INTELLIGENCE PREPARATION OF THE BATTLEFIELD

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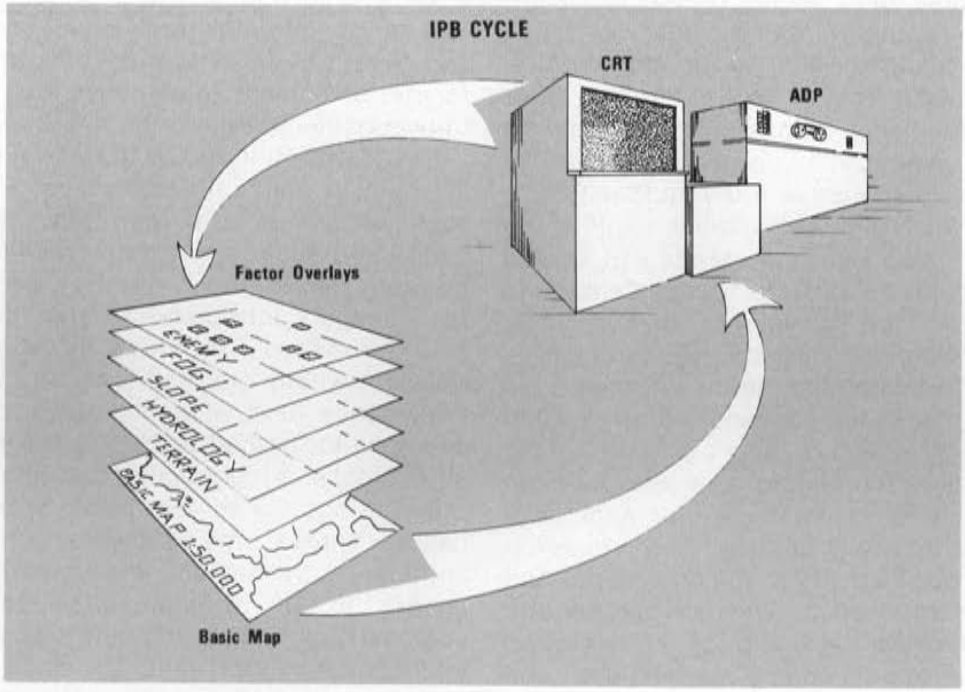
As readers of the **MI Magazine** you may be aware of significant changes that have occurred within military intelligence for improving support to the tactical commander. Tactical intelligence doctrine and training are currently undergoing intensive review and revision at the Intelligence Center in order to insure that MI personnel are "fully equipped" to meet the challenges of the future. One of the projects concerned with this effort is called "Intelligence Preparation of the Battlefield" or short title: IPB.

At the outset, rest assured that this is not another attempt at "redesigning the wheel." That's why BG Eugene Kelley, Jr., Commander, United States Army Intelligence Center and School (USAICS) when he approved the concept on 13 November 1975, said, "IPB is not new; we've been doing much of it all along." What is new is the "standardization of techniques of tactical intelligence analysis." Therein lies the essence of IPB. But it goes beyond that because it is a practical approach to helping G2/S2 personnel provide better support to the commander.

IPB has its doctrinal base in draft FM 100-5, OPERATIONS, Chapter VII, Intelligence. Chapter VII, succinctly stated, is the "mission statement" of tactical intelligence support to the commander. The commanders will expect the type of support expressed in Chapter VII and we can do no less than meet the challenge. Implied within the mission statement are two major requirements; one — the training of high quality human resources and two, — the full integration of Automatic Data Processing (ADP) support systems to assist the G2/S2 in the accomplishment of their mission.



It's time for a definition so that we are all oriented from the same start point: *"IPB is a procedure that provides for the maximum integration and analysis of the factors of combat intelligence, weather, enemy, and terrain to enable the commander to exploit his knowledge of the enemy relative to the advantages and limitations of weather and terrain, to tilt combat power in his favor."* IPB standardizes tactical intelligence analysis through the use of graphics such as annotated maps and photographs, overlays and templates as aids to analysis and a means of disseminating intelligence. It emphasizes the use of graphics, discrete symbology and colors to communicate intelligence information to the generals, colonels, and captains. IPB will rely heavily on ADP graphical display systems and a supporting digitized data base to provide the commander with the best information available. Lastly, IPB includes the development of tactical intelligence analytical techniques, ADP-CRT display and digitized intelligence data base system requirements necessary to meet the decision-making needs of the commander in the next decade.

