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C3CM—A Warfare Strategy

Gene E. Layman

The highest form of generalship is to balk the enemy's plans.
Sun Tzu, 500 B.C.

Command, Control and Communications Countermeasures (C3CM) are focused means to disrupt the enemy's decisionmaking capacity and his command processes. The target is the enemy decision maker. The pressure points are his sensors, his means of communicating information, and his analysis centers. The purpose is to confuse him so he is unable to effectively control his forces.

Like any type of warfare, C3CM requires a strategy, a doctrinal framework, to guide the practical application of its tactics. This strategy cannot be reduced to a number of rules where response to stimuli are specified in advance. An adequate set of such rules is, if not impossible, impractical. Rather we should examine the essential factors of C3CM to assist us in the development of a strategy framework so that tactical employment will be the product of the general applications of the principles of that strategy. (Strategy being the art of selecting appropriate objectives and of organizing resources to efficiently secure these objectives.) My purpose here is, first, to clarify the general C3CM mission at the US Navy battle group level and, second, to present the elements of a C3CM strategy upon which employment concepts may be built.

C3CM Within the Hierarchy of Strategies

There is a hierarchy of strategies that corresponds to the various levels of warfare conducted in execution of national policy. Grand strategy defines the type of war to be undertaken—the broad goals to be obtained and the general direction in which the war is to be conducted. Grand strategy is followed by theater strategy, and, for the Navy, this can be followed by a battle group employment strategy. Examples of individual warfare area supporting strategies are C3CM, Anti-air, Antisubmarine, and Antisurface Warfare.

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This hierarchical strategy structure illustrates key relationships; namely, the crucial need for guidance to be provided from higher to lower warfare levels, and the importance of corresponding support that lower levels must provide in supporting higher level objectives. Stated simply, the mission and operational objectives at any level must be subordinate to, and supportive of, higher level strategies in this hierarchy.

A second characteristic of this hierarchy is that as one proceeds down the operational hierarchy, the tactics applicable to the operational mission becomes more clear. This is generally the case until we reach C³CM strategy at which point our lens becomes clouded. The problem does not lie in a lack of understanding of opportunities for disrupting enemy C³ nor tactics that may be employed. The problem lies in the absence of a strategic framework that enables a battle group commander to define C³CM objectives clearly—objectives upon which he can base a coherent plan of action.

Liddell Hart has defined warfare mission objectives into two broad categories—*dislocation* and *exploitation* of the enemy.¹ The first category includes dislocation of the enemy's position, organization and control of forces, intentions and plans, response to our initiatives, and his view of the tactical environment. The objective in this category is to position one's own forces in a more advantageous circumstance than one's enemy's. Mission objectives in the exploitation category are aimed at defeating the enemy through the physical destruction of his forces or by the threat to do so. Exploitation should follow dislocation. "You cannot hit [defeat] an enemy with efficiency unless you have first created the opportunity."²

C³CM plays an important role in both dislocation and exploitation of the enemy. Most acts aimed at dislocation are a part of C³CM in a broad sense because they are aimed at confusing the enemy decision maker. However, C³CM essentially plays a *supporting* role in exploitation by enhancing the effectiveness of one's own destructive capability and reducing that of the enemy. The ultimate defeat of the enemy's forces must depend upon his capitulation or physical destruction.

In consideration of the hierarchical nature of strategies and the role of C³CM in support of physical destruction, we may postulate a fundamental principle of C³CM employment at the battle group level—*tactical C³CM must be subordinate to the force (battle group) mission and supportive of destructive warfare task areas.*

There is a purpose for this rationale and for making what appears to be an obvious statement as a principle of employment. It places a requirement on the C³CM planner to develop and clearly define C³CM objectives and employment strategy in a manner that can be related to the overall battle group mission as well as to specific warfare area missions. This is necessary in order to integrate C³CM with other supporting functions in the battle group mission. This is a challenge! Too frequently we think of C³CM at the tactical level in terms of

jamming a communications link or producing false targets in an adversary's radar without fully defining the broader objectives we should be trying to achieve.

