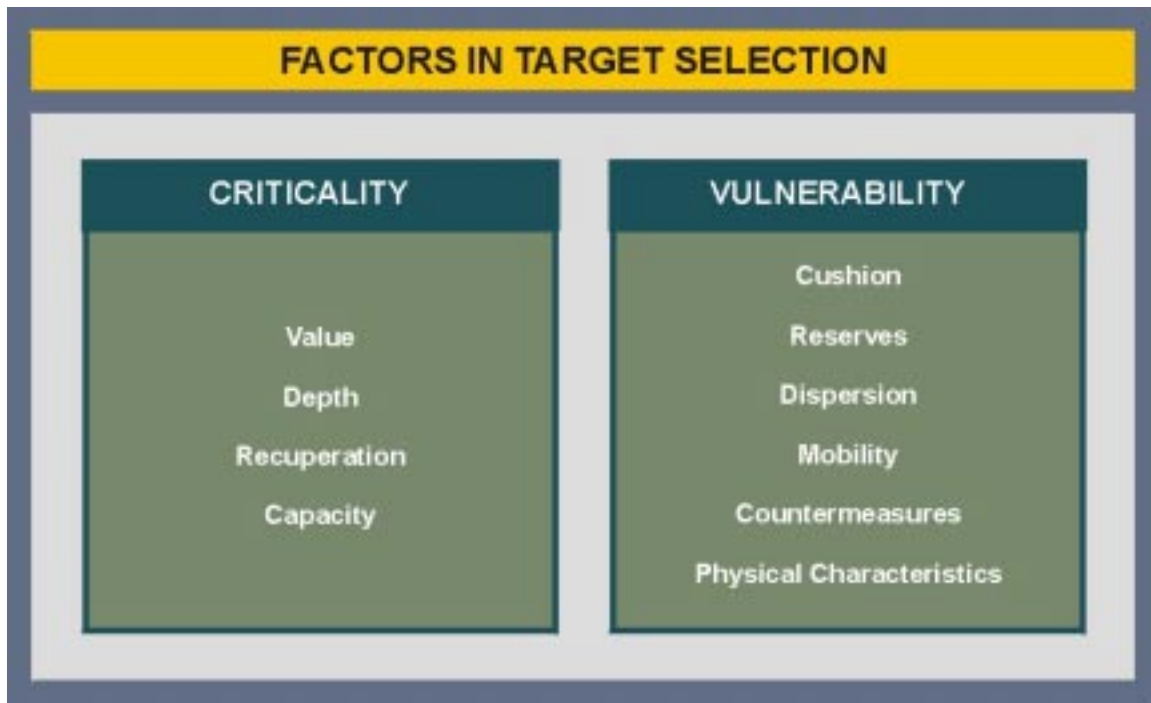


Figure III-3. Factors in Target Selection

production of nonessential military items or services, and production or provision of substitute materials or services.

2. Reserves provide a quantity of stored resources the adversary may use when the normal supply of the resource is disrupted. Assessment of reserves depends upon the estimation of the system use or flow rate. The measure of reserves is the percentage of the products used versus the total products available.

3. Dispersion is the geographic distribution of either the installations in a target system or target elements within a target complex. An installation with a large number of dispersed elements presents a more difficult targeting problem than does a tightly concentrated installation. Alternatively, dispersion may degrade the adversary's capabilities by making his own operations more complex.

4. Mobility is a measure of the time required to shift a target component activity from one location to another. Mobility affects both the perishability of the information about the location of the adversary system and friendly systems' ability to detect, locate, identify, and strike the target component.

5. Countermeasures are a measure of an adversary's ability to counteract the potential disruptive activity of the friendly system through active and passive means. Effective use of terrain, camouflage, emission controls, passive defenses (caves), and active defenses could negate the ability of the friendly system to exert an influence upon adversary component activity.

6. Physical Characteristics are analyzed to determine the target's susceptibility to kinetic damage. They include such elements as weight, shape, volume, construction, and sturdiness.

b. **Documentation.** Documentation includes a list of potential targets, with folders of information on each, to include validation data and approval messages. The target folder will include any identified potential collateral damage concerns or collateral effects associated with the target. **Target folders should be continually updated** as data is collected to reflect the most recent information regarding target status. An independent technical review of the compiled data helps to ensure mistakes do not proliferate through the rest of the targeting cycle. Commands and components should strive to utilize a common standard for documentation. DIA Regulation (DIAR) 57-24 contains requirements for target folders. These normally include:

- (1) At least six elements of target identification (basic encyclopedia [BE] number or unit ID, functional classification code/O suffix, name, country code, coordinates with reference datum, and a significance statement);
- (2) Images that reflect the physical components accurately (not necessarily the most current);
- (3) Target materials;
- (4) Amplifying text (all-source to include pertinent MASINT information); and
- (5) Geospatial information and services (GI&S)-related data.

For additional details, see Appendix A, "Targeting Support Services and Products," and DIAR 57-24, US/Allied Target Materials Program.

c. Identification of Collection and Exploitation Requirements

(1) The target development process will **identify additional intelligence requirements**. These requirements must be articulated as early in the targeting process as possible, to support target development and other assessments. Targeting personnel submit requests for information (RFIs) through collection managers. RFIs must clearly articulate what pieces of information are needed to complete the target development. It is an iterative process continuing throughout the entire joint targeting process.

(2) Other types of collection requirements may involve monitoring the activity level of various installations to validate their viability as targets, or identifying other facilities within the same target system, or identifying when alternate facilities should be nominated to the joint target list (JTL). These are usually standing requirements and are incorporated into the JFC's priority intelligence requirements (PIRs).

(3) **Exploitation of time-sensitive targets (TSTs) require robust intelligence, surveillance, and reconnaissance (ISR) support.** Once identified and prioritized, a comprehensive ISR plan must be implemented to effectively detect, identify, precisely locate and monitor these targets. These requirements must also be incorporated into the JFC's PIRs.

d. **Target development is time- and resource-intensive.** The supported combatant commander may choose to federate portions of the workload with experts outside the theater. This can provide combatant command staffs with access to specialized technical or analytical expertise, lighten the workload on theater planning staffs throughout all phases of the Joint Operation Planning and Execution System process, provide for an independent technical review of targeting options, reaffirm nomination rationales, and validate fundamental intelligence assessments.

e. **Federation and collaboration are excellent methods of bringing target development expertise and planning support to JFCs.** Crisis intelligence federation provides valuable pre-planned support options which can be initiated at the supported combatant commander's discretion. Collaborative technologies over networks can help facilitate federated target development provided an established process governs methods and timelines for tasking and deliverables.

See JS J-2 Crisis Intelligence Federation Concept of Operations (CONOPs), and JP 2-01, Joint and National Intelligence Support to Military Operations.

f. **Joint intelligence preparation of the battlespace (JIPB)** produces an extensive database that targeting specialists use to prepare detailed analyses describing how attacking individual targets affect target systems. The intelligence products required for this analysis may include:

- (1) All-source intelligence collection (imagery intelligence [IMINT], SIGINT, MASINT);
- (2) GI&S (maps, charts, and mensurated points); and
- (3) Target materials, including TSAs, nodal system analyses, and targeting graphics.

For further information, refer to Appendix A, "Targeting Support Services and Products," and JP 2-01.3, Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Battlespace.

3. Target Validation

a. Target validation ensures **all targets meet the objectives and criteria outlined in the commander's guidance** (see Figure III-4). Certain questions should be considered during target validation:

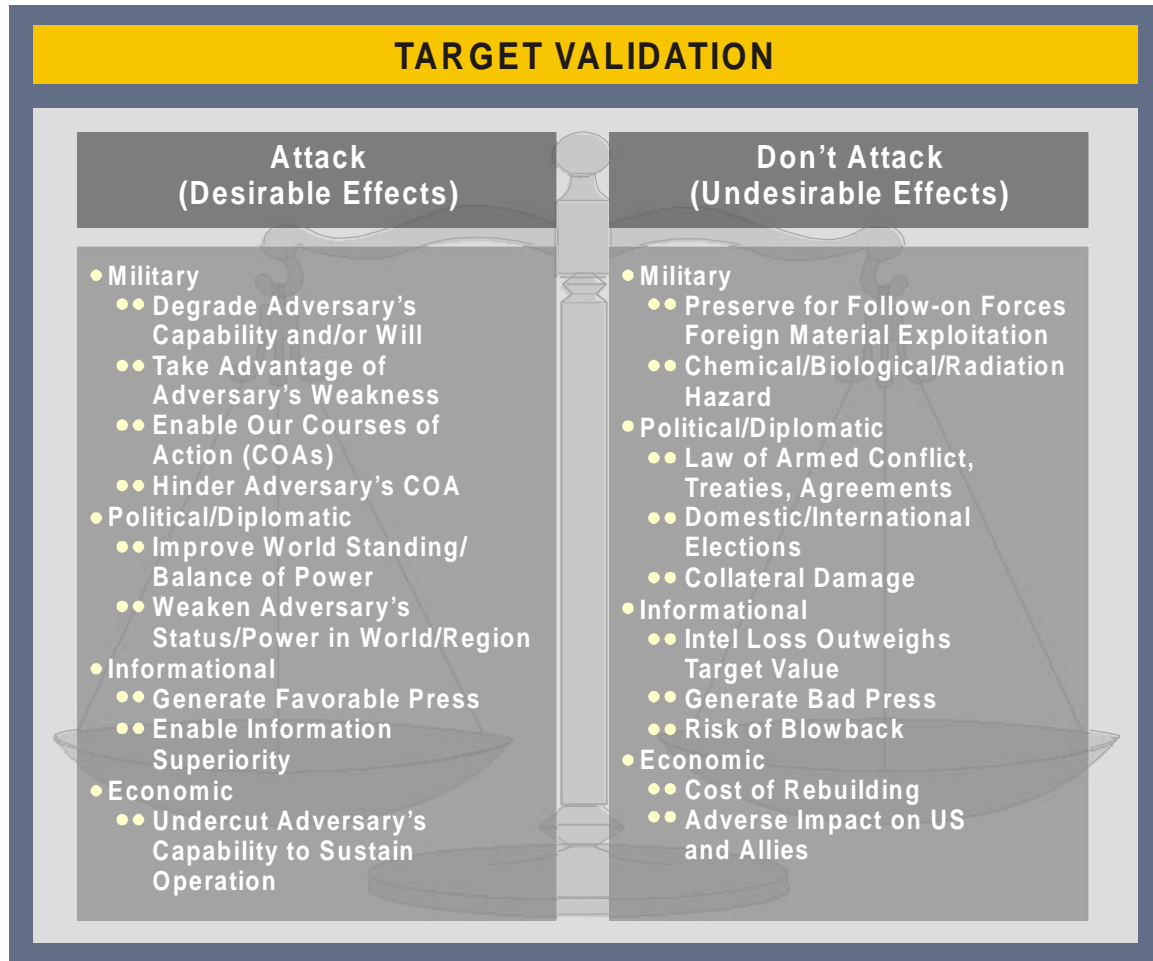


Figure III-4. Target Validation

(1) Does the target contribute to achieving one or more JFC objectives or supporting sub-tasks?

(2) Does the target comply with JFC guidance and intent? Is the target a lawful target? What are the LOAC and ROE considerations?

(3) Does the target contribute to the adversary's capability and will to wage war?

(4) Is the target operational?

(5) Are there any facilities or targets collocated with no-strike or restricted facilities?

(6) What is the relative potential for collateral damage or collateral effects, to include casualties? Consider collateral damage concerns in relation to LOAC, ROE, and commander's guidance.

(7) What psychological impact will operations against the target have on the adversary? On friendly forces or coalition partners?

- (8) What would be the impact of not conducting operations against the target?
- (9) Is the target environmentally sensitive or likely to generate environmental impacts?

b. The JFC's intelligence personnel, Staff Judge Advocate (SJA), planners, and other personnel are included in the target development process and they must be familiar with the combatant command's target validation process.

4. Nomination

The JTL is a consolidated list of selected targets considered to have military significance in a combatant commander's area of responsibility (AOR). National agencies, the combatant commander's staff, joint forces subordinate to the combatant commander, supporting unified commands, and components all nominate targets to the combatant commander for validation and approval (in some cases, national-level approval is required). Component commanders, national agencies, supporting commands and/or the JFC staff submit their target nomination lists (TNLs) for inclusion on the JIPTL to support JFC objectives, associated subordinate tasks, and priorities. TNLs are submitted to the JFC targeting representative. Once compiled, the draft JIPTL is normally forwarded to the joint targeting coordination board (JTCB) for coordination and final approval by the JFC. Once approved, the list is transmitted to components and appropriate agencies as the daily JIPTL. The JTCB may meet daily, or as often as required. Targets are also vetted against the no-strike list (NSL) and RTL at each successive level. Relief may be requested from the JFC for targets nominated to the JIPTL that are also on the RTL. When national level restrictions are imposed, SecDef or Presidential approval is needed and a specific process is followed.

See Appendix G, "Chairman of the Joint Chiefs of Staff Policies on 'Sensitive Target Approval and Review Process' and the Accompanying 'Collateral Damage Estimation and Casualty Estimation Methodology,'" for additional information on the STAR process.

5. Prioritization

Targets on the JIPTL are prioritized based on the JFC's objectives and guidance and the mutual support required between the joint force components. Once the JIPTL is consolidated, prioritized and deconflicted, it must be approved by the JFC or his designated representative, before the component commanders can use it to prepare their plans and orders. Intelligence supports this process by ensuring target information is complete and accurate, targets are clearly related to objectives, and the selection rationale is clear and detailed. This may include specifying which targets must be attacked as integrated targets — sets or individually — and which must be struck in sequence and which pose potential collateral damage concerns.

"If intelligence does its job, the end-state is successful targeting . . . readily found and accessible."

**Dr. Lewis S. Metzger,
Air Force Chief Scientist, January 2000**

6. Information Operations Considerations for Target Development

a. IO target development fundamentals do not differ from those of traditional target development. The traditional methodology of identifying target systems, components, and their critical elements remains valid. However, **there is a widening of the JIPB scope to take in information processing systems.** This expansion of the traditional concept of target systems will require an increase in the quantity and fidelity of intelligence collection. There is an additional requirement for technical and analytical expertise.

b. **Long lead times are usually required to fulfill IO-related collection requirements.** Target analysts must work to associate CNA capabilities with potential target vulnerabilities, and determine information gaps for those targets as early as possible. Furthermore, because of intense competition for scarce intelligence collection resources, stovepiped intelligence operations must be minimized and full data sharing must be coordinated among target analysts and planners working on these target sets.

c. Effective target systems analysis will discern all the dimensions of an adversary's information systems and their inter-relations. System dimensions include human factors, communications architecture, network topology, information flow and functionality, among others. Target intelligence specialists must seek to include these interrelated elements when analyzing processes/systems in order to identify their critical elements.

CHAPTER IV

INTELLIGENCE SUPPORT TO CAPABILITIES ANALYSIS AND FORCE ASSIGNMENT

“To fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy’s resistance without fighting. In the practical art of war, the best thing of all is take the enemy’s country whole and intact; to shatter and destroy it is not so good.”

Sun Tzu
The Art of War (c. 500 BC)

1. Overview

The capabilities analysis and force assignment phases of the joint targeting cycle are closely related. The primary purpose of capabilities analysis is to maximize the efficiency of employment of the JFC’s combat forces through the application of enough force to achieve the desired outcome while minimizing collateral damage effects. **The capabilities analysis phase is also referred to in the air targeting cycle as the “weaponneering” phase.** Although they are primarily operational level functions, capabilities analysis and force assignment functions may also be performed at the strategic and tactical levels of warfare. Estimates of the effectiveness of available forces and/or systems against various proposed targeting options assist in the JFC apportionment process and in subordinate component commanders force assignment decisions. During the execution phase, detailed, tactical-level capabilities analysis is used to optimize weapons delivery parameters to validate ordnance loads and support mission planning. **During the force assignment phase which follows, appropriate combat forces are selected to deliver the selected weapons to each target.**

2. Intelligence Role in Capabilities Analysis

a. **Overview.** The capabilities analysis phase of the joint targeting process involves the estimation of the most likely outcome resulting from the use of lethal or nonlethal capabilities against specific targets to achieve desired effects. **Its purpose is to weigh the relative efficacy of the available forces/systems as an aid to facilitating the JFC’s decision regarding which COAs to employ in operations.** These estimates build upon the analyses performed in target development. In particular, they expand on the information characterizing the physical and functional vulnerability of the target with a connecting thread of logic to the JFC’s objectives, guidance, and intent. The IC, including federated partners, plays a role in capabilities assessment by ensuring the target materials they provide include the estimative analyses required to make valid assessments (see Appendix C, “Weaponneering”). The intelligence provided in this phase is also used to refine collection requirements.

b. Weaponneering

(1) **Weaponneering is the process of determining the quantity of a specific type of lethal or nonlethal weapons required to achieve a specific level of damage to a given target.**

Weaponneering takes into account target vulnerability, weapons effect, munitions delivery accuracy, damage criteria, probability of kill, and weapon reliability. Weaponneering is conducted in both the third phase of the joint targeting process and within the time-sensitive targeting cycle. Weaponneering steps are detailed in Appendix C, “Weaponneering.”

(2) The Services, as well as the Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME), DIA, JWAC, and the DTRA, developed a number of quantitative techniques used to estimate weapon effectiveness and collateral damage risk. The JTTCG/ME develops analytical methods for measuring and predicting munitions effectiveness. It also produces a large body of scientifically valid data related to specific weapons, munitions, and appropriate targets. This group devised mathematical models, which enable weaponneers to predict the effectiveness of weapons against most significant targets. Inputs to these methodologies include factors such as target characteristics (size, shape, and hardness) and delivery parameters (altitudes, speeds, dive angles). Model outputs include the amount of force required to achieve specified damage levels in terms of stated damage criteria, which provides weapons effectiveness comparisons.

(3) **The JTL, JIPTL, and commander’s objectives and guidance provide the basis for weaponneering assessment activities.** Time constraints may preclude calculations of potential effects against all targets and should proceed in a prioritized fashion mirroring the target list. The JTTCG/ME publishes numerous documents and electronic products conducting methodologies in non-nuclear, kinetic weaponneering. Of particular interest for joint targeting purposes are the “Joint Munitions Effectiveness Manual (JMEM)/air-to-surface weaponneering system (JAWS),” the “Special Operations Target Vulnerability and Weaponneering Manual,” and the “JMEM surface-to-surface weapons effectiveness systems.”

3. Intelligence Role in Force Assignment

a. **Overview.** The force assignment process integrates previous phases of the targeting cycle and fuses capabilities analysis with available forces, sensors, and weapons systems. It is primarily an operations function, but requires considerable intelligence support to ensure ISR assets are integrated into the OPLAN. **Matching the components’ available forces/systems and ISR assets to the approved targets prioritized on the JIPTL is at the heart of total force assignment.** Thus the force assignment process provides the vital link between theoretical planning and actual operations.

b. Targeting personnel assist operations planners in balancing expected effects with available employment options when supporting the force assignment process. Their recommendations should reflect an objective assessment of the most appropriate capability to achieve the effect required to meet the commander’s objective. During this process, targeting personnel provide current target status, including BDA, effectiveness analysis and collateral damage estimates.

c. **Five General Steps in the Force Assignment Process.**

(1) **Consolidate target development, BDA and capabilities analysis results.** In this step, the targeting personnel assemble the necessary data from previous research. To make this complex data more useful to their operations counterparts, the targeting personnel must prepare summary files with worksheets on pertinent information collected on each potential target. Target files should contain four types of information: target development results, capabilities analysis (probability of damage [PD]), collateral damage analysis results, and attrition calculations.

See Appendix G, “Chairman of the Joint Chiefs of Staff Policies on ‘Sensitive Target Approval and Review Process’ and the Accompanying ‘Collateral Damage Estimation and Casualty Estimation Methodology’”.

(a) **Prepare Target Development Results.** The target development process produces extensive, detailed target folders and supporting products for each potential target on the JIPTL. While crucial for the overall joint targeting process, this mass of detail very quickly overwhelms the force assignment team unless it is distilled down into a summary containing only the essential information needed to perform this function. Targeting personnel prepare target worksheets summarizing the contents of the target folder. This summary should include the latest BDA information on the target and include the following: specific aimpoints, BE number, name, category code, O-suffix, installation coordinates, country code, significance or contribution to its target system, and how its destruction or degradation contributes to the JFC’s objectives. Additionally, the worksheets must contain a statement reflecting the target’s priority (in accordance with [IAW] the JIPTL), current status (BDA results), desired point or points of impact (DPIs) if applicable, and the associated precise coordinate, desired effect, and any potential collateral damage concerns.

(b) **Generate Capabilities Analysis Results.** During capabilities analysis, information on weapons effects estimates and damage criteria are typically arranged as an array using the following factors: forces, delivery systems, weapons fuzing and delivery tactics. The results from the capabilities analysis provide a series of PD calculations used to estimate levels of physical damage when dealing with lethal applications. Targeting personnel may also consider the effects of nonlethal applications on the target. The results of collateral damage analysis (IAW CJCS-approved collateral damage and casualty estimation [CE] methodologies) may be required for each DPI/weapon combination. The force assignment team will normally require several possible weaponeering solutions for each DPI on each target, arranged in order of effectiveness. Guidance usually requires collateral damage be minimized. Specific collateral damage results will need to be summarized for each DPI/weapon combination.

(c) **Produce Attrition Calculations.** Intelligence analysts provide data on the enemy defensive posture, capabilities, and intentions. Working with operational planners, attrition models are run to estimate the probability of the weapon system arriving at the target, and include probability of release or probability of arrival (PA). Other factors include maintenance failure, adversary defenses, and weather. Weaponeers should factor any attrition analysis/PA data into their PD calculations.

(2) **Assemble Data on Friendly Force Status, Factoring in Operational Constraints**

and Apportionment Guidance. Operations planners and their logistic counterparts assemble data on the current status and availability of friendly forces and munitions. The JFC approves specific guidance on how the military effort will be divided between different missions (apportionment). This affects how the force assignments team tasks dual or multi-role platforms, sequences force activities and directs force packages to operate in different parts of the battlespace. Other issues affecting force assignment include: maintenance status of combat and support assets, battle damage to equipment from previous missions, operator availability, munitions availability and location of stockpiles relative to combat assets. However, simply knowing what forces are available to be tasked does not give the complete operational picture. Operations planners are constrained by factors like weather, adversary operations, force protection, battlespace management issues, LOAC, and ROE constraints. Packaging and timing concerns for strike aircraft or operating areas for support assets, i.e., air-refueling aircraft, surveillance or intelligence assets also affects which targets can be attacked.

(3) **Assigning Forces to Specific Targets and Supporting Missions.** In this step, operations planners assign combat forces, ISR assets, and munitions to specific targets/aimpoints, develop force packages, assign missions to supporting forces, and resolve timing, sequencing and deconfliction issues. Targeting personnel support this process by providing prioritized recommendations for munitions and delivery systems for specific targets/aimpoints and may also specify delivery parameters, weapons fuzing, axis of attack, and assessment criteria. Operational constraints may require modification to targeting personnel's initial recommendations. Timing, sequencing of events, and interaction of combat forces with supporting assets becomes crucial in the crafting of an effectively executed plan or order. The operational characteristics of particular weapons system applied against a specific target may require adjustments to the overall plan or order. Often, targets are not attacked strictly in the priority order approved on the JIPTL. In some circumstances, it may be impossible to completely satisfy an objective issued by the JFC. Targeting personnel must be readily able to assist in evaluating the impact of these changes upon the entire targeting effort. As changes are made due to operational and special constraints (e.g., specific collateral damage restrictions) it is important to maintain a balance in achieving the commander's objective without inadvertently violating existing special constraints.

(4) **Present Joint Targeting Recommendations to the JFC for Approval.** The force assignment team also prepares a comprehensive briefing on the recommended plan explaining the rationale behind the operational decisions and target selection. If high priority targets cannot be attacked or objectives cannot be met, the planners must inform the component commander who modifies the objective or accepts the fact that the desired end state for a particular objective is not fully achievable. If necessary, the component commander can seek the required modifications to objectives, guidance, or prioritization from the JFC via the JTCB process. Normally, a summary of the OPLAN resulting from the force assignment process, once approved by the component commander, is briefed to the JFC as part of the JTCB process. Generally, operations and intelligence staffs work together to produce and brief the recommended plan.

