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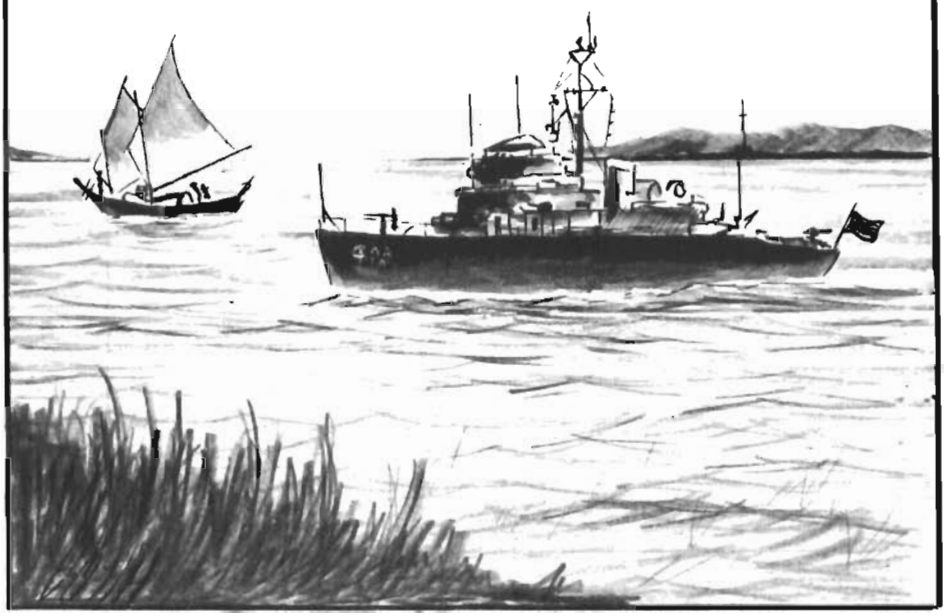

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INTRODUCTION

The great seapower nations have traditionally strived to exert that power beyond the sea frontier of the nation itself and thus have been generally "blue water" in outlook. But occasionally in history those who have controlled the sea have found themselves unprepared to exercise that seapower into strategically located shallow water areas--those coastal and inland waterways which often are the major thoroughfares of a country and support the mass of its population.

The Duke of Parma had that problem in 1588 when his troop barges were unable to rendezvous with the mighty Spanish Armada for the planned invasion of England because of the activities of a handful of Dutch "flyboats" operating in the shallow water of the Flemish Coast--out of reach of the deep-draft galleons. Two centuries later the powerful British Navy was forced to face the embryonic American Navy on equal terms on the inland lakes (in both the American Revolution and the War of 1812). Fifty years later the Union Navy had to construct a fleet of coastal and river craft from scratch to enable it to penetrate the vitals of the Confederacy. Today finds that same navy, now the world's biggest, doing much the same thing a second time in order to deny the use of the coastal and inland

waterways of Vietnam to an enemy whose military and commercial watercraft are nearly all built of wood.

The purpose of this paper is to analyze this problem of inshore operations, recognizing the established pattern of unreadiness and improvisation, in order to determine if there exists a continuing need for such capabilities in our Navy after the Vietnamese conflict is settled. When discussing inshore operations in this paper, the writer does not include in its meaning the traditional concepts of amphibious and mine warfare operations. It can be rightly argued that both these modes of naval operations belong within the confines of an inshore operations definition, but they are not addressed herein because they are already established elements within the U.S. Navy.

The first chapter will analyze the possible threats which might require the Navy to maintain a continuing capability in inshore operations. The second chapter will present historical examples of the use of inshore operations and some of the lessons learned with possible application today. The third chapter will review the present commitment of the U.S. Navy in inshore operations in Vietnam. The fourth chapter will discuss possibilities for future application. Lastly, there will be an appreciation of the problem in the U.S. Navy today, along with several proposed courses of action the Navy might initiate.

The writer served a year in 1966-67 as the Navy projects officer in the Operational Plans and Requirements Division, J-3, U.S. Military Assistance Command, Vietnam. In that position the Navy's unreadiness to perform the tasks required of it in the inshore operations areas was a continual difficulty. There was, as well, an unconcealed attitude on the part of some naval officials that the U.S. Navy should not even now be concerned with the "muddy waters" of the coastal and inland waterways. Manifestly, a study into this type of operational requirement is in order. The writer has particularly drawn on this past experience in Chapter III of this paper.

I--THE THREAT

> The conventional division of the globe into land and marine areas, controlled respectively by land and naval forces, has always been highly arbitrary . . .. Moreover, there are large and important areas in which operations ashore and afloat are associated in the most intimate manner.[1]

The increased interest and attention given to naval inshore operations, because of the events of the last several years, has caused a proliferation of terms and definitions. The *Dictionary of United States Military Terms for Joint Usage* (JCS Pub. 1) offers little help in resolving this problem of definitions. The myriad of terms heard in relation to inshore operations include restricted waters, confined waters, shallow waters, unconventional warfare, paranaval warfare, special warfare, river warfare, riverine warfare, and inshore warfare.

The Chief of Naval Operations defined restricted water operations in June 1961 as "... those conducted in waters, less rivers and estuaries, where the operation of combatant ships is inhibited by the depth of water, navigational hazards, shore defenses, surrounding landmasses, and the increased enemy threat incident thereto."[2] Note that the foregoing specifically excludes "rivers and estuaries," areas that many naval persons today would still prefer to exclude from U.S. Navy responsibility. It is intended, however, that the scope of this paper not only include river operations, but also not restrict the degree of naval involvement in inshore operations to "warfare" only.

For purposes of discussion in this paper the term unconventional warfare will be avoided for "what is unconventional in one war may well be conven-

tional in the next."[3] This is certainly a valid statement in the 20th century, and the Vietnam war is reinforcing its premise. Placing the "unconventional" tag on inshore operations tends to remove that type operation from the mainstream of naval thought. The bones of inshore operations must be picked to determine if they deserve full partnership with other "conventional" naval responsibilities, before they are buried for resurrection the next time they are needed.

Paranaval operations is much too restrictive in meaning as it alludes to activities outside the normal naval organization or to clandestine practices.

Since this paper intends to include inland waterways within its scope of inshore operations and since the term "riverine" has come into extensive use in Vietnam, presented below are three riverine definitions accepted by the Military Assistance Command, Vietnam (MACV):

> a. **Riverine Area.** An inland area with an extensive network of rivers, canals, streams, irrigation ditches, paddies or swamps extending over a broad, level terrain, parts of which may be inundated periodically or permanently. It may include sparsely-populated swamps or forests, places where rivers and streams have steep banks densely covered with tropical trees or bamboo, and locations where the terrain is relatively flat and open. A large agrarian population may be concentrated along the waterways. Riverine areas near the ocean, or far inland, may be affected by tides.
>
> b. **Riverine Operations.** All military activities designed to achieve and/or maintain control of a riverine area by destroying hostile forces and restricting or eliminating hostile activities. Operations are characterized by the extensive use of water transport to move military forces and equipment.
>
> c. **Riverine Warfare.** Combat and associated support operations by designated Army, Navy and other forces in riverine area. This includes operations from the water, the air, and by waterborne and other ground assault forces on land. River warfare, on the other hand, refers only to specific tasks by naval components--water patrol, transport, and combat support--as part of the overall riverine operations.[4]

The writer is not crusading for the use of one term over the other, but in order to resolve the confusion of semantic jargon the below-listed terms will have the following meanings when referred to in this paper:

1. **Inshore Operations.** Those naval activities conducted in water areas where the depth of water or geographic location precludes the normal operations of U.S. Navy oceangoing ships. This definition is subdivided into two parts:

a. Coastal Operations. Those inshore operations conducted aloug the oceanic littoral of a territory.

b. Riverine Operations. Those naval activities conducted in support of riverine operations as defined in subparagraph b. in the preceding paragraph.

