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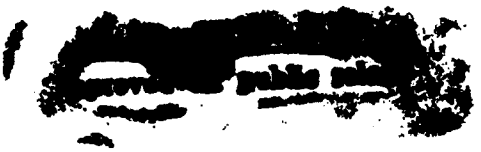
Measuring the Leverage

Assessing Military Contributions to Drug Interdiction

Carl H. Builder

Arroyo Center
Project AIR FORCE



The research described in this report was sponsored jointly by the United States Army, Contract MDA903-91-C-0006 and by the United States Air Force, Contract F49620-91-C-0003.

Library of Congress Cataloging in Publication Data

Builder, Carl H.
Measuring the leverage : assessing military contributions to drug interdiction / Carl H. Builder.
p. cm
"Prepared for the United States Army and United States Air Force."
"MR-158-A/AF."
ISBN 0-8330-1338-6
1. Narcotics, Control of—United States. 2. United States—Armed Forces—Civic action. 3. Drug traffic—United States I. United States. Army. II. United States. Air Force. III. Title.
HV5825.B85 1993
363.4'5'0973—dc20 93-7134
CIP

Published 1993 by RAND
1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
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Assessing Military Contributions to Drug Interdiction

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Preface

This monograph analyzes the problems of measuring the effectiveness of military operations in support of drug interdiction. It is a philosophical examination of those problems from several vantage points: from the military's extensive historical experience with interdiction campaigns, from the military's traditional means for assigning responsibility and granting authority, and from the changing relationship between the military and the public through the news media. Those vantage points provide insights on both the prospects for success in drug interdiction and the importance of an unbroken chain of command to performance assessments.

The purpose of this monograph is not—indeed cannot be—to resolve the problems in measuring the effectiveness of military operations in support of drug interdiction. Instead, the purpose is to help military commanders who are under pressure to provide such measurements better understand the inherent problems and how they have been addressed, if not resolved, in the past.

This study was conducted jointly under the Strategy and Doctrine Program of Project AIR FORCE, and under the Strategy and Doctrine Program of the Army Research Division's Arroyo Center. Project AIR FORCE and the Arroyo Center are two of RAND's federally funded research and development centers (FFRDCs).

This monograph is one of several products of research conducted under a joint project on military involvements in drug control. It should be of interest, as background information, to those military commanders at all levels who are responsible for tasking or allocating their units to drug interdiction operations and to those civilian policy makers who have mandated the involvement of the American military in the national drug control program.

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Summary

The American military is engaged in a variety of operations in support of the drug control strategy and programs of the U.S. Government. One of the more significant responsibilities assigned to the American military is the lead role for aerial and maritime detection and monitoring of illegal drug traffic into the United States. As the resources required for this and other drug control–related military responsibilities are identified and justified in defense program planning, in budgets, and before Congress, a salient and persistent question is how the effectiveness of military operations in support of drug interdiction should be measured.

This monograph explores the question of how military operations in support of drug interdiction should be assessed. The question is approached from several vantage points:

- The military's broader historical experience with interdiction campaigns, mostly in support of combat or war objectives
- The military's traditional means for assigning responsibility and granting authority at different hierarchical levels
- The changing relationship between the military and the public caused by the revolution in information technologies and, hence, the news media.

A brief review of some of the military's experience in historical interdiction campaigns suggests several cautions in any assessment of the effectiveness of drug interdiction operations and campaigns:

- Assessments of the performance of interdiction operations have almost always been difficult because of the indirect nature of interdiction operations as they relate to war objectives and because of the adaptability of an enemy in responding to interdiction campaigns. This is true even in those cases where the data on both sides of the campaign have become available after the campaign or war had ended and representatives from both sides could be interviewed.
- While there have been a few clear successes or failures in interdiction campaigns, those outcomes appear to have favored the side least constrained by time, options (alternative courses of action), and by policy (or legal)

constraints. Where the balance of these aspects was less clear, the success (or failure) of the campaign also seems to have been.

- In several historical instances, successful interdiction operations may have displaced the flow of contraband to alternative means or routes that ultimately—unintentionally or inadvertently—impaired further interdiction more than they did smuggling operations. This suggests that there may be "break points" or discontinuities in interdiction campaigns where the costs escalate rapidly for one side or the other, but not necessarily in favor of the interdictor.

More general consideration of military operations suggests that there is no single, proper measure of interdiction performance; there are only measures appropriate to each interdiction task as it relates to its proximate higher objectives. While the geographical and legal constraints imposed upon military operations in support of drug interdiction may seem severe or debilitating, they are probably no more so than have been experienced in conflicts since World War II. What has changed dramatically since then is the public scrutiny brought to bear upon all military operations because of the abundant information made available through the news media. Thus, military operations in support of drug interdiction are likely to be closely watched, reported, and subject to controversy, not simply because they are associated with either the military or with drugs, but because of the way the world now works in an age of abundant information.

The ability to assess the performance of military operations in support of drug interdiction ultimately rests, as it does with any interdiction campaign, upon a knowledge of the relationships between many tasks and objectives, from the smallest to the largest. Those relationships are seldom known with much certainty; in the case of drug interdiction, many of the parallel tasks and higher-level objectives are undertaken or set by civilian agencies. Nevertheless, the traditional military command structure has always provided a clear basis for defining responsibilities and accountability for tasks and objectives, even when those tasks and objectives have been truncated by civil authorities or constrained by politically imposed rules of engagement.

Thus, the assessment of military operations in support of drug interdiction tasks should proceed as it has for all military interdiction campaigns, task by task, with the assessment of the contribution of each task to its next larger objective as the responsibility of the commander who *assigned* the task. Where that chain of command (and objectives) passes to civilian authorities, the military responsibility for assessment must also end, as it has in the past.

In sum, these perspectives on the military's historical approaches to interdiction campaigns and, more generally, to the assignment of responsibilities for measuring the effectiveness of their operations suggest that any interdiction campaign devoted to controlling illegal drugs will be both difficult to assess and controversial. It will be difficult not just because of the fractionation of tasks and responsibilities or because of restrictive rules of engagement, but mostly because of the complex and dynamic nature of interdiction campaigns. It will be controversial not just because drug control or use of the military is controversial, but mostly because of the changing nature of a society with an abundance of public information. The concerns should not be with the difficulties of assessment or the controversy that may attend assessments, but with ensuring clear lines of military responsibility and authority and with the validity of the overall strategy that has led to military operations in support of drug interdiction.

Acknowledgments

The author is indebted to four colleagues for their significant contributions to the preparation, content, and form of this monograph: Peter Reuter encouraged the effort from the beginning to the end; without his interest and gentle prodding, it would not have been undertaken or completed. Bonnie Dombey-Moore was the steadfast champion of its publication and sponsorship. John Arquilla reviewed the draft and offered many constructive suggestions to improve its content and form. And Jerry Stiles assisted in redrafting the manuscript to my specifications. All share in any praise this monograph may elicit; however, none but the author should be included in its criticism.

The author is grateful for a detailed and cogent critique of an earlier draft of this monograph by John Carnevale of the Office of National Drug Control Policy. His comments stimulated a careful reexamination of the draft and several additions. Although the monograph has certainly benefited from his critique, just as certainly, it does not conform fully to his views or suggestions.

1. Introduction

This is an essay on the problems of assessing the performance of interdiction, specifically drug interdiction, and more specifically military operations in support of drug interdiction. The American military, committed by Congress to supporting the nation's program to control drugs, finds itself participating in an interdiction campaign where its responsibilities and authority are sharply proscribed and are likely to remain so.

Unlike most combat operations, which the military prefers to design and conduct according to its own concepts and doctrines, current peacetime military operations in support of drug interdiction must be designed and conducted in close coordination with civilian agencies, imposing significant limitations on both the scope and means of the military operations.[1] These circumstances have made even more acute concerns that have probably attended most interdiction campaigns: Are they doing any significant good? How can one be sure that they are worthy of the resources expended? Are there better ways to use those resources?

Interdiction, like deterrence, has become an accordion word, expanding and contracting in its specialized meanings to its various users. In one of its broader meanings, *to interdict* is "to forbid, prohibit, or debar, as to interdict trade with a foreign nation."[2] In one of its narrower meanings, *interdiction* is "an action to divert, disrupt, delay or destroy the enemy's *surface* military potential before it can be used effectively against friendly forces."[3] In between, there are meanings that would seem to apply with equal comfort to both traditional military interdiction campaigns and drug interdiction operations: "to prevent or hinder, by any means, enemy use of an area or route."[4] For the purposes of this essay, the last definition is close enough and entirely consistent with the goal of interdiction as set forth in the *National Drug Control Strategy:*

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[1]Actually, the American military has been under increasing constraints in the conduct of combat operations ever since World War II. That fact, however, has also been a growing source of concern for the military, one which is likely only to be heightened by the terms of its participation in drug interdiction operations.