(5) **Issue Tasking Orders to Forces.** Once the plan developed by the force assignments team is approved, tasking orders to the assigned combat and support forces must be prepared and

issued. It is important to remember tasking for intelligence organizations supporting mission planning and CA during this phase.

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CHAPTER V

INTELLIGENCE SUPPORT TO MISSION PLANNING AND FORCE EXECUTION

"He who is skilled in attack flashes forth from the topmost heights of heaven, making it impossible for the enemy to guard against him. This being so, the places that he shall attack are precisely those that the enemy cannot defend."

Sun Tzu
The Art of War (c. 500 BC)

1. Overview

The mission planning and force execution phase of the joint targeting cycle begins after the component commander approves force execution of the targeting plan, developed during the force assignment phase. **Execution phase functions are primarily carried out at the operational and the tactical levels.** At the operational level, the component commander's staff performs C2 functions, monitors the execution of the approved targeting plan, and directs changes as required by battlespace developments. At the tactical level, the tasked units perform detailed mission planning tasks and conduct their assigned missions under the approved targeting/operations plan. At the operational level, the JFC's staff utilizes information provided by the components to maintain macro-level awareness of ongoing operations. Intelligence continues to play a critical role in three areas throughout the force execution phase: supporting mission-planning functions, operational level C2, and CA at all levels. **During force execution, targeting personnel at the operational level monitor the evolving combat situation and ensure intelligence is available for last-minute substitutions, immediate or TST, future targeting and reattack recommendations (RRs), and CA.** Additionally, analysts will update and reassess the collateral effects associated with chemical, biological, radiological, nuclear and high yield explosives (CBRNE) targets using the best available weather information. During tactical mission planning, target intelligence analysts supply the tasked combat units with updated intelligence data on the targets, target materials, and GI&S. The extent and degree to which intelligence informs the mission planning and force execution phases varies across operations, Services and units.

For further information on Joint Force Mission Planning and Execution processes, see JP 3-60, Joint Doctrine for Targeting, Appendix C, "Integrating Component Targeting Processes."

2. Mission Planning

Mission planning begins after the component commander directs force execution, and **is based upon missions directed in the component commander's published tasking order.** Once force execution is directed, intelligence provides accurate and complete target intelligence data to the responsible planners; supplies the tasked unit with the target data necessary to execute the mission; and ensures CA preparations are made at appropriate levels.

a. **Support for Mission Planning.** The component targeting staff provides tactical level planners with intelligence-derived targeting data for orders issued against specific targets. This intelligence data consists of target ID nomenclature, desired point of attack, a description of the specific objective and intended effect (desired level of damage), as well as collateral damage concerns or restrictions. Additional intelligence products tailored to specific unit-level planning requirements may also be provided.

(1) **Basic Target Identification Elements.** All targets should be identified with a unique reference number. For fixed targets, targeting personnel must include the target's BE number. Mobile targets and fielded forces are identified by a unit ID number per guidance from the JFC. The functional classification code, modernized integrated database (MIDB) installation or facility name, and country code should be used to ensure accurate target ID. Targeting personnel must also provide coordinates and the source (e.g., World Geodetic System [WGS]-1984), accuracy (e.g., plus or minus 300 feet horizontal; plus or minus 100 feet vertical), or validity (90 percentile) of the coordinates.

(2) **Critical Elements/Aimpoint (DPI/Desired Mean Point of Impact [DMPI]).** Critical elements are those elements which, if attacked, will achieve outcomes that support the commander's objectives. The DPI is the desired location of impact for individual weapons, and is associated with precision-guided weapons or a single, non-precision weapon. A DMPI, on the other hand, is the aimpoint associated with sticks of multiple non-precision or cluster weapons. This data is normally generated by the component targeting staff, IAW JFC targeting guidance, and provided to the executing unit. In some cases, specific aimpoints, weapons, or other specific employment restrictions are downward directed from the subordinate JFC, combatant commander, Secretary of Defense, or even from the President. This amplifying guidance is clearly articulated in the component commander's tasking order to preclude confusion at the unit level or unauthorized changes to the targeting plan. In other cases, the component commander may leave weaponeering decisions or even aimpoint selection to the discretion of the unit-level commanders. In this instance, unit level targeting analysts and operations planners must ensure they fully understand the JFC's and component commander's objectives as well as any guidance or restrictions pertaining to their target. Close coordination between the component targeting staff and unit level targeting personnel is essential to ensure success.

(3) **Description of the Objective and Desired Level of Damage.** The component targeting staff must provide the executing unit with the target objective and the level of damage desired, IAW JFC targeting guidance.

b. **GI&S Support to Executing Units.** The JFC targeting staff must ensure subordinate component commanders and their units have the required target materials and GI&S products to carry out their assigned missions. Intelligence and operations personnel use target materials (TMs) and GI&S for target ID, weaponeering, attack planning, CA, and as a common reference graphic. Targeting personnel must identify potential requirements as early as possible so TMs are available to executing units.

c. **Support for CA at the Tactical Level.** Unit level intelligence personnel have a critical role in CA. Post-mission debriefing reports, or mission reports (MISREPs), together with any associated weapon system video data, are crucial to making timely and effective CA. The time to begin thinking about CA is **not** after force execution. Unit level planners must be prepared for post-mission reporting and understand how they are expected to disseminate their products. The component commander's staff must implement procedures to ensure rapid consolidation, exploitation, and dissemination of the unit MISREPs.

d. Early in the mission planning phase of a crisis or conflict, the campaign planner must take into account the possible application of non-kinetic missions. Non-kinetic weapons may be the weapons of choice to minimize collateral damage and casualties and may be used prior to kinetic weapons. Non-kinetic mission planning require expanded support tools and new types of TMs. The traditional basic target graphic (BTG), for example, is not sufficient for CNA planning.

3. Force Execution at the Operational Level

During force execution, targeting personnel on the component commander's staff monitor ongoing operations, attack results, identify emerging targets or TSTs IAW JFC guidance/priorities, and reattack requirements. Targeting personnel within the current operations cell must maintain situational awareness of targets being attacked as well as the status and position of friendly forces. They must also coordinate to ensure that appropriate ISR assets are integrated into the operation. In conjunction with this, targeting personnel must understand the objectives of the ongoing operation, the commander's intent, and the scheme of maneuver, and be fully cognizant of the capabilities and unique operational requirements of all the components. Support to force execution is a demanding targeting job. It requires the real time performance of all the functions associated with targeting.

For additional information refer to JP 3-60, Joint Doctrine for Targeting, JP 3-05.2, Joint Tactics, Techniques, and Procedures for Special Operations Targeting and Mission Planning, JP 3-30, Command and Control for Joint Air Operations, JP 3-31, Command and Control for Joint Land Operations, JP 3-32, Command and Control for Joint Maritime Operations, and JP 5-00.1, Joint Doctrine for Campaign Planning.

"Mere tonnage of explosives is a fallacious criterion. In the final analysis, the victories are achieved because of the effect produced, not simply because of the effort expended."

**Gen. Hansell memo to Gen. Arnold
26 July 1944**

a. **Target Awareness.** Targeting personnel supporting force execution must be knowledgeable of the JIPTL, current operations and objectives across the entire joint force, and have the latest CA on each target. Targeting personnel must be thoroughly qualified

in understanding target vulnerabilities and their susceptibility to the effects of friendly force weapons.

b. **Joint Fires Support.** Joint fires are produced during the employment of forces, from two or more components, in coordinated action toward a common objective. Liaisons from each component provide the expertise and coordination route to pass emerging targeting information or support. This maximizes available assets and recommendations to effect the evolving situation.

(1) **Weapons Effects.** Targeting personnel monitoring ongoing operations are required to recommend the best available asset to apply against emerging targets. Collateral damage concerns are assessed IAW JFC and component commander guidance. The targeting personnel must also have a thorough understanding of the weapons capabilities and availability of all joint force components, to include nonlethal assets (e.g., EW).

(2) **Support Requirements.** Support requirements are the responsibility of operations and logistic planners. Targeting personnel should coordinate closely with both operations and logistic cells when developing weapon-target pairing recommendations. Support considerations may drive operational decision maker requirements for multiple weaponeering recommendations. However, an appreciation of the support requirements helps targeting personnel provide more effective recommendations for weapon-target pairing. Support requirements are not limited to weapons system ranges, or force protection requirements (i.e., suppression of enemy air defense support, aerial refueling), but may also include how much time is required to change a direct fire mission or ordnance load. Targeting personnel should also be aware of any additional guidance governing weapons expenditures, which may be driven by LOAC concerns, by consideration of weapon replenishment rates, or by the logistic effort required to keep the weapons in stock.

c. **Situational Awareness.** In order to maintain a current picture of a dynamic battlespace, **targeting personnel must be familiar with ongoing operations.** This includes the location of friendly and adversary forces, boundaries, fire support coordinating measures, airspace coordination areas, engagement zones, target locations and all restricted and prohibited areas, whether based upon ROE, LOAC considerations, or other restrictions. Targeting personnel also must understand the relationship among the various targets and attack objectives.

(1) **Effect on Operations.** Before recommending what assets to divert against an emerging target, targeting personnel need to comprehend and advise on what effect this change will have on the ongoing operation.

(2) **Required Coordination.** If a weapons platform is diverted from its original target, the current operations targeting analyst must inform the appropriate target planners so they can place the target on future JIPTLs as required. If a particular high priority target is uncovered during the execution phase, additional missions may need to be diverted from lower priority efforts. When forces are diverted, intelligence collection management personnel must also be notified so a collection mission is not wasted and CA teams notified so accurate reporting can occur.

d. **Planning for CA at the Operational Level.** At the operational level, **targeting personnel should plan for CA during the target development, capabilities analysis, and force assignment phases of the joint targeting cycle.** One of the challenges of the execution phase is to ensure the preparations for CA made during the planning phases of the joint targeting cycle are carried throughout the course of the execution phase. This includes ensuring intelligence and operations organizations tasked to perform CA functions — BDA and munitions effectiveness assessment (MEA) — receive the appropriate tasking orders and any updates or changes made during the execution period. This is especially crucial for any federated intelligence organizations reporting BDA, since they are normally located outside the joint area and may have difficulty maintaining detailed situational awareness of the dynamic combat operations. Additionally, the component level CA team must provide rapid updates to the joint force staff throughout the course of the execution phase.

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CHAPTER VI

INTELLIGENCE ROLE IN COMBAT ASSESSMENT

"So ends the bloody business of the day."

Homer

1. Overview

a. CA is the final phase of the joint targeting process and is defined as the determination of the overall effectiveness of force employment during military operations. **CA helps the geographic combatant commander, the subordinate JFC, and subordinate commanders understand how the campaign is progressing and shape future operations.** CA consists of BDA (see Appendix E, "Battle Damage Assessment Procedures," for expanded tactics, techniques, and procedures [TTP]), MEA, and results in RR (see Figure VI-1). Final products include assessment of success in meeting JFC objectives and recommendations to modify objectives or guidance, if needed. Planning for CA should begin prior to force employment.

b. CA effectively "closes the loop" and feeds the other elements of the targeting process. To determine the effectiveness of an operation, three questions need to be answered. First, were the desired outcomes achieved at the target and with respect to the larger target system (BDA)? Second, did the forces assigned perform as expected (MEA)? Finally, if the desired outcomes were not achieved, or if the employed forces did not perform as expected, what should be done

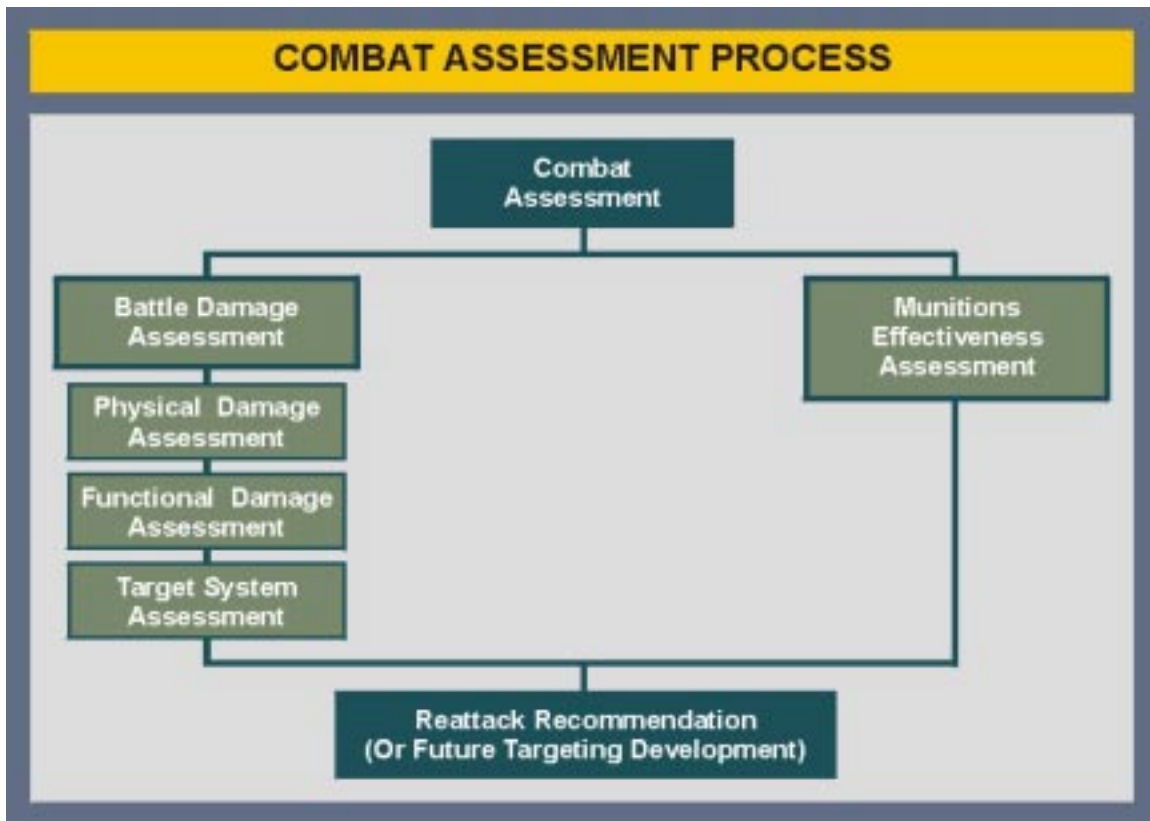


Figure VI-1. Combat Assessment Process

now (RR)? From the answers to these questions, an assessment can be made as to the overall effectiveness of the forces assigned in combat and future targeting options can be recommended.

c. **The combatant command and the subordinate JFC should establish a CA management system and combine the expertise of operations and intelligence staffs.** Targeting personnel provide objective assessments to planners, gauging the overall impact of military operations against adversary forces as well as provide an assessment of likely adversary reactions and counteractions. A comprehensive CA program greatly assists the JFC in determining future targeting plans and operations.

2. Battle Damage Assessment

a. BDA is a timely and accurate estimate of damage or degradation resulting from the application of military force, either lethal or nonlethal, kinetic or non-kinetic, against a target. BDA is primarily an intelligence responsibility with required inputs and coordination from operations and can be federated throughout the IC. **BDA is composed of physical damage assessment phase, functional damage assessment phase, and target system assessment phase.** It answers the question: “Were the strategic, operational, and tactical objectives met as a result of the forces employed against the selected targets?”

b. **The most critical ingredient for effective BDA is a comprehensive understanding of the JFC’s objectives and how they relate to a specific target.** For BDA to be meaningful, the JFC’s objectives must be observable, measurable, and obtainable. The JFC should provide a comprehensive plan, together with an intelligence architecture, to support BDA. This plan must integrate ISR resources and timeliness to effectively/efficiently support timely BDA. Pre-conflict planning requires collection managers with a thorough understanding of collection systems capabilities (both organic and national) as well as their availability. Targeting personnel should also have a basic understanding of the collection systems supporting the operation.

c. During combat, BDA reporting should follow standardized formats and timelines, and be passed to command planners and force executors immediately. The BDA Quick Guide produced by DIA serves as a summary reference on general BDA information, including physical and functional damage assessment definitions. Another useful guide, the DIA BDA Reference Handbook, contains detailed technical information to support BDA analysis during military operations and to assist in providing basic training for BDA team members.

d. The three phases of BDA are described below:

(1) **Phase 1 — Physical Damage Assessment.** A physical damage assessment is an estimate of the quantitative extent of physical damage (through munitions blast, fragmentation and/or fire damage effects) to a target element based on observed or interpreted damage. This post-attack target analysis should be a coordinated effort among combat units, component commands, the subordinate joint force, the combatant command, national agencies, supporting commands, the NMJIC, and the primary theater BDA cell. Some representative sources for data necessary to make a physical damage assessment include the air tasking order (ATO) or

master air attack plan, MISREPs, aircraft cockpit video (ACV), weapon system video (WSV), visual/verbal reports from ground spotters or combat troops, controllers and observers, artillery target surveillance reports, SIGINT, HUMINT, IMINT, MASINT, and open-source intelligence (OSINT).

(2) **Phase 2 — Functional Damage Assessment.** The functional damage assessment is an estimate of the effect of military force to degrade or destroy the functional/operational capability of a target to perform its intended mission. Functional assessments are inferred from the assessed physical damage and all-source intelligence information. This assessment must include an estimation of the time required for recuperation or replacement of the target's function. BDA analysts need to compare the original objective for the attack with the current status of the target to determine if the objective was met.

(3) **Phase 3 — Target System Assessment.** Target system assessment is a broad assessment of the overall impact and effectiveness of military force applied against an adversary target system relative to the operational objectives established. These assessments may be conducted at the combatant command or national-level by fusing all Phase 1 and 2 BDA reporting on targets within a target system.

e. The results of the BDA process are provided in three phases of BDA reports (BDAREPs) described below. Refer to Appendix E, "Battle Damage Assessment Procedures," for details on BDAREPs.

(1) **Phase 1 — Physical Damage Assessment.** Phase 1 BDA reporting contains an initial physical damage assessment of hit or miss based usually upon single source data. Reporting timeline: 1-2 hours after receipt of information. Reporting format: structured free text, United States message text format (USMTF), or voice report during system connectivity problems.

(2) **Phase 2 — Functional Damage Assessment.** Phase 2 BDA reporting builds upon the Phase 1 initial report and is a fused, all-source product addressing a more detailed description of physical damage, an assessment of the functional damage, inputs to target system assessment (Phase 3), and any applicable MEA comments. When appropriate, a reattack recommendation is also included. Reporting timeline: 4-6 hours after receipt of information. Reporting format: USMTF.

(3) **Phase 3 — Target System Assessment.** Phase 3 BDA reporting contains an in-depth target system assessment. When appropriate, a reattack recommendation and/or targeting nomination is also included. This report combines the analyses from the Phase 1 and 2 reports, plus all-source information. Reporting timeline: daily. Reporting format: structured free text (if sent via USMTF, use the general free text narrative format).

f. **Federated Battle Damage Assessment.** Federated BDA allows the supported combatant commander to establish pre-planned partnerships to share responsibilities and leverage appropriate expertise from outside the theater. The combatant commander may request federated BDA support from multiple commands and agencies through the JS J-2. Upon approval, each agency

in the partnership will be assigned specific targets, either by individual target sets/categories or by geographic region. The JS J-2T and J-2O will work with the requesting command to form the best federated partnership based on available resources and capabilities.

See the JS J-2 Crisis Intelligence Federation Concept of Operations (CONOPS) and JP 2.01, Joint and National Intelligence Support to Military Operations.

3. Munitions Effectiveness Assessment

MEA is an assessment of the military force applied in terms of the weapon system and munitions effectiveness to determine and recommend any required changes to the methodology, tactics, weapon systems, munitions, fuzing, and/or delivery parameters to increase force effectiveness. MEA is conducted concurrently and interactively with BDA assessments. MEA is primarily the responsibility of component operations, with inputs and coordination from the IC. MEA targeting personnel seek to identify, through a systematic trend analysis, any deficiencies in weapon system and munitions performance or combat tactics by answering the question, “Did the forces employed perform as expected?” Using a variety of intelligence and operations inputs, to include Phase 2 functional damage assessments, operators prepare a report assessing munitions performance and tactical applications. The report details weapon performance against specified target types. This information could have a crucial impact on future operations and the quality of future BDA. MEA can continue years after the conflict using archived data and information collected by on-site inspections of targets struck during the conflict.

4. Reattack Recommendation (or Future Targeting Development)

BDA and MEA provide systematic advice on reattacking targets, culminates in RR and future targeting, and thus guides further target selection (or target development). Recommendations range from attacking different targets to changing munitions and/or delivery tactics. The RR and future targeting is a combined operations and intelligence function and must be assessed against the relative importance of the target to the targeting effort/campaign being run.

5. Information Operations Considerations for Combat Assessment

a. IO employment methods differ from traditional force application; therefore, targeting analysts performing CA sometimes use different mechanisms to measure the weapons effect on a target and the resultant effect in achieving the objective. Targeting analysts performing CA should work very closely with operations personnel and members of the IO cell to ensure all potential CA indicators are evaluated.

b. **The methodology for IO BDA uses a change assessment, functional damage assessment, and target system assessment to determine the effectiveness of the weapons and tactics employed to achieve the stated objective.** Change assessment is based upon observed or interpreted battle damage indicators at selected monitoring points. It uses a systematic

understanding of complex target systems, and intelligence capabilities identify and assess changes associated with the target. The quantitative extent of change assessment is used to assess the resulting functional damage. This assessment is not limited to the intended target system, and may even encompass several systems in order to ascertain and justify the assessment results. IO MEA and RR are similar to traditional CA processes.

c. Unlike traditional collateral effects, it is possible that neither intended nor unintended effects of IO will be directly observable. Specialized sensors may be required to detect results. Therefore, a more detailed analysis of the entire target system is warranted.

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APPENDIX A

TARGETING SUPPORT SERVICES AND PRODUCTS

1. Overview

Target products are graphic, textual, tabular, digital, video, or other physical and quantitative presentations of information and intelligence designed to support targeting operations. These products locate, identify, and describe potential targets with enough accuracy to support the decision to attack and execute the mission. They are also used for training, planning, and evaluating operations. National agencies, commands, and combat units produce a myriad of TMs to support war planning and warfighting. The JFC and component personnel rely predominantly on the combatant command JIC, DIA, and NIMA to provide the necessary targeting-related products. This appendix discusses the target support products and services available to assist joint targeting activities. It specifically describes NIMA products and services, as well as the air target materials and target material programs (TMPs). Finally, it concludes with a summary of databases frequently used for conducting target planning and BDA.

2. World Geodetic Systems

A wide variety of imagery and GI&S products are available to targeting personnel at the combatant command, subordinate joint force, and unit level to support combat operations. In order to ensure targeting personnel can easily relate information from such a wide variety of products, NIMA provides and maintains the WGS 84, a single, common, accessible 3-dimensional coordinate system with a mathematical reference surface used to calculate coordinates and reference geospatial information. One of the principal purposes of a WGS is to eliminate local horizontal geodetic datums, but until a global datum is accepted, implemented, and used worldwide, local datums will still exist. Transformations between local datums and WGS are required and are provided and maintained by NIMA. The navigational, strategic, tactical, and relay global positioning system (GPS), which is becoming the primary navigation tool for land, sea, and air operations, is designed to read coordinates in several datums, including WGS.

3. Target Materials Programs and Products

Under the auspices of the Military Target Intelligence Management System, the Target Materials System consists of a series of programs designed to facilitate tasking, production, and dissemination of intelligence and topographic-based products used by operational forces and planners to support targeting requirements. Those products with a wide applicability have been organized into specific programs under assigned managers to maintain product standardization and to facilitate production. Each TMP manager provides centralized oversight/management supporting the Joint Intelligence/Analysis Centers or other organizations responsible for the actual production. These managers coordinate production efforts, ensure standardization of products, and aid in the development of improvements for these programs.