To provide a better focus, the mission of C³CM should be defined precisely in relation to general warfare. Clausewitz wrote that the object of war is to exercise control over the enemy by reducing the enemy to a state where he is neither able to prosecute effective warfare operations nor willing to resist. This control can be exercised either through the destruction of the enemy's military power—by making the enemy measure of sacrifice, real or perceived, unacceptable—or by causing the enemy to view his goals as unattainable. Therefore, a battle group's mission could generally be stated as: destroy the enemy's military power and engage in activities that deter the enemy's actions.

The reliability of the enemy's C³ structures must be regarded as a critical factor in his mission potential and in his own estimate of his ability to carry out operations successfully. C³CM then has the potential for reducing the enemy's operational capabilities. A general C³CM mission may be described by the following. Command, Control and Communications Countermeasures are offensive and defensive operations aimed at prohibiting the enemy from maintaining effective control over his forces by: initiating active measures to disrupt enemy C³ while maintaining the ability to control one's own forces by protecting them against enemy C³CM actions. When properly employed, C³CM will degrade the enemy's ability to execute initiatives against our forces and prevent effective counterresponse to our initiatives.

Accordingly C³CM operations are carried out by initiating actions aimed at impeding the flow and management of an enemy's essential information and by injecting false or misleading information into the enemy's C³ systems. The Joint Chiefs of Staff have defined C³CM activities as "the integrated use of operations security, military deception, jamming, and physical destruction supported by intelligence, to deny information to, influence, degrade, or destroy adversary C³ capabilities and to protect friendly C³ against such actions."³ Viewed in terms of affects, these activities are aimed at such results as distorting the enemy's understanding of the tactical situation, severing commanders from the forces they control, and preventing mutual support between force components.

The discussion thus far has been descriptive of C³CM mission and means. It still lacks a cohesive form that adequately relates means to mission. Central to the problem in defining this relationship are: knowing the vulnerabilities of the enemy's C³ process; knowing circumstances in which C³CM actions are likely to be effective and the proper manner to employ C³CM tactics; gaining relevant information for employment; and devising effective means to assess and control operations. Five core elements that address these central problems are:

- A perception of C³CM warfare focused on the enemy's objectives;
 - The concentration of efforts on main C³CM objectives;
 - Conducting operations under a single, integrated tactical plan;
 - The proper balance between centralized and decentralized control;
- and
- The use of a strategy framework as a comprehensive means of operations assessment and control.

A Perception of C³CM Warfare Focused on the Enemy's Objectives

In warfare a whole range of activities are organized and executed toward achieving a small number of tactical objectives. The very principles of operations, i.e., doctrine, that the enemy is most likely to apply in the employment of his forces, should serve as the basis for planning an opposing C³CM operational strategy. The enemy's tactical objectives are central to his principles of operation. A grasp of his tactical objectives is the first step in exploiting his vulnerabilities. One's skill and ingenuity in planning C³CM operations rest largely on this fundamental notion.

Hostile Tactical Objectives. As an illustration of a concept of hostile tactical objectives, consider the AnticARRIER Warfare (ACW) mission. An obvious enemy goal for ACW is to inflict sufficient destruction on the carrier battle group to render it incapable of carrying out its assigned mission. An enemy strategy for destruction would be to mass and deploy surface, subsurface and airborne platforms, so as to be able to deliver a devastating missile attack upon the battle group with the carrier as the primary target.

Given accurate information on the enemy, it is possible to anticipate the enemy's battle management process, from which one is able to partition his operations into discrete tasks for each general type of warfare. A representative list of hostile tactical objectives associated with AnticARRIER Warfare operations might be:

- Establish and maintain surveillance of carrier battle group.
- Establish theater command post in place.
- Deploy surface, subsurface and air strike forces.*
- Confirm strike plan.
- Position surface, subsurface and air strike forces.*
- Assign targets to surface, subsurface and air strike forces.*
- Provide targeting information to surface, subsurface and air strike forces.*
- Position support aircraft.
- Authorize attack.
- Acquire targets by surface, subsurface and air weapons systems.*
- Coordinate launch.