[2]Webster's Third New World International Dictionary.

[3]JCS Pub 1, emphasis added. This definition apparently excludes interdiction of aerial or submarine forms of military potential.

[4]JCS Pub 1. This definition comes from the Inter-American Defense Board.

> The primary goal of interdiction is to deny the smuggler the use of air, land, and maritime routes. This can best be done by establishing and maintaining an active patrol presence and by intercepting and seizing illicit drug shipments entering the United States.[5]

The Military's Limited Role

The American military has not been assigned the total responsibility for or mission of interdicting the flow of drugs into the United States from international sources. Initially, it was assigned, among several other responsibilities, as the lead agency of the federal government for the detection and monitoring of the aerial and maritime transit of illegal drugs into the United States.[6] Subsequently, that responsibility was further defined and broadened to include support of law enforcement agencies in several ways, including aerial and ground reconnaissance outside, at, or near the borders of the United States and the construction of roads and fences and the installation of lighting to block drug smuggling corridors across the United States' international boundaries.[7] Significantly, these assignments stop well short of all those actions that may be appropriate "to prevent or hinder" the transit of illegal drugs.

This limitation of tasks or functions denies the American military the unilateral, comprehensive, and, for the most part, unrestricted means it enjoyed, say, in the pursuit of interdiction campaigns during World War II. It is more remindful of the limitations imposed on the American military during the Korean and Vietnam wars with respect to scope (observance of sanctuaries) and means (no weapons of mass destruction). But the most frustrating aspect of this limitation is that it denies the military any *independent* interdiction mission against which it can measure its contribution or success:

> Because military forces play only supporting roles, their contribution is to enhance the primary interdiction campaign as executed by the [law enforcement agencies]. An issue confronting [the Department of Defense] is how to measure the military contribution to the collective success of [drug] interdiction. Efforts to find an answer are confounded by both the policy restrictions on military activity and the difficulties of assessing in isolation just one part of a large undertaking with many interdependent pieces.[8]

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[5] *National Drug Control Strategy*, Office of National Drug Control Policy, 4th ed., The White House, Washington, D.C., January 1992, p. 99.

[6] FY 1989 Defense Authorization Act (Public Law 100–456, September 28, 1988).

[7] FY 1990 Defense Authorization Act (Public Law 101–510, November 5, 1990).

[8] Michael R. Anderberg, *MOEs for Drug Interdiction: Simple Tests Expose Critical Flaws*, Center for Naval Analyses, CRM 91-48, September 1991, p. 12-1.

Thus, a vexing issue for the American military is how to assess the performance of its limited supporting operations for drug interdiction as a contribution to the larger national drug interdiction campaign and to the national drug control program.[9]

The Nature of Interdiction Campaigns

Interdiction campaigns—in war to stop supplies or reinforcements, or in peace to stop illegal commerce—have often been controversial in their purposes and performance. Although military interdiction campaigns waged in war or against other states may be qualitatively different from a "drug war" against smugglers, some aspects seem familiar:

> In World War II, Korea, and Vietnam, American air forces mounted sustained air interdiction campaigns, using thousands of men and machines, in an effort to interrupt or disrupt the flow of men and materiel to the enemy armies fighting American forces. Interdiction has always been a controversial subject. . . . The common denominator has been the goal of denying enemy ground forces the resources to win the battle. The disputes have arisen from the difficulty of assessing fully just how the air attacks have effected the capability of the enemy's armies and therefore the outcome of the battle or campaign.[10]

> The successes and failures of interdiction have been disputed heatedly since World War II and are likely to be the subject of great controversy for some time to come.[11]

It is generally recognized that the effectiveness of military interdiction campaigns in war is sensitive to such things as the enemy's demands for supplies, pressure on the enemy to move things, and the alternative means available to move them, just as much as to the abilities to execute and sustain the interdiction campaign.

> [F]or interdiction to be effective there must be a demand for the resources that interdiction attempts to deny. If our forces and the enemy forces face one another with little or no exchanges of artillery or fighting, interdiction is of less significance than when the enemy is required by our forces to use

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[9]John Carnevale of the Office of National Drug Control Policy, in commenting on an earlier draft of this monograph, asked why it was necessary to assess the military's contribution separately from the larger national drug interdiction campaign. One reason, of course, is the moral imperative faced by military commanders at all levels who are responsible for ordering their subordinates to undertake high-risk military operations, such as the launching of aircraft and small boats at night and in bad weather. Those commanders have always been responsible for reconciling the risks with the worth or contributions of operations under their command.

[10]Richard H. Kohn and Joseph P. Harahan, eds., *Air Interdiction in World War II, Korea, and Vietnam*, Office of Air Force History, Washington, D.C., 1986, p. 2.

[11]Op. cit., p. 15.

> the assets that he has, especially to expend them quickly, therefore making resupply more critical.[12]

Destroying railroad transport avails little if the enemy can move almost as well by road or air; impeding all means of transport will not succeed if the enemy can simply retire at will from combat until the interdiction campaign subsides under the absence of any directly observable results. It is widely appreciated, as a matter of doctrine, that minefields on land or at sea, intended to impede movements of the enemy, are not effective if the enemy is given the opportunity to sweep them or otherwise circumvent them. Interdiction, by itself, is seldom enough. This fact has always made its contribution and performance hard to measure in its own terms, even when the military has enjoyed considerable freedom in, and unilateral control over, the means employed. These difficulties are likely to be even greater in interdiction for drug control than they are for conventional combat.

> Clearly, interdiction taken alone has a limited capacity to deter drug trafficking; it affects just part of the transportation complex, but nothing of production, distribution, or money laundering.[13]

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[12]General Jacob E. Smart, as quoted in Kohn and Harahan, Air Interdiction in World War II, Korea, and Vietnam, p. 17.

[13]Anderberg, *MOEs for Drug Interdiction*, p. 3-3.

2. The Military Experience with Interdiction

The military is certainly no newcomer to interdiction—and not just in war. In peacetime, the military has acted against illegal commercial trade.[1] Reflection on a limited sample of the military's experience with interdiction suggests some of the difficulties in assessing interdiction performance and, perhaps, the prospects or parameters for success in the interdiction of illegal drugs. The number of examples that might be cited is large, but the following dozen were both familiar to the author and seemed pertinent to illustrating the problems for drug interdiction.[2]

Royal Navy and the Slave Trade

For 50 years, during the first half of the nineteenth century, the Royal Navy waged a desultory campaign against the slave trade in the Atlantic. That interdiction campaign offers some obvious parallels to the current military involvement in drug interdiction:

- It involved the military in the interdiction of illegal international commerce unconnected to wartime objectives.
- The trafficking involved a high-value commodity marked by large price increases as it passed through the trade system from source country to domestic consumption.
- The source countries were often uncooperative with the British government or with the Royal Navy in taking measures to suppress the trade at its source.

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[1]Particularly if one includes the interdiction efforts of the Royal Navy and the U.S. Coast Guard. In peacetime, the U.S. Coast Guard is a part of the U.S. Department of Transportation. In wartime, its operational command shifts to the U.S. Navy. Thus, along with its status as a civil law enforcement agency, the U.S. Coast Guard is also considered to be a part of the American military and has participated in military interdiction campaigns (e.g., in Vietnam).

[2]RAND colleague and historian John Arquilla points out that this list could readily be expanded to include a number of additional military interdiction efforts, extending from the ancient Peloponnesian War to the modern example of the blockade of Iraq. The number of examples in this essay has been limited because the author's purpose is not a historical analysis of interdiction, but a general appreciation of the several difficulties of assessing the effectiveness of military interdiction efforts. Nevertheless, more historical analyses of interdiction with relevance to drug interdiction would seem to be a fruitful direction for future research.

- The trade represented a highly politicized, moral, and social issue in Britain and later, in the United States.
- The smugglers engaged in adaptive, high-technology techniques.[3]
- Legislative changes were requested by the military so as to untie their hands.[4]

While the Royal Navy never prosecuted this interdiction campaign with anything near its full capabilities, its progress was not obviously limited by the resources applied so much as by the nature of the problem. What can be said with certainty about the campaign is that it ended when the slave trade went away with the collapse of market demand because of the abolition of slavery in Brazil and then the United States.

Civil War Blockade of Southern Ports

During the American Civil War, the Union used its superior naval force to blockade the ports of the Confederacy—to prevent the South from selling its goods (e.g., cotton) on the world markets and, with the proceeds, importing needed arms. While the blockade was occasionally pierced by the famous Confederate blockade runners and was assaulted by raiders and ironclads, it progressively tightened over the course of the war and is generally considered to be a successful interdiction campaign. It was complemented by Union land campaigns designed to split and further constrict the Confederacy.

During the course of the war, the relative strengths and the options available to each side changed to the advantage of the Union. Over time, the North's advantage in industrial power could be increasingly brought to bear on the conflict, and the South's initial advantage in the military operational arts was overcome by the logistical superiority of the North.

