

## APPENDIX D

### FM 34-130: Intelligence Preparation of the Battlefield

#### CHAPTER 1

#### INTRODUCTION

*If I always appear prepared, it is because before entering on an undertaking, I have meditated for long and foreseen what may occur.*

--Napoleon Bonaparte, 1831

IPB is the best process we have for understanding the battlefield and the options it presents to friendly and threat forces.

#### ***What is IPB?***

IPB is a systematic, continuous process of analyzing the threat and environment in a specific geographic area. It is designed to support staff estimates and military decision making. Applying the IPB process helps the commander selectively apply and maximize his combat power at critical points in time and space on the battlefield by--

- Determining the threat's likely COA.
- Describing the environment your unit is operating within and the effects of the environment on your unit.

IPB is a continuous process which consists of four steps which you perform each time you conduct IPB:

- Define the battlefield environment.
- Describe the battlefield's effects.
- Evaluate the threat.
- Determine threat COAs.

The IPB process is continuous. You conduct IPB prior to and during the command's initial planning for an operation, but you also continue to perform IPB during the conduct of the operation. Each function in the process is performed continuously to ensure that--

- The products of IPB remain complete and valid.
- You provide support to the commander and direction to the intelligence system throughout the current mission and into preparation for the next.

A brief overview of each function is presented below. For a thorough discussion, see Chapter 2.

#### **Step 1. Define the Battlefield Environment**

In step 1 of the IPB process, the G2/S2--

- Identifies characteristics of the battlefield which will influence friendly and threat operations.
- Establishes the limits of the area of interest (AI).
- Identifies gaps in current intelligence holdings.

This focuses the command's initial intelligence collection efforts and the remaining steps of the IPB process.

To focus the remainder of the IPB process, the G2/S2 identifies characteristics of the battlefield which require in-depth evaluation of their effects on friendly and threat operations, such as terrain, weather, logistical infrastructure, and demographics. Generally, these are analyzed in more detail for areas within the command's area of operations (AO) and battle space than for other areas in the AI.

The G2/S2 establishes the limits of the AI to focus analytical and intelligence collection efforts on the geographic areas of significance to the command's mission. He bases the AI's limits on the amount of time estimated to complete the command's mission and the location and nature of the characteristics of the battlefield which will influence the operation. If the command has not been assigned an AO, the G2/S2 coordinates with the G3/S3 to develop a joint recommendation on its limits for the commander's approval. Similarly, the G2/S2 confers with the G3/S3 on recommendations for the command's battle space during development of friendly COAs.

Defining the significant characteristics of the battlefield environment also aids in identifying gaps in current intelligence holdings and the specific intelligence required to fill them. Similarly, the G2/S2 identifies gaps in the command's knowledge of the threat and the current threat situation.

Once approved by the commander, the specific intelligence required to fill gaps in the command's knowledge of the battlefield environment and threat situation becomes the command's initial intelligence requirements.

## **Step 2. Describe the Battlefield's Effects**

Step 2 evaluates the effects of the environment with which both sides must contend. The G2/S2 identifies the limitations and opportunities the environment offers on the potential operations of friendly and threat forces. This evaluation focuses on the general capabilities of each force until COAs are developed in later steps of the IPB process.

This assessment of the environment always includes an examination of terrain and weather but may also include discussions of the characteristics of geography and infrastructure and their effects on friendly and threat operations.

Characteristics of geography include general characteristics of the terrain and weather, as well as such factors as politics, civilian press, local population, and demographics. An area's

infrastructure consists of the facilities, equipment, and framework needed for the functioning of systems, cities, or regions. Products developed in this step might include, but are not limited to--

- Population status overlay.
- Overlays that depict the military aspects and effects of terrain.
- Weather analysis matrix.
- Integrated products such as modified combined obstacle overlays (MCOOs).

Regardless of the subject or means of presentation, the G2/S2 ensures that these products focus on the *effects* of the battlefield environment.

### Step 3. Evaluate the Threat

In step 3, the G2/S2 and his staff analyze the command's intelligence holdings to determine how the threat normally organizes for combat and conducts operations under similar circumstances. When facing a well-known threat, the G2/S2 can rely on his historical data bases and well developed threat models. When operating against a new or less well-known threat, he may need to develop his intelligence data bases and threat models concurrently.

