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Warning Course - III

Scope Notes

I. Warning Structures and Vehicles

a. Informal Warning Structures

Warning is often accomplished and usually assisted by the informal networks and associations that exist within and across the agencies of the intelligence community. These constitute the informal warning system which functions most importantly in crossing the institutional synapses of the warning system. The vehicles, manner of operation and strengths and weaknesses of this system will be treated.

b. Institutional Warning Structures

The more familiar components of the warning system are the horizontal and vertical control mechanisms within agencies, the analytical centers and the alert centers which perform within the system. This section will address the alerting systems that energize the agencies; the vehicles that convey the warnings from institution to institution; their issue handling modes; and provide examples of operations.

The discussion of handling modes is an analysis of system operations from an external standpoint. Mainstream handling literally includes physical changes in work arrangments, locations and so on, all of which send a signal to the receiver of warning. Handling by exception sends its own signals, usually in the form of alternatives to the mainstream point of view or assessment.

c. The National Warning System - 1983

This presents our latest understanding of the national warning system, its purposes, prime directives, players and concepts. As in the past, the national system is confederal rather than unitary or centralized. Unlike the past, no single analytical entity (National Indications Center or Strategic Warning Staff) is responsible for warning, but every agency is; The subject matter of warning is not just war, but any threat to the US, its persons and its interests. The targets for monitoring potential threats are no longer the communist countries

1. The Director of Central Intelligence is the President's top warning officer. The National Intelligence Council provides the DCI with substantive analytical support and an ability to integrate analysis from within the various agencies. The NIO for Warning is the system's mechanic, working on the process of warning more than the substance.

2. The component agencies are responsible for warning their own audiences or constituencies, whereas the DCI and the NIC provide the whole community outlet for warning. DoD continues to have special responsibility for tactical warning.

3. Each alert center fits into its own agency's warning structure. Generally alert centers provide trip wire services and safeguard against surprise for their respective consumers.

4. The key objective of both institutional and informal

warning systems is to achieve a high degree of reliability. How the systems look is less important than how well they work.

5. Current and estimative intelligence often provide warning, buth they serve many other purposes as well. Warning is exclusively devoted to coping withharm, one of many topics in current and estimative intelligence. When they deal with harm, they are actually providing warning. Warning also has distinct purposes, practices, processes and concepts, which mandate that analysts in other fields of intelligence receive training for effective warning.

II. Cognitive Process -- the psychology of warning

a. Definitions and Terms

These include the DCID statement about warning (...includes measures taken to avoid surprise), the classical terms strategic and tactical warning, and new terms warning of war, warning of attack and warning of developing crisis. The pivotal definition linking warning in all areas is, warning is a communication of a judgment about harm conveyed clearly to a decision-maker in sufficient time to deter, avoid contain or cushion the impact of the harm.

b. Warning Phases

Psychologists have identified and defined six phases in a warning episode. These are recognition that a harm exists;

validation that it is genuine; definition of its components (nature, gravity, probability, timing, direction, and duration of the harm); communication of these judgments to the persons capable or charged to cope with the harm; their independent evaluation of the situation by means at their disposal; finally action steps to deal with the harm.

The phases are not sequential, but actually near simultaneous, repetitive, interactive and continuous. Additionally, they proceed simultaneously within the intelligence and policy/decision-making arms of the government, which influence each other.

c. Evidence

Most treatments of evidence deal with the collection sources. This is often misleading as to the probity and diagnostic value of the information conveyed by the collection source. This treatment establishes the standard of evidence as that required in Tort Law: evidence sufficient to induce a reasonable person to take prudent precautions under the circumstances. The circumstances include ambiguity of the information, risks, costs, time and opportunities for action, action choices available and situational considerations.

The Law of Evidence contains rich examples of the kinds of inferences that may be drawn safely from particular kinds of evidence. For the purposes of analysis, as opposed to system management, these examples are instructive, if not enlightening. An important rule is that the more filtered or handled the information is, the less reliable are the inferences that may be drawn from it.

d. Probabilities

This portion of the course must TEACH (not familiarize) the difference between impact and likelihood.

Types of events--independent, dependent or mutually exclusive--must be defined and illustrated so a person can identify the appropriate probabilistic rule (formula) to apply in calculations. Marginal probability of a single event must also be mastered, followed by joint probability of more than a single event. This is in two forms: the <u>and</u> form as well as the <u>or</u> form. After these forms have been mastered, conditional probability is undertaken.