> [F]undamentally, the victory of the North was due not to the operational capabilities of its generals, but to its capacity to mobilize its superior industrial strength and manpower into armies which such leaders as Grant were able, thanks largely to road and river transport, to deploy in such

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[3]The so-called Baltimore Clippers were built to carry huge amounts of sail in order to outrun the ships of the Royal Navy; but they were, as a consequence, quite impractical for any lower value bulk cargo. In that respect, they were echoed a century later by the fast "cigarette" boats that were built for smuggling.

[4]Admiralty law of the time did not permit prosecution unless the slaver was captured with its cargo. This resulted in cargoes being jettisoned into the sea if capture seemed imminent. The Royal Navy sought changes in the law to make capture of ships with slaver paraphernalia, such as shackles and manacles, sufficient.

> strength that the operational skills of their adversaries were rendered almost irrelevant.[5]

The North enjoyed more options than the South for bringing power to bear upon its opponent: on land, at sea, along the river and rail transportation routes, over control of the cities, in the western states, and on the issue of slavery.

There can be little doubt that the Union blockade contributed to the Confederate defeat, but it is less clear that the interdiction campaign was decisive or essential to the Union's ultimate victory—other important factors favored the North. Interdiction was but one of a number of means available to the North and benefited from its partnership with other forms of pressure on the South.

Coast Guard During Prohibition

Although the Coast Guard stands in between the military and civil law-enforcement arms of the U.S. government, it has participated in a number of interdiction campaigns, including wartime campaigns when it has been called upon to support combat operations with the U.S. Navy. The Coast Guard was involved with interdicting rum running during the nation's experiment with the prohibition of intoxicating liquors in the 1920s.[6]

Before prohibition, the manufacture and distribution of intoxicating liquors involved a large number of individuals and organizations with a broad range of capabilities. But interdiction efforts quickly drove the formerly legal producers and the less capable of the illegal producers out of business and concentrated the illegal traffic in the hands of the most capable. One of the unintended but frequently observed consequences of interdiction campaigns is the selection by survival of the best smugglers; during Prohibition, the survivors were highly organized criminals.[7] Prohibition became a war against organized crime as much as a war on liquor.

Given the uneven and unhappy national experience with the enforcement of Prohibition and the fate of the experiment, judgments about the success of the interdiction campaign or the Coast Guard's contributions are problematical.

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[5]Michael Howard, "The Forgotten Dimensions of Strategy," in *Foreign Affairs*, Vol. 57, No. 5, Summer, 1979, pp. 975–986, with the quote taken from p. 977. RAND colleague John Arquilla notes that this conclusion remains contentious among current Civil War historians. Resolving or even fully airing that controversy, of course, is well beyond the purposes of this essay.

[6]M. F. Willoughby, *Rum War at Sea*, U.S. Government Printing Office, Washington, D.C., 1964.

[7]This point is made by Michael Anderberg in *MOEs for Drug Interdiction*, p. 3-5.

However, this chapter in American history is a precedent with obvious parallels for the military's involvement in the peacetime interdiction of illegal commerce.

The Battle of the Atlantic

The German effort, during World War II, to interdict the Atlantic sea lanes, particularly the flow of supplies to Britain, with submarines and surface raiders, is a classic military interdiction campaign—one worthy of consideration because many judge it to have been a severe challenge and a close call for the Allies. The passage of time and the options available, however, did not favor the Germans, as the interdictors, as it had the Union in the Civil War. The Allies were able to expand their shipping faster than the Germans could sink it, in large measure because their production facilities in America were not under attack. Although technical developments on both sides shaped the seesaw character of that battle, the ultimate outcome could be foretold in production and loss curves that developed early in the war.[8]

Operation Strangle in Italy

A concerted interdiction campaign, known as Operation "Strangle," was undertaken during World War II to isolate those German forces in Italy that had stalemated the Allied advance toward Rome:

> In January 1944, Allied forces conducted a successful, surprise amphibious landing at Anzio, Italy. When the American Fifth Army failed to move inland quickly, the Germans moved up, reinforced their positions, and pinned down the American army. To alleviate some of this enemy pressure, Allied air forces began Operation Strangle on March 15th. This was a two-month air interdiction campaign conducted by tactical, strategic, and coastal air forces against the enemy's supply and transportation system in northern and central Italy. Flying more than 50,000 sorties and dropping some 26,000 tons of bombs, these air forces destroyed or damaged numerous Italian rail, road, and port facilities. Despite this pounding, German armies continued receiving sufficient supplies and war materials to keep pressing the U.S. Fifth Army on the beaches at Anzio.[9]

The Anzio beachhead was finally relieved by pressure on the Germans from other Allied ground forces advancing from the south.

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[8]For an overview of this battle, see John Keegan, *The Price of Admiralty*, Viking Penguin, New York, 1989, pp. 265–273, 310–315.

[9]Kohn and Harahan, *Air Interdiction in World War II, Korea, and Vietnam*, fn. 20, p. 3.

The campaign is worthy of consideration because it was deliberately planned and executed for rapid and specific effect and because it was subsequently examined in some detail by military analysts.[10] Although the success of the campaign may be disputed, the case is pertinent because it demonstrates that even when interdiction campaigns have been carefully designed, orchestrated, and measured, and even when all the data from both sides have been examined after the war, it may still be very difficult to measure success with any agreed metric. Neither have access to German records and interviews with the German commanders after the war really resolved the matter.

Thus, the absence of information about drug smugglers and their operations—particularly about the extent to which they have been deterred or their capabilities reduced—may not be a significant or principal bar to assessing the effectiveness of interdiction. We have an excellent case in Operation Strangle, in which all such impediments to measurement were absent and, yet, ambiguity about the success of the campaign remains.

Isolating the Normandy Beachhead

In 1944, the German Panzer Lehr Division[11] was positioned deep in France to serve as a flexible reserve against the expected Allied invasion across the English Channel. Once the Allied landing points had been clearly established, the division was to move forward and attack the vulnerable beachhead positions. The Allies used their dominance of the air over France to carry out what must be considered one of the most stunningly successful interdiction campaigns of modern warfare—as judged by both sides, during and after the war.

The Panzer Lehr Division was subjected, from the outset, to continuous air attacks upon its assembly points, while it was on the move, and upon its means of transport. The speed of movement was severely reduced, units were separated from each other and their equipment, and much of the equipment was destroyed.[12] The Division began to arrive seven days late at the Normandy beachheads, in pieces, disorganized, and not in any condition to contribute effectively to the battle.

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[10]See F. M. Sallagar, *Operation "Strangle" (Italy—Spring 1944): A Case Study of Tactical Air Interdiction*, RAND, RM-7496-PR, July 1971.

[11]*Panzer Lehr* translates to "tank instructors," but my colleague, Jerry Stiles, notes that the Panzer Lehr Division was formed by General Guderian in 1943 from the staff of the tank demonstration teams that were originally stationed at the tank training facilities. Whether or not the division personnel actually served as instructors is unclear.

[12]The ordeal of the Panzer Lehr Division is described by Douglas Batting in *The Second Front*, in the series *World War II*, Time-Life Books, Alexandria, Virginia, 1978, pp. 183, 187, and 190.

The actual losses inflicted upon the Panzer Lehr Division were probably not as important as the disruption of its mission, particularly the timing of that mission. Delaying the division by seven days, until the beachheads could be established and reinforced, was the crux of the interdiction campaign. Even if the division had arrived with all of its equipment intact, it was too late to affect the success of the invasion. Time was crucial to both sides in this brief campaign: Delaying the movement of reinforcements, even for a week, strongly favored the purposes of the interdictors; being delayed by just a week vitiated the purposes of the reinforcements.

Submarine Operations in the Pacific

American submarine operations in the Western Pacific during World War II have been regarded as the single most decisive campaign of the war against Japan. Most students of the war, on both sides, believe that Japan's defeat was brought about by strangulation of vital shipping, mostly by American submarine operations, but also by aerial mining and, to a lesser extent, by air and surface attacks. This view holds that Japan was brought near the point of collapse by this interdiction campaign and that the aerial bombardment of Japan, including the use of atomic bombs, forced the Japanese to confront their inevitable defeat.

This very effective interdiction campaign, waged through unrestricted submarine warfare, reinforces several previous observations about interdiction. The passage of time was on the side of the interdictors: American military strength was growing every year, while Japan's had been at its peak in the first year and declined thereafter. The options or alternatives available favored the Americans: Japan was utterly dependent upon shipping, while the Americans had many means of interdicting it and many other means of bringing military pressure to bear upon Japan.

