

APPENDIX F

TARGETING

TARGETING PROCESS

Targeting is the process of selecting targets and matching the appropriate response to them, including operational requirements and capabilities. The purpose of targeting is to disrupt, delay, or limit threat interference with friendly COAs; it requires coordinated interaction between FS operations, intelligence, EW, and plans cells. Targeting is based on the enemy's assets that provide him an advantage (HPTs), friendly scheme of maneuver, and tactical plans. (See FM 6-20-10.)

Target development is one of the six IEW tasks. Mission analysis must precede generating any ECOAs. These ECOAs are the starting point for all other staff actions to wargame against, and to develop follow-on products. The products of the decide function are briefed to the commander. Upon his approval, his decisions are translated into the OPORD with annexes. (See FM 34-130.)

METHODOLOGY

Decisions create the guidelines for the acquisition and engagement of targets. TA and attack are made through a decision cycle. The methodology used to translate the commander's intent into a plan is **DECIDE, DETECT, DELIVER, and ASSESS**. Figure F-1 shows the functions of intelligence support to targeting, Figure F-2 shows the targeting methodology, and Figure F-3 is a targeting checklist.

<p>RECEIVE GUIDANCE ON:</p>	<ul style="list-style-type: none"> ● Commander's intent. ● HPTs. ● Attack criteria. ● Lead time between DPs and TAs. ● ROE. ● Conditions to establish BDA requirements.
<p>DEVELOP:</p>	<ul style="list-style-type: none"> ● MCOO. ● Situation and event templates. ● HVTs.
<p>EXPLAIN:</p>	<ul style="list-style-type: none"> ● ECOA as part of wargaming. Based on friendly COA, refine event template; assist in developing HPT list, TSS matrix, and sensor or attack systems matrix.
<p>PRODUCE:</p>	<ul style="list-style-type: none"> ● Collection plan, ISM, and AGM. ● SOR.
<p>BRIEF: (Ensure all analysts & collectors understand the CDR's intent.)</p>	<ul style="list-style-type: none"> ● ACE sections (ECOA, HPTL, TSS, and AGM).
<p>COLLECT:</p>	<ul style="list-style-type: none"> ● Information for nomination, validation, and PSA.
<p>DISSEMINATE:</p>	<ul style="list-style-type: none"> ● HPT related information and intelligence to FS immediately. ● Pertinent information and BDA per SOP and TTP.
<p>ENSURE:</p>	<ul style="list-style-type: none"> ● Information collection and intelligence production support all FRAGOs.

Figure F-1. Functions of intelligence support to targeting.

DECIDE	DETECT	DELIVER	ASSESS
<ul style="list-style-type: none"> ● Target Development ● TVA ● HPT and HVT ● TSS ● Attack Options ● Attack Guidance 	<ul style="list-style-type: none"> ● Target Detection Means ● Detection Procedures ● Target Tracking 	<ul style="list-style-type: none"> ● Attack Planned Targets ● Targets of Opportunity ● Desired Effects ● Attack Systems 	<ul style="list-style-type: none"> ● Tactical Level ● Operational Level ● Restrike ● Feedback
<p>Tracking your target is applicable during all of these steps.</p>			

Figure F-2. Targeting methodology.

DECIDE:

_____ Do the commander's planning guidance and intent contain enough detail to enable the targeting team to determine—

- HVTs to nominate as HPTs?
- Desired effects on each HPT?
- When to attack each HPT?
- Any restrictions or constraints?
- Which HPTs require BDA?

_____ What targeting assets (organic, attached, supporting) are available to detect and attach HPTs?

_____ What detect, deliver, and assess support is needed from higher HQ?

_____ When must requests to higher HQ be submitted to obtain the support when required?

_____ Have target tracking responsibilities been established?

_____ Are systems in place to handoff the detected targets to assets that are capable of tracking them?

_____ What detect, deliver, and assess support is required from subordinate units; when is it required?

Figure F-3. Targeting checklist.

- _____ What detect, deliver, and assess support requests have been received from subordinate units; what has been done with them?
- _____ Has the AGM been synchronized with the DST and the maneuver and FS plans?
- _____ Are all commands using a common datum for locations? If not, are procedures in place to correct differences in data?

DETECT:

- _____ Does the collection plan focus on PIR HPTs? (Which includes HPTs designated as PIR?)
- _____ What accuracy, timeliness, and validity standards (TSS) are in effect for detection and delivery systems?
- _____ Are all TA systems fully employed?
- _____ Have backup TA systems been identified for HPTs?
- _____ Have responsibilities been assigned to the appropriate unit and/or agency for detecting each HPT?
- _____ Are HPTs being tracked?
- _____ Have verification procedures using backup systems been established where necessary?
- _____ Are TA and BDA requirements distributed properly among systems that can accomplish both?

DELIVER:

- _____ Have communications links been established between detection systems, the decisionmaker, and delivery systems?
- _____ Have responsibilities been assigned to the appropriate unit and/or agency for attacking each HPT?
- _____ Has a backup attack system been identified for each critical HPT? (The primary system may not be available at the time the HPT is verified.)
- _____ Have FSCMs or AGMs and clearance procedures been established to facilitate target engagement?

Figure F-3. Targeting checklist (continued).

- _____ Have O/O FSCMs or AGMs been established to facilitate future and transition operations?
- _____ Have potential fratricide situations been identified; have procedures been established to positively control each situation?
- _____ Have responsibilities been assigned to the appropriate unit or agency for tracking specific HPTs and providing BDA on specified HPTs?
- _____ What are the procedures to update the HPTL and synchronize the AGM and DST if it becomes necessary to change the scheme of maneuver and FS as the situation changes?

ASSESS:

- _____ Are the collection assets linked to specific HPTs still available?
- _____ Have the collection asset managers been notified of the attack of a target requiring assessment?
- _____ Have assessment asset managers been updated as to the actual target location?
- _____ Has all the coordination for the assessment mission, particularly airborne assets, been accomplished?
- _____ What is the status of BDA collection?
- _____ Has the information from the mission been delivered to the appropriate agency for evaluation?
- _____ Has the targeting team reviewed the results of the attack to determine restrike requirements?
- _____ Has the target intelligence gathered from the assessment been incorporated into the overall enemy situation development?

