Commander's Handbook for Joint Battle Damage Assessment

United States Joint Forces Command
Joint Warfighting Center

Office of the Secretary of Defense
Joint Battle Damage Assessment
Joint Test and Evaluation

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MESSAGE FROM THE COMMANDER

This Handbook has been developed for joint force commanders and their staffs as a resource tool for establishing, conducting, and monitoring joint battle damage assessment processes within their commands. Though consistent with joint and Service doctrine, it is not a doctrinal publication. The primary joint doctrine reference publications for battle damage assessment are Joint Publication 2-01.1, *Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting*, and Joint Publication 3-60, *Joint Doctrine for Targeting*.

Lessons learned from recent operations have highlighted the requirement to re-emphasize battle damage assessment processes. Given the current pace of operations, analysts are often challenged in providing commanders with the timely battle damage assessments necessary to evaluate the battlespace situation. This Handbook addresses the assessment process for both fixed and maneuver targets. Federated battle damage assessment concepts are discussed that allow joint force commanders to benefit from the available resources of National and supporting command assets. Additionally, information on useful tools is provided, which offer an extensive suite of integrated office automation, messaging, and battle damage assessment collaborative applications.

Corrections or suggestions for improvement of this Handbook are welcome and should be sent to Commander, Joint Warfighting Center, (USJFCOM/JW 100), 116 Lake View Parkway, Suffolk, Virginia, 23435-2697.

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PREFACE

The Office of the Secretary of Defense Joint Battle Damage Assessment Joint Test and Evaluation and the United States Joint Forces Command Joint Warfighting Center have developed this *Commander's Handbook for Joint Battle Damage Assessment.* **This handbook is not intended to be authoritative, but is offered as a supplement to extant battle damage assessment (BDA) doctrine.** For further information on BDA doctrine, see Joint Publication (JP) 2-01.1, *Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting*, and JP 3-60, *Joint Doctrine for Targeting*.

JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, defines BDA as "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 weapon 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."

Today, **virtually all BDA is "joint,"** requiring coordination among two or more Services, joint force components, and/or national assets to successfully accomplish BDA in a timely, efficient, and effective manner. Each Service and joint force component offers unique capabilities in the BDA process. Additionally, a federated BDA concept has been instituted whereby supporting commands and agencies work directly in support of the supported command to facilitate BDA information flow.

This handbook has been developed expressly for joint force commanders, joint force headquarters, and joint force component forces—all of which require BDA information.

The five steps within the BDA cycle are discussed in detail — planning, collection, processing and exploitation, production, and dissemination. Available collaborative tools that may assist joint forces in streamlining and collaborating BDA also are discussed.

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CHAPTER I
JOINT BATTLE DAMAGE ASSESSMENT OVERVIEW

1. Combat Assessment

a. There are six phases in the joint targeting cycle: 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).

b. CA is a crucial part of joint targeting operations. The joint targeting process provides short-term assistance for immediate decisions. This is essential to provide to the joint force commander (JFC) a fully developed picture of the battlespace. A critical ingredient for effective CA is an understanding of all aspects of target development and its link to the JFC's objectives and guidance.

c. CA is performed at all levels. At the JFC level, the CA process should normally be an all-source joint program supported by all components and designed to determine if the required effects on the adversary envisioned in the operation plan (OPLAN) are being achieved. CA addresses the effectiveness of operations.

d. CA is composed of three interrelated components: battle damage assessment (BDA); munitions effectiveness assessment (MEA); and future targeting or reattack recommendations. BDA is the complementary activity to the selection of targets performed in target development. It takes a three-phased approach to proceed from a micro-level examination of the damage or effect inflicted on a specific target, to ultimately arriving at macro-level conclusions regarding the functional outcomes created in the target system, retracing the macro-to-micro path of analysis in target development. **The focus of this handbook is on joint BDA planning, collection, assessment, processing, production, and dissemination within a joint force.**

For more information on the joint targeting cycle and CA, see JP 3-60, Joint Doctrine for Targeting.

2. Battle Damage Assessment

a. BDA is the timely and accurate estimate of damage resulting from the application of military force, either lethal or nonlethal, against a predetermined objective. BDA can be applied to the employment of all types of weapon systems (air, ground, naval, and special operations forces weapons systems) throughout the range of military operations. Comprehensive BDA requires a coordinated and integrated effort between joint force intelligence and operations functions. **BDA is composed of physical damage assessment, functional damage assessment, and target system assessment.**

For more information on BDA, refer to JP 2-01.1, Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting.

b. These assessments are contained in formal reports that flow according to command concept of operations (CONOPS) and tactics, techniques, and procedures (TTP). (See Figure I-1.) Note that fighting units, joint force components, allies, supporting commands and agencies, and the Joint Staff Directorate for Intelligence, Targeting (JS/J-2T) (National Military Joint Intelligence Center [NMJIC]), BDA cells provide supporting information and assessments to the command-designated

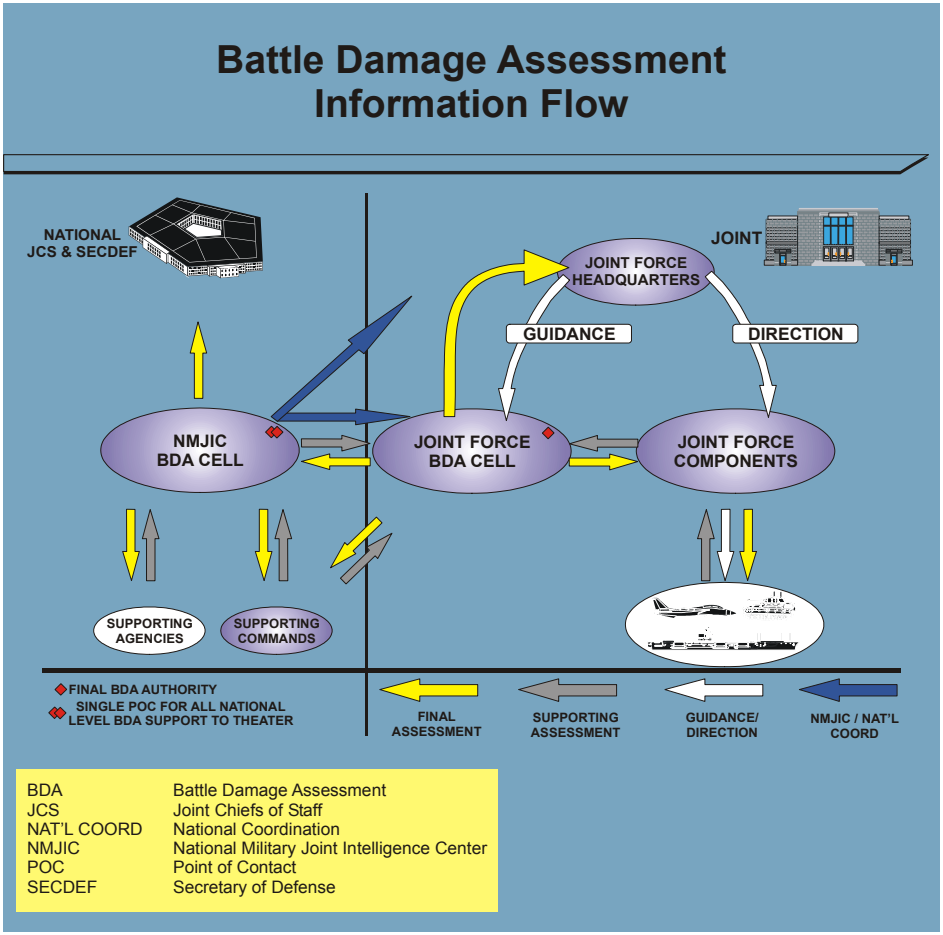


Figure I-1. Battle Damage Assessment Information Flow

BDA cell, which makes and disseminates the final assessment. **Any large operation can quickly outpace any one command's ability to keep up with the BDA requirements.** As a partial remedy to the problem, a federated BDA concept could be instituted whereby supporting commands and agencies work directly in support of the supported command to facilitate information flow. The JS/J-2T located in the NMJIC coordinates this federated BDA.

c. **Targets are described as areas, complexes, installations, forces, equipment, capabilities, functions, or behavior identified for possible action to support the commander's objectives, guidance, and intent.** Targets may be fixed or mobile. Fixed targets are normally permanent facilities such as airfields, buildings, or bridges and may be processed in advance of an operation by joint force and/or strategic systems. Mobile targets are transient, such as adversary maneuver forces, and normally are processed through joint force changes to the adversary's order of battle (OB). For example, if the JFC knew that an adversary air force consisted of a certain number of operational aircraft, the adversary OB would be modified each time joint force BDA confirmed the destruction of adversary airframes.

Battle damage assessment is the timely and accureate estimate of damage resulting from the application of military force.

3. Maneuver Force Battle Damage Assessment

a. Maneuver forces are the subsets of mobile targets comprising a fielded ground force (for example, tanks, trucks, and personnel) and are tracked via an OB. Unlike strategic systems comprised primarily of fixed targets, maneuver force BDA requires the constant assessment of the "systems of systems" comprised of thousands of continuously moving elements. The systems of an adversary force are constantly evolving in battle due to attrition, reinforcement, and changing task organization. Maneuver force BDA must facilitate both the counting of units for OB management, as well as the computation of the combat effectiveness of the units. This requires extensive coordination between BDA and OB analysts, and the utilization of a single OB throughout the joint force (displayed to various levels of fidelity as required for the decision-maker and staff in question). The exact delineation of responsibility is situational and often built around task-organized adversary forces.

b. While systems assessments of most other target sets are heavily supported, or even performed by national agencies, the primary authority for the ground forces' OB is usually within theater, such as within the JFC staff or at the joint force land component commander (JFLCC) staff. Effective maneuver force BDA requires a common baseline OB and combat effectiveness model of the adversary force. The general process follows. (Steps (1) and (2) primarily are BDA responsibilities, and steps (3) through (5) essentially are OB responsibilities.)

- Step 1. Reported damage is assessed and validated to include the numbers and types of equipment and personnel, and their level of degradation. This reporting essentially is a physical damage assessment. It can be very difficult to ascertain exactly what

damage equipment and personnel have sustained. Often the level of damage incurred must be inferred based upon the observed munitions effects on the environment and knowledge of equipment vulnerabilities, troop densities, and degrees of protection.

- Step 2. Multiple reports are collated and deconflicted to prevent redundant reporting.

- Step 3. The unit location and identity is determined and matched to the OB and situation map (SITMAP).

- Step 4. The OB worksheet and SITMAP are updated. This requires that OB worksheets be maintained at each echelon and sequentially merged into the overall land component command OB on a regular basis (normally every 6 hours, depending upon the operating tempo [OPTEMPO]).

- Step 5. The updated OB is interpreted to update the combating effectiveness or threat model. Without constant updating, the model very rapidly loses its validity. BDA will only provide the attrition of forces. Tracking reinforcements, changing task organizations, and other such factors are normally the responsibility of the OB analyst cell. Other factors generally consider the level of leadership, training, and morale. This step can be equated to functional damage assessments of individual units and, in total, a target systems assessment of the adversary's fielded ground forces.

4. Battle Damage Assessment Cycle

The BDA process mirrors the intelligence cycle, as stated in JP 2-01, *Joint Intelligence Support to Military Operations*, and adapts that cycle to specifically depict what happens during the process of conducting BDA. (See Figure I-2.) Regardless of the specific BDA processes evaluated (mobile or fixed), the joint force command's damage assessments and reports include the key steps of

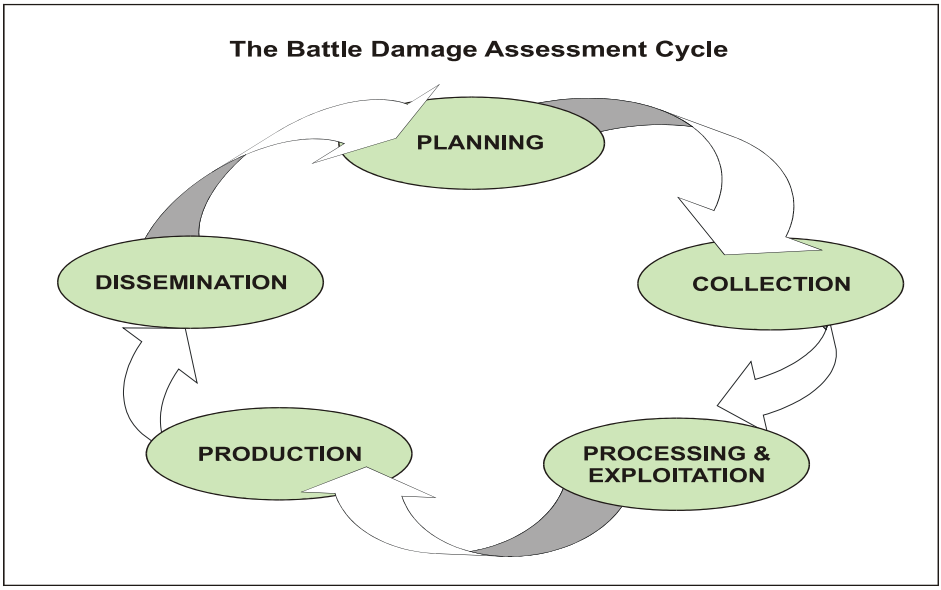


Figure I-2. The Battle Damage Assessment Cycle

planning, collection, processing and exploitation, production, and dissemination. These steps provide a common basis for measuring and comparing the performance of the mobile and fixed target BDA processes.

a. **Planning.** BDA planning exists in the following forms:

- Deliberate (long-term) planning includes the identification and definition of a BDA cell (agency specifically tasked and organized to do BDA) and development of a CONOPS, system architectures, and the training requirements to support them. System architectures include operational, technical, and system level overlays to ensure proper information flow.

- Crisis action planning normally begins the moment the National Military Command Center (NMCC) recognizes a threat. This includes standing up appropriate BDA cells at national and theater levels; providing or redistributing required command, control, communications, computers, and intelligence (C4I) systems support; acquiring and training augmentees and familiarizing them with the target sets and forces in theater; and contingency-specific reporting and dissemination architectures.

- Daily planning includes coordinating intelligence collections for BDA requirements and becoming familiar with daily (recurring) planning products such as the master air attack plan (MAAP), scheme of maneuver, high-payoff target list (HPTL), and attack guidance matrix. The MAAP contains key information that forms the foundation of the joint air tasking order (ATO). Information that may be found in the plan includes JFC guidance, joint force air component commander (JFACC) guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, and aircraft allocations.

b. **Collection.** BDA collection begins when a particular collection requirement is requested or a standing requirement is actually collected, and ends when collected information is passed to a site responsible for processing and exploitation. This includes both the collection requirements (tasking) and actual collection operation processes.

c. **Processing and Exploitation.** BDA processing and exploitation begins when an exploitation site receives information from a collection platform, and ends when the exploited product is disseminated for BDA production. During processing and exploitation, collected data is correlated and converted into forms suitable for analysis and production. In this step, the data may be further exploited to gain the fullest possible advantage. Processing remains distinct from the production step of the intelligence cycle in that the data has not yet been fully subjected to analytical assessment.

d. **Production.** BDA production for fixed targeting begins when the BDA cell receives a (processed and exploited) product and ends when a formal BDA report is released. In the case of fielded (maneuver) forces, the product is the update to the OB and combat effectiveness models (for example, a combatant commander's hourly combat power updates) rather than the individual report. BDA is composed of three separate assessments:

See Chapter V, "Joint Battle Damage Assessment Production," for more information concerning BDA reports.

Physical damage assessment estimates the quantitative extent of physical damage to a target.

- **Phase I - Physical Damage Assessment.** Physical damage assessment estimates the quantitative extent of physical damage (through munitions blast, fragmentation, or fire damage effects) to a target resulting from the application of military force. The assessment is based primarily on visual observation of the target and is usually derived from a single source such as aircrew mission reports (MISREPs) or debriefs, weapons system video (WSV), or manned or unmanned imagery reconnaissance. The unit controlling the weapons systems, as well as intelligence collection units that can "see" the damage, develop Phase I BDA reports. The reports state whether a target was hit or missed and include an initial estimate of damage. Phase I BDA usually provides the first indicator of problems with weapons systems or tactics assessed during MEA. The command-designated BDA cell is responsible for collating reports and making the final assessment. JS/J-2T acts as a single point of contact from the theater to all national level support agencies.

- **Phase II - Functional Damage Assessment.** Functional damage assessment estimates the effect of military force on degrading or destroying the functional or operational capability of the target to perform its intended mission. Phase II BDA reviews all Phase I BDA and amplifies the initial analysis. The level of success is based upon the operational objectives established against the target. Functional damage assessments draw on all-source intelligence and operational data to determine functional damage to a target. A key step in functional damage assessment is identifying and establishing the installation or target's critical elements and their interconnectivity. A critical element is defined as one that, if destroyed or not operating, will preclude the installation from functioning. An estimate of the

recuperation time required for the adversary to repair or reconstitute should always be part of a functional damage assessment report.

- **Phase III - Target System Assessment.** Target system assessments produce a target system damage assessment for the theater of operations. Phase III BDA subject matter experts (SMEs) produce a target system assessment by fusing all supplemental BDA reporting. Target system assessments provide the JFC with estimates of the remaining capabilities of the targeted system and are used as input for determining if objectives are being met. The fundamental determination made during Phase III BDA is how successful efforts have been to degrade an entire target system. It considers the impact of operations against all parts of the system, as well as the cumulative impact of operations against dependent and ancillary systems.

e. **Dissemination.** BDA dissemination begins when a report produced in the previous step is completed and ends when the BDA cell receives confirmation that the report or product was received by the appropriate organizations.

5. Effects-Based Operations and Battle Damage Assessment

Effects-based operations (EBO) may be described as actions that change the state of a system to achieve directed policy aims using the integrated application of select instruments of power. Moreover, EBO are part of a national or multinational operation to translate policy into actions to create a desired end state. Requisite to EBO is the use of a command-cognitive process that can reliably align the desired end state to effects to causative actions to the beginning state to influence a complex adaptive system such as a geographic region, nation state, head of state, political party, political leader, nongovernmental organizations, or international organizations.

a. **Battle Damage Assessment in the Command Decision Structure.** The purpose of BDA in the targeting process is to determine the degree of success in achieving objectives and to formulate any required follow-up actions, or to indicate readiness to move on to new tasks in the path to achieving the overall JFC objectives. Thus BDA both completes and begins the joint targeting process anew by linking the achieved outcomes with stated objectives that began the cycle.

b. **Battle Damage Assessment and Effects-Based Targeting**

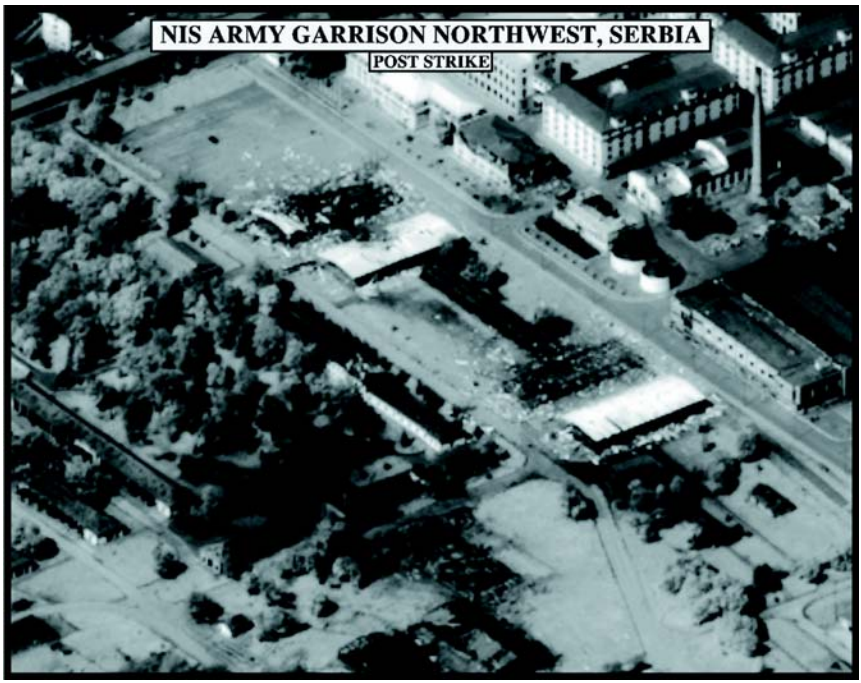
- The principles of effective joint targeting emphasize that the focus of the targeting process is on achieving the JFC's objectives. Therefore, effective targeting is distinguished by the ability to identify the targeting options, both lethal and nonlethal, to achieve the desired effects that will support the commander's objectives. It is pivotal to the success of effects-based targeting to link sensors, delivery systems, and desired outcomes. The ability to rapidly collect, share, access, and manipulate information is an enabler in achieving information superiority over US adversaries. Achieving this information superiority is important for conducting effects-based targeting.

- An understanding of the adversaries' operational objectives and decision cycle enables the commander to use varied joint and multinational means to produce effects against the adversary's critical vulnerabilities. When choosing targets, the commander must be focused on the underlying purpose in

striking these targets, as the effects will be more than the results of the fires. Targeting effects are the cumulative results of actions taken to engage geographical areas, complexes, installations, forces, equipment, functions, perception, or information by lethal and nonlethal means. Targeting effects are designed to influence the outcomes of individual battles or engagements, operations, or campaigns. **Once the action is taken, the commander must evaluate the effectiveness of the operation. If the desired effect was not achieved, the target may need to be re-engaged or another method may need to be selected to achieve the effect.** Targeting effects can be categorized in either of two forms, **direct** or **indirect**.

•• Direct targeting effects are the immediate, first-order consequence of a military action such as weapons employment, unaltered by intervening events or mechanisms. They usually are immediate and easily recognizable. For example, a parked aircraft is destroyed either by a direct hit from a bomb, or by being sufficiently close to the point of detonation and receiving the brunt of the weapon's blast and fragments.

•• Indirect targeting effects are the delayed or displaced second- and third-order consequences of military action. They often are accentuated by intermediate events or mechanisms to produce desired outcomes that may be physical or psychological in nature. Frequently, indirect effects are difficult to recognize due to subtle changes in adversary behavior that may hide their extent. For example, the plane destroyed as a direct effect of an attack on an airfield, combined with similar attacks on all the assets of an



Direct targeting effects are the immediate, first-order consequence of a military action.

adversary's air defense system, over time may ultimately degrade the legitimacy of the regime by portraying them as incapable of protecting the populace.

•• Direct and indirect effects possess fundamental characteristics that exert influence on adversary capabilities. Individual effects tend to compound over time, yielding a result greater than the sum of the effects' immediate individual consequences. Likewise, indirect effects often synergistically combine to produce greater changes than the sum of their individual consequences. This cumulative nature of effects may occur at different levels of war as the contributing lower-order effects are achieved.

•• Indirect effects can ripple through an adversary target system, most typically through nodes that are common and critical to related target systems, though they may influence other target systems as well. The cascading of indirect effects usually flows from higher to lower levels of war. As an example, destruction of a headquarters element will result in the loss of command and control (C2) and with it the synergy of subordinate units.

•• Effects often spill over to create unintended consequences, usually in the form of injury or damage to persons or objects unrelated to the objectives. Sound planning should allow for consideration of the risks of unintended second- and third-order consequences. While estimating the outcomes of unintended effects can never be an exact process, it becomes increasingly difficult as effects continue to compound and cascade through targets and target systems. In addition, the impact of a single event can often be magnified over time and distance to greatly exceed the span of the direct effect associated with that single event.