See DIAR 57-24, US/Allied Target Materials Program, for guidance on production criteria and additional details about TMPs.

a. **Target Materials Program.** Program Manager: JS J-2T/Target Materials Program Office. Product(s): The primary TMs produced today are consolidated into one product, known as the core target material (CTM). The CTM provides the minimum core requirements, which have been deemed essential to support the operational users of TM's. The CTM, a cross between the old BTG and the quick response graphic (QRG), is designed to be the standard product to be incorporated into the automated/electronic target folder (A/ETF). As the CTM within the A/ETF, the CTM has the ability to be expanded to meet specific command or system requirements. Additional information such as that contained in any of the previously produced TMs (e.g., radar target graphic [RTG], infrared target graphic [ITG], and seasonal target graphic [STG]) can readily be placed into the A/ETF. Finally, the training target material (TTM) is built to CTM standards. The TTM adheres to real-world operational standards; therefore, it enables operators to "train as they fight."

(1) **Governing Directive:** DIAR 57-24, *US/Allied Target Materials Program*.

(2) **Producers:** JICs, Air Intelligence Groups, JAC, and selected allied producers.

(3) **Media:** Softcopy, compact disk, and hardcopy if required to support operational requirements.

(4) **Distribution:** CTMs are distributed to US and Allied forces and planners with a need to know. Requests for distribution should be sent to the combatant command responsible for the geographic AOR by the requestor through the requestor's chain of command. The TTM will be distributed on a limited (as required) basis.

b. **Legacy Target Materials.** The following TMs are being replaced by the CTM, but remain available for use in target planning and training for several years.

(1) **Basic Target Graphic.** The BTG was the basic, general-purpose imagery-based product used to delineate and to describe the elements of a fixed installation to support a wide range of target-related functions, including mission planning and execution, training, weaponeering, BDA, and other elements. The BTG provided a photographic database divided into two sections: the graphic page, which showed the target facility; and the text page, which provided detailed information on the target. This all-source information was derived from imagery analysis, general intelligence data, MASINT analysis, and GI&S data. BTGs could consist of several graphic pages to provide more detailed visual references for TM users.

(2) **Operational Target Graphic (OTG).** An OTG was a low volume, high detail target graphic, built to help locate hard to find targets. The OTG provided six mandatory images to include 15, 5-8, 1, and <1 nautical mile overviews, as well as individual close-ups of each functional area, radar, and/or infrared overviews.

(3) **QRG.** When target graphics were required during emergency or crisis situations, it was often necessary to modify the production standards to provide a QRG. Modifications were made by the responsible combatant commander, who authorized production of QRGs that

use only selected requirements in the annotations and textual description, or that eliminated all annotations except basic ID of target components.

(4) **Supplemental Graphics.** Supplemental graphics could be added to the BTG when required. They included the following:

(a) **RTG, ITG, and STG.** These graphics provided alternative types of coverage to facilitate effective targeting and mission planning efforts against certain targets. Production was based on the targets validated by the combatant commander.

(b) **Hard Target Graphic (HTG).** This graphic provided more detailed targeting information on hardened targets and target components than normally provided in a BTG. HTG production will continue as a component in the CTM. HTGs are produced on those targets validated by the combatant commander and documented in the TMs production document. Based upon command requirements, physical vulnerability assessment data and graphics typical in an HTG will be produced for appropriate database facility records on designated information systems.

(c) **Enhanced Target Graphic.** This graphic contained expanded information on selected components of large, high-priority, complex targets that required more detail than provided in a BTG. They were produced on targets required by the combatant command commander or JFC.

c. **Tactical Target Positioning Data.** NIMA derives coordinates and elevations for targets and navigation points as requested by DOD elements. NIMA identifies the requested feature on selected source materials and forwards the data to the appropriate TM producer in the specified format. The targeting community's geocoordinate formats are presented in degrees, minutes, and thousandths of a minute, or degrees, minutes, seconds, and hundredths of a second. Datum reference and accuracies will also be included.

4. NIMA Missile/Air Target Materials Program

The NIMA Missile/Air Target Materials Program (M/ATMP) provides geospatial and IMINT information to support precision strike planning and execution. This program includes materials required for GPS, visual, infrared, and radar aided strike operations and planning. Selected NIMA, DOD, and Allied producers prepare both hardcopy and digital materials. The M/ATMP consists of the following products:

a. **Aeronautical Information** includes Table Formatted Aeronautic Data Set (TFADS), Special Aeronautical Information Request data/graphics, Annotated Airfield Images, and Force Protection Graphics. The graphic products are keyed to the data in TFADS, which contains the complete set of reporting fields for MIDB plus additional fields.

b. **Aim Point Graphic (APG)** is an annotated image with WGS 84 coordinate, mean sea level elevation, and descriptive data for use in the worldwide Aim Point navigation database.

This database contains radar, infrared, and visually significant features used for navigation, including initial points, final update points, fix points, and offset aiming points. APGs are used by Air Wings for mission planning and operations. The graphic product can be carried on board the aircraft and is used extensively by AV-8B, B-1, B-2, B-52, C-130, F-15, and F-16 aircraft. These products are available via the NIMA Image Product Library (IPL).

c. **Controlled Image Base** is a seamless dataset of orthophotos made from rectified grayscale aerial images, offered in 1, 5 and 10 meter resolutions. This product supports mission planning functions, but is not to be used for targeting.

d. **DPPDB** is a deployable set of geodetically controlled images covering a specified area together with support data and a digital map index. The DPPDB enables customers to derive the precise latitude, longitude, and elevation of **identifiable** features within the database while operating within a digitally based workstation. This product supports the accuracy necessary for targeting including the application of precision-guided munitions.

e. **Facility Reference Point Graphic** supports strategic targeting by depicting the authoritative **functional** outlines and reference points for facilities of interest to the targeting community. Additionally, facility location information is passed to the MIDB and the national target base. These products are available via the NIMA IPL.

f. **Foundation Feature Data (FFD)**. FFD is a digital **geospatial** information framework of data which supports planning and initial operations. The data is at a scale of approximately 1:250,000, and the delineating feature information is in 7 thematic coverages.

g. **Gridded Products**

(1) **Gridded Area Photo** is a geodetically controlled image map of a specified airfield or other area, rectified to remove distortions. It contains map projection based upon WGS 84, which provides acceptable data to initialize aircraft inertial navigation systems or other mission support functions.

(2) **Gridded Installation Photograph (GIP)** is an image product with an alphanumeric grid reference system with a known spacing and geodetic coordinate tick marks. Additionally, precise geodetic data is supplied for a reference point annotated on the image. It is orthorectified to remove terrain distortion. The GIP is an air/ground coordination tool used to support special operations (SO) and other air and ground support missions.

(3) **Gridded Reference Graphic (GRG)** is an orthorectified image map or set of image maps with a Military Grid Reference map projection and a geodetic reference point on each image. The GRG supports SO.

h. **Mensurated Point Graphic** can be used as an interim targeting product with mensurated points or as a finished product with DMPIs annotated and referenced to a specific BE, Category and O-suffix.

i. **Mission Specific Data Set (MSDS).** MSDSs provide a combination of NIMA information tailored to unique customer requirements. The data may be custom produced for a requirement or assembled from NIMA's data warehouse of imagery, IMINT and geospatial information. The data can be fused into views or perspectives at multiple scales in support of special targeting requirements and can be attributed or enhanced by the customer with additional information.

5. Frequently Used Databases and Publications for Target Planning and BDA

a. **MIDB** is the Department of Defense's authoritative, all-source repository of worldwide general military and targeting intelligence. MIDB information is maintained in support of the combatant commands, Services, combat support agencies, United States Government agencies, and international organizations. The MIDB's standardized database architecture provides the infrastructure for data exchange between intelligence and operational consumers from the national to tactical levels. MIDB data provides a baseline source of intelligence on installations, military forces, population concentrations, C2 structures, significant events, and equipment in addition to target details.

b. **MIDB Standard Operating Procedures (SOPs).** The MIDB SOPs provide detailed production requirements and procedures for maintaining information in the MIDB on facilities and orders of battle at each of the production levels (comprehensive, standard, basic, and minimal). The MIDB SOP replaces the Geographic Installation Intelligence Production Specifications series of documents.

c. **Standard Coding System Functional Classification Handbook** provides a list of the functional classification (category) codes and their descriptions. A category code is composed of five numeric characters and is used to identify a function performed at a facility.

d. **Point Reference Guide Book** provides guidance for selecting reference points needed to derive geographic coordinates. Reference points locate critical functional elements of installations in certain target categories. Each photograph or sketch depicts a sample installation, annotates the reference point at the defined location, and explains briefly how to find the reference point.

e. **Physical Vulnerability Data Sheets** provide information about facilities whose vulnerability or susceptibility cannot be accurately coded.

f. **BDA Quick Guide and BDA Reference Handbook** are DIA produced documents and the DOD standard reference for the assessment of battle damage.

g. **OPLANs Appendices** tasks units to support specific operations contained in the installation target list. The installation list allows a unit to obtain the TMs needed for mission planning and aircrew studies of specific targets.

h. **National exploitation system (NES)** is the imagery community's interface with the MIDB. NES supports the dissemination, exploitation, and exploitation support data processes. NES is the repository for imagery target reports, topic reports, and cables. NES replaces advanced imagery requirements exploitation system (AIRES) lifecycle extension, the national data systems, and the advanced imagery requirements exploitation system.

i. **Requirements Management System** is a system used to perform imagery requirements management data processing.

j. **MASINT Requirements System** is a system used to provide MASINT requirements management data processing.

APPENDIX B

TARGET DEVELOPMENT EXAMPLE CHECKLIST

1. Receive commander's guidance and measures of merit.
2. Develop targeting objectives.
 - a. Develop targeting objectives as they pertain to each target system.
 - b. Coordinate with IO cell to deconflict and synchronize targeting objectives.
3. Conduct a review of available targeting information on the targeted country.
 - a. Review the following targeting sources.
 - (1) TSA.
 - (2) A/ETFs.
 - (3) Current TM products, e.g., CTMs, other Service-specific TMs.
 - b. Review MIDB for baseline information.
 - (1) Standard facility fields (BE, category code, O-suffix, facility name).
 - (2) Date of information.
 - (3) Remarks (provides description that should be cross-checked with other sources).
 - (4) Coordinates (verify Datum).
 - c. Compare to other databases or imagery files.
 - (1) AIRES life extension.
 - (2) National data systems.
 - (3) NES.
 - (4) Demand, Driven, Direct, Digital, Dissemination (also known as "5D").
 - (5) IPL.
 - (6) Imagery Exploitation Support System.

- d. Review other functional intelligence products.
 - (1) Military Capabilities Study.
 - (2) Topical studies (example: Threat to Air Operations — NAIC).
- e. Review single source information.
 - (1) Verify with additional sources.
 - (2) Review reliability of original source.
 - (3) Submit for additional intelligence collection.
 - (4) Do not add to target list until additional sources confirm target function and location.
- f. Review open-source information.
 - (1) Review in-house sources, where available.
 - (2) Request information through:
 - (a) Defense Attaches.
 - (b) Regional Survey Teams.
 - (c) Other.
- g. Compare above sources to ensure target information is consistent. If discrepancies, exist that could result in misidentification of a target, review the original source material or submit for additional collection.
- 4. Coordinate with theater and national analysts.
 - a. Determine the political/psychological impact of targeting country.
 - b. Determine the political/psychological impact of targeting a specific target system.
 - c. Determine what type of facilities should be placed on the no-strike target list (and why).
 - d. Validate analysis with area experts.
 - e. Validate currency/quality of intelligence.
 - f. Coordinate with JS J-2T to vet the target to the IC.

5. Prepare/review NSLs and RTLs.
 - a. NSL: Identify and accurately locate facilities IAW LOAC standards (e.g., hospitals).
 - (1) Coordinate with all source military intelligence analysts.
 - (2) Coordinate with community analysts, including CIA.
 - (3) Coordinate with SJA.
 - (4) Ensure no-strike targets are accurately identified in MIDB. Task responsible producer to update sensitive facilities in MIDB, if necessary.
 - b. RTL: Identify targets that have been restricted or limited from attack based on their current or potential operational or intelligence value to friendly forces.
 - (1) Coordinate with JTF staff.
 - (2) Coordinate with component staffs.
 - c. Changes: Task analysts and responsible producers to inform immediately when changes or additions are made.
6. Make preliminary target recommendations.
 - a. Verify each target meets the stated objective.
 - b. Cross-check against the NSL/RTL.
 - c. Determine the recuperability of the target.
 - d. Determine the political, economic, or military consequence of striking the target then submit to DIA to coordinate political/military assessment (PMA) within the IC.
 - e. Submit to intelligence collection agencies (CIA, DIA/DHS, CMO, NSA) for estimate for gain/loss analysis.
 - f. Where appropriate, consult agencies which have vital interests in the targeted facilities.
 - g. Deconflict with IO cell.
 - h. Ensure targets are accurately located on overhead imagery and confirmed by more than one source.
 - i. Establish BDA collections considerations.

7. Complete collateral damage analysis IAW Joint Chiefs of Staff (JCS) methodology.
 - a. Review imagery.
 - b. Review MIDB.
 - c. Request JWAC assistance if required.
 - d. Locate no-strike and restricted targets in relationship to planned targets.
8. Complete CE IAW JCS methodology.
9. Conduct final video teleconference (VTC) or collaborative planning session with supporting and supported parties.
 - a. Include relevant national (at a minimum: CIA, DIA, NSA, JS J-2T, NIMA) and theater supporting organizations (JIC/JAC, military intelligence brigades), supported JTF, IO cell, and others as appropriate (e.g., CMO, JWAC, JIOC, cruise missile support activity, component elements).
 - b. Review targeted facilities to ensure all concerned agree on where the target is to be struck, and the expected outcome.
 - c. Review results of IGL assessment, PMA, collateral damage analysis, other appropriate inputs, and casualty estimates to develop final strike recommendation.
 - d. Ensure IO and conventional targets are deconflicted if the JFC utilizes separate IO planning and force allocation architectures.
10. Prioritize target recommendations.
11. Submit final targeting recommendations to the designated target selection authority.
12. Request objectives and guidance for subsequent lists.

APPENDIX C WEAPONNEERING

1. Weaponneering

a. The process of determining the quantity of a specific type of lethal or nonlethal weapon required to achieve a specific level of damage to a given target, considering target vulnerability, weapon effect, munitions delivery accuracy, damage criteria, probability of kill, and reliability is defined as weaponneering, and is used to support capabilities analysis. Weaponneering is conducted in the third phase of the joint targeting process and is also performed within the TST cycle.

b. Weaponneering quantifies expected results of lethal and nonlethal weapons employment against targets. The commander's objectives and guidance, JTL, and, JIPTL provide the basis for weaponneering assessment activities. Time constraints preclude calculations of potential effects against all targets, which should proceed in a prioritized fashion mirroring the target list. Non-nuclear, kinetic weaponneering is normally conducted using methodologies prepared by the JTCG/ME. The JTCG/ME publishes numerous documents and compact discs read-only memory such as the "JAWS," "Effectiveness Data for the Army Tactical Missile System (ATACMS)," and the "Special Operations Target Vulnerability and Weaponneering Manual." Expansion of the conflict to include the targeting of networked information systems yields more options. However, these additional capabilities must also be weaponneered to quantify the expected effects and allow comparison with a variety of traditional targeting solutions. The ability to complete this process with a weaponneering-like methodology for some of the techniques associated with IO will be entirely dependent on the ability to collect effectiveness data and account for uncertainty.

c. The Services, as well as the JTCG/ME, DIA, and DTRA developed a number of quantitative techniques used to estimate weapon effectiveness. The JTCG/ME developed analytical methods for measuring and predicting munitions effectiveness and produced a large body of scientifically valid data related to specific weapons, munitions, and appropriate targets. The organization devised mathematical models which enable weaponneers to predict the effectiveness of weapons against most militarily significant targets. Inputs to these methodologies include factors such as target characteristics (size, shape and hardness), and delivery parameters (altitudes, speeds, dive angles). Model outputs, which allow weapon effectiveness comparisons, include the amount of force required to achieve specified damage levels in terms of stated damage criteria.

2. Steps in Weaponneering

There are multiple steps in weaponneering, including:

a. **Identification of Collection Requirements.** Most weaponneering data is assembled during target development. The weaponneer establishes collection and exploitation requirements as soon as they are identified. Requirements for both target development and weaponneering should be coordinated and submitted as a single set.

b. **Obtain Information on Friendly Forces.** The weaponeer must know the delivery platforms, weapons, and fuzes available for use, as well as probable munitions delivery tactics. Weaponeering results are only useful to operations planners if employment parameters used in the weaponeering process represent those used in combat. In combat planning, where a large number of targets must be weaponeered very quickly, it is advisable to agree upon standard planning factors. Some additional information helpful in making intelligent weaponeering recommendations include: weather, training/readiness posture, target acquisition probability, collateral damage potential, and ROE. Targeting analysts must work closely with the operations and logistics staff to obtain this information and ensure its inclusion in the range of options available to the JFC.

c. **Determine Target Elements to be Analyzed.** This step examines data produced during target development or provided by imagery analysts to decide which elements to analyze for vulnerability. The first step in this process is performing a functional analysis, and the second, performing a structural analysis. In preparing a functional analysis, targeting personnel identify the functions of all parts of a target, determine the relative importance of each part, and designate those parts which are vital to target operation. A structural analysis provides much of the information necessary for determining overall target vulnerability. It includes construction types, dimensions of structures, and equipment. The results of this analysis determine the components to be struck or attacked.

d. **Determine Damage Criteria.** Target vulnerability data is expressed in terms of the results desired when a target is struck or attacked. Specifically, a desired level of destruction, damage, or performance degradation is sought to produce a significant military advantage for friendly forces. The desired goal of the attacker is called “damage criteria” or “kill criteria.” Damage criteria can be referred to as a quantitative measure of target susceptibility to a given amount of damage. These criteria support achieving the MOE outlined in the objectives and guidance.

e. **Determine Weapons Effectiveness Index.** The JMEM has established the effectiveness indexes for nonnuclear weapons. Weapons effectiveness varies according to the weapon, target, damage criteria, delivery conditions, and target environment.

f. **Determine Aimpoints and Impact Points.** The sixth step in the weaponeering phase is to determine the DPI for precision guided munitions, or DMPI for stick deliveries. In choosing a point of attack, it is usually best (time permitting) to select more than one target element and weapon combination. This allows resource- and weather-constrained planners greater flexibility.

g. **Evaluate Weapon Effectiveness.** During this step, various platforms, missiles, weapons, yields, heights of burst, fuzes, and delivery tactics are evaluated to determine the best combination to use against each individual target. In this step, the weaponeer determines the solution to the problem, which is expressed as the PD — the statistical probability that a specified damage criteria can be met assuming the probability of arrival. Although weaponeers search for the best combination of weapon and delivery system to recommend for use against a target, they must recognize that their first choice may not always be available due to logistic or operational

considerations. If time permits, the weaponeer should develop an array of probabilities, using different combinations of systems, weapons, and fuzes to provide force application planners flexibility. Normally, weaponneering is done with more generalized parameters at the force level and unit specific factors are taken into account by the executing unit.

h. **Prepare Preliminary Documentation.** Weaponeers provide recommended options and supporting rationale to planners for use in planning decisions. The information should include the specific element or point of attack. This point may be specified in a simple textual description, by reference to areas annotated on standard target materials, by reference to the grid provided on targeting graphics. Precise target coordinates for the point of attack should also be provided. Use of precise coordinates derived through approved mensuration tools significantly improves delivery accuracy for non-visual weapons employment. Additionally, documentation should reference an objective for which the target is applied. Targeting personnel also recommend fuzes or fuze settings whenever unit level expertise or materials available are limited. When specific effects are required (e.g., arming and self-destruct times for mines), it is essential to provide such information to operational combat units preparing ordnance for the mission.

i. **Review Collection Requirements.** After development, weaponneering, and force selection information is accumulated, gaps in the weaponeer's database can be identified. Collection requirements should be reviewed to determine if they will fill the gaps, require modification, or whether new requirements should be established.

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APPENDIX D

INTELLIGENCE SUPPORT TO TIME-SENSITIVE TARGETS

1. Overview

a. TSTs are those targets of such high priority to friendly forces that the JFC designates them as requiring immediate response. These targets either pose (or will soon pose) a danger to friendly forces or are highly lucrative, fleeting targets of opportunity — or both.

b. A critical factor in prosecuting TSTs is the requirement to conduct all the steps of the joint targeting cycle in a short time. To successfully compress the targeting cycle, the joint force and component staffs must be thoroughly familiar with the details of each step of the process and with the specific nodes or cells in the joint force and components responsible for each portion of the process. Time is saved by conducting detailed prior planning and coordination between joint forces, a thorough IPB, employment of interoperable C4I systems, and clear guidance on what constitutes a TST.

c. TST prosecution begins with the ID of possible TST target sets during target development and is supported by all intelligence disciplines. The synergy of these efforts is aimed at drastically reducing timelines associated with immediate tasking of missions allocated to TST prosecution or in re-tasking or pre-planned missions.

d. Intelligence support to TST prosecution mirrors the pre-planned targeting cycle. One of the primary roles of targeting personnel in the execution phase is to monitor combat operations in order to rapidly prosecute emerging threats. TST ID depends upon a robust monitoring operation.

e. The time-critical nature of TST operations necessitates the theater element responsible for execution retains functional responsibility for forces apportioned in support of TST operations. Intelligence must provide the appropriate mix of targeting and ISR capabilities to the execution authority. Intelligence also acts as a facilitator to rapidly share location and other pertinent data across components. This ensures all executing units have access to timely and relevant data on emerging targets. Rapid sharing and fusing of data is of central importance in order to defeat TSTs. Federated operations should be designed to enhance rapid sharing of essential data.

2. Time-Sensitive Targeting Cycle

The time-sensitive targeting cycle consists of six steps: Detection, Location, Identification, Decision, Strike, and Assessment.

a. Detection

(1) Detection is accomplished at multiple levels. Detection notification should flow to designated ISR Battle Management agencies/cells or to appropriate command agencies as directed. It is the responsibility of the detecting element to ensure information is sent to and

received by the appropriate coordinating/executing agency. In turn, such agencies fuse multi-sensor data (when available) and notify targeting agents of possible TST detection.

(2) The accelerated TST execution cycle begins with the detection of an event as reported by various intelligence sources (SIGINT, IMINT, HUMINT, MASINT, OSINT). Example events include the launch of a theater ballistic missile reported by a national ISR platform, observation of a group of vehicles by an unmanned aerial vehicle (UAV), or the sighting of a tactical radar system by special operations forces, to name a few.

b. **Location.** If detection yields a potential TST, the detecting element receiving indications initiates procedures to locate the potential target. If the element assesses the target as potentially time-sensitive based on location and indications, it notifies appropriate TST execution authorities for further development and decisionmaking. If a detecting element's source data can be exploited by another component, this information should be forwarded via appropriate component liaisons or systems. If assets and priorities allow, mobile TSTs should be tracked throughout the mission attack cycle to support dynamic retasking and rapid restrike if necessary.

c. **Identification.** Identification determines the existence and validity of a detected TST, fuses TST information, and provides a recommendation for attack. Both unplanned and unanticipated TSTs are evaluated in this phase, which consists of two sub-functions: Intelligence Analysis and Operational Assessment.

(1) Intelligence Analysis

(a) Intelligence analysis evaluates and compares acquired data with existing guidance, plans, and available information to confirm the existence of a TST and the need to prosecute. Acquired data is compared with IPB baselines and fused with multiple source data. If insufficient information exists to confirm the existence of a TST, targeting analysts determine the need to continue collection. If deemed significant, collection priorities and shortfalls are re-evaluated.

(b) If sufficient information exists confirming the presence of a TST, targeting personnel evaluate the emerging target with commander's objectives, guidance, and intent. If it matches commander-established priorities and thresholds, criticality and perishability is evaluated. The TST receives a relative importance ranking based on the target environment, the target-type priority, and current operations.

(c) For TSTs requiring immediate response (e.g., such as a highly lucrative, fleeting target of opportunity), target vulnerabilities are identified and DPIs/DMPIs are developed (if applicable). If an MOE does not exist for the TST (generally an unanticipated threat), targeting personnel recommend desired effects and MOEs to the target.