Berlin Blockade

If the American submarine operations in the Western Pacific were a clear success, the Soviet attempt to blockade Berlin was just as clearly a failure. In 1948, the Soviets, to resolve the question of sovereignty of Berlin, blocked Allied access to the land routes (road and rail) through East Germany to Berlin. The Soviets perceived that the Allies were unlikely to force their access at the risk of initiating another great war in Europe or, even if they attempted to force their access, the

Allies would not succeed. Given those unpalatable choices for the Allies, the Soviets anticipated that the sovereignty of Berlin would be negotiated according to their terms.

That the Soviets did not anticipate the Allied capacity for airlifting supplies to Berlin is not surprising. They had no experience with airlift on such a scale, and their experience with the failed German airlift at the siege of Stalingrad had probably influenced their perspectives. Moreover, it was not at all clear, even to the Allies, that the city could be sustained by such costly means. But the important aspect of the airlift was not its capacity or cost; it reversed the burden of initiating conflict. Instead of the Allies having to start a fight to gain access over the land routes, the Soviets were suddenly put in the position of having to start a fight to deny access through the air. The tables had been completely reversed. Once it became apparent that the city could indeed be sustained by airlift indefinitely, time began to work to the Allied advantage. The Soviets had created a world display case for Allied resolve and technological virtuosity counterpoised against Soviet heavy-handedness and clumsiness.

In this evident defeat of an interdiction campaign, time and options favored the interdicted rather than the interdictor. For the first time, the shadow of the atomic bomb and its consequences imposed constraints upon both sides in the interdiction campaign. Indeed, the campaign took its shape from the inhibitions on both sides to initiate the use of force to break or maintain the blockade.

The Korean Peninsula

During the Korean War, the United Nations forces attempted to interdict the movement of Chinese forces and supplies from the Yalu River, southward toward the lines of engagement near the 38th Parallel. While the interdiction campaign, waged mostly in daylight with aircraft, resulted in much civil destruction in Korea, the flow of forces and supplies continued at night in sufficient quantities to support the Chinese forces engaged. One officer on the scene put it this way:

> Interdiction at that time was prosecuted intensely, with results that were difficult to measure. Let me say that differently: the results were measurable because we had good intelligence, but the significance of the effort was the difficult thing to determine. The North Koreans and the Chinese could fire 50 shells a day or 500, depending upon what they had. There was little or no difference in results between their firing 50 and their firing 500 because neither side was moving significantly.

> The critical issue [in the effectiveness of interdiction] is how urgently did the enemy need the supplies that you were destroying, or delaying in distribution. The answer for Korea is that they weren't very urgent at that particular period, except for short periods of time. . . .[13]

The campaign illustrates the difficulties of interdiction and of measuring its effects when the side subject to interdiction needs to move only modest amounts of contraband to succeed and is capable of adapting with alternative means or times of movement. Such situations make assessing interdiction campaigns problematical:

> The interdiction operations were not decisive [in Korea]. There is a big difference between decisiveness and failure. We didn't fail, but we didn't make the enemy surrender on the front line, because we didn't cut off all of his resources.[14]

This observation invited another:

> Are the terms "failure" and "success" really relevant to interdiction? Perhaps interdiction is a process in modern war that lacks a discernible beginning or end. Success or failure may be absolutely irrelevant concepts—inapplicable, inappropriate.[15]

The case is also worthy of consideration because it represents another example of constraints shaping the campaign. The UN forces were constrained from bombing either the Chinese forces at their source or the means they were using to cross the Yalu River into North Korea. These lessons were to be observed again in the Vietnam War.

Market Time

During the early phases of the war in Vietnam, the North Vietnamese provided much of their supply to the Viet Cong by the easiest, least costly method available—sampan traffic down the coast. With the American involvement in the war, one of the easiest and least costly countermeasures was the U.S. Navy's campaign, called "Market Time," to shut down the sampan trafficking in arms and supplies for the insurgents in the South. Naval aircraft and ships were so successful in locating and attacking or seizing the sampans that they effectively shut down the supply route.

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[13]General Jacob E. Smart, as quoted in Kohn and Harahan, *Air Interdiction in World War II, Korea, and Vietnam*, pp. 48, 49.

[14]Ibid., p. 51.

[15]Richard H. Kohn, as quoted in Kohn and Harahan, *Air Interdiction in World War II, Korea, and Vietnam*, p. 51.

The Market Time interdiction campaign certainly was successful in achieving its immediate purposes. But, in a larger sense, the result was to shift the trafficking to a new land route that could not be so easily shut down.

Ho Chi Minh Trail

When Market Time succeeded in shutting down the water supply routes from North to South Vietnam, the labyrinth of jungle trails known as the Ho Chi Minh Trail became the principal trade route for arms, personnel, and supplies into the South. While many means, most of them from the air, were devised and applied to interdict this land traffic, few would judge the campaign to have been a success:

> But we never stopped the flow of troops and materiel. There was never total interdiction. We were trying to get complete results from an operation that was not susceptible to that kind of interdiction.[16]

Although the diversion of the traffic from the sea to the land almost certainly imposed a cost upon the North Vietnamese, it may have imposed a proportionately greater cost upon the interdicting forces. In this case, successful interdiction of one supply conduit (sampan traffic) may have inadvertently aggravated the interdiction problem more than the supply problem by forcing the supplier to open a new conduit (land trails). As in Korea, the southward movement of supplies could be adapted in route, time, and amount to suit the needs of the interdicted.

When, in the latter stages of the Vietnam War, in 1972, the North Vietnamese went on the offensive with regular forces, their demands for supplies and reinforcements would pose a situation more amenable to air interdiction efforts. According to the air commander at the time, General John W. Vogt, Jr., air "stopped them dead, and the major factor was the use of air in an effective interdiction campaign."[17] This comparative success stimulated the following observation:

> Perhaps interdiction is more effective in conventional warfare, against mechanized armies, or technologically sophisticated armies, dependent upon large amounts of supplies with definite objectives, moving on definable lines of communication, under complicated time schedules. A

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[16]General John W. Vogt, Jr., as quoted in Kohn and Harahan, *Air Interdiction in World War II, Korea, and Vietnam*, p. 64.

[17]Ibid., p. 81.

> shifting or kaleidoscopic front, or an uncertain combat situation, or when forces are not engaged for specific objectives perhaps are not situations conducive to interdiction.[18]

Arms Supplies to Afghanistan

The Soviet effort to prevent the supply of rebel arms out of Pakistan, during the 1980s, is another example of the frustration of modern military forces trying to interdict supplies when:

- The interdicted is favored by the passage of time and by the alternative options available, and
- The interdictor is constrained to a level or scope of violence by political considerations.

The Soviets in Afghanistan, as with the U.N. forces in Korea or the Allied forces in Vietnam, would have preferred to attack the supplies at their source but were inhibited by the prospects of a larger and undesired war. The pace and style of the conflicts were not of a kind that made the amount or timing of the interdicted supplies critical to the outcome of the conflict.

Summarizing the Cases

The dozen preceding examples would suggest that interdiction would have been most likely to succeed if

- The passage of *time* and availability of alternative *options* favored the interdictor, even in the absence of the interdiction campaign, and
- The interdictor was largely freed of policy or legal *constraints* in carrying out the interdiction campaign.

These observations are captured in the summary of the historical examples provided by Table 1. Although time, options, and constraints may not be the only parameters for determining outcomes in interdiction, the correlation in

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[18]Richard H. Kohn, as quoted in Kohn and Harahan, *Air Interdiction in World War II, Korea, and Vietnam*, p. 81. The entire quotation seems pertinent to expectations from the interdiction campaign against drug smuggling.

Table 1

A Comparison of Historical Interdiction Campaigns[a]

Campaign	Outcome[b]	Time[c]	Options[d]	Constraints[e]
Slave trade	–			–
Southern ports	+	+	+	+
Prohibition	–		–	–
Atlantic	close	–	–	+
Italy				+
Normandy	++	++	+	+
Pacific	++	+	++	+
Berlin	– –	–	–	– –
Korea			+	– –
Market Time	+			
Ho Chi Minh Trail	–	–	– –	– –
Afghanistan	–		–	– –

[a]All assessments of favorable (+) or not favorable (–) are from the perspective of the interdictor.

[b]Interdiction campaign outcome.

[c]Effects of the passage of time.

[d]Range of alternative options available.

[e]Policy or legal constraints imposed.

these examples is sufficient to warrant their consideration as flags pointing toward or away from victory.[19]

Even so, the implications of these examples and their salient parameters for the military involvement in drug interdiction remain subjective. Much depends upon the purposes and expectations of interdiction campaigns. In some cases, as in Korea and Vietnam, interdiction was undertaken because the resources were available and could best contribute to the conflict if used for interdiction—not with the expectation that interdiction, by itself, would be decisive.

To illustrate, if the purpose of the military involvement in drug interdiction is more political than operational—to demonstrate that all of the nation's available resources will be applied to the problem wherever they can—success is represented more by the *commitment* than by the results. On the other hand, if the purpose is mostly operational—to shut down or impose significant costs on drug trafficking—success must be measured against those expectations.