Obviously there are many gray areas in the above definitions where "blue water" meets "muddy water," and when this is the case the required mission will dictate whether oceangoing ships or inshore assets, or both, should be utilized. As was mentioned in the Introduction, the traditional types of amphibious and mine warfare operations are not included in the discussion in this paper, although certain aspects of those operations would certainly fall within the confines of the stated definition of inshore operation.

If the U.S. Navy is to establish a permanent force to conduct inshore operations, then a reason must be established for the existence of such a force--a continuing threat or possible threat that other naval elements cannot effectively meet.

The inshore operations being conducted by U.S. naval forces in Vietnam today present an obvious argument in

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favor of maintaining such forces at the present time. But does this necessarily bespeak for such forces after the cessation of hostilities in Vietnam? It might be a shade trite, but the old aphorism about fighting the next war with the tools of the last certainly is worth consideration. In addition, there are those who have argued that certain of the inshore operations being conducted by the U.S. Navy in Vietnam should not actually be Navy missions.

To find if a possible threat exists which might require inshore operations on the part of the U.S. Navy, one has but to look at recent history; at Communist subversion and insurgent attempts and at the stated aims of "wars of national liberation" as espoused by Chairman Mao Tse-tung. In so doing it is readily apparent that the Communist subversive insurgency efforts in the last two decades have been concentrated in emerging and underdeveloped nations.[5]

These countries are often endowed with adverse terrain features and usually lack modern transportation networks. Many have features of physical conformation favorable to inshore operations (either by the government or its enemies). These features could include any combination of coastlines, bays, estuaries, islands, lakes, canals, and rivers with their associated fluvial plains and delta regions.

Such waterways often furnish the major line of communications within these emerging nations, and it is along these waterways that the population tends to mass. People naturally gravitate to water, be it salt or fresh, where conditions exist so that such a source can be harnessed to their needs. Control or exploitation of these water resources becomes paramount to control of the population. Thus, the ability to utilize and control coastal and inland waters, which are usually the cheapest, most accessible, and convenient means of transportation, can be most important to an insurgency effort. It is also generally an easier task for an insurgent force to interdict railroads and roads than major waterways. Therefore any threatened government must maintain and rigorously control these waterways as well as deny them to insurgents. The frequent mutual interests of such nations and the United States dictate a requirement that the U.S. Navy be prepared to assist. Hopefully, this can be done through a Military Assistance Program, but a readiness to commit forces may also be necessary.

The menace of Communist insurgency is, however, not the only threat that might require an inshore warfare capability. The need for such a capability in the U.S. Navy might well arise in a limited, general, or even nuclear war in the future. In addition, the Navy's ability to conduct inshore operations could expand the options of maritime power available to the United States short of war. These options could include board and search, blockade and quarantine, and patrolling in waters not accessible to seagoing ships.

When considering inshore operations in this light the immediate thought is of the U.S. Coast Guard. The majority of the Coast Guard's assets and efforts are directed toward operating on inshore waters while maintaining readiness to function immediately as a component of the Navy when directed.[6] The Coast Guard's effective participation in Vietnam as a part of Operation "Market Time" is an example of that service's preparedness for such an inshore mission.[7] The primary problem in considering the Coast Guard as a possible integral component of an inshore warfare force is one of command, control, and budget since it is normally under the Department of Transportation instead of Defense. The Coast Guard, however, could contribute much to an inshore force of the U.S. Navy, and its possible roles will be considered in a later chapter.

The Soviet Union's present expan-

sionist maritime and naval strategy gives it an ever-increasing capability to project its power and influence beyond its own coastal areas and inland seas. In the words of the Commander in Chief of the Soviet Navy, Adm. Sergei Gorshkov, "The flag of the Soviet Navy now proudly flies over the oceans of the world. Sooner or later, the U.S. will have to understand that it no longer has mastery of the sea."[8] The "blue water" challenge that Soviet fleet units now advance against the U.S. Sixth Fleet in the Mediterranean and those elements of the Seventh Fleet off Korea, plus the Soviets' maritime resupply of North Vietnam, are proof that Admiral Gorshkov makes no idle boast.

As the Soviet Navy increases its ability to project itself further into the oceans of the world, so does it also increase its capability to support inshore operations beyond its own littoral. Thus, the Soviets are better able to support, directly or indirectly, "wars of national liberation" throughout most of the world.

The Soviet Navy's version of the U.S. Military Assistance Program is another threat with dramatic examples evident in Cuba, North Vietnam, North Korea, and Egypt. The bulk of the naval craft furnished the navies of the above countries by the Soviets are inshore types with the *Komar* and *Osa* class patrol boats presenting a significant threat to any surface vessel venturing within range of their missiles.[9]

The Soviets already possess a commanding lead over the U.S. Navy in several areas of inshore warfare. It has, for example, over 300 coastal combatants, 100 missile patrol boats, and 350 motor torpedo boats, in comparison to the 156 river patrol boats (PBR), 95 patrol craft, fast (PCF), 7 patrol gunboats (PG), and 10 fast patrol boats (PTF) currently in the U.S. Navy.[10] The Soviet fishing fleet of some 4,000 vessels[11] could be utilized in a number of inshore roles. Additionally, the Soviet Army has had extensive experience in crossing major rivers and a fair proportion of its mechanized units are amphibious for this purpose.

With the combined threats of Communist insurgency efforts and Soviet naval expansion, the need for the U.S. Navy to have some type of permanent inshore operations capability becomes more apparent; not only to fulfill its own missions, but also as a vehicle to develop the expertise, doctrine and equipment to assist indigenous navies when necessary.

Where are these areas where inshore operations might be necessary?

The prime targets for Communist insurgency efforts are the emerging or underdeveloped nations in Africa, Latin America, and on the periphery of the Asian landmass, including the archipelagoes to the south. History since World War II contains a number of examples of Communist activity in the aforementioned locations, which together also include the full spectrum of inshore operations.

The Indochina Peninsula, where armed conflict has been almost a continuous way of life for 25 years, has seen the various participants use water lines of communications extensively. The fluvial plains of the Mekong and Red Rivers are inundated over half the year by the numerous distributaries and canal systems of those two great rivers. A majority of the Vietnamese people live on these two plains. The use of the rivers and coastal waters by the French, Vietnamese, Viet Cong, and now the American military has been great and will be covered more extensively in the following chapters.

Castro infiltrated his initial band of insurgents into Cuba and supported his insurgency by sea. In the last several years the Governments of Venezuela, Colombia, and Guatemala have complained that the Castro government was attempting to overthrow them with insurgents supported by sea infiltration.

The Cuban Government is in an ideal geographic position to exploit operations of this type in the Central American area.

In Africa during the several Congo uprisings, the Congo River and even Lake Tanganyika were used extensively by the belligerents. More recently the Israeli-Egyptian war presented some vivid examples of inshore operations, from moving PT boats from the Mediterranean overland to the Gulf of Aqaba and the PT boat torpedoing, allegedly by mistake, of the U.S.S. *Liberty* by the Israelis to the sinking of the Israeli destroyer *Elath* by an Egyptian *Komar* Class guided missile patrol boat.

A glance at a globe will show that most of the world's emerging and underdeveloped nations have some geographic feature of coast, river, or lake where inshore operations could be employed by insurgents and counterinsurgent forces.