The G2/S2's evaluation is portrayed in a threat model that includes doctrinal templates which depict how the threat operates when unconstrained by the effects of the battlefield environment. Although they usually emphasize graphic depictions (doctrinal templates), threat models sometimes emphasize matrices or simple narratives.

### Step 4. Determine Threat COAs

Step 4 integrates the results of the previous steps into a meaningful conclusion. Given what the threat normally prefers to do, and the effects of the specific environment in which he is operating now, what are his likely objectives and the COAs available to him? In step 4, the G2/S2 develops enemy COA models that depict the threat's available COAs. He also prepares [event](#) templates and matrices that focus intelligence collection on identifying which COA the threat will execute.

The enemy COA models developed in step 4 are the products that the staff will use to portray the threat in the decision making and targeting processes. The G2/S2 cannot produce these models, effectively predicting the threat COAs, unless he has--

- Adequately analyzed the friendly mission throughout the time duration of the operation; identified the physical limits of the AO and AI; and identified every characteristic of the battlefield environment that might affect the operation (step 1).
- Identified the opportunities and constraints the battlefield environment offers to threat and friendly forces (step 2).
- Thoroughly considered what the threat is capable of and what he prefers to do in like situations if unconstrained by the battlefield environment (step 3).

In short, the enemy COA models which drive the decision making process are valid only if the G2/S2 establishes a good foundation during the first three steps of the IPB process.

### **Who Conducts IPB?**

Everyone in the US Army conducts some form of IPB. For example:

- A rifleman in an infantry fire team considers the possible actions of the enemy soldier he is about to engage. He also considers how the local terrain and weather affect both himself and his adversary.
- An armor company commander considers the possible actions of the enemy battalion that he is about to engage. He also considers how terrain affects the enemy's COAs and the accomplishment of his own mission.

Both of these examples illustrate an informal application of IPB; that is, describe the effects of the battlefield and determine the threat's COAs. It is the application of battlefield common sense. At this level it requires little formal education beyond realistic field training exercises (FTXs) against a "savvy" enemy.

As the size of the unit increases, the level of detail required in the IPB effort increases significantly. An armored company commander's informal IPB produces little more than an appreciation of what the threat is most likely to do during their engagement. A division staffs IPB can produce--

- Detailed terrain analysis products.
- Climatic summaries.
- Detailed studies of the threat, his equipment, and his doctrine.
- A comprehensive set of enemy COA models depicting a broad range of possible threat COAs.

Any unit large enough to have a staff (S1, S2, S3, and S4) develops at least some of the formal IPB products described in this manual. The G2/S2 has staff responsibility for the command's IPB--that IPB which directly supports the decision making process. The G2/S2, however, is not the only one who conducts or needs to understand and use IPB.

**Every commander and every member of the staff needs to understand and apply IPB during the staff planning process.** IPB identifies the facts and assumptions about the battlefield and the threat that allow effective staff planning. IPB forms the basis for defining the COAs available to the friendly command and drives the wargaming process that selects and refines them.

The G2/S2 is responsible for facilitating the unit IPB effort, but he and his staff cannot provide all the IPB the unit requires. Every commander and staff officer needs to think through the effects the environment has on both threat and friendly operations.

Furthermore, every staff officer should prepare detailed IPB products tailored for his own functional area. For example:

- A division electronic warfare (EW) officer will expand and refine the division all-source production section's (ASPS) IPB products to include electronic preparation of the battlefield.
- The engineer liaison for a brigade staff refines and customizes the S2's enemy COA models to show threat options for the employment of obstacles or breaching equipment.
- The counterintelligence analysis section (CIAS) refines the ASPS's IPB products to focus on the threat's intelligence system and its collection capabilities.
- A division air defense artillery (ADA) officer uses the ASPS's IPB products as the basis for developing enemy air COA models and supporting event templates and matrices.
- Staff officers in the support operations section refine the ASPS's IPB products to focus on the logistics support mission and prepare IPB products for their specific functional areas.
- The chemical staff officer refines the ASPS's enemy COA models to show the enemy's options for employing nuclear, biological, and chemical (NBC) weapons. This allows refinement of the NBC reconnaissance support plan and enhances contamination avoidance tactics and techniques.