STEP 1 - DECIDE: **Figure F-3. Targeting checklist (continued).**

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DECIDE provides the overall focus and sets priorities for intelligence collection and attack planning (Figure F-4). Targeting priorities must be addressed for each phase or critical event of an operation. The decisions made are reflected in visual products as follows:

- HPTL is a prioritized list of HPTs whose loss to the enemy will contribute to the success of the friendly COA.
- Intelligence collection plan, or R&S plan, answers the commander's PIR, to include those HPTs designated as PIR. The plan, within the availability of additional collection assets, supports the acquisition of more HPTs. Determining the intelligence requirements is the first step in the CM process. (See FMs 34-2 and 34-2-1.)
- TSS matrix addresses accuracy or other specific criteria that must be met before targets can be attacked.
- AGM, approved by the commander, addresses which targets will be attacked, how, when, and the desired effects.

The formats for the HPTLs, TSS, and AGMs are examples only. Targeting personnel must understand all that is involved in building these targeting tools. However, experienced staffs may prefer to develop their own tailored formats.

IPB and Mission Analysis. IPB, including EPB, is a continuous process and starts in the preparation phase. It continues to provide updated as well as new products and supports the targeting process. The intelligence estimate provides key support to target development. MCOOs, doctrinal, situation, event, and DSTs help identify ECOAs, NAIs, TAIs, HVTs.

TVA and Wargaming. The battlefield environment, its effects on combatants, and the threat are considered in IPB analysis to arrive at an intelligence estimate. TVA yields HVTs for a specific ECOA. Target spreadsheets identify the HVTs in relation to a type of operation, and target sheets (see FM 6-20-10, App A) give detailed targeting information for each HVT. This information is used during the IPB and the wargame processes. Both tools are developed by the G2 ASPs.

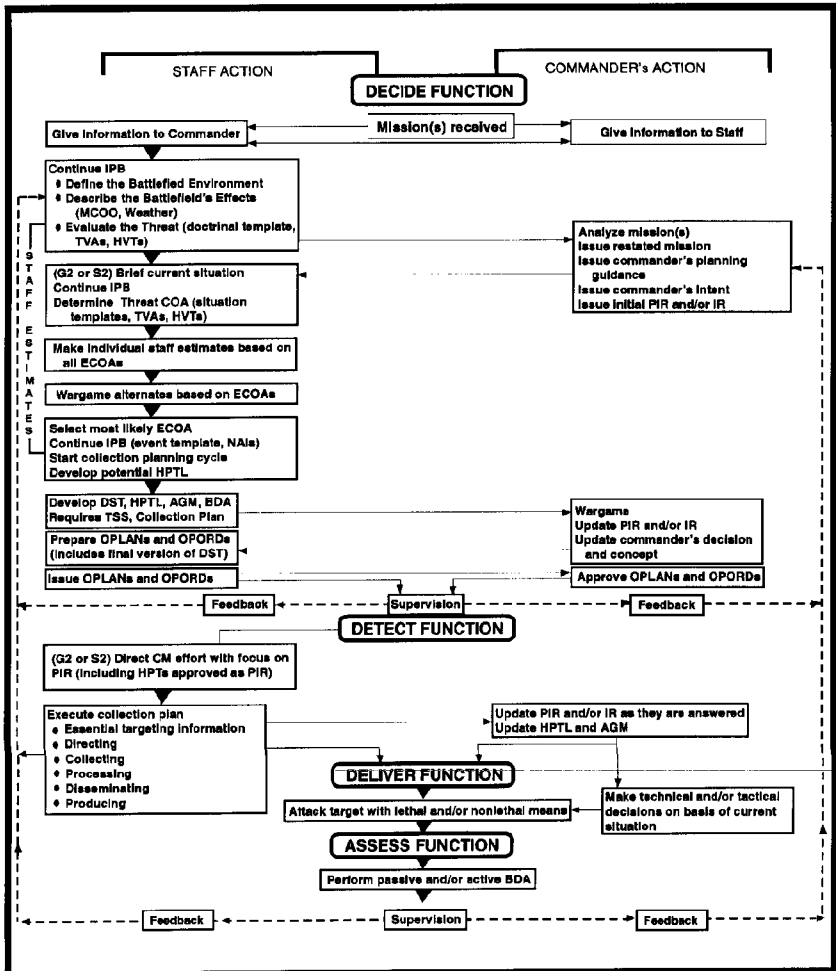


Figure F-4. The targeting process.

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TVA, which is a detailed analysis of the enemy in selected COAs, uses the following enemy characteristics:

- Doctrine.
- Tactics.
- Equipment.
- Organizations.
- Expected behavior.

TVA methodology provides a relative ranking of target sets, or categories. It begins when target analysts in the G2/S2 assume the position of enemy commander. The target analyst, in coordination with other staff members, wargames the operation.

During wargaming, alternate friendly COAs are analyzed in terms of their impact on enemy operations and likely responses. The enemy battlefield functions that must be attacked to force the best enemy response are identified. The commander and staff analyze the criticality of friendly battlefield functions on a specific COA. The best places to attack HPTs are identified as TAIs. DPs or decision TPLs are used to ensure that the decision to engage or not to engage occurs at the proper time. Wargaming also identifies HVTs in priority that are critical to the success of the enemy mission. It also identifies the subset of HVTs which are HPTs that must be acquired and attacked for the friendly mission to succeed. HPTs selected are recorded on the DST.

Collection managers evaluate HVTs to determine asset detection capability. HPTs receive priority in the allocation of assets. The FSO determines friendly weapons systems capable of attacking HVTs with lethal fires, and the EWO nominates and coordinates to provide non-lethal fires.

Using the capabilities of the system to attack the targets, the G2/S2 analyzes and synthesizes the threat's response to each attack. Targets should be assigned priorities according to description, signature, degradation, and graphic representation. If targets have the same relative importance, a targeting team must prioritize the targets and seek advice from the FSE targeting analyst and the FAIO. After the targets are prioritized, they are placed on an HPTL (Figure F-5). After the HPTL is approved, the G2 will use it to develop the collection plan.

EVENT OR PHASE:		
PRIORITY	CATEGORY	TARGET

Figure F-5. Example high-payoff target list.

TSS. TSS are criteria applied to enemy activity (acquisitions and battlefield information) used in deciding whether the activity is a target. TSS break nominations into two categories: targets, which meet accuracy and timeliness requirements for attack; and suspected targets, which must be confirmed before any attack.

- **HPT.** This refers to the designated HPTs which the collection manager is tasked to acquire.
- **TIMELINESS.** Valid targets are reported to attack systems within the designated timeliness criteria.
- **ACCURACY.** Valid targets must be reported to the attack system meeting the required TLE criteria. The criteria is the least restrictive TLE considering the capabilities of available attack systems.