The coastal areas along which inshore operations are or can be conducted are obvious. Of special note are the tremendous problems associated with controlling the coastal regions of the large archipelago nations of Indonesia and the Philippines.

Inland waterways must not be neglected in a geographic overview of potential trouble spots where inshore warfare might be profitable. Some of the more prominent inland waters in underdeveloped and emerging areas are: the Mekong, rising in Tibet, flowing through China into Laos, thence along the border of Thailand and through Cambodia before spreading its delta into South Vietnam; the Tonle Sap (The Great Lake) in Cambodia; the Irrawaddy in Burma; the Brahmaputra, Ganges, and Indus Rivers in India and Pakistan; the Tigris and Euphrates in Iraq; the several large lakes and the Congo, Niger, and Nile Rivers in Africa; and the extensive Amazon with its equally extensive tributary system, the Paraguay, Uruguay, Orinoco, and Magdalena Rivers in South America.

II--THE PAST

> History is experience, and as such underlies progress, just as the cognate idea, experiment, underlies scientific advance.[1]

A case could be made to prove that inshore operations and naval operations were basically synonymous in history until Europe started to emerge from the Dark Ages. Then inventions such as the rudder, compass, and sextant, along with the development of new sail plans, made the true oceangoing ship feasible. True, many examples can be found of daring transits upon the high seas prior to the Age of Discovery. The sailing craft and galleys of the Phoenicians and Vikings are prime illustrations. But these vessels were basically small shallow-draft vessels which changed little over the centuries because of the "technological ceiling" imparted by limitations of sail form and oar power. The Vikings were early exponents of riverine warfare, penetrating great distances up the major rivers of Europe and traveling inland via waterways as far as Constantinople on their raids.[2]

A historical survey seems particularly pertinent to this subject if Communist insurgency is accepted as the major threat to be met by inshore operations. This type of insurgency, from terrorist activity through guerrilla warfare to limited war, has seen the incorporation of the methods, weapons, and tactics from the past. This at a time when the world's major military organizations' greatest concerns are with new concepts and technology dealing with global mobility, missiles, and nuclear warfare.

In this chapter, inshore operations will be reviewed in the American Civil War, the British Nile Campaign of 1892-1900, two British operations in World War I, the Greek Communist insurgency of 1946-1949, and the French Indochina War of 1946-1954.

The American Civil War[3] has been selected as the starting point for this short historical review of inshore operations for the following reasons: (1) it was the first extensive war of the Industrial Revolution and saw the introduction of weapons (including naval weapons) that revolutionized warfare; (2) the Civil War is one of the prime examples of a navy performing inshore tasks for which it was ill prepared; and (3) it was a war where joint inshore operations by the Army and Navy contributed considerably to the Union victory.

The Civil War saw no naval actions of any consequence fought on the high seas, but it still must be considered a maritime war. In prosecuting what became known as the "Anaconda Policy," squeezing the commercial life out of the Confederacy, the Navy was forced to resort to shallow-water operations. With only 42 ships in commission at the beginning of the war and over 3,500 miles of coastline in the South,[4] it was obvious that a blockade would not be too effective. As the war progressed it became apparent that the best course of action to follow in tightening the blockade was to close the major ports in the South by occupation. In a series of conjunct operations the Army and Navy proceeded to do just that, thereby denying the ports to the Confederacy, establishing advanced bases for the Union blockading fleet, harassing the enemy's rear, and furnishing logistics support to Union armies campaigning in the heart of the Confederacy. Sherman could not have undertaken his Atlanta campaign and his March to the Sea unless he was assured the Navy would be in Savannah with support.

The greatest contribution of the monitors and ironclads to the war was their ability to challenge harbor defenses and other fortified positions. Their maneuverability, shallow draft, heavy armor, and weight of shot allowed them to operate in the coastal areas and tidewater rivers in disregard of all but the heaviest batteries.

The support given the Army of the Potomac by the Navy allowed the Union Army to conduct operations in the tidewater area of Virginia by making highways instead of obstacles out of the watercourses in that area. By keeping their backs to the water McClellan, in the Peninsula campaign, and Grant, in the siege of Petersburg, relied on the Navy to protect their lines of communications and also to furnish them direct fire support from gunboats on the rivers. It was for operations such as these that the Union "double-ender" gunboats were designed; just like a two-way ferryboat, either end was forward[5] (a capability that could be of great advantage to the River Assault Forces in Vietnam).

It was on the rivers of the West that the Army and Navy had their greatest combined success. The Union strategy was to cut the Confederacy in two by gaining control of the Mississippi River, which flowed through the heartlands of the two belligerents. This would deny the South access to the lower reaches of the Mississippi Basin while reopening this great highway system to commerce from the Union's western states.

The initial operations on the western rivers were a hodgepodge of Army and Navy efforts. The Army was out of its element procuring, outfitting, and manning riverboats for war; the great distance from Cairo, Ill. to salt water invited Navy neglect of the problem. The first efforts at organizing a western river service put naval officers in charge of the project with War Department funding and direction.[6] With time and some agonizing growing pains the River Flotilla finally found its place under control of the Navy Department with closer cooperation with the Army and War Department as the war progressed, and the value of the rivers and the river gunboats became more apparent.

The Army-Navy riverine team pro-

ceeded to roll back the enemy using a scratch fleet of woodclads, tinclads, ironclads, transports, and sundry other boats. Forts Henry and Donaldson, Island No. 10, Shiloh, and the Vicksburg campaigns found the River Flotilla furnishing the Army the heavy fire support, mobility, and logistics support that enabled them to eject the Confederate Army from the Mississippi Basin.

Which service should have command and control of river forces was a point of debate in the Civil War as it is today. After the confusion at the outset of the war, there evolved an arrangement that proved satisfactory because of the spirit of cooperation which usually existed between the Army and Navy leaders and their commands. There was no overall joint commander; the Navy furnished the Army with what, today, would be considered "mutual support."[7]

Joint operations between the Army and the River Flotilla reached their zenith in the Vicksburg campaign with Generals Grant and Sherman and Admiral Porter cooperating to the highest degree. Porter's fleet performed yeoman service in the several operations to outflank the Confederate stronghold, operating in bayous and up watercourses where often trees had to be cleared to let the boats pass.

It was on one of these, the Steele's bayou operation, that an important lesson in riverine warfare was learned--boats operating in narrow channels should be accompanied by troops to control the banks when necessary. Admiral Porter sent this message when his boats were hemmed in, in the swamp by Confederate snipers, "DEAR SHERMAN: Hurry up, for Heaven's sake. I never knew how helpless an ironclad could be steaming around through the woods without an army to back her."[8]

In the opinion of the writer, the inshore experiences in the Civil War provided a number of lessons, besides the above, including: (1) the Navy (both Union and Confederate) was better able than the Army to procure, operate, and undertake tactical employment of military rivercraft; (2) control of inland as well as coastal water lines of communication was decisive when other means were not available or could be neutralized; (3) the most effective method of blockade was to physically deny the enemy his transshipment points; (4) it was profitable to adapt indigenous boat designs and construction methods when operating in confined waters; (5) mines were the biggest single threat to inshore operations; (6) armor protection and weight of fire were more important than speed for boats assaulting fortifications--gunboats could travel with relative impunity on broad waterways through enemy territory as long as major fortifications and enemy armed craft of comparable threat could be avoided; and lastly, (7) the Navy was ill prepared, from the standpoint of ship types, trained personnel, doctrine, and tactics, to prosecute the inshore operations required of it.[9]

The 5-year Paraguayan War of 1865 fought against Brazil, Uruguay, and Argentina, witnessed the use of naval forces 600 miles up the Paraguay River. As an aside, during this war the population of Paraguay dwindled from 1,300,000 people to 221,000. The allied naval force under Brazilian Admiral Tamandare gave essential support to the allied armies by maintaining the water lines of communication, giving the troops ashore fire support, and assaulting the Paraguayan river force and fortifications.[10]

The British Navy through the years mounted numerous inshore operations in support of the Empire, and several are noted in the following paragraphs. The primary seapower of the world until World War II, the Royal Navy was usually ready to operate inshore when circumstances dictated. Its leadership obviously realized that this was a logical adjunct to England's traditional sea-

power role.