The bottom line is that every soldier conducts IPB. Every soldier thinks through an informal IPB procedure, but commanders and staff officers undertake a more formal process.

### Doctrine Versus Tactics, Techniques, and Procedures

The doctrinal principles of IPB are sound and can be applied to all situations at all levels. The tactics, techniques, and procedures (TTP) of applying IPB may vary according to the mission, enemy, terrain, troops, and time available (METT-T) situation.

The doctrinal principles of IPB call for--

- Evaluating the battlefield's effects on friendly and threat operations.
- Determining the threat's possible COAs and arranging them in order of probability of adoption.
- Identifying assets the threat needs to make each COA successful (high value targets [HVTs]) and where they can be expected to appear on the battlefield (target areas of interest [TAIs]).
- Identifying the activities, or lack of, and the locations where they will occur that will identify which COA the threat has adopted.

The decision to use a sketch instead of an overlay to depict the battlefield's effects or the threat's available COAs is a matter of TTP. Such decisions can only be made within the context of a given situation. Similarly, the amount of detail that goes into each step of the IPB process, the techniques for depicting areas of RESTRICTED terrain, and other such decisions are also driven by factors of METT-T and local policies and procedures.

## What IPB Accomplishes

IPB identifies facts and assumptions about the battlefield environment and the threat. This enables staff planning and the development of friendly COAs.

IPB provides the basis for intelligence direction and synchronization that supports the command's chosen COA.

IPB contributes to complete staff synchronization and the successful completion of several other staff processes, which are described below.

## IPB and the Intelligence Estimate

In order to facilitate staff planning, the G2/S2 prepares the intelligence estimate before the remainder of the staff completes their own estimates if at all possible. The intelligence estimate forms the basis for the facts and assumptions of the decision making process, driving the other staff estimates and the remaining steps in the decision making process. The products of IPB are the basis of the intelligence estimate. In fact, if the G2/S2 lacks the time required to prepare a written estimate, he can usually substitute graphics that depict the results of his IPB evaluations and analysis.

Paragraph 1, **MISSION**, of the intelligence estimate restates the command's mission.

Paragraph 2, **AREA OF OPERATIONS**, which is derived from step 2 of the IPB process, describes the battlefield's effects. The most important subparagraphs of paragraph 2 are the "effects on enemy COAs" and "effects on own COAs." These sections describe the battlefield's impact on operations.

Paragraph 3, **ENEMY SITUATION**, is derived from step 3 of the IPB process, **evaluate the threat**. This is primarily a discussion of what is known about the threat (facts) and the results of analysis of those facts (assumptions).

Paragraph 4, **ENEMY CAPABILITIES**, is derived from step 4 of the IPB process, **determine threat COAs**. This is a listing and discussion of the COAs available to the threat. These COAs should exactly correspond with the enemy COA models developed in step 4 of the IPB process.

Paragraph 5, **CONCLUSIONS**, is derived from the evaluations made during the IPB process. Here you summarize the effects of the battlefield environment on friendly and enemy COAs, list the set of probable threat COAs (in order of probability of adoption), and list the threat's exploitable vulnerabilities.