Considering these factors, different TSS may exist for a given enemy activity on the basis of different attack systems. For example, an enemy artillery battery may have a 150-meter TLE requirement for attack by cannon artillery and a 1 km requirement for attack helicopters. TSS are developed by the FSE in conjunction with MI personnel. Intelligence analysts use TSS to quickly determine targets from battlefield information and pass the targets to the FSE.

Attack system managers, such as FSEs, FCEs, or FDCs, use TSS to quickly identify targets for attack. Commands can develop *standard* TSS based on anticipated enemy OB and doctrine matched with the normally available attack systems.

The G2/S2 knows the accuracy of acquisition systems, associated TLE, and the expected dwell times of enemy targets. He can then specify whether

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information he reports to the attack system manager is a target or a suspected target. Some situations may require the system to identify friendly and neutral from threat before approval to fire is given. HPTs that meet all the criteria should be tracked until they are attacked IAW the AGM. Location of targets that do not meet TSS should be confirmed before they are attacked. The TSS can be depicted in a TSS matrix (Figure F-6).

The matrix lists each system that forwards targets directly to the FSE, FCE, or FDC. The effects of weather and terrain on the collection assets and on enemy equipment are considered. TSS are keyed to the situation. However, the greatest emphasis is on the enemy situation considering deception and the reliability of the source or agency that is reporting.

HPT	TIMELINESS	ACCURACY
COPs	3 hr	150 m
RISTA	30 min	150 m
2S3	30 min	500 m
M-46	30 min	500 m
ADA	15 min	500 m
CPs	3 hr	500 m
Ammunition	6 hr	1 km
Maneuver	1 hr	150 m

Figure F-6. Example target selection standards matrix.

Attack Guidance. Knowing target vulnerabilities and the effect an attack will have on enemy operations allows a staff to propose the most efficient available attack option. Key guidance is whether the commander wishes to disrupt, delay, limit damage, or destroy the enemy. During wargaming, DPs linked to events, areas (NAIs and TAIs), or points on the battlefield are developed. These DPs cue the command decisions and staff actions where tactical decisions are needed.

On the basis of commander's guidance, the targeting team recommends how each target should be engaged in terms of the effects of fire and attack options to use. Effects of fire (see Joint Pub 1-02) can be to **harass, suppress, neutralize,**

or **destroy** the target. The subjective nature of what is meant by these terms means the commander must ensure the targeting team understands his use of them. Applying FS automation system default values further complicates this understanding.

- Harassing fire is designed to disturb the rest of the enemy troops, to curtail movement, and, by threat of losses, to lower morale. The decision to employ harassing fires needs careful consideration. Harassing fire has little real effect on the enemy, subjects gun crews to an additional workload, and increases the threat of counter-battery fires. ROE or the potential for adverse public opinion may prohibit its use. However, harassing fires may be a combat multiplier in some situations. Consider their use in SASO, delaying actions, and economy of force operations.
- Suppressive fire on or about a weapons system degrades its performance below the level needed to fulfill its mission objectives. Suppression lasts only as long as the fires continue. The duration of suppressive fires is either specified in the call for fire or established by SOP. Suppression is used to prevent effective fire on friendly forces. It is typically used to support a specified movement of forces. The FSCoord needs to ask or calculate the *when* and *how long* questions.
- Neutralization fire is delivered to render the target ineffective or unusable temporarily. Neutralization fire results in enemy personnel or material becoming incapable of interfering with an operation or COA. Key questions the FSCoord must ask are when and how long does the commander want the target to be neutralized. Most planned missions are neutralization fires.
- Destruction fire is delivered for the sole purpose of destroying material objects. It physically renders the target permanently combat-ineffective unless it is restored, reconstituted, or rebuilt. Setting automated FS default values for destruction of 30 percent does not guarantee achieving the commander's intent. The surviving 70 percent may still influence the operation. Destruction missions are expensive in terms of time and material. **Consider whether neutralization or suppression may be more efficient.**

The decision of what attack system to use is made at the same time as the decision on when to acquire and attack the target. Coordination is required when deciding to attack with two different means (such as EW and combat air operations). Coordination requirements are recorded during the wargame process.

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The attack guidance must be approved by the commander and detail the following:

- A prioritized list of HPTs.
- When, how, and desired effects of attack.
- Any special instructions.
- HPTs that require BDA.

This information is developed during the wargame. Attack guidance—

- Applies to planned targets and targets of opportunity.
- May address specific or general target descriptions.
- Is provided to attack system managers via the AGM (Figure F-7).
- May change as the operation progresses.

The AGM must be updated during staff planning meetings and as the enemy situation changes. Consider separate AGMs for each phase of an operation.

PHASE/EVENT: Attack through the security zone				
HPTL	WHEN	HOW	EFFECT	REMARKS
COPs	P	GS ARTY	N	PLAN IN INITIAL PREP
RISTA and OPs	P	GS ARTY	N	PLAN IN INITIAL PREP
2S1 and 2S3	P	MLRS	N	PLAN IN INITIAL PREP
2S6, SA9 and SA13	P	GS ARTY	S	SEAD FOR AVN OPS
REGT CP	A	MLRS	N	
RESERVE BN	P	AVN BDE	D	INTENT TO ATTACK RESERVE BN IN EA HOT
LEGEND:	I = IMMEDIATE A = AS ACQUIRED P = PLANNED	S = SUPPRESS N = NEUTRALIZE D = DESTROY		
NOTES: ¹ This is only an example of an AGM. Actual matrices are developed on the basis of the situation. ² An "H" for harassing fires may be included in the EFFECT column during SASO.				

Figure F-7. Example attack guidance matrix.

HPTL. Lists the prioritized HPTs identified during wargaming. They have priority for engagement.

WHEN. Timing the attack of targets is critical to maximizing effects. During wargaming, the optimum time is identified and reflected in the WHEN column. A "P" indicates the target should not be engaged now but should be *planned* for future firing (e.g., a preparation, a SEAD program, or a countermobility program) or simply put on file. An "A" indicates such targets should be engaged in the sequence received in the headquarters, with respect to the priority noted in the HPTL. An "I" indicates the attack

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must be *immediate* and is a special case. This designation should be limited to a small percentage of targets and only for the most critical types. Too many immediate targets are disruptive and lower the efficiency of attack systems. Immediate attacks take precedence over all others and are conducted even if attack systems must be diverted from attacks already underway. Examples of important targets include:

- Missile systems capable of NBC attacks.
- Division headquarters.
- NBC weapons storage and support facilities.