In the Nile River operations, large British gunboats were operated up the Nile 1,700 miles from its Mediterranean delta in the heart of the Sudan. Gunboats were used in support of the force that attempted unsuccessfully to relieve General Gordon at Khartoum in 1884. In his campaign to reconquer the Sudan (1896-1900), General Kitchener had under his own direct operational control a naval force of river gunboats especially designed for use on the Nile. These were built in England, then shipped in sections to Egypt, and after eight transshipments via water, rail, and camel were assembled above the Nile cataracts in the Sudan. These boats were no small river craft as they measured 140'x24'x3.5', had a top speed of 12 knots, and were armed with one 12-pounder, two 6-pounders and four Maxims. They had a steel-protected deck and a crew of 30 men.[11]

These boats not only provided fire support and control of the long water line of communication but also acted as towboats for logistics support. It was estimated that one gunboat could tow the equivalent of 1,575 camel loads.[12]

After defeating the dervishes at Omdurman, assisted by fire support from his gunboats, and occupying Khartoum, Kitchener's mixed Anglo-Egyptian force embarked on their barges again and were towed another several hundred miles upstream to Fashoda. There they coerced a French expedition out of the lower Sudan in what became known as the "Fashoda Incident." The use of gunboats and the river in the Nile campaign underlined the importance of inland waterways in those areas where the terrain, climate, or the populace are hostile.

Lawrence and Allenby were not the only Britishers fighting the Turks in the Near East in World War I. The Royal Navy was there too, operating in the Tigris, Euphrates, and Shatt-al-Arab Rivers in support of the British Mesopotamia campaign.

The river flotilla in this instance was a separate navy command operating directly under the senior army commander. The gunboats were specially-built, shallow-draft boats of the *Fly* class prefabricated in England and assembled at Abadan. They had their propellers housed in a tunnel and, because of the expanse of open country and lack of bridges and overhang on the rivers, had a high mast and crow's-nest for lookout and fire control purposes. By beaching or anchoring, the gunboats were able to register their shots and provide indirect fire.[13]

The major threat encountered in this inland operation was from controlled and floating mines, although Turkish gunboats and aircraft also were of concern. Again, it was obvious that river combatants could not persist for long in a confined waterway when the banks were not in friendly hands.

Close coordination existed between the Army and the Navy in the Mesopotamia campaign culminating in the fall of Baghdad in 1917.

The British Expeditionary Force sent to Archangel in 1918, as a result of the collapse of the czarist regime in Russia, was supported by a naval force on its advance 250 miles up the Dvina River before the campaign ended. With this force were some monitors and a naval seaplane unit operated from a mobile base complete with workshops and living quarters on barges which were towed along with the force.[14]

The war against Communist insurgents in Greece from 1946 to 1949 is an example of the useful employment of a small naval force in coastal operations. At the outset the Greek Communists had full sanctuary in the three Communist countries along the Greek northern border--Yugoslavia, Albania, and Bulgaria. The Greek Government's strategy was to attempt to close the borders while keeping the insurgents isolated in the rugged terrain of the north.

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The Royal Hellenic Navy's task was to patrol the wet flanks of the northern frontier to deny support to the rebels from the sea. Both the east and west coast are rugged with numerous inlets and islands--a real "smuggler's haven." To accomplish this task the navy had about 35 ships and boats, from destroyer escort size to 72-foot motor launches, plus armed caiques (small boats). This small force patrolled, protected coastal areas, furnished gunfire support and conducted combined operations with the army.

Due to the lack of other suitable transportation the Greek Army relied heavily upon waterborne logistics support throughout the war. The navy furnished the greater part of this support with a fleet of approximately 20 LSTs and LCTs. This force was also used on occasion in amphibious landings.[15]

The small Greek Navy accomplished its tasks and made a significant contribution to the successful counterinsurgency campaign. Because of the navy the army had a great degree of mobility and freedom of action in the coastal areas, while the insurgents were essentially denied the same.

Because of the United States present involvement in Vietnam, much has already been written of the French Indochina War--the unsuccessful French counterinsurgency effort against the Communist-inspired Vietminh from 1946 to 1954. Nevertheless, a quick review of the inshore operations by the French is in order as their experience has, to a degree, influenced the U.S Navy's activity in Vietnam today, particularly in riverine operations. For river warfare purposes the French organized the *divisions navales d'assauts (Dinassauts).* Author Bernard Fall considered the *Dinassaut* concept one of the most significant innovations to come out of the French war in Vietnam.[16]

The French Navy was assigned three primary tasks in Indochina: (1) to ensure freedom of action and maintain lines of communication along the coast while denying the same to the enemy, (2) to provide security against the mine threat to ports and their approaches, and (3) to ensure the security of inland water lines of communication.[17]

It is difficult to assess the effectiveness of the French Navy in their coastal missions. On the positive side the French coastal lines of communication were never threatened, and the bulk of the French logistics support moved by water. But how effective the French were in denying the use of coastal waters as lines of communication to the Vietminh is debatable. The coastal surveillance was accomplished by a force of small frigates, coastal patrol launches, and aircraft when available. The problem was to find insurgent infiltrators among the thousands of junks and sampans normally operating along a 1,500 mile coast. It is known the Vietminh established coastal havens to shelter boats involved in moving rebel supplies. Also a system of warning signal towers was erected along the coast. To counter operations of this type takes a massive search effort, denial of coastal areas to the insurgents, and good sources of intelligence. Captured Vietminh documents of the period gave credence to the effectiveness of the French effort in some areas by urging the use of interior lines of communications to the greatest degree possible.[18]

The French apparently had little trouble in keeping the major ports free of any significant threat from mines or swimmer-planted charges.

The *Dinassauts* performed the bulk of the task in the inland waterways. These units were naval commands under the operational control of the navy and were charged with furnishing support in close coordination with the army. The largest *Dinassaut* contained a permanently assigned, integral landing force of army commandos with its own reconnaissance aircraft and armored

vehicles.[19]

The *Dinassauts*, which ranged in size from 12 to 20 boats, were equipped primarily with U.S. World War II landing craft extensively modified for river operations. The type landing craft used were: LCM, LSSL, LSIL, LCVP, LCU, and LCT. The French also developed a small, rugged, steel-hulled river gunboat, the *St. Can*, still in use by the Republic of Vietnam Navy. Most of these boats were heavily armored and armed, carrying guns of up to 3 inch, as well as mortars for indirect fire and flamethrowers for ambush suppression. As an example, the typical monitor was a modified, armor-plated LCM armed with a 40-mm, three 20-mm, two 50-caliber machine guns and an 81-mm mortar.[20]

The *Dinassauts* provided the French with logistics lift, troop transportation, and concentrated mobile firepower throughout the extensive river and canal systems of the Red and Mekong Rivers. They were utilized to supply and reinforce areas where other means were not available or practicable, to support both offensive and defensive army operations, and to conduct independent raids into enemy territory.