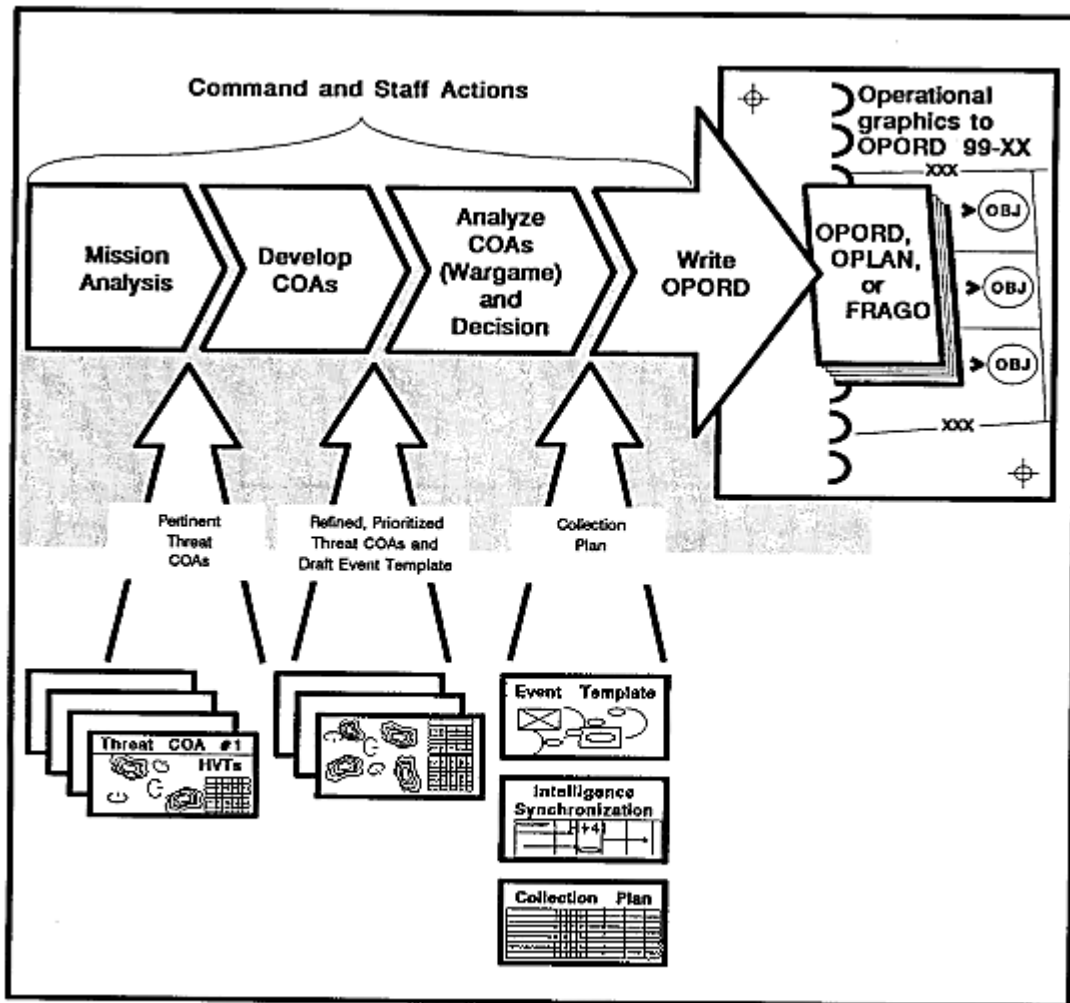
## IPB and the Decision Making Process

Commanders and staffs use the decision making process to select a COA and develop an operations plan (OPLAN), operations order (OPORD), or fragmentary order (FRAGO) that

implements it. The results and products of IPB, conveyed in the intelligence estimate, are essential elements of the decision making process. Accordingly, the major IPB effort occurs before and during the first of five steps in the decision making process.

The decision making process is a dynamic and continuous process. The staff continues to estimate the situation as the operation progresses, adapting the command's COA to unforeseen changes in the situation. The IPB which supports the decision making process must also remain dynamic, constantly integrating new information into the initial set of facts and assumptions.

The relationship of the IPB process to each step in the decision making process is discussed below (see Figure 1-1).



**Figure 1-1. The S2 or G2 must support the tactical decision making process with specific products.**

**Mission Analysis:**

In this step IPB products enable the commander to assess facts about the battlefield and make assumptions about how friendly and threat forces will interact on the battlefield.

The description of the battlefield's effects identifies constraints on potential friendly COAs and may reveal implied missions. It also identifies opportunities the battlefield environment presents, such as avenues of approach, engagement areas, and zones of entry, which the staff integrates into potential friendly COAs and their staff estimates.

Enemy capabilities and vulnerabilities identified during evaluation of the threat allow the commander and staff to make assumptions about the relative capabilities of the friendly command. Threat evaluation also provides the detailed information on the threat's current dispositions, recent activities, equipment, and organizational capabilities the staff needs to complete their own staff estimates and planning.