Here are some of the things the IPB project is doing at the present time:

a. Information requirements concerning terrain and weather factors are being developed in accordance with the intelligence needs of the generals, colonels, and captains.

b. A model of a sector of the SCORES, Europe I scenario using IPB is being developed against which future IPB requirements will be tested. Nine terrain factor overlays are being prepared by the Defense Mapping Agency, Topographic Center (DMATC) in response to this requirement.

c. The analytical techniques of IPB are being integrated into appropriate officer and enlisted courses at the Intelligence Center and will provide the basis for standardizing tactical intelligence analysis. IPB can best be accomplished using the "hands on" method of training either in the classroom or on the job in field units.

d. Doctrinal templating of enemy combat power elements is under development as a means of graphically tailoring enemy predictable patterns of activity to the advantages and limitations imposed by weather and terrain. This will provide the basis for more precise predictions about enemy capabilities and intentions in an actual combat situation.

e. ADP compatible combat power symbology is under development to relate type, number, range and mobility of enemy weapons systems at various scales such as 1:250,000, 1:50,000 (and possibly greater scales) for use by the commander as he focuses from the macro to the micro perspective of the battlefield.

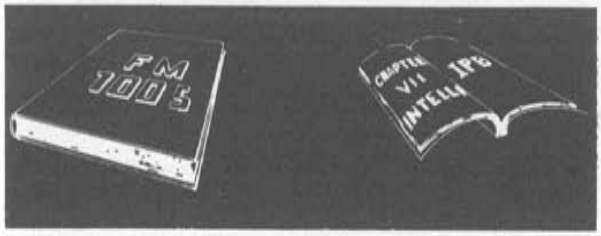
f. A training circular on IPB is being developed which will include tactical intelligence analysis techniques (weather, enemy and terrain), combat power symbology and doctrinal templating.

Military history is full of examples about how military engagements were won or lost due to the commander's use of terrain and his recognition of the effects of weather. In order to exploit, however, the advantages and limitations of terrain and weather, the commander must have a G2/G3 team with the imagination and innovative expertise to achieve the proper degree of military advantage at the right time and place. Despite what the lessons of history may tell us, one thing is imminently clear about the battlefield scenario of the next decade — nothing can be left to chance or luck because of a training deficiency. Opposing force commanders have one basic thing in common; they will both be engaged on the same piece of terrain. If relative combat power factors are near equal then the use of terrain and weather holds the key to victory or defeat. But when you already acknowledge that you will be outnumbered and outgunned, the importance of weather and terrain loom even more significantly as factors of combat intelligence that must be fully considered before the next battle.

FM 30-10, Military Geographic Intelligence (Terrain), contains the basic factors of terrain such as surface configuration, vegetation, hydrology, soils, climate and weather, built-up areas, roads, trails, etc. Few people other than imagery interpreters are really familiar with this manual. Until recently, MI personnel were not wholly oriented towards the tactical intelligence field. Vietnam proved the value and need for trained intelligence personnel at all echelons of command. But like so many other things, once the need becomes apparent, it takes time to overcome the lack of sufficiently trained and experienced MI personnel to fill requirements. The career emphasis is now being shifted to tactical intelligence support, and our once parochial attitudes changed away from the more exotic

specialties to those that give the commander the best support.

The use of annotated maps, overlays, and photography are techniques we have all used at one time or another in conducting an analysis of the area of operations. Those of you who have served in a tactical unit have probably made use of many products available through your local Engineer Topographic support element. Perhaps DMATC and/or Engineer Topographic Laboratories, Fort Belvoir, VA, have prepared special products such as cross-country movement, fields of fire, orthopicto maps, etc., of certain areas of operation based on specific requirements. On the other hand, maybe in all reality you fall within the multitudes that agonized through the DIVEX or terrain analysis course and felt that tactical terrain analysis is a nice to know thing (to pass the exam) but you'll never have to use it. These are some of the reasons why the IPB effort is so important in terms of the role MI personnel will be expected to play during the next decade.



IPB is not the total solution. It is a "blueprint" to success in that it applies fixes to many of the major training shortfalls of the past. What was done in the past was not wrong; however, the requirements of the future demand sharpening the focus of tactical intelligence analysis to critical essentials. Chapter VII talks about the Tactical Intelligence Zones of interest to the generals, colonels, and the captains. The Corps commander is interested in the air and ground area from the rear of friendly boundaries out to at least 150 kilometers forward of the line of contact. The Corps commander is concerned with determining at the earliest possible time the magnitude of the threat in terms of combat power, the direction of movement, rate of movement, and the breakthrough area. He wants to know where the main attack is. The 8-10 day battlefield scenario does not give the commander time to initiate elaborate plans and requests for information. Under the traditional approach the battle would be over before the commander is ready to fight. That's why IPB must be accomplished now, prior to the first battle.