The relationship between logic, math and probability diagrams (tress) must be used throughout. Finally, the implications of new information and how the news changes a priori probabilities must be mastered. (Bayesian probability)

e. Uncertainty and False Alarms

The following probability matrix must be developed in terms of the six factors listed under "Phases": gravity, probability, nature, duration,timing,direction of harm. It is important to distinguish which factors failed in a warning assessment because the warning is no longer a false alarm but a near or remote miss. The important message of a warning is vigilance not reassurance.

Mixing the signal leads to a breakdown in credibility which is reinforced by failure to distinguish between false alarms and misses.

	REAL WORLD EVENT	
	HAPPENS	DOESN'T HAPPEN
Analyst says it: will happen	HERO	CRYs FOX
Analyst says it: will NOT happen:	DUMMY	OK BUT NO CIGAR

When warnings are early, usually information is ambiguous. This does not mean that no action is possible or desirable. Quite the contrary. At this point the array of harm-handling measures is broad, the costs of action low, margin for error is large and so on. Once information becomes unambiguous, the costs rise, opportunities diminish and many are already lost, and the margin for error is very small. Harm is not avoided even though surprise may be. Early harm-handling actions are reasonable when they reflect the circumstances of ambiguity, are intended to clarify that and also deal with the harm as it is known at the time. The tradeoffs must be understood.

III. Analytical Techniques

a. Traditional analysis approaches

The analysis of intelligence problems is approached from the perspective of the amount of information available to reach the correct conclusion. The methodology to be used by the analyst must match the degree of uncertainty in the available information.

Case 1 -- Complete information is extant. The proper technique to be used involves logical processes. This is essentially a series of structured facts.

Case 2 -- Incomplete information exists, but what is extant is sufficient to be treated with probabilistic techniques. This involves understanding the probabilities for both discrete and for continuous events, and the application of some form of parametric or nonparametric hypothesis testing.

Case 3 -- Sparse information exists, but it is insufficient to treat with probabilistic techniques. This requires the analyst to rely on individual or group expertise and the way probability diagrams can help focus on outcomes.

b. Role of assumptions and biases

This section draws on the work done by Heuer, Jervis and others pointing out that analysis may be faulty owing to problems in cognition -- how mental processes work;

conception -- what they work on abstractly; perception -- what they work on as reflected from reality; and expectations -- what a person thinks will occur before it occurs. Each of these factors are in turn influenced by group and organizational dynamics, cultural factors and so on. In so far as these create for a person a system that predicts reality well and provides meaning to it, they are in stable balance. A system that fails to incorporate reality-checks is flawed for intelligence work.

c. Indications analysis

The US intelligence community has developed an inferential, indirect technique which it dignifies withe the name, "indications intelligence." This technique attempts to ascertain the nature and timing of hostile intentions and capabilities from the observed actions which have as their common purpose the readying of a hostile country for hostilities. Its basic assumptions are that national behavior ultimately must disclose both intentions and capabilities, manifest in observable forms.

A key tool in indications analysis is the indicators list. This represents a synthesis of learning about the behavior of a nation, usually its armed forces, as well as a check list of the types of behavior to expect in a crisis or prior to a war. It is an essential tool of inductive analysis based on indications. Indicators tend to be abstractions from the real; indications are their real counterpart. A good analogous type of analysis is performed by doctors assessing symptoms.

DIA,CIA and NSA have each developed their own variations of this analysis technique.

d. Looking for Decision Points

This is essentially a combination of influence diagramming and decision theory. The analyst must be taught to construct a series of cause-event inluential relationships and to display them graphically. An analysis of the known events and of inferred events will permit some form of reasoning, either Bayesian or Treeing, and the sensitivity testing for guessing (used to fill gaps in the diagram). This will disclose certain decision points that must be reached for some activity to transpire. The decision nodes are then treated inferrentially.

e. New Frontiers

Among the new frontiers in warning research, either in predicting outcomes or intentions and capabilities before outcomes, are Expected Utility Theory from the University of Rochester; Catastrophy Theory; and Tree Analysis, usually Bayesian. Some attempt to employ these techniques will be offered. Additionally some exposure to Expert Systems in the field of artificial intelligence will be presented. An initial effort at Fault Tree Analysis, akin to automotive or medical diagnostic procedures, will be available for review.

The theme of this section of course work is to open an analyst or mid-level decision-maker to the variety of analytical techniques and the richness of research now available for application to real world problems. Facility in moving among these techniques as well as in incorporating them into routine analytical habits will improve the credibility of the intelligence product.