Enemy COA models developed in step 4 of the IPB process, **Determine Threat COAs**, provide a basis for formulating potential friendly COAs and complete the intelligence estimate.

The IPB process identifies any critical gaps in the command's knowledge of the battlefield environment or threat situation. As part of his initial planning guidance, the commander uses these gaps as a guide to establish his initial intelligence requirements.

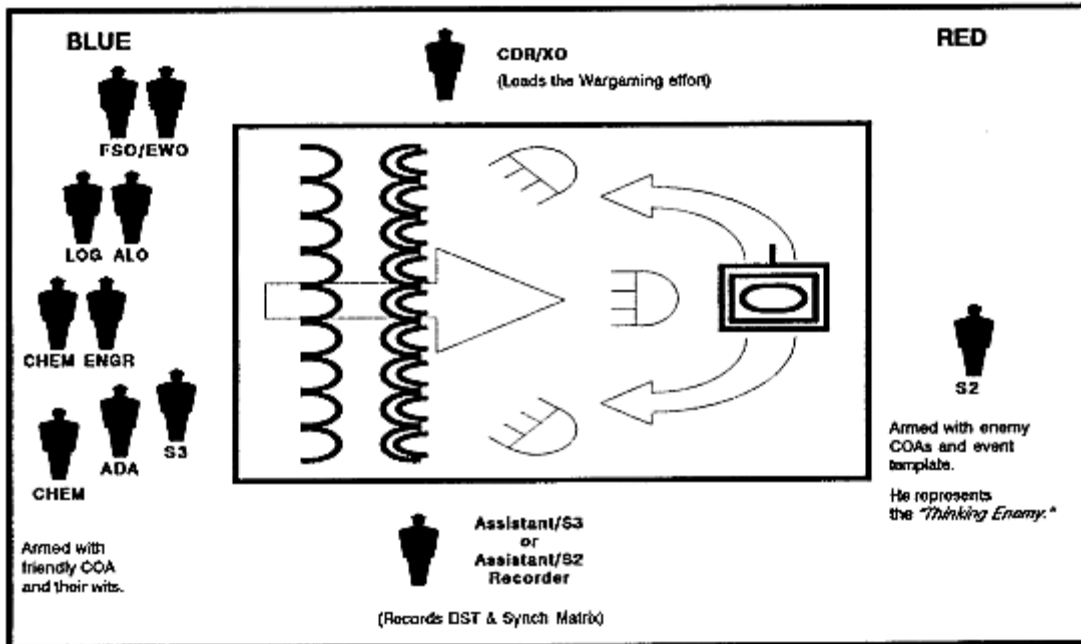
#### **Develop Courses of Action:**

The staff develops friendly COAs based on the facts and assumptions identified during IPB and mission analysis. Incorporating the results of IPB into COA development ensures that each friendly COA takes advantage of the opportunities the environment and threat situation offer and is valid in terms of what they will allow.

#### **Analyze and Compare COAs:**

During the wargaming session the staff "fights" the set of threat COAs, developed in step 4 of the IPB process, against each potential friendly COA. Targeting conferences follow or accompany the wargaming session to refine selected HVTs from the enemy COA models into high-payoff targets (HPTs) that support the friendly COA. Figure 1-2 shows this wargaming.





**Figure 1-2. Wargaming.**

Based on the results of wargaming, for each potential friendly COA, the staff--

- Constructs a decision support template (DST) and its associated synchronization matrix.
- Identifies supporting intelligence requirements.
- Refines the enemy COA models and event templates and matrices, focusing on the intelligence required to execute the friendly COA.
- Arranges the threat COAs in order of probability of adoption. (There may be a different order of probability for each potential friendly COA.)
- Identifies the most dangerous threat COA.
- Refines the friendly COA, to include identifying the need for branches and sequels.
- Determines the probability of success of the friendly COA.

The results of wargaming each potential friendly COA against the set of enemy COA models allows the staff to make a recommendation on the best friendly COA. The G2/S2's recommendation includes an evaluation of the intelligence system's ability to provide the intelligence needed to support each COA.