An IPB analysis of weather, enemy, and terrain essentially converts to graphics information in the intelligence estimate, the intelligence annex to the OPORD and the analysis of the area of operations. Basically we are concerned with two things: what the analysts do and the product which the G2/S2 gives to the commander, i.e., the estimate of enemy capabilities and intentions displayed graphically. There is no doubt that this method of analysis is being used in the field today at the tactical level. But here is the hangup — is it being done only if the commander wants it? IPB is the "homework" that must be accomplished before the "final examination" of the next war. IPB is concerned with what the commander needs — not with what he wants — for today or next week.

Take terrain information needs for example. These vary depending on the area of the perceived conflict — whether it is Europe, the middle East, Africa or Korea. The standard 1:50,000 scale map does not contain sufficient information to determine forest density, tree spacing and diameter to impede the movement of armor. It does not contain the type of information necessary to determine the percent of canopy closure to obscure observation or the density of vegetation that will conceal a tank from ground observation or the limitations of vegetation on fields of fire and line-of-sight. Perhaps the standard 1:50,000 scale map will not meet the needs of the commander in the future. IPB is attempting to identify the terrain intelligence information needs of the commander (as initiated by the G2/S2), relate these needs to current capabilities and from there deduce requirements for the future. There is no standard cross-country movement map product available to the commander today. He can request the development of a special product for his area of concern but this takes months to prepare. If the unit moves to a new area, a new product will probably have to be requested.

What is the current capability of tactical imagery interpretation support systems to provide periodical terrain information updates to insure that ground truth and map truth are similar? The answer — limited. A system is under development which will greatly enhance this capability, not only within MI, but within the Engineer realm. The Combined Arms

Combat Developments Activity (CACDA), Fort Leavenworth, has established the CACDA Topographic Coordinating Committee. This committee consists of representatives of all TRADOC schools, DMA, and associated agencies that have an interest in topographic products. The driving requirement is to identify and validate user terrain information requirements so a digitized data base can be established. All special map products prepared by DMATC are done by the manual method. Some terrain evaluation data for certain areas of the world has been digitized. The ADP state-of-the-art is here but until now development has been frustrated through the lack of an Army-wide validated terrain information requirement.

Chapter VII says that the role of the CI staff officer is to advise the commander on how the "enemy sees us." The role of the CI staff officer is being greatly expanded into the area of tactical support to the commander, particularly with concern for operational security matters and tactical deception. This is an effort unilateral of IPB but it is quite evident that the analytical techniques of IPB can certainly help the CI staff officer in doing his job. He needs to be able to analyze terrain to determine the advantages and limitations it poses to enemy collection capabilities. An electronic line-of-sight overlay will help him evaluate enemy radar, radio intercept and jammer threat to any given sector. With an overlay of friendly electronic systems locations he can determine where the enemy might best locate his equipment to be most effective. Terrain masking can be used to the benefit of the friendly commander if the planning is done in advance. Electronic signatures often are a dead giveaway as to unit boundaries and dispositions. If we know it, we can assume the enemy does too. An imaginative and innovative CI staff officer can use seasonal vegetation overlays prepared based on current photography and reconnaissance to determine the validity of friendly camouflage techniques and practices. Before we can counter the enemy threat, we must know his capabilities and then devise countermeasures which are incorporated into training and field use.

The biggest obstacle to the accomplishment of IPB is the inertia of the static or peacetime environment. Every military operation is in some way affected by terrain and weather. If the G2/S2s of today do not have the capability of advising the commander on the advantages and limitations of weather and terrain within his tactical intelligence zone of interest, as one knows his own backyard, then there is much work to be accomplished.

Enemy doctrinal templating enables the analysis to relate enemy composition and disposition during the attack to terrain and anticipated avenues of approach. We know that by doctrine the enemy is committed to predictable patterns of activity. The massing of divisions for a breakthrough dictates various sized sectors for each maneuver element. A breakthrough can be templated according to events that must occur if that maneuver is to be executed at a certain place within a certain time. IPB is developing this technique of analysis beyond the simplistic approach familiar to all in FM 30-102, Handbook on Aggressor. Templating varies according to the level of the commander and his tactical intelligence zones of interest.

The Corps commander for instance is interested in avenues of approach that will accommodate division-sized elements and regimental-sized maneuver units while the division commander is interested in regimental-sized avenues of approach and battalion-sized maneuver units. The Intelligence Center is teaching Soviet tactical doctrine and will use templating as a means of synthesizing the salient points of doctrine into graphical formats that can be applied to perceived battlefield situations. Unit templates, showing frontages, depths, echelon spacing of forces in the attack against deliberate defensive positions, can be moved about over 1:250,000 and 1:50,000 maps to enable the analyst and commander to visualize the massing for a hasty river crossing or any other perceived situation. For the battalion and company commanders, locally produced map segments and annotated photographs at greater scales may be better suited to their needs.