(d) From this intelligence assessment, targeting analysts develop a strike/no-strike recommendation for consideration by operations planners. This information is evaluated by planners to decide whether to continue or discontinue development on the potential TST.

(2) Operational Assessment

(a) Operational assessment determines the best weapon/target pairing and availability of assets to prosecute the TST. Further, it prioritizes prosecutable TSTs and makes a force reapportionment recommendation for approval by the appropriate commander.

(b) Targeting analysts develop weaponeering solutions, or use weapon/target pairings developed in the pre-planned targeting cycle for each DPI/DMPI. Additionally, targeting analysts perform a collateral damage assessment. For fixed facilities, targeting personnel mensurate coordinates for each DPI/DMPI. These tasks are executed at the component-level for potential diversion of assets from pre-planned targets.

(c) In developing solutions, ROE and LOAC considerations are applied to ensure the target and DPI/DMPI are executable. Where potential conflict exists, targeting analysts should notify operations personnel and legal representatives of such concerns and provide additional recommendations to include guidance changes, passing of target execution to another service, or no-strike.

(d) Targeting personnel assign a priority to the developed TST. Consideration of the battlespace environment, current objectives, and available assets are utilized in this prioritization. If the threat appears to cross multi-component boundaries, intelligence personnel coordinate between organizations through liaisons or by direct analyst-to-analyst communications.

(e) Nomination of the TST is passed to battle managers by both operations and targeting personnel. Targeting personnel assemble and present the necessary materials supporting recommendations to attack a target.

d. **Decision.** The time-sensitive targeting decision step represents the selection of force and assignment tasking. Targeting and intelligence analysts provide planners and operations personnel updated intelligence of threats and target status. Additionally, targeting personnel supporting TST operations notify ISR, CA, and planners of impending attacks and diverts from planned missions. Targeting personnel reincorporate non-executed targets (based on diverted planned missions) into the JIPTL. ISR and BDA personnel, in turn, notify collection managers of changes, as needed. Additionally, targeting personnel ensure information is provided to those units executing the mission.

e. **Strike.** During the strike step, targeting personnel continue to monitor operations for additional emerging threats, and return to the normal monitoring roles within the pre-planned joint targeting cycle and await BDA.

f. **Assessment.** The assessment phase of TST prosecution is the point where the TST attack cycle re-enters the joint targeting cycle's CA phase. Both phases are identical. In this phase, CA analysts are responsible for monitoring, reporting and making RR and future targeting based on mission results of current operations.

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APPENDIX E

BATTLE DAMAGE ASSESSMENT PROCEDURES

1. Purpose

This appendix outlines responsibilities, reporting requirements, and procedures for conducting BDA to support a JFC's CA process. It describes the coordination and analytical efforts at the national, combatant command, and component command levels, as well as among federated partners to ensure the flow of required data to support the combatant commander and subordinate JFC. These procedures rely on existing dissemination systems for imagery, text, voice transmissions, and measurement and signature information. National, combatant, and component command dissemination systems form the core of BDA reporting and distribution channels. Further information regarding these communications systems, architecture, and procedures can be found in JP 2-01, *Joint and National Intelligence Support to Military Operations*. Federated support for BDA production is requested by the combatant command with the JS J-2 brokering all requirements for federated crisis support through the JS J-20. The JS J-2 will formally approve crisis federation BDA partnerships. Approval is based upon expertise associated with responsible production (RESPROD) requirements under the Department of Defense Intelligence Production Program (DODIPP), balancing the supporting organizations' capabilities compared to the combatant commander's requirements, and consideration to worldwide operational requirements and long-term intelligence capabilities. JS J-2T provides oversight of all targeting and BDA federation partnerships.

Further information regarding federation can be found in the JS J-2 Crisis Intelligence Federation Concept of Operations, 30 May 2001 and JP 2-01, Joint and National Intelligence Support to Military Operations.

2. General

BDA is a process directed by the combatant commander and conducted by the subordinate JFC, component and supporting commands, as well as the IC through JS J-2 approved federated partners. BDA is required during war or military operations other than war to determine if strategic, operational, and tactical objectives have been met. Strategically, BDA provides the President, Secretary of Defense, Chairman of the Joint Chiefs of Staff, and combatant commanders with intelligence on the status of efforts to fulfill SecDef and/or Presidential national strategy and national military objectives and guidance. Operationally, BDA determines the functional status of adversary facilities, and target systems, as well as the combat effectiveness of adversary forces. Tactically, BDA identifies the effects of individual attacks against adversary facilities and forces.

3. BDA Overview

a. **Phases.** During combat operations, BDA is conducted in three phases. All three phases examine whether or not the JFC's operational and tactical objectives have been accomplished (see Figure E-1).

BATTLE DAMAGE ASSESSMENT OVERVIEW			
Battle Damage Assessment Phase	Results	Responsible Organization	Data Sources
Phase 1 (Physical Damage Assessment)	<ul style="list-style-type: none"> Initial Physical Damage Assessment (hit or miss) 	<ul style="list-style-type: none"> Unit, Combatant Command, Subordinate Joint Force Commander (JFC), National 	<ul style="list-style-type: none"> Debriefs Forward Observer Weapon System (Aircraft Cockpit) Video Theater and National Sources
Phase 2 (Functional Damage Assessment)	<ul style="list-style-type: none"> Detailed Physical Damage Assessment Functional Damage Assessment Target System Assessment Inputs Munitions Effectiveness Assessment Comments 	<ul style="list-style-type: none"> Combatant Command, Subordinate JFC, National 	<ul style="list-style-type: none"> All-Source
Phase 3 (Target System Assessment)	<ul style="list-style-type: none"> In-Depth Target System Assessment 	<ul style="list-style-type: none"> Combatant Command, Subordinate JFC, National 	<ul style="list-style-type: none"> All-Source with Subject Matter Expert Input

Figure E-1. Battle Damage Assessment Overview

(1) Phase 1 BDA reporting is the initial analysis performed to provide a preliminary physical damage assessment of attack results. It is most often derived from one or more imagery sources (e.g., WSV, ACV, tactical reconnaissance, or national system imagery), but can also use other sensitive intelligence information, aircrew mission reporting, and/or open-source information. Phase 1 BDAREPs are released information. Phase 1 BDAREPs are released one to two (1-2) hours after receipt of source data, in order to facilitate the tactical and operational commander's battlespace awareness and rapid reattack or reallocation decisions within the current ATO or similar plan. Typically, Phase 1 reports for any single campaign are produced by several BDA cells, IAW the combatant commander's Federated BDA concept of operations (CONOPS). Phase 1 BDAREPs generally provide the first indicator of problems with weapon systems and/or tactics which are addressed in more detail by MEA efforts.

(2) Phase 2 BDA reporting amplifies Phase 1 reporting by drawing upon multi-discipline source information (including any relevant Phase 1 reports) and operational data to provide detailed physical damage assessment, functional damage assessment, inputs to target system assessment (Phase 3), and any applicable MEA comments. When appropriate, a reattack recommendation is also included. As with Phase 1 reporting, several BDA cells typically produce Phase 2 reports for each campaign, IAW the combatant commander's Federated BDA CONOPS.

Phase 2 reports are generated within four to six (4-6) hours of information receipt with more stringent requirements than Phase 1 reports. Phase 2 reports are cumulative in reporting BDA information from previous attacks. The Phase 2 reports facilitate the operational commander's immediate operational battlespace awareness and decisions, as well as operational planning of future ATOs and/or other planning processes.

(3) Phase 3 BDA reporting provides in-depth target system assessment, adding subject matter expert (SME) analysis to Phase 2 reporting of functional damage of individual targets. Phase 3 reports are meant to aid the JFC in strategically allocating strike resources against target sets and in shifting targeting philosophy to address unfulfilled campaign goals. In general, the combatant commander releases a single Phase 3 report each day, from inputs provided IAW his Federated BDA CONOPS (the combatant commander may delegate the responsibility for drafting the Phase 3 report, or portions thereof, to the NMJIC targeting and BDA cell and/or another BDA cell with appropriate subject matter expertise). When appropriate, a reattack recommendation and/or targeting nomination is also included.

b. **Goals.** BDA is conducted to ensure the JFC and combatant commander have the means to accurately estimate residual enemy capabilities. The overriding goal is to assess the results of combat operations and measure them against the existing strategic, operational, and tactical objectives. Timely BDA allows the operational commander to quickly allocate or redirect forces in the most efficient configuration. BDA is crucial to the decisionmaking process, and influences current and future military operations.

c. **Time Period or Phase Considerations (General)**

(1) **BDA Planning**

(a) The joint force J-2 must develop and implement an effective BDA architecture prior to combat operations to ensure successful BDA is available to provide RR and future targeting development, as well as provide an overview of campaign progress. During the planning process, it is critical to obtain specific and measurable objectives from the combatant commander, JFC or J-3 in order to determine the effectiveness of the campaign. Extensive coordination between the joint force J-2, the IC, and participating operations elements are necessary to ensure a successful and integrated effort. A typical BDA architecture includes national and combatant command exploitation capabilities, standardized reporting procedures, and effective communications. A comprehensive CONOPS for conducting BDA at each level of command improves the entire process. AOR-specific CONOPS details roles, responsibilities, and procedures for BDA participants at all levels (tactical, operational and national). AOR-specific CONOPS should include Federated BDA support architecture and procedures, if the planned campaign will exceed the combatant commander's or JFC's indigenous BDA resources.

(b) Permanently assigned BDA personnel should activate a preplanned support architecture during a crisis. Peacetime exercises with components, national intelligence agencies, federated partners, and other related agencies (including JWAC, JIOC, and DTRA,) should be conducted to update or formalize requirements and procedures for reporting and dissemination.

Emphasis is placed on integrated operations and intelligence systems to test the flow of BDA reporting.

(c) BDA is supported by information and intelligence gained from multi-discipline sources. IMINT, SIGINT, HUMINT, MASINT, and OSINT reports and products should be included in target folders to enhance BDA analysis. Key considerations are that the data included in the target folders must be accurate, usable, easily displayed, and understood by the consumer.

(d) Plans should include identifying back-up plans in the event of natural disaster, terrorist threats/acts, and/or communications outages. Identifying and exercising procedures for BDA mission continuity and reconstitution are critical and consistent with the federated intelligence support to BDA concept. BDA cells work with their command continuity of operations program manager to ensure that plans for BDA operations are included. Technical considerations to support mission continuity may include backing up BDA data daily on removable hard drives and/or mirroring file servers at alternate locations (e.g., another federated partner).

(2) **BDA During Conflict.** Extensive coordination between intelligence and operations elements is essential to direct and refine BDA. Without coordination between the target development and BDA cells, the BDA cell is ill-prepared for targets that may have been added or deleted. BDA collection requirements are continually refined, and collection activities planned in conjunction with mission execution. If possible, consideration should be given to timing attacks to immediately precede collection opportunities. Prompt and accurate BDA analysis allows combatant commanders considerable leverage in reattack options. Timely and factual post MISREPs in the USMTF approved format can greatly enhance BDA analysis. Actual analysis should use pre-established methodologies for target system assessments, recovery and/or recuperation estimates, combat strength, and combat effectiveness, and be incorporated in an all-source fusion effort. Adversary deception efforts must be analyzed in the overall BDA analysis. As soon as force protection conditions allow, MEA teams should be inserted to collect data to determine the effectiveness of munitions and assess ground truth for BDA improvement. Analysis of data gathered by MEA exploitation teams could result in changes in current operations, and could provide additional clues to BDA analysts regarding future attacks against similar targets. The BDA cell can assist the MEA exploitation teams by recommending targets to be exploited; targets of interest may include those with use of new weapons, use of delayed fuzes to reduce collateral damage, underground facilities, and other HVTs.

(3) **Post Conflict BDA Requirements.** BDA continues even after the cessation of hostilities. Post conflict assessments yield data on weapon effectiveness and suggest BDA procedural changes. Retrievable, archived BDA information, including mission data, is used to develop lessons learned and assess the adversary's ability to reconstitute combat power. All BDA information should reside in a single defined database to support post conflict studies. In addition to gathering all BDA intelligence and operations related information, MEA exploitation teams should be deployed, where appropriate, to conduct on-site analyses of damage from a ground-level perspective.

d. **BDA Reference Materials.** A set of common reference materials is important in performing and disseminating BDA. This historical information is normally a subset of target reference materials, which are produced in accordance to DIAR 57-24, *US/Allied Tactical Target Materials*. Common BDA reference materials may include but are not limited to: Overview Graphics, DMPI graphics, BTG, Tomahawk land-attack missile aimpoint graphics, or the standard target material outlined within the current DIAR 57-24. Other historical information needed to conduct BDA includes collateral damage estimates and pertinent message traffic. The combatant commander specifies which type of target material will be used for standardization.

e. **Centralized BDA Management.** BDA must be centrally managed for efficiency. Each combatant command designates a primary BDA cell within the AOR. This cell is typically located within the J-2 or the JIC/JAC, and is the focal point of all command BDA efforts. All other BDA cells within the command, at the national level, and federated partners provide support to this command BDA cell through a federated BDA concept. The command BDA cell fuses information and assessments from each of the component commands, units, and national sources into its definitive BDA assessment, which is briefed to the combatant commander and passed to all appropriate levels. This centralized management avoids duplicative exploitation and develops products that support each echelon. Two way communications are critical; federated partners need to know when and how their federated targets are going to be struck, and the JFC should receive RR and future targeting development. Good communications will reduce the opportunity for misunderstanding, which can hamper or impede mission completion. Daily VTCs, computer net meetings/collaborative environment sessions, teleconferences, real-time chat, or e-mail updates are among the many tools to be considered.

f. **BDA CONOPS.** The BDA CONOPS provides joint force guidance for a standardized approach to BDA. Each BDA cell should assemble a CONOPS before the employment of friendly forces in combat operations. The following items should be addressed within each BDA CONOPS:

(1) BDA Responsibilities and Functions.

- (a) Combatant command (combatant commander, J-2, J-3, JIC/JAC, BDA cell).
- (b) Subordinate joint force (JFC, J-2, J-3, joint intelligence support element).
- (c) Federated partners.
- (d) Component commands (J-2, BDA cells).
- (e) Subordinate operational units.

(2) BDA Analysis and Reporting Requirements and Timelines.

- (a) ATO dissemination requirements.

- (b) Targeting objectives dissemination requirements.
 - (c) TM references.
 - (d) BDA products.
 - (e) BDA reporting timelines.
 - (f) BDAREP distribution requirements.
 - (g) Video dissemination requirements.
- (3) Potential BDA Cell Composition.
- (a) Coordination, management, and/or administration.
 - (b) Presentations (may include public affairs).
 - (c) All-source BDA analysis teams may consist of the following:
 - 1. Maritime team;
 - 2. Land team;
 - 3. Air and air defense team(s);
 - 4. Fixed facilities team(s) (may include a team for each target system).
 - (d) SMEs, and Imagery, SIGINT, OSINT and MASINT analysts.
 - (e) Collection management liaison officers.
 - (f) GI&S Officer.
 - (g) Video analysts.
 - (h) Structural engineers.
 - (i) Weapon effects experts and/or targeting analysts.
 - (j) Operations personnel.
 - (k) MEA exploitation teams may include the following:
 - 1. All-source SMEs;

- ## 4. Responsibilities and Functions

(1) Establishes objectives and guidance in order to provide the gauge for measuring the effectiveness of combat operations.

- b. **Combatant Command Director of Intelligence.** The J-2 is the executive agent for overall coordination and direction of BDA planning, operations, and support to subordinate commands and activates the command BDA cell. The J-2 provides BDA assessments to the subordinate JFC, who is the final validation authority for the campaign if directed by the combatant commander. (Note: The

combatant commander is the final BDA authority, unless he delegates this authority to the subordinate JFC.) Other combatant command staff directorates, component commands, and national agency representatives are responsible for coordinating BDA activities with the J-2. The J-2 is responsible for the following:

- (1) Organizes the BDA effort by establishing a BDA CONOPS and procedures for intelligence support to BDA in the AOR.
- (2) Requests and coordinates federated BDA support requirements with the JS J-2 J-20 and upon JS J-2 approval coordinates with federated partners.
- (3) Provides analysis of operational results through reports and briefings to the combatant and component commanders.
- (4) Coordinates with J-3 to ensure necessary operation planning and mission-specific information are provided to the command and federated BDA cell participants.
- (5) Ensures appropriate BDA intelligence and operations reporting instructions are provided to subordinate and supporting commands and the NMJIC targeting and BDA cell.
- (6) Deconflicts BDA inconsistencies.
- (7) Manages combatant command collection resources and tasks national collection resources for BDA support.
- (8) Identifies joint BDA training requirements.
- (9) Conducts inquiries into possible unintended consequences due to weapon employment (civilian casualties, collateral damage to civilian property, and collateral effects to environment and region) for the combatant commander's approval.

c. Combatant Command-Designated BDA Office of Primary Responsibility (OPR)
(usually the JIC/JAC)

(1) **Responsibilities.** The combatant command-designated BDA OPR develops an integrated architecture of intelligence resources to meet BDA requirements. The BDA OPR may stand up a BDA cell, allocating appropriate resources. The command-designated BDA OPR should manage all BDA-related intelligence planning, collection, exploitation, analysis, production, and distribution required to support operations.

(2) **Functions.** In order to perform its functions, the BDA OPR requires unrestricted access to relevant all-source intelligence processing and analysis elements, and should perform the following:

(a) Form a combatant command BDA cell within the targeting division around a cadre of permanently assigned BDA-trained personnel.

(b) Augment the target development and BDA cells, as required, to ensure effective BDA support to the combatant and subordinate commands and forces.

(c) Forward national exploitation requirements for BDA analysis and/or reporting to the NMJIC. Identify additional BDA-related requirements to the NMJIC, and monitor national-level responses.

(d) Manage transmission and receipt of BDA-related information (such as WSV, MISREPs, Phase 1/2/3 reports and imagery, and/or ATO) to/from federated partners and component commands.

(e) Serve as the sole point of contact for developing and prioritizing BDA collection requirements unless delegated elsewhere. Gather input from subordinate commands and coordinate all-source collection requirements. Monitor the status of these requirements and advise the J-2 on collection priorities.

(f) Ensure data processing and systems support requirements can be met, including the capability to establish a theater-level integrated BDA database.

(g) Ensure JIC/JAC BDA training requirements are met.

(h) Conduct BDA exercises on a regular basis during peacetime, preferably with participation from components, federated partners, and the JS J-2 BDA cell in the NMJIC.

(i) Ensure technical activities such as MASINT collection are integrated into the BDA effort and all resources are available to support the BDA cell.

d. **Command BDA Cell.** A separately defined BDA cell exists within the combatant command J-2 organization. When the situation begins to shift from peacetime to crisis, this cell will be fully augmented to include all members identified in the BDA CONOPS section of this appendix.

(1) **Responsibilities.**

(a) The BDA cell serves as executive agent for the BDA OPR, integrating all BDA reporting, and preparing the combatant command's first-phase BDAREP.

(b) The BDA cell performs second- and third-phase BDA and reviews, validates, compiles, and deconflicts all incoming analysis and reporting.

(c) The BDA cell or its identified federated partner can produce a daily summary or a complete Phase 3 Target System Assessment report which summarizes target elements, adversary combat unit status, and physical and/or functional damage.

(d) The responsibility for BDA on tactical forces, military equipment, and order of battle (OB) rests with the command BDA cell. National-level analysis of these forces may be required in situations of a “limited” operational nature where theater or tactical reconnaissance platforms are unavailable for BDA support.

(e) The command BDA cell is responsible for conducting preliminary inquiries and producing a report on collateral damage incidents.

(2) **Functions.**

(a) Establish internal standard operating procedures, methodologies, and requirements for combatant command BDA analysis. Coordinate with joint force representatives, validate BDA requirements, and ensure they are met. Establish a BDA training plan.

(b) Organize and staff the combatant command BDA cell to provide BDA support to subordinate commanders. Train augmentees.

(c) Coordinate with J-3 current operations, Plans Directorate planners, and other staff personnel to integrate BDA planning. Ensure operational objectives, planning, mission-specific data, and operations reporting, as related to BDA analysis, are provided by J-3.

(d) Develop BDA assessments for combatant commander approval.

(e) Coordinate NMJIC targeting and BDA cell and Federated partners’ BDA support (e.g., hardcopy messages, ATOs, MISREP, WSV, ACV, UAV video and/or imagery transmissions). Provide updated phone numbers, message and e-mail addressees to the federated partners and NMJIC targeting and BDA cell on a routine basis.

(f) Respond to requests for BDA information from subordinate commands.

(g) Coordinate BDA reference material and graphic requirements in accordance to production procedures in DIAR 57-24, *US/Allied Tactical Target Materials*, and ensure all key components within the AOR have access to those materials.

(h) Manage the combatant command’s automated BDA database. Ensure compatibility with national and subordinate command BDA database access requirements are fulfilled.

(i) Ensure collection requirements are identified for BDA and task appropriate command assets or request national asset support.

(j) Conduct preliminary collateral damage inquiries to determine details due to a potential violation of the LOAC. Recommend changes for current operations, if needed. (Note: Under the provisions of Department of Defense Directive [DODD] 5100.77, *DOD Law of War*, and Chairman of the Joint Chiefs of Staff Instruction [CJCSI] 5810.01A, *Implementation of the DOD Law of War Program*, a command must conduct a preliminary inquiry if there is a potential violation in the LOAC.)

e. Combatant Command Director of Operations

(1) **Responsibilities.** CA is one of the joint targeting coordination responsibilities conducted by the J-3. The J-3 is the primary source for BDA-related operational planning, mission data, and operational reporting for the J-2 and the BDA cell. The J-2 coordinates with J-3 to ensure integration of BDA into operational planning and execution.

(2) **Functions.**

(a) Ensures copies of combat operation tasking orders are provided to BDA planners, and any subsequent changes are forwarded to facilitate BDA collection and analysis.

(b) Ensures mission-specific data, such as weapon fuzing and aimpoint information, is provided to appropriate components.

(c) Augments the BDA cell with weapon systems operators and SMEs, as necessary.

(d) Coordinates all CA-related activities, including post-strike presentations to the combatant commander, staff, and subordinate commanders, to minimize unevaluated reporting and ensure continuity.

(e) Serves as the primary agent for coordinating and conducting MEA activities.

f. Subordinate Joint Force Responsibilities and Functions

(1) **Subordinate JFC Responsibilities.** The subordinate JFC should conduct an initial and continuing assessment of organic BDA resources. The assessment of BDA capabilities is used to request additional resources and support from other commands and agencies and to prioritize the BDA effort. The subordinate JFC ensures subordinate units furnish appropriate BDA-related reports.

(2) **J-2 Responsibilities.** The joint force J-2 coordinates BDA efforts with the combatant and component commands. The J-2 also identifies specific BDA requirements exceed internal joint force capabilities for transmission to the combatant command, and is responsible for the following:

(a) Assumes the BDA responsibilities and functions (covered in subparagraph 4g below) when component command BDA elements have not been designated.

(b) Provides BDA collection requirements to the combatant command J-2.

(c) Ensures subordinate units provide operational and intelligence reports and other BDA information, to meet the requirements outlined in subparagraph 4h below.

(d) Provides transmission of imagery and video to support BDA. Transmission requirements should be based on coordination or tasking.

g. **Subordinate Joint Force Service and Functional Component Commands.** The functional and Service component commands have several Service BDA-related responsibilities, to include the following:

(1) **Air Taskings.** The joint force air component commander (JFACC) should ensure a copy of each ATO is provided to the appropriate BDA cells and intelligence centers. The JFACC also ensures all changes to the tasking are forwarded to the appropriate BDA cells.

(2) **Mission-Specific Data.** Functional and Service component commanders ensure actual mission data, to include mission objectives, aimpoint selections, debriefings, operations reports, and other mission data, are provided to the appropriate BDA cell. Weapons information (including time on target [TOT], fuzing, weapon, and delivery platform) should also be included.

(a) Information should be forwarded expeditiously to facilitate accurate and timely CA.

(b) DMPI should be provided in both textual and graphic form to eliminate confusion. Specific information should allow focused, substantive BDA reporting.