The primary threat to the river craft were homemade controlled mines often coordinated with ambushes. Occasionally water barriers would be used to hinder passage or to set up an ambush. The French found that light reconnaissance aircraft were of great assistance in discovering ambush and mine control sites as well as in coordinating airstrikes when needed. The only effective counters to the controlled mine were a chain drag sweep designed to cut the control wires or the deployment of troops on both river banks to flush out the mine control point. These measures slowed the force considerably. A well-laid ambush in a narrow waterway was best met by putting troops ashore covered by heavy fire from the boats. When moving in enemy territory, the period when the enemy threat was greatest was during retirement. Usually the only way for the boats to get out of an area was to withdraw via the same waterway used to enter, and this naturally gave the enemy an opportunity to set mines or to lay an ambush. Continuous air reconnaissance, boat patrol, or counterambush in the suspected area reduced this threat whenever these measures could be employed.

"The nature of riverine operations makes the highest degree of coordination and cooperation between the ground forces, naval units and supporting air forces mandatory."[21] The French appear to have adhered to this principle where possible, but in hindsight it might be said they just did not have enough of a good thing so far as the *Dinassauts* were concerned. Great ingenuity was used to adapt boats to purposes for which they were not intended, and the military worth of river assault forces was well proven in Indochina. In the words of Ambassador McClintock in 1954, "The most important river-warfare since the operations of the Federal Navy against New Orleans and Vicksburg has been carried on during the past eight years in Indochina."[22]

Numerous other coastal and inland operations make interesting reading when considering the role of inshore warfare, but they are too voluminous for the purpose of this paper. A quick resume is presented to acquaint the reader with these other potential areas of study.

In World War I both sides conducted extensive coastal operations of various kinds. The Austrian Navy had a gunboat force on the Danube River which saw action throughout the war. The British Navy was able to oust the Germans from Lake Tanganyika by shipping two 40-foot armed motorboats overland by rail, tractor, and river from Capetown. A combined British force captured the German port of Duala in the Cameroons; then a riverine force cleared the

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rest of the colony.

In World War II, coastal operations were carried on in Europe in the same general areas as World War I. Of particular note were the British Commando raids and the German and Russian efforts in the Baltic, Barents, Black, and Azov Seas. The Germans and the Russians used the extensive inland waterways available to them to transport inshore naval assets across the continent as was necessary. The U.S. Navy assisted the Army in the Rhine River crossing and maintained a Rhine River Patrol for a period after the war. In the Pacific, U.S. PT boats were used with success against Japanese supply efforts in the Solomon Islands. Adm. Milton Miles' Sino-American Cooperation Organization operated behind the Japanese lines in China, furnishing intelligence and other valuable services including the sinking of 141 enemy ships and boats. This was accomplished in a period of a little more than a year by a "ragtag" naval force, including Chinese pirates.[23]

Inshore operations can be valuable in "show-the-flag" or smuggler situations. The Yangtze River Patrol was maintained in China from 1866 until 1941, operating as far as 1,400 miles from the coast. The antirumrunner patrols of the U.S. Coast Guard during Prohibition presents an interesting study of massive infiltration attempts.[24]

Looking back in history it is clear that navies have been repeatedly called upon to operate on inshore waters. Extensive inshore operations are taking place in Vietnam today, which will be discussed in later chapters. Given the nature of the anticipated threat and geography of those countries threatened, it is reasonable to predict that navies of the future will also be required to participate in inshore operations. In the past most navies have been better prepared to meet coastal contingencies than those on inland waters. Before Vietnam, however, the U.S. Navy had little capability in either, and this at a time when the majority of its advisory effort was directed toward the very countries where inshore capabilities were most apt to be required. Although it had had plenty of warning, it showed itself totally blind to this tremendous gap.

It is sometimes not enough for a navy to be able to maintain command of the high seas. In order to exploit this sea supremacy a nation occasionally is required to project its power into marginal seas and inland waters which are of value either to the nation itself or the enemy. Denial of the sea to the enemy is not enough in itself if he does not need the use of the sea and has access to coastal and inland waterways that can serve his purposes. This was in part the case in the American Civil War and the present war in Vietnam. To eliminate coastal and inland waters from one's conception of control of the sea is to put constraints on the very flexibility and mobility which are the crucibles of seapower.

The Navy planners have always been faced with the problems of constrained budget dollars, of shortages in trained manpower, and of the need to meet the "big" threat. As a result, up until World War II if they didn't fit into the fleet battleline even acknowledged good concepts were cast aside. World War II brought a revolution to the U.S. Navy; it became *the* seapower of the world--a true two-ocean navy. The aircraft carrier replaced the battleship as the major combatant. The amphibious force, which had not even existed prior to the outbreak of the war, became a full-fledged type command in each fleet.[25] The postwar period saw the Soviet Union become the major threat to the United States. The Navy struggled to find its place in the new order of nuclear power, missiles, and strategic airpower. Little mention was made of coastal or river capabilities; after all, it was opined, the amphibious force could handle any such contingency.

But with the Greek and Indochina insurgencies, the other side of the Communist threat slowly emerged--the little dirty wars fought against simple people with terror and simple weapons. The United States was preparing for the massive threat of a major confrontation with the Soviets, a threat that would hopefully never come, while a Communist threat of an entirely different sort was already a reality. It was, indeed, a natural reaction--the one threat meant possible mass annihilation while the other only represented an ignorant guerrilla with a gun.

The French Navy's experience in the Indochina War gave rise to some serious thoughts by some individuals on the U.S. Navy's capability to wage inshore warfare. The President of the Naval War College in 1954, writing to the Chief of Naval Operations, expressed this all too infrequent view:

> There are many areas in the world in which a substantial naval capability for operations in restricted waters, including lakes and rivers, will be required of the U.S. Navy and its allies under limited as well as global war conditions. The U.S. does not now appear to have sufficient of this capability.[26]

With the overthrow of Cuba by Castro, the expansion of the Viet Cong effort in South Vietnam, and President Kennedy's emphasis on counterinsurgency and limited war capabilities, more and more voices were raised in the Navy for the need of inshore warfare capabilities. Several tangible results of this new concern were the aforementioned SEAL teams, the CODAG-powered patrol gunboat program,[27] and the Marine Corps study on riverine operations.[28]

III--THE PRESENT

> There is nothing in my Navy training--and I've been in the Navy eighteen years--that prepares me for this. This is the most dangerous work I've ever seen.[1]

The first sentence of the above quote aptly summarizes the majority of the tasks assigned the combat elements under Commander Naval Forces Vietnam (COMNAVFORV). The Navy simply had not adequately anticipated the resource requirements necessary for inshore operations. In other spheres of naval warfare it was far more ready. The 7th Fleet has proven from the commencement of U.S. combat participation in the war that the faith put in the flexibility and mobility of the attack carrier concept was well founded. The Amphibious Force was ready when required to move major units of the Marine Corps into Vietnam. Although heavily committed in most of those areas considered traditional naval tasks, the Navy at least had the "nuts and bolts" and necessary expertise to come "on the line" when required.

However, except for some special categories such as the Mobile Inshore Underwater Surveillance Units (MIUWS) for harbor defense and the Sea, Air, Land Teams (SEAL), the Navy's capability in inshore operations was for all intents and purposes nonexistent when the United States entered the Vietnam war. It is a credit to the Navy planners and operators that once the gauntlet was thrown and the needs determined, the required tasks were accomplished with ingenuity and alacrity by using whatever the Navy had available in the fleet, in mothballs or could buy off the shelf. Nevertheless, many costly lessons had to be learned on the firing line. The U.S. Navy's experience in coastal surveillance, river patrol, and river assault forces in Vietnam, which the writer observed firsthand, provide innumerable cases in point.