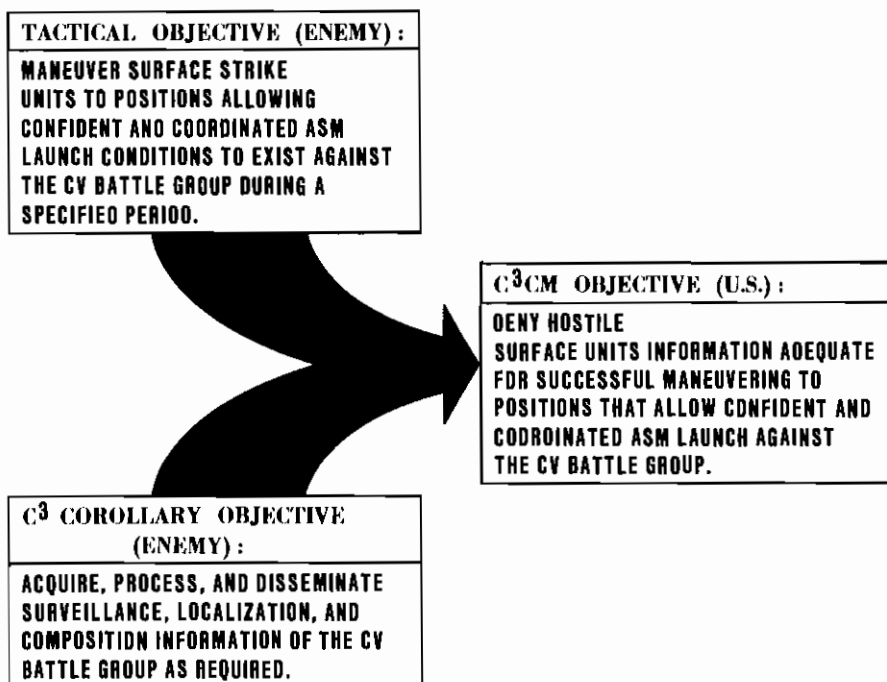
The types of general warfare that the enemy may engage in can be partitioned into a set of separate tasks such as those shown. There are two reasons why this partitioning is important. First, it establishes the basis for selecting C3CM objectives and it is useful in establishing their priority. Second, it provides a planning methodology for the integration of C3CM with other warfare areas (AAW, ASW, ASUW) through common or complementary objectives. Before elaborating on this we should first examine some of the more apparent properties associated with hostile tactical objectives.

There are three such properties that establish a basis for predicting and evaluating the cumulative effects of multiple C3CM actions on an enemy's operations. Each objective has *tactical significance*. The degree of success of the enemy's overall mission is significantly related to the degree of success for each objective. Next, there are many *interdependencies* among hostile tactical objectives. Disruption of one often leads to disruption of others. And, finally, many hostile tactical objectives are *time critical*—to cause a delay in the achievement of an enemy's tactical objective is often as effective as denial. If we understand the tactical significance of each of the enemy's objectives, objective interdependency, and the criticality of timing, we then have a basic framework for evaluating opposing C3CM objectives. This framework can be further developed by the introduction of C3 corollary objectives.

The employment of C3CM relies on our ability to analyze the enemy's operations from a C3 viewpoint. To simplify this analysis we recognize that each hostile tactical objective has a C3 corollary objective in which we may group all C3 events supporting that objective. As an illustration, consider expanding the tactical objective of "Position surface strike forces." The enemy's plan for achieving this objective will include individual assignments to each surface combatant and directions to position each in a location with respect to the battle group. Movement of the battle group and its activities must be taken into account and will modify not only the actual desired location of each enemy surface combatant relative to the battle group, but may require changing its assignment as well. Information required for such maneuvering establishes the necessity for a C3 objective as a corollary to the hostile tactical objective, as shown in Figure 1.

From this we can see a natural C3CM objective in opposition to this pair: namely, to deny the enemy the ability to acquire, process and disseminate information. Yet it should be measured against the effect on the primary hostile objective, that of positioning surface strike forces.