(3) The functional or Service component command intelligence element is responsible for forwarding mission-specific information, including mission objectives, number and type of weapons, and weapon fuzing, to the appropriate BDA cells.

(4) **Make Initial BDA Assessments.** Component commands should be prepared to make initial BDA assessments based on information received from subordinate units or supporting BDA cells in order to adapt quickly to the fluid environment of combat. While an initial assessment may be superseded by a later combatant command BDA cell assessment, it can be used for immediate operational decisionmaking. Clearly, the acceptance of single source or unevaluated BDA for redirecting combat missions is a judgment call on the part of the commander and the operations staff.

(5) **Input BDA into Target Planning Cycle.** The component command should establish procedures to input BDA data into its target planning cycle through RR and future

targeting development. This data should include BDA information on individual targets and specific aimpoints.

(6) **MEA.** Each component command should be the responsible agent for MEA on munitions, systems, and tactics under its control. Components should identify deficiencies in munitions and/or weapon system effectiveness and work to eliminate them within their commands. If unable to resolve the deficiencies, the component command should pass them on to the appropriate Service staff, and the JTCG/ME for resolution.

h. Subordinate Operational Units. Subordinate operational units provide BDA information detailed below.

(1) **Tactical Unit BDA Reporting Requirements.** BDA reporting from tactical units should meet requirements and timelines specified below.

(2) **Intelligence Report (INTREP).** INTREPs are normally required within 1 hour of the occurrence of significant BDA-related activity from tasked units other than aircraft squadrons (ground forces, naval units, and other organizations). Flying units can use INTREPs to provide supplementary intelligence or operational data not included in a MISREP. INTREPs must be specific when describing a location, adversary units, equipment, weapons used, and damage inflicted. Further details supporting the BDA effort should be provided if available. Imagery associated with the report should be forwarded to the appropriate BDA cell via file transfer protocol (FTP), e-mail, or posting to the IPL. A gun damage assessment is provided by forward observers for naval gunfire and artillery missions.

(3) **MISREP.** A MISREP is a post-mission report based on aircrew debriefing and is normally required within 2 hours of engine shutdown. MISREPs should confirm operational information, including the details provided in the ATO. Specific requirements include: ATO mission number; aircraft type; weapons expended; weapons fuzing; target, target aimpoints, and/or DMPs; and TOT. Reporting must be specific (particularly in planning close air support) when describing location, known or possible adversary units and equipment, weapons used, and estimated damage inflicted. The Military Target Intelligence Committee (MTIC)-approved USMTF for MISREPs should be used for standardization purposes. This standardized format allows for automated parsing of MISREP information into command and national targeting and BDA automation support tools and databases. MISREPs should be sent to all BDA participants, using the e-mail and/or message address provided by the command BDA cell and identified within the combatant command BDA CONOPS.

(4) **WSV, ACV, and Tactical/Theater Air Breathing Collection Assets.** WSV supports hit/miss assessment and limited BDA depending on the size of the target attacked. ACV (to include AC-130 video) is an excellent source of initial BDA because it provides hit assessments, MEA in terms of weapons function (high order explosion), possible secondary explosions, smoke/venting and visually discernible damage, but usually has low resolution preventing a complete analysis of the physical damages to the target and potential unintended consequences. Tactical and Theater ISR assets (e.g., Predator, Global Hawk, U2, Joint

Surveillance Target Attack Radar System) provide additional and greater resolution imagery. ISR imagery provides the BDA analyst with the best information to assess physical damages to the target, as well as unintended consequences. These information sources for first-phase BDA analysis should be forwarded to the command BDA cell as soon as possible. Subordinate units have the responsibility to expedite transfer of these products to either the JFC or component HQ, and as directed, for further dissemination to appropriate federated BDA partners.

(5) **Tactical and Component Command Reconnaissance Units BDA Reporting Requirements.** Reporting from tactical and component command reconnaissance units is normally IAW the requirements and timelines identified below.

(6) **Reconnaissance Exploitation Report (RECCEXREP).** The RECCEXREP, in proper USMTF, is required from all tasked reconnaissance units within 45 minutes of engine shutdown. This message, available in both hard copy and electronic formats, provides the initial results of reconnaissance missions. BDA-related analysis or information should be specifically noted.

(7) **Imagery Transmission.** Secondary imagery associated with the RECCEXREP should be transmitted to the combatant command J-2 within 2 hours of engine shutdown.

(8) **Imagery Interpretation Report (IIR).** The IIR is required from all tasked units to the command J-2 within 1 hour of imagery receipt in USMTF format. This message is a hardcopy or electronic report which validates or clarifies the related RECCEXREP, and includes information assisting theater BDA.

i. NMJIC Targeting and BDA cell and Federated BDA Partner Responsibilities and Support Requirements.

(1) The NMJIC targeting and BDA cell provides focused national-level target intelligence for contingency operations planning and execution to the President; Secretary of Defense; Chairman of the Joint Chiefs of Staff; JS; and combatant commands. As a federated BDA partner, the NMJIC targeting and BDA cell provides coordinated, national BDA support to combatant and subordinate commands through hardcopy message and imagery production. This all-source analysis augments efforts of the combatant command.

(2) **National BDA Point of Contact.** The JS J-2T and/or NMJIC targeting and BDA cell (if stood up) are the single points of contact for national BDA support. The JS J-2O-3 Crisis Augmentation Division, in conjunction with JS J-2T and/or NMJIC targeting and BDA cell, coordinates and facilitates national agencies, organizations, and other combatant command participation in federated BDA support when requested by the supported combatant commander.

(3) **Integrated National BDA Support.** The JS J-2 coordinates the employment of national BDA expertise and capabilities through the JS J-2T by standing up the NMJIC targeting and BDA cell in an integrated, interagency approach. The NMJIC targeting and BDA cell includes representatives from JS J-2, DIA, NIMA, NSA, CIA, JS J-3, the Services, JWAC, and

DTRA, as appropriate. All combatant command requests for BDA support from any of the national intelligence agencies are handled through the NMJIC targeting and BDA cell to ensure a unified national-level BDA effort.

(4) The NMJIC uses the Joint Worldwide Intelligence Communications System (JWICS), and joint deployable intelligence support system (JDISS) to coordinate BDA activities in limited and/or small-scale operations. Messages, reports, imagery, and video can be transferred via several means to include posting to a joint targeting toolbox ETF, FTP, Joint Collaborative Environment Info Work Space, e-mail, posting to an IPL server, or posting to a web page. FTP may improve timeliness; however, because FTP only allows point-to-point dissemination, federated partners may have to transfer files to other federated partners in addition to the supported combatant command. JDISS electronic mail has bandwidth constraints, which limits the timeliness of imagery and video transmission; therefore, e-mail of BDAREPs, imagery, and video should be a last resort. The combatant command's BDA CONOPS will take into account their communications architecture and data management requirements when developing the file transfer means. When deployed, NISTs can be used to support the flow of BDA information at the discretion of the supported commander. All federated partners should have their systems support personnel coordinate with the combatant command command, control, communications, and computer systems division to ensure complete connectivity requirements per the combatant command's BDA CONOPS.

(5) **MEA.** The NMJIC targeting and BDA cell works with the combatant and component commands to identify any potential MEA requirements, and coordinates MEA-related collection and exploitation requirements with appropriate national-level agencies. The DIA Physical Vulnerability Assessments Division assists this cell and commands in identifying the technical team and requirements for MEA exploitation teams, which will gather on-site data on captured targets or for post-campaign assessments.

(6) **Reporting Requirements and Timelines.** Federated BDA partner all-source reporting and imagery product/graphic support must be provided to the combatant command, who approves the products and determines further distribution to the JFC, component and subordinate commands, as well as tactical units, as appropriate. Reporting must be at the "operational immediate" precedence, unless otherwise directed, and should meet specified timelines and requirements, to include classification and releasability annotations. BDA reporting is sent per the combatant command's BDA CONOPS.

5. BDA Reporting

a. **Within the Combatant Command.** The combatant command is responsible to the JFC, subordinate commands, and components for providing accurate and timely BDA information to support battlespace awareness, as well as tactical and operational force employment decisions. To this end, there are two mechanisms the combatant command should employ to assure timely, accurate, and effective BDA to the tactical and operational commanders. First, identify, coordinate, and promulgate a detailed BDA CONOPS. This BDA CONOPS should fully address incorporating the technical expertise and resources of federated partners; identify and use those systems resources and processes

that maximize the combatant command's communications architecture for information dissemination to and from the operational area; and develop the robust management structure needed to collect, track, and disseminate BDA data, conduct timely review, approval, and dissemination of federated BDA products, and integration of federated BDA partners into the combatant command's overall intelligence architecture. Second, the combatant command must exercise their BDA CONOPS through national-level exercises, which identify communications shortfalls, improve federated relationships and operational practices, and garner trust in the overall BDA process. For a detailed discussion of reporting requirements within each command, consult the appropriate combatant command BDA CONOPS.

(1) **Phase 1 Physical Damage Assessment Reporting.** Typically the combatant command BDA cell, the federated partners, and other subordinate BDA cells generate initial BDAREPs. To support this effort, the command BDA cell is responsible for ensuring the appropriate collection is requested and should forward any theater operational information derived from unit reports, ACVs, WSVs, and tactical reconnaissance images are made available to federated partners and subordinate BDA cells. The combatant command must also provide timely review and dissemination of federated and command BDA cell initial reports and imagery in support of tactical and operational commanders. Units subordinate to the command BDA cell may report initial BDA information via MISREPs, WSV, RECCEXREPs, IIRs, Artillery Spotter, or UAV reports, Direct Action reports and various other operational reports through the appropriate component commands. Consult Military Standard 6040, *US Message Text Formatting Program*, for procedures, standards, and guidance for USMTF.

(2) **Phase 2 Functional Damage Assessment Reporting.** The combatant command BDA cell along with federated partners and other subordinate BDA cells will generate supplemental BDAREPs. To support this effort, the command BDA cell is responsible for compiling and ensuring all relevant theater operational information derived from unit reports, ACVs, WSVs, and tactical reconnaissance images are made available to federated partners and subordinate BDA cells. The combatant command must also provide timely review and dissemination of federated and command BDA cell supplemental reports and imagery in support of operational and geographic combatant commanders. Using the available data, SMEs within the command BDA cell review and/or make the final command's BDA assessment on each damaged aimpoint, target element, and target as reported by the federated partners, subordinate BDA cells, and internally. The final target assessment reports are then disseminated for consideration within the target planning cycle per the combatant command's BDA CONOPS.

(3) **Phase 3 Target System Assessment Reporting.** Depending upon the extent and tempo of military operations, a more complete assessment regarding the systemic functionality of relevant target systems should be developed. This assessment should include the overall status of adversary combat forces (including residual combat capabilities) and the infrastructure that supports them. The combatant commander may conduct this Phase 3 assessment or federate it. To conduct the Phase 3 report, all Phase 2 reports must be compiled and made available to the BDA cell performing the assessment. The Phase 3 report is transmitted, per the combatant command's BDA CONOPS, to the combatant command BDA cell for review, approval, and further dissemination. This Phase 3 report comprises the core assessment used for the overall campaign assessment, giving the combatant commander and JFC the strategic awareness needed

to evaluate campaign objectives and phases.

b. **From Federated Partners** (subject to adjustment by supported command through coordinated CONOPS).

(1) **Phase 1 Physical Damage Assessment Reporting.** Phase 1 BDA reporting from the federated partners includes an initial BDA message report, imagery report, and may include with loss of system communications an initial voice report (IVR).

(a) **Initial BDA Message Report.** A hardcopy Phase 1 message or e-mail, using the MTIC approved formats, is transmitted immediately after receipt and analysis of imagery information. Additional reporting requirements may be identified within the initial BDA coordination process and the combatant command's BDA CONOPS. A quick turn-around is necessary to support the tactical and operational commander's battlespace awareness. This information is transmitted, released, and distributed per the combatant command's BDA CONOPS.

(b) **Initial BDA Imagery.** Phase 1 BDA imagery is transmitted or posted immediately following the Phase 1 message report. The imagery format coincides with the combatant command's BDA CONOPS, if detailed, or complies with DIAR 57-24, *US/Allied Tactical Target Materials*, for target material. Per the BDA CONOPS, federated partners may transmit the imagery to the combatant command for approval and further dissemination or disseminate directly and post on their IPL server. Posted imagery can be pulled by the command's BDA cells, federated partners, or other organization(s) as needed by using NIMA's NES. By pulling only the BDA images needed, the load on the theater communication network is reduced. Additional BDA imagery is made available according to command requirements.

(c) **IVR.** When systems connectivity prevents immediate transmission of the Phase 1 message report, the federated partner should take action to communicate the information via voice channels. The IVR should be made via secure telephone to the command BDA cell(s) as soon as possible. Reports must identify physical damage to a specific target or target aimpoints and unintended consequences as a result of combat operations. Similar reporting is issued on BDA of tactical forces (i.e., military equipment and OB) when required. Follow-on voice reports of additional relevant information or analysis must be provided as soon as practical during systems communications outages. Voice reports must be provided to the combatant command BDA cell, the designated JTF, the JFACC, and other subordinate commands as determined by the combatant command's BDA CONOPS.

(2) **Phase 2 Functional Damage Assessment Reporting.** This hardcopy message is normally released 4-6 hours after receipt of information. Due to the detailed nature of the Phase 2 report information, this report is produced in a heavily formatted USMTF message. As the culmination of the regular national-level BDA reporting cycle, this fused all-source intelligence message addresses the following: a more detailed description of physical damage to the target's aimpoints and elements; assessments of the functional damage and recuperation and/or replacement time of the target and aimpoints; inputs on the impact on the target system associated

with the target; and an assessment of any collateral damages and/or effects. The damage to the target and/or target system is assessed in light of the command objectives and guidance. Collateral damage and/or effects assessments are required to meet legal requirements for reporting this information immediately upon identification. A Phase 2 report provides cumulative reporting of strikes by building on the previous Phase 2 report. MEA information should also be included as necessary. When appropriate, a reattack recommendation is also included. The combatant command BDA cell, authorized component BDA cells, and federated partners will produce this report; however, only the command BDA cell will officially release the report for theater and IC consumption, except where delegated by the combatant command's BDA CONOPS.

(3) **Phase 3 Target System Assessment Reporting.** Depending upon the extent and tempo of military operations, a message detailing the functionality of relevant target systems, and the overall status of adversary combat forces, including residual combat capabilities, may be provided on a daily basis. When appropriate, a reattack recommendation and/or targeting nomination is also included. This report is provided to the commander in a structured free text format. If sent via USMTF, use the general free text narrative format. Times for transmission and/or information cut off for the daily target system analysis message should be IAW the combatant command's BDA CONOPS.

c. **BDAREP Examples.**

(1) **Phase 1 BDAREP**

(a) The MTIC approved e-mail structured free text enclosure format for the Phase 1 BDAREP has the simplest and most flexible format. It is designed to have several fixed administrative (subject and purpose) and target ID (target name, BE number, coordinates) inputs, and an open text section which discusses the physical damage to the various attacked or damaged target elements. Depending on the guidance from the command or theater, the open text section can contain a basic assessment or a detailed amount of information associated with the damage assessment. See Figure E-2 for Phase 1 e-mail BDAREP example.

(b) When required, the Phase 1 assessment is provided in a MTIC approved, USMTF formatted BDAREP. Although there are many options to include a great amount of information within this format, typically only the basic data is provided on the physical damage to the attack/damaged elements. The final decision on which data fields to include in the USMTF Phase 1 BDAREP depends on the guidance from the command or theater, the amount of information, and/or the available time and resources to complete the assessment. The USMTF version of the Phase 1 BDAREP is written in a machine readable message format, in which the machine counts each slash of the document and sorts the message data into data sets, and then into over arching set groups. It is imperative that message format be followed exactly to ensure accurate data sorting within targeting and BDA automation support tools. Incorrect inputs result in erroneous machine sorting. The Phase 1 BDAREP version of the USMTF message is an abridged version of the Phase 2 BDAREP. The basic difference is that many/most of the fields in the Phase 1 BDAREP are optional. See Figure E-3 for Phase 1 USMTF BDAREP example.

(2) **Phase 2 BDAREP.** The Phase 2 BDAREP is an all source assessment containing

PHASE 1 E-MAIL BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE

SUBJECT: NMJIC PHASE 1 BDA REPORT NUMBER P-0001

PURPOSE: THIS PHASE 1 BDA REPORT CONTAINS INITIAL PHYSICAL DAMAGE ASSESSMENTS. QUESTIONS SHOULD BE DIRECTED TO THE NMJIC AT 777-666-9999, DSN 222-9999, OR SECURE PHASE 1 IMAGERY CAN BE LOCATED ON THE XXXX IMAGERY SERVER USING THE KEYWORD 'BDA'.

NAME: NORTHERN HQ FACILITY

BE: 1111-33333

COUNTRY: CC

GEO COORDS: 334520N / 0443910E

INFORMATION CUTOFF: 011315ZJAN2002

TM REF & PAGE NO: BTG, EG 1111-33333, 15 APR 96, PAGE G2

TEXT: FAIR QUALITY EO IMAGERY COLLECTED AT 011205ZJAN2002 REVEALED THE FOLLOWING:

TGTELEM: (01) OPS BUNKER, GRID J.4-U.1

PHYDMG: CONFIRMED MODERATE DAMAGE

REMARKS: DAMAGE FROM THE 010730ZJAN2002 ATTACK BY 1 X F-16 AIRCRAFT.

TGTELEM: (04) HQ BUILDING – NORTH WING, GRID A.5-S.7

PHYDMG: CONFIRMED LIGHT DAMAGE

REMARKS: DAMAGE FROM THE 010700ZJAN2002 ATTACK BY THE SINGLE TLAM-C BLOCK III WHICH IMPACTED AIMPOINT AC.

TGTELEM: (04) HQ BUILDING – SOUTH WING, GRID A.5-S.3

PHYDMG: CONFIRMED SEVERELY DAMAGED

REMARKS: DAMAGE FROM THE 010700ZJAN2002 ATTACK BY A PAIR OF TLAM-C BLOCK III WEAPONS IMPACTING AIMPOINT AE. OVERALL DAMAGE TO THE HQ BUILDING IS ASSESSED AS MODERATE BASED UPON DAMAGE TO THE NORTH AND SOUTH WINGS OF THE STRUCTURE.

COMMENTS: NO ADDITIONAL DAMAGE WAS NOTED TO THE OTHER TARGET ELEMENTS AND NO COLLATERAL DAMAGE WAS OBSERVED.

Figure E-2. Phase 1 E-mail Battle Damage Assessment Report Example

detailed physical and functional damage assessments, inputs to the target system assessment, and comments on munitions effectiveness. When appropriate, a reattack recommendation is also included. The Phase 2 BDAREP builds upon the initial target assessment in the Phase 1 BDAREP, and provides the detailed target assessment. A Phase 2 report provides cumulative reporting of strikes by building on the previous Phase 2 report. This report also provides critical inputs for the Phase 3 target system assessment report. The Phase 2 BDAREP is written in a MTIC

PHASE 1 UNITED STATES MESSAGE TEXT FORMAT BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE

Note: This example used the data from the e-mail free text BDAREP from above.

OPER/GOLDEN GOOSE//
MSGID/BDAREP PHASE1/NMJIC/P-0001//
BDAREPID/BEN:1111-33333/REPCOUNT:1//

ICOD/011315ZJAN2002//
BDACELL/NMJIC/TEL:COM 777-666-9999/TEL:DSN 222-9999/SECTEL:999-3333//

GENTEXT/PURPOSE/THIS PHASE 1 BDA REPORT CONTAINS INITIAL PHYSICAL DAMAGE ASSESSMENTS. PHASE 1 IMAGERY CAN BE LOCATED ON THE XXXX IMAGERY SERVER USING THE KEYWORD 'BDA'.//

TARGET/BEN:1111-33333/-/-/NORTHERN HQ FACILITY/-/CC/SEC:334520N0443910E /-/TMREF:BTG/TMDATE:19960415/TMREFID:EG 1111-33333/-//
COLDMG/NONE IDENTIFIED//

TGTEL/PLANNED:Y/01/TGTEL:OPS BUNKER/TMPAGE:G2/TMGRID:J.4-U.1//
ELDMG/PHYDMG:MOD/CONF:CONF//
AIMPOINT/-/BUNKER/PHYDMG:MOD/CONF:CONF/-/TMPAGE:G2/TMGRID:J.4-U.1//
MSSNDAT/-/010730ZJAN2002/-/-/ACFT:1/ACMOD:F16//

TGTEL/PLANNED:Y/04/TGTEL:HQ BUILDING/TMPAGE:G2/TMGRID:A.5-S.5//
ELDMG/PHYDMG:MOD/CONF:CONF//
AIMPOINT/AC/NORTH WING OF BLDG/PHYDMG:LT/CONF:CONF/-/TMPAGE:G2/TMGRID:A.5-S.7//
MSSNDAT/-/010700ZJAN2002/-/-/-/NUMWPN:1/WPNTYPE:TLAM3-C//
AIMPOINT/AE/SOUTH WING OF BLDG/PHYDMG:SVR/CONF:CONF/-/TMPAGE:G2/TMGRID:A.5-S.3//
MSSNDAT/-/010700ZJAN2002/-/-/-/NUMWPN:2/WPNTYPE:TLAM3-C//

BDASRC/IMINT//
IMAGERY/EO/FAIR/OBLIQUE/011205ZJAN2002//

**Figure E-3. Phase 1 United States Message Text Format
Battle Damage Assessment Report Example**

approved, machine readable USMTF message format, in which the machine counts each slash of the document, sorts the message data into data sets, and then sorts it into over arching set groups. It is imperative that the message format be followed exactly to ensure accurate automated data sorting within targeting and BDA automation support tools. Incorrect inputs result in erroneous machine sorting. See Figure E-4 for Phase 2 BDAREP example.