Appendix A discusses in more detail the relationship between IPB and wargaming.

**Decision:**

Following staff recommendations, the commander decides upon a COA and issues implementing orders. He also approves the list of intelligence requirements associated with that COA and identifies the most important as priority intelligence requirements (PIR). The command's collection manager uses the results of IPB to develop and implement a collection plan that will satisfy these requirements (see IPB and the Collection Management Process).

**Execution:**

As intelligence confirms or denies planning assumptions on the battlefield environment or the threat's COA, a continuous IPB process identifies new intelligence requirements. As the battle progresses, IPB is used to continuously evaluate the situation facing the command, driving new iterations of the decision making process and the directing step of the intelligence cycle.

For a complete discussion of the decision making process, see FM 101-5.

**IPB and the Targeting Process**

The targeting process results in targeting guidance that supports the command's COA. This guidance generates additional intelligence requirements in support of each potential friendly COA the targeting process supports.

**Decide:**

As part of COA analysis and comparison, or immediately after, the staff generally starts the targeting process with a targeting conference. Using the results of staff wargaming and IPB as a guide, they decide--

- What targets to acquire and attack (HPTs).
- What target selection standards (accuracy and timeliness) to use.
- Where and when these targets will likely be found (named area of interest [NAI] and TAI).
- How to attack the targets, based on the commander's targeting concept.
- Whether battle damage assessment (BDA) on each target is required to support the commander's intent or the command's COA, and how detailed it must be.

TARGET CATEGORY	HPTs <sup>1</sup>	WHEN	HOW	RESTRICTIONS
1. C <sup>3</sup>	46, 48	I	N and EW	Coordinate attack with EW
2. FS	1, 2, 7	A	N	Do not execute MRL older than 10 minutes
3. MANEUVER	25, 28	A	S	Last volley RAAMS/ADAM
4. ADA	58	P	S2 or G2	SEAD program 120800A
5. ENGR	58	P	N	Counter-mobility program O/O
6. RISTA	103, 105	P	EW	
7. REC	111, 112	P	N	
8. NUCLEAR/CHEMICAL		I	D	Accuracy 0 to 200 meters BDA required
9. BULK FUELS		A	D	
10. AMMO		A	D	
11. MAINTENANCE		P	N	Not HVT nor HPT
12. LIFT		P	N	Not HVT nor HPT
13. LOC		P	N and G3	Not HVT nor HPT - no FASCAM

<sup>1</sup> Numbers refer to target spread sheets (FM 6-20-10). This is only a type attack guidance matrix. The G3 or S3 and the FSE develop actual matrices on the basis of the tactical situation.

LEGEND:	I = Immediate	A = As acquired	S = Suppress
	P = Planned	N = Neutralize	D = Destroy

Figure 1-3. IPB supports development of the attack guidance matrix.

The targeting team further refines the event templates and matrices to include the information required to support targeting. Figure 1-3 shows an example attack guidance matrix.

## **Detect:**

During this step the command's collection manager develops collection strategies that will satisfy specific information requirements which support the targeting process. He plans for synchronized collection, focusing on the proper HPT at each phase in the command's COA. If BDA is required to support the command's COA, the collection manager plans collection to satisfy that set of requirements as well. Whenever possible, he plans and arranges direct dissemination of targeting intelligence from the collector to the targeting cell or appropriate tire support element (FSE).

## **Deliver:**

IPB structures the analysis that enables the G2/S2 to advise the commander and fire support officer (FSO) on the execution of the tire support plan.

For a complete discussion of the targeting process, see FM 6-20-10.

### **IPB and the Collection Management Process**

Collection management synchronizes the activities of organizations and systems to provide intelligence the commander needs to accomplish his COA and targeting efforts. IPB helps the commander identify his intelligence requirements and provides the focus and direction needed to satisfy them.

The commander bases his initial intelligence requirements on the critical gaps identified during IPB in the **mission analysis** step of the decision making process. Refined and updated requirements result from staff wargaming and selection of a particular friendly COA.