[19]RAND colleague John Arquilla notes that these cases also suggest the importance of another parameter: whether the interdictor is a state power confronting nonstate smugglers. He observes that in the three such cases included here—the slave trade, Prohibition, and Afghanistan—interdiction campaigns failed to gain their objectives. Moreover, that parameter is clearly pertinent in the drug war, which is being waged by a state against nonstate actors.

Evidence of both purposes can be found in current arguments about drug interdiction efforts.

The utility of reflecting on these (or other) historical military experiences with interdiction is not to resolve the prospects for drug interdiction efforts, but to sensitize the mind to

- The general conditions or circumstances that bear upon the effectiveness of interdiction campaigns
- The difficulties of measuring the effectiveness of those campaigns, even after the facts on both sides are known.

3. The Performance Assessment Imperatives

The ability to assess the performance of any interdiction operation, including its worth to larger objectives, can be no better than the knowledge of the relationships between means and ends in the conflict or enterprise. If the relationship between an interdiction operation and any of the larger goals in which it is embedded is unknown or uncertain, then so too, ultimately, must be any assessment of its worth with respect to those goals. The assessment of performance of an operation implies an understanding of the connections between that operation and the highest pertinent goal to which that operation is presumed to contribute.

The impetus to assess performance or to measure effectiveness cannot be dismissed as merely a military penchant for taking measurements. Where military operations must be paid for in risk to human life, there must be some accounting of the worth of those operations. Even if those ordered to carry out interdiction operations do not question their orders or their contributions, those who issue the orders must ultimately weigh the worth of the operations in the light of those risks or losses. The military need to measure these things includes fulfilling its moral responsibility to those who must risk their lives in the conduct of military operations. It also, increasingly, includes the need to account to Congress for its budget requests: Is the acquisition of an additional, costly radar really justified by its contribution to drug interdiction? How is that to be measured?

Although the search for interdiction effectiveness is ostensibly driven by the need to know whether interdiction operations are working and worth it, that explanation, too, does not go deep enough. The pursuit of measurements of interdiction so often appears hopelessly complex and frustrating: On the one hand, simple measures, such as body counts, do not tell the whole story; on the other hand, the effects of interdiction may not be discernible against the background noise of the larger war.

Yet, if, somehow, one were told that interdiction is working and is worth it, that still would not be enough. The need to measure is not simply to earn "brownie

points" or to grade subordinates or to justify the price paid; it is also to find out what, if anything, is broken and needs fixing.[1] This impetus to find out what is not working is a useful perspective for the assessment of any interdiction operation—up to and including interdiction campaigns.

Dropping Bridges, for Example

If wartime interdiction calls, among other things, for knocking out the bridges across some river—over which the flow of supplies or reinforcements is presumed possible or probable—how should one assess the operations to effect that result? Suppose two out of four bridges are dropped? Is that interdiction operation then 50 percent successful? Few would be willing to conclude so. Dropped bridges are a measure of something, possibly, but not necessarily of interdiction. They might come closer to measuring interdiction if:

- All of the bridges had previously been used to their full capacity for supplies and reinforcements
- No other means were available to transport those supplies and reinforcements
- The outcome of the conflict really depended upon getting those supplies and reinforcements across the river.

If all of those conditions cannot be reasonably ensured, dropped bridges are not a measurement of interdiction but a measure of performance for the operations to drop bridges. The indirect nature of interdiction—and its complex relationships with the larger conflict—makes such assurances difficult.

How, then, should the operations to drop bridges be assessed with respect to interdiction? What is the contribution of dropping half or all of the bridges? For the one responsible for dropping the bridges, half or all is an important measure of *task* completion. But that is generally not enough, even for the one given the task. There are always the larger questions: Has the dropping of bridges succeeded in its motivating purpose of interdicting supplies and reinforcements? Has the interdiction campaign, of which bridge-dropping was a part, succeeded in its purpose of altering the course or outcome of the larger conflict?

While those larger questions or their answers are the responsibilities of higher authorities or commands, they have become increasingly salient, even at the

[1]This is one of the functions of the control loop in military command and control. Indeed, measures of effectiveness for military operations can be interpreted as measurements for the purpose of control, sought by the commander responsible for control of those operations.

lower levels. If the dropping of bridges has been undertaken at the risk of lives—which is usually the case—then the saliency of the larger questions is likely to grow in proportion to the risks or the losses. Is this mission worth the resources expended? Will it really contribute something worthwhile to the larger effort? In the absence of confidence in affirmative answers to the larger questions, the atmosphere or morale for interdiction operations, particularly those of long duration or high costs, becomes corrosive. People have to know whether their efforts are paying off, even (perhaps especially) when they are a small part of a larger effort. It is of little avail to do one's job well if

- The larger effort is not working somewhere, somehow, or
- The larger effort does not really depend upon doing that job.

Thus, the need to measure interdiction operations is not just about earning credit; it may be mostly about finding out what, if anything, is broken and where. And the imperative of finding the answers is, ultimately, a moral imperative, because part of the cost of any interdiction campaign, in war or against contraband, is reckoned in the risking of human life. Although many of the military operations in support of drug interdiction may seem remote from the risks of combat, most military operations, even those for routine training, can involve risks above the norm for civilian duties. Some obviously risky military operations, even in peacetime, are the launch and recovery of aircraft and small boats at sea, particularly at night and in bad weather.

In sum, the need to measure the effectiveness of military operations is not simply a burden imposed by higher authority—even though that imposition may be present. The need to measure is an imperative at all levels of command to fulfill the obligations of control (fixing that which is broken) and economy (conserving resources, including lives).

4. A Hierarchy of Connections

Any interdiction operation is associated with larger campaign or war objectives through a hierarchy of connections. Taking again the bridge-dropping example, there is a connection between

1. The dropping of bridges and the amount of supplies and reinforcements crossing the river on bridges. This connection recognizes that the enemy may have options to use the remaining bridges more effectively.
2. The amount of supplies and reinforcements crossing the river on bridges and those crossing the river by other means. This admits that the enemy may have means other than bridges to move his supplies and reinforcements.
3. The amount of supplies and reinforcements crossing the river by all means and progress of the interdiction campaign. This connection acknowledges that interdiction of all supplies and reinforcements—i.e., perfect interdiction—may not succeed because the enemy has other means or venues for pursuing his objectives, such as living off the land or with local support.
4. The progress of the interdiction campaign and the war objectives. This recognizes that persevering in the interdiction campaign may turn out not to fulfill or even contribute to the war objectives.

Interdicting Border Crossings

All of these connections have been recognized in historical combat interdiction campaigns. They can also be anticipated in future drug interdiction campaigns. For example, certain areas, such as road crossings along the Mexican border, are suspected conduits for drug smuggling. A military task might be interdiction of smugglers and drugs making land crossings of the border in those areas.[1] The obvious performance question facing those given that task is how well they have (or have not) succeeded in closing those designated border areas as drug conduits. The answer is not simply the number of smugglers captured or the

[1]Indeed, National Guard forces may be so assigned now under the direction of state governors (i.e., while operating under Title 31 rather than Title 10 of the U.S. Code).

amount of drugs seized, for those numbers tell nothing about what is getting through without interception.

> In particular, seizure statistics lie in a kind of limbo absent comparable figures on the drug flow from which the seizures are drawn. Seizures per se are statistics without a context; neither the forces on the front lines nor their leaders in Washington have a sound basis for their interpretation.[2]

Indeed, those tasked with the interdiction operation might not be capturing any smugglers or seizing any drugs, for one of the following reasons:

- Their efforts have succeeded in deterring further smuggling in the designated areas of the border.
- They have effectively closed the area to all traffic, whether it included drugs or not.
- No drugs were crossing in the first place.
- Their efforts have been grossly ineffective or inappropriate against the smuggling methods.

A logical alternative for measuring success might be the actual reduction of contraband making successful land crossings in the designated border areas. Unfortunately, that measurement may be much more difficult to make than counting bridges dropped. It depends upon knowing what the successful contraband traffic was before and what it is as a result of the interdiction operation. Neither number, by itself, says anything about the efficacy of the interdiction. Both numbers are needed, yet they may be difficult to measure directly. More likely, they must be inferred or estimated—unlike damaged or destroyed bridges, which can be seen or photographed.

If the crossing point was not previously being used for contraband, the interdiction operation must be measured in terms of the reduction in the *potential* capacity of the conduit. This is an even more problematic number, especially with contraband that is easily concealed and transported. Obviously, dropping bridge spans or completely closing border crossings makes it easier to assess interdiction, because the denominator no longer matters when the numerator has been turned into a zero. Unfortunately, for drug interdiction, the cost of closing many of the conduits is prohibitive because of the concomitant costs to normal, legal commerce.