(3) **Phase 3 BDAREP.** The Phase 3 BDAREP combines the analyses from the Phase

PHASE 2 BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE

OPER/GOLDEN GOOSE//
MSGID/BDAREP PHASE2/NMJIC/F-0005//
BDAREPID/BEN:1111-22222/REPCOUNT:1//

ICOD/011630ZJAN2002//
BDACELL/NMJIC/TEL:COM 777-666-9999/TEL:DSN 222-9999/SECTEL:999-3333//

GENTEXT/PURPOSE/THIS PHASE 2 BDA REPORT IS AN ALL-SOURCE ASSESSMENT CONTAINING DETAILED PHYSICAL AND FUNCTIONAL DAMAGE ASSESSMENTS, INPUTS TO THE TARGET SYSTEM ASSESSMENT, AND COMMENTS ON MUNITION EFFECTIVENESS. PHASE 2 IMAGERY, IF PRODUCED, CAN BE LOCATED ON THE XXXX IMAGERY SERVER USING THE KEYWORD 'BDA'.//

TARGET/BEN:1111-22222/-/-/BIG CITY C2 FACILITY/CAT:33333/CC/SEC:333333N0444444E/WE
/TMREF:BTG/TMDATE:19940115/TMREFID:EG 1111-22222/TGTSYS:C4I//
GENTEXT/TARGET OBJECTIVE/TO SEVERELY DISRUPT BIG CITY'S LEADERSHIP COMMAND & CONTROL CAPABILITIES.//

TGTDMG/FUNCDMG:DES/STCHG:Y//
GENTEXT/BDA SUMMARY/TARGET FUNCTIONAL DESTROYED. DUE TO THE DAMAGE AT THIS TARGET, IT IS ASSESSED THAT MODERATE FUNCTIONAL DAMAGE HAS BEEN CAUSED TO TARGET SYSTEM. UNCONFIRMED REPORTING INDICATES ALTERNATE C2 PROBABLY CAPABLE OF ASSUMING LIMITED FUNCTIONS FOR THE BIG CITY LEADERSHIP. BASED UPON THE LEVEL OF TARGET FUNCTIONAL DAMAGE, IT IS ASSESSED THAT THE TARGETING OBJECTIVE HAS BEEN MET.//
COLDMG/NONE IDENTIFIED//

TGTELEM/PLANNED:Y/-/TGTEL:C2 OPERATIONS BUILDING/TMPAGE:G3/TMGRID:B.5-S.0//
ELEMDMG/PHYDMG:SVR/CONF:CONF/FUNCDMG:DES/STCHG:Y/MINRECUP:3MON/MAXRECUP:6MON//
GENTEXT/DAMAGE NARRATIVE/ALL-SOURCE INTELLIGENCE CONFIRMS THAT THE C2 OPERATIONS BUILDING HAS SUFFERED SEVERE INTERNAL DAMAGE AND IS FUNCTIONALLY DESTROYED. EXTENSIVE SMOKE FROM INTERNAL FIRES IS CLEARLY VISIBLE. NUMEROUS FIRE TRUCKS ARE IN THE FACILITY. COCKPIT VIDEO CONFIRMS FOUR WEAPONS IMPACTING, WITH AT LEAST ONE PENETRATING TO THE BASEMENT OF THE BUILDING. ESTIMATE BIG COUNTRY WILL REQUIRE SIGNIFICANT TIME, AND PROBABLE FOREIGN TECHNICAL ASSISTANCE, TO RECONSTITUTE C2 EQUIPMENT.//

Figure E-4. Phase 2 Battle Damage Assessment Report Example

PHASE 2 BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE (cont'd)

AIMPOINT/-/OPS BUILDING/PHYDMG:SEV/CONF:CONF/-/TMPAGE:G3/
TMGRID:B.5-S.0//

MSSNDAT/MAP:AU/010800ZJAN2002/-/ACFT:1/ACMOD:F15E/CALL:GUMBY
11/NUMWPN:2/WPNTYP:GBU10/DELAY/TIME:50MSEC//

MSSNDAT/MAP:AU/010805ZJAN2002/-/ACFT:1/ACMOD:F16/
CALL:SNOWBALL 12/NUMWPN:2/WPNTYP:GBU24/DELAY/TIME:50MSEC//

TGTELEM/PLANNED:Y/-/COMMS ANTENNA/TMPAGE:G3/TMGRID:H.6-X.2//
ELEMDMG/PHYDMG:DES/CONF:CONF/FUNCDMG:DES/STCHG:Y/
MINRECUP:3WK/MAXRECUP:2MON//

GENTEXT/DAMAGE NARRATIVE/IMAGERY CONFIRMS THAT THE ANTENNA
WAS PHYSICALLY AND FUNCTIONALLY DESTROYED BY THE WEAPONS
WHICH CUT OFF THE TOP HALF OF THE STRUCTURE. ALTHOUGH
DESTROYED, IT COULD BE REPAIRED QUICKLY.//

AIMPOINT/-/ANTENNA/PHYDMG:DES/CONF:CONF/-/TMPAGE:G3/
TMGRID:H.6-X.2//

MSSNDAT/MAP:AU/010802ZJAN2002/-/ACFT:1/ACMOD:F15E/CALL:GUMBY
02/NUMWPN:2/WPNTYP:GBU10/AIR//

GENTEXT/MUNITIONS EFFECTIVENESS SUMMARY/ALL THE WEAPONS
IMPACTED THE AIMPOINT AND APPEAR TO HAVE FUNCTIONED
PROPERLY.//

BDASRC/SIGINT/ACV/IMINT//

IMAGERY/EO/FAIR/OBLIQUE/011200ZJAN2002//

BDAREF/A/BDAREP PHASE1/NMJIC/011315ZJAN2002/P-0007//

AMPN/PHASE 1 BDAREP WAS PERFORMED USING PARTIALLY OBSCURED
IMAGERY.//

Figure E-4. Phase 2 Battle Damage Assessment Report Example (cont'd)

1 and 2 BDAREPs, and provides detailed target system assessments. When appropriate, a reattack recommendation and/or targeting nomination is also included. When required, the Phase 3 report can update or correct a Phase 2's overall target functional damage assessment. Within the Phase 3 report, individual target system assessments are provided against all the different target systems that are attacked during the operation. The Phase 3 report is a cumulative structured free text report which addresses both damage to targets, plus the effects of recuperation activities. Note: As requested by the command or by operational requirements, the Phase 3 BDAREP format can be modified with additional narratives/information to address other target system issues. See Figure E-5, Phase 3 BDAREP example.

Current approved BDAREP formats and required input data are explained in detail on the J-2T Homepage in the BDA sub-homepage.

6. Battle Damage Assessment Terminology and Damage Definitions

PHASE 3 BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE

SUBJECT: (U) Operation GOLDEN GOOSE - NMJIC Phase 3 BDAREP Number T-0004

ICOD: 012330ZJAN2001

POC: NMJIC Targeting and BDA Cell, 777-666-9999, DSN 222-9999, secure: 999-3333

1. (U) PURPOSE: This Phase 3 BDA REPORT is a US national level input to the theater assessment of target system functionality and residual capability. It is provided to the command for consideration in making their target system functional damage assessment. The command is the final authority for BDA in their AOR. The functional assessment statements reflect reporting on all targets damaged in that system to date. The "Individual Target Functional Damage Updates" sections identify target functional damage changes (Yes) since a previous Phase 3 report or if the target has been added (New) to the assessment for the first time. The following target systems are included in this Phase 3 report: Electric Power and Lines of Communication.

2. (U) EXECUTIVE OVERVIEW: The following provides an executive overview of Phase 3 BDA to date by functional area. Details on specific targets to include functional damage/status/intelligence assessments/outlook are contained in the body of the message.

A. (U) ELECTRIC POWER: Although numerous targets have been attacked over the past two days, the overall effect is light functional damage to the entire electric power grid.

B. (U) LINES OF COMMUNICATION: The country's ability to move supplies to its forces remains moderately degraded since Day 1 attacks against the critical bridges over the David River.

3. (U) TARGET SYSTEM: Electric Power (PWR) _____

A. (U) TARGET OBJECTIVE: Disrupt/destroy adversary's electric power production capability in order to degrade military's ability to conduct and sustain wartime operations.

Figure E-5. Phase 3 Battle Damage Assessment Report Example

PHASE 3 BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE (cont'd)**B. (U) INDIVIDUAL TARGET FUNCTIONAL DAMAGE UPDATES:**

<u>BE</u>	<u>Target Name</u>	<u>CAT Code</u>	<u>Functional Damage</u>	<u>Status Change</u>
1111-00011	BIG CITY TRANS STA, CC	12200	Light	New
1111-00100	COUNTRY HPP, CC	13300	Light	Yes
1111-00222	CAPITAL-1 TRANS STA, CC	12200	Severe	New
1111-00550	CAPITAL-2 TRANS STA, CC	12200	Moderate	Yes

C. (U) TARGET SYSTEM FUNCTIONAL DAMAGE: Light _____

D. (U) GENERAL ASSESSMENT: Capability to produce electric power and sustain the operation of the national power grid, although degraded, remains intact. Functional damage to the electric power system is confined to the capital area and the southeast part of the country. Critical operations in these areas could still be maintained through the use of local power sources. The objective has been only partially met.

E. (U) BDA SUMMARY: Today's limited air strikes were successful in hitting their aimpoints and causing damage to several of the electric power facilities around the capital. Physical and functional damage to these targets was limited to the switching equipment and transformers.

F. (U) OUTLOOK: Reconstitution has already begun, but will take several days to two weeks to repair the damage.

4. (U) TARGET SYSTEM: Lines of Communications (LOCs)

A. (U) TARGET OBJECTIVE: Disrupt adversary's ability to resupply their forces from the numerous warehouse complexes and depots located north of the David River.

B. (U) INDIVIDUAL TARGET FUNCTIONAL DAMAGE UPDATES:

<u>BE</u>	<u>Target Name</u>	<u>CAT Code</u>	<u>Functional Damage</u>	<u>Status Change</u>
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No changes.

C. (U) TARGET SYSTEM FUNCTIONAL DAMAGE: Moderate

Figure E-5. Phase 3 Battle Damage Assessment Report Example (cont'd)

PHASE 3 BATTLE DAMAGE ASSESSMENT REPORT EXAMPLE (cont'd)

D. (U) GENERAL ASSESSMENT: Damage to the three largest bridges over the David River has forced the adversary to re-route traffic over several small bridges. Although heavier volumes of traffic have been seen at these smaller bridges, it appears that supplies are still able to be distributed from the numerous warehouse and depot complexes that have not been damaged/destroyed. It is estimated that the resupply flow over the David River has been cut by about 25 percent. Because of existing supplies with the fielded forces, this decrease will not have an immediate effect on their military operations. Continued attacks against the supply warehouses and fuel depots, and new attacks against the remaining David River bridges will eventually have an effect on resupply. The objective has not been met yet.

E. (U) BDA SUMMARY: No new sorties have been flown against the bridges since the first day of the war. The functional damage assessments against these bridges has not changed over the last 24 hours (South Street Bridge - destroyed, Victory and War Hero Bridges - moderate).

F. (U) OUTLOOK: Although bridge repair work has not begun, nor has pontoon bridging equipment been identified in the area, it is estimated that the adversary will attempt to improve their LOC capabilities in the near future.

Figure E-5. Phase 3 Battle Damage Assessment Report Example (cont'd)

BDA terminology and damage definitions are discussed in detail in DIA Reference Document DI-2820-4-02, *Battle Damage Assessment (BDA) Quick Guide*, and DIA Reference Document DI-2820-2-02, *Battle Damage Assessment (BDA) Reference Handbook* (SECRET). These documents are accessible via the J-2T Homepage in the BDA sub-homepage.

7. BDA Training

Training for BDA operations may be requested through combatant command training courses, the Joint Targeting School (JTS) BDA course (Dam Neck, VA), or the DIA Joint Military Intelligence Training Center (JMITC) BDA course (Bolling AFB, Washington, DC). In addition, distance learning is available through a joint JMITC web based and JTS CD-ROM based interactive training program.

8. Authority for Delegated Responsible Production Agency Database Management-Post BDA Reporting.

The targeting cycle is heavily reliant upon the availability of an accurate, complete facility database, i.e., the MIDB. Maintenance of this national database is a complex task, which is facilitated through DODIPP ID of RESPROD organizations. All targeting organizations use the expertise delineated by this process for target development and validation. Federated BDA should leverage this delineated expertise to the greatest extent possible. However, upon initiation of crisis operations the combatant commander becomes responsible for the maintenance and update of BDA information which other

organizations and agencies have RESPROD. To ensure the database remains accurate and complete on a timely manner, and to ensure the RESPROD organization/agency does not lose valuable information because of combatant command responsibility for BDA, guidelines are necessary to delineate combatant command and analytical responsibility.

a. The combatant command must make all effort to meet the Phase 1, 2, and 3 BDA reporting release times identified within this appendix or per the BDA CONOPS. However, the combatant command should not exceed 30 days, from weapon employment on the target, to release the reports and update the national database.

b. At the 30-day point from weapon employment, and with the absence of combatant command BDA information, the RESPROD analyst may make all entries necessary to update the national database and, by default, has full authority for all analytical calls on the facility. The RESPROD analyst may enter pertinent information into the database at any time but cannot change the combatant command's physical and functional damage calls for at least 60 days. At the 60-day point from weapon employment the RESPROD analyst has full authority for all analytical calls on the facility.

APPENDIX F

LAW OF ARMED CONFLICT AND RULES OF ENGAGEMENT CONSIDERATIONS IN TARGETING

1. Overview

The Armed Forces of the United States will comply with the LOAC in the conduct of military operations during all armed conflicts, however such conflicts are characterized, and with the principles and spirit of the law of war during all other operations. While LOAC affects all phases of the targeting cycle, its greatest impact is on target development. Target development is also the phase of the targeting cycle where intelligence support is most intense. Therefore, it is essential for intelligence personnel to understand the basic principles of LOAC as they relate to targeting. In support of this requirement, this appendix discusses the LOAC and the ROE as they apply to targeting.

2. LOAC and International Law

a. Sources of LOAC, or the Law of War, include the set of international agreements governing warfare and certain elements of customary international law. Examples of these agreements are: the Geneva Conventions, Hague Conventions, Chemical and Biological Weapons Conventions, and Convention on Conventional Weapons. The United States recognizes some aspects of the 1977 Additional Protocols to the Geneva Conventions as customary international law but is not a party to the Additional Protocols.

b. Even though the United States recognizes most of these agreements and customs, their applicability to any military operation may be subject to dispute. The position of the United States, as well as North Atlantic Treaty Organization and the United Nations, is that their forces will apply the principles and spirit of the LOAC to any military operation.

c. The LOAC rests on four general principles:

(1) Discrimination requires distinguishing between combatants and military objectives, that may be attacked, and noncombatants and protected places, that may not be attacked;

(2) Military necessity justifies those measures not forbidden by international or domestic law that are necessary for securing the military objective as soon as possible;

(3) Unnecessary suffering prohibits the use of unlawful weapons designed to cause unnecessary suffering and the employment of lawful weapons in a manner calculated to cause unnecessary suffering; this concept also extends to unnecessary destruction of property;

(4) Proportionality means that the injury to persons and damage to property incidental to military action, in the circumstances ruling at the time, must not be excessive in relation the concrete and direct military advantage anticipated.

d. One of the major considerations in the LOAC is that of targeting. There are few absolutes in targeting, but the application of general principles applies. Targets should be confirmed as military objectives; members of armed forces having the status of combatants, or other persons taking a direct part in hostilities; and objects which by their nature, location, purpose, or use make an effective contribution to military action. Planners must take all reasonable steps to ensure these targets may be attacked without probable losses in lives and damage to property disproportionate to the military advantage anticipated.

e. LOAC with respect to targeting, collateral damage, and civilian casualties is derived from the principle of discrimination. The intentional destruction of civilian objects not required by military necessity and the direct, intentional attack upon civilians not taking part in hostilities is prohibited. In terms of civilians and civilian objects, the principle of proportionality requires commanders to assess whether incidental civilian injury or loss of life, or incidental damage to civilian objects will be excessive in relation to the direct military advantage anticipated by the attack. This balancing may be done on a target-by-target basis and is based on all information reasonably available to the commander at the time the target is vetted/approved during the target development process and again, as practicable, just prior to the planned attack on the target.

f. LOAC provides guidance for weapons use and target selection and is a basic source of constraint. The decisions of commanders and civilian leaders are often influenced by other international law, domestic law, and policy. Other constraints, such as ROE, can be imposed for military or political reasons.

3. Rules of Engagement

ROE are defined in JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, as “directives, issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered.” In other words, **ROE establish guidelines for the use of force imposed by military commanders**. The standing rules of engagement codify the inherent right of self-defense and provide guidance for the application of force for mission accomplishment. LOAC concerns are but one element for consideration when developing ROE. Nonlegal issues such as political objectives and military mission also play an essential role in the construct and application of ROE. For example, during the Korean War, theater commanders placed a five mile no-strike target area below the North Korean and Chinese border. The reason for this was to try to prevent drawing China into the war. It is the JFC’s responsibility to weigh target nominations against the ROE and, if targets prohibited by ROE are critical to the campaign, to request appropriate ROE amendments.

4. General Restrictions on Targeting

a. **Protection of the civilian population and civilian objects.** The civilian population, as well as individual civilians, may not be the object of attack. Acts of violence intended to spread terror among the civilian population are prohibited. Civilian property not validated (in terms of

supporting the adversary military/war effort) as a military objective cannot be the object of an attack.

b. **Non-participation in hostilities.** Civilian LOAC protections carry a strict obligation on the part of civilians not to take direct part in hostilities, become combatants, or engage in acts of war. Civilians engaging in fighting or otherwise participating in combat operations, individually or as a group, lose their protected status.

c. **Requirement to distinguish between military targets and civilian objects.** It is necessary to distinguish between military targets and civilian objects (regardless of the legal status) within or over the territory in which combat occurs. Civilians may not be used as human shields in an attempt to render an area immune from military operations, protect a defensive position, hide military objects, or to screen an attack. Civilians may not be forced to leave their homes or shelters to disrupt the movement of an adversary. When an adversary employs illegal means to shield legitimate targets, the decision to attack should, unless otherwise authorized, be reviewed by higher authority in light of current ROE, military considerations, international law, and precedent.

d. **Lawful military attacks will be directed only at military targets.** By their nature, location, purpose, or use, military targets make an effective contribution to military action, and their total or partial destruction, capture, or neutralization offers a definite military advantage. Many objects are clearly military targets, such as military encampments, armaments, aircraft, tanks, antiaircraft emplacements, or troops. Factories, workshops, and plants that directly support the adversary warfighting capability are generally considered legitimate military targets. Controversy exists over objects such as civilian transportation, communications systems, dams, and dikes, and their potential to be classified as military targets. These civilian objects (transportation, communications systems, dams, etc.) may be classified as military targets in appropriate circumstances. Traditionally, modern transportation and communications systems are military targets because of heavy use by the military during conflicts. An object's inherent use does not automatically determine its status. Even a traditionally civilian object such as a house can be a military target if it is occupied and used by military forces. The key factor is whether the object contributes to the adversary's military action so its capture, destruction, or neutralization offers a military advantage in the prevailing circumstances. In the absence of credible intelligence to the contrary, a presumption of civilian property attaches to objects traditionally associated with civilian use (dwellings, schools).

5. Precautions in Attack

When conducting military operations, care must be taken to spare noncombatants and protected property. Positive steps must be taken to avoid or minimize incidental civilian casualties or damage. The extent of danger to the civilian population varies with the type of military target attacked, terrain, weapons, weather, and proximity to the target. Threats to civilians depend on type of attack, level of conflict, and resistance encountered by adversary forces. Precautions include the following:

a. **Minimization of Incidental Civilian Casualties.** Attacks are not prohibited against military targets even if they cause incidental damage to civilian objects. In spite of precautions, such incidental casualties are inevitable during armed conflict. LOAC prohibits those attacks where incidental injury to civilians or incidental damage to civilian objects would be excessive in relation to the concrete and direct military advantage anticipated. Required precautionary measures are reinforced by traditional military doctrines, such as economy of force, concentration of effort, target selection for maximization of military advantage, avoidance of excessive collateral damage, accuracy of targeting, and conservation of resources.

b. **Cancellation or Suspension of Attacks.** If target intelligence is found to be faulty, unsubstantiated or uncorroborated before an attack is started or completed, the attack must be canceled or suspended, allowing however, for the safety of friendly forces if they would be endangered during disengagement.

6. Separation of Military Activities

International law prohibits the intentional targeting of civilians or civilian property. However, the parties to a conflict are obligated to remove their own civilian population, individual civilians, and civilian objects from areas or locations where they might be subject to attack. Under the 1949 Geneva Conventions, safety zones or demilitarized zones (see Figure F-1) may be created by or between the warring parties. Such zones are rarely established. If created, however, they may be used to protect civilian populations. Under the same Convention, combatants are required to wear uniforms, insignia, or other identifiable markings. Facilities such as hospitals must be clearly marked. International law requires combatants to locate military facilities away from hospitals and schools. When an adversary places military objectives in or near a populated area, the failure to separate military activities weakens effective protection of the nearby civilian population and may constitute a breach of LOAC.

7. Special Protection

Noncombatants must not knowingly be attacked or unnecessarily prevented from discharging their proper functions. However, the accidental injury of personnel or damage to objects at or near a military target is not cause for redress. Special protections are discussed below.

a. **Wounded and sick personnel, medical units, hospitals, and medical transport.** Under the 1949 Geneva Conventions and the 1977 Protocol 1 to the Geneva Conventions, the following civilian or military individuals or entities are protected:

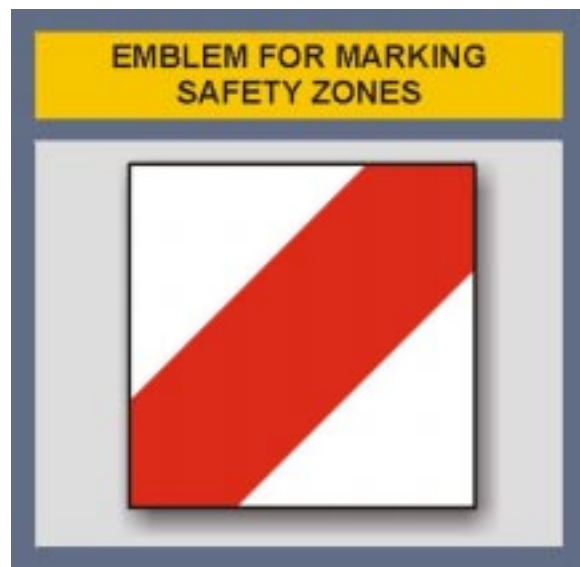


Figure F-1. Emblem for Marking Safety Zones

- (1) Fixed hospitals and other medical units.
- (2) Medical personnel and religious personnel such as chaplains.
- (3) Medical transports, whether medical aircraft, medical vehicles, medical ships and craft, and (where possible) sick bays of warships.
- (4) Wounded, sick and shipwrecked persons.

b. **International Medical Symbols.** Since 1864, the international medical symbol used to protect medical activities during wartime is a Red Cross on a white field. However, some Muslim countries have been using a Red Crescent on a white field to indicate medical activities. See Figure F-2 for examples of these symbols. Not all countries use the Red Cross or Red Crescent. Israel uses a Red Star of David (although not an internationally-recognized emblem) while Kazakhstan uses both the Red Cross and Red Crescent on the same flag. Iran has used a Red Lion and Sun. These symbols are used to mark civilian and military medical personnel, vehicles, and hospitals. The International Committee of the Red Cross, national Red Cross, and Red Crescent societies are permitted to make limited use of these symbols. A few US humanitarian organizations legitimately use the Red Cross for their private missions. Targeting personnel must ensure they are aware of all the potential emblems a country might use for protected sites.

c. **Buildings and Monuments (religious, cultural and/or charitable).** Buildings and monuments devoted to religion, art, science, or charitable purposes or historic sites may not be targeted. There is a duty to identify such places with distinctive and visible signs. When these buildings are used for military purposes, they may lose their protected status and qualify as military targets. Lawful military targets located near protected buildings are not immune from attack, but precautions must be taken to spare the protected buildings. Many allies and potential adversaries of the United States are party to the 1954 Hague Convention for the Protection of



Figure F-2. International Medical Symbols

Cultural Property in the Event of Armed Conflict. This treaty establishes a blue and white shield as the distinctive emblem for protected cultural property in war (see Figure F-3).

d. **Prisoner of War Camps.** Prisoners of war (POWs) may not be targets, be kept in a combat zone, or used to render an area immune from military operations. When military considerations permit, POW camps are to be identified by the letters “PW” or “PG.” These letters should be clearly visible from the air. The use of POW camp markings for any other purpose is prohibited. See Figure F-4 for additional emblems.