Our ability to deny the enemy this type of information depends, first, on our knowledge of how he acquires it, and second, on the means available to deny, disrupt or present false information. We can create a model that defines the enemy's: sensor deployment (satellite, radio direction finding, radar,

Figure 1. C³ Objectives

visual, etc.); informational needs (acquisition, localization, targeting, etc.); communications channels (HF, VHF, data links, IFF, satellite, etc.); and spatial and temporal interrelationships that will allow us to determine the most appropriate C³CM means (emission control, deception, jamming, etc.) to prevent him from achieving his objective.

This perception of C³CM warfare focused on an enemy's objectives requires a systematic approach for analyzing and predicting his behavior and provides the basis for a C³CM strategy. If we know his mission we can project the enemy's tactical objectives. Applying knowledge of the enemy's resources, principles of operations, and the operational environment to a basic framework provides the C³CM decision maker a means to anticipate the C³ events the enemy is likely to initiate to achieve his objectives. The following sections build on this basic concept.

The Concentration of Efforts on Main C³CM Objectives

The concentration of one's strength against an enemy's weak points has been a fundamental principle of strategy throughout the history of warfare.

The question to be dealt with here is: how does the principle of concentration

apply to C³CM? Clearly the need does not require a concentration of C³CM assets in the physical sense. Rather, the C³CM effort should be concentrated on weaknesses in the enemy's C³ process. Important and feasible C³CM objectives should be identified and pursued with determination, for only by a concentrated effort can there be confidence in achieving common goals—dispersed efforts will produce only random results.

The selection and establishment of priorities of C³CM objectives is an expression of the operational C³CM strategy. It involves considerable uncertainty since it is based upon an appraisal of factors that are largely outside the control of the battle group. However, this selection must be made, made carefully, and evaluated again and again during execution. The following C³CM objectives selection criteria will be considered here.

- Own Force Mission and Concept of Operations.
- Enemy's Principles of Operations.
- Unique Nature of the Operational Environment.
- Ability to Resolve Uncertainties Concerning the Enemy's Employment of Tactics.
- Balance Between the Probability of Achieving Objectives, the Demand on Resources, and the Benefit to the Battle Group Mission if Attained—feasibility, suitability and acceptability.

First, the particular C³CM objectives determined *must* support the force mission and be in concert with the general concept of operations of other warfare activities. The goal of all actions is the efficient use of resources to achieve the battle group mission objective. Within this context, C³CM is aimed at denying the enemy the effective use of his resources to achieve his mission. General opportunities are determined by applying our knowledge of the enemy's principles of operations.

The unique nature of the operational environment will provide a focus from the general to the specific. Numerous factors, such as, where we are, the respective orders of battle, how we are deployed, how the enemy is deployed, our estimate of his understanding of the situation, the physical environment, geopolitical conditions restricting freedom of transit, etc., must be considered in selection of C³CM objectives. It is through an analysis of the operational environment that we can estimate the methods the enemy is likely to employ to achieve his objectives, the C³ events that he will rely on, and the general opportunities for C³CM actions.

The choice of C³CM objectives is based on a general understanding of the tactic options the enemy may employ to achieve each of his tactical objectives. As an operation progresses through phases, knowledge of the enemy's methods can be further refined and confirmed through knowledge of his tactics. It is only through the resolution of uncertainties concerning the enemy's employment of specific tactics that we are able to refine our plans

and select specific C³CM actions. The knowledge that a particular C³CM action would be highly effective is useless unless it can be applied in an operational situation. Finally, the selected C³CM objectives must meet the basic test of feasibility, suitability, and acceptability. The selection process should ensure that C³CM objectives achieve operational balance, spread the demand for resources over time, and provide mutual support of activities.

Conducting Operations Under A Single Integrated Tactical Plan

Once the general C³CM objectives have been established, it is necessary to work out a plan of action that can be executed with the resources available. Three employment concepts should be considered in formulating C³CM plans—planning for flexibility in execution, integration of C³CM with other warfare operations plans, and the proper balance of centralized and decentralized control.

Planning for Flexibility in Execution. The enemy's operations can be described by a number of tactical objectives. Each hostile tactical objective and its C³ corollary provides a potential C³CM objective in opposition. Based upon knowledge of the enemy's operational doctrine we may visualize the tactical situation as we would expect it to develop. There can be a wide latitude in our definition of C³CM objectives and in the means by which we choose to achieve them. The specific objective—whether to delay, partially deny, confuse, cause certain platforms to be out of position, etc., will be chosen in an environment in which considerable uncertainty exists.