•• Measures of effectiveness (MOEs) in military operations are defined as tools used to measure results achieved in the overall mission and execution of assigned tasks. MOEs are a prerequisite to the performance of CA. Assessment of such indicators normally takes place at the tactical, operational, and even strategic levels of war and goes beyond counting craters or vehicles destroyed. The key is to determine when the predetermined conditions that affect adversary operational employment or overall strategy have been met, and whether or not the anticipated effects are occurring. The continuing intelligence analysis process helps to ensure that proper CA measurements take place.

c. **Battle Damage Assessment and the Confirmation of Objectives Accomplishment.** Attack operations are designed to accomplish specific objectives. In turn, targets are selected with the goal of attaining these objectives in the most efficient way possible, consistent with the commander's policies for conducting the operation. The commander and staff assess the results of mission execution. If CA reveals that the commander's guidance has not been met, the targeting process must continue to focus on the targets involved. This feedback may result in changes to original decisions made during planning.

d. **Battle Damage Assessment and the Efficient Use of Forces.** An appraisal of the effectiveness of attack operations needs to be made in the context of overall operation goals, as well as in terms of the performance of individual weapon systems. By rapidly and accurately analyzing BDA, re-strikes

on targets that have been disabled or on portions of target systems that are no longer functioning can be avoided and forces can be used in the most efficient way.

e. **Battle Damage Assessment and Adjustments in Operations Execution.** BDA is accomplished at all levels of the joint force. The joint force and component staffs continuously evaluate the results of operations and provide these to the JFC for the overall evaluation of the current operation. Included in this evaluation are the target systems and remaining adversary warfighting capabilities relative to the objective and strategy. Future adversary courses of action and remaining adversary combat capabilities should be weighed against established targeting priorities to determine future targeting objectives and recommend changes in courses of action. Military operations and target sets are adapted as the operation proceeds, based upon an improved understanding of what the best approach should be. Thus, the types and locations of targets change as the operation proceeds.

CHAPTER II
JOINT BATTLE DAMAGE ASSESSMENT PLANNING

1. Planning for Joint Battle Damage Assessment Operations

a. **General.** Planning for BDA is an integral part of the targeting and planning processes. Planning for BDA helps to ensure the right people and resources have the tasking orders and other information required to support BDA and determines assessment objectives and requirements. The JFC should provide a comprehensive plan, together with an intelligence architecture, which integrates intelligence, surveillance, and reconnaissance (ISR) resources and timeliness to effectively and efficiently support timely BDA. Pre-conflict planning requires collection managers with a thorough understanding of organic and national collection systems capabilities and availability. Targeting personnel should also have a basic understanding of the collection systems supporting the operation.

b. **Battle Damage Assessment Planning**

- The BDA cycle begins with planning. BDA planning and direction normally occur during and in conjunction with operations planning. Initial planning typically occurs when the warning or planning order is sent. During this time, the command will either develop or review and modify its BDA plan. One of the most important aspects of the BDA process is the planning of all elemental BDA activities prior to combat operations to ensure that participants are familiar with the BDA processes and data requirements. Specifically, this includes:

  - The commander's guidance

  - The command's BDA reporting and releasability criteria, including methods of transmission and customer addresses

  - Target Materials (TM)

  - Information on pre-attack target status and any camouflage, concealment, and deception measures the adversary has taken to protect the target

  - Mission-specific information (such as targets, weapons, aimpoint, and time on target [TOT]) contained in the planned integrated tasking order (ITO) or equivalent ATO, joint air operations plan, or MAAP

  - Information on adversary's recuperation capabilities per target set, for example spare parts or reserves

- At this time, planning for conducting BDA on mobile targets occurs. The BDA plan should state which cell has reporting responsibilities for ground force maneuver units and other types of mobile targets. BDA and the OB cells should coordinate to establish the key elements vital to determine the combat effectiveness of adversary ground force maneuver units and develop the requisite collection requirements.

- Once hostilities commence, the BDA cell conducts planning on a daily basis to ensure receipt of the products necessary to conduct BDA operations. These products assist in planning and nominating new targets for initial

collection (and previously struck targets for additional collection). The success of the BDA planning and direction step only can be determined by the results achieved in the other steps of the BDA cycle.

2. Battle Damage Assessment Operations

The JFC is responsible to components for providing accurate and timely BDA information to support battlespace awareness, as well as tactical and operational force employment decisions. To this end, the mechanisms the JFC may employ to ensure timely, accurate, and effective BDA to the tactical and operational commanders are as follows:

a. Identify, coordinate, and promulgate a detailed BDA OPLAN. This BDA plan 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
- Develop the robust management structure needed to collect, track, and disseminate BDA data; conduct timely review, approval, and dissemination of federated BDA products; and integrate federated BDA partners into the combatant command's overall intelligence architecture

b. The following items should be addressed within the BDA plan:

- BDA responsibilities and functions, including target set delegation
  - Combatant command BDA cell
  - Subordinate joint force intelligence
  - Federated partners
  - Component commands
  - Subordinate operational units
- BDA analysis and reporting requirements and timelines
  - ATO/ITO dissemination requirements
  - Targeting objectives dissemination requirements
  - TM references
  - All-source information inputs for BDA analysis
  - BDA product formats
  - BDA reporting timelines
  - BDA report distribution requirements and recipients
  - WSV dissemination requirements
  - Operations Reporting requirements (MISREPs, inflight reports [INFLIGHTREPs], size, activity, location, unit, time, and equipment [SALUTE] reports, and situation reports [SITREPs])
  - BDA communications capabilities among Services
- Potential BDA cell composition

- Coordination, management, and administration
- Presentations (may include public affairs)
- All-source BDA analysis teams
- Imagery intelligence (IMINT), signals intelligence (SIGINT), open-source intelligence (OSINT), and measurement and signature intelligence (MASINT) analysts
- Collection management (CM) liaison officers
- Information operations officer
- Administrative personnel
- Geospatial Information and Services Officer
- Video analysts
- Structural engineers
- Weapon effects experts or targeting analysts
- Operations personnel or platform/weapon system experts

• Command-specific information impacting BDA

- JFC guidance and objectives
- Rules of engagement
- MOEs
- Releasability and classification with multinational partners
- Control measures and restrictions

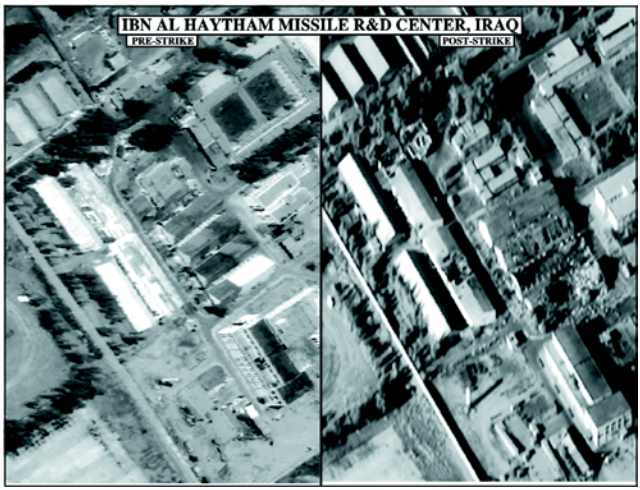
• Command automation or communication systems and paths

c. During initial planning, it is imperative to actually test the BDA plan. This will include communications checks to ensure BDA cells have proper connectivity and distribution lists are complete and correct. The combatant command must exercise its BDA plan through national level exercises, which identify communications shortfalls, improve federated relationships and operational practices, and garner trust in the overall BDA process.

3. Commander's Guidance and Battle Damage Assessment

a. **Commander's Guidance.** The joint force and component commanders' guidance establish an order of work for the intelligence analysts collecting, processing, and exploiting information and producing and disseminating intelligence. This understanding especially is important in joint operations involving a significant number of preplanned, on-call air-to-surface and surface-to-surface missions. When new missions are of higher precedence or contain targets of higher priority than those of the preplanned scheduled missions, the intelligence analysts must adjust their effort accordingly and redirect the collection, processing, and exploitation efforts to support BDA for those higher precedence missions or higher priority targets.

b. For example, during Operation IRAQI FREEDOM, the restaurant meeting place of the Iraqi commanders may not have appeared on any of the components' HPTL, but the combatant commander's intent to induce regime-change assigned this mission against this otherwise innocuous target the highest precedence. Both mission precedence and target priority influence the order and level of work for intelligence analysts supporting BDA, so the analysts



Both mission precedence and target priority influence the order and level of work for intelligence analysts supporting battle damage assessment.

should understand what to look for and where to find it.

- **Joint Force Commander's Objectives and Guidance.** During the first step of the joint targeting cycle, the JFC issues military objectives and guidance that serve as the basis for the component commanders' objectives, tasks, and measures of performance (MOPs) and MOE. MOPs and MOEs serve as indicators of success. This guidance helps the joint force BDA analysts prioritize the processing and exploitation of collected post-strike information.

- **Joint Force Air Component Commander's Guidance.** The JFC's objectives and guidance provides the basis for all ATO/ITO planning. Intelligence products, special analytical studies, and subject area analysts play an active role in directly supporting the prioritization of objectives and tasks as well as the development of MOPs/MOEs. Tasks and measures are then used to guide the target development process, as well as the intelligence analysts processing and exploiting information collected post-attack on those targets.

•• **Target Development.** The target development step examines potential adversary military, political, and economic systems to identify system components, target vulnerabilities, and critical nodes. Products from this step include target significance statements and the identification of critical elements and potential target aimpoints. The JFACCs target development planners supported by all-source analysts from various theater and national organizations create prioritized target nomination lists (TNLs) with associated aimpoints in accordance with the JFC's operational objectives by consolidating the other component target lists.

•• **Battle Damage Assessment.** Target developers use BDA information prior to nominating targets to the TNL and continuously monitor BDA to determine whether the targets remain operational or deserve removal from the TNL. The

commanders' guidance and objectives, and attack guidance from the TNL, prioritize the BDA analysts' efforts in processing and exploiting post-strike collection information.

- **Joint Force Land Component Commander's Guidance.** JFLCC BDA analysts use both the JFC's guidance and the JFLCC's guidance in their assessments. The attack guidance contained in the approved target list, the JFLCC's HPTL or damage criteria matrix, attack guidance matrix, and battlespace shaping matrix (BSM) guide the land component BDA analysts in processing and exploiting post-strike information collected on targets engaged by surface-to-surface fires. The BSM depicts the HPTL and the attack guidance matrix over time. Other sources for guidance can be found in the prioritized attack guidance matrix, reactive attack guidance matrix, and damage criteria matrix. (Figures II-1 through II-5 show examples of how matrices may be utilized to graphically portray the commander's targeting guidance and intent.)

- **Joint Force Maritime Component Commander's Guidance.** Joint force maritime component commander's (JFMCC) BDA analysts use the attack guidance on the ATO/ITO and naval component commander target list to prioritize their efforts in processing and exploiting collected post-strike information.

4. Planning Requirements for Battle Damage Assessment Operations

a. **Physical Requirements for Battle Damage Assessment Operations.** The BDA cell will have many physical needs to perform its duties in an accurate and timely manner. It will need a secure area in which to operate, desks and other office furnishings, information systems, office equipment, and sufficient supplies to support the function. The cell's leadership needs to coordinate with appropriate commands to ensure other supporting physical needs, such as billeting, transportation, and messing for BDA cell augmentee personnel, are included in planning efforts.

b. **Command, Control, Communications, Computers, and Intelligence Connectivity for Battle Damage Assessment Operations.** Connectivity is vital to the success of the BDA mission. All BDA participants need to be familiar with the primary and secondary transmission methods and timelines. In addition, customer addresses and telephone numbers must be verified to ensure the

SAMPLE ATTACK GUIDANCE MATRIX				
HIGH PAYOFF TARGET LIST	WHEN	HOW	EFFECT	REMARKS
Combat Outposts	Planned	General Support Artillery	Neutralize	Plan in initial preparation
Reconnaissance, Surveillance, Target Acquistion Sites, and Outposts	Planned	General Support Artillery	Neutralize	Plan in initial preparation
Self Propelled Artillery	Planned	Multiple Launch Rocket Systems	Neutralize	Plan in initial preparation
Surface to Air Missiles	Planned	General Support Artillery	Suppress	Suppression of enemy air defenses
Command Posts	As acquired	Multiple Launch Rocket Systems	Neutralize	
Reserve Units	Planned	Aviation	Destroy	

Figure II-1. Sample Attack Guidance Matrix

SAMPLE PRIORITIZED ATTACK GUIDANCE MATRIX					
PRIORITY	**CATEGORY**	**HIGH-PAYOFF TARGETS**	**WHEN**	**HOW**	**COMMENTS**
1	Air Defense Units	Surface-to-Air Missiles	As acquired/ Planned	Neutralize	
2	Fire Support Elements	Artillery Command Posts/Rocket Launchers	Immediately	Neutralize/ Electronic Jamming	Coordinate with Electronic Countermeasures
3	Engineer Units	Bridging Units	As acquired	Neutralize	
4	Command, Control, and Communications Facilities	Command Posts		Neutralize/ Electronic Jamming	Coordinate with Electronic Countermeasures
5	Maneuver Elements	1st Echelon Forces	As acquired	Destroy	
6	Reconnaissance, Surveillance, Target Acquisition Sites and Outposts	Forward Direction Finding Nodes		Neutralize	
7	Nuclear and Chemical Units		Immediately	Destroy	Need Immediate Battle Damage Assessment
-	Recconnissance Units		As acquired	Neutralize	Not High-Payoff Target
-	Petroleum, Oil, and Lubricants Facilities		As acquired	Neutralize	Not High-Payoff Target
-	Ammunition Depots		As acquired	Neutralize	Not ilgh-Payoff Target
-	Maintenance Units		As acquired	Neutralize	Not High-Payoff Target
-	Transportation Units		As acquired	Neutralize	Not High-Payoff Target
-	Lines of Communication		As acquired	Neutralize	Not High-Payoff Target

Figure II-2. Sample Prioritized Attack Guidance Matrix

SAMPLE REACTIVE ATTACK GUIDANCE MATRIX				
PRIORITY	**A**	**B**	**C**	**D**
AREA	PENDLETON	OCEANSIDE	NORTH AND SOUTH OF OCEANSIDE	NORTH FLANK
TARGET CATEGORY/ PRIORITY	Integrated Air Defenses (1) Rocket Launchers (2) C3I (5) Mechanized Infantry	Rocket Launchers (3) C3I (6) Mechanized Infantry	Rocket Launchers (4) C3I Mobilization Areas	C3I Mobilization Areas Rocket Launchers
UNIT PRIORITY	Artillery Armor Mechanized Reserves Infantry	Artillery Headquarters Mechanized Infantry Reserves	Artillery Headquarters Mechanized Armor Infantry	Headquarters Artillery Infantry Armor
INTENT	Defeat Adversary	Fix and Destroy Adversary	Prevent Adversary from Reinforcing	Prevent Adversary from Interdicting Lines of Communication
Legend	C3I Command, Control, Communciations, and Intelligence			

Figure II-3. Sample Reactive Attack Guidance Matrix

SAMPLE LAND COMPONENT COMMAND BATTLESPACE SHAPING MATRIX			
PRIORITY	TARGET A Defeat Adversary Defending River	TARGET B Defeat Adversary Corps Establishing Defenses	TARGET C Neutralize Adversary Coastal Defenses
UNIT	4th Mechanized Brigade 2nd Infantry Regiment	4th Mechanized Brigade 4th Motorized Rifle Division	4th Coastal Defense Brigade 4th Motorized Rifle Division Artillery Brigade
TIME	Prior to D+4	Until Phase 2 Completion	From D+3 to D+4
1	Fire Support Multiple Rocket Launchers (Destroy) Long-Range Radar (Destroy) Missiles (Destroy)	Fire Support Multiple Rocket Launchers (Destroy) Long-Range Radar (Destroy) Missiles (Destroy)	Fire Support Multiple Rocket Launchers (Destroy) Long-Range Radar (Destroy) Missiles (Destroy)
2	C3I Corps Headquarters (Neutralize) Fire Support (Destroy) RSTA (Neutralize) Combat Service Support (Neutralize)	Maneuver Mechanized/Armor (Destroy) Motorized Infantry (Neutralize) Foot-Mobile Infantry (Neutralize)	Maneuver Mechanized/Armor (Destroy) Motorized Infantry (Neutralize) Foot-Mobile Infantry (Neutralize)
3	Maneuver Mechanized/Armor (Destroy) Motorized Infantry (Destroy) Foot-Mobile Infantry (Neutralize)	C3I Corps Headquarters (Destroy) Fire Support (Destroy) RSTA (Neutralize) Combat Service Support (Neutralize)	C3I Corps Headquarters (Neutralize) Fire Support (Destroy) RSTA (Neutralize) Combat Service Support (Neutralize)
4	Mobility/Countermine Bridging (Destroy) Mine Clearing (Destroy) Lines of Communications (Neutralize)	Mobility/Countermine Bridging (Destroy) Mine Clearing (Destroy) Lines of Communications (Neutralize)	Mobility/Countermine Bridging (Destroy) Mine Clearing (Destroy) Lines of Communications (Neutralize)
5	Combat Service Support Fire Support (Destroy) Armor/Mechnanized (Neutralize)	Combat Service Support Fire Support (Destroy) Armor/Mechanized (Neutralize)	Combat Service Support Fire Support (Destroy) Armor/Mechanized (Neutralize)
6	Integrated Air Defenses C3I (Destroy) Surface-to-Air Missiles (Destroy) Antiair Artillery (Neutralize)	Integrated Air Defenses C3I (Destroy) Surface-to-Air Missiles (Destroy) Antiair Artillery (Neutralize)	Integrated Air Defenses C3I (Destroy) Surface-to-Air Missiles (Neutralize) Antiair Artillery (Neutralize)
Legend	C3I Command, Control, Communications, and Intelligence RSTA Reconnaissance, Surveillance, and Target Acquistion		

Figure II-4. Sample Land Component Command Battlespace Shaping Matrix

appropriate individuals are receiving reports. During a contingency, the electronic dissemination of high volumes of information should not only be expected, but is required to perform the successful execution of BDA analysis. Some basic guidelines and considerations that should assist in determining the best system, communications path, format, and recipients for each of the various BDA reports are as follows:

- **Timeliness.** BDA information must be reported in a timely manner in order for time-sensitive decisions regarding targeting, reattack, force commitment,

SAMPLE DAMAGE CRITERIA MATRIX				
	DESTROY		NEUTRALIZE	
	END STATE	MOES	END STATE	MOES
MANEUVER				
Armor/Mechanized	Unable to operate above platoon level	25% Combat Effective	Unable to perform mission for 24-48 hours	10%
Infantry	Unable to operate above company level	25% Combat Effective	Unable to perform mission for 24-48 hours	Not Applicable
FIRE SUPPORT				
Ballistic Rockets	Destruction	0%	Not Applicable	Not Applicable
Artillery/Rockets Radar C3I	Unable to mass fires at battalion and above	Towed 25% Self-Propelled 35%	Unable to mass fires at battalion and above for 24-48 hours	Reduce personnel and equipment by 15%
C3I				
Operational Area	Unable to effectively command subordinate units	Specified nodes destroyed	Unable to effectively command subordinate units for 24-48 hours	Jam or reduce units by 20%
Corps		Headquarters 40%		
RSTA	Unable to effectively communicate	50% Combat Effective	Unable to effectively communicate for 24-48 hours	
MOBILITY				
Bridging/Mine Clearance	Unable to perform mission	60% Combat Effective	Unable to perform mission for 24-48 hours	Reduce personnel and equipment by 10%
Lines of Communication	Lines of communication unusable	Bridges destroyed Barriers emplaced	Lines of communication unusable for 24-48 hours	
AIR DEFENSE				
Integrated Air Defenses	Unable to operate at battalion and above	Not Applicable	Unable to coordinate air defense for 24-48 hours	Not Applicable
Antiair Artillery	Unable to operate at company/battery and above	25% Combat Effective	Operate autonomously for 24-48 hours	Reduce personnel and equipment by 15%
Surface-to-Air Missiles		10% Combat Effective		Not Applicable
CSS				
POL	Unable to provide combat support	40% Combat Effective	Unable to provide combat support for 24-48 hours	Reduce personnel and equipment by 30%
Ammunition				
Transportation				
Legend	C3I	Command, Control, and Communications, and Intelligence		
	CSS	Combat Service Support		
	MOEs	Measures of Effectiveness		
	POL	Petroleum, Oil, and Lubricants		
	RSTA	Reconnaissance, Surveillance, and Target Acquisition		

Figure II-5. Sample Damage Criteria Matrix

and allocation of resources to be made. Voice transmissions may be used in time-critical situations. Web dissemination technology may increase timeliness in reporting. If command guidance restricts widest broadcast of BDA, then passwords may be used to limit web access as needed, such as strictly within the JFC and federated BDA supporting agencies.

- **Reliability.** Communication paths and systems must be reliable. When choosing a means of communication, system vulnerabilities must be taken into consideration.

- **Commonality.** Numerous communications systems and architectures have been developed and are in use Service-wide. Not all of these systems can "talk" together. Therefore, to select the appropriate system for use, two questions need to be answered: Who requires the information, and what is the lowest common number of systems that can support the requirement?

- **Redundancy.** Communications systems redundancy should be built into the system architecture to ensure and enhance timeliness, reliability, and success.

- **Capacity.** During contingencies, high volumes of information traffic of all types should be expected. At times, communication systems may become inundated. To alleviate systems from becoming inundated, distribution restrictions may need to be instituted.

- **Alternative Systems.** Due to system inundation, breakdowns, and losses, as many alternative methods of dissemination as available and feasible, should be established.

- **Simplicity.** Reasons for keeping the communications systems, formats, and procedures simple include, but are not limited to, OPTEMPO, training requirements, possible high reliance on augmentees/rapid turnover of personnel, and possible dual language

Connectivity is vital to the success of the battle damage assessment mission.

environment in a joint/multinational operation.

- **Classification**. Communications systems that allow for a classification level that the majority of BDA/CA information users can access should be used. This is an extremely important consideration when working in the multinational forces arena where allies will require access to BDA/CA information. Every effort should be made to ensure that federated BDA supporting agencies have access to the appropriate releasable/multinational systems that are used in theater on a day-to-day basis.

c. **System-Specific Command, Control, Communications, Computers, and Intelligence**

- **Joint Worldwide Intelligence Communications System.** The Joint Worldwide Intelligence Communications System (JWICS) is the sensitive compartmented information (SCI) 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.

- **Global Command and Control System.** Global Command and Control System (GCCS) is the Department of Defense (DOD) system for the C2 of joint and multinational forces. It incorporates the force planning and readiness assessment applications required by commanders to effectively plan and execute military operations. Its common operational picture (COP) correlates and fuses data from multiple sensors and intelligence sources to provide warfighters the situational awareness needed to be able to act and react decisively. It also provides an extensive suite of integrated office automation, messaging, and collaborative applications. GCCS is fielded worldwide, all networked via the DOD's classified private Intranet and is designed and implemented to provide our nation's warfighters the information superiority required to prevail now and well into the 21st century.

- **Secret Internet Protocol Router Network.** The SECRET Internet Protocol Router Network (SIPRNET) is a worldwide SECRET level packet switch network that uses high-speed Internet protocol routers and high-capacity Defense Information Systems Network circuitry.

- The following systems operate within JWICS, GCCS, and/or SIPRNET:

•• **INFOWORKSPACE.™** INFOWORKSPACE™ (IWS) is a collaborative tool application that runs BDA processes on a US-only SIPRNET workstation. It provides access to other CA federated BDA sites. IWS is a white board application that allows SECRET level voice and data collaboration (or sharing of information) from other applications. It may be used to share information between US agencies and the joint force. This is a new tool and is still in the development stage. BDA on SIPRNET will include BDA web pages, component BDA summaries, and connectivity with the JFACC for BDA sources such as MISREPs and WSV.

•• **Theater Battle Management Core System.** The theater battle management core system (TBMCS) is a US Air Force (USAF) air operations center (AOC) automation system. TBMCS provides

the JFACC with a single automated C4I system to plan and execute joint air operations at the operational level. Its major purpose is to allow the production, dissemination and execution of the ATO/ITO. To promote interoperability, intelligence functions within TBMCS will utilize integrated imagery and intelligence segments of GCCS. The targeting software toolset in TBMCS is the Joint Targeting Toolbox (JTT).

•• **Joint Targeting Toolbox.** The JTT is a suite of software applications hosted on Service, command, and government agency core system environments that are specifically engineered to support operations and targeting requirements at the national, strategic, operational, and tactical levels. JTT supports the entire targeting cycle from commander's objectives, guidance, and intent to generating the target list from the ATOs/ITOs to CA, with the goal of leveraging current targeting applications by packaging their functionality into a collection of interoperable targeting tools. JTT provides a capability to rapidly receive, correlate, manipulate, display, and disseminate target intelligence data from multi-discipline sources and apply the resulting information to the battle planning, mission execution, and assessment processes (e.g., view the COP of the operational area, call up imagery for selected targets, retrieve and manipulate relevant portions of tasking orders, master attack plans and candidate/priority target lists; share information, search common targeting databases, conduct online web-based target management, and assess results of attacks). JTT operates at the US SCI, US general service (message), and multinational collateral security levels.