During staff wargaming, the G2/S2 uses the enemy COA models developed in step 4 of the IPB process to portray the enemy. The remainder of the staff "fights" each potential friendly COA and notes where and when in its execution decisions are required to make the COA successful. They also determine the specific intelligence required to support each decision and record it onto the list of proposed intelligence requirements. When the commander selects a particular friendly COA, he also approves and prioritizes the supporting intelligence requirements.

IPB supports further development of requirements by identifying the activity which will satisfy each requirement and where and when the activity is expected to occur. The event template identifies the NAI where the activity will occur. The event matrix describes the indicators associated with the activity. Both the event template and event matrix depict the times during which the activity is expected to occur. The details these tools provide are the basis of an effective intelligence collection plan.

IPB products also contribute to the development of staff synchronization tools such as the DST and battlefield operating system (BOS) synchronization matrix, shown in Figure 1-4. The collection manager uses these additional tools to ensure that the collection plan stays synchronized with the command's operations. The resulting intelligence synchronization matrix

(ISM), as shown in Figure 1-5, depicts the collection strategies which support the command's COA.

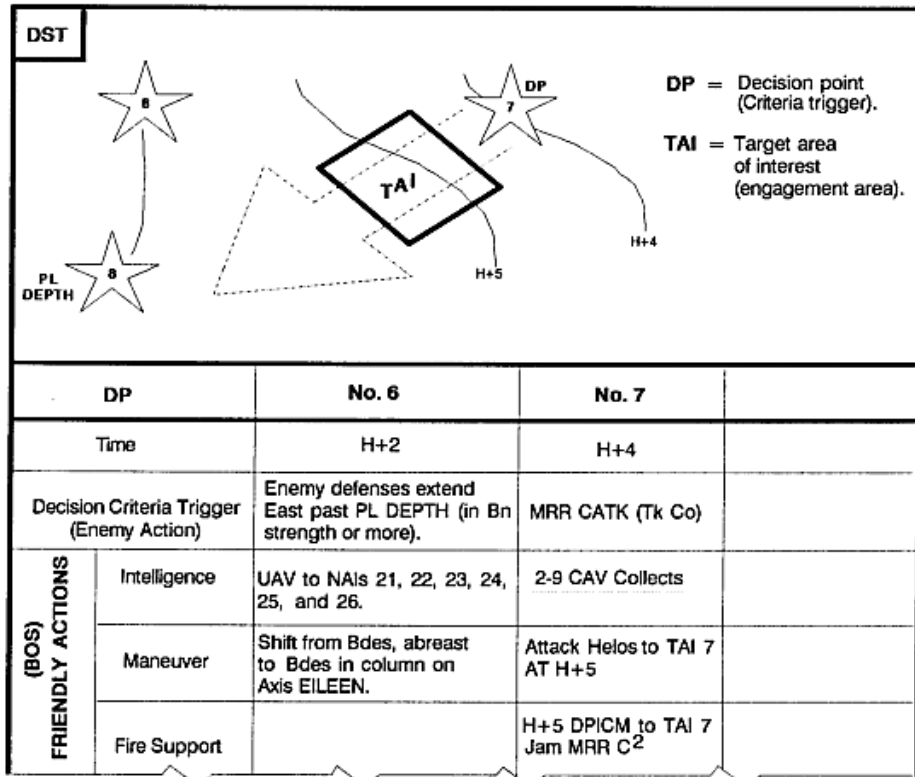


Figure 1-4. The DST and BOS synchronization matrix record the results of wargaming.