It will be necessary to develop sets of alternate plans and variations as to how each objective could be achieved. Option selection from these plans will be determined through observing the manner in which the operation develops. In short, it will be necessary to develop sets of alternative plans, to evaluate them in context with the actual situation, and to select the best options to achieve the C³CM objectives.

Integration of C³CM With Other Warfare Plans. C³CM is not an end, but a means to mold a battle situation to place one's own forces in the most advantageous position to carry out its mission by *dislocation*. It is a means to reduce enemy force efficiency and to enhance one's own, thereby making the enemy susceptible to *exploitation*. Both these means may be achieved with the support of C³CM actions that prohibit the enemy from maintaining effective control over his forces.

Explicit here is the recognition that both dislocation and exploitation center on the positioning or the use of destructive forces. C³CM must be integrated with the other warfares. Integration is possible only by the selection of C³CM objectives that are common with or complement the other

warfare objectives that are basic to battle group operations. Once a proper set of objectives is clearly defined for each warfare area, appropriate plans can be developed in conjunction with one another to achieve a compatibility among warfare tasks. It is only through focusing on common objectives that C³CM can be integrated with other warfare activities.

The Proper Balance Between Centralized and Decentralized Control

The ability to effectively plan and implement C³CM operations is strongly dependent upon the efficient collection and interpretation of tactical intelligence. The C³CM decision-maker responsible for planning and supervising overall C³CM operations should be in a position to observe the broad range of battle group and hostile activities.

Centralized planning functions include:

- Assessing the battle group situation.
- Selecting appropriate C³CM objectives to support the battle group mission.

- Developing plan options for the use of dispersed assets to achieve C³CM objectives.

- Insuring the integration of C³CM plans with other warfare plans.
- Promulgating plans.

Centralized supervision functions include:

- Assuring that force wide readiness posture is attained.
- Assessing the evolving situation.
- Selecting options from alternative plans and initiating actions.
- Coordinating C³CM actions with other warfare activities.
- Assessing effectiveness of C³CM actions.
- Modifying plans appropriate to the battle group situation.
- Providing tactical information to those executing C³CM actions.

Because of the dynamic nature of war, the pressure of unfolding operations limits the time that is available for leadership to fully exploit information sources. An appropriate distribution of authority for the employment of C³CM at a battle group level would be a mix of centralized planning and overall supervision, and decentralized execution. The informed decision maker at the scene of action is in the best position to judge the most appropriate means to achieve his assignment.

Decentralized execution requires that planned actions be clearly described and related to objectives. The overall results that the C³CM objectives are meant to accomplish as well as the tactics involved should be clearly described in a manner so that all participating decision makers are able to analyze their particular situation, weigh available assets, and direct their employment to support the commander's concept of operations.

Strategy as a Comprehensive Means of Assessment and Control

The prudent tactical commander dealing with the C³CM problem would make an estimate of the situation, determine appropriate C³CM objectives, and develop plans for the achievement of those objectives. Unfortunately, two fundamental problems complicate the smooth execution of even the best plans. First, C³CM is directed at an enemy that reacts and these reactions are not always predictable. Therefore, normal conditions will require that objectives be altered during the course of an engagement both in content and in relative priority. Second, it must always be assumed that the "fog of war" will set in and that breakdowns will occur between planning and execution. These breakdowns occur because of unanticipated enemy actions, faulty or conflicting information, poor coordination among activities, improper timing, etc.

An essential quality of an effective commander charged with execution of C³CM is the ability to assess the development of the situation and to make proper modifications to the plan that are fully consistent with the chosen strategy. It is a simpler task to develop a sound strategy and operation plan than it is to execute one, while at the same time being faithful to the strategy upon which the plan is based. The first requires a talented staff and proper intelligence. The second requires that which Clausewitz refers to as military genius—"a highly developed mental aptitude that provides a sense of unity and a power of judgment . . . which easily grasps and dismisses a thousand remote possibilities which an ordinary mind would labor to identify and wear itself out in doing so."⁴

The purpose here is to provide a theoretical framework that will minimize the need for "military genius" by the commander charged with the execution of C³CM. The concept is based upon the recognition of the need for several distinct levels of assessment, and upon the use of selected strategy to provide the standards against which performance is measured.