•• **Automated Deep Operations Coordination System.** The Automated Deep Operations Coordination System (ADOCS) is a joint mission management software application. It provides a suite of tools and interfaces for horizontal and vertical integration across battlespace functional areas. The maritime variant of ADOCS, the Land Attack Warfare System, is the baseline for the Naval Fire Control System. Key integration functions within ADOCS are counterfire COP, joint battlespace management, coalition coordination and integration, air interdiction planning and execution, fire support coordination measures analysis, and battlespace visualization. The ADOCS system is useful to BDA cells in that it provides situational awareness regarding what targets are planned to be struck, what emerging targets have been added to the ATO/ITO, and what targets have been dropped from the list due to reprioritization. Even more specific to the BDA effort is the post-strike coordination activity that can be conducted via ADOCS especially with regard to time-sensitive targets (TSTs). Increased utilization of ADOCS by BDA cells should improve the timeliness of BDA reporting.

•• **Modernized Integrated Database.** Modernized integrated database (MIDB) all-source intelligence is analyzed and thoroughly evaluated when choosing potential target systems and components. The MIDB is the worldwide general military intelligence (GMI) database for the Distributed Production Program to provide GMI to the warfighter. MIDB serves as the primary repository of intelligence data for the entire DOD community, Australia, Canada, and United Kingdom. The targeting fields in the

MIDB include BDA data on installation status and physical/functional damage. JTT has the ability to update the targeting fields within MIDB. MIDB data is available through INTELINK, the SCI "Internet." MIDB is also available on SIPRNET through a security guard. MIDB OB data contains much text and graphic information concerning potential adversary sites, facilities, and units. It is the core military intelligence data system, consisting of several distributed databases and applications

•• **All-Source Analysis System.** The All-Source Analysis System (ASAS) is a series of computer hardware, software, and associated secure communication systems, enclaves, and workstations that provide seamless multi-source intelligence fusion and analysis to all echelons of the US Army. ASAS is divided into four main elements: the ASAS-Single Source, the ASAS-All Source, the ASAS-Communications Control Set, and the ASAS-Remote Workstation. ASAS tracks, analyzes, and reports on the intelligence and allows partially developed information and intelligence to be analyzed, correlated, and fused to prepare completed intelligence products for dissemination. ASAS also provides a communications front end, connecting adjacent, superior, and subordinate units with the ASAS enclaves through the Area Communications System. The ASAS-Remote Workstation provides the ASAS linkage with the battlefield coordination detachment in the AOC. The ASAS-Remote Workstation provides the interface to the Army Battle Command System and the USAF TBMCS.

- **Data Link Considerations.** Within the modern battlespace, machine-to-machine communications are becoming increasingly important. Data links from weapons, sensors, and aircraft are capable of rapid, secure transmission of large amounts of data that can be fused into a near-real-time portrayal of the battlespace. The latest generation of weapons can relay information on their status, position, target acquisition, fuzing, and other parameters. This can be very useful to the BDA analyst. It is important that communications channels and informational systems to receive and analyze this data are included in the tools for a BDA cell as they become available.

d. **Training for Battle Damage Assessment**

- **Formal Training for BDA.** Formal training is the best method for training analysts in BDA procedures and techniques. Several joint and Service schools cover BDA-related topics in targeting courses and many BDA-specific courses are offered. The following are some of the BDA formal training courses currently available.

•• The Joint Targeting School at the Naval and Marine Intelligence Training Center, Dam Neck, VA, currently offers several courses that include BDA skills.

•• The Joint Military Intelligence Training Center at the Defense Intelligence Agency (DIA) offers a two-day BDA course for analysts who will perform Phases II & III BDA in the NMJIC.

•• The USAF "Combat Targeting Course" at Goodfellow Air Force Base

(AFB), TX, is a seven-week course that qualifies both enlisted, officer, and civilian personnel from all Services to operate in positions requiring targeting expertise in support of combat mission operations.

•• The 36th Intelligence Squadron at Langley AFB, VA, offers a two-week BDA course. This course is designed to train personnel in BDA fundamentals.

•• The Joint Intelligence Training Activity Pacific, San Diego, CA, offers a four-day "US Pacific Command (USPACOM) Battle Damage Assessment Fundamentals Course" along with online training and a mobile training team.

•• The US Joint Forces Command (USJFCOM) Joint Forces Intelligence Center (JFIC) offers an "Intro to CA" course and an eight-module BDA course.

- **Computer-Based Training for BDA.** Computer or web-based training is not a substitute for formal classroom training, but can be used to help inform new BDA analysts, as part of on-the-job training (OJT), or as supplemental and/or refresher training. Computer or web-based courses are currently available from several sources.

•• The USPACOM Regional Joint Intelligence Training Facility, the Joint Intelligence Training Activity Pacific, has an online accessible "USPACOM BDA Fundamentals" course.

•• USJFCOM JFIC has placed their eight-module BDA course online.

•• The Joint Targeting School maintains a multi-module computer-based BDA rapid familiarization compact disk (CD) set. The one-hour multimedia training modules are designed to quickly train BDA cell joint and/or Service Reserve augmentees designated to perform BDA analysis and dissemination during exercises and real-world operations. Augmentees may review the multi-CD set prior to deployment or immediately upon arrival in the operations area. They can also be used as part of a training program for permanently assigned personnel. The modules include an introduction to joint targeting, BDA for hardened targets, BDA for telecommunications systems, BDA process and command structure, BDA for Integrated Air Defense Systems, and BDA for mobile/maneuver targets.

- **On-the-Job Training for BDA.** Military intelligence personnel receive OJT when they arrive at a new station or are assigned to a new job. This training can ensure that assigned personnel are familiar with BDA skills and will be able to function in a BDA cell via a training plan developed and implemented by each organization responsible for BDA operations.

e. **Battle Damage Assessment Federation Requirements.** Another important part of planning for BDA operations is the creation of a BDA federation plan. When an operation is larger than can be handled, the JFC can develop a matrix of other commands and agencies to federate out the Phases I, II, and III BDA analysis and reporting. When this concept is used, target sets are federated between the JFC and the NMJIC. The NMJIC BDA cell further federates their portion with other intelligence organizations at the national or theater levels. Typical participants in federated BDA are DIA, US Strategic Command, and USJFCOM. Other joint

intelligence centers may also participate. The organization of the federation will depend on the support operation. Typically, agencies will produce phased reporting on particular target sets that are assigned to them. The federated partners must have access to operational data from the supported operation, such as mission execution data and collections schedules. Additionally, the federated partners need to operate on the same systems used in the operational area on a day-to-day basis. By using federation, no single organization is overwhelmed by the BDA requirements. When using this concept, information distribution and communications between the federated partners is critical.

5. Battle Damage Assessment Cell Organization

a. **General.** The BDA cell is located within the targets branch. This cell is composed of targeteers and other personnel whose main function is to provide the main fusion center for near and mid-term BDA. Other BDA cell duties include providing the inputs for collection requests; managing inputs, coordinating, and analyzing BDA information; and ensuring speedy dissemination to decision-makers and other users.

b. **Functions within a Battle Damage Assessment Cell.** The BDA cell can be broken down into four distinct functions:

- **Management.** Management personnel are tasked with the organization and decision-making responsibilities for the BDA cell. Ultimately, the responsibility of decision-making lies with the officer in charge.

- **Operations and Intelligence.** Operations personnel are tasked with coordinating on planning and delivery of the weapons systems, and advising on technical or procedural aspects of the delivery platforms. Concurrently, intelligence personnel are tasked according to their specialized skills, and they provide rapid and accurate data analysis.

- **Support.** Support personnel channel information through the appropriate lines of communication to ensure that it arrives where and when required. In addition, they take care of the non-production-related activities that are required in any operation. The support group serves as a sort of catchall for the many important tasks performed by miscellaneous personnel involved in the BDA process. The following is a notional example of some of the personnel that may be assigned to a BDA cell:

  - Team chief (should be a targeteer)
  - Assistant team chief
  - BDA cell noncommissioned officer in charge
  - Liaison officers
  - Operations representatives
  - Targeteer/weaponeer
  - Structural analyst (either an imagery analyst or a well-trained targeteer)
  - SIGINT analyst
  - Human intelligence (HUMINT) analyst
  - Imagery analyst
  - Briefers

The lower echelons of command are responsible for inputs to the battle damage assessment process through mission and operational reports.

•• BDA database managers

•• Graphics/photographic personnel

•• Editors/reviewers

•• Administrative personnel

•• Couriers

•• Communications specialists

Note: Personnel requirements are situation dependent. The type of conflict and its duration will determine staffing requirements. Some personnel on this list may be assigned to other parts of the operations or intelligence staff, but will work BDA issues as needed.

c. **Different Levels of Battle Damage Assessment Cells**

- The lower echelons of command are responsible for inputs to the BDA process through mission and operational reports. Within a joint force, the BDA process normally is an all-source joint program that is supported by all components and designed to determine if the required effects on the adversary envisioned in the operations plan are being achieved.

- BDA is centrally managed for efficiency. The JFC usually designates the joint force BDA cell as the focal point of all command BDA efforts. All other BDA cells provide support to the joint force BDA cell. The joint force BDA cell fuses information and assessments from each of the component commands, units, and national sources into its definitive BDA assessment.

•• **Joint Force Battle Damage Assessment Cell.** The joint force BDA cell is under the control of J-2 Intelligence and is usually collocated with the command intelligence center. The joint force BDA cell is responsible for integrating operational and federated Phase I, II, and III BDA reporting and acts as the final authority on all BDA-related issues in the operations area.

•• **Joint Force Land Component Commander Battle Damage Assessment Cell.** The JFLCC cell is established in the JFLCC analysis control center. The JFLCC analysis control center is responsible for the adversary ground force intelligence picture and is also responsible for conducting BDA analysis on the mobile ground forces subset of land forces and facilities.

•• **Joint Force Air Component Commander Battle Damage Assessment Cell.** The JFACC BDA cell is responsible for integrating all-source reporting into Phase I and II BDA reports on fixed facilities target sets as designated by the JFC BDA CONOPS. Additionally, the JFACC BDA cell receives MISREPs from subordinate units and other units flying sorties in support of the air component. MISREPs generated on missions flown against mobile targets are passed to JFLCC analysis control center to conduct mobile target BDA analysis. The JFACC BDA cell is also responsible for forwarding WSV and other supporting JFACC produced operations data to the joint force BDA cell.

•• **Joint Force Maritime Component Commander Battle Damage Assessment Cell.** The JFMCC BDA cell functions as the central maritime command node for integrating all-source reporting into Phases I and II BDA reports on maritime defense and OB targets of adversary maritime forces and ports target set, if so designated by the JFC BDA CONOPS. The JFMCC

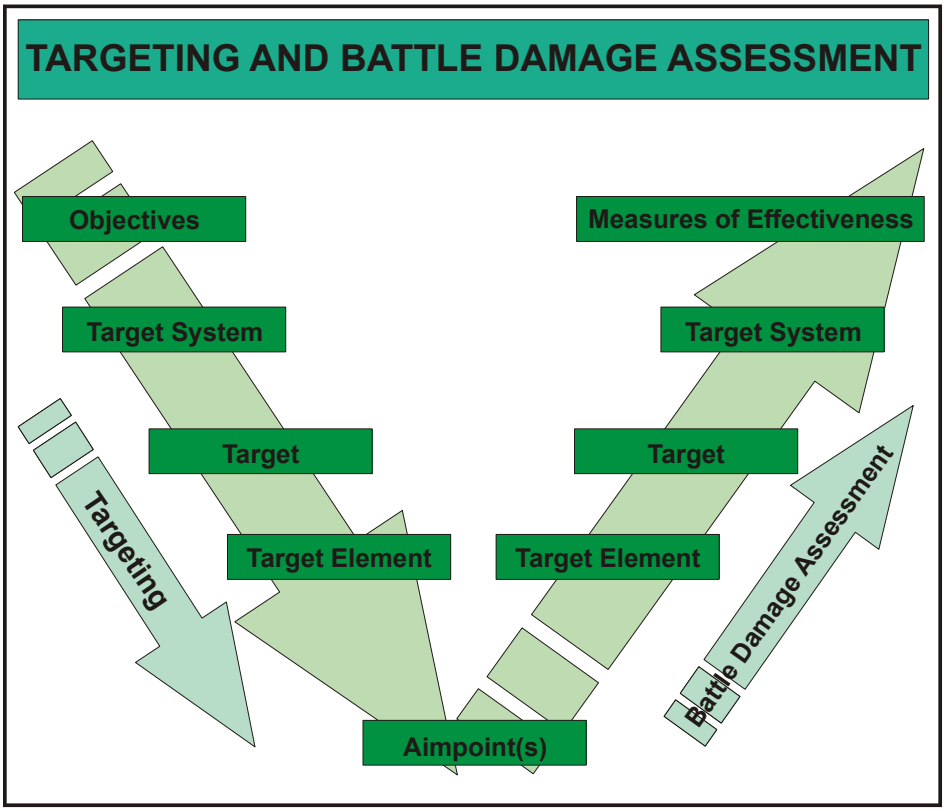


Figure II-6. Targeting and Battle Damage Assessment

may also be responsible for forwarding MISREPs and WSV to required BDA cells.

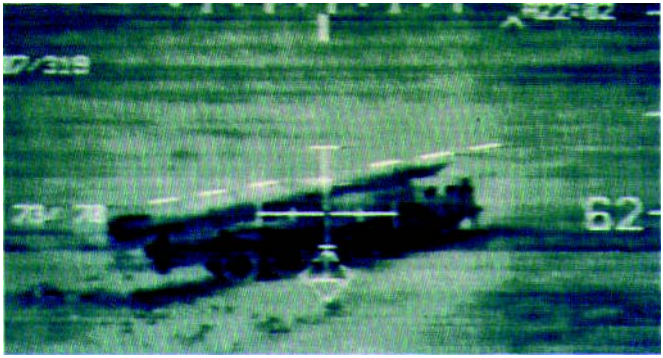
•• **National Military Joint Intelligence Center Battle Damage Assessment Cell.** The NMJIC BDA cell is organized under the auspices of JS/J-2T. The NMJIC will activate a BDA cell and will coordinate national-level BDA support for a combatant command. The NMJIC BDA cell produces Phases I, II, and III BDA reports in accordance with the target set responsibilities as assigned by the JFC BDA CONOPS and will normally disseminate Phase III BDA reports on all target sets daily to the combatant command BDA cell.

•• **Other Federated Battle Damage Assessment Cells.** Federated BDA cells provide combatant commanders theater-requested support for BDA. These cells produce physical and functional assessments and provide them to the combatant command BDA cells for validation. These cells also provide a BDA summary report to the combatant command BDA cell and NMJIC.

d. **The Relationships Between Battle Damage Assessment and Targeting Cells.** A critical ingredient for effective BDA is an understanding of all aspects of target development and its link to the JFC's objectives and guidance. BDA is the complementary activity to the selection of targets performed in target development. During target development, the targeteer applies the objectives to the target systems where the best effects can be produced. From there, the appropriate targets are selected and the target elements/aimpoints are determined. During BDA, the analyst reverses this approach, working from the target elements that were struck back up to the effects on the target and target system and concluding with a determination of the effectiveness of achieving the objectives. Targeting analysis supports BDA analysis. The target and desired effects must be known before functional damage can be determined. (See Figure II-6.)

6. Information Operations Considerations in Battle Damage Assessment

Information Operations (IO) are an efficient mechanism for employing forces to achieve effects across the spectrum of conflict in support of national security objectives. Offensive IO involve the integrated use of assigned and supporting capabilities and activities, mutually supported by intelligence, to affect adversary decision-makers and achieve or promote specific objectives. These assigned and supporting capabilities and activities include, but are not limited to, operations security, military deception, psychological operations, electronic warfare, physical attack/destruction, and special IO, and may include computer network attack. The physical attack mission area will require the standard BDA, but greater attention must be paid to the process or information that was targeted rather than the physical medium within which it resides. IO employment methods differ from traditional force application. Therefore, targeting analysts performing BDA sometimes use different mechanisms to measure the weapons effect on a target and the resultant effect in achieving the objective. Targeting analysts performing BDA should work very closely with operations personnel and members of the IO cell to ensure all potential BDA indicators are evaluated. The methodology for IO



All time-sensitive targets do not necessarily warrant immediate attack.

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. IO BDA requires a systematic understanding of complex target systems and the intelligence capabilities to identify and assess changes associated with the target.

7. The Integration of Special Operations Forces Reporting into the Battle Damage Assessment Process

Special operations forces (SOF) reporting can add vital information to the BDA process. SOF can also provide functional damage assessment of targets attacked by lethal or nonlethal means such as IO.

8. The Impact of Target and Air/Integrated Tasking Order Changes on Battle Damage Assessment Planning

Rapidly changing or flexible targeting priorities can cause problems for accurate and timely BDA. The BDA cell needs to keep abreast of any and all changes in the ATO/ITO, retargeting of pre-planned strikes, on-call strikes, and the prosecution of TSTs. One way to stay abreast of ATO/ITO changes is to ensure access to operational planning and execution systems (see subparagraph 4c). Furthermore operations planning and execution personnel must ensure that changes are entered into planning and execution systems.

a. **Time-Sensitive Targets.** All TSTs do not necessarily warrant immediate attack. The commanders' guidance identifies the high-payoff targets and establishes when specific targets should be attacked. TSTs qualifying as high-payoff targets usually require an immediate response per the attack guidance because they pose a clear and imminent danger to friendly forces or provide highly lucrative targets of opportunity. Coordination of TST collection requirements for high-payoff TSTs should begin when the nominated TST is approved as a target. This should permit the corresponding ISR data to be generated, processed, and exploited in time to support assessments capable of generating reattack recommendations, if appropriate. Coordination of CM requirements on TSTs is of paramount importance. Collection requirements generally dictate concurrent planning for reconnaissance to ensure reconnaissance assets are allocated against that target area immediately after an attack against TSTs. Immediate reconnaissance is accomplished so that BDA can be

accomplished and, if necessary, reattack recommendations may be made.

b. **On-Call Strikes.** On-call strike sorties can add to the workload of a BDA cell. Since on-call strikes do not have predetermined targets, the BDA cell will need to closely coordinate with the operations cell to keep abreast of on-call strikes. As targets for the on-call sorties are found, they will need to be added to the BDA collection and production planning processes to ensure that timely BDA is available on this type of target.

c. **Re-Targeting.** Re-targeting of sorties is problematic for BDA tracking. Targets planned for strikes will not be attacked if their assigned sorties are re-targeted to cover a TST or other emerging target. Careful attention must be paid to this issue to ensure that targets are covered and that BDA collection is adjusted to cover the targets actually struck by each sortie.

d. **Air/Integrated Tasking Order Changes.** The ATO/ITO can go through many changes from when it is first planned to when it is actually executed. On any given day, one ATO/ITO is being executed and usually more than one ATO/ITO is being developed or updated. This means that it is very important to ensure that the correct ATO/ITO is being used in the BDA cell. Once the ATO/ITO has been disseminated and mission execution begins, collection and BDA play a primary role in a dynamic environment that requires quick responses (or quick fire missions) to counter emerging and relocatable targets. As changes are made to the ATO/ITO, adjustments must be made for rescheduling collections and BDA. Deviations from the ATO/ITO can cause a major ripple effect, not only within the BDA cell, but extending to outside agencies as well. Within a joint force, combat may begin in the middle of an ATO/ITO. Collection must consequently be adjusted. Refer to the following examples:

- **Internal Example.** TST diversions necessitate that the collections team will have to reschedule airborne reconnaissance assets.

- **External Example.** TST diversions could cause the JFC's objectives to be delayed because the TST divert utilized assets intended to eliminate a target system that has to be destroyed before another set of targets can be attacked. For example, if adversary air defense missile systems were not suppressed, targeted chemical/biological storage areas located within the operational area could not be destroyed, and the JFC's objectives could not be fulfilled.

9. The Importance of Collection Planning to Battle Damage Assessment

A vital component of preparation for BDA is to ensure that plans to collect and disseminate all-source information for BDA in a timely manner are in place prior to the start of operations. The JFC should provide a comprehensive collection plan with intelligence architecture to support BDA.

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CHAPTER III
JOINT BATTLE DAMAGE ASSESSMENT COLLECTION

1. Overview

a. **Purpose.** The purpose of this chapter is to provide general instructions on the interaction between the BDA cell and CM. This chapter will not go into detail about CM or explain the process of CM as that is out of the scope of this handbook.

For information on CM, see JP 2-01, Joint Intelligence Support to Military Operations.

b. **Goal**. **The primary goal of the BDA cell in this step of the BDA cycle is to request and conduct as much collection as possible to support the JFC's BDA requirements.** While BDA collection probably will never be a major intelligence collection priority, it is important that the BDA cell actively seek as much collection as possible.

c. **Methods of Submitting Targets for BDA Collection.** There are three ways to request collections for BDA. The first is through the normal deliberate planning process, where targets are submitted for post-strike collection by the planning or targeting staff. The second is through an ad hoc collection process. The BDA cell submits ad hoc requests as required. The third way to request BDA collections is through the TST process. The TST cell submits these requests. While these three ways of requesting BDA collection differ in both timelines and processes, they result in the same ultimate request: that of BDA collection. These three request procedures are explained in further detail in the following sections.

2. Deliberate Battle Damage Assessment Collection

Deliberate BDA collection, as a whole, is part of the targeting/planning process in that requesting collection is a normal function of the target development/target nomination process. The general process for deliberate BDA collection is that the operational planners request BDA collections based on the plans they have developed. The below two examples provide more detail for the JFACC and JFLCC deliberate BDA process.

a. JFACC targets are contained in the ATO/ITO. In this case, joint force components nominate targets to support the JFC's objectives. Those targets then are consolidated into a TNL. The TNL then forms the basis of the joint integrated prioritized target list (JIPTL), which is approved by the JFC. This list then is passed to the MAAP cell to develop the plan of attack, which ultimately becomes the ATO/ITO. In the process of developing the ATO/ITO, the targeteers in the MAAP cell develop a weaponeered-sourced JIPTL, which lists targets down to the aimpoint level that will be placed on the ATO/ITO. This list is used to form the BDA collection request. Therefore, all targets on the list will be submitted for the JFACC's deliberate BDA collection request, regardless of which joint force component originally nominated the individual targets. The targeteers/planners pass the list to the CMs. **The CMs consolidate all collections requests based on the JFC's requirements and produce a joint integrated prioritized collection list.**

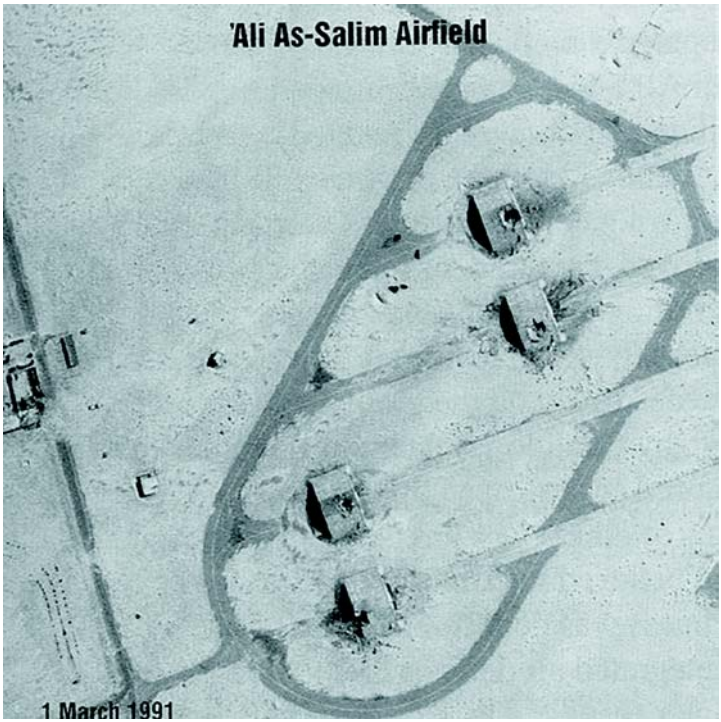
Collection managers then select the most capable asset for collection.

- An important issue that must be resolved during the planning phase is developing the time lines and actual methods for passing the weaponeered-sourced JIPTL from the targeteers to the CMs. The CMs need time to prioritize the requested targets, decide which platform can provide the best collections, and pass the targets to the actual platforms. Therefore, CMs need the weaponeered-sourced JIPTL in a readily useable format.