MRLS may be considered for immediate attack depending on their demonstrated effectiveness against friendly forces and their tactical employment. The G3/S3 and FSCoord or FSO must establish procedures within the TOC that allow for immediate attack of targets.

HOW. Links the attack system to the HPT. It is best to identify a primary and backup attack system for attack of HPTs.

EFFECT. Refers to the target attack criteria. The targeting team should specify attack criteria according to the commander's guidance. Target attack criteria should be quantifiable (e.g., percentage of casualties or destroyed elements, time, ordnance, and allocation or application of assets). Also, it can be noted as the number of battery or battalion volleys.

REMARKS. Notes which targets should not be attacked in certain tactical situations (e.g., if the enemy is withdrawing). Examples of how to use this column:

- Accuracy or time constraints.
- Required coordination.
- Limitations on the amount or type of ammunition.
- Any need for BDA.

STEP 2 - DETECT:

DETECT is the next critical function in the targeting process. The G2/S2 is the main figure in directing the effort to detect identified HPTs. To identify who, what, when, and how for TA, the G2/S2 must work closely with the—

- ACE.
- FAIO.
- Targeting officer and FSO.

This process determines accurate, identifiable, and timely requirements for collection systems. The ACE must ensure collection system asset managers understand these requirements.

Information needs for target detection are expressed as PIR and IR. Their priority depends on the importance of the target to the friendly COA and tracking requirements. PIR and IR that support detection of HPTs are incorporated into the overall unit collection plan.

Targets are detected by the maximum use of all available assets. The G2/S2 must focus the intelligence acquisition efforts on the designated HPTs and PIR. Situation development information, through detection and tracking, will be accumulated as collection systems satisfy PIR and IR. The collection manager—

- Considers availability and capabilities of all collection assets within his echelon and those available to subordinate, higher, and adjacent units.
- Considers joint or combined force assets.
- Translates the PIR and IR into SIR and SOR.
- Arranges direct dissemination of targeting information from the collector to the targeting cell or targeting intelligence to the FSE if possible.

Detection Procedures. Use all TA assets effectively and efficiently. Avoid duplication of effort among intelligence available assets unless it is required to confirm target information. At corps and division, the ACE develops and manages the collection plan and ensures that no gaps in planned collection exist. This allows timely combat information to be collected to answer the commander's intelligence and TA requirements. To detect HPTs, give clear and concise

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taskings to those TA systems capable of detecting a given target. This information lets analysts develop the enemy situation and identify targets (Figure F-8).

FS personnel provide the G2/S2 with the degree of located accuracy. The accuracy requirements are matched to the TLE of the collection systems. This allows the G2/S2 to develop more detailed TSS. NAIs and TAIs identified are matched with the most capable detection system available. If the target type and its associated signatures (e.g., electronic, visual, thermal) are known, the most capable collection asset can be directed against the target. The asset can be placed in the best position according to estimates of when and where the enemy target will be located.

Assets are positioned based on friendly estimates of where the enemy target is located. Information needed to detect targets are expressed in PIR and IR, which are incorporated into the collection plan. The collection manager translates the PIR and IR into SIR.

The collection manager considers the availability of all collection assets at all echelons. When a target is detected, the information is passed to the FAIO to determine if it is an HPT, its priority, and if it meets the TSS. To ensure that target information is passed quickly, the FAIO should be located in the ACE with communications to the FSE. Once an HPT is discovered, the FAIOs coordinate with their respective G2s/S2s and pass the targets directly to the FSE. If the commander approves the target, it is then passed to a firing unit. Mobile HPTs must be detected and tracked to maintain a current target location. Target tracking is inherent to detection.

BOS	TARGET ACQUISITION MEANS
INTELLIGENCE	SIGINT/EW, IMINT, HUMINT, TECHINT, MASINT systems.
MANEUVER	Patrols, scouts, units in contact, air/ground cavalry/air units.
FS	TAB, AN/TPQ-36/37 radars, FOs, AFSOs, COLTs.
AD	ADA scouts, ADA system's acquisition radars.
MOBILITY, COUNTER- MOBILITY, SURVIVABILITY	Engineer and NBC reconnaissance.
CSS	Truck drivers, base cluster recon/counterrecon patrols.
C ²	MIJI reports.
AIR FORCE	Joint STARS, AWACS.

Figure F-8. BOS detection capabilities.

As the assets collect information for target development, the information is forwarded to ACE intelligence analysts who use the information to perform situation and target development. Once a target specified for attack is identified, the analysts pass it to the FSE. The FSE executes the attack guidance against the target. Coordination between the intelligence staff and the FSE is essential to ensure that the targets are passed to an attack system that will engage the target.

The FAIOs can coordinate with the G2 and FSE to pass HPTs and other targets directly to the FCE at the division artillery TOC or, if approved by the maneuver commander, directly to a firing unit. The result is an efficient attack of targets which have been designated in advance for attack.

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When the FAIO gets intelligence information which warrants attack, he notifies the FSE. This allows the FAIO to focus on intelligence analysis and the FSE to manage the control of fires. The targeting officer at the maneuver brigade and the S2 at the battalion perform FAIO functions.

Tracking priorities are based on the commander's concept of the operation and targeting priorities. Tracking is executed through the collection plan. Not all targets will be tracked. Because many critical targets move frequently or constantly, these HPTs require tracking.

Synchronization of Intelligence Collection. While conducting operations, the G2/S2 monitors execution of the collection plan. He uses an ISM to synchronize the intelligence system in order to give answers to PIR in time to affect the decisions they support. As HPTs are identified, he informs the appropriate FSE and cross-cues collection assets to support BDA as needed.

During delivery, NRT collectors and observers are cued to continue tracking targets during their engagement. Planned or cued BDA collection and reporting help determine if the engagement produced the desired effects. If not, continued tracking supports immediate reengagement.

To facilitate hand-off of target and tracking responsibilities, the G2/S2 coordinates with higher and subordinate units. Requirements for intelligence in a given area can then be directed to the unit responsible for that area. Operational graphics are useful when tracking particular threat units or HPTs. Passing responsibility for the target as it crosses the graphic ensures that it is not lost in crossing.

Synchronization continues during the CM process. The G2/S2 uses the products of the targeting process to develop SIR and SOR that synchronize the collection effort with command DPs. He plans and allocates time for collection, processing, and dissemination.

During execution the collection manager monitors the collection and reporting to ensure synchronization. He prompts asset managers to meet timelines, cross-cueing, and retasking as necessary to keep intelligence operations synchronized with command operations.