Figure 2 provides a graphic means to illustrate the relationship between planning and control. A strategy is developed by the selection of C³CM objectives and understanding their relative importance to the battle group mission (establishes priorities). General plans are then developed that define the means by which each C³CM objective is to be pursued. These plans set forth support functions, coordination, and timing necessary for success. The plan is then committed to action and the monitor or supervision of the planned action phase begins.

Operations Assessment and Control. While planning and commitment is a top-down process, assessment and control may be viewed as a bottom-up process. The right side of the figure shows three levels. The lowest level requires estimating the performance of individual tactics and tasks. This could be

PLANNING**CONTROL**

Figure 2. Planning and Control

conducted at the battle group staff level but most likely would be the responsibility of those performing the functions. These include jamming, deception, operations security, destruction, intelligence gathering, surveillance and all positioning, coordination, preparation, and other actions required for the execution of individual or joint tactics. Performance monitoring includes all those activities required to estimate the degree of success of individual or joint tactics in achieving operational goals. This provides the first level of feedback. Command must decide if the tactic or task is being or was performed satisfactorily or if not, should the assignment be modified by tailoring the tactic or committing additional assets.

Failure to achieve tactical goals will require corrective action by the decision maker. If the tactical goal was an end in itself, which it rarely is, the decision would be simplified. But for the tactical decision maker to bring the situation into perspective, he must consider the relative importance of each tactic at a higher level, that is, with respect to the C³CM objective that the individual tactic supports. Only by estimating the degree of success that the tactic contributes to this higher goal can one gain the vision necessary to make decisions at the tactics level. Therefore, it is the responsibility of the C³CM decision maker not only to monitor the performance of individual tactics and tasks but to consistently evaluate the impact of an aggregate of actions toward the achievement of the higher level C³CM objectives. Generally this will require not only estimating the success contributed by the assets he controls, but also appraising the conditions of other warfare activities upon integration

of efforts and areas of mutual support. This is the second level of assessment and the proper use of objectives. This assessment provides the second level of feedback for the modification of plans according to an estimate of the most effective means to achieve the objectives.

At the battle group level the C³CM decision maker must frequently assess the validity of the strategy that was selected for the operation. He must consider the degree of achievement of the individual objectives and the cumulative effect on the battle group mission. He must reassess those factors that led him to the initial choice of particular C³CM objectives. Again he must balance his estimates of the probability of achieving each objective, the demand on resources, the impact on the battle group mission for achieving each objective, and the aggregate effect of achieving multiple objectives. Modifications in C³CM objectives and their relative priorities must then be reflected in changing plans and their execution.

The C³CM decision maker must always keep the battle group mission and other supporting warfare activities in mind when modifying objectives and adapting plans to circumstances. There are many ways to gain objectives but all actions should support the battle group mission in concert with other supporting warfare activities.

In summary, C³CM is a military strategy aimed at the disruption of enemy warfare operations by preventing the enemy from maintaining effective control over his forces. The cumulative effects of C³CM actions, although individually directed at thwarting the enemy's actions, can best be understood in relation to their disruptive effects on the enemy's tactical objectives. A C³CM strategy is expressed by a small number of C³CM objectives selected to oppose these hostile tactical objectives. This selection of C³CM objectives and the supporting plan of action should be based on an application of knowledge of the enemy's principles of operations and an appraisal of the tactical environment. C³CM operations should be conducted under a single plan integrated with other warfare activities. Finally, operational C³CM strategy should serve as a comprehensive means for the application of resources and must provide a frame of reference for operational assessment and control.

Notes

1. B.H. Liddell Hart, *Strategy* (London: Faber & Faber, 1954), chap. XX.
2. *Ibid.*
3. Command, Control and Communications Countermeasures, Joint Chiefs of Staff Memorandum of Policy No. 185, 9 December 1980.
4. Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1976), p. 112.