- Currently the easiest method to pass this data is in the form of a spreadsheet. While this is the easiest way to pass data, it may not always be the best way, as this generally requires retyping the information into a CM tool. This, in turn, brings about the necessity to identify the timing requirements for this collection list. Therefore, during the planning phase, the BDA cell must work with both the targeteers and the CMs to determine the best method for forwarding the weaponeered-sourced JIPTL.

b. In the JFLCC's deliberate BDA collection process, the BDA cell chief works closely with the deep operations coordination cell (DOCC). When the DOCC plans for a deep strike operation, it coordinates for post-strike BDA collection through the JFLCC CM cell. The JFLCC BDA cell monitors the submission, acceptance, tasking, and reported results of deep strike-initiated BDA collection opportunities.

- For deliberate BDA collection to be successful, there must be close coordination between the planners (such as the DOCC, target developers, MAAP cell), the CMs, and the BDA



High-value targets are identified early in the planning process.

cell. This close coordination should be done well in advance of any operation. Coordination should include the BDA cell development of information elements, which the actual exploiters will use to answer the requestor's questions. Information elements are discussed in more detail in subparagraph 5c.

- High-value target (HVT) BDA collection is another item for close coordination for BDA during the planning phase. HVTs are targets the adversary commander requires for the successful completion of the mission. The loss of HVTs would be expected to seriously degrade important adversary functions throughout the friendly commander's area of interest. HVTs may be of such vital importance that the JFC may wait for BDA before moving to the next phase of an operation. HVTs are identified early in the planning process. These targets are also passed to the CM cell in advance with the awareness that these targets or aimpoints are on the JFC's high priority targets for BDA collection. In most instances, these targets or aimpoints should not have BDA collection efforts diverted from them without prior coordination.

3. Ad Hoc Battle Damage Assessment Collection

a. Ad hoc BDA collection is initiated by the BDA cell if the deliberate collection process has not accomplished collection for a specific target. Ad hoc collection may also occur if deliberate collections were accomplished but did not fully answer the BDA questions. The respective BDA cells maintain a simple list of targets that have been struck and if and when they received BDA collection. This is an easy way to track what targets on the ATO/ITO have collections planned against them. This also provides an initial point for ad hoc target nominations. Added to this list are those targets that should have been collected on but were either eliminated for another higher priority target, or the collection occurred but did not satisfy the requirements. Those situations require new collection to satisfy the requirement.

b. These targets will be consolidated and, with the appropriate information elements, submitted to the CMs. If the CM cell uses specialized applications, the BDA cell may be required to insert these targets into the application in order to request collection. The joint air operations center (JAOC) may group the analysis, targeting, and BDA cells together to form an all-source correlation and fusion cell, which may have an organic CM representative within it. This person also can submit ad hoc collection requirements for BDA purposes. Within the JFLCC, the BDA cell in the J-2 coordinates collection for BDA purposes with the co-located JFLCC CMs.

c. Success in managing ad hoc targets is reliant on BDA cell manning and proficiency levels. If the BDA cell is small, the ad hoc target responsibility may be placed on the BDA cell chief. If the cell is robust, there may be a person dedicated to monitor and submit targets for ad hoc collection. Regardless of the size of the BDA cell, there must be close coordination and interaction between the CMs and the BDA cell.

4. Time-Sensitive Target Battle Damage Assessment Collection

a. Most JAOCs have a TST cell. The main function of this cell is to prosecute time sensitive and dynamic targets in real time. The cell may have dedicated BDA personnel assigned to assist with BDA on these targets. During the coordination

process for the TSTs, the TST cell determines whether there is a need for post-strike collection. If so, the TST cell puts BDA information elements into the collection nomination system. Currently, ADOCS normally is used for coordination within the TST cells. The collection request in this case would be acted upon by a particular CM cell (described below), which has direct access to the collection platforms. Under this process, the TST cell submits the target for collection within ADOCS.

b. Within the JAOC, there is an ISR cell that processes changes to the current day's collection plan. This cell includes platform liaison officers who have direct communications with the platform operators and exploiters. They coordinate with the platform operators and pass on any new BDA requirements. If the target is of sufficient value, it may supersede other high priority targets. Because there are limited numbers of collection assets and always more requests than assets can accommodate, the J-3 may have to determine if the request warrants deleting some targets from the original collection plan or if the request should go unfilled.

c. Once collected, the information is summarized in ADOCS for further use and re-nomination if necessary. This information may be entered on chat pages or voice reporting by the ISR cell. The data may also be copied into a targeting application within the command, either by a BDA representative in the TST cell or the other BDA personnel. Thus, the information becomes available to the JFC, components, and other units.

5. Developing Battle Damage Assessment Collection Requests

a. To achieve the most accurate BDA collections, the BDA cell chief or BDA CM must understand how to develop BDA collection requests. Such knowledge is important for all three types of BDA collection requests previously described. Therefore, the BDA cell chief or BDA CM must have a good understanding of developing a request for information (RFI), information elements, and different types of intelligence. Additionally, personnel within the BDA cell should be familiar with CM policies and procedures.

b. **Requests for Information**

- RFIs are the formal requests for collections submitted to the CM. In developing RFIs, BDA cell members should include elements of four criteria as follows:

  •• Pertinence—to the requestor's operational area

  •• Feasibility—determination as to whether the request can be met by systems in accordance with the requestor's latest time the information will be of value

  •• Completeness—succinct explanation of activity to be collected, justification, location, latest time the information will be of value, and the requesting unit's contact information

  •• Necessity—determination as to whether the information has already been collected

- To best prioritize BDA collection requests, BDA cells always should be familiar with the priority intelligence requirements (PIRs). There are rarely enough collection assets for all the collection requests in an operation, and CMs must make choices on which requests receive collections and which do not. Therefore, the BDA requests must be based on the JFC's PIRs.

Imagery intelligence is the easiest to use and exploit.

Prioritization is key to providing timely BDA on the commander's most urgent BDA needs.

c. **Information Elements.** Information elements are specific questions spelled out within an RFI. The better and more detailed the information elements are, the better the information will be returned. For BDA, the information elements should say more than just report damage noted. At minimum, information elements should request report damage at designated coordinates or aimpoints. Physical damage reporting criteria needs to conform to the approved BDA "Quick Guide" physical damage levels. Additional information elements may request changes noted since last image, repair activity, or any military activity noted. It is also important to use the information elements to clarify what type of damage/effect you are trying to determine. While it is not necessary to redevelop an information element for each target or aimpoint, the information elements should be detailed enough to support BDA analysis. Finally the information elements should state reporting requirements.

d. There are a number of types of collection that can be requested to support BDA production. There are benefits and limitations to each. The CM decides which type of collection and which asset will best answer the information elements. Nevertheless, it is important for the BDA cell to understand these collections as well.

- IMINT is the easiest to use and exploit; however, it cannot tell what happened to things that the available sensors cannot detect.

- SIGINT is readily available and can be timely but can be of limited use due to increased classification.

- HUMINT can provide the most detailed information about the amount and type of damage but can be hard to task due to limited assets and the amount of time required to produce data.

- OSINT is a non-traditional form of collection and can provide data quickly but the information presented may be inaccurate. Additionally, there is no formal method to task or ask for specific OSINT collection.

- MASINT is an emerging source of data. In the future this should provide very good BDA data.

e. BDA cells should be aware that using multiple "INTs" normally provide the best type of BDA information. Each type of collection can provide critical data relative to the physical and functional damage of a target that has been attacked. For instance, if destruction of a building is intended to force an adversary individual to change his travel plans, imagery can display destruction of the building, but it cannot determine whether the individual actually changed his travel plans. HUMINT would be necessary. As another example, assume that destruction of a building is intended to alter the adversary's communications architecture. Imagery cannot depict whether destruction of the building has damaged the communications architecture. SIGINT would be necessary. As a final example, suppose the JFC's strategy is to destroy a percentage of an adversary's manufacturing capability of a specific weapon or product, but the adversary has hidden its production among several possible factories. IMINT can display whether we have destroyed any of the possible factories, but it cannot detect whether those factories housed the intended target. Another intelligence source would be required. As these examples demonstrate, it is important to use the information elements to clarify which type of damage/effect you are trying to achieve on a target.

6. Monitoring Tools

There are several tools that the BDA cell can use to monitor the status of BDA collections, or to find further information about collections.

a. **Theater Collection Plan.** At the strategic level, the theater collection plan identifies the combatant commander's intelligence needs and the associated strategy used to satisfy those intelligence requirements. It is the single document that consolidates and deconflicts all theater-level collection. The basis for the theater collection plan is the combatant commander's PIRs. Each PIR has supporting indicators, specific information requirements, targets, and required collection timeframes. In addition, the theater collection plan identifies the intelligence asset(s) being used to satisfy each intelligence requirement. The theater collection plan worksheet is a working tool used to develop the theater collection plan and may be located on a joint force home page. This enables collection managers within the operational area to gain feedback on what intelligence discipline(s) and what collection asset(s) their requirements have been tasked to and when collection is scheduled to take place.

b. **Planning Tools for Resource Integration, Synchronization, and Management.** Planning Tools for Resource Integration, Synchronization, and Management (PRISM) is a CM tool frequently used by CM cells. For viewing imagery collection plans, an organizational account within PRISM will allow daily checks of the collection deck and can be used by BDA cell personnel to request imagery directly. The PRISM program is

normally available over ADOCS for use by BDA cells so equipped.

7. Battle Damage Assessment Collection Responsibilities

a. **BDA Cell Chief /BDA Collection Manager**

- Overall responsibility is to ensure that all collection requests are passed to the CM cell
- Ensures smooth coordination among other participants in the BDA collection process (planners, targeteers, DOCC, CM cell, TST cell, etc.)
- Coordinates procedures for the CM cell to deliver BDA collections
- Submits ad hoc BDA collections
- Tracks receipt of requested BDA collections and resubmits requests as necessary

b. **Collections Management Cell**

- Ensures receipt of the weaponeered-sourced JIPTL and develops deliberate BDA collections plan
- Develops BDA collections on TSTs
- Delivers BDA collections according to the procedures coordinated with the BDA cell chief/BDA CM

c. **Deep Operations Coordination Cell.** Requests BDA collections based on planned operations.

d. **Targeteers/Master Air Attack Plan Cell.** Submits weaponeered-sourced JIPTL to the CM cell for deliberate BDA collection planning and provides a courtesy copy to the BDA cell.

e. **TST Cell.** Submits TSTs for BDA collections.

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CHAPTER IV
JOINT BATTLE DAMAGE ASSESSMENT PROCESSING AND EXPLOITATION

1. Overview

During the processing and exploitation phase, the intelligence analysts in the joint force and component headquarters convert information (raw sensor data) into intelligence for use in the next step, production of the BDA reports. Knowledge of both the commanders' guidance and the recipients' needs are vital ingredients to the successful processing and exploitation of information in support of BDA.

2. Battle Damage Assessment Processing

BDA analysts derive most Phase I reports from MISREPs, INFLIGHTREPs, reconnaissance exploitation reports (RECCEXREPs), SALUTE reports, HUMINT, intelligence information reports (IIRs), spot reports (SPOTREPs), operational "in-contact" reports, and national sources to report initial damage.

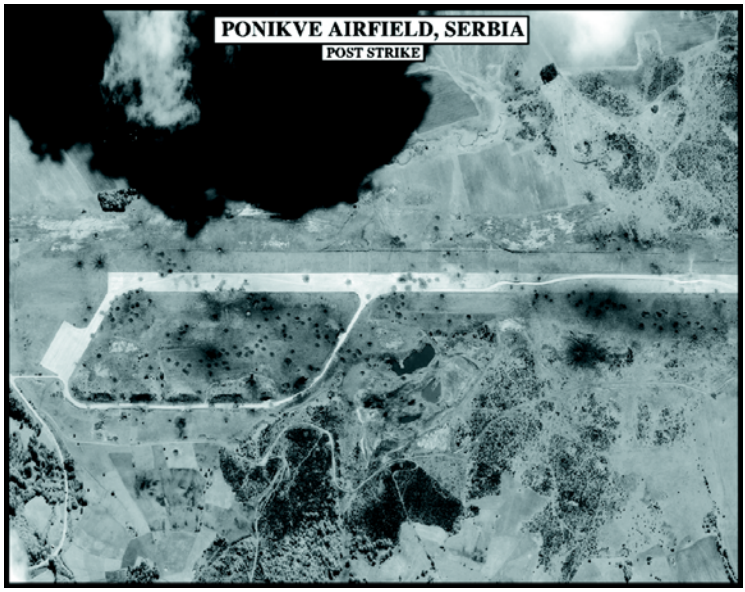
a. **Inputs.** Data sources for tactical analysis may include MISREPs from air crew debriefs, aircraft cockpit video also known as "gun camera footage," WSV, imagery from airborne radar or infrared optical systems, reconnaissance imagery such as Tactical Aerial Reconnaissance Pod System or unmanned aerial vehicles (UAVs), visual reports from joint force air component ground fire liaison elements or Advanced Tactical Aerial Reconnaissance System, artillery target surveillance reports, and reports from ground units. National intelligence collection systems may be the first platforms able to provide information needed to assess damage by cruise missiles, Army Tactical Missile System, and other long-range, unmanned systems. An initial reattack recommendation may be included when sending the BDA reports to the appropriate BDA cell for further analysis.

b. **Multiple-Intelligence Source Post-Strike Data**

- BDA requires all-source information to analyze effects on the adversary. Multiple-intelligence sources may eliminate ambiguities arising from deceptive measures successfully employed against one sensor. Current BDA relies heavily on IMINT to provide the physical status of a target. IMINT is the primary source for physical damage assessment due to its reasonably high degree of accuracy, especially when evaluating structural damage. However, imagery sometimes may not be available or, if available, may be inadequate to assess certain types of damage.

- Other resources may prove useful in providing information supporting direct or inferential judgments concerning the extent of incurred physical and functional damage. These sources can also provide direct intelligence regarding the resumption of functional operations or repair activities. Other advantages of multiple-intelligence sources include optimizing the synergy between sensors, as well as reducing dependency on any single source. In addition, improving analytical skills and gaining experience with all sensors will benefit analysts in instances when imagery is not available.

c. **Weapons System Video.** WSV plays an integral role in the BDA process. WSV



Current joint battle damage assessment relies heavily on imagery intelligence to provide the physical status of a target.

may be used for target study and analysis, weaponeering, OB updates, restrike decisions, and reconstitution estimates. WSV provides the ability to rapidly answer the question: "Was the target hit?" The significance of this information is crucial in determining whether further assets must be committed to achieve the desired effect on the target. The term "first-phase BDA" is often used synonymously with WSV during the mission debrief, even though the terms "strike assessment" or "hit or miss" are more appropriate. WSV analysis generally allows for determining only whether the target was struck or not; it usually does not reveal the degree to which the target remains functional. At times, **WSV may be all that is available for intelligence analysts to process for the BDA analysts working a specific target due to limited coverage or possible communications loss.**

d. **Significant Reports**

- **Mission Reports.** The MISREP provides timely mission results and non-imagery recorded sightings. Information for this message is obtained from post-flight debriefings and may amplify the INFLIGHTREP. The MISREP is sent to the tasking agency, the requesting unit or agency, and other interested organizations in the joint task force. When missions are covered by a close air support summary (CASSUM), a MISREP is not required. During combat operations (following ATO/ITO execution), a MISREP will be generated for each sortie flown against fixed facilities. MISREPs are generated as United States message text format (USMTF) messages to the joint force air component and saved in a central MISREP database. The targeting relevant information may be accessed or viewed via JTT applications. Since MISREPs are not releasable to foreign nationals, they may not be accessible to all forces during multinational operations. Once MISREPs are released, BDA cells will use them in

Weapons System Video—Pre-Strike

Weapons System Video—Post-Strike

Weapon system video plays an integral role in the joint battle damage assessment process.

EXAMPLE OF A MISSION REPORT

```
UNCLAS
OPER/ SLAMMER 9401/USCENTCOM2313/EAGLE SLAM//
MSGID/MISREP/24FS DOW/4001/DEC//
REF/A/ORDER/8AF/232300ZDEC03//
REF/B/INTSUM/ACIN/231100ZDEC03//
MSNID/DCA/9 TACC/1/BB5656
UNID/27 FS//
ROUTE/242355Z/3436N07825Z/250015Z/RPNAME:CAP
DELTA/250020Z/RPNAME:CAP ECHO//
FLTDTAIL/DINGLE91/KLFI/27/FLGC/242350Z/250001Z/WASH//
TIMESPEC/TFRM:AIR ALERT/250005Z/250001Z/WASH//
TGTPOS/06/UNKNOWN AIRCRAFT/UR/POSID/ARABIAN GULF/OVER
WATER/2335N07925W/000T/630KTS/AGL:50//
RESULT/TGTEL:6 FLOGGER LIKE AIRCRAFT/ QTY: 4/DESTR/YES/
ATTACK/17QNL12341234//
TARWI/4/8/6/1/D//
JAM/RADAR:2N//
ENCEPT/3535N32925E/250055Z/AGL;50/NONATO:FLOGGER/UR/6/6/5/4
/AA3//
ACLOSS/DINGLE94/F15C/3534N32859E/250050Z/CHUT/MSLS-RKT-
AA//
```

Figure IV-1. Example of a Mission Report

determining whether a target has been struck. Standard USMTF should be utilized for all message reports. (See Figure IV-1 for a MISREP example.)

- **In Flight Reports.** The INFLIGHTREP is used to report mission results and/or information of tactical or intelligence value. The voice message is used by pilots/aircrews to give a broad assessment of mission accomplishment and/or any other tactical information sighted of such importance and urgency that the delay, if reported by normal debriefing, would negate the usefulness of the information. Ground based C2 units use the record message to provide a record version of a voice INFLIGHTREP. If available, INFLIGHTREPs will be generated during operations. These reports are sent directly to the AOC. Normally, INFLIGHTREPs are not relied upon for any BDA other than for decisions to do immediate re-attacks on TSTs.

- **Close Air Support Summaries.** The CASSUM provides summary close air support mission results and non-imagery recorded sightings. Information for this message is obtained from post flight debriefings. When a mission is covered by a CASSUM, a MISREP is not required. Perishable information will not be delayed for the CASSUM and will be transmitted as quickly as possible using intelligence report, tactical report, or other applicable messages. CASSUMs missions flown in support of the JFLCC submit MISREPs to the air support operations center (ASOC). The ASOC is responsible for forwarding BDA reporting to the joint force land component.

For further information on MISREPs, INFLIGHTREPs, and CASSUMs, refer to CJCSM 6120.05, Manual for Tactical

Command and Control Planning Guidance for Joint Operations Joint Interface Operational Procedures for Message Text Format.

- **Reconnaissance Exploitation Reports.** The RECCEXREP is used to provide an abbreviated imagery interpretation report format for tactical reporting. This message must be prepared and sent as soon as possible, but not later than 45 minutes after the reconnaissance mission aircraft has landed. 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. Specific examples are classified.

- **Spot Intelligence Report.** The spot intelligence report (SPIREP) is used to provide the Chairman of the Joint Chiefs of Staff, the NMJIC, the combatant commanders, the Service Chiefs, and heads of selected agencies with timely intelligence regarding events that could have an immediate and significant effect on current planning and operations. The SPIREP must be submitted as soon as possible, but not later than one hour after it has been determined that a critical situation of unusually high interest to US decision makers has occurred or appears imminent. (See Figure IV-2.)

For further information on RECCEXREPs and SPIREPs, refer to CJCSM 6120.05, Manual for Tactical Command and Control Planning Guidance for Joint Operations Joint Interface Operational Procedures for Message Text Format.

- **SALUTE Report.** A SALUTE report is a short, simplified report used by ground units to pass observations. Such reports should answer the who, what, where, and when questions. The SALUTE (**S**ize, **A**ctivity, **L**ocation, **U**nit, **T**ime, and **E**quipment) is used to quickly pass the information. (See Figure IV-3.)

EXAMPLE OF A SPOT INTELLIGENCE REPORT

```
OPER/WHALE WASH//
MSGID/SPIREP/DIA JSW/1024042//
RPTSTAT/INIT/1//
PERID/222359Z/TO/232359Z//
CNTRY/NU/ES/US//
INFOEV/231748Z/351025N0790125W/-/LOCAL/A//
GENTEXT/NATURE OF EVENT/(U) THE SANDINISTAS HAVE LEARNED
ABOUT OPERATION WHALE WASH AND POSITIONED THEIR FORCES TO
BLOCK THE ADVANCEMENT. THE CONTRAS ARE OUTNUMBERED AND
ANY US PERSONNEL IN THE AREA ARE IN EXTREME DANGER//
GENTEXT/OUTLOOK/(U) WITHOUT DRASTIC CHANGES TO THE
OPERATIONAL PLANS, OPERATION WHALE WASH MAY BE A FAILURE
WITH POTENTIAL HIGH CASUALTIES//
RMKS/(U) THE SOURCE OF THIS INFORMATION HAS EXCELLENT
ACCESS TO THIS MATERIAL AND HAS ALWAYS PROVIDED RELIABLE
INFORMATION IN THE PAST. IT IS RECOMMENDED THAT OPERATION
WHALE WASH BE POSTPONED//
```

Figure IV-2. Example of a Spot Intelligence Report

- **Imagery Interpretation Report.** The IIR is used to report in a single message format, the initial phase interpretation report (IPIR), or supplemental phase interpretation report (SUPIR). The IPIR is used to provide results of first-phase exploitation of imagery interpretation. It is formatted to allow direct database entry and human readability. The IPIR can report single or multimission data. The SUPIR is designed to provide results of second-phase exploitation of imagery interpretation. It is formatted to allow direct database entry and human readability. The SUPIR can report single or multimission data. A single IIR, when used as an IPIR, is sent for each mission dependent upon the platform used, and is updated as a SUPIR. The IIR (IPIR) should be sent as soon as possible but not later than 4 hours after the aircraft acquiring the photographic information has landed. The IIR (SUPIR) should be sent as soon as possible and may be transmitted in "fragments" to facilitate transmission.

- **Intelligence Report.** The intelligence report (INTREP) is used to provide for the joint exchange of information obtained through tactical collection efforts. The INTREP provides timely information regarding events that could have an immediate and significant effect on current planning and operations or information that may be of timely interest at the national level. This message is the primary means of reporting

EXAMPLE OF A SALUTE REPORT

FROM: SERPENT 60

TO: SERPENT 72

SUBJECT: SALUTE

S- 2 ROCKET EXPLOSIONS, 1 IMPACTED APPROX 300M SW OF FARP AND APPROX 400M FROM OBJECTIVE BRAVO. THE OTHER IMPACTED APPROX 200M NE OF LZ HAWK.

A- TWO EXPLOSIONS FROM POSSIBLE 107MM ROCKETS

L- 1ST IMPACT 42SWB 1428 4561 2ND IMPACT 42SWB 1431 4560

U- UNKNOWN

T- 021209ZNOV02

E- 2 ROCKETS, POSSIBLE 107MM

QRF DEPLOYED AT 1219Z IN 2 GMV WITH 10 PAX. SHOT AND SPLASH WAS HEARD. TIME OF FLIGHT WAS APPROX 10 SECONDS. BOTH IMPACTS WERE OBSERVED.

Figure IV-3. Example of a SALUTE Report

HUMINT and counterintelligence information. (See Figure IV-4.)

- **Tactical Report.** The tactical report (TACREP) is used only to provide perishable information of tactical significance and is provided for the immediate attention of the tactical commander(s). The TACREP also is used to alert commanders of immediate threats to friendly forces. Amplifying information may be reported by other message formats. Because of the significance of this report, the message should not be delayed to obtain all possible data on a continuing event. For maritime operations reporting, the TACREP is used to report contacts developed by high frequency direction finding assets. The primary method of transmission is record with voice as alternate. General services or SCI channels are used as appropriate. The TACREP normally is sent with an immediate or flash precedence because of the high-priority and perishable nature of the information. (See Figure IV-5.)

For further information on IIRs, INTREPs, and TACREPs, refer to CJCSM 6120.05, Manual for Tactical Command and Control Planning Guidance for Joint Operations Joint Interface Operational Procedures for Message Text Format.

h. **Information Operations.** Depending on the types of operations, IO may be planned at the combatant command level, or it may be planned by the President of the United States and the Secretary of Defense, in conjunction with other agencies outside of DOD. IO differ from traditional force application and require targeting analysts to use different mechanisms to measure the effect on a target and the resultant effect in achieving the objective. Targeting analysts performing BDA should work very closely with operations personnel and members of the IO cells to ensure all potential BDA indicators are evaluated. 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.