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[2]Anderberg, *MOEs for Drug Interdiction*, p. 4-4.

Michael Anderberg has examined six possible measures for the effectiveness of drug interdiction operations:[3]

1. Amounts of drugs seized
2. Fraction of interceptions or inspections that result in drug seizures
3. Fraction of drug shipments flowing in a conduit that are seized
4. Fraction of attempted drug shipments successfully flowing through a conduit[4]
5. Smuggler's markup in drug price when using a conduit
6. Fraction of total drug market flowing through a conduit.

He found all these measures wanting on two or more of the following aspects:[5]

- They rely upon unknowable information about the actual flow of drugs.
- They would encourage the focus of interdiction efforts on the least effective smugglers.
- They are only partially affected or influenced by interdiction efforts.
- They would not respond quickly enough to provide useful control feedback on the effectiveness of interdiction efforts.

Anderberg concludes that:

> None of the [measures] considered here are likely to be of much value for evaluating performance in real operations; measures that use good data suffer from serious conceptual problems, notably a lack of mission orientation; those that are soundly related to the mission require data that cannot be collected under any foreseeable circumstances.[6]

Even assuming that those flaws could, somehow, be accepted or overcome, the problem of measuring the effectiveness of interdiction efforts is still far from resolved. There is a dynamic here: The enemy is likely to be adaptive and respond to the interdiction operations. The drug smuggler may adopt new smuggling techniques because of the interdiction operations, perhaps even increasing the attempted throughput and, thereby, increasing the baseline against which the interdiction must be measured. Those same new smuggling techniques may, at least temporarily, undermine confidence in measurements of

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[3]Ibid., pp. 1-2, 1-3. The description of these measures has been modified to match the terminology used here; however, the substantive aspects have been preserved.

[4]Numbers 3 and 4 are not fractional complements: Seizures may not account for all of the losses in shipments; some may be lost for other reasons, such as accident, abandonment, theft, etc.

[5]Anderberg, *MOEs for Drug Interdiction*, p. 11-1.

[6]Ibid., p. 11-5.

the amount of contraband making successful crossings. Or, because of any number of factors in the drug market or interdiction operations elsewhere, there may be an increase or decrease in the attempted throughput—establishing a new, hidden baseline against which reductions in contraband traffic should be measured. Interdiction operations against a responsive, adaptable enemy would seem to be inherently dynamic and uncertain.

The Complications of Alternatives

If the capacities—actual or potential, with and without interdiction operations—of, say, a road crossing point, could somehow be estimated or measured, and if the calculated reduction in capacity were taken as a first-order measure of interdiction performance, even then the following additional connections (and complications) arise:

1. Between the residual capacity (as interdicted) of the road crossing point(s) and the residual capacity of other border areas for drug traffic by land crossings. This raises the possibility of off-road vehicles and walkers carrying the drugs around the road crossing points. It admits to alternatives for the smuggler to use other means and venues for land crossings.[7] The combat analog is the use of swimmers, barges, or other means to move supplies and reinforcements across a river after bridges have been damaged or destroyed.
2. Between the residual capacity of all land crossings and the residual capacity of all border crossings through other media—the air and sea. This connection admits that the smuggler may have alternatives to moving drugs by land crossings. The combat analog is the use of aircraft and ships to transport supplies and reinforcements after land routes have been effectively closed, as in the Soviet blockade of Berlin in 1948.
3. Between the residual capacity of all means of border crossing and the residual capacity for interior production of drugs. This connection admits that some or all of the drugs may not have to be imported, but can be domestically manufactured. The combat analog is the raising and supplying of forces off the land, without the need for outside supplies or reinforcements, as in the Vietnam War.

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[7]For example, it is generally believed that the success in intercepting aerial drug smugglers destined for Florida has resulted in a shift of the aerial traffic to the border areas of Mexico, for transshipment across the border by land. Recently, Puerto Rico has become an attractive transshipping point for illegal drugs because of its accessibility to smugglers and because goods shipped to the U.S. mainland from Puerto Rico are not subject to customs inspections.

4. Between the residual capacity of all means to supply drugs and the demand or market for the drugs. This connection admits that the residual capacity may be significantly in excess of the demand or that the demand can be met indefinitely from existing stores or reserves. The combat analog is the enemy who is not supply or reinforcement limited in the prosecution of his campaign objectives, or who may be able to regulate his need for supplies and reinforcements without sacrificing his campaign objectives, as in the Korean War.
5. Between the consumption of drugs, however driven or limited, and the social problems that stimulated the interdiction campaign. This connection admits that campaign aims may not be matched to the social problem that motivated the campaign. The combat analog is the possibility that the means chosen (i.e., interdiction, destruction of forces, or inflicting societal damage) for prosecuting the war, while having some logical basis, may not in fact lead to the accomplishment of the desired war aims or goals.

All of these combat analogs became apparent at one time or another during the war in Vietnam: When the coastal water routes were closed, the flow of supplies moved to land routes. When truck roads were effectively closed through bombing, the infiltration of supplies was pursued by means of walkers on the trails. With reduced flows of supplies, the enemy lived off the land, built up supply stores, and paced his operations to conform to the availability of supplies. And, ultimately, the interdiction campaign, along with all the other military actions undertaken, was not successful in accomplishing the desired political aims or goals of the war under the constraints imposed.

The story of drug interdiction, so far, is not all that different:

> Intensified interdiction is supposed to result in reduced smuggling, all things being equal, but, in the decade of the eighties, each year has seen increases in both the resources devoted to interdiction and the quantities of drugs sold on the retail market. Smugglers have compiled a most respectable record of adaptation and evasion; when one avenue becomes difficult, they open another.[8]

Indeed, the drug interdiction campaign in the Caribbean is reminiscent of Operation Market Time, which caused the North Vietnamese to move their supply routes from the water onto the land, where they were much harder to interdict on the Ho Chi Minh trails.

> The pressure from successful interdiction encourages smugglers to search for adaptations and alternatives, some of which might turn out to be clear

[8]Anderberg, *MOEs for Drug Interdiction*, p. 3-2.

> improvements over their old methods. For example, it remains to be seen whether the development of large-scale drug routes through Mexico in the face of interdiction in the Caribbean amounts to a net gain for the government or the smugglers.[9]

In sum, the assessment of interdiction performance against an adaptive, responsive enemy is a snarl of complexities arising not only from the uncertainties that adhere to the necessary measurements, but also from the dynamic and interconnected nature of the contest—in the means and ends available to both sides. The military has historically sorted out this snarl by means of its hierarchical command structure in which the responsibilities for interdiction operations and their assessment are assigned.

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[9]Ibid., pp. 3-5, 3-6.

5. Hierarchies and Responsibilities

In the hierarchy of connections just described, several classical levels of military art are apparent:

- **Tactical:** typically concerned with the most effective *application* of specific (assigned) means (e.g., forces) to a specific task (e.g., to drop a bridge span). For military operations in support of drug interdiction, this means the effective application of military means (e.g., guards and search teams) to reduce the capacity of a specific conduit (e.g., a border road crossing).
- **Operational:** typically concerned with the most effective *allocation* from an array of limited means to alternative tasks in type, place, or time. In drug interdiction, this means the most effective allocation of limited military resources (e.g., land, sea, and air forces) to alternative missions, regions, and deployment schedules.
- **Strategic:** typically concerned with the *relationship* or contributions of possible means to possible ends. In drug interdiction, this means the relationship or contributions of interdiction (or other activities) to the overall purposes or objectives of the drug control program.

The responsibilities between these levels are easily separated in the military command structures. The commander on the scene of the task is usually responsible for the tactical-level decisions. Higher-level commanders, responsible for the allocations of forces and other military resources, work an array of operational-level problems. The strategic-level commanders are generally political leaders or those military commanders who directly serve them.

Given those relatively clear separations of responsibility and authority, the performance assessments of military interdiction operations for drug control can also be clearly delineated: Tactical commanders can assess their performance strictly in terms of *executing* their task of effectively reducing the capacity of a specific, assigned conduit with the assets assigned to them. Whether those resources *should* have been assigned to that conduit is, strictly construed, not their concern. Given those resources and their assignment to the conduit, the tactical commander's concern is the *most effective application* of those resources to the task at hand.

Likewise, operational commanders can assess their performance in terms of *balancing* or efficiently allocating the resources assigned to them to minimize the flow of contraband through all conduits under their command. Whether those resources *should* be committed to interdiction as opposed to other campaigns (e.g., education or rehabilitation) is, again, not their proper military concern.

Ultimately, it is the strategic commanders, political or military, who are responsible for assessing the *suitability* of interdiction as a means to their larger ends (e.g., to stop the flow or to win the war). It is here that the buck stops, for this is the level at which the responsibility takes on political as well as military dimensions. It is the strategic commander who must, ultimately, question and defend the appropriateness of both means and ends.