IEW Systems. The collection manager at each echelon gives appropriate IEW agencies missions through the collection plan and ISM. The intelligence analyst directly supports the collection manager. To properly synthesize information being received from forward units and collection systems intelligence analysts must understand their capabilities and limitations.

Figure F-9 explains the intelligence disciplines that provide targeting information through collection.

DISCIPLINE	FUNCTION
SIGINT/EW	<ul style="list-style-type: none"> • Friendly SIGINT/EW systems search for, intercept, and locate threat electronic signals emanating from radios, radars, and beacons. • Signatures are caused by electronics associated with the particular C² functions of the target. • Signatures identify signals based on characteristics of the signal or content of any messages intercepted. • The signals are then associated with an adversary's OB. • Electronic systems organic to tactical and operational (corps and theater) EW units can locate threat radio, radar, beacon, and C² system emissions using DF equipment. • DF efforts have inherent considerations that affect target accuracy such as DF system accuracy, terrain, and distance to target.
IMINT	<ul style="list-style-type: none"> • Imagery assets can be located in the AEB of the corps MI Bde, GRCS, and GS and DS companies of the Div MI Bn TUAV when fielded. • TUAV is organic to the DS Co of a heavy division. • TUAV is organic to the GS Co in a light infantry division. • FCE is assigned to the GS Co. • Predator UAV and Joint-STARS are USAF assets. They include airborne and ground-based IMINT sensors such as photo, TV, infrared, and MTI radar. • Targets have visual and infrared signatures that can be imaged. • Imagery analysts study results of IMINT missions to determine the presence, location, and assessed damage to threat targets. These films and devices can detect thermal signatures produced by equipment (engines, heaters, or any device producing or absorbing heat). These devices can also differentiate camouflaged equipment and structures. • Mounted sensors in UAVs provide TA capability which can locate threat elements unseen by ground observers and

Figure F-9. Intelligence disciplines.

<p>HUMINT</p>	<p>can successfully direct engagement of the targets. SLAR can detect the movement of vehicles beyond visual range of ground observers.</p> <ul style="list-style-type: none"> • Imagery and intelligence analysts look for the threat's patterns of activity or intentions produced from IMINT systems. • Patterns of movement (numbers, direction, times) are analyzed and synthesized with other combat information to determine a threat commander's intentions. • Imagery can be requested from national and theater systems to support area studies and operations. • Imagery can also be used for training in garrison and at CTCs. <ul style="list-style-type: none"> • HUMINT is produced by LRSUs, CI teams that are positioned throughout the depth of the battlefield, and interrogation teams that may be at maneuver battalions and higher. • Interrogation of threat prisoners can be focused on the detection of HVT and HPTs. • Interrogators should receive lists of intelligence interests and the commander's PIR. • Giving current HPTs to the interrogators allows them to focus their efforts on locating these targets while gleaned additional information for situation development. • LRSUs are another HUMINT source. They may be tasked to determine the presence or absence of threat activity within the NAIs developed during the IPB process. • Keying these NAIs to HPTs allows the LRSUs to contribute significantly to the target detection process. • Information gained from LRSUs is real or NRT and can result in immediate engagement. • Due to extensive preparation and support requirements, LRSUs should be planned early and used IAW its doctrine (e.g., depth, target selection, insertion techniques). • CI teams detect subversion, espionage, and terrorist threats to friendly forces, and can also work with the local population to gather items of intelligence interest. • SOF may be tasked through SOCCE assigned at brigade, division, or Corps.
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Figure F-9. Intelligence disciplines (continued).

<p>TECHINT</p>	<ul style="list-style-type: none"> • The TECHINT system is made up of two parts: S&TI and battlefield TECHINT. • S&TI supports strategic level of war intelligence. • Battlefield TECHINT supports operational and tactical levels of war intelligence. • TECHINT aids the commander by providing products that either identify or counter an adversary's monetary technological advantage. • TECHINT is an integral part of all-source intelligence because it involves everyone from individual soldiers to the policy makers. • Foreign material is photographed or captured and exploited for information, capabilities, limitations, and vulnerabilities. • The 203d MI Battalion operates the CMEC for the Army, or forms the Army's component of JCMEC or CCMEC. • Teams are sent from the battalion down to ECB units. • The G2, G3, TECHINT commander, and MI commander comprise the battlefield TECHINT team. • The commanders execute the staff's directives to collect materials for the TECHINT teams to exploit.
<p>MASINT</p>	<ul style="list-style-type: none"> • A MASINT sensor collects energy emitted by or reflected from an object or event for the purpose of identification and characterization. • Enemy weapon systems have physical characteristics and distinct performance identifiers when used. • Dynamic targets and events are primary candidates for MASINT exploitation by the MI force projection brigades. • These sources create energy emissions across the EM spectrum which carry information about its characteristics and performance via waves or particles. • This information is the signature collected by MASINT sensors; it can be used when developing threat assessments, OBs, IPB, and targeting materials. • MASINT data becomes invaluable during the rapid reprogramming of <i>smart</i> weapons and sensors or when changing tactics.

Figure F-9. Intelligence disciplines (continued).

	<ul style="list-style-type: none"> ■ Issues fire mission request to appropriate executing units. ■ Informs G2 of target attack. G2 alerts appropriate system responsible for BDA (when applicable). <p>TARGETS OF OPPORTUNITY:</p> <ul style="list-style-type: none"> -Are processed the same as planned HPTs. -Those not on HPTL are first evaluated to determine when or if they should be attacked. <ul style="list-style-type: none"> ■ Decision to attack follows attack guidance & is based on— <ul style="list-style-type: none"> •Activity of the target. •Dwell time. •Target payoff compared to other targets currently being processed for engagement. <ul style="list-style-type: none"> -If decision is made to attack immediately, target is processed further. -Availability & capabilities of attack system to engage targets are assessed. -If target exceeds availability or capabilities, send target to higher HQ for immediate attack. -If decision is to defer attack, continue tracking; determine DPs for attack, and modify collection taskings as appropriate.
<p>TECHNICAL DECISIONS (DETERMINED BASED ON TACTICAL DECISIONS):</p>	<ul style="list-style-type: none"> ■ Precise delivery means. ■ Number and type of munitions. ■ Unit to conduct the attack. ■ Response time of the attacking unit. ■ Results in physical attack of targets by lethal and/or nonlethal means. ■ FS cell directs attack system to attack target once tactical decisions have been made. ■ FS cell provides attack system manager with—

Figure F-10. Deliver functions and responsibilities (continued) .