EXAMPLE OF AN INTELLIGENCE REPORT

```
OPER/DESERT SHIELD//
MSGID/INTREP/2ACR/0506001//
AMPN/PRETECHREP//
HEADING/SOURCE IDENTIFICATION//
4PERSDAT
/DE/NAME-IND/CY/RANK-OR-POSITION/PERSONAL-ID/DOB
/01/YELTSIN/RS/PRIVATE/MI1234/330101//
1CAPEQ
/DE/EQUIP-CPTRD/QTY /LOCATION
/01/RIFLE(AKM-47)/21/33URQ155155
/02/HMG(12.7MM)M1963/7/33URQ155155//
4CAPUNIT
/DE/CAPTIME/CAPTURING-UNIT/EV/CO
/01/201745Z/A-TRP-1SQ-2ACR/A1/RS
/02/201745Z/A-TRP-1SQ-2ACR/A1/RS//
RMKS/A SUPPLY STORAGE POINT WAS SEIZED DURING GROUND CONTACT. MOST
WEAPONS THAT WERE CAPTURED HAD MARKINGS OF CZ44A ON THE STOCKS. THE OOB
HOLDINGS REVEAL THE DISTINCTIVE MARKING FROM A COMPANY OF THE 128-MTZRFL-
DIV//
```

Figure IV-4. Example of an Intelligence Report

EXAMPLE OF A TACTICAL REPORT

```
EXER/READIEX 4-93//
MSGID/TACREP/NCO USAM HFDF NET/L250001/JUN//
AMPN/BLUE FORCE SUPPORT//
MAROP/120001Z4/1/HF:LCX/-/-/CS:BLUELADY/LATLONG:1234N0-12345W5 /ELP:110NM-32NM-
125.0/SNQUAL:TENUOUS FIX/SNSRCD:BEDF/SNNR:L1234 /DFLOB:0G 1211N07220W 282.4T
XCU/DFLOB:IR 4000N02000W 098.6T GDU /DFLOB:IL5000N01000W 222.2T FCU/DFLOB:IY
3600N00630W 111.3T GCN//
OPSUP:DI:0000/NET:80/TSKR:IL/RFREQ:12345678HZ//
MAROP/120003Z6/1/HF:LCX/-/-/CS:READMAN/LATLONG:1256N4-123456W7 /ELP:111NM-32NM-
125.0/SNSRCD:BEDF/SNNR:L1238/DFLOB:OG 1211N07220W 281.4T XCU/DFLOB:IR
4000N02000W 098.2T ECU/DFLOB:IL 5000N01000W 225.6T PDN/ DFLOB:IY 3600N00630W 112.7
FCU//
OPSUP/DI:1111/NET:80/TSKR:IR/RFREQ:123456789HZ//
```

Figure IV-5. Example of a Tactical Report

3. Battle Damage Assessment Exploitation

a. **Target Development and Target System Analysis**

- Target development and target system analysis studies are invaluable tools to the BDA analyst. The purpose of BDA is to compare what was actually accomplished to what target development determined should be accomplished when the targeting options were being formulated, and to determine if the commander's objectives were accomplished. Consequently, a critical ingredient for effective BDA is detailed familiarity with all aspects of the analysis performed in the target development that justified the chosen targets and their linkage to the JFC's objectives and guidance.

- By using finished intelligence from the target development process, an analyst can become familiar with targets and target systems, both in their physical and functional layouts and with regard to how they fit in the system's overall functionality. Target development is usually accomplished by SMEs and may be tailored to the JFC's objectives. Since the target must be known before functional damage can be determined, a target development study can save considerable amounts of research and analysis and allow for fast, accurate, and relevant BDA.

b. **Measures of Effectiveness.** See Chapter 1, subparagraph 5b, for information on MOEs.

c. **Federated Battle Damage Assessment.** When an operation is large, a JFC may develop a matrix of other commands and agencies to federate out the Phases I, II, and III BDA analysis and reporting. The joint force works with the NMJIC to divide the various BDA target sets and systems and the BDA phases among the participating organizations. By doing so, no single organization is overwhelmed by the BDA requirements.

CHAPTER V
JOINT BATTLE DAMAGE ASSESSMENT PRODUCTION

1. General

a. **The production phase of the BDA cycle is where the majority of the information used in BDA is evaluated, analyzed, and incorporated into the various means of BDA reporting.** This phase starts with gathering the data and reports previously requested during the planning phase and collected during the collection phase. As the data and reports are gathered, they are analyzed to glean relevant BDA information. Once this data has been reviewed, coordination and interaction among targeteers, all-source analysts, imagery personnel, and structural engineers allow for all-source fused BDA analysis. Armed with the mission data and Phase I reporting, the initial physical damage assessment will be verified and any additional or collateral damage will be noted. A functional damage assessment will be made to include an estimate of recovery time in Phases I and II. SMEs at the national agencies, supporting intelligence, and WSV provide data for the assessments.

b. **The overarching goal of BDA is the determination of the overall effectiveness of force employment during military operations.** BDA production involves integrating, evaluating, analyzing, and interpreting information from single or multiple sources into a finished intelligence product. Intelligence production support for BDA includes detailed assessments of damage to the adversary's combat capability, summaries of adversary actions, predictions of adversary intent, and recommendations for future joint force operations. Timely and accurate BDA is an essential element of effective combat operations. BDA incorporates assessments of physical, functional, and target system damage. **The joint force requires continuous feedback on the status of**

Battle damage assessment incorporates assessments of physical, functional, and target system damage.

mission objectives, and operators need BDA input to determine the relative success of completed attacks, the necessity and timing of restrikes, and the selection of follow-on targets.

2. The Three Phases of Battle Damage Assessment

a. **Phase I - Physical Damage Assessment**

- Phase I BDA "… estimates 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" (DIA DI 2820-4-03, *BDA Quick Guide*). Phase I BDA reports for fixed and deep mobile targets come primarily from operational area and national intelligence collection systems. MISREPs do not constitute complete Phase I BDA data, but are a source for "hit or miss" determination. Many times the MISREP, including WSV, is inconclusive. Phase I BDA often cannot be determined fully without using other sources in addition to the MISREP and WSV. Data sources that can be used to determine the extent of physical damage to a target may include reports such as INFLIGHTREPs, SPIREPs, and RECCEXREPs. Other sources may include second or third phase imagery reports, WSV, visual reports from ground spotters or combat troops, controllers and observers, artillery target surveillance reports, SIGINT, HUMINT, IMINT, MASINT, and OSINT.

- **Mobile and Maneuver Target Physical Damage Assessment Considerations.** The physical damage assessment (PDA) of mobile and maneuver targets is often problematic due to insufficient accuracy of sensors to properly identify/record physical damage to equipment and the limited number of collection platforms to cover the vast array of ground mobile equipment and personnel formations. Another concern is the possibility of duplicate reporting of damage to a specific piece of equipment or formation from multiple sources and insufficient correlation of the received information. For ground mobile equipment, PDA typically consists of identifying the piece of equipment and whether it is destroyed. Some PDA products (IPIRs for example) do provide latitude in making varying levels of damage calls, but the numbers of mobile targets potentially involved in combat scenarios can range from hundreds to thousands of separate targets. This fact limits the utility of tracking PDA determinations other than destroyed/not destroyed in many combat situations. In scenarios with large numbers of maneuver units arrayed against each other, the largest percentage of physical damage reports concerning mobile and maneuver targets are sent from land component forces as a result of direct fire engagements.

b. **Phase II - Functional Damage Assessment**

- Phase II BDA "… estimates the effect of military force on degrading/destroying the *functional or operational* capability of the target to perform its intended mission. The level of success is based upon the operational objectives established against the target" (Joint Targeting School, *Combat Assessment Student Guide*). Phase II reporting is accomplished using all-source information. It consists of a detailed physical and functional damage

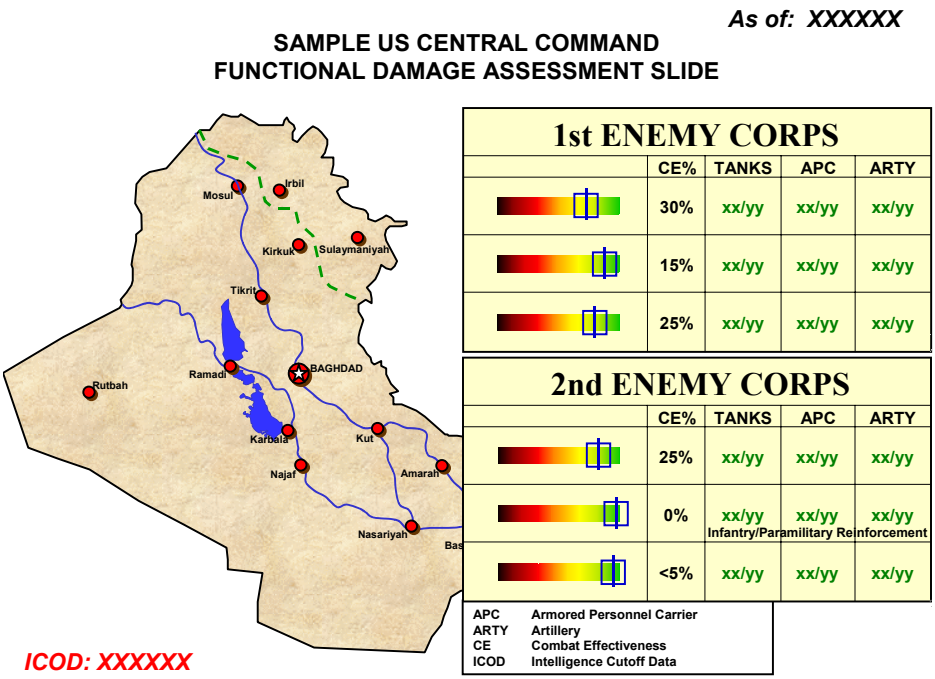


Figure V-1. Sample US Central Command Functional Damage Assessment of Maneuver Forces Slide

assessment on individual target(s) and provides input to the Phase III BDA report target system assessment. Applicable comments on munitions effects are also included. Unlike the Phase I BDA report, this is a detailed report. It is produced several hours after all-source information is available and analyzed. Data sources that are useful in the accomplishment of this phase may include SIGINT, HUMINT, IMINT, MASINT, and OSINT.

- **Mobile and Maneuver Target Functional Damage Assessment Considerations.** The functional damage assessment (FDA) of mobile and maneuver targets involves making two assessments. Where possible and appropriate, individual functional assessments of damaged equipment will be made reflecting the residual capabilities of the damaged equipment and the likelihood and timeline of its reconstitution/recuperation to full functional capability. The other assessment involves combining individual PDA and FDA of identifiable unit equipment and determining the remaining combat effectiveness of the unit as a whole. (See Figure V-1) The residual capability of the unit to perform its estimated mission should be addressed, and where appropriate, non-physical factors (such as morale, training, leadership, etc.) should be incorporated into the combat effectiveness assessment.

c. **Phase III - Target System Assessment.** Phase III BDA is "… an estimate of the overall impact of force employment against an adversary target

system" (Air Force Publication 14-210, *USAF Intelligence Targeting Guide*). Phase III reporting is accomplished using all-source information and is a combination of BDA Phases I and II data on individual targets along with other available all-source data on the overall target system. The overall cumulative physical and functional damage to the target system(s) is assessed in this report. This is a comprehensive report, utilizing the greatest amount and variety of information to assess how the operation is proceeding. Phase III reports, produced at specific command-designated intervals, take the longest to compile and produce. Phase III assessments provide the JFC with an estimate of the remaining capabilities of the targeted system. This assessment is merged with the inputs of experienced operations personnel to develop recommendations to continue with current activities or to pursue other courses of action. Data sources that are useful in the accomplishment of this phase may include all intelligence and operational resources.

3. Finished Pre-Strike Products in Battle Damage Assessment

BDA relies upon intelligence and operational products, which are produced during peacetime and combat planning. The products include targeting studies such as individual target development and target systems analyses, reference materials like other intelligence studies, target materials, and operational products including weaponeering and delivery parameters. These finished products are part of the information used in the production of BDA.

a. **Target Development and Target System Analysis.** Target development and target system analysis studies are invaluable tools to the BDA analyst. The purpose of BDA is to compare what was actually accomplished to what target development determined should be accomplished when the targeting options were being formulated, and to determine if the commanders' objectives were accomplished. Consequently, a critical ingredient for effective BDA is detailed familiarity with all aspects of the analysis performed in the target development that justified the chosen targets and their linkage to the JFC's objectives and guidance. By using finished intelligence from the target development process, an analyst can become familiar with targets and target systems, both in their physical and functional layouts, and how they fit in the system's overall functionality. Target development is usually accomplished by SMEs and should be tailored to the JFC's objectives. Since one must know the target before determining functional damage, a target development study can save considerable time in research and analysis and allow fast, accurate, and relevant BDA.

b. **Reference Materials.** A set of common reference materials is important in performing and disseminating BDA. Having this common frame of reference will allow for better communication of BDA results. The materials used for BDA are normally a subset of target reference materials, which are produced in accordance to DIA Reference (DIAR) 57-24, *US/Allied Tactical Target Materials Program.* Common BDA reference materials may include, but are not limited to, DIA's BDA Reference Handbook, overview graphics, desired mean point of impact graphics, basic target graphics, or the standard target material outlined within the current version of DIAR 57-24. Other information needed to conduct BDA includes collateral damage estimates, targeting references such as the DIAR DDB-2800-2-YR, *Critical Elements of Selected Generic Installations (Critical Elements Handbook*), and pertinent message traffic. Other reference materials such as political-

military analyses, weapons system technical analyses, target vulnerability analyses, and the Joint Munitions Effectiveness Manuals (JMEMs) can also be useful in performing BDA.

c. **Weaponeering Solutions/Planned Weapons Delivery Parameters.** The planned parameters for weapons delivery and the weaponeering solutions used to determine the selection of weapons to achieve the desired damage are crucial to performing BDA. Weaponeering is important to the BDA process because it provides additional technical information on weapons, weapon performance/effectiveness, fuze selection and function, and target vulnerability to support the determination of physical and functional damage. For example, if an airburst or proximity-fuzed weapon was used against a radar, one would not expect to find a bomb crater, but look instead for blast and fragmentation damage to the antenna and equipment. On the other hand, if a delay-fuzed weapon was used against an aircraft shelter, one might see only a penetration hole on an image because the bomb would detonate inside the structure. Ideally, mission coordination between the BDA analyst and the mission weaponeer or targeteer should be arranged, as analyst participation during the mission-planning phase presents distinct advantages. An analyst already familiar with the target and target area can make meaningful contributions during the planning phase. Post-attack analysis, performed by the same individual or an analyst cognizant of important mission elements, will likely be superior to an analysis performed by individuals with little or no target familiarity.

4. Post-Strike Data Useful in Multiple-Intelligence Source Battle Damage Assessment Fusion

BDA utilizes all-source information in analyzing munitions effects on an adversary. Multiple sources may eliminate ambiguities arising from deceptive measures employed against one sensor. Current BDA relies heavily on IMINT and WSV to provide the physical status of a target. IMINT is the primary source for physical damage assessment due to its reasonably high degree of accuracy, especially when evaluating structural damage. However, imagery sometimes may not be available or, if available, may be inadequate to assess certain types of damage. In such cases, the BDA analysts should be particularly alert to other intelligence sources, including MISREPs, WSV or aircraft cockpit video, SIGINT, MASINT, HUMINT, and OSINT. These latter resources may prove extremely helpful in providing information supporting direct or inferential judgments concerning the extent of incurred physical and functional damage. These sources can also provide direct intelligence regarding the resumption of functional operations or repair activities. Other advantages of multiple sources include optimizing the synergism between sensors as well as reducing dependency on any single source. All-source data includes information obtained from the following intelligence disciplines:

a. **Human Intelligence.** "A category of intelligence derived from information collected and provided by human sources." (JP 1-02). HUMINT provides information that is beyond the capabilities of technical

sensors and often incorporates the values and qualitative judgments of the source.

b. **Imagery Intelligence.** "Intelligence derived from the exploitation of collection by visual photography, infrared sensors, lasers, electro-optics, and radar sensors such as synthetic aperture radar wherein images of objects are reproduced optically or electronically on film, electronic display devices, or other media." (JP 1-02). **Although BDA does not rely solely on imagery, it is the most widely used, available, and reliable source of BDA.**

c. **Measurement and Signature Intelligence.** "Scientific and technical intelligence obtained by quantitative and qualitative analysis of data (metric, angle, spatial, wavelength, time dependence, modulation, plasma, and hydromagnetic) derived from specific technical sensors for the purpose of identifying any distinctive features associated with the target, source, emitter, or sender measurement of the same. The detected feature may be either reflected or emitted." (JP 1-02). The scientific and technical intelligence communities are the primary users of MASINT. MASINT sensors detect, locate, track, identify, and describe the distinctive characteristics of fixed or dynamic target sources based on unique signatures. MASINT can be acquired from a variety of satellite platforms, airborne platforms, UAVs, and mobile or fixed ground-based collection assets from great distances.

d. **Signals Intelligence.** "1. A category of intelligence comprising either individually or in combination all communications intelligence, electronics intelligence, and foreign instrumentation signals intelligence, however transmitted. 2. Intelligence derived from communications, electronics, and foreign instrumentation signals." (JP 1-02). Geolocational accuracy of SIGINT is less than for IMINT sensor capabilities in that the wavelength of electromagnetic energy in the imagery spectrum (e.g., visible and infrared light) is much shorter than the wavelengths used in the radio spectrum.

e. **Open-Source Intelligence.** "Information of potential intelligence value that is available to the general public." (JP 1-02). OSINT can provide significant background information on sociological, demographic, cultural, and ethnological composition of a specific country. It is important to note that OSINT could be used as an initial BDA indicator since news organizations frequently report and broadcast damage before operational area or national collection assets can be positioned. OSINT has been, and can be, used for general information on how efforts are, or are not, succeeding before official reports are available.

5. Operational Data

Before effective BDA can be performed, the following information obtained from weapon system mission taskings must be gathered and reviewed by the BDA analyst: aimpoint, TOT, weapon type, and number of weapons. In addition, targeteers must work closely with aircrews and debriefers, as well as with other intelligence specialists and mission planners from the operations staff to prepare timely and credible assessments.

a. **Actual Weapons Delivery Parameters.** The actual parameters for the weapons delivery are extremely important to performing BDA, especially if they are different from what was planned. Knowing what weapon was used, the delivery conditions, and the fuzing will allow a more precise determination of the damage. Mission information and delivery parameters provide additional technical information to support the determination of

Weapon System Video Advantages

- Imagery of target is available immediately
- Provides ability to identify the number and location of weapon impact points
- Provides ability to confirm weapon detonation. This ability is particularly critical to assessing successful weapon penetration into hard targets
- Provides confirmation of internal damage by observing secondary explosions and fires that may not be visible on other imagery
- Shows a sequence of events, not just a "snapshot" view of the target area

Figure V-2. Weapon System Video Advantages

Weapon System Video Disadvantages

- Visual orientation of the target area is sometimes difficult because of the narrow field of vision and short duration of video prior to impact
- Smoke plume after impact can make assessment difficult
- Analyst may be influenced by audio track of the pilot's comments

Figure V-3. Weapon System Video Disadvantages

physical and functional damage. For example, if an airburst fuze was used instead of an impact fuze, the lack of a bomb crater would not necessarily mean the target was not damaged. Knowing this piece of information would cue the BDA analyst to look for other damage signatures. The precise location of weapon impact, along with the type of weapon and fuzing, can be used to "reverse weaponeer" a target to determine the expected physical damage level. The procedures for accomplishing this are covered in the JMEM, *Air-to-Surface Weaponeering System*. This process is especially useful when dealing with complex targets such as refineries and chemical plants where multiple critical elements can be within the damage radius of a single weapon. Some of the needed information include the following:

- **Aimpoint.** This data provides the BDA analyst with information about the location of intended weapon impact(s). This data also enables the BDA analyst to focus the search for damage to intended targets and assess the intended damage to the overall target.

- **Time on Target.** This type of data enables the analyst to focus intelligence generated after the strike. It also enables the analyst to create a strike timeline that chronicles the damage done to the entire target.

- **Type and Number of Weapons.** This type of data can help fill in the gap between what is visible and/or reported and what has actually occurred. It also enables predictions to be made on the accuracy and damage potential of the weapon, including any additional or collateral damage. In addition, knowing what type of weapon will be used lets the analyst know if WSV will be available for exploitation.

b. **Weapon System Video.** See Chapter IV, "Joint Battle Damage Assessment Processing and Exploitation," subparagraph 2c, for an overview of WSV. Figures V-2 and V-3 highlight the advantages and disadvantages of WSV.

c. It is important to note that many of the newer global positioning system guided weapons, such as the Joint Direct Attack Munitions, will not always have WSV available, since the weapons are autonomously guided to their predetermined target coordinates.

For further and detailed guidance regarding WSV, consult the Air Combat Command Intelligence Handbook, Volume 5, Weapons System Video Tactics, Techniques, and Procedures (WSVTTP).

6. Battle Damage Assessment Reporting Process

a. Due to the criticality and availability of BDA information, BDA analysis and reporting is conducted in three phases. All three phases examine whether the commander's operational and tactical objectives were satisfied. BDA analysis and reporting is a building process. Phase I provides an initial assessment, Phase II validates and updates Phase I analysis while providing detailed and functional assessments, and Phase III provides in-depth target system assessments. Regardless of the operational situation or scenario, there are three additional guidelines that are always followed when analyzing and reporting BDA information. These guidelines specify that BDA is a command responsibility, BDA analysis is driven by the JFC's objectives, and that specific BDA sources should be identified to reduce distortions and allow consumers to determine if additional information is available for analysis. From these principles, the importance of clearly defined, understood, measurable, and shared objectives to every supporting organization can be seen. The priorities established by the JFC for focusing BDA efforts and resources are to provide BDA to support immediate re-strike recommendations and support the ATO/ITO cycle. These priorities also include BDA-related information and products to support media inquiries, public affairs initiatives, historical archives, research and development efforts, and other activities not directly supporting operational requirements.

b. For BDA on mobile and maneuver targets, units in contact with adversary forces inflict combat losses to the forces they are opposing. This information is passed from squad/platoon elements to companies in the form of SPOTREPs and SITREPs. The companies then pass this information to higher headquarters in the form of SPOTREPs and commanders' SITREPs. The unit intelligence officer (S-2) is responsible for reporting adversary equipment losses and the assessment of the adversary's combat effectiveness to the next higher echelon, which, in turn, passes this information on until it is consolidated at the

JFLCC level. Information from joint assets needs to be integrated with land component BDA information to maximize BDA reporting accuracy. Care must be taken to minimize duplication of information that is available to both the land component and joint BDA sections (e.g., MISREPs). Where possible, subjective combat effectiveness determinations should be separable from BDA reporting based on identifiable and verifiable BDA information. Numerous OBs may exist at different levels (due to increasing levels of OB details required at lower echelons), but the JFC decides which BDA section makes the final determination in adjusting the joint force OB for the adversary force. (See Appendix A, "Tactics, Techniques, and Procedures for Maneuver Battle Damage Assessment," for more detailed discussion of maneuver force BDA production.)

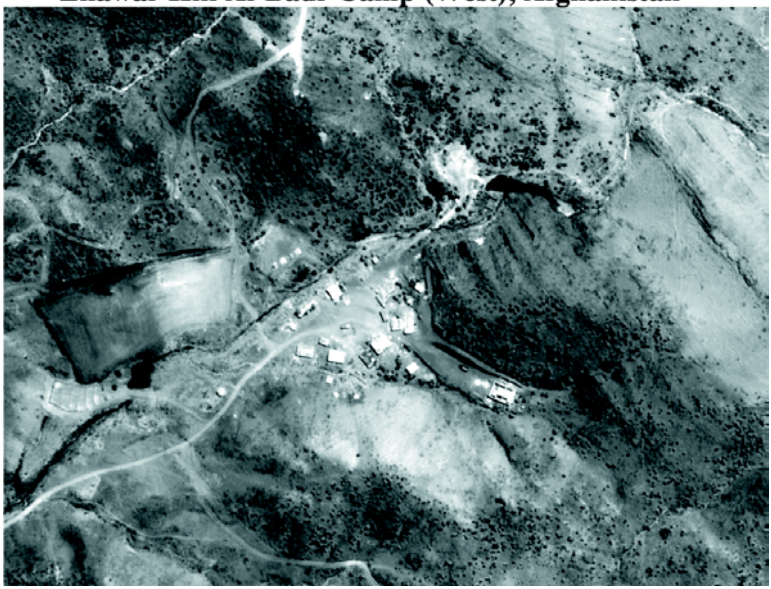
c. **Analysis of Battle Damage Assessment.** Analysis is the core of BDA production. BDA analysts use all-source information to accurately portray the status of targets that have been attacked to accomplish the commander's objectives. The following sample responsibilities may be used in a BDA cell. These responsibilities may be modified to fit the actual circumstances faced by a particular BDA cell.