As a result of the U.S. Navy's advisory effort in the Republic of Vietnam, a small but gradually increasing group of officers and men in the Navy was exposed to inshore operations in an insurgency environment. The advisers took organizational talent, maintenance

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know-how, leadership, ingenuity, and initiative to the Vietnamese Navy (VNN), but when it came to the tactical use of the units it was often the Vietnamese naval counterpart who was advising the adviser. The knowledge these advisers gained was to prove invaluable at a later date.

The American aid and advisory effort started in South Vietnam in 1954. The U.S. Navy assisted the VNN in converting the remnants of the French naval establishment in the South into a navy. Headquartered at the large naval yard in Saigon, the VNN was organized into a Sea Force and River Force with the attendant bases, training, and supply facilities. Later the Junk Force was organized initially as a paranaval force of indigenous fishermen and then incorporated fully into the VNN.[2]

The Sea Force was furnished a broad spectrum of shallow-water craft over the years for coastal patrol and logistics purposes including PCs, LSSLs, LSILs, LSMs, PGMs, MSCs, LSTs, and several other types.[3]

The Junk Force used locally built, powered and sail junks. Twenty-eight junk bases were established at regular intervals along the coast by the summer of 1962.[4] The Junk Force was tasked with coastal patrol along the surf line, in estuaries and bays and also provided the local militia an amphibious raiding capability. The junks are armed with 50-caliber machine guns and small arms. The use of indigenous crews familiar with the local area and people has obvious advantages in counterinsurgency or countersmuggling operations. The use of boats similar to the local craft simplifies maintenance and training requirements.

The River Force received the remnants of the French *Dinassauts* but as Bernard Fall noted, "By April 1959, the valuable *Dinassauts* were largely disbanded since the French had invented them and there was no equivalent in American manuals . . .."[5]

The River Force was revived in 1961 when the Viet Cong began choking off the rice exports out of the Mekong Delta. The River Force was organized into three elements: the River Assault Groups (RAGs), River Escort Group, and the Transport Group. These groups are equipped with armed and armored landing craft.

The normal RAG, designed to lift an Army of Vietnam (ARVN) battalion, usually consists of one monitor, one command boat, five armored LCMs, six armored LCVPs, and six river gunboats--either old French *St. Cans* or MAP procured River Patrol Craft (RPC). The RAGs are under the operational control of army corps commanders and report to the VNN for administrative purposes only. Each is furnished with a U.S. Navy lieutenant and an enlisted man as advisers. RAGs perform the tasks of troop lift, gunfire support, local logistics support, convoy, river patrol, and static defense. When not on a troop lift mission the RAGs have no ground reaction force to counter ambush and sniper fire. The fact that the RAGs have no permanent or semipermanent troops assigned is a major limitation.[6]

The Transport Group of LCUs was established to provide military logistics support from Saigon to the Delta area. The River Escort Group was formed to give protection to the river convoys carrying charcoal, rice, and other produce out of the Delta to Saigon.[7]

The coastline of South Vietnam is approximately 1,200 miles long. It has been estimated that some 50,000 junks operate in these waters.[8] With the sinking of a steel-hulled trawler caught trying to smuggle arms into Vietnam in February 1965, the Vietnamese Government, concluding their small navy could not cope with a surveillance task of the magnitude required, requested assistance from the U.S. Navy.

In March 1965 the 7th Fleet commenced patrols of the South Vietnam coast with destroyer-type ships and

patrol aircraft. This force evolved into TF 115, the Coastal Surveillance Force, better known as Operation "Market Time," with operational control eventually residing in the Commander U.S. Naval Forces Vietnam (COMNAVFORV).[9]

Even the world's greatest Navy found itself hard pressed to furnish the necessary assets to establish this surveillance force. To furnish an outer barrier patrol the Navy used DERs, MSOs, MSCs, and VP aircraft. The mission was to stop infiltrators, especially the steel-hulled variety, from moving supplies into the Viet Cong via the high seas.[10]

It was recognized that this outer barrier would not be in a position to stop indigenous-type craft from infiltrating supplies from outside Vietnam along the inshore coastal regions or transshipping same within South Vietnam. Shallow-draft boats were needed to effect barriers at the 17th parallel and at the Cambodian border as well as to assist the VNN Sea Force and Junk Force to patrol the inshore area along the whole coast of Vietnam.

The U.S. Coast Guard came to the Navy's rescue. In just over 2 months from the receipt of the "call," USCG 82-foot patrol boats (WPB) were on patrol in Vietnamese waters. The initial batch of 17 has now grown to 26. These boats proved to be ideally suited for this duty.[11] Capable of staying on station even in the extremely adverse weather of the monsoons for up to 5 days, these boats have figured prominently in most of the major Communist infiltration attempts detected to date. Each boat mounts five .50-caliber machine guns and one 81-mm trainable mortar (in essense a smoothbore, muzzle-loading cannon). The Coast Guard has done an outstanding job in Vietnam and represents a competence that most certainly should be considered when future requirements for coastal or river patrol need to be filled.

The Navy urgently needed a relatively fast patrol boat to meet the estimated requirements for additional boats in the inshore barrier of "Market Time." Not having such a craft, the Navy made an intensive survey of the small boat industry and selected the *Swift*, a 50-foot aluminum-hulled boat originally designed for liaison and supply purposes to offshore oil rigs in the Gulf of Mexico. Designated the PCF (Patrol Craft, Fast) in Navy livery, the *Swift* is armed with three .50-caliber machine guns and one 81-mm mortar and has a maximum speed of 26 knots. Eighty-four of these boats are now part of the "Market Time" force, and although the *Swift* has done a commendable job, doing a task for which it was not designed, its sea-keeping and habitability characteristics leave much to be desired in the heavy seas of the monsoon.[12]

The Navy also sent three Patrol Air Cushion Vehicles (PACV) to Vietnam in 1966 for combat evaluation in the coastal and river environment. These, like the *Swifts*, were "off the shelf" buys and were modified for Navy use by adding light armor and armament. The fact that the availability rate of these craft was not high is understandable when it is recognized these were new and experimental weapons which had to rely on parts support direct from the manufacturer in the United States. Many problems were revealed during their evaluation, but the promise this type of vehicle holds for inshore operations is great, especially when the tremendous advances of the "state of the art" in the last 2 years are considered. The PACV can move at speeds up to 70 knots, it can operate in shoal water, in marshland, and over relatively level ground. The highlight of the PACV deployment was their use in support of a Special Forces operation in the marsh area of the Plain of Reeds along the Cambodian border. The PACVs (nicknamed "The Monster" by the VC) were able to roam freely through the reed-

covered marshes and greatly impressed all observers, particularly those from the Army.[13]

The previously mentioned MIUWS units which provide harbor defense are also under the operational control of CTF 115.

From what the writer observed while in Vietnam, "Market Time" operations have shown that surveillance aircraft are invaluable in covering large offshore areas, particularly when surface traffic is relatively light, where their function is to vector surface units to any suspicious target. Inshore, however, when the enemy is capable of losing himself in the density of local traffic, the only course is an extensive stop and search program with each patrol boat assigned a reasonable area of responsibility. "Market Time" units have also performed numerous collateral duties, including gunfire support, search and rescue, civic action operations with the natives, and lift for small amphibious raids. Headquartered in Camranh Bay, CTF 115 controls these operations through five combined Coastal Surveillance Centers, where coordination is also maintained with Vietnamese Sea Force and Junk Force units and U.S. Army reconnaissance aircraft.