	<ul style="list-style-type: none"> •Selected time of attack. •Effects desired IAW previous discussion. •Any special restraints or requests for particular munitions types. ■ Attack system manager (FSCoord, ALO, AVN BDE, LNO, NGLO) determines if his system can meet requirements. If cannot, he notifies FS cell. Some reasons for not being able to meet requirements include— <ul style="list-style-type: none"> •System not available at specified time. •Required munitions not available. •Target out of range. ■ FS cell must decide if selected system should attack under different criteria or if a different system should be used.
<p>TARGETS OF OPPORTUNITY ARE ATTACKED BASED ON:</p>	<ul style="list-style-type: none"> ■ The target's activity. ■ Estimated assembly area activity.
<p>DESIRED EFFECTS: DISRUPT DELAY LIMIT</p>	<ul style="list-style-type: none"> ■ Planned Targets: <ul style="list-style-type: none"> •Verify enemy activity as that planned to be attacked. •Reaffirm decision to attack. •Issue the fire mission request (through FS cell) to appropriate executing units. ■ Targets of Opportunity: <ul style="list-style-type: none"> •Targeting team must decide payoff and availability of attack systems and munitions.
<p>ATTACK SYSTEM:</p>	<ul style="list-style-type: none"> ■ Planned Targets: <ul style="list-style-type: none"> •Decision made during <i>decide</i> function. •Determine system availability & capability. •Targeting team must determine best system available to attack target if system not available or capable.

Figure F-10. Deliver functions and responsibilities (continued).

	<ul style="list-style-type: none"> ■ Targets of Opportunity: <ul style="list-style-type: none"> • Targeting team must determine attack system, subject to maneuver commander's approval. • Consider all available attack systems. • Attacking targets should optimize capabilities of— <ul style="list-style-type: none"> – Light and heavy ground forces. – Attack helicopters. – FA. – Mortars. – Naval gun fire. – Combat air operations (CAS and air interdiction). – Offensive EW. • Consider availability & capabilities of each resource using the following: <ul style="list-style-type: none"> – Desired effects on the target. – Payoff of the target. – Degree of risk to use asset against target. – Impact on friendly operations. • Target attack must be coordinated among two or more attack systems. • Engaging a target by lethal means, along with jamming or monitoring, may be of greater benefit than simply firing at the target.
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Figure F-10. Deliver functions and responsibilities (continued).

STEP 4 - ASSESS:

Combat assessment is the determination of the effectiveness of force employment during military operations. It is composed of three elements:

- BDA, which is the timely and accurate estimate of damage resulting from the application of lethal or nonlethal military force against a target.
- MEA, which is an assessment of the military force in terms of weapon systems and munitions effectiveness.

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- Reattack recommendation.

In combination, BDA and MEA inform the commander of effects against targets and target sets. Based on this, the threat's ability to make and sustain war and centers of gravity are continuously estimated. During the review of the effects of the campaign, restrike recommendations are proposed or executed. BDA pertains to the results of attacks on targets designated by the commander. Producing BDA is primarily an intelligence responsibility, but requires coordination with operational elements. BDA requirements must be translated into PIR. It accomplishes the following:

- At the tactical level, commanders use BDA to get a series of timely and accurate snapshots of their effect on the enemy. It provides commanders an estimate of the enemy's combat effectiveness, capabilities, and intentions. This helps commanders determine when or if their targeting effort is accomplishing their objectives.
- BDA helps to determine if restrike is necessary. Commanders use BDA to allocate or redirect attack systems to make the best use of available combat power.

The G3 through the targeting team conducts MEA concurrently and interactively with BDA as a function of combat assessment. MEA is used as the basis for recommending changes to increase effectiveness in—

- Methodology.
- Tactics.
- Weapon systems.
- Munitions.
- Weapon delivery parameters.

The G3 develops MEA by determining the effectiveness of tactics, weapons systems, and munitions. Munitions effect on targets can be calculated by obtaining rounds fired on specific targets by artillery assets. The targeting team may generate modified commander's guidance concerning—

- UBL.
- RSR.
- CSR.

The need for BDA for specific HPTs is determined during the **decide** function. Record BDA on the AGM and intelligence collection plan. The resources used for BDA are the same resources used for target development and TA. An asset used for BDA may not be available for target development and TA. The ACE receives, processes, and disseminates to the targeting team the results of attack, which are analyzed in terms of desired effects.

The targeting team must keep the following BDA principles in mind:

- BDA must measure things that are important to commanders, not make important the things that are easily measurable.
- BDA must be objective. When a G2/S2 receives a BDA product from another echelon, he should verify the conclusions (time permitting). G2s/S2s at all echelons must strive to identify and resolve discrepancies among the BDA analysts at different headquarters.
- The degree of reliability and credibility of the assessment relies largely upon collection resources. The quantity and quality of collection assets influence whether the assessment is highly reliable (concrete, quantifiable, and precise) or has low reliability (best guess). The best BDAs use more than one collection discipline to verify each conclusion.

Each BDA has three assessment components (Figure F-11). Each requires different sensors, analytical elements, and timelines. They are not necessarily subcomponents of each BDA report. (See FM 6-20-10, Appendix D.)

COMPONENTS	DESCRIPTION
PDA	<ul style="list-style-type: none"> • Qualitative physical damage from munitions blast, fragmentation, and fire. • Based on observed or interpreted damage.

<p>FDA</p>	<ul style="list-style-type: none"> • Effects of military force to degrade or destroy capability of target to perform mission. • Assessment based on all-source intelligence. • Includes an estimate of time to reconstitute or replace target. • Temporary assessment compared to a TSA used for specific missions.
<p>TSA</p>	<ul style="list-style-type: none"> • The overall impact of the full spectrum of military operations on an entire target system's capability. • Can be applied against an adversary's combat effectiveness. • May address significant subdivisions of a target. • A more permanent assessment.

Figure F-11. BDA functions.

BDA is more than determining the number of casualties or the amount of equipment destroyed. The targeting team can use other information, such as—

- Whether the targets are moving or hardening in response to the attack.
- Changes in deception efforts and techniques.
- Increased communication efforts as the result of jamming.
- Whether the damage achieved is affecting the enemy's combat effectiveness as expected.

BDA may also be passive by compiling information regarding a particular target or area (e.g., the cessation of fires from an area). If BDA is to be made, the targeting team must give intelligence acquisition systems adequate warning for sensors to be directed at the target at the proper time. BDA results may change plans and earlier decisions. The targeting team must periodically update the decisions made during the **decide** function concerning—

- IPB products
- HPTLs.
- TSS.
- AGMs.
- Intelligence collection plans.
- OPLANs.