- Sample Battle Damage Assessment Analyst Responsibilities

  •• Developing and maintaining a target data sheet by using the following sources of information: target list, aimpoint list, target description, aimpoint graphics, imagery, basic target graphics, and operations support plan.

  •• Creating/maintaining target data folders with the most current TM, including basic target graphic, quick response graphics, and electronic target folders, as well as current imagery and technical data.

Zhawar Kili Al-Badr Camp (West), Afghanistan



Analysis is the core of battle damage assessment production.

Basic Procedures for Effective Battle Damage Assessment Analysis

- **Step 1:** Learn the joint force commander's objectives
- **Step 2:** Study proposed targets
- **Step 3:** Review operational status and prior battle damage assessment reports
- **Step 4:** Understand the planned operations
- **Step 5:** Perform physical damage assessments
- **Step 6:** Estimate recuperation time based on the damage to target elements
- **Step 7:** Identify any unusual munitions effects
- **Step 8:** Perform a target functional damage assessment based upon the damage to the target's elements
- **Step 9:** Perform a target system functional damage assessment based upon the combined functional damage to the various targets in the system
- **Step 10:** Ascertain if the joint force commander's objectives have been met based upon the target and target system damage

Figure V-4. Basic Procedures for Effective Battle Damage Assessment Analysis

••• Ensuring that a copy of the target data sheet is placed in the target folder.

••• Submitting a discrepancy sheet to the TM specialist for any missing items in the target data folder.

••• Reviewing the target data folders to become familiar with targets and to ensure target data sheet are current.

•• Understanding all source intelligence to include: MISREPs, SIGINT, IMINT, IPIRs, supplemental phase interpretation reports, TACREPs, HUMINT, MASINT, and OSINT (for example, Cable News Network and Foreign Broadcast Information Service).

•• Establishing and maintaining working contact with NMJIC BDA cell counterparts to resolve differences in assessments. Scheduling discussions between analysts and experts on assigned targets who can provide insight and facts relating to targets.

•• Reviewing the BDA quick response graphic and other references.

•• Providing input to BDA chief for any needed briefings or BDA products.

•• Maintaining electronic target folders with the most current imagery and target data sheets.

•• Annotating maps with assigned targets/facilities to provide geographic reference and assist in tracking targets when necessary.

•• Maintaining a position pass-down log.

- Analytical Processes Used in Battle Damage Assessment

•• There are two types of reasoning methods used to perform assessments, inductive (direct observance of damage either by sensors or personnel) and deductive (utilizing indirect methods to determine levels of damage). An example of inductive observation could involve aircrew reports of secondary explosions. Deductive assessments use logic to determine damage (that is, since the electrical substation has been damaged, the automated functions of the headquarters have most likely been impacted) and may be made even if damage is unobserved, but is subsequently verified by a third party. Measurement of the "miss" distance (the distance between the weapon detonation and the target) may also allow for inference of damage. Regardless of the BDA situation, see Figure V-4 for the basic procedures for effective BDA analysis.

•• BDA is seldom completely quantifiable or verifiable. BDA usually requires inference and qualitative analysis based on fact and reasoning involving the use of intuition, common sense, and experience in preparing basic conclusions. If a building is completely destroyed, no inferences are required. If the damage observed is less than total, inferences must be made. For example, since roof or wall materials usually conceal the structural framework of a building, damage to framing members is often difficult to determine, but roof distortion is a dependable indication of damage to the framing. Care should be taken to avoid overlooking clues to unseen damage or damage that is barely detectable. Structural damage in the form of cracked slabs or framing members is also very difficult to detect, as is damage from a detonation immediately adjacent to or directly against a building wall.

•• Additionally, functional damage is not always easy to directly observe. Even though a target may have sustained physical damage, its operational capability may not have been affected. In the case of a tank, functional damage may be apparent (for example, if a tank has lost its main armament). However, unless a tank's treads are clearly visible, it may be difficult to determine if the tank is able to move. Similarly, a factory building with a hole in its roof may still be able to operate at capacity if none of the critical machinery or equipment inside has been damaged. Clearly, effective BDA requires the analyst to thoroughly understand the function, component organization, and the interrelationships of the critical target elements to estimate the functional target damage by observing only limited physical damage.

d. **Types and Formats of Battle Damage Assessment Reports**

- **Phase I.** Phase I BDA is an initial physical damage assessment based on a single source, and is usually derived from visual observation of the target. The reports from this phase state

ICOD: XXXXXX

As of: XXXXXX

SAMPLE US CENTRAL COMMAND EFFECTS ASSESSMENT BRIEFING SLIDE

TARGET SET		OBJECTIVE		TOT TGTS ATKD	LAST 24 HRS	BATTLEFIELD EFFECT
C4I	LEADERSHIP	NEUTRALIZE		5	2	
	SECURITY	NEUTRALIZE		10	4	
	C2	ISOLATE		15	6	
WMD	DELIVERY	NEUTRALIZE		20	8	
	STORAGE	DENY ACCESS		25	10	
	PROD/R&D	HALT/CONTROL		30	12	
GFF	RGFC	FIX/DEFEAT	FIXED (JTL)	35	14	
			MOBILE	40	16	
	RA	FIX/DEFEAT	FIXED (JTL)	45	18	
			MOBILE	50	20	
AFA,ADF,NFP	IADS	NEUTRALIZE		55	22	
	AIR FORCES	NEUTRALIZE		60	24	
	NAVAL FORCES	NEUTRALIZE		70	26	
TOTAL				460	188	

ICOD	Intelligence Cutoff Date	C4I	Command, Control, Communications, Computers, and Intelligence
GFF	Ground Forces and Facilities	C2	Command and Control
RGFC	Republican Guard Forces Command	JTL	Joint Targeting List
RA	Regular Army	IADS	Integrated Air Defense System
AFA	Air Forces and Airfields	HRS	Hours
ADF	Air Defense	TOT	Time-on-Target
NFP	Naval Forces and Ports	PROD	Production
WMD	Weapons of Mass Destruction	R&D	Research and Development

Figure V-5. Sample US Central Command Effects Assessment Briefing Slide

whether a target was hit and often include an initial estimate of physical damage. For mobile ground targets located short of the fire support coordination line, Phase I BDA reports rely heavily on operational reports from units in contact and information from organic intelligence collection assets. Phase I BDA reports can be transmitted as an e-mail free text enclosure and/or by USMTF message. Use of USMTF is essential to ensure compatibility with automated systems and databases.

- **Phase II.** Phase II BDA, or supplemental BDA, reviews all Phase I physical damage assessments on a target (including target elements and aimpoints) and amplifies the initial physical analysis by drawing on all-source intelligence and operational data to determine a more detailed description of physical damage to the target elements, an assessment of the functional damage to both the target elements and overall target. Unless otherwise specified in the BDA plan, this report is produced as a heavily formatted USMTF message to allow seamless interface with automated systems and databases.

- **Phase III.** Phase III BDA primarily performed in large-scale conflicts develops a target system assessment by fusing all Phase I and II BDA reports with the experience of SMEs. Phase III BDA is transmitted via a USMTF message, with most of the content in free text fields.

e. **Supplemental Battle Damage Assessment Products.** The joint community continues to explore and develop automated

tools, such as JTT, to facilitate supplemental BDA reporting that is required within the operational area. Until these tools are fully developed and fielded, BDA cells must use work-arounds with existing capabilities such as spreadsheets and display boards. The below examples include examples of such work-arounds.

- **Battle Damage Assessment Briefings.** The joint force J-3 may produce an effects assessment briefing chart, (See Figure V-5) which is a display of the operational area effects assessment with script and bullet notes used to update the JFC, joint force staff, and components. It could provide a quick overview of BDA effects status, but more detailed BDA briefs may be developed as well.

- **Battle Damage Assessment Status Graphics.** In order for analysts to provide the most current BDA information to the JFC, there must be some method to quickly track and record BDA results. One method is to maintain a BDA status display. This display is typically wall-mounted and erasable to make updates easy, or it is computer-generated and maintained on a server accessible by all BDA cell members. When using a BDA status display, it is recommended that it be large enough to accommodate ATOs/ITOs from two to three days. In order to facilitate the use of this display, it is recommended that the BDA cell noncommissioned officer in charge or representative fill out the ATO/ITO information upon receipt or that it be automatically updated. A BDA imagery status display provides basic target information and the ability of the BDA cell imagery officer in charge and noncommissioned officer in charge to rapidly track and manage the status of analysts and the targets they have been assigned to read out. In addition, this information can be used in building BDA briefings. Most importantly, however, utilizing a display of this type also provides all members of the BDA cell a means to rapidly determine the activity status of all targets and whether any restrikes are necessary.

- **Battle Damage Assessment History.** In order for analysts to have a comprehensive BDA information picture on each target and target system, it is imperative that a history of BDA be maintained. This history is vital to determining the collective damage against a target and ensures that previous damage is not re-reported as new damage.

- **Battle Damage Assessment Summary.** Excel spreadsheets may be used to provide a summary of all Phase I and II BDA reports produced during the previous 12-hour period. These spreadsheets may be posted to joint force components' websites and are e-mailed to the NMJIC BDA cell.

f. **Battle Damage Assessment Processing, Information Flow, and Dissemination Timeline Requirements**

- BDA must be tailored to the decision-maker and phased into the planning and execution cycles. Inputs into assessments must be planned and scheduled. Joint force TTP manuals must include assessment timelines. Availability of selection and collection and assessment times must be anticipated in planning. Comprehensive BDA requires too much time, even under ideal circumstances. This fact drives the phasing of BDA. The time steps should, therefore, correspond to the planning cycle. (See Figure V-6.)

NOTIONAL BATTLE DAMAGE ASSESSMENT REPORTING TIMELINES		
Battle Damage Assessment Report	**Reporting Times**	**Format**
Phase I	1 - 3 Hours	Hard Copy and/or Voice
Phase II	4 - 6 Hours	Hard Copy
Phase III	Daily	Hard Copy

Figure V-6. Notional Battle Damage Assessment Reporting Timelines

- Reporting timelines are usually started based on the TOT for the weapon or the collection asset. BDA report generation timelines vary and are determined by the CONOPS. However, Phase II reports will generally be produced four to six hours after information is collected, and Phase III reports will be done on a daily basis. In addition to these reports, the BDA cell will also update its BDA matrix (or some other type of tracking sheet), request additional collection to confirm earlier assessments, and produce daily briefings on results and the overall effect.

g. **Different Types of Battle Damage Assessment Consumers.** All targeting cycle participants require BDA feedback to varying degrees of detail. For example, unit intelligence personnel need to know that target XYZ was destroyed so they can update OB data for pre-mission briefings. At the same time, national level analysts may need to know (given the destruction of target XYZ) that the adversary's ability to conduct air operations has been reduced to 50 percent. In addition, members of the research and development community use BDA data to develop new weapons, weapons systems, or munitions, as well as to verify the performance of inventory systems.

- **National.** Strategically, BDA provides the President, Secretary of Defense, Chairman of the Joint Chiefs of Staff, and combatant commands with intelligence on the status of efforts to fulfill Secretary of Defense and/or Presidential national strategy and national military objectives and guidance.

- **Combatant Command.** The most important customers for BDA are the warfighters in a combatant command. They need the answers to the question: "Were the JFC's operational objectives met as a result of the forces employed against the selected targets?" BDA is a vital input in the planning and execution of combat operations and is essential to the JFC's decision-making process.

- **Component Operations Cells.** BDA determines the functional status of adversary facilities and target systems, as well as the combat effectiveness of adversary forces. Additionally, BDA identifies the effects of individual

attacks against adversary facilities and forces.

- **Combat Units.** Combat unit commanders, planners, tactics officers, and operational elements are interested in BDA to help answer the question, "Did the forces employed perform as expected?"

7. Battle Damage Assessment Command, Control, Communications, Computers, and Intelligence - Communications Networks and Tools Used in Battle Damage Assessment

a. Today's BDA analysts will most likely perform the majority of their work on an automated system. These systems have the tools and communications network connections to allow BDA reporting and dissemination both within the operational area and worldwide. National, joint force, 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*.

b. In addition to national systems, most BDA cells will have access to a classified local area network. These will include GCCS, SIPRNET, and JWICS. The software toolsets normally hosted on these systems include databases like the MIDB, and applications such as JTT, ADOCS, ASAS, and other office automation software packages.

c. Joint force BDA websites offer a one-stop shop for intelligence, BDA, and assessment information. The sites may contain battle rhythm products, BDA home pages, and intelligence home pages. Additionally, BDA reports and effects assessments could be posted and updated on these websites.

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CHAPTER VI
JOINT BATTLE DAMAGE ASSESSMENT DISSEMINATION

1. Overview

a. Purpose. The purpose of this chapter is to provide some generalized background and guidance on the dissemination of intelligence information and how it pertains to the dissemination of BDA products.

b. Dissemination Goals. Intelligence must be provided in a form that is readily understood and usable by the recipient in a timely manner without overloading the user and, at the same time, without affecting the load on communications capabilities.

2. Dissemination of Battle Damage Assessment Products

a. **Dissemination and the Battle Damage Assessment Cycle**

- The final step in the BDA cycle is dissemination. This step is as important as the first four steps because the purpose of BDA is to assess the effectiveness of actions taken and to assist in future decisions. If operational decision-makers do not have the information, then the process has failed. This step ensures reports and graphics are in the proper format for consumers to use. The reports are then transmitted in accordance with the CONOPS to stated consumers by various means (normally e-mail, USMTF message traffic, and web updates). However, dissemination does not end with the transmission or posting of the data. This step also requires that the units, elements, commands, and agencies requiring the data actually receive it. Procedures to monitor successful transmission of BDA products (that is, acknowledgment of e-mails and periodic follow-ups) should be specified in the CONOPS. Additionally, archiving information for deconfliction and regeneration is accomplished during the dissemination phase. Data archiving allows detailed event analysis after the operation.

- The dissemination step begins when a report produced in the production phase is completed and ends when the BDA cell receives confirmation that the report or product was received by the appropriate organization. Input from the production phase of the BDA cycle include Phases I, II, and III BDA reports. Additional inputs to the dissemination phase may include requirements for BDA products and support. Outputs of the dissemination phase to the joint intelligence and operational communities include BDA phase reports, BDA products, and requirements for BDA products and support adjustments.

b. **Systems/Communications Paths.** The execution of BDA to support the war effort in the operational area will require the electronic dissemination of high volumes of information. The following describes the systems and communications paths for disseminating BDA-related information. Recommended recipients of each category of information are listed in Figures VI-1 and VI-2.

- **Battle Damage Assessment Imagery.** The primary means of storing imagery

NOTIONAL JOINT BATTLE DAMAGE ASSESSMENT REPORTING RESPONSIBILITIES				
Organization	**Product**	**Frequency**	**Addressees**	**Dissemination**
Joint Force CA Cell	Assessment Summary	12 Hours	J-2 Targets, J-3, J-5 Component and Federated BDA Cells	GCCS, SIPRNET E-Mail, Joint Force Web Pages
JFLCC BDA Cell	Ground BDA Summary	12 Hours	Joint Force CA Cell, J-2 Targets, NMJIC	Joint Force Web Pages/Database
JFLCC BDA Cell	Combat Power Updates	At least hourly	Joint Force BDA Cell	Joint Force Web Pages/Database
JFACC, JFMCC, BDA Cell	Phases I and II BDA reports	As produced	Joint Force CA Cell, J-2 Targets, NMJIC	GCCS, SIPRNET, E-Mail
BDA	Battle Damage Assessment			
CA	Combat Assessment			
GCCS	Global Command and Control System			
JFACC	Joint Force Air Component Commander			
JFLCC	Joint Force Land Component Commander			
JFMCC	Joint Force Maritime Component Commander			
NMJIC	National Military Joint Intelligence Center			
SIPRNET	SECRET Internet Protocol Router Network			

Figure VI-1. Notional Joint Battle Damage Assessment Reporting Responsibilities

for all producers is on central INTELINK servers.

- **Phases I and II Battle Damage Assessment Reports.** Primary dissemination for a joint force and component BDA cells is via GCCS e-mail and USMTF message traffic. For federated BDA cells, JWICS e-mail is the primary dissemination, with GCCS or SIPRNET e-mail as the backup. When available, Joint Intelligence Virtual Architecture collaborative capabilities will be used to pass BDA reports. As a last resort, secure facsimile or Secure Telephone Unit transcription can be used.

- **Phase III Battle Damage Assessment Reports.** Primary dissemination is via JWICS e-mail. The primary backup is via SIPRNET e-mail.

- **Battle Damage Assessment Summaries.** BDA summaries are disseminated just as Phases I and II reports. These summaries may also be posted on each component's home pages.

- **Analysis Summaries.** Primary dissemination is via GCCS e-mail. The analysis summaries may also be disseminated via e-mail to the federated BDA cells and posted on joint force web pages.

3. Federated Battle Damage Assessment Dissemination

a. **Federated Battle Damage Assessment.** Cells and components should populate target-specific BDA information on the JTT database on GCCS (or the releasable GCCS if necessary) with updated

NOTIONAL JOINT BATTLE DAMAGE ASSESSMENT REPORTING RESPONSIBILITIES - CONTINUED				
Organization	**Product**	**Frequency**	**Addressees**	**Dissemination**
JFACC, JFMCC, and Federated BDA Cells	BDA Summary	12 Hours	Joint Force CA Cell, J-2 Targets, and NMJIC	GCCS, E-Mail
JFLCC and JSOCC BDA Cell	Phase I Ground Mobile Forces BDA	As received	JFLCC BDA Cell, J-2 Targets, Joint Force BDA Cell	GCCS Automated Systems
Federated BDA Cells	Phase I BDA Report	< 2 Hours of receipt	Joint Force CA Cell and NMJIC	Joint Force Server, SIPRNET, JWICS E-Mail
Federated BDA Cells	Phase II BDA Report	< 6 Hours of intelligence receipt	Joint Force CA Cell and NMJIC	Joint Force Server, SIPRNET, JWICS E-Mail
NMJIC BDA Cell	Phase III BDA Report	24 Hours	Joint Force CA Cell	Joint Force Server, SIPRNET, JWICS E-Mail

BDA	Battle Damage Assessment
CA	Combat Assessment
GCCS	Global Command and Control Systems
JFACC	Joint Force Air Component Commander
JFLCC	Joint Force Land Component Commander
JFMCC	Joint Force Maritime Component Commander
JFSOCC	Joint Force Special Operations Component Commander
JWICS	Joint Worldwide Intelligence Communications System
NMJIC	National Military Joint Intelligence Center
SIPRNET	SECRET Internet Protocol Router Network

Figure VI-2. Notional Joint Battle Damage Assessment Reporting Responsibilities - Continued

data from their respective BDA reports. JTT access provides the components with the entire BDA database for the contingency, as well as electronic target folders. This is the same information that is used to develop the ATO/ITO and the source for joint targeting coordination board input. E-mail should be used as a backup for all communications. Since all federated partners should be supplied with GCCS, they should use that system for posting reports and sending e-mails.

b. **Phases I and II Battle Damage Assessment Reports.** All components and federated partners should use JTT to generate BDA reports and BDA summaries. JTT creates the report in USMTF format. Phase I BDA reporting must be accomplished within two hours of receipt of either the MISREP or IIR.

c. **Phase III Battle Damage Assessment Reports.** Reports generated by NMJIC should be posted on the joint force website. System level depends upon classification of the report; however, the primary site should be GCCS.

d. **Finished Battle Damage Assessment Imagery.** Federated BDA cells normally produce annotated BDA imagery

in JPEG or GIF format and post it to JTT. JTT can accept images as part of the BDA module. This is the preferred method to keep all reporting in a single accessible location. Additionally, an attempt should be made to publish imagery to a central INTELINK server at the National Geospatial Intelligence Agency following established procedures.

e. **Battle Damage Assessment Summaries.** These Excel spreadsheets provide a summary of all BDA reports produced during the previous 12-hour period. BDA summaries may be posted to component websites and e-mailed to the joint force BDA cell and NMJIC BDA cell.

f. **INFOWORKSPACE.™** The JFC may create a joint force BDA room within IWS for collaboration on BDA issues within the federated network. At this time, IWS is available for BDA use on SIPRNET and JWICS US-only systems. The joint force BDA cell should ensure IWS functionality when necessary.

g. **Augmentees, Systems, and Workspaces.** All commands participating in the BDA process must plan for augmentees, systems, and workspaces to support BDA operations.

4. Fixed Target Battle Damage Assessment Dissemination

a. **Joint Force Air Component Battle Damage Assessment Cell Communications.** Units have numerous options by which to transfer BDA-related information to the air component BDA cell to ensure all systems are available and being monitored. Below is a listing of systems and communications paths by which the air component BDA cell may disseminate BDA summaries and receive BDA information from subordinate air component units.

- **Global Command and Control System.** BDA reports may be disseminated through the joint force air component home page.

Federated battle damage assessment cells normally produce annotated battle damage assessment imagery in JPEG or GIF format and post it to a joint targeting toolbox.

Battle damage assessment may be discussed during a video teleconference if required.

- **Theater Battle Management Core System.** TBMCS has a message handling capability called IRIS (Imagery Receive and Intelligence System). BDA/CA reports may be generated and disseminated throughout the operational area via IRIS.

- **SECRET Internet Protocol Router Network.** BDA reports may be disseminated through a joint force air component air intelligence squadron home page.

- **Defense Message System.** CA reporting can be disseminated to designated Defense Message System addressees.

- **Secure Telephone Unit III Voice/ Transcription.** BDA reporting on high priority targets can be transmitted to the joint force air component BDA cell via the Secure Telephone Unit.

- **Secure Facsimile.** The BDA summaries can be disseminated via a secure facsimile to individual addressees as required.

- **Joint Worldwide Intelligence Communications System.** BDA may be discussed during a JWICS video teleconference if required.

- **Automated Dissemination Websites.** Joint force websites may be used not only to facilitate product posting, but also to allow users to own and modify individual pages within the site in an effort to improve timely access by centralizing information (to include federated partners).

b. **Joint Force Air Component Battle Damage Assessment Products.** The joint force air component BDA cell normally produces and disseminates a BDA summary every 12 hours. Individual Phases I and II

BDA are produced and disseminated as they are generated.

5. Mobile and Maneuver Target Battle Damage Assessment Dissemination

a. **Architecture Considerations.** Dissemination of mobile and maneuver BDA may be accomplished by either of two methods; pull or push. The pull method allows commanders and staffs at all echelons to access BDA information via web pages or commonly accessible databases, as necessary. The push method involves verbal notification (radio/briefing, etc.), e-mail/chat or other active means to pass BDA information to the intended recipient. This may be accomplished on a set schedule or tied to a perceived requirement based on battlespace situational awareness. The flexibility of modern software applications allows for multiple ways to portray a wide variety of mobile and maneuver BDA data. While there is no standard on how or what to present for mobile and maneuver BDA, commonly used methods depict decreases/increases in adversary equipment coupled with subjective combat effectiveness determinations of adversary units. (See the FDA graphic at Figure V-1.)

b. **Common Understanding of Battle Damage Assessment Products.** Combat effectiveness of adversary units is based in whole, or in part, on known/presumed equipment losses, subjective factors based on available intelligence on adversary morale, leadership, training, combat experience, etc., and an operational assessment based on the training and experience of the BDA analyst. The architecture adopted to disseminate mobile and maneuver BDA data should facilitate rapid access and display of desired information by all echelons to assist coordination, deconfliction, and a shared situational awareness. Commanders and staffs should be aware of what objective and subjective data was used to derive the combat effectiveness figures presented.

c. **Frequency of Dissemination.** The frequency of BDA product dissemination is dependent on the battle rhythm of the joint force and its supporting staff. Posting data to a website or easily accessible database allows mobile and maneuver BDA customers to view BDA data as damage and combat effectiveness determinations are made. BDA summaries are often sent out on a regular schedule (every 6 or12 hours is a common standard) to briefly update the overall mobile and maneuver BDA situation.

d. **Dissemination Route.** The routes by which BDA information is disseminated will vary as the communications architecture of the joint force is initialized, expands, and adjusts to the situation. E-mail, websites, and database access points via Non-Secure Internet Protocol Router Network (NIPRNET), SIPRNET, and JWICS will invariably play a role in disseminating mobile and maneuver BDA products depending on the linkages established between components, the joint task force (if established), the combatant command, supporting organizations, and any coalition involvement in the operation.