IV. Warning Lore -- the lessons of US experience in warning

a. Deception and Security

Deception is a distortion of reality as perceived. It may be divided into dissimulation -- hiding what is real; and simulation -- presenting what is not real. In each subdivision are physical and conceptual branches. The most sophisticated deceptions are those that are simple enough to be believed; mounted when the deceiver holds the initiative; are well-prepared over a long period of time; and aim to achieve a large measure of surprise. The aim of all deceptions is to induce the wrong decisions by the top leadership of the target. Lesser but acceptable aims are to mislead or confuse that leadership. All successful deceptions require a feedback channel, either human or technical. The most reliable safeguard against deception is a reality check for consistency and congruence between words and actions. Such tests are more easily spoken of than applied.

b. Other Lessons Learned

This is a compendium of the US warning experience as influenced by crises. For example,

-- nations plan early and prepare carefully for hostilities; wars hardly ever happen by chance, accident or drift;

-- military actions are usually the latest of the actions a nation takes to prepare for war. They come well along in the decision-making process;

-- measurements of capabilities are not especially valuable either as measurements of true capabilities or as reflectors of intentions. Capabilities are not as self-evident and "concrete" as most analysts presume;

-- failures in warning have almost never occurred because of technical failures or the absence of information owing to poor collection. Invariably they have been failures of judgment.

-- Others

b. Decision-making

Decision-making has been analyzed from many vantage points. Among analysts there is a tendency to assume conscious value optimizing choices. This is a Greek model reinforced by Euclidian logic and mathematics. An alternative, equally predictive approach is that optimizing choices flow after action has begun and initial consequences weighed. The former is intentional or premeditative. The latter includes negligent behavior and contingent intentions.

There are many analystš who also assume the primacy of individual rational actors. This minimizes the role of large bureaucracies in mitigating decision-making and mediating decision-making's contact with reality.

Finally decision-makers are often spoken of and written about as if unitary role players. In fact, the roles and information needs of decision-makers are as complicated and manifold as people working in intelligence. Warnings may stray when they ignore the rolé diversity of the decision-maker.

V. Sources of Information

a. What to expect from each collection discipline

Reliable and accurate human source reporting remains the most vulnerable to deception yet the most valuable source of information as to intentions,plans, and resolve to act, etc. Signals Intelligence has the advantages of its technical medium as a safeguard against error, but is still subject to human manipulation of the information conveyed . The more technical branches of SIGINT provide more reliable information about their specialties but become far removed from motivation , intentions and other peculiarly human characteristics of action. Imagery is invaluable but subject to four inferences: what is observed has been observed surreptitiously and is accurate; that which is imaged was deliberately permitted to be imaged;

the item was too large or extensive to be hidden; the item was such that the target didn't care whether it was imaged or not.

Analysts need to learn the advantages and disadvantages of each collection source andhow to read the product of each.

b. Quo vadis technology?

Technology is rapidly leading towards an era of instant and disposable analysis. Machines don't make better warning; they make better analysts, who make better warning.

This section would also treat the tremendous, mind-expanding increases in analytical capability that new machines make possible. This expanded capability imposes its own demands and burdens on analysts and on the intelligence community. On the other hand, decision-makers can become ensnared by the information potential machines provide. The balance is delicate, evolving and often far from clear.

VI. History of US Warning

This portion of the course would build upon materials already compiled around the training institutions of the community. NSA has some films on the history of cryptanalysis. NWS has some films on the history of the warning community itself, featuring [redacted] of the NIC. DIC has other materials. One portion of this topic would include dicussion of community performance in recent crises -- 25X1

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[redacted]

25X1
25X6

VII. Discussion of General Warning Subjects

a. Past Viewpoints

This topic deals with what has been tried by the US Government to achieve reliable and responsive warning. False starts include organizations, substantive areas of concentration and gimmicks.

b. Current Theories

These range from Betts' "intelligence failures are inevitable" to DCI's "no surprise." The better theories stress that understanding how we know that we know provides a hopeful vision of warning analysis.

Each agency in the community has its own characterization of warning, including who does it within that agency and what the warning element will do. These variances constitute the poles of operational theory in intelligence.

Specific issues include the need for and role of community warning products; the need for coordination; the role of alert centers, the roles and actions of mid-level managers and the effects of products.

The community, for example, does not control its behavioral signals which tend to contradict its substantive messages.

The volume and repetition of production destroys the vigilance message which is the substance of warning.

Community treatment and discussion of false alarm erodes confidence in the customers of intelligence warning.

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There remains a need for a community warning vehicle. One aspect of such a vehicle is to avoid making every problem so familiar as to frustrate warning, because of conditioning.

Finally, our systems need to be conscious of the need for consistency and congruence, even on a day-to-day basis.

c. The DCI's views

This is a forum for the DCI or the NIO/W to present the viewpoint of the DCI.