The next inshore operation initiated in Vietnam by the U.S. Navy was the River Patrol Force, TF 16, better known as Operation "Game Warden." Its task is to do on the rivers what "Market Time" does along the coast--deny the major rivers of the Mekong Delta and the Rung Sat Special Zone to enemy use. "Game Warden" was also assigned the collateral duty of operating the minesweeping effort on the approaches to Saigon. To accomplish its tasks the force has assigned to it 120 River Patrol Boats (PBR), 36 "Seawolf" (HU-1B) helicopters, 12 Minesweeper Boats (MSB), 4 modified LSTs as mobile bases for PBRs and helicopters, and several SEAL detachments for clandestine operations. Additional PBRs and helicopters are programed.

When the decision was made to form the River Patrol Force the Navy was again faced with the dilemma of having no assets with which to do it. Again the Navy went to the commercial market and put into quick production the 31-foot fiberglass PBR armed with three machine guns and a rapid fire grenade launcher. This 25-knot boat has a newly developed water jet propulsion instead of the normal propellor-rudder system.[14]

Since the Navy had no suitable gunship helicopter, the U.S. Army provided HU-1Bs. The Army also supplied spare parts and major maintenance and provided transition training for initial Navy crews.

The tendency toward mobile afloat basing for the "Game Warden" units has been progressive. The initially planned LSTs, modified to provide basing facilities in the river estuaries, and YFNBs (Large Covered Lighter), with repair and berthing facilities aboard, have been supplemented by a new floating base concept. These consist of four 110'x30'x7' barges lashed together. These barge bases are fully self-sustaining with lift and repair capability, berthing and messing facilities, armament for self-defense, self-contained generators, communications spaces, and a helicopter pad.[15]

The minesweeping operations on the Long Tau River approach to Saigon have been highly successful, but have revealed the need for a boat better armed and armored than the wooden MSBs for protection against enemy ambushes along the river banks.

When General Westmoreland's request to extend U.S. ground operations into the IV Corps area of Vietnam was approved, the means of troop mobility was of great concern. The IV Corps area comprises the great majority of the Mekong Delta region in South Vietnam. There lives in the Delta area, including Saigon, approximately 65 percent of the

population of South Vietnam. Included in this area is a total of 80 percent of the rice production. The only dry land available is already occupied, either by the living or by the hallowed dead. Because of the great expanse of inundated area, land transport is at a minimum. The primary means of communication is furnished by over 3,000 miles of waterways.[16]

Because of the lack of dry land for basing, MACV planners chose two courses as a means of locating U.S. troops in the delta. The first was the construction of a base at a site, subsequently named Dong Tam, on the My Tho River, 5 miles west of the provincial capital of My Tho. This required an extensive dredging and fill project to literally lift the base out of the rice paddies. Included in the plan was an airstrip and a large boat basin. The second base was to be a mobile afloat base capable of housing an infantry brigade plus assigned Navy personnel. This Mobile Riverine Base (MRB), as it is known, has now been operational in Vietnam for over a year.

The MRB consists of Self-Propelled Barracks Ships (APB), each capable of berthing 1,100 personnel; Nonself-propelled Barracks Barges (APL), LSTs for warehouse and logistics resupply, Landing Craft Repair Ships (ARL) with both Navy and Army maintenance facilities aboard,[17] and several salvage craft.

In the initial planning it was envisioned that this planned riverine force would be a joint Navy-Marine operation. But it soon became apparent that no Marine troops were available because of the Marine commitment in I Corps, so the 9th Infantry Division, U.S. Army, was selected as the riverine division.[18]

The division had its own helicopter and amphibious mechanized battalions which gave it a degree of mobility, but it was felt that water lift was necessary for operations in the delta. Based on the French *Dinassaut* and Vietnamese RAG experience, it was decided to form U.S. Navy River Assault Squadrons (RAS), two of which were subsequently deployed during the winter and spring of 1966.

The RAS is designed to lift and provide fire and logistics support for one reinforced infantry battalion. It consists of 51 boats: 2 command boats, 6 monitors, 26 Armored Troop Carriers (ATC), 1 refueler (all the foregoing are converted LCM-6s), and 16 Assault Support Patrol Boats (ASPB), a new design.[19]

Since the Navy had not been in the river assault business to any degree since the Civil War, this whole force had to be generated from virtually nothing. In less than 1 year from the decision, units were operational in Vietnam.

Extensive modifications, based on the lessons learned from the Vietnamese RAGs, were made to the LCMs to convert them to river assault craft. Additional buoyancy, armorplate, bar armor (for breaking up HEAT rounds), and armament were included in the modification. With the added weight the speed of these boats was reduced to a barely acceptable 8 knots. The ASPB functions as point, flank protector, rear guard, scout, or minesweeper. It has a speed of 15 knots, is heavily armored, and is designed to resist mining. All the boat types of the RAS can tow chain drag minesweeps. Where practicable, armament and communications equipment is common to the Army's.[20] To give added mobile indirect fire support, Army 105-mm howitzers are emplaced on barges and towed to the objective area--the barge serving as a gun platform.[21]

As was the case in the Civil War, there is no unity of command in the Mobile Riverine Forces, and General Westmoreland is the first common superior. Both the Army and the Navy elements are instructed to operate in close cooperation and coordination with the Navy charged to furnish the Army

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"direct support"[22] while on river assault missions. Basically this gives the Army commander the control of the mission, which is as it should be, for the traditional amphibious doctrine, that the Navy retains operational control until the landing force is established on the beach, is not practicable in the riverine environment. The troops may be landed and reembarked, partially or in whole, a number of times in one mission. Usually other ground units from the same organization as the landing force will be operating in the same area via overland routes or helo-lift.

A last point on command and control: the Mobile Riverine Base is under the overall command of the senior Army officer embarked, an arrangement of the Navy's choosing, not the Army's.

The MRF has performed well in its first year. It has given U.S. ground forces a great degree of mobility and flexibility in a hostile environment. The mobile base concept has many merits, including inexpensive, quick base development, and less unfavorable impact on the native population. It is a reusable asset, and it has tactical mobility.[23]

All three of the inshore operations just described are performed by units which were not even in existence in the U.S. Navy before the need for them was generated in Vietnam. The requirements for these forces often were resisted by varying degrees by the Navy hierarchy, albeit with justification as most of the money and personnel support had to come from other Navy programs. The various applications of seapower should be sold by the Navy, not to it. The control of those coastal and inland waterways of the world which are located in areas of interest to the United States must be of concern to the Navy if it is to project naval power in support of the flag.

IV--THE FUTURE

> [The Mississippi provided] . . . a ready means for troops and their supplies in a country of great extent but otherwise ill provided with means of carriage. From this consideration it was but a step to see the necessity of an inland navy for operating and keeping open these waters.[1]

With the U.S. Navy heavily involved in inshore operations in Vietnam, will the planners now "see the necessity" of a continuing requirement for inshore capabilities in the Navy after that conflict has been resolved? Now is the time for the Navy to take a hard look at what will be done with the inshore assets and talents generated by the present situation. If inshore operations are going to remain a task of the fleet forces, then an organization has to be established to guide its destinies.

Inshore operations might be included in the Navy's organizational structure in a number of ways, such as: (1) establishing a new type command in each fleet, assigning them the various ships, boats, aircraft, and other units required--the type commander would furnish assets as necessary to operational commanders; (2) placing a tactical operational commander in each fleet, similar to COMASWORFLANT, who would have the necessary assets furnished by the existing type commander;[2] (3) creating an inshore operations task force, headquartered afloat, that could deploy worldwide;[3] or (4) assigning inshore operations units to the two fleet amphibious type commanders but keeping them distinct separate organizations, such as COMFAIRWINGSLANT's relationship to COMNAVAIRLANT. This latter course should be the next evolutionary step as COMPHIBPAC currently functions as the type commander for the inshore warfare assets operating in Vietnam; COMNAVFORV is their operational commander. Many aspects of inshore operations are not the same as those of amphibious operations, but there are a number of general similarities. These principally concern the operation of small craft near or onto the

shoreline. The Amphibious Force is the only type command operating across the waterland interface and thus is the logical initial home for inshore operations.