Templating enables the analysts to make inductive judgments about where certain types of enemy units, weapons systems, CPs, and assembly areas might be located on the transitional battlefield. Threat in terms of time, distance, and range of weapons systems can be evaluated. The Tactical Surveillance Officer can use this as a basis for determining the effectiveness of area collection coverage and thereby maximize the use of his resources by directing them against priority targets and

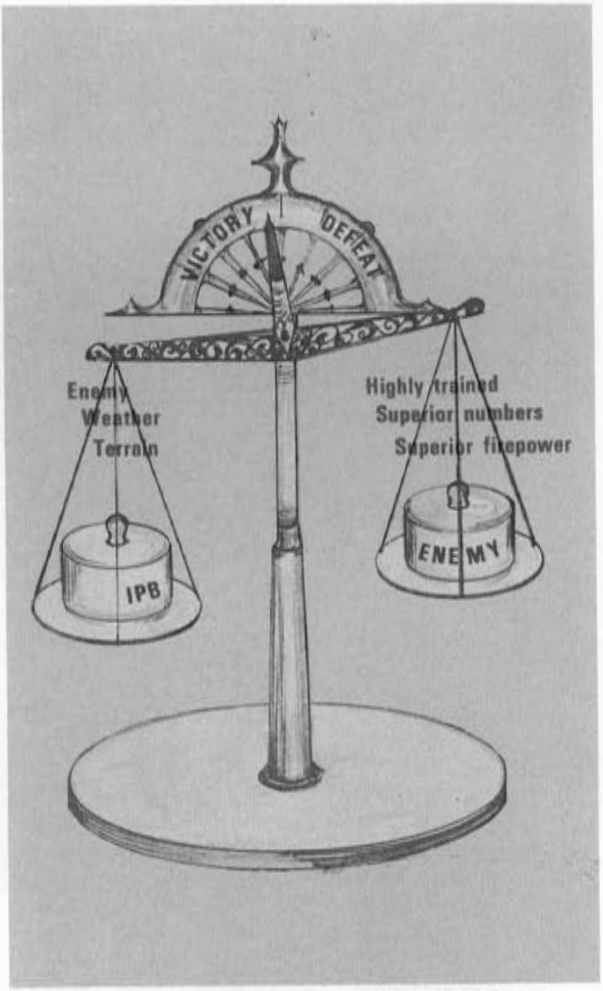
areas.

An IPB model based on a sector of the SCORES Europe I scenario is being developed at the Intelligence Center to test the practical applications of IPB and serve as a guide for improving the training of MI personnel in the techniques of tactical intelligence analysis. The goal is to close the "reality gap" between the academic world and the real world. This will require an intensive and frank dialog between MI personnel in tactical units and those at the Intelligence Center. To date, discussions with MI personnel who have returned from overseas units and those engaged in CONUS G2/S2 training exercises indicate that IPB is on the mark.

The discussion of combat power symbology and ADP display systems have been kept for last on purpose. The manual applications of the techniques of IPB will provide the basis for development of software programs required for much of the intelligence interface in the Army Tactical Data System (ARTADS) under development for support of the tactical commander. The interactive information requirements for weather, enemy and terrain must be identified before the software programs can be written. Weather and terrain factor overlays and doctrinal templates developed will be converted into digital data and retained in the data base. The data base will be continually updated with information derived from tactical and strategic collection and information resources. Synthesized intelligence information (IPB derived) will ultimately be displayed to the commander (the generals) on a CRT scope or other ancillary graphics media.

An ADP compatible symbology to communicate combat power threat is currently under development. The generals for the most part are interested in gross threat indicators, i.e., large densities of tanks, massing of artillery, etc. The purpose is to communicate threat potentialities using discrete symbols and colors that show number, type, range and mobility of weapons systems. The commander will have the capability of viewing the battlefield in the macro sense (1:250,000) or in the micro — 1:50,000 or greater.

The integration of IPB into Intelligence Center training is already a reality. Many student classes have received an IPB orientation and the techniques are being used by the Advance Course in divisional exercise and in the terrain analysis course. Much effort has



already been devoted towards establishing a soviet tactical doctrine data base to insure uniformity of contacts within the various Center training departments. An IPB Planning and Coordinating Committee has been established with representatives from Center directorates to insure that doctrinal and training changes are fully coordinated on a timely basis. In December 1975, a concept letter on IPB was sent to the Integration of Intelligence From All Sources (IIFAS) representatives of TRADOC schools and from their response it is apparent that the techniques of IPB have direct application to their needs.

Readers are encouraged to direct their comments and suggestions to the Commander, USIACS, ATTN: ATSI-CD-CS.

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