Figure F-3. Emblem for Cultural Property Under the 1954 Hague Convention

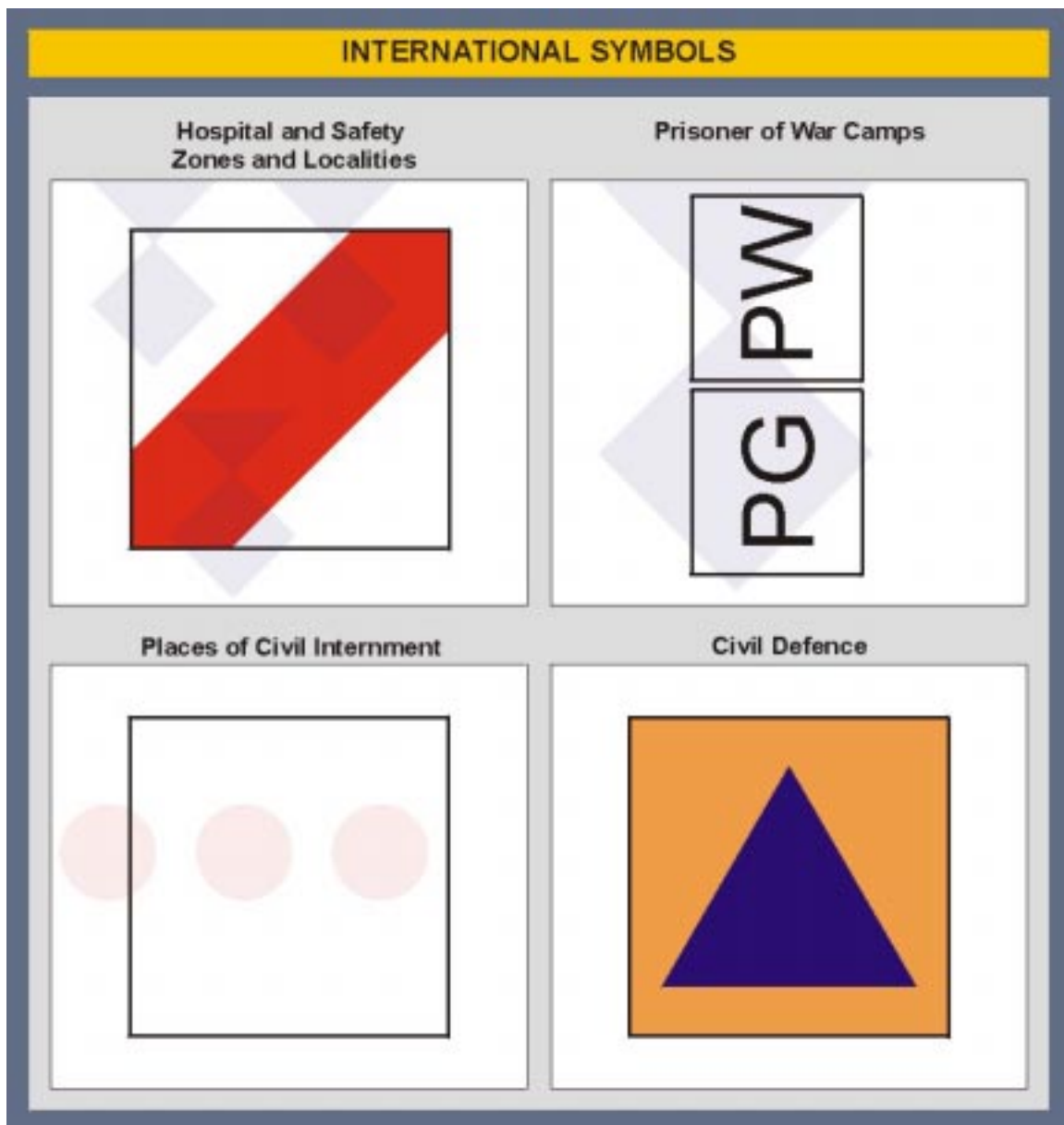


Figure F-4. International Symbols

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APPENDIX G
CHAIRMAN OF THE JOINT CHIEFS OF STAFF POLICIES ON
“SENSITIVE TARGET APPROVAL AND REVIEW PROCESS” AND
THE ACCOMPANYING “COLLATERAL DAMAGE ESTIMATION
AND CASUALTY ESTIMATION METHODOLOGY”

1. Need

Following the Gulf War, the defense community developed a single standard process to identify, review, and gain approval for sensitive targets. This single process uses a disciplined methodology to predict the collateral damage, and includes a CE.

2. Sensitive Target Approval and Review Process

a. The Joint Staff J-3 Deputy Directorate for Global Operations received the tasking, as derived from Operation ALLIED FORCE (OAF) lessons learned, to formalize the national-level approval process. In addition to developing a CJCSI, this tasking resulted in an update to the Office of the Secretary of Defense Contingency Planning Guidance 2002 and the Joint Strategic Capabilities Plan (JSCP) 02. These updates recognize the combatant commander’s responsibility for determining sensitive targets and the need to initiate a formal approval process. This joint approval process was formalized within the CJCSI 3122.06, *Sensitive Target Approval and Review Process*. Sensitive targets are those targets where the commander has estimated the physical damage and collateral effects on noncombatant persons, property, and environments occurring incidental to military operations exceed established national-level notification thresholds. Sensitive targets do not need to be collateral damage related. They may also include those targets which exceed national-level ROE, or where the combatant commander determines the target may have adverse political ramifications.

b. The STAR process was developed with two distinct procedures. The first is to support the deliberate planning process. It defines the requirements necessary for the combatant commander to pre-approve sensitive targets within CJCS-directed contingency plans or standing combatant command CONPLANs and OPLANs. The second procedure, though similar to the deliberate planning procedure, outlines the requirements necessary for the combatant commander to gain approval of sensitive targets during crisis operations. The JS coordinates the request within the timeframe requested by the combatant commander.

c. When the combatant command initiates the approval process, the JS brokers the sensitive target approval request with the Secretary of Defense. The command must forward all relative intelligence information to the JS J-2T to do this effectively. This ensures the best understanding of current linkages and value gained in relation to military objectives, the concerns that resulted in determining the target as sensitive, and what legal considerations may exist. Success in gaining approval in the STAR process hinges on receipt of this information.

d. This STAR process is applicable to the full spectrum of weapon employment, e.g., conventional, IO, STO, nuclear, etc.

3. Joint Collateral Damage Estimation/Casualty Estimation Methodology

a. In January 2000, the Joint Requirements Board formally tasked the JS J-2 to develop a standardized CE methodology. This effort resulted in a casualty lexicon, a methodology, and an interim conventional CE tool produced by the Defense Threat Reduction Agency. In August 2000, HQ United States European Command (USEUCOM) presented a modified 1998 four-tier methodology, which also folded CE into its overall assessment. This modified four-tier methodology then became the model J-2T used in developing the final joint methodology via a J-2T chaired collateral damage estimation (CDE)/CE Methodology working group from October 2000 through February 2001. The CJCS legal counsel, the geographic combatant commanders (USEUCOM, US Central Command, US Southern Command, and US Pacific Command), targeting offices, and the US Forces Korea targeting office were participants in the working group. The working group incorporated the changes to JSCP 02, requiring combatant commanders to determine thresholds per national-level guidance to identify “Sensitive Targets” for national-level review. The updated methodology developed a complete lexicon to support the end-to-end process of developing the commander’s consequence management estimations. The greatest refinement over the 1998 methodology was the update and enhancement of the weapons effects criteria and data, as evaluated by a second working group comprised of JMEM/AS Group, JMEM operational users working group, JWAC, and JS J-2T. The criteria and associated data were generated over a seven-month period starting in May 2001. Additional modifications included the addition of an unguided and cluster method, as well as new and updated automated tools to support the enhanced methodology. Finally, the J-2T developed a “National-level Target Materials Production Standard” terms of reference (J2-0000-223-02, Jan 02) to support the collateral damage evaluation and standardize the way information is presented to the national decision makers. The following provides a basic overview of the JS standard CDE/CE Methodology contained within Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3160.01, *Joint Methodology for Estimating Collateral Damage and Casualties for Conventional Weapons: Precision, Unguided, and Cluster*.

b. First, the combatant commander must develop the following information to support the evaluations within the methodology. This information is also forwarded to the JS as a basis for the evaluations and for national-level approval.

(1) Determination of a total noncombatant casualty estimate, which when exceeded requires national-level approval.

(2) Determination of collateral effect thresholds (e.g., overriding environmental considerations, economic considerations, etc.), which when reached requires national-level approval.

(3) Determination of the civilian infrastructure (e.g., dual-use, ability to redirect product/services to military, etc.) the combatant command may consider for targeting purposes. Lessons learned show little to no downward direction in determining what civilian infrastructure supports military warfighting capability and whether it may be targeted or not. As such, many targets

were not struck because of unclear guidance. This provides the combatant commander with the ability to identify his own “limits” without impeding the targeting development.

c. The Precision, Unitary Warhead Methodology is an enhancement of the Four-Tier methodology used during OAF and modified by HQ USEUCOM to more accurately account for casualties and allied concerns. It adds 2 x circular error probable to weapons effects, which accounts for 93.7 percent of actual weapon impact points. The review of weapons effects resulted in the need to focus on Serious Injuries and Structural Damage criteria. The methodology established the 10 percent Probability for Serious Injuries from Fragmentation Effects to Standing Personnel Wearing Two Layers of Clothes (Summer Uniform) as the basis for all initial evaluations. All other criteria fall within this range. These criteria and basis are also used in the unguided and cluster method. The methodology incorporates two primary assumptions:

(1) No intelligence can account for transient personnel, therefore, in the absence of current intelligence (e.g., open air markets, parks, or current imagery showing rough estimate of personnel in open) the risk to “personnel in the open” is not performed.

(2) All weapons perform as designed.

d. The Precision Guided Four-Tier process is as follows:

(1) Tier 1, Information Gathering and Target Materials Development. Perform an intelligence database search. Obtain the target write-ups (if required) and produce annotated imagery showing collateral damage concerns, critical elements, and worst-case weapon effects range around aimpoint, facility, or combatant command identified boundary.

(2) Tier 2, Initial Assessment. Combatant command target planners assess the collateral concerns by reviewing the annotated imagery and compiled data. Civilian or high-interest facilities (diplomatic facility [DIPFAC], CBRNE, etc.) within the worst-case weapons effect range become collateral concerns requiring Tier 3 or 4 evaluation.

(3) Tier 3, Weaponeeing Assessment. First use of weaponeeed solution(s); methodology assesses risk from employment of specific weapons and fuzing, delivery parameters, and mitigation techniques. Analysis of fragmentation pattern orientation may lead to recommendations or commander’s guidance on allowable attack axes. These weaponeeing solutions allow the combatant command planners to evaluate collateral damage risk relative to the threat to combat forces and the expected military advantage gained. Multiple solutions with ranging CDE/CE values give target planners greater flexibility in force employment. Concerns which continue to exceed any threshold requires Tier 4 evaluation.

(4) Tier 4, High Fidelity Weaponeeing Assessment: The conduct of this tier and utilization of associated tools/products are intended for the combatant command, unless specifically delegated or authorized by the combatant commander to subordinate units and components. The tier uses the high fidelity modeling of the JWACs CDE tool for conventional

munitions effects and DTRA's Hazardous Prediction Assessment Capability tool for CBRNE concerns. Tier 4 analysis is required for all planned attacks against known or suspected CBRNE targets and any targets associated with toxic industrial chemicals. The combatant commander uses all available information and command expertise to make an experiential call on whether the concern remains high or is actually low.

(5) Tiers 2, 3, and 4 also require an evaluation of concerns for non-CBRNE collateral effects (e.g., effects that cross state/country boundaries, damage the environment, cause economic impact to allies, etc.). If these non-CBRNE collateral effects exceed established thresholds, the target is determined to be sensitive, whether the CDE/CE determination was low or high.

(6) Targets that remain high after Tier 4 analysis are considered "Sensitive Targets," and require national-level review via the STAR process.

e. Unguided and cluster munitions 3-tier process.

(1) Three-tier process for unguided and cluster munitions is as follows:

(a) Tier 1, Information Gathering and Target Materials Development: Perform an intelligence database search. Obtain the target write-ups (if required) and produce annotated imagery showing potential collateral damage concerns, critical elements, and worst-case weapon effects circumference around aimpoint, facility, or combatant command defined boundary.

(b) Tier 2, Initial Assessment: Combatant command target planners assess the collateral concerns by reviewing the annotated imagery and compiled data. Civilian or high-interest facilities (DIPFAC, CBRNE, etc.) within the weapon effects circumference become collateral concerns requiring Tier 3 evaluation.

(c) Tier 3, Weaponizing Assessment: First use of weaponized solution(s); methodology assesses risk from employment of specific unguided or cluster ordnance, fuzing, delivery platforms, delivery parameters, and mitigation techniques. Analysis of bomb train orientation may lead to recommendations or commander's guidance on allowable attack axes. These weaponizing solutions allow the combatant command planners to evaluate collateral damage risk relative to the threat risk to combat forces and the expected military advantage gained. Multiple solutions with ranging CDE/CE values give target planners greater flexibility in force employment. Since no high fidelity model to support unguided/cluster solutions exists, concerns exceeding any thresholds in Tier 3 require weaponizing for precision munitions or sending forward for national-level approval as a "Sensitive Target" via the STAR process.

(d) Tiers 2 and 3 also require an evaluation of concerns for non-CBRNE collateral effects (e.g., effects that cross state/country boundaries, damage the environment, cause economic impact to allies, etc.). If these non-CBRNE collateral effects exceed established thresholds, the target is determined to be sensitive, whether the CDE/CE determination was low or high.

(2) This collateral damage methodology is designed for conventional weapon employment, but the same approach is applicable to any force weapon employment.

4. Additional Guidance

a. The combatant command should identify sensitive target(s) within the RTL until such time they receive approval through the STAR process or the reason for the sensitivity is removed or is no longer a factor. Also, the combatant command should forward to JS J-2T the BDA information to include imagery on the sensitive target(s) within one hour of completion of the BDA Phase 2 Report(s). This is necessary to answer the national-level interest generated during the STAR process.

b. All echelons in applying this methodology should always ensure the weapon-to-target pairing is maximized for effects on the target. It is possible to sub-optimize effects on target by giving too great an emphasis to collateral damage concerns and focusing on a few mitigation techniques. For example, burying a weapon to mitigate fragmentation concerns will significantly decrease both blast and fragmentation effects on the intended target. Another example, using a smaller than needed warhead on a target which is only susceptible to blast damage; e.g., a bridge.

c. The JS Standard CDE/CE Methodology provides a common ground for all combatant commands, subordinate commands, and components to follow. It does not prevent the combatant commander from generating additional guidance and TTP. For instance, a combatant commander may direct that no submunitions be employed within an urban environment or within 500 ft of a residence; or break down the CDE/CE low range to develop a CDE/CE value of “medium” to support allied processes, but they would only report “low” (a compilation of the command’s defined low and medium) and “high” to the JS, lateral command authorities, and higher command authorities (“medium” would be a definition that would exist only within the combatant command).

d. The highly sensitive nature of collateral damage requires very tight controls on maintaining strict standards to the automation tools that support the methodology. JS J-2T exercises that control through the MTIC. Targeting organizations at all echelons only use those tools approved by the MTIC and only within the tiers each tool was designed to support. Those tools approved by the MTIC are identified on the JS J-2T homepage.

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APPENDIX H

PRECISION ENGAGEMENT COLLABORATION PROCESS

1. Purpose

Combatant commanders have begun to enhance their theater targeting processes through the use of collaborative technologies. One model for conducting collaborative targeting operations is the Precision Engagement Collaboration Process (PECP). This is not intended as the only doctrinal method of using collaborative processes to support joint targeting. Commanders must determine the processes they wish to use in order to best achieve their objectives.

2. General

a. Operations DESERT STORM and ALLIED FORCE identified challenges in DOD's ability to execute the joint targeting process. Specialized expertise was in short supply, and support from national agencies and targeting centers of excellence was not always synchronized with theater efforts. PECP brings together SMEs from the operations, intelligence, and interagency communities to provide a methodology for executing the targeting cycle in a collaborative environment. The result is a manageable distribution of the workload, improved situational awareness among all participants, and better targeting solutions for the JFC.

b. PECP has three elements: the process; the participants/organization (also referred to as the collaborative community); and the environment in which collaboration occurs. By combining these elements, PECP provides an efficient and scalable method to respond to targeting challenges during deliberate planning, crisis action planning, and sustained operations. PECP brings rigor and discipline to a potentially undisciplined web-based environment, ensuring the targeting product(s) provided to the warfighter are thoroughly vetted and represent the best possible solution based on the commander's guidance and objectives. By dividing the labor among theater and stateside participants, PECP allows the targeting community to respond rapidly to the JFC's requirements without forward-deploying large numbers of analysts and operators.

3. Definitions

a. **Organization.** The PECP organization consists of a **virtual coordination group (VCG)** and numerous **virtual support groups (VSGs)**.

b. **VCG.** As the lead element, the VCG is responsible for conveying to the collaborative community the JFC's desired targeting effects as based upon his objectives and guidance. The VCG assigns leaders and designates components of VSGs, empowers VSGs with identifying targeting solutions, and monitors the progress of those VSGs. Ultimately, the VCG provides quality assurance by ensuring the VSG's targeting recommendations are aligned with the JFC's objectives and guidance. The VCG comprises J-2 and J-3 representatives from the JFC staff, components, JS, and the supported combatant commander (in cases when the JFC is not a combatant commander.)

c. **Virtual Coordination Group Lead.** The VCG Lead, as the key enabler for successful PECP operations, sets the tone for collaboration. Qualifications for this position include experience in joint operations, authority to task component and national agency representatives, and access to the JFC as well as his J-2 and J-3. The VCG Lead needs to understand the JFC's mission, concept of operations, intent, and guidance and must be able to convey that information to other members of the collaborative community.

d. **Virtual Support Group.** VSGs are collaborative workgroups within the PECP where specialized, analytical, and operational forms of expertise reside (see Figure H-1). VSGs comprise theater and national-level SMEs from the intelligence, operations, and interagency communities. Capitalizing upon the teamwork inherent to a collaborative environment, VSGs develop targeting recommendations such as target nomination lists, weaponeering solutions, and measures of merit. VSGs may be organized by commander's objective, target sets, desired targeting effects, or by any other category that may make sense given the operational scenario.

e. **Collaborative Environment.** The collaborative environment is a web-based workspace made available through a collaborative tool such as InfoWorkSpace. This environment functions like an office complete with conference room, file cabinets, and whiteboard. PECP takes advantage of an important feature referred to as **persistent environment**, which ensures products placed in the collaborative workspace can be accessed at all times, whether or not a collaborative session is taking place.



Figure H-1. Sample Organizations Within Virtual Support Groups

f. **Product.** The VCG tasks the VSG to create products to include TNLs, ETFs, weaponeering solutions, graphics, and other traditional targeting outputs. A product may also be a specialized analytical assessment that helps improve targeting decisions. Once complete, a product is placed within PECP's persistent environment and/or within a targeting information management tool. The product is accessible to anyone in the collaborative environment who has the requisite authorities or permissions.

4. Initiating PECP

a. Initiation of the PECP begins with a request from the supported JFC to the JS, applicable military and governmental operations, intelligence, and targeting organizations (see Figure H-2). The JS J-3 and J-2 task appropriate agencies and organizations to conduct PECP in support of the JFC. The JFC will need to determine if its own battle staff will facilitate the collaborative sessions and administer the process, or whether an outside agency/command should provide those services.

b. PECP is most effective when collaboration occurs over the Secret Internet Protocol Router Network (SIPRNET), as this network is used universally throughout the operations and intelligence communities. Several target sets, however, will require collaboration over the sensitive compartmented information network known as JWICS. No matter which network is employed, PECP requires requesting and participating organizations to keep their collaborative tool software

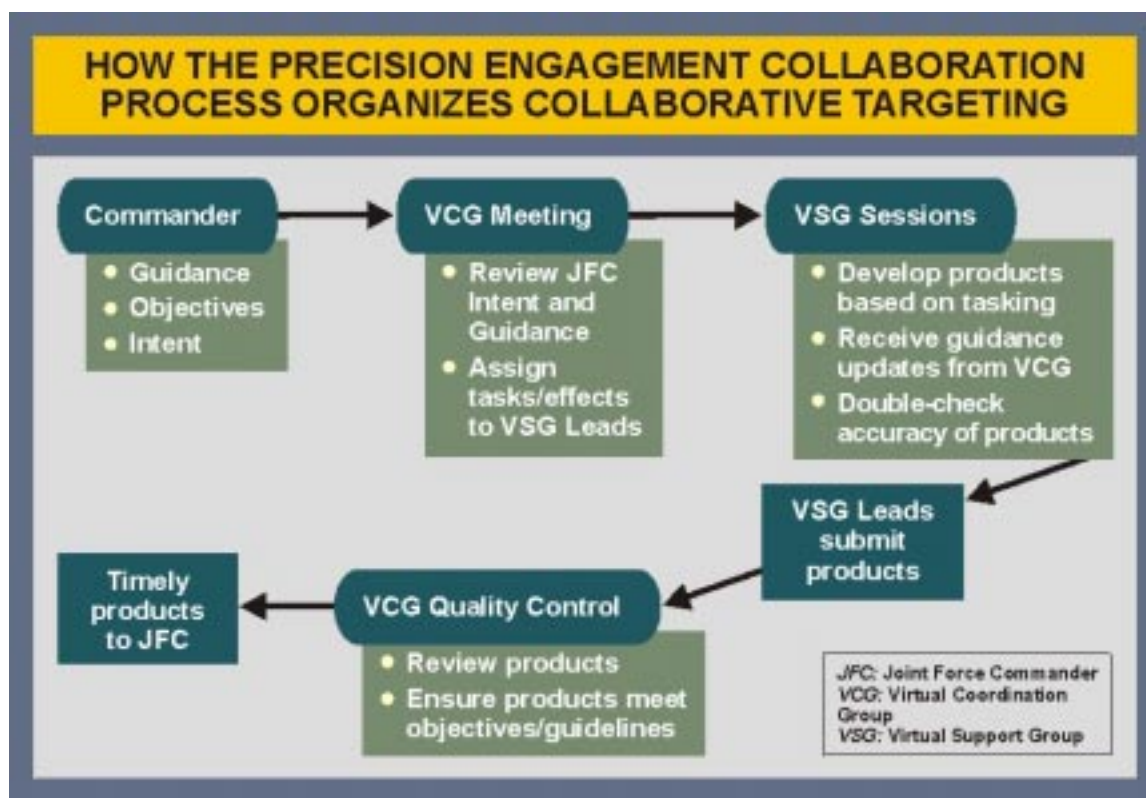


Figure H-2. How Precision Engagement Collaboration Process Organizes Collaborative Targeting

and training standards current. Commands and agencies may contact USJFCOM for assistance with their collaborative connectivity and training programs in support of targeting. Likewise, USJFCOM can provide support and PECP assistance via existing CONOPS and TTP.

c. Once connectivity is established, the supported JFC's staff will convene an initial collaborative session to:

- (1) review the JFC's operational intent, guidance, and objectives;
- (2) determine targeting objectives that support the JFC's strategy;
- (3) designate VCG composition and leadership;
- (4) designate VSG composition and leadership;
- (5) establish a task list with associated suspense dates; and
- (6) announce the date/time of the next VCG session based on the JFC's battle rhythm and the tasks assigned.

5. The Process

a. PECP follows the six phases of the joint targeting cycle. Due to the persistent nature of the collaborative environment, PECP allows for the simultaneous overlapping of phases vice a strict, linear sequence. The PECP process adjusts to the theater's battle rhythm. For instance, in deliberate planning, the VCG can articulate the commander's guidance and objectives, assign tasks to the VSGs, then wait weeks before holding another collaborative session. During a crisis, however, the VCG can meet with the VSGs every several hours or even minutes, passing changes in the commander's guidance while receiving products from the VSGs. Ultimately, VSG products help improve decisions and recommendations offered during joint guidance, apportionment, and targeting team and JTCB meetings.

b. In both of the aforementioned timelines, PECP yields collaborative meetings during which guidance and tasks are passed, suspenses are set, and products are received. One of the most important features of the process is the vetting of products. Vetting helps control quality and ensures the final product reflects the shared expertise of all pertinent SMEs.

c. VSG Leads can task subordinate VSG members as the situation requires, but are ultimately held accountable for submitting thorough and accurate products to the VCG by predetermined suspenses. This VCG-to-VSG empowerment is one of the most effective aspects of PECP.

6. PECP in a Coalition Environment

As multi-level security matures, the integration of SIPRNET with the networks of our coalition partners will allow a single collaborative environment to support coalition operations. In the meantime, theater-specific CONOPS and TTPs need to encourage the classification of targeting products at releasable levels to the maximum extent possible, thereby allowing the migration of PECP products to coalition networks.