Surveillance Responsibilities

None of those assessments in interdiction, at any level, are likely to be easy to quantify, but they are at least tidy, both in concept and with respect to the separation of responsibility and accountability. Some examples may make the distinctions a little less abstract: Airborne radar and communications aircraft, such as the Navy's E-2 and the Air Force's E-3, have been deployed over the Caribbean to detect and track possible drug-smuggling aircraft. All three levels of command are immediately evident, each with quite different considerations in any assessment of their performance in support of drug interdiction:

1. **Tactical:** This level of command responsibilities would include (a) the pilots who are responsible for executing the aircraft flight plans for surveillance of an assigned sector or area, (b) the radar officers[1] or operators who are responsible for utilizing the electronic assets of the aircraft to detect and track possible smugglers, and (c) the communications officers or operators who are responsible for communicating accurate and timely information on possible smugglers to appropriate law enforcement agencies.
2. **Operational:** This level of command responsibilities would include (a) the squadron or wing commanders who are responsible for assigning the aircraft to sectors or areas for surveillance, (b) the task force commanders who are responsible for deploying and committing their aircraft and other resources to surveillance, and (c) the regional commanders who are

[1]On the Navy E-2 aircraft, the radar officer is in command of the surveillance mission; on the Air Force E-3, the pilot is in command of the mission. The difference appears to be cultural, as between the two military services, not technical or operational, as between the two aircraft.

responsible for allocating their regional resources to drug interdiction campaigns.

3. **Strategic:** This level of command responsibilities would include (a) the President and Commander in Chief of the armed forces, (b) the commanders of the military departments, who are responsible for approving and funding the use of military forces for regional interdiction campaigns, (c) the defense policymakers who must approve the use of the military in drug control programs, and (d) the civilian drug-control policymakers who conceive drug interdiction as an effective drug-control measure.

Each of these commanders—at least ten different ones in this example—has a different performance assessment problem. The pilot cannot be held accountable for whether the aircraft radar is technically adequate to detect very slow-flying targets; his responsibility is to plan and fly the mission profile assigned to him. The task force commander cannot be held accountable for the productivity of the region he is trying to surveil; his responsibility is to use the resources at his disposal most effectively to surveil the area assigned him, regardless of the yield.

A Truncated Chain of Command

Assessments of the effectiveness of an interdiction campaign must be conducted with an eye toward the responsibilities at every level of the command structure:

> It does little good to evaluate a commander on events beyond his influence. Though the nominal mission may be the same at several different echelons, each level might have its own distinctive [set of measures], some for external reporting and others for internal management.[2]

Since the military has been assigned tasks at the operational and tactical levels—and not at the strategic levels—the measures of interdiction effectiveness should be commensurate with those levels of responsibility and authority:

> One possibility is to focus narrowly on the performance of the actual military activities. For example, the mission of detection and monitoring might be characterized in terms of coverage, probability of detection, timeliness of notification to [the law enforcement agencies], fraction of targets tracked to intercept, and similar technical criteria. Such an approach has two attractive advantages: (1) the necessary data are internal to military operations, not requiring collection from the smugglers and [law enforcement agencies], and (2) the measures are of a kind familiar to military forces in other operational settings. There is a down side,

[2]Anderberg, *MOEs for Drug Interdiction*, p. 2-3.

> however: doing well on such technical criteria gives no assurance that the effort has any useful impact.[3]

Indeed, the question of useful impact is generally one for the strategic level—not the tactical and operational levels, which are currently the only ones assigned to the military in drug interdiction.

Whose responsibility is it, then, if the interdiction program is not working or is not very effective? It depends upon what is broken and where it is broken. If it were simply that the radars have not been properly gated within their available Doppler range to detect slow-flying aircraft,[4] it may be primarily the radar operator's responsibility. The radar operator's performance should be assessed according to the fraction of the radar's technical potential that he or she has been able to exploit during operations; but no more than that. Similarly, each commander, from top to bottom, has a different responsibility, and his or her performance can be measured or assessed only against that responsibility.

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[3]Ibid., pp. 13-1, 13-2.

[4]Doppler radars detect the frequency shift of signals reflected from moving targets. They can be "gated" by setting the thresholds (upper and lower bounds) of the frequency shifts that will be displayed as targets. If the thresholds are set too wide, they may introduce unwanted targets or "clutter." If they are set too narrow, they may discard targets of interest, such as an aircraft flying more slowly than expected.

6. The Influence of Abundant Information

A generation ago, say in World War II or the Korean War, the separation of responsibilities and assessments just described would have been sufficient for all concerned (and informed). The tactical commanders would have carried out their assigned tasks with little regard for whether or not the operational commanders above them had balanced their resources such that they were not wasting their efforts (or blood):

> Theirs not to reason why,
> Theirs but to do and die.[1]

More pertinently, however, they were not likely (ever) to know whether the operational commanders above them had done their jobs properly—whether they had allocated their resources so that other conduits were left to flow freely while the tactical commanders struggled to close the ones assigned to them. The same tactical commanders were most unlikely to question whether the entire campaign—of which they were only a small part—was achieving (or could achieve) its objectives or, if it did achieve them, whether their tasks made any significant contribution to the war. The tactical commanders had to rely upon their superiors to decide and tell them that.[2] If questions were voiced, they were likely to die in censorship or from a lack of access to a large or interested audience.

The more recent need to quantify and to account for the connections across the hierarchy of levels can be associated with the explosion of public information. The influence of abundant information became painfully apparent during the Vietnam War. Quantitative assessments were demanded by the voracious appetites of the news media (and hence the bureaucracies) for information, and analysis of that information by outside critics became inevitable. For the first time, the connections across levels in the hierarchy were made a part of the public assessment:

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[1]Alfred, Lord Tennyson, "The Charge of the Light Brigade," 1854.

[2]While questions about the effectiveness of certain military operations were raised during World War II (e.g., the efficacy of strategic daylight aerial bombardment), such questions were likely to be muted until after the war by the lack of public exposure to either the questions or the answers, for reasons that included censorship, morale, and audience interest.

- If the tactical commander could count dead bodies of the enemy as a measure of his performance in the field, the critics could question whether or not the enemy could produce fresh soldiers faster than they were being killed by that process.
- If the operational commander could assert that enemy supplies had been reduced to a small fraction of their previous levels, the critics could question whether or not the enemy needed any significant amount of supplies to sustain the conflict on his terms.
- If the strategic commander asserted that even a stalemate would prevent Southeast Asia from being taken over by the Communists, the critics could question who had the greater stamina and whether the domino theory was valid.

The making of such connections is not new; they can be found in the debates over strategic bombing more than 40 years ago. But their promulgation through the news media is new[3] and has altered the problem of military performance assessments, for all levels, probably forever. The connections can no longer be ignored, because the information necessary to make or suggest them is increasingly available, even to the tactical commander and his people on the "front lines."

Although the military ethic demands obedience to lawful orders, military people at all levels are now exposed to information pertinent to the assessment of their performance in other, larger contexts. This exposure and its potentially corrosive effects were painfully evident during the later stages of the Vietnam War. The public's increasing ability and interest in scrutinizing military operations and their effectiveness have been apparent in both the Granada and Panama interventions and in the war against Iraq. Military commanders at all levels must be increasingly concerned about the effects of media and public assessments of military performance upon their subordinates.

The widely appreciated point, with respect to military drug interdiction, is that "body counts" are no longer sufficient. Assessing the performance of drug interdiction will require more sophisticated or "meaningful" measures. Perhaps less appreciated is that this is not simply a contextual problem to be associated

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[3]The motivations of the news media have not changed so much as has their ability to access and process information, instantly and from anywhere the world, and their development of an audience for that information. Thus, the changes are largely due to technical developments, such as satellite communications, the portable video camera, and the ubiquitous microchip, which has facilitated the "information revolution." For a brief summary of these changes, see Carl H. Builder and Steven C. Bankes, "Technology Propels European Political Change," in *IEEE Technology and Society Magazine*, Vol. 11, No. 3, Fall 1992, pp. 10–17.

with controversial military operations or campaigns. Rather, controversy has become the hallmark of abundant public information. Drug interdiction operations of the future, military or civilian, will not be able to escape it:

- If a tactical commander estimates that the daily drug traffic at his crossing point has been reduced from 100 kilos down to 1 kilo, critics may have information to suggest that the smugglers have simply moved the traffic to off-road vehicles on either side of the road.
- If the operational commander asserts that drug smuggling across the entire Mexican border has been reduced to a small fraction of its previous levels, the critics may have information to suggest that the problem has moved to the Canadian border or that the smugglers are now transshipping through European cargoes.
- If the strategic commander asserts that all drug smuggling across all U.S. borders has been significantly reduced, critics can question whether or not the drug consumers are really dependent upon outside sources and are proving capable of manufacturing drugs in their own basements with common chemicals.