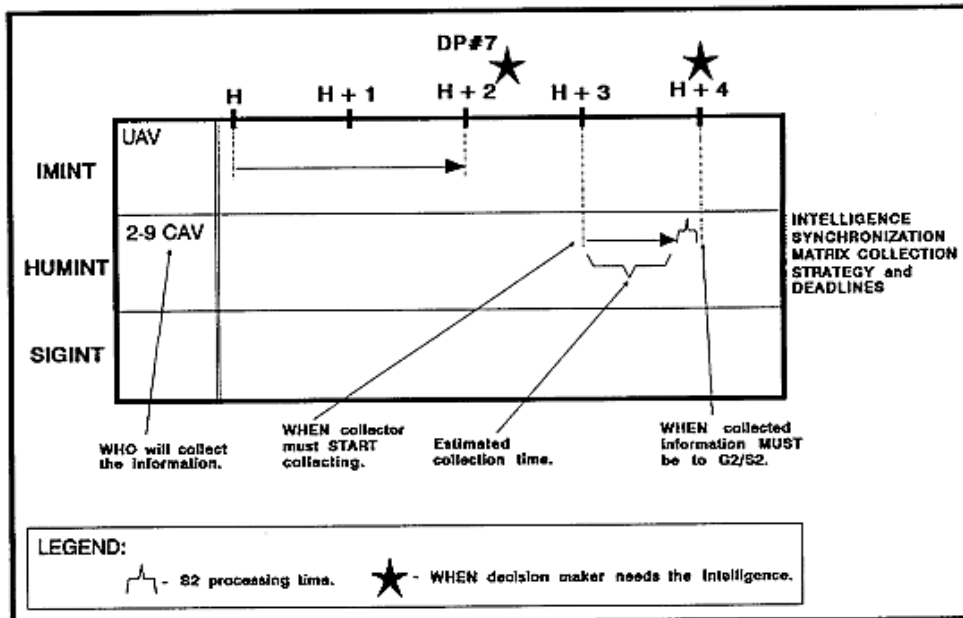


Figure 1-5. The Intelligence synchronization matrix.

Intelligence synchronization is more than simply ensuring that collection systems of various sorts are operating 24 hours a day. The G2/S2 must direct the intelligence system, receive the information it produces, process it and then produce and disseminate intelligence of value to the commander in time to support his decisions. The coordination of this entire cycle is *intelligence synchronization*.

FM 34-2 discusses intelligence synchronization and the collection management process in detail.

### **IPB and the Command and Staff Execution of Battle**

IPB provides the G2/S2 the tools he needs to quickly evaluate incoming information and intelligence as it relates to the command's ISM and DST. This supports the commander's decisions during COA execution and helps him to quickly confirm or deny the assumptions used during COA development.

During battle, the commander and staff track the DST and the ISM against incoming reports. As the staff nears each decision point (DP), they look to the G2/S2 for the intelligence that supports that decision.

Sometimes the battle will progress in a direction unanticipated during the initial IPB and wargaming. The enemy is following his own plans and timelines; those determined during staff wargaming are only estimates. Therefore, staffs should ensure they use IPB, wargaming, and intelligence synchronization as dynamic tools rather than as one-time events. As the operation unfolds and the enemy's intentions become more clear, reinstate the IPB and decision making processes as needed. This requires key members of the staff to "huddle" or conduct "mini-wargaming." During these sessions, the G2/S2 reviews and modifies the initial IPB. The battle staff then wargames the best friendly response or preemptive action based on the updated set of IPB predictions. New decisions and COAs lead to updating and refining the collection plan, intelligence synchronization, and new decision support tools.

### **How IPB Relates to Everything Else**

IPB is an essential element of the intelligence cycle. The products developed during IPB are so critical to this cycle and the staff planning effort that it is a distinct function. There are six intelligence and electronic warfare (IEW) tasks described in FM 34-1, the Army's intelligence principles manual. They are to develop--

- IPB products.
- Situation development products.
- Indications and warnings (I&W) products.
- Target development and target acquisition products.
- BDA products.
- Force protection products.

These IEW functions are accomplished within the Intelligence System of Systems (ISOS) to respond to the commander's intelligence needs. The ISOS is the flexible architecture of

procedures, organizations, and equipment that collect, process, store, and disseminate intelligence. The G2/S2 uses IPB products to process volumes of information provided by the ISOS and the intelligence cycle.

IPB products also enable staffs to exploit the modern technology of the ISOS by focusing collection systems that now provide near-real-time (NRT) information in sufficient accuracy to conduct direct targeting. IPB not only enables a staff to put steel on target but also helps prioritize and maximize the effects of targeting. IPB plays a critical role in the decision making process. Finally, the commander leads the IPB effort. The entire staff executes the IPB process.

The military intelligence (MI) unit commander is not responsible for the supported command's IPB. However, the MI unit commander will use the IPB process to support his own unique planning requirements. Some of these involve employment of the ISOS assets under his control.