6. Final Word

Without disseminating results, BDA is of marginal value. BDA personnel must remain cognizant at all times of the commander's priorities. These priorities may be explicitly stated by the commander or may need to be inferred from information gathered from multiple means over multiple systems. Timely, accurate, and complete BDA—that is responsive to the commander's priorities—must be disseminated to be effective.

APPENDIX A
TACTICS, TECHNIQUES, AND PROCEDURES FOR MANUEVER BATTLE DAMAGE ASSESSMENT

1. General

Documentation concerning fixed target BDA TTP has existed for a number of years, while materials related to maneuver BDA have been sparse at best. This appendix provides a single source guide for TTP to BDA sections in producing BDA of maneuver forces. JFCs exercise ultimate responsibility and authority for determining BDA of maneuver forces within their operational area. Maneuver BDA operations take place at multiple levels of an operation and need to be coordinated, deconflicted, and as seamless as possible to provide the best assessments obtainable for commanders at all levels. By following the guidelines set forth in this appendix, maneuver BDA sections can better prepare themselves for BDA operations at multiple levels of command. Intelligence, operations, and communication architectures, along with command-specific TTPs, will modify implementation of this TTP. However, the majority of the principles and methodologies put forth within will remain valid regardless of the level of operation and the number of echelons involved.

2. Overview

The maneuver BDA process relies extensively on intelligence joined with operational data to report effects of friendly operations against adversary targets. The maneuver BDA process is broken down into five functions: 1) planning, 2) collection management, 3) information processing and intelligence exploitation, 4) production, and 5) dissemination. These functions are accomplished sequentially for individual targets and simultaneously for the maneuver target set overall. The number of maneuver targets that are engaged in mid- to high-intensity operations far outnumber the intelligence and operational sources of information that report battle damage. Operational decisions may need to be based on less than perfect BDA information. Reporting of BDA information based on specific intelligence or operational reporting should be separated from BDA based on predictive or speculative estimates. Additionally, BDA should be reported in a timely, accurate, and complete enough manner to support the commander's battle rhythm and specific intelligence requirements.

3. Planning

a. The planning for maneuver BDA operations occurs simultaneously with OB and situational awareness functions within ground intelligence sections and staffs. Knowledge of adversary force strengths and weaknesses, dispositions, and capabilities is required before they are engaged by friendly forces so that their combat strength may be properly decremented based on BDA reporting and analysis. Access to up-to-date intelligence preparation of the battlespace (IPB) information is necessary to aid in the correlation of BDA reporting to specific adversary units. Detailed and current IPB also provides an initial understanding of nontangible factors enhancing or degrading the adversary's ground forces combat effectiveness. Updated planning data that may significantly affect BDA operations should be sought and integrated with historical data to ensure that the most complete and accurate pre-strike information is available to BDA personnel.

b. The most important planning consideration is for BDA personnel to learn and understand the commander's objectives. These objectives will often be dependent in whole or in part on BDA information. BDA personnel should analyze the objectives to determine if there are elements of them that may be met by timely, accurate, and complete BDA information. Once BDA personnel understand the commander's objectives and how BDA operations may support achieving those objectives, BDA personnel should analyze the maneuver BDA database and IPB data to determine which unit or units could best provide answers to the commander's objectives. Some adversary units may be specifically identified for targeting in the commander's objectives or operation order. In other cases, the specific identification of units may require further analysis once adversary units have been engaged.

c. To prepare for BDA operations, BDA personnel must organize the available data and plan tasking for personnel within the BDA cell to best utilize their training and experience levels. Collection requirements to fill in information gaps and anticipated requirements for BDA information should be sent to the collection manager to ensure the availability of BDA information after strikes against adversary forces. BDA planning must be adjusted to reflect operational requirements and the operations tempo of friendly units. Detailed TTP for BDA planning is as follows:

- **Gather Required Personnel.** Manning levels and necessary specialty skills for BDA cells involved with maneuver BDA operations should be identified in existing BDA CONOPS. Where this is not the case, planners should consider the amount of BDA reporting expected at each level; necessary skills to manipulate, analyze, and present BDA information; and architecture limitations (such as systems, space, classification level, etc.). Personnel with operational experience, OB training, and imagery analysis capability are particularly valuable to maneuver BDA cells. Planners should expect a wide variety of experience, training, and capability in the personnel assigned to maneuver BDA cells.

- **Review Joint Doctrine and Joint Force BDA-Related Publications.** BDA cell personnel should review joint doctrine that relates to combat assessment, targeting, and sources of operational and intelligence data that might assist the BDA effort. Understanding joint terminology and organizations will assist BDA cell members in knowing what to ask for, how to ask for it, and where to seek BDA-related information within the joint community. Available theater-level documents should be reviewed to determine how joint doctrine and concepts are applied at the combatant command level and might be applied at a joint task force level.

- **Review Multi-Service and National BDA-Related Publications.** FM 3-60.1/ MCRP 3-16D/ NTTP 3-60.1/AFTTP(1) 3-2.3, *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets*, should be reviewed by BDA cell members to become familiar with the agreed processes and procedures developed by the Services for time-critical targets, some of which may be maneuver targets. The two primary DIA BDA documentary sources (DI 2820-4-03, *BDA Quick Guide*, and DIA DI-2820-2-01, *BDA Reference Handbook*) should be examined to learn proper terminology, process, and procedures.

- **Review Service BDA-Related Publications.** Service publications that include discussion of BDA as part of targeting considerations should be analyzed as to how they are implemented. These publications may also direct personnel to sources of information for BDA analysis. Army publications FM 6-20-10/MCRP 3-1.6.14, *TTP for the Targeting Process*, and FM 3-0, *Operations*, may be helpful in this regard. Navy and Air Force publications NWP 3-03.4, *Strike Operations Against Land Targets*, AFDD 2-1.3, Counterland, AFI 14-117, Air Force Targeting, and AFP 14-210, *USAF Targeting Guide*, should be scanned for sections that cover maneuver targets.

- **Review Local Tactics, Techniques, and Procedures.** Review local TTPs (for example, position books) that relate to BDA operations and sections concerning successful BDA operations (IPB, situational awareness, CM, intelligence processing, analysis, and dissemination). This will prove valuable in determining where to go and who to approach for assistance in acquiring information and intelligence related to BDA.

- **Acquire and Review the Commander's Objectives and Guidance.** The objectives and guidance from the commander and staff may be found within the operation order, fragmentary order, and/or OPLAN, and through other written and verbal means. The commander's PIRs are key to focusing BDA production efforts. BDA cell members should confer with appropriate personnel (for example, the OB technician and battle captain) to ensure they have a thorough understanding of the commander's objectives and guidance.

- **Review Targeting, Operational, and Intelligence Planning Documents.** Targeting and intelligence planning material will further focus the BDA analyst's efforts in prioritizing limited collection and analytical resources. Access to these materials will help BDA personnel anticipate incoming information from operational sources. They will also help them gauge how current operations are doing in relation to planned operations. Some specific products include the HPTL, high-value target list, attack guidance matrix, TST guidance, TNL, ATO/ITO the decision support matrix or decision support template, and intelligence estimates.

- **Ensure Access to Required Systems and Applications.** To ensure access to tools and information required to perform their duties, BDA personnel should apply for the necessary passwords to log onto systems required to conduct BDA operations and monitor other functions that have an effect on BDA (that is, CM, situational awareness, OB, and others). Specific training and requests for passwords/systems will be contingent on the need to know, security clearance, BDA cell position responsibility, level of operation, and time factors. In some cases, BDA personnel may not need to access the system or software package themselves, but may need to liaison with other operators to receive the information (verbally or by hard/soft copy message or note/e-mail). Coordination should be accomplished before operations commence to acquire necessary systems, access required software applications, and provide training as required. A partial list of systems, software applications, and networks that may aid BDA operations follows:

•• **Automated Deep Operations Coordination System.** ADOCS allows BDA cells to monitor joint and component fires against ground units.

•• **Joint Worldwide Intelligence Communication System.** JWICS is the SCI network used by national agencies and combatant command intelligence organizations.

•• **Joint Targeting Toolbox.** JTT is the software application that currently is the primary targeting tool for joint forces.

•• **SECRET Internet Protocol Router Network.** SIPRNET is the primary US-only secret collateral means for exchanging intelligence data with US agencies, organizations and between components.

•• **Joint Deployable Intelligence Support System.** This system consists of a family of hardware and software that allows connectivity and interoperability of intelligence systems. It can operate on the JWICS network.

- **Update Contact Lists.** Prior to engaging in hostilities, communications should be established with units who will be providing intelligence and operations data to the BDA cell. Primary, alternate, and second alternate communication paths to appropriate units should be determined and tested as applicable. Lists of frequently contacted and important units/positions should be clearly marked and easily accessible.

- **Review and Organize Intelligence Preparation of the Battlespace, Situational Awareness, and Order-of-Battle Data.** Review IPB, situational awareness, and OB products from higher (and lower, if appropriate), and arrange regular access to them to facilitate correlation of BDA reporting and unit identification. Update and organize BDA databases to reflect current OB and situational awareness information. Provide BDA information to OB and situational awareness personnel as required to update their data.

- **Organize Manning and Tasking of Battle Damage Assessment Cell.** Clearly delineate roles and functions of BDA cell positions and personnel manning those positions. Seek some redundancy to cover functions and positions when there are unforeseen absences from the BDA cell. Ensure all personnel are aware of time-sensitive reporting requirements linked to the commander's battle rhythm, the decision support matrix, or the decision support template.

- **Review Collection Plans and Request Intelligence Collection on Targets of Battle Damage Assessment Interest.** Before and during operations, BDA personnel should monitor collection tasking of multi-intelligence sources (multi-INTS) assets, and determine what BDA-related information should be available given successful execution of the collection plan. Where collection plans do not sufficiently cover areas or targets of BDA interest, the BDA cell should go through proper CM channels to request necessary collection. Where there is a target of particular importance, multi-INTS coverage should be requested. BDA personnel should monitor the progress and status of their collection requests once they enter the CM system.

- **Develop and Refine Tactics, Techniques, and Procedures for the Operation.** In line with the

commander's objectives, the organizations involved in the operation, and the resources available, the maneuver BDA cell should develop and refine its TTP for the operation at hand. Reporting responsibilities, procedures, and primary/secondary communication methods between concerned BDA and OB sections at all echelons should be developed, refined, and practiced. Procedures for tracking appropriate data, deconflcition methodologies, and dissemination means (usually web-based or via a commonly accessible database) should be agreed to and practiced by appropriate entities. The factors to be considered in determining combat effectiveness of units should be understood by key staff members and their commanders.

4. Collection Management

A close relationship must exist between CM and BDA cells. Where practical, BDA cell members should be able to access CM websites that show the status (accepted, tasked, fulfilled, or otherwise) of collection requests. Personnel within the BDA cell should be familiar with CM policies and procedures as explained in local TTPs.

a. **Air Interdiction Battle Damage Assessment Collection Monitoring.** The joint force air component will generally task collection on targets engaged in accordance with the ATO/ITO. The joint force land component BDA and CM cells should monitor collection requests to JFC assets to ensure that the key maneuver targets already engaged receive collection for BDA purposes. This is particularly important when it comes to dynamic maneuver, TSTs and other ad hoc maneuver targets that were not considered during initial ATO/ITO-CM synchronization for BDA collection coverage.

b. **Synchronization of Battle Damage Assessment Collection Requests.** Care must be taken for BDA collection requests in instances where specific attacks against maneuver targets are known by BDA cells in advance. Timing details, such as "no earlier than" and "latest time information of value" should be included in the request so that unnecessary pre-engagement information is not collected instead of the desired post-strike data.

c. **Prioritization of Effort.** By remaining aware of the JFC's and component commanders' PIRs, BDA cells can provide the proper emphasis on the appropriate units and/or geographic areas for BDA collection efforts. There are not enough collection or production and analysis resources to sufficiently cover BDA for all maneuver targets. Adversary efforts to recover damaged or destroyed equipment can also result in fleeting BDA opportunities as equipment is moved from the location where it was attacked. Prioritization is key to providing timely BDA on the commander's most urgent BDA needs.

d. **Monitoring Tools.** The JFC's J-2 collection plan will usually show both national and operational area collection for multiple echelons to access. Reviewing the collection plan will give BDA cell members an indication of when and from what source(s) BDA information should be forthcoming. The joint force air component will post the airborne collection decks, showing operational and tactical collection assets, to a web page. In addition to on-line spreadsheets, there are a variety of collection management tools, such as PRISM and the requirements management system that will show various collection decks and may be used to nominate targets for collection.

5. Information Processing and Intelligence Exploitation

a. Once an adversary unit has been engaged and damage has been inflicted, information should be available regarding the engagement. However, this will not always be the case due to unobserved indirect fires, such as artillery, and direct engagements, such as Joint Direct Attack Munitions, that do not receive intelligence collection or have reliable observation of their effects by personnel. Given the operating level of the BDA cell, personnel should ensure they are on distribution lists of operational and intelligence reporting that provides details of engagements and their effects. In addition to content indicating the level of damage inflicted, other pertinent data, such as the time of the engagement, weapon(s) used, and time information/intelligence was collected and reported, should be noted whenever possible. Where reporting is consolidated into summaries, care must be taken to avoid duplication of reported attrition when original reports are available to the BDA analyst.

b. Knowledge of the reports available, their use (or non-use) by others in the BDA reporting chain, and the reliability and fidelity of the individual reports of damage is key to piecing together the results of combat operations. When proper USMTF reports are available, various software programs may be used to parse relevant data from the reports for automatic database entry or easy separation of BDA-related reports from other reporting. For speed and ease in reporting BDA on high priority targets, verbal, e-mail/chat, or handwritten means may be used to pass operational and intelligence BDA information. Receipt of BDA-related operational and intelligence reporting, coupled with analytical rigor, provides the primary ingredients for BDA production. Priority and choice of reporting processes will be situation-dependent based, in part, on level of command, access to information, and the amount of information available. Detailed TTP for information processing and intelligence exploitation is as follows:

- **United States Message Text Format Reports.** Advance coordination with the report originator is required to ensure the BDA cell, or its responsible parent organization, is an addressee for the desired messages. When possible, direct receipt by BDA personnel of the messages is preferred. If direct delivery is impossible or impractical, a reliable point where the messages may be accessed is required. Improper use of USMTF by report originators will not allow BDA personnel to use parsing software to facilitate rapid receipt and processing of BDA-related reports. Selected fixed target-related messages are included in the following list, as receipt of those messages is necessary for tracking activities and strength level of maneuver units when they are in garrison locations.

- A partial list of BDA Ground Mobile Target-related USMTF reports with a brief description of each taken from the USMTF is as follows:

  •• **Ammunition Fire Unit Mission Fired Report.** The ammunition fire unit mission fired report is used to provide target information, ammunition expenditure, and target disposition following engagement of a target.

  •• **Close Air Support Summary.** The close air support summary is used to provide timely reports of close air support missions and other information obtained during post-flight aircrew debriefings.

•• **In-Flight Report.** The INFLIGHTREP is used to report mission results and/or information of tactical or intelligence value. The voice message is issued by pilots/aircrews to give a broad assessment of mission accomplishment and/or any other tactical information sighted of such importance and urgency that the delay, if reported by normal debriefing, would negate the usefulness of the information. The record message is used by ground-based C2 units to provide a record version of a voice INFLIGHTREP.

•• **Mission Report.** The MISREP is used to report mission results and items of intelligence interest in all tactical roles. It may also be used to retransmit or amplify an INFLIGHTREP.

•• **Battle Damage Assessment Report.** The battle damage assessment report (BDAREP) is used to provide a 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 Report - Phase I.** The BDAREP Phase I is used to provide an initial physical damage assessment of hit or miss based on single source data.

•• **Battle Damage Assessment Report - Phase II.** The BDAREP Phase II is used to provide an all-source assessment containing detailed physical and functional damage assessments, inputs to the target system assessment, and comments on munitions effectiveness.

•• **Order of Battle Report.** The OB report is used to provide the latest order of battle information.

•• **Intelligence Situation Summary.** The intelligence situation summary is used to provide timely periodic intelligence summaries regarding either actual or simulated (training exercise) foreign crisis situations that could have an immediate actual or simulated effect on US plans and operations.

•• **Intelligence Summary.** The intelligence summary (INTSUM) is used to provide a brief summary of information of intelligence interest covering a specific period of time, as specified by the JFC. It provides a summary of the adversary situation in forward and rear areas, adversary operations and capabilities, and weather and terrain characteristics. The INTSUM reflects the intelligence staff officers' interpretations and conclusions regarding adversary capabilities and probable courses of action. The INTSUM is prepared by components and lower echelons as directed.

•• **Spot Intelligence Report.** The SPIREP is used to provide the Joint Chiefs of Staff, the NMJIC, the combatant commands, the Services, and selected agencies with timely intelligence regarding events that could have an immediate and significant effect on current planning and operations.

•• **Intelligence Report.** The INTREP is used to provide for the joint exchange of information obtained through tactical collection efforts. The INTREP provides timely information regarding events that could have an immediate and significant effect on current planning and operations, or information that may be of timely interest at the national level.

•• **Imagery Interpretation Report.** The imagery interpretation report is used to report, in a single message format, the IPIR or SUPIR. The IPIR is used to provide results of first-phase exploitation of imagery interpretation. It is formatted to allow direct database entry and human readability. The IPIR can report single or multi-mission data. The SUPIR is used to provide results of second-phase exploitation of imagery interpretation. The SUPIR is formatted to allow direct database entry and human readability and can report single or multi-mission data.

•• **Tactical Electronic Intelligence Report.** The tactical electronic intelligence report is used to report time-critical operational electronic intelligence (ELINT) and parametric information. Information contained therein may be used for indications and warning, database maintenance, OBs, and strike planning. ELINT collectors use this message format as a reporting vehicle. The JFC uses this message format to advise the joint force of updates to the ELINT OB database.

•• **Tactical Report.** The TACREP is used only to provide perishable information of tactical significance for the immediate attention of the tactical commander(s).

c. **Theater-Specific Reports.** Non-standard messages and products related to BDA, combat effectiveness assessment (CEA), and CA that are unique to the theater provide flexibility in terms of content, format, and frequency for BDA cells. Incoming commanders and staff members, with new hardware and software tools at their disposal, may adjust and add unique message formats, if mission and situation dictates, that will aid in the production of BDA. The joint force and supporting commands and national agencies need to be aware of, and familiar with, any theater-specific reports and standards. BDA cells concerned with maneuver BDA should focus their review of these messages on the areas that most affect the combat power and effectiveness of maneuver targets in the short, medium, and long term.

d. **Time-Sensitive Reports.** When BDA-related operational information or intelligence is perishable, its utility constrained by time, or its criticality to the commander outside of normal reporting periods, operations and intelligence personnel may report BDA information through informal means. Through proper prior planning, coordination, and alertness, BDA cell personnel should be able to promptly receive, process, analyze, and incorporate relevant information from time-sensitive reporting means into BDA products. Usually, the reporting unit will follow up an initial, time-sensitive report delivered to the BDA cell via telephone, e-mail/chat, facsimile, or handwritten means with a formal report. Care must be taken in processing these reports so that when a formal operations or intelligence report concerning information already reported arrives in the BDA cell, proper adjustments may be made to the maneuver forces attrition figures (avoiding duplicate damage counting).

e. **Organize Information and Intelligence Data for Battle Damage Assessment Production.** The BDA-related operations and intelligence reports received in the BDA cell must be processed in a systematic way to ensure priority BDA information is processed first, all appropriate data is utilized, and accountability of incoming reports is maintained in relation to ongoing and past operations. The highest priority reporting (sorted either by specific unit, type of equipment, or unit location) of maneuver force damage must

be filtered out of incoming reports to provide the commander with the most important data first. To determine if all appropriate data is being utilized, BDA cell personnel must aggressively coordinate and monitor the inputs of relevant information and intelligence into the cell. Where data or specific reports or report formats are missing, actions must be taken to correct the existing information gap and to fill in gaps from missed past reporting. Organization of incoming and processed reports (through hard and soft copy file and database manipulation) is necessary so that BDA cell personnel can properly manage what can be a deluge of reporting and to retain the ability to reconsider analytical judgments made on insufficient or inaccurate reporting.

6. Battle Damage Assessment Production

The production of maneuver BDA is centered on three products giving different levels of detail for damage to adversary maneuver forces. The primary products; PDA, FDA/CEA, and target system assessments, when combined, provide an overall picture of the combat effectiveness of adversary maneuver forces - from the tactical through the strategic level of operations. At each level of analysis, BDA cell personnel must aggressively seek out intelligence and operations data to successfully account for damage inflicted on adversary forces. Rapid data gathering, research, analysis, deconfliction of data and reporting via approved channels must occur at all levels. Redundant means of BDA reporting must be set up to maintain routes of communication to appropriate commanders and their staffs that require BDA for critical decision-making

a. **Mobile and Maneuver Target Physical Damage Assessment Considerations.** The PDA of ground mobile targets is often problematic due to insufficient accuracy of sensors to properly identify/record physical damage to equipment and the limited number of collection platforms to cover the vast array of ground mobile equipment and personnel formations. Another concern is the possibility of duplicate reporting of damage to a specific piece of equipment or formation from multiple sources and insufficient correlation of the received information. For ground mobile equipment, PDA typically consists of identifying the piece of equipment and whether it is destroyed. PDA products, such as IPIRs, do provide latitude in making varying levels of damage calls, but the numbers of mobile targets potentially involved in combat situations can range from hundreds to thousands of separate targets. This fact limits the utility of tracking PDA determinations (other than destroyed/not destroyed) in many situations. In scenarios with large numbers of maneuver units arrayed against each other, the largest percentage of physical damage reports concerning mobile and maneuver targets will be sent from land component forces as a result of direct fire engagements.

- **Research Baseline Data.** In making the transition from peacetime operations to hostilities, the maneuver BDA cell must ensure that the OB start point of the adversary forces at the transition is reflected in the BDA database. The input of data will be double-checked by responsible personnel to ensure there are no data entry errors that could skew the BDA database. Subsequent to each report containing BDA information received in the BDA cell, a comparison to the then existing BDA database will take place to assist in determining the likelihood of the damage being inflicted on specific adversary units. Tools may vary between different echelons to aid

in rapidly determining the amount, type, and subordination of maneuver equipment to assist the damage assignation process.

- **Gather Status Updates.** Aggressive pursuit of intelligence and operations BDA information is required at all times. Knowing the sources, means, and format of the various types of information available is key to understanding what to expect, when, and from where subordinate, superior, and peer level units are reporting BDA information. Recording (whether within the message body or its header/footer information) the specific time(s) and location(s) when the BDA information or intelligence was collected (as opposed to reported or disseminated) is important in order to fix the unit association with the report of damaged/destroyed equipment. A method for viewing gathered reporting should be used to assist with deconflicting reporting.

•• **Maneuver Unit Battle Damage Assessment Roll-Up Report(s).** Lower echelon intelligence sections track maneuver BDA in conjunction with OB maintenance and situational awareness efforts. Their maneuver BDA reporting should be relayed through the appropriate channels for consolidation with other BDA data available at successive levels. The aggregate maneuver unit BDA roll-up should provide the joint force designated maneuver BDA cell with remaining, destroyed, damaged (if practical), and unaccounted for (if known) adversary ground equipment of interest to the commander. Intelligence cutoff data should also be incorporated in the roll-up so currency of the data may be determined. Each echelon in the roll-up chain should be cognizant of what operations and intelligence reporting is incorporated in each successive roll-up.

•• **Tactical Electronic Intelligence.** The time-critical operational (tactical) ELINT information from these reports can assist in identifying threats to fixed- and rotary-wing aviation assets. Active radars may be detected through ELINT sensors, and determining BDA of attacks against radars can be partially determined through the adept use of ELINT assets. Availability is through USMTF or verbal means when SIGINT personnel are operating in close proximity to the BDA cell.

•• **Tactical Report.** Depending on message content, the TACREP may provide extremely valuable input towards unit status and combat effectiveness. Availability is through USMTF or verbal means when SIGINT personnel are operating in close proximity to the BDA cell.