What has changed in the past generation is not the problem but access to information about the problem and to the number of voices that can be heard expressing their views about it. To the extent that military personnel are exposed to this information and the disparate views, they are subject to its corrosive or salutary effects in assessing what they are doing.

7. Assessing Drug Interdiction Operations

Thus, the challenge in assessing the performance of military interdiction is not so much what to measure, but how far to go up or down the chain of connections in measuring it. At the most rudimentary or tactical level, the basic measure is the reduction in the potential contraband capacity of the specific or assigned conduit in question; any other measure is a contributor to, or surrogate for, that fundamental measurement. However, the significance of that or any higher-level assessment of performance depends upon its contribution to the next higher level of tasks or objectives. This chain of connections provides meaning for the enterprise, from the lowest task to the highest goal. Hence, the crux of the problem is that, like any chain, it is most vulnerable at its weakest link.

The entire enterprise depends upon sound actions at all levels. It avails little to secure the road crossing against contraband if the drugs can easily cross elsewhere—on other roads, where there are no roads, in the air, or on the sea. It avails little to secure all of the borders against contraband if the drugs can be easily made inside the borders. If those actions at all levels can be proven sound, then the conflict or enterprise can be defined well enough to forge the necessary connections between levels and then to measure the performance of the enterprise. The problem is not what to measure but rather adequate knowledge of the complex chain of relationships between actions and aims, particularly as one nears the top of the chain.

Michael Anderberg argues that the aims themselves, at the highest level, defy measurements and assessments:

> The national strategy declares the principal purpose of interdiction is deterrence against smuggling; denial of routes, seizures of drugs, and arrests of smugglers are not the ultimate goals, merely means to the end. Upon closer inspection, however, deterrence appears as an abstraction that cannot be linked to interdiction operations in any practical terms. Nor can interdiction bear the full burden for achieving deterrence; most other aspects of the war on drugs contribute as well. As a result, there seems no obvious way to evaluate interdiction directly in terms of deterrence, and no other statement of the mission has official blessing.[1]

These impediments to the assessment of interdiction campaigns and even deterrence have not historically stymied the military, because the military

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[1]Anderberg, MOEs for Drug Interdiction, p. 3-6.

command structure is designed to parse the means and connect the ends in a continuous chain of authority and responsibility from top to bottom. Abstractions, like nuclear deterrence, are linked to operations (e.g., the numbers of bombers and missiles on alert) by strategic-level commanders who accept the responsibility for "how much is enough." From the military experience with both interdiction and deterrence, the problem in drug interdiction is not abstractions so much as it is a broken chain of command.

Although the military command structure cannot truncate the questions of critics, it can take (and historically has taken) the responsibility for answering them:

- At the tactical level, interdiction should be assessed in terms of the reduction of the contraband capacities—actual or potential—of the specific conduit(s) assigned, using the resources assigned, without regard to their relationships with other conduits or with higher campaign goals. If the tactical assignment is limited to some task in a chain of tasks related to reducing the capacity of a conduit—such as target detection or monitoring—then the tactical performance should be assessed in similarly limited terms: the reduction in undetected or unmonitored contraband carriers. While the tactical commander so assigned—and the rest of the world so interested—may want to know how that task contributes or is connected to the larger efforts, the responsibility for that assessment lies at the next higher level.
- At the operational levels,[2] interdiction should be assessed in terms of the reduction of the capacities of all conduits assigned, using the resources assigned, without regard to their relationships with other conduits or with higher campaign goals. This assessment, except for the assignments of conduits and resources, would appear to be the same as that for the tactical level. The problems for the two are quite different, however: The tactical commander is concerned primarily with *effective execution*—the *how*—of the reduction, while the operational commanders are concerned with the *efficient allocation*—the *what*, *where*, and *when*—of their resources.
- At the strategic level, interdiction should be assessed in terms of the ability to achieve, or to contribute to, the larger ends of the drug-control program. Here, the assessment is about the choice of means (an interdiction campaign) to achieve a specific program objective (reduce the flow of drugs across the

[2]There may be several such levels, with differing and sometimes overlapping responsibilities in scope and type—by geography, service, function, operational medium, and units.

borders) or contribute to a general program goal (reduce the use of drugs in the United States) with the resources available.

Collectively, assessments at all three levels provide a basis for overall judgments about the performance or efficacy of interdiction and for insights as to where the supporting operations may be broken or need most improvement. None of those three levels can or should escape scrutiny, because failure is possible at all of them. Spotting failure—and fixing it—should be the ultimate purpose of performance assessments. Failures at the highest level—in the strategic conception of the interdiction campaign—should be of the greatest concern, for they pervade and can doom the entire enterprise if undetected. By contrast, many, if not most, failures at the lowest levels may be leaks in the dikes that can be repaired before they imperil the larger enterprise.

The Sources of Frustration

Only part of the frustration for the military in assessing its performance in drug interdiction arises from the *lateral* truncation of a sequence of tasks: For example, in its lead role for the detection and monitoring of aerial and maritime drug traffic, the military can detect and monitor, but it cannot follow through with apprehension and prosecution of the drug traffickers who have been detected and monitored. It is frustrating for the military to have to measure its performance in terms of part of the job to be done.

But a much more important source of frustration for the military arises from the *vertical* truncation of tasking: The military's responsibilities for tasking at the operational and tactical levels are more evident than at the strategic levels. It was Congress that mandated the military's involvement—a strategic decision—but Congress does not appear to accept responsibility for that tasking when it then asks the military to demonstrate its accomplishments in drug interdiction. In the military chain of responsibilities and authorities, the one who assigns the task is the one who must defend its worth.

That vertical chain appears to be broken as it passes from the military leadership to Congress. Note that when the President, as Commander in Chief of the American military, orders the military to undertake a particular task, as in the Grenada and Panama interventions, he stands as the principal defender of that tasking as to its worth and contribution. But Congress can mandate the military's involvement without accepting a commander's responsibilities.

These lateral and vertical truncations of responsibility and authority are schematically illustrated in Figure 1. The horizontal dimension represents the

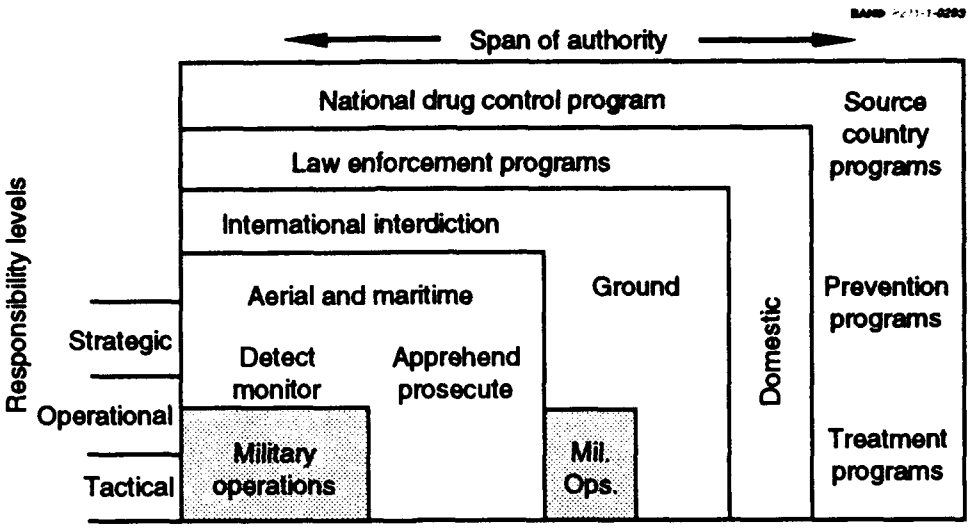

Figure 1—Areas of Responsibility and Authority

scope of activities and, hence, the span of authority in the drug program, from the totality of the national drug control program down to the military's lead role for detection and monitoring of aerial and maritime drug traffic. The vertical dimension represents the level of responsibility, from the tactical up through the strategic levels.

As Figure 1 indicates, the military's responsibilities and authorities are truncated both laterally and vertically; but the vertical truncation may be the more important of the two as the military wrestles with the problem of assessing its performance in drug interdiction, for the military misses the continuity in the chain of command more than it does the full sequence of tasking.

More generally, the history of interdiction campaigns should warn us that any interdiction campaign devoted to controlling illegal drugs will be difficult to assess and controversial. It will be difficult not just because of the fractionation of tasks and responsibilities or the restrictive rules of engagement, but mostly because of the very nature of interdiction campaigns. It will be controversial not just because drug control or use of the military is controversial, but mostly because of the changing nature of a society with an abundance of public information.

That said, however, the assessment of military operations in support of illegal drug interdiction should be approached just like any other military interdiction campaign. The concerns should not be with the difficulties of assessment but

with insuring clear lines of responsibility and authority and with the validity of the overall strategy that has led Congress to mandate military operations in support of drug interdiction.