Based on BDA and MEA, the G2/G3 consider the level to which operational

objectives have been achieved and make recommendations to the commander. Reattack and other recommendations should address operational objectives relative to the—

- Target.
- Target critical elements.
- Target systems.
- Enemy combat force strengths.

BDA key players are the commander, operations officer, FSO, AAO, ALO, and S2. The S2 integrates intelligence and operational data. In coordination with the G3, the G2/S2—

- Recommends HPTs.
 - Develops and recommends IR to include those for targeting and BDA. Some requirements become PIR.
 - Coordinates with the G3/S3, AAO, and FSO to develop a fully coordinated targeting and BDA plan.
 - Develops a synchronized collection plan to answer the commander's IR and tracks and maintains BDA charts and files.
 - Tasks or requests collection support from the appropriate unit or agency to collect information required to satisfy the commander's targeting objectives and BDA reporting requirements.
 - Establishes procedures to ensure reports from FOs, scouts, troops in contact, pilots, and AVTRs are quickly made available for BDA analysis.
 - Matches BDA reporting requirements against the commander's objectives to determine targeting effort drain; develops and maintains historical BDA databases, and disseminates hard and soft copy intelligence and BDA results.
 - Uses the results of BDA and combat assessment to determine the need to develop further threat COAs.
- Determines priority for collection assets between the targeting effort and

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the BDA supporting requirements.

- Determines and updates enemy capabilities based upon results of the targeting effort.

SASO CONSIDERATIONS

Target development and targeting are difficult in an SASO environment. Although the principles of the targeting process still apply in SASO, consider the following:

- ROE tend to be more restrictive than in conventional combat situations. Everyone involved in the targeting process must completely understand the ROE.
- Identification of HVTs, threat intentions, threat locations, and weapons systems is slow to develop and may not be able to be acted upon when fully developed.
- Because of the nature of the threat (usually a relatively small, unconventional enemy may constitute a significant threat to US forces) determination of HVTs (specifically, what constitutes an HVT) is extremely difficult. Thus, it is difficult to develop precise time, location, and rates of march for a threat force.
- "Targets," which blend into the population, are often less visible than conventional targets.
- When identified, targets present less of a window of opportunity in which to react, decreasing decision time.
- Because of considerations of the HN population, targeting must be precise. Selecting the right weapons system for the right target is paramount.
- Interaction and coordination with nontraditional elements and agencies may be required. This may include private organizations, NGOs, other federal agencies, civil agencies, allies or coalition forces, and HN forces.

CARVER TECHNIQUE

ARSOF uses CARVER factors to assess mission, validity, and requirements. They are also used in technical appreciation and target analysis.

The CARVER selection factors assist in selecting the best targets or components to attack. As the factors are considered, they are given a numerical value, which represents the desirability of attacking the target. The values are then placed in a decision matrix. After CARVER values for each target or component are assigned, the sum of the values indicates the highest value target or component to be attacked within the limits of the statement of requirements and commander's intent. Figure F-12 explains the CARVER techniques.

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
Criticality	<ul style="list-style-type: none"> •Means target value. •Primary consideration in targeting. •Target is critical when its destruction or damage has major impact on military, political, or economic operations. •Consider targets within a system in relation to other elements of the target system. •Value of target will change as situation develops. •Target requires use of time-sensitive methods which respond to changing situation. <p>EXAMPLE: When one has few locomotives, railroad bridges may be less critical as targets; however, safe-guarding bridges may be critical to maneuvering conventional forces requiring use of such bridges.</p>	<ul style="list-style-type: none"> •Time—How rapidly will impact of target attack affect operations? •Quality—What % of output, production, or service will be curtailed by target damage? •Surrogates—What will be effect on output, production, and service? •Relativity—How many targets? What are their positions? How is their relative value determined? What will be affected in the system or complex stream? 	<ul style="list-style-type: none"> •Immediate halt; target cannot function without it. •Halt within 1 day, or 66%. •Halt within 1 week, or 33%. •Halt within 10 days, or 10%. •No significant affect. <p>*Refers to time or %; curtailment in output, production, or service.</p>	<p>9 to 10</p> <p>7 to 8</p> <p>5 to 6</p> <p>3 to 4</p> <p>1 to 2</p>

Figure F-12. CARVER techniques.

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
Accessibility	<ul style="list-style-type: none"> •Target is accessible when operations element can reach the target with sufficient personnel and equipment to accomplish mission. •Entails identifying & studying critical paths the operational element must take to achieve objectives & measuring those things that aid or impede access. •You must be able to reach target AND remain there for extended periods. •Basic steps identifying accessibility: <ul style="list-style-type: none"> -Infiltration from staging base to target. -Movement from point of entry to target/objective. -Movement to target's critical element. -Exfiltration. 	<ul style="list-style-type: none"> •Active & passive EWS. •Detection devices. •AD capabilities within target area. •Road & rail transportation systems. •Type terrain & its use. •Concealment & cover. •Population density. •Other natural or synthetic obstacles & barriers. •Current & climatic weather conditions. •Analysis along each critical path to target should measure time it would take for action element to bypass, neutralize, or penetrate barriers/obstacles. •Measured by relative ease or difficulty of movement for operational element & likelihood of detection. Consider using standoff weapons in such evaluations. 	<ul style="list-style-type: none"> •Easily accessible standoff weapons can be employed. 	9 to 10
			<ul style="list-style-type: none"> •Inside a perimeter fence but outdoors. 	7 to 8
			<ul style="list-style-type: none"> •Inside a building but on ground floor. 	5 to 6
			<ul style="list-style-type: none"> •Inside a building but on second floor or in a basement; climbing or lowering is required. 	3 to 4
			<ul style="list-style-type: none"> •Not accessible or inaccessible without extreme difficulty. 	1 to 2

Figure F-12. CARVER techniques (continued).