•• **Size, Activity, Location, Unit, Time, and Equipment Report.** Properly completed, the SALUTE message provides specific, detailed information of maneuver unit status at the tactical level. Availability is through message traffic, verbal means, or both.

•• **Initial Phase Interpretation Report/ Imagery Interpretation Report/ Supplementary Phase Interpretation Report.** Depending on the National Imagery Interpretation Rating Scale of the imagery product, the fidelity and quantity of maneuver BDA information available through these report formats will vary widely. Availability is through USMTF or verbal means (for critical targets) or through the various imagery product libraries for the actual image. With high National Imagery

Interpretation Rating Scale products, specific levels of damage will be discernable on some pieces of equipment. BDA cell analysts must determine if the damage to the equipment is significant enough to put the piece in the "destroyed" column for counting damage, or if it should be considered as a component in estimating the overall combat effectiveness of the adversary unit to which the equipment belongs.

•• **US Message Text Format Battle Damage Assessment Report – Phase I and Phase II.** BDAREPs, like IPIRs, may contain detailed BDA concerning maneuver targets depending on the source(s) of information for the report and the circumstances in which the data was collected. These reports are associated with fixed targets or specific geographic locations. Access to appropriate databases (e.g., Modernized Integrated Database) will assist the maneuver BDA analyst in associating damaged/destroyed equipment with its parent unit.

•• **Unmanned Aerial Vehicle Reporting.** UAV reporting will be available for major adversary formations/targets via IPIR/IIR reporting. Time-sensitive and detailed (depending on distance from and the weather around the target) reporting on maneuver targets will be available to units with UAV monitors. Verbal communications or handwritten notes may be passed to BDA cell analysts to use as source material for inputting data on maneuver BDA. Care must be taken to avoid double-counting UAV data acquired through this truncated means in case a subsequent imagery product is created.

•• **Mission Report.** Results of air missions against targets are reported via USMTF and are posted on the joint force primary targeting system in the operational area (e.g., the JTT) or the JFACC approved tool/location. The MISREPs available will be scrutinized for messages that involve maneuver forces.

••• **Unit Association.** At least once every four hours a BDA analyst should pull appropriate MISREP data and coordinate with OB personnel and systems to correlate reported strikes against adversary forces to specific adversary units. Wherever practical, automated or semi-automated correlation of BDA and OB information should be attempted to save time and possibly increase the level of accurate correlations. If only a situation map board is available, the BDA analyst should attempt to manually correlate the MISREP information to where adversary units would likely have been at the time of the engagement. Factors such as time of attack, unit equipment, rate, direction, and speed of movement should be considered when performing manual correlation.

••• **Physical Damage Determination.** By looking at the munitions expended, the delivery parameters for the engagement, and the target(s) attacked as described in the MISREP, the BDA analyst can make an estimation of the damage inflicted on the reported target(s). Preferably, the BDA analyst would have the time, training, and software/hardware available to

perform reverse weaponeering on the target(s) engaged using information from the MISREP.

•• **Intelligence Summary.** Ground-oriented units producing INTSUMs at varying operational levels will include BDA data (usually in summary form) and may include observations and analysis concerning nontangible factors that affect a unit's combat effectiveness (such as leadership, training, and morale). These reports should be reviewed for appropriate data that may assist in developing estimated combat strengths of adversary units.

•• **Coalition Systems.** If a coalition has been established for the operation, the primary means of sharing operational information within coalition forces is a theater -specific coalition local area network. The primary means for acquiring BDA operational data and, in some respects, intelligence data, will be on this system. BDA cells should have an active account on the system and either access to, or close coordination established with, commanders and staff members who may receive BDA queries based on their position and experience with the BDA cell home unit.

- **Conduct Physical Damage Assessment (Phase I) Battle Damage Assessment Analysis.** The primary challenge in conducting PDA (Phase I) BDA of maneuver targets is in coalescing operational information (who fired what) with intelligence information (the effect on the target) in a timely and accurate manner. The fog and friction of combat creates obstacles to the analysis process that must be overcome through redundant reporting means, attention to detail in noting sources and the time activities occur, and rapidly filtering valuable BDA information from extraneous information. Automated and semi-automated tools can assist in the process of performing PDA (Phase I) BDA, but there are never enough intelligence sensors to provide adequate coverage of all maneuver equipment of BDA interest. Maneuver BDA analysts will, through necessity, have to make judgment calls on adversary current strength based on incomplete information augmented by their training and experience in OB, IPB, weapon systems, and adversary doctrine.

- **Determine Physical Damage.** Depending on the source of the BDA intelligence/information report used for analysis, the physical damage determination may have already been annotated in the report. Where a physical damage determination has not been made, or if there is cause to reconsider the damage determination made by the report issuing organization, the maneuver BDA analyst must decide whether the equipment mentioned in the report has been destroyed or not. If the command BDA requirements and architecture supports tracking damaged maneuver equipment, damaged equipment determinations must be included with remaining equipment and destroyed equipment tallies. PDAs in the USMTF BDAREP Phase I format may be prepared at this time if there is a low level of maneuver activity. The creation of a maneuver BDA cell usually indicates the presence or anticipation of a large number of maneuver targets requiring BDA. Creating USMTF BDAREP Phase 1 reports inside the maneuver BDA cell is a superfluous task given the necessity to prepare PDA

Phase I BDA reports as described below and the presence of a significant amount of maneuver activity.

- **Prepare Physical Damage Assessment (Phase I) Battle Damage Assessment Report.** Once a "destroyed/not destroyed" decision has been made in relation to a piece of adversary equipment, the result must be entered into the maneuver BDA database, constituting the Phase I assessment. Once the BDA analyst has determined to what unit the destroyed equipment belongs (with assistance, as necessary, from ground OB technicians), the specific type and number of destroyed equipment are entered into the database. The source of the BDA report needs to be annotated, along with the date-time-group of the source of the BDA report. Comments and remarks may be included as necessary. If, upon further analysis, an adjustment is required to a BDA input, the database needs to be flexible enough to make adjustments, which, upon acceptance, will be reflected in the maneuver BDA database. The database should be viewable on a web page or as a commonly accessible database to assist other components and the JFC with operational decisions concerning maneuver forces.

b. **Functional Damage Assessment (Phase II) Considerations**

- The FDA of adversary ground units involves making two assessments. Where possible and appropriate, individual functional assessments of damaged equipment will be made reflecting the residual capabilities of the damaged equipment and the likelihood and timeline of its reconstitution to full functional capability. In addition to combining individual PDA and FDA (if possible) of identifiable unit equipment comes the determination of the remaining combat effectiveness of the unit as a whole. The residual capability of the unit to perform its estimated mission should be addressed and, where appropriate, non-physical factors (such as morale, training, and leadership) should be incorporated into the combat effectiveness assessment. The FDAs and CEAs of adversary units must be clearly separable and consolidated at each successive echelon as they are forwarded to the joint force designated maneuver BDA cell.

- Individual FDAs of maneuver targets have limited utility in large-scale conflict scenarios when taken further than the physical, destroyed/not destroyed, level of fidelity. FDAs of maneuver related installations (barracks, supply depots, etc.) using the USMTF BDAREP (Phase II) format should have been considered during the PDA phase of analysis. Individual intelligence products will enable some detailed functional calls of specific damaged ground/mobile equipment, but will rapidly be overcome by events in a fast moving combat scenario. The FDA that will be of primary concern depicts the effect that the cumulated total(s) of destroyed equipment have on specific units and their ability to accomplish their respective mission(s). The initial linkage of a specific destroyed piece of equipment to a specific unit is accomplished in the PDA process. The FDA process combines the individual PDA reports, along with analytical expertise, to provide the combat effectiveness of adversary units at different operational levels. Accomplishing a proper CEA of an adversary unit requires BDA personnel to consider other factors

than the physical destruction of adversary equipment. Factors such as training, morale, leadership, will, and combat experience should be considered, as intelligence is known concerning those factors. Where intelligence is lacking in providing specific data to support assessing non-quantitative factors, operational experience and properly trained BDA personnel will be required to estimate the effect of those factors. Accomplishing FDA of maneuver targets involves the following steps:

•• **Review Baseline Data.** Familiarity with the unit being examined, its equipment, its mission(s), and its role in the ground scheme of maneuver is required to start an FDA/CEA for a specific unit. Much of the quantifiable information on adversary units is available within the BDA database and/or the various databases of land component intelligence sections. The modernized integrated database, local all-source correlated database of Army analysis and control elements, and databases held at intelligence centers within the joint force are all possible repositories of the baseline data needed for maneuver BDA operations. The JFC will determine which database becomes the baseline data.

•• **Gather Physical Damage Assessment (Phase I) Assessments.** PDA (Phase I) assessments already in the land component BDA database will be available to the BDA analyst, along with pending reports waiting to be processed into the BDA database.

•• Conduct Functional Damage Assessment (Phase II) Analysis. BDA personnel will consider the various accepted and pending PDA (Phase I), the current situation of the unit (in consultation with ground OB technicians), known intangible factors (such as leadership, morale, and training), and combined training and experience of BDA cell members in conducting FDA/CEA (Phase II) BDA analysis.

•• **Prepare Functional Damage Assessment (Phase II) Battle Damage Assessment Report.** Inclusion into the BDA database of individual PDAs (destroyed/not destroyed) after analytical deliberation by BDA cell personnel constitutes the initial FDA (Phase II) BDA report for ground units. Once a PDA (Phase I) BDA report is accepted into the BDA database, the resulting decrement on adversary unit strength and the unit's resulting current strength should be viewable over the web page or commonly accessible database used to track and display maneuver BDA information. The subsequent FDA/CEA (Phase II) BDA report should equate to the components BDA report. Strength figures and combat effectiveness assessments for adversary units are incorporated into the component BDA reports, along with the echelon of which the unit is a part and the change in strength level from the previous report.

•• **Conduct Combat Effectiveness Assessment Analysis.** It has been demonstrated in recent conflicts that having modern equipment does not necessarily make a modern, competent force. CEA overcomes the simplistic counting of equipment and contains in-depth analysis of the respective opposing ground force maneuver unit or the opposing unit's forces as a whole. This report builds on Phase II, physical damage reports of equipment, their combined effect on a unit as

shown in FDAs, and non-physical factors (such as morale, leadership, communications, and logistics), which are derived from all-source reporting. The OB analysts should have the best information pertaining to starting information on the respective units, capabilities, leadership, supply, and morale and weighting factors for each. All-source reporting, especially SIGINT and HUMINT, will give insight into the changing status of these non-physical factors. The overall CEA of specific units need to be combined for a CEA for the adversary as a whole.

•• **Target System Analysis (Phase III) Considerations.** The target system analysis (TSA) of maneuver targets incorporates the combined FDA/CEAs of all units comprising the ground fielded forces target set and the effects that efforts against other target systems may have on the combat effectiveness of the combined adversary ground force. The TSA (or Phase III report) provides the vehicle for integration of the overall effect on the ground forces and their supporting facilities during the ongoing operation. The Phase III report is produced at least once a day by the joint force and should include input from the components. Publication of the Phase III report allows frequent interchanges between land component BDA cell, J-2 analysts, national agencies, and the joint force BDA cell for sharing perspectives and information. The Phase III report should address the progress made toward meeting the commander's objectives related to adversary forces within the limitations set forth by the commander's guidelines.

7. Dissemination

Once maneuver BDA has been determined (that is, a particular level of damage has been assigned to a specific unit), the information needs to be available to the decision-maker and appropriate staff members. Dissemination of maneuver BDA may be accomplished via either of two methods, pull or push. The pull method entails commanders and staffs at all echelons accessing data from web page or commonly accessible database(s) as required. The push method involves active verbal notification (radio/brief, etc.), e-mail/chat, or other active means to move BDA to the intended recipient either on a predetermined schedule or linked to a perceived or known requirement based on battlefield situational awareness. The flexibility of modern software applications allows for multiple ways to portray a wide variety of mobile and maneuver BDA data. BDA information must be approved for release before dissemination by the proper authority or authorities, as required, and should be in a clear, concise format. The currency of the BDA report must be noted in the product to enable the recipient to ascertain its relevance to other reported information. Depending upon the methodology used, it may be necessary to track dissemination to ensure proper receipt by the requesting unit(s) and successful completion of ad hoc support requests. While there is no set standard on how or what to present for mobile and maneuver BDA, commonly used methods depict decreases/increases in adversary equipment coupled with subjective combat effectiveness determinations of adversary units. Current strength levels could also be sorted by maneuver, fire support, air defense, engineer, and total categories.

a. **Common Understanding of Battle Damage Assessment Products.** Combat effectiveness of adversary units will be based in whole or in part on known/presumed equipment losses; subjective factors based upon available intelligence on adversary morale, leadership, training, combat experience, etc., and an operational assessment based on the training and experience of the BDA analyst. The architecture adopted to disseminate mobile and maneuver BDA data should facilitate rapid access and display of desired data by all echelons to assist with coordination, deconfliction, and a shared situational awareness. Commanders and staffs should be aware of what objective and subjective data was used to create the combat effectiveness figures presented.

b. **Frequency of Dissemination.** The frequency of BDA product dissemination will be dependent on the battle rhythm of the joint force and its supporting staff. Posting data to a website or easily accessible database allows mobile and maneuver BDA customers to view BDA data as damage and combat effectiveness determinations are made. BDA summaries are often sent out on a regular schedule (every 6 or 12 hours is a common standard) to briefly summarize the overall mobile and maneuver BDA situation. Special BDA product requests may be sent to the maneuver BDA cell via a variety of means (telephone, e-mail/chat, facsimile, or formal message traffic). Priority for fulfilling special BDA product requests will be dependent upon the relation of the request to the JFC's PIRs and decision point criterion. Availability of BDA personnel, time, and resources will also directly affect the ability of the BDA personnel to fulfill special BDA product requests. Coordination prior to the initiation of hostilities for products is recommended for BDA products out of the ordinary production cycle.

c. **Dissemination Routes.** The routes by which BDA information is disseminated will vary as the communications architecture of the joint force is initialized, expands, and adjusts to the situation. E-mail, websites, and database access points via NIPRNET, SIPRNET, and JWICs will invariably play a role in disseminating mobile and maneuver BDA products depending on the linkages established between components, the joint task force (if established), the combatant command, supporting organizations, and any coalition involvement in the operation.

d. **Accountability and Priority.** Dissemination of some BDA products may be tracked to record their transmittal for accountability purposes and to ensure completion of tasking for BDA requests of particular interest to the JFC and as directed. Without disseminating results, BDA is of marginal value. BDA personnel must remain cognizant at all times of the commander's priorities. These priorities may be explicitly stated by the commander or may need to be inferred from information gathered from multiple means over multiple systems. Timely, accurate, and complete BDA—that is responsive to the commander's priorities—must be disseminated to be effective.

8. Conclusion

This maneuver BDA TTP is meant to be a guide to help maneuver BDA cells prepare for operations in a joint environment. It provides guidance to assist cells faced with performing maneuver BDA operations. Inputs, outputs and mechanisms will vary from command to command and echelon to echelon. The basic process and requirements are similar at every level regardless of the adversary faced, the organization of friendly forces, and the architecture available to conduct BDA operations within. Modifications,

sometimes extreme, are to be expected, depending on the JFC and his staff's BDA requirements.

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APPENDIX B
REFERENCES

The Commander's Handbook for Joint Battle Damage Assessment is based upon the following primary references.

1. AFDD 2-1.3, *Counterland*

2. AFI 14-117, *Air Force Targeting*

3. AFP 14-210, *United States Air Force Intelligence Targeting Guide*

4. CJCSM 6120.05, *Manual for Tactical Command and Control Planning Guidance for Joint Operations Joint Interface Operational Procedures for Message Text Formats*

5. DIA, DI-2820-2-0, *Battle Damage Assessment (BDA) Reference Handbook*

6. DIA, DI-2820-4-03, *Battle Damage Assessment (BDA) Quick Guide*

7. DIA, DIAR 57-24, *US/Allied Tactical Target Materials Program*

8. DIA, DIAR DDB-2800-2-YR, *Critical Elements of Selected Generic Installations (Critical Elements Handbook)* (SECRET)

9. FM 3-0, *Operations*

10. FM 6-20-10/MCRP 3-1.6.14, *Tactics, Techniques, and Procedures for the Targeting Process*

11. FM 3-60.1/MCRP 3-16D/NTTP 3-60.1/AFTTP(1) 3-2.3 *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets*

12. JMEM, *Air-to Surface Weaponeering System*

13. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*

14. JP 2-0, *Doctrine for Intelligence Support to Joint Operations*

15. JP 2-01, *Joint Intelligence Support to Military Operations*

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17. JP 3-05.2, *Joint Tactics, Techniques, and Procedures for Special Operations Targeting and Mission Planning*

18. JP 3-60, *Joint Doctrine for Targeting*

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GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

ADOCS	Automated Deep Operations Coordination System
AFB	Air Force base
AOC	air operations center
ASAS	All Source Analysis System
ASOC	air support operations center
ATO	air tasking order
BDA	battle damage assessment
BDAREP	battle damage assessment report
BSM	battlespace shaping matrix
C2	command and control
C4I	command, control, communications, computers, and intelligence
CA	combat assessment
CASSUM	close air support summary
CEA	combat effectiveness assessment
CCD	camouflage, concealment, and deception
CD	compact disc
CM	collection management
CONOPS	concept of operations
COP	common operational picture
DIA	Defense Intelligence Agency
DOCC	deep operations coordination cell
DOD	Department of Defense
EBO	effects-based operations
ELINT	electronic intelligence
FDA	functional damage assessment
GCCS	Global Command and Control System
GMI	general military intelligence
GMT	ground mobile target
HPTL	high-payoff target list
HUMINT	human intelligence
HVT	high-value target
IIR	imagery interpretation report
IMINT	imagery intelligence
INFLIGHTREP	inflight report
INTREP	intelligence report

INTSUM	intelligence summary
IO	information operations
IPB	intelligence preparation of the battlespace
IPIR	Initial Phase Interpretation Report
IRIS	Imagery Receive and Intelligence System
ISR	intelligence, surveillance, and reconnaissance
ITO	integrated tasking order
IWS	INFOWORKSPACE™
J-2	Intelligence Directorate of a joint staff
J-2T	Joint Staff Directorate for Intelligence, Targeting
J-3	Operations Directorate of a joint staff
JAOC	joint air operations center
JFACC	joint force air component commander
JFC	joint force commander
JFIC	Joint Forces Intelligence Center
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JIPTL	joint integrated prioritized target list
JMEM	Joint Munitions Effectiveness Manual
JP	Joint Publication
JS	Joint Staff
JTT	joint targeting toolbox
JWICS	Joint Worldwide Intelligence Communications System
MAAP	master air attack plan
MASINT	measurement and signature intelligence
MEA	munitions effectiveness assessment
MIDB	modernized integrated database
MISREP	Mission Report
MOEs	measures of effectiveness
MOP	measure of performance
Multi-INTS	multi-intelligence sources
NIPRNET	Non-Secure Internet Protocol Router Network
NMCC	National Military Command Center
NMJIC	National Military Joint Intelligence Center
OB	order of battle
OJT	on-the-job training
OPLAN	operation plan
OPTEMPO	operating tempo
OSINT	open-source intelligence
PDA	physical damage assessment
PIRs	priority intelligence requirements
PRISM	planning tools for resource integration, synchronization, and management

RECCEXREP	reconnaissance exploitation report
RFI	request for information
SALUTE	size, activity, location, unit, time, and equipment
SCI	sensitive compartmented information
SIGINT	signals intelligence
SIPRNET	SECRET Internet Protocol Router Network
SITMAP	situation map
SITREP	situation report
SME	subject matter expert
SOF	special operations forces
SPIREP	specialist intelligence report; spot intelligence report
SPOTREP	spot report
SUPIR	Supplemental Phase Interpretation Report
TACREP	tactical report
TBMCS	theater battle management core system
TM	target materials
TNL	target nomination list
TOT	time on target
TSA	target system analysis
TST	time-sensitive target
TTP	tactics, techniques, and procedures
UAV	unmanned aerial vehicle
USAF	United States Air Force
USJFCOM	United States Joint Forces Command
USMTF	United States message text format
USPACOM	United States Pacific Command
WSV	weapon system video

PART II—TERMS AND DEFINITIONS

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 weapon 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)

collection management. In intelligence usage, the process of converting intelligence requirements into collection requirements, establishing priorities, tasking or coordinating with appropriate collection sources or agencies, monitoring results, and retasking, as required. (JP1-02)

collection operations management. The authoritative direction, scheduling, and control of specific collection operations and associated processing, exploitation, and reporting resources. Also called COM. (JP 1-02)

collection requirements management. The authoritative development and control of collection, processing, exploitation, and/or reporting requirements that normally result in either the direct tasking of assets over which the collection manager has authority, or the generation of tasking requests to collection management authorities at a higher, lower, or lateral echelon to accomplish the collection mission. Also called CRM. (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. (JP 1-02)

communications intelligence. Technical information and intelligence derived from foreign communications by other than the intended recipients. Also called COMINT. (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. (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. (JP 1-02)

electronic intelligence. Technical and geolocation intelligence derived from foreign non-communications electromagnetic radiations emanating from other than nuclear detonations or radioactive sources. Also called ELINT. (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)

general military intelligence. Intelligence concerning the (1) military capabilities of foreign countries or organizations or (2) topics affecting potential US or multinational military operations, relating to the following subjects: armed forces capabilities, including order of battle, organization, training, tactics, doctrine, strategy, and other factors bearing on military strength and effectiveness; area and terrain intelligence, including urban areas, coasts and landing beaches, and meteorological, oceanographic, and geological intelligence; transportation in all modes; military materiel production and support industries; military and civilian command, control, communications, computers, and intelligence systems; military economics, including foreign military assistance; insurgency and terrorism; military-political-sociological intelligence; location, identification, and description of military-related installations; government control; escape and evasion; and threats and forecasts. (Excludes scientific and technical intelligence.) Also called GMI. (JP 1-02)

human intelligence. A category of intelligence derived from information collected and provided by human sources. Also called HUMINT. (JP1-02)

inflight report. The transmission from the airborne system of information obtained both at the target and en route. Also called INFLIGHTREP.

information operations. Actions taken to affect adversary information and information systems while defending one's own information and information systems. Also called IO. (JP 1-02)

integrated priority list. A list of a combatant commander's highest priority requirements, prioritized across Service and functional lines, defining shortfalls in key programs that, in the judgment of the combatant commander, adversely affect the capability of the combatant commander's forces to accomplish their assigned mission. The integrated priority list provides the combatant commander's recommendations for programming funds in the planning, programming, and budgeting system process. Also called IPL. (JP 1-02)

master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Sometimes referred to as the air employment plan or joint air tasking order shell. Information that may be found in the plan includes joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, etc. Also called MAAP. (JP1-02)

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. (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. (JP 1-02)

open-source intelligence. Information of potential intelligence value that is available to the general public. Also called OSINT. (JP 1-02)

physical damage assessment. The estimate of the quantitative extent of physical damage (through munition 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. (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, and weapon system and munitions selection. The reattack recommendation is a combined operations and intelligence function. Also called RR. (JP 1-02)

reconnaissance exploitation report. A standard message format used to report the results of a tactical air reconnaissance mission. Whenever possible the report should include the interpretation of sensor imagery. Also called RECCEXREP. (JP 1-02)

signals intelligence. 1. A category of intelligence comprising either individually or in combination all communications intelligence, electronics intelligence, and foreign instrumentation signals intelligence however transmitted. 2. Intelligence derived from communications, electronics, and foreign instrumentation signals. Also called SIGINT. (JP 1-02)

target materials. Graphic, textual, tabular, digital, video, or other presentations 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 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. (JP 1-02)

technical intelligence. Intelligence derived from exploitation of foreign material, produced for strategic, operational, and tactical level commanders. Technical intelligence begins when an individual

service member finds something new on the battlefield and takes the proper steps to report it. The item is then exploited at succeedingly higher levels until a countermeasure is produced to neutralize the adversary's technological advantage. Also called TECHINT. (JP 1-02)

weapon system video. 1. Imagery recorded by video camera systems aboard aircraft or ship that shows delivery and impact of air-to-ground, or surface-to-air ordnance and air-to-air engagements. 2. A term used to describe the overarching program or process of capturing, clipping, digitizing, editing, and transmitting heads-up display or multi-function display imagery. 3. A term used to refer to actual equipment used by various career fields to perform all or part of the weapon system video process. Also called WSV. (JP 1-02)

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