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APPENDIX J

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APPENDIX K
ADMINISTRATIVE INSTRUCTIONS

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GLOSSARY

PART I — ABBREVIATIONS AND ACRONYMS

ACV	aircraft cockpit video
A/ETF	automated/electronic target folder
AFDD	Air Force Doctrine Document
AIRES	advanced imagery requirements exploitation system
AOR	area of responsibility
APG	aim point graphic
ATO	air tasking order
BDA	battle damage assessment
BDAREP	battle damage assessment report
BE	basic encyclopedia
BTG	basic target graphic
C2	command and control
C4I	command, control, communication, computers & intelligence
CA	combat assessment
CBRNE	chemical, biological, radiological, nuclear and high yield explosives
CDE	collateral damage estimation
CE	casualty estimation
CIA	Central Intelligence Agency
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CMO	Central Measurement and Signature Intelligence (MASINT) Organization
CNA	computer network attack
COA	course of action
CONOPS	concept of operations
CONPLAN	operation plan in concept format
CTM	core target material
DHS	Defense Human Intelligence (HUMINT) Service
DIA	Defense Intelligence Agency
DIAR	Defense Intelligence Agency regulation
DIPFAC	diplomatic facility
DMPI	desired mean point of impact
DOD	Department of Defense
DODD	Department of Defense directive
DODIPP	Department of Defense Intelligence Production Program
DOE	Department of Energy

DOS	Department of State
DPI	desired point of impact
DPPDB	digital point positioning database
DTRA	Defense Threat Reduction Agency
ETF	electronic target folder
EW	electronic warfare
FFD	foundation feature data
FM	field manual
FTP	file transfer protocol
GI&S	geospatial information and services
GIP	gridded installation photograph
GPS	global positioning system
GRG	gridded reference graphic
HQ	headquarters
HTG	hard target graphic
HUMINT	human intelligence
HVT	high-value target
IAW	in accordance with
IC	intelligence community
ID	identification
IGL	intelligence gain/loss
IIR	imagery interpretation report
IMINT	imagery intelligence
INR	Bureau of Intelligence and Research (DOS)
INTREP	intelligence report
IO	information operations
IPB	intelligence preparation of the battlespace
IPL	image product library
ISR	intelligence, surveillance, and reconnaissance
ITG	infrared target graphic
IVR	initial voice report
J-2	intelligence directorate of a joint staff
J-2O	J-2 deputy directorate for crisis operations
J-2T	J-2 deputy directorate for targets
J-3	operations directorate of a joint staff
JAC	Joint Analysis Center
JAWS	Joint Munitions Effectiveness Manual (JMEM)/air-to-surface weaponery system
JCS	Joint Chiefs of Staff

JDISS	joint deployable intelligence support system
JFACC	joint force air component commander
JFC	joint force commander
JIC	joint intelligence center
JIOC	Joint Information Operations Center
JIPB	joint intelligence preparation of the battlespace
JIPTL	joint integrated prioritized target list
JMEM	Joint Munitions Effectiveness Manual
JMITC	Joint Military Intelligence Training Center
JP	Joint Publication
JS	joint staff
JSCP	Joint Strategic Capabilities Plan
JTCB	joint targeting coordination board
JTCG/ME	Joint Technical Coordinating Group for Munitions Effectiveness
JTF	joint task force
JTL	joint target list
JTS	Joint Targeting School
JTTP	joint tactics, techniques, and procedures
JWAC	Joint Warfare Analysis Center
JWICS	Joint Worldwide Intelligence Communications System
LOAC	law of armed conflict
MASINT	measurement and signature intelligence
M/ATMP	Missiles/Air Target Materials Program
MCWP	Marine Corps warfighting publication
MEA	munitions effectiveness assessment
MIDB	modernized integrated database
MISREP	mission report
MOE	measure of effectiveness
MSDS	mission specific data set
MTIC	Military Targeting Intelligence Committee
NAIC	National Air Intelligence Center
NES	national exploitation system
NIMA	National Imagery and Mapping Agency
NIST	national intelligence support team
NMJIC	National Military Joint Intelligence Center
NSA	National Security Agency
NSL	no-strike list
NWP	naval warfare publication
OAF	Operation ALLIED FORCE
OB	order of battle

OPLAN	operation plan
OPR	office of primary responsibility
OSINT	open-source intelligence
OTG	operational target graphic
PA	probability of arrival
PD	probability of damage
PECP	precision engagement collaboration process
PIR	priority intelligence requirement
PLANORD	planning order
PMA	political/military assessment
POL	petroleum, oils, and lubricants
POW	prisoner of war
QRG	quick response graphic
QRT	quick reaction team
RECCEXREP	reconnaissance exploitation report
RESPROD	responsible production
RFI	request for information
ROE	rules of engagement
RR	reattack recommendation
RTG	radar target graphic
RTL	restricted target list
SecDef	Secretary of Defense
SIGINT	signals intelligence
SIPRNET	secret internet protocol router network
SJA	Staff Judge Advocate
SME	subject matter expert
SO	special operations
SOP	standard operating procedures
STAR	sensitive target approval and review
STG	seasonal target graphic
STO	special technical operations
TFADS	Table Formatted Aeronautic Data Set
TM	target material
TMP	Target Materials Program
TNL	target nomination list
TOT	time on target
TSA	target system analysis
TSG	targeting support group
TST	time-sensitive target

TIM	training target material
TTP	tactics, techniques, and procedures
UAV	unmanned aerial vehicle
USEUCOM	United States European Command
USJFCOM	United States Joint Forces Command
USMTF	United States message text format
USSTRATCOM	United States Strategic Command
VCG	virtual coordination group
VSG	virtual support group
VTC	video teleconference
WARNORD	warning order
WSV	weapon system video
WGS	World Geodetic System

PART II — TERMS AND DEFINITIONS

aimpoint. 1. A precise point associated with a target and assigned for a specific weapon impact to achieve the intended objective and level of destruction. May be defined descriptively (e.g., vent in center of roof), by grid reference or geolocation. 2. A prominent radar-significant feature, for example a tip of land, or bridge, used to assist an aircrew in navigating and delivering their weapons (usually in bad weather and/or at night). Also called offset aimpoint (OAP). (Approved for inclusion in the next edition of JP 1-02).

air tasking order. A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities, and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called ATO. (JP 1-02)

battle damage assessment. The timely and accurate estimate of damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective. Battle damage assessment can be applied to the employment of all types of weapon systems (air, ground, naval, and special forces weapons systems) throughout the range of military operations. Battle damage assessment is primarily an intelligence responsibility with required inputs and coordination from the operators. Battle damage assessment is composed of physical damage assessment, functional damage assessment, and target system assessment. Also called BDA. (JP 1-02)

battle damage indicator. A measurable phenomenon, either quantitative or qualitative, that can be used to indicate the damage/change of a target. Also called BDI. (Approved for inclusion in the next edition of JP 1-02).

collateral damage. Unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time. Such damage is not unlawful so long as it is not excessive in light of the overall military advantage anticipated from the attack. (JP 1-02)

collateral effects. Unintentional or incidental direct or indirect effects causing injury or damage to persons, objects, or environment. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

collection requirement. An established intelligence need considered in the allocation of intelligence resources to fulfill the essential elements of information and other intelligence needs of the commander. (JP 1-02)

combat assessment. The determination of the overall effectiveness of force employment during military operations. Combat assessment is composed of three major components: (a) battle damage assessment; (b) munitions effectiveness assessment; and (c) reattack recommendation. Also called CA. See also battle damage assessment; munitions effectiveness assessment; reattack recommendation. (JP 1-02)

command and control warfare. The integrated use of operations security, military deception, psychological operations, electronic warfare, and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions. Command and control warfare is an application of information operations in military operations. Also called C2W. C2W is both offensive and defensive: a. C2-attack. Prevent effective C2 of adversary forces by denying information to, influencing, degrading, or destroying the adversary C2 system. b. C2-protect. Maintain effective command and control of own forces by turning to friendly advantage or negating adversary efforts to deny information to, influence, degrade or destroy the friendly C2 system. (JP 1-02)

commander's critical information requirements. A comprehensive list of information requirements identified by the commander as being critical in facilitating timely information management and the decisionmaking process that affect successful mission accomplishment. The two key subcomponents are critical friendly force information and priority intelligence requirements. Also called CCIR. (JP 1-02)

course of action. 1. Any sequence of activities that an individual or unit may follow. 2. A possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission. 3. The scheme adopted to accomplish a job or mission. 4. A line of conduct in an engagement. 5. A product of the Joint Operation Planning and Execution System concept development phase. Also called COA. (JP 1-02)

damage assessment. 1. The determination of the effect of attacks on targets. 2. A determination of the effect of a compromise of classified information on national security. (JP 1-02)

database. Information that is normally structured and indexed for user access and review. Databases may exist in the form of physical files (folders, documents, etc.) or formatted automated data processing system data files. (JP 1-02)

Department of Defense Intelligence Information System. The combination of Department of Defense personnel, procedures, equipment, computer programs, and supporting communications that support the timely and comprehensive preparation and presentation of intelligence and intelligence information to military commanders and national-level decision makers. Also called DODIIS. (JP 1-02)

desired mean point of impact. A precise point, associated with a target, and assigned as the center for impact of multiple weapons or area munitions to achieve the intended objective and level of destruction. May be defined descriptively, by grid reference, or by geolocation. Also called DMPI. (Approved for inclusion in the next edition of JP 1-02).

desired point of impact. A precise point, associated with a target, and assigned as the impact point for a single unitary weapon to achieve the intended objective and level of destruction. May be defined

descriptively, by grid preferences, or geolocation. Also called DPI. (Approved for inclusion in the next edition of JP 1-02).

effective damage. That damage necessary to render a target element inoperative, unserviceable, nonproductive, or uninhabitable. (JP 1-02)

electronic warfare. Any military action involving the use of electromagnetic and directed energy or antiradiation weapon to control the electromagnetic spectrum or to attack the enemy. Also called EW. The three major subdivisions within electronic warfare are: electronic attack, electronic protection, and electronic warfare support. a. electronic attack. That division of electronic warfare involving the use of electromagnetic energy, directed energy, or antiradiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires. Also called EA. EA includes: 1) actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum, such as jamming and electromagnetic deception, and 2) employment of weapons that use either electromagnetic or directed energy as their primary destructive mechanism (lasers, radio frequency weapons, particle beams). b. electronic protection. That division of electronic warfare involving passive and active means taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability. Also called EP. c. electronic warfare support. That division of electronic warfare involving actions tasked by, or under direct control of, an operational commander to search for, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition, targeting, planning, and conduct of future operations. Thus, electronic warfare support provides information required for decisions involving electronic warfare operations and other tactical actions such as threat avoidance, targeting, and homing. Also called ES. Electronic warfare support data can be used to produce signals intelligence, provide targeting for electronic or destructive attack, and produce measurement and signature intelligence. (JP 1-02)

end state. The set of required conditions that defines achievement of the commander's objectives. (JP 1-02)

functional damage assessment. The estimate of the effect of military force to degrade or destroy the functional or operational capability of the target to perform its intended mission and on the level of success in achieving operational objectives established against the target. This assessment is based upon all-source information, and includes an estimation of the time required for recuperation or replacement of the target function. (JP 1-02)

fusion. In intelligence usage, the process of examining all sources of intelligence and information to derive a complete assessment of activity. (JP 1-02)

high-payoff target. A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. Also called HPT. See also high-value target; target. (JP 1-02)

high-value target. A target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. Also called HVT. See also high pay-off target; target. (JP 1-02)

immediate targets. Targets that have been identified too late, or not selected for action in time to be included in the normal targeting process, and therefore have not been scheduled. Immediate targets have two subcategories: unplanned and unanticipated. See also target. (JP 1-02)

information operations. Actions taken to affect adversary information and information systems while defending one's own information and information systems. Also called IO. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

intelligence federation. A formal agreement in which a combatant command joint intelligence center receives pre-planned intelligence support from other joint intelligence centers, Service intelligence organizations, Reserve units, and national agencies during crisis or contingency operations. (Approved for inclusion in the next edition of JP 1-02).

intelligence preparation of the battlespace. An analytical methodology employed to reduce uncertainties concerning the enemy, environment, and terrain for all types of operations. Intelligence preparation of the battlespace builds an extensive database for each potential area in which a unit may be required to operate. The database is then analyzed in detail to determine the impact of the enemy, environment, and terrain on operations and presents it in graphic form. Intelligence preparation of the battlespace is a continuing process. Also called IPB. (JP 1-02)

intelligence requirement. 1. Any subject, general or specific, upon which there is a need for the collection of information, or the production of intelligence. 2. A requirement for intelligence to fill a gap in the command's knowledge or understanding of the battlespace or threat forces. (JP 1-02)

joint deployable intelligence support system. A transportable workstation and communications suite that electronically extends a joint intelligence center to a joint task force or other tactical user. Also called JDISS. (JP 1-02)

joint force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. See also joint force commander. (JP 1-02)

joint force commander. A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called JFC. (JP 1-02)

joint integrated prioritized target list. A prioritized list of targets and associated data approved by the joint force commander or designated representative and maintained by a joint force. Targets and priorities are derived from the recommendations of components in conjunction with their proposed operations supporting the joint force commander's objectives and guidance. Also called JIPTL. (JP 1-02)

joint intelligence preparation of the battlespace. The analytical process used by joint intelligence organizations to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's decisionmaking process. It is a continuous process that includes defining the total battlespace environment; describing the battlespace's effects; evaluating the adversary; and determining and describing adversary potential courses of action. The process is used to analyze the air, land, sea, space, electromagnetic, cyberspace, and human dimensions of the environment and to determine an opponent's capabilities to operate in each. Joint intelligence preparation of the battlespace products are used by the joint force and component command staffs in preparing their estimates and are also applied during the analysis and selection of friendly courses of action. Also called JIPB. (JP 1-02)

joint targeting coordination board. A group formed by the joint force commander to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance and priorities, and refining the joint integrated prioritized target list. The board is normally comprised of representatives from the joint force staff, all components and, if required, component subordinate units. Also called JTCB. See also joint integrated prioritized target list; targeting. (JP 1-02)

joint targeting steering group. A group formed by a combatant commander to assist in developing targeting guidance and reconciling competing requests for assets from multiple joint task forces. Also called JTSG. See also targeting. (JP 1-02)

joint target list. A consolidated list of selected targets considered to have military significance in the combatant commander's area of responsibility. Also called JTL. (JP 1-02)

Joint Worldwide Intelligence Communications System. The sensitive, compartmented information portion of the Defense Information Systems Network. It incorporates advanced networking technologies that permit point-to-point or multipoint information exchange involving voice, text, graphics, data, and video teleconferencing. Also called JWICS. (JP 1-02)

law of armed conflict. See law of war. (JP 1-02)

law of war. That part of international law that regulates the conduct of armed hostilities. Also called the law of armed conflict. See also rules of engagement. (JP 1-02)

list of targets. A tabulation of confirmed or suspect targets maintained by any echelon for informational and fire support planning purposes. See also target list. (JP 1-02)

measures of effectiveness. Tools used to measure results achieved in the overall mission and execution of assigned tasks. Measures of effectiveness are a prerequisite to the performance of combat assessment. Also called MOEs. (JP 1-02)

Modernized Integrated Database. The national level repository for the general military intelligence available to the entire Department of Defense Intelligence Information System community and, through Global Command and Control System integrated imagery and intelligence, to tactical units. This data is maintained and updated by the Defense Intelligence Agency. Commands and Services are delegated responsibility to maintain their portion of the database. Also called MIDB. See also database. (JP 1-02)

munitions effectiveness assessment. Conducted concurrently and interactively with battle damage assessment, the assessment of the military force applied in terms of the weapon system and munitions effectiveness to determine and recommend any required changes to the methodology, tactics, weapon system, munitions, fusing, and/or weapon delivery parameters to increase force effectiveness. Munitions effects assessment is primarily the responsibility of operations with required inputs and coordination from the intelligence community. Also called MEA. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

no-strike list. A list of geographic areas, complexes, or installations not planned for capture or destruction. Attacking these may violate the law of armed conflict or interfere with friendly relations with indigenous personnel or governments. Also called NSL. See also law of armed conflict. (JP 1-02)

on-call targets. Planned targets that are known to exist in an operational area and are located in sufficient time for deliberate planning to meet emerging situations specific to campaign objectives. (JP 1-02)

phase 1 battle damage assessment report. A report that provides a preliminary physical damage assessment of hit or miss based usually upon single source data. Also known as Phase 1 BDAREP. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

phase 2 battle damage assessment report. A report that builds upon the Phase 1 BDAREP, and is a fused, all-source product addressing a more detailed description of physical damage, an assessment of the functional damage, inputs to the target system assessment (Phase 3 BDAREP), and any applicable munitions effectiveness assessment comments. When appropriate, a reattack recommendation is also included. Also known as Phase 2 BDAREP. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

phase 3 battle damage assessment report. A report that contains an in-depth target system assessment. When appropriate, a reattack recommendation and/or targeting nomination is also included. Also known as Phase 3 BDAREP. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

physical damage assessment. The estimate of the quantitative extent of physical damage (through munitions blast, fragmentation, and/or fire damage effects) to a target resulting from the application of military force. This assessment is based usually upon single source data. See also battle damage assessment. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02).

planned targets. Targets that are known to exist in an operational area, and against which effects are scheduled in advance or are on-call. Examples range from targets on joint target lists in the applicable campaign plan, to targets detected in sufficient time to list in the air tasking order, mission-type orders, or fire support plans. Planned targets have two subcategories: scheduled or on-call. See also scheduled targets. (JP 1-02)

priority intelligence requirements. Those intelligence requirements for which a commander has an anticipated and stated priority in the task of planning and decision making. Also called PIRs. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02).

reattack recommendation. An assessment, derived from the results of battle damage assessment and munitions effectiveness assessment, providing the commander systematic advice on reattack of targets and further target selection to achieve objectives. The reattack recommendation considers objective achievement, target and aimpoint selection, attack timing, tactics, weapon systems, and munitions selection. The reattack recommendation is a combined operations and intelligence function. Also called RR. See also battle damage assessment; munitions effectiveness assessment; target. (JP 1-02)

restricted target. A target that has specific restrictions imposed upon it. Actions that exceed specified restrictions are prohibited until coordinated and approved by the establishing headquarters. (JP 1-02)

restricted target list. A list of restricted targets nominated by elements of the joint force and approved by the joint force commander. This list also includes restricted targets directed by higher authorities. Also called RTL. See also restricted target; target. (JP 1-02)

rules of engagement. Directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. Also called ROE. (JP 1-02)

scheduled targets. Planned targets upon which fires will be delivered at a specific time. See also planned targets; target. (JP 1-02)

target. 1. An area, complex, installation, force, equipment, capability, function, or behavior identified for possible action to support the commander's objective, guidance, and intent. Targets fall into two general categories: planned and immediate. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst that hits the target. Also called TGT. (JP 1-02)

target acquisition. The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. Also called TA. See also target analysis. (JP 1-02)

target analysis. An examination of potential targets to determine military importance, priority of attack, and weapons required to obtain a desired level of damage or casualties. See also target acquisition. (JP 1-02)

target complex. A geographically integrated series of target concentrations. See also target. (JP 1-02)

target component. A set of targets within a target system performing a similar function. See also target. (JP 1-02)

target concentration. A grouping of geographically proximate targets. See also target; target complex. (JP 1-02)

target critical damage point. The part of a target component that is most vital. Also called critical node. See also target; target component. (JP 1-02)

target folder. A folder, hardcopy or electronic, containing target intelligence and related materials prepared for planning and executing action against a specific target. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

targeting. The process of selecting and prioritizing targets and matching the appropriate response to them, taking account of operational requirements and capabilities. See also joint targeting coordination board; target. (JP 1-02)

targeting effects. The cumulative results of actions taken to attack targets and target systems by lethal and nonlethal means. See also target; targeting. (JP 1-02)

target intelligence. Intelligence that portrays and locates the components of a target or target complex and indicates its vulnerability and relative importance. See also target; target complex. (JP 1-02)

target list. The listing of targets maintained and promulgated by the senior echelon of command; it contains those targets that are to be engaged by supporting arms, as distinguished from a "list of

targets” that may be maintained by any echelon as confirmed, suspected, or possible targets for informational and planning purposes. See also joint target list; list of targets. (JP 1-02)

target materials. Graphic, textual, tabular, digital, video, or other presentation of target intelligence, primarily designed to support operations against designated targets by one or more weapon(s) systems. Target materials are suitable for training, planning, executing, and evaluating military operations. (JP 1-02)

target nomination list. A list of targets nominated by component commanders, national agencies, or the joint force commander staff for potential inclusion on the joint integrated prioritized target list to support joint force commander objectives and priorities. Also called TNL. See also joint integrated prioritized target list; target. (JP 1-02)

target of opportunity. A target visible to a surface or air sensor or observer, which is within range of available weapons and against which fire has not been scheduled or requested. See also target. (JP 1-02)

target priority. A grouping of targets with the indicated sequence of attack. (JP 1-02)

target signature. 1. The characteristic pattern of a target displayed by detection and identification equipment. 2. In naval mine warfare, the variation in the influence field produced by the passage of a ship or sweep. (JP 1-02)

target stress point. The weakest point (most vulnerable to damage) on the critical damage point. Also called vulnerable node. See also target critical damage point. (JP 1-02)

target system. 1. All the targets situated in a particular geographic area and functionally related. 2. A group of targets that are so related that their destruction will produce some particular effect desired by the attacker. See also target; target complex. (JP 1-02)

target system assessment. The broad assessment of the overall impact and effectiveness of the full spectrum of military force applied against the operation of an enemy target system or total combat effectiveness (including significant subdivisions of the system) relative to the operational objectives established. (Approved for inclusion in the next edition of JP 1-02).

target system component. A set of targets belonging to one or more groups of industries and basic utilities required to produce component parts of an end product such as periscopes, or one type of a series of interrelated commodities, such as aviation gasoline. (JP 1-02)

target system element. A smaller, more intricate part of the target system component, and is necessary to the operation of the component as a whole. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

time-sensitive targets. Those targets requiring immediate response because they pose (or will soon pose) a danger to friendly forces or are highly lucrative, fleeting targets of opportunity. Also called TSTs. (JP 1-02)

unanticipated immediate targets. Those immediate targets that are unknown or not expected to exist in an operational area. See also target. (JP 1-02)

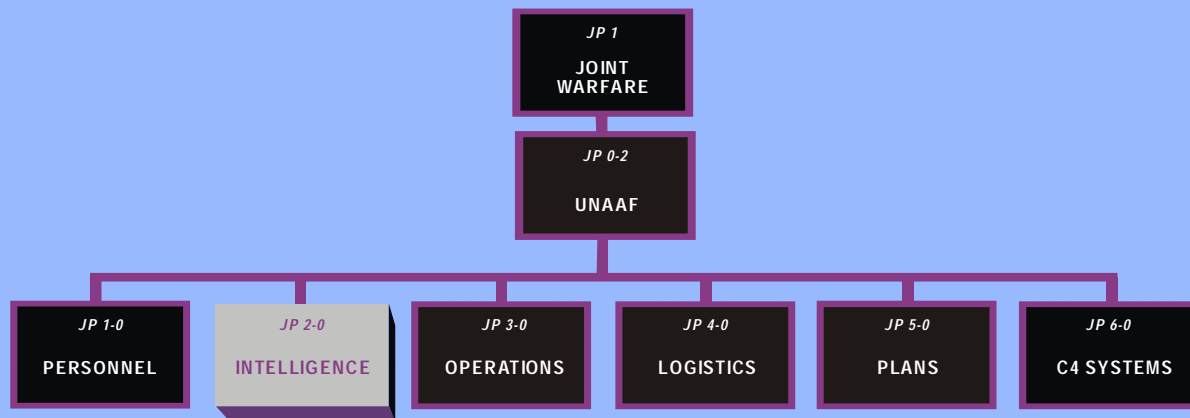
unplanned immediate targets. Those immediate targets that are known to exist in an operational area but are not detected, located, or selected for action in sufficient time to be included in the normal targeting process. See also immediate targets; target. (JP 1-02)

vulnerability. 1. The susceptibility of a nation or military force to any action by any means through which its war potential or combat effectiveness may be reduced or its will to fight diminished. 2. The characteristics of a system that cause it to suffer a definite degradation (incapability to perform the designated mission) as a result of having been subjected to a certain level of effects in an unnatural (manmade) hostile environment. 3. In information operations, a weakness in information system security design, procedures, implementation, or internal controls that could be exploited to gain unauthorized access to information or an information system. See also information operations. (JP 1-02)

weaponneering. The process of determining the quantity of a specific type of lethal or nonlethal weapons required to achieve a specific level of damage to a given target, considering target vulnerability, weapons effect, munitions delivery accuracy, damage criteria, probability of kill, and weapon reliability. (JP 1-02)

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JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 2-01.1** is in the **Intelligence** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