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
Recuperability	<ul style="list-style-type: none"> •Measured in time—How long will it take to replace, repair, or bypass destruction of or damage to the target? •Varies with sources and type of targeted components and availability of spare parts availability. 	<ul style="list-style-type: none"> •Onhand equipment such as railroad cranes, dry docks, and cannibalization. •Restoration and substitution through redundancies. •Onhand spares. •Equivalent OB equipment sets that backup critical equipment or components; effects of economic embargoes and labor unrest. 	<p>Replacement, repair, or substitution requires—</p> <ul style="list-style-type: none"> •1 month or more. •1 week to 1 month. •72 hours to 1 week. •24 to 72 hours. •Same day replacement, repair, or substitution. 	<p>9 to 10</p> <p>7 to 8</p> <p>5 to 6</p> <p>3 to 4</p> <p>1 to 2</p>
Vulnerability	<ul style="list-style-type: none"> •Target is vulnerable if operational element has means & expertise to successfully attack the target. •Scale of critical component needs to be compared with capability of attacking element to destroy or damage it. •Attacking element may tend to— <ul style="list-style-type: none"> –Choose special components. –Do permanent damage. 	<ul style="list-style-type: none"> •Depends on— <ul style="list-style-type: none"> –Nature and construction of the target. –Amount of damage required. –Assets available, (e.g., personnel, expertise, motivation, weapons, explosives, and equipment.) 	<ul style="list-style-type: none"> •Vulnerable to long-range laser target designation, small arms fire, or charges of 5 lbs or less. •Vulnerable to light antiarmor weapons fire or charges of 5 to 10 lbs. 	<p>9 to 10</p> <p>7 to 8</p>

Figure F-12. CARVER techniques (continued).

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
Effect	<ul style="list-style-type: none"> -Maximize effects through use of onsite materials. -Cause the target to self-destruct. 		<ul style="list-style-type: none"> •Vulnerable to medium antiarmor weapons fire, bulk charges of 10 to 30 lbs, or very careful placement of smaller charges. 	5 to 6
			<ul style="list-style-type: none"> •Vulnerable to heavy antiarmor fire, bulk charges of 30 to 50 lbs, or requires special weapons. 	3 to 4
			<ul style="list-style-type: none"> •Invulnerable to all but the most extreme targeting measures. 	1 to 2
	<ul style="list-style-type: none"> •Measure of possible military, political, economic, psychological & sociological impacts at target & beyond. •Closely related to the measure of target criticality. •Type & magnitude of given effects desired will help planners select targets & target components. 	<ul style="list-style-type: none"> •Primary effect of destruction of 2 adjacent long-range radar sites in EWS may be to open hole in system that is of sufficient size & duration to permit attacker to launch a successful air or missile nuclear strike against defender. 	<ul style="list-style-type: none"> •Overwhelmingly positive effects; no significant negative effects. 	9 to 10
			<ul style="list-style-type: none"> •Moderately positive effects; few significant negative effects. 	7 to 8
			<ul style="list-style-type: none"> •No significant effects; neutral. 	5 to 6
			<ul style="list-style-type: none"> •Moderately negative effects; few significant positive effects. 	3 to 4

Figure F-12. CARVER techniques (continued).

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
	<ul style="list-style-type: none"> •Addresses all significant effects, whether desired or not, that may result once selected target component is attacked. •Traditionally, this element addressed effect on local population; now there are broader considerations. •Frequently neutral at tactical level. 	<ul style="list-style-type: none"> •Can include— <ul style="list-style-type: none"> –Triggering of counter-measures. –Support of negation of PSYOP themes. –Unemployment. –Reprisals against civilian population. –Collateral damage to other targets. •Possible effects can be speculative & thus should be labeled. •Effects of same attack may be different at tactical, operational & strategic levels. <p>EXAMPLE: Destruction of a substation may not affect local power but cuts off power to adjacent region.</p>	<ul style="list-style-type: none"> •Overwhelmingly negative effects; no significant positive effects. 	<p>1 to 2</p>

Figure F-12. CARVER techniques (continued).

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
Recognizability	<ul style="list-style-type: none"> •Target's recognizability is degree to which it can be recognized by an operational element or intel collection & recon assets under varying conditions. •Weather impacts visibility. •Rain, snow & ground fog may obscure observation. 	<ul style="list-style-type: none"> •Site & complexity of target. •Existence of distinctive target signatures. •Presence of masking or camouflage. •Technical sophistication & training of attackers. 	<ul style="list-style-type: none"> •Target is clearly recognizable under all conditions & from a distance; requires little or no training. 	9 to 10
	<ul style="list-style-type: none"> •Road segments with sparse vegetation & adjacent high ground provide excellent conditions for good observation. •Distance, light & season must also be considered. 		<ul style="list-style-type: none"> •Target is easily recognizable at small-arms range & requires small amount of training. 	7 to 8
			<ul style="list-style-type: none"> •Target is difficult to recognize at night or in bad weather, or might be confused with other targets or components; requires some training. 	5 to 6
			<ul style="list-style-type: none"> •Target is difficult to recognize at night or in bad weather, even within small-arms range; it is easily confused with other targets or components; requires extensive training. 	3 to 4
			<ul style="list-style-type: none"> •Target cannot be recognized under any conditions, except by experts. 	1 to 2

	DESCRIPTION	FACTORS	CRITERIA & VALUES*	SCALE
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Figure F-12. CARVER techniques (continued).

CARVER factors and their assigned values are used to construct a CARVER matrix. Table F-1 is a tool for rating the desirability of potential targets and allocating attack resources.

- List the potential targets in the left column.
- For strategic level analysis, list the enemy's systems or subsystems (electric power supply, rail system).
- For tactical level analysis, list the complexes or components of the subsystems or complexes selected for attack by your higher HQ.
- As each potential target is evaluated for each CARVER factor, enter the appropriate value into the matrix.
- Once all the potential targets have been evaluated, add the values for each potential target.
- The sums represent the relative desirability of each potential target; this constitutes a prioritized list of targets.
- Attack those targets with the highest totals first.
- If additional men or munitions are available, allocate these resources to the remaining potential targets in descending numerical order.
- This allocation scheme will maximize the use of limited resources.

The S2 can use the CARVER matrix to present operation planners with a variety of attack options. With the matrix, he can discuss the strengths and weaknesses of each COA against the target. Having arrived at conclusions through the rigorous evaluation process, the S2 can comfortably defend his choices.

Table F-1. Bulk electric power supply.

POTENTIAL TARGETS	C	A	R	V	E	R	TOTAL
Fuel Tanks	8	9	3	8	5	6	41
Fuel Pumps	8	6	2	10	5	3	34
Boilers	6	2	10	4	5	4	31
Turbines	8	6	10	7	5	9	45
Generators	4	6	10	7	5	9	41
Condenser	8	8	5	2	5	4	34
Feed Pumps	3	8	5	8	5	6	33
Water Pumps	3	8	5	8	5	4	33
Generator Step up Transformer	10	10	10	9	5	9	53