To determine the Navy's permanent requirements in the inshore operations area, a study group could be formed in OPNAV charged with establishing long-range goals and the organizational structure of an inshore operations force.

Included in this "inshore operations force" should be those units which encompass coastal surveillance, river patrol, river assault, harbor defense, and SEALs. Boats can be manufactured in a relatively short time if prototypes have been developed, therefore it would not be necessary to maintain a large fleet of boats. A representative group of boats would be needed for training purposes, for evaluation of boat characteristics, for development of doctrine and tactics, and for the meeting of small contingencies quickly. The force would also establish military assistance teams for the purpose of aiding foreign navies. These teams might be patterned after the U.S. Army Special Forces, i.e., each man would have a primary specialty in inshore operations, but would be competent in several; members would know the language, history, customs, and traditions of the area and would be trained in counterinsurgency and civic action. The result would be thorough field evaluation of equipment and a pool of men familiar with specific inshore areas.

It is in military assistance that the U.S. Navy needs to put forth a major effort, so far as inshore operations are concerned. If Communist insurgency is the most likely threat which inshore operations must be designed to counter, then those undeveloped countries which are considered the most likely targets, and with waterways of strategic or tactical importance, must be helped.

When coastal or river patrol organizations are required by a foreign nation, every effort should be made to utilize indigenous boats to minimize maintenance and technical training requirements. Often a "navy" as such will be entirely lacking, for the governments of these countries usually do not understand the applications of naval power. Such waterborne forces as they do have frequently will be army controlled or oriented. In fact, the existing indigenous inshore force might be a section of the national police or a coast guard organization. U.S. assistance efforts should be tailored both to the threat and to the level of competence of the population (not to "show the flag" prestige ships). Besides, large oceangoing combatants could impart a real or imagined threat to neighbor nations and invite a "matching game," plus they are expensive to operate.

Nonbelligerent employment of an inshore patrol force should not be overlooked by the Navy advisers; the force must serve the natives to gain their confidence and support. Appropriate collateral duties might include: search and rescue, medical and mail services to isolated areas, flood and disaster assistance, customs, fisheries control, ferry service, and logistics lift.

The potential level of insurgency will dictate how sophisticated an inshore operation should be. If the enemy reaches the point where he is a serious challenge to the government, for example by using faster boats for infiltration, or is capable of vanquishing government forces in open combat, then more heavily armed and armored boats and some form of support aircraft may be needed. In such a case more advisory effort may well be required, and at some level of escalation the entry of U.S. Navy inshore operations units or other U.S. combat forces may be necessary.

A U.S. Navy inshore operations force, with a direct line to its military assistance teams throughout the world, would be in a position to monitor insurgency activity and allocate re-

sources to meet potential threats.

Close coordination with the U.S. Coast Guard should be established from the outset. Common boat designs, exchange of personnel, and tactical expertise are areas where such coordination would be beneficial. Contingency plans could incorporate Coast Guard units in their task organizations and Navy and Coast Guard units could train together on occasion. In times of domestic disaster, appropriate Navy inshore units would be available to assist the Coast Guard.

Reserve Navy or Coast Guard inshore units could be established, using the "weekend warrior" concept. Personnel could be trained while assisting other law enforcement agencies in waterways control. This type of underway training would probably be more appealing to many reservists than drills one night a week. Reserve units could be assigned specific overseas contingency areas on which to base their training syllabus.

The Naval Inshore Operations Training Center at Mare Island currently trains crews going to the inshore commands in Vietnam[4] and could continue after the war, in the same function. It might also serve as the headquarters "Inshore Operations Force, Pacific" and Little Creek, Va., or some location along the coast of the Gulf of Mexico, the location of "Inshore Operations Force, Atlantic."

The evaluation and development of boats, equipment, and tactics would also be an important function of the command. Extensive testing of prototype boats in various roles and environments is necessary for such craft as the air cushion vehicle, the hydrofoil, air boats, high-speed boats for clandestine operations, and the whole spectrum of small craft that might be needed. The testing for the feasibility of operations in subzero climate over frozen inland waters is an example that comes to mind.[5]

The force would oversee the development of special equipment. Based on the writer's observations in Vietnam, development efforts should include: a simple mine detector which could double as a fathometer and would work in shallow, muddy water; a quick and better way to sweep mines; lightweight armor; a simple hydrographic recording device; more effective armament (both direct and indirect fire); mine absorbent hulls and material, such as flooring made of "beehive" collapsible inserts like the material used to absorb shock on parachuted heavy equipment; auxiliary electric "creep" motors for silent running; a mobile tree and mangrove remover; outboard propulsion units for barges; underwater swimmer support vehicles and equipment; a system of antiswimmer protection for mobile afloat bases (possibilities are: electric shock, high-frequency sound, electrified nets, sonar detection or underwater TV); fire department type "snorkels" on monitors that could be armed with closed circuit TV as well as weapons for reconnaissance and direct fire purposes over riverbanks and dug-in ambushes; night vision devices; fire suppression systems for fuel tanks.

Doctrine and tactics would also be an important production of the inshore operations force. Initially, extensive study of similar operations in history should be conducted. Lessons learned and pertinent intelligence forwarded by the Military Assistance Program teams and other sources would be systematically cataloged for reference.

Several areas of doctrine and tactics needing additional development are: coordination and communications between aircraft and boats; the use of LSDs or similar designs as mother ships for inshore warfare units; employment of barges for mobile bases, piers, helo platforms, gun platforms; use of remote-controlled boats, especially in minesweeper or assault roles; application of light, vertical, or short-takeoff aircraft, possibly float equipped, to in-

shore patrol and river assault support; pusher-type tugs for moving single or multiple barge units; air transportable and recoverable patrol boats.

As already mentioned, close liaison with the Coast Guard would be essential. The same would apply with the Marines and Army in river assault operations and towards commonality of such things as ammunition and communications equipment; with the Oceanographic Office for needed inshore (particularly inland) hydrographic data; with the Service Force for necessary special support and salvage assets; with the Mine Force in regard to both offensive and defensive mine warfare in shallow waters; with the Fleet Air Force for the expertise in development and operation of the necessary surveillance, combat support, and general purpose aircraft; with the Seabees for assistance in design and construction of defendable ashore bases; and, of course, with other elements of the Amphibious Force.

Based on the foregoing, the inshore operations force might be organized into four functional and four operational groups.

The functional groups are:

1. Research and Development Group --to develop those vehicles, equipment and doctrine necessary for all phases of inshore operations.

2. Inshore Assistance Group--to furnish military assistance teams, boats, and equipment to those countries in which inshore operations need to be developed.

3. Support Group--to coordinate logistic support to all inshore operations groups and to maintain mobile base assets, miscellaneous support craft.

4. Training Group--to develop a training syllabus, to coordinate tactical innovations within the force and to operate a training center where all required aspects of inshore operations would be taught.

The operational groups are:

1. Coastal Patrol Group--to maintain a ready force of varied units (PACVs, PGs, PTFs and PBS) prepared to deploy and operate coastal surveillance and harbor defense elements where required.

2. River Patrol Group--to maintain a ready force of craft to carry out inland waterways patrol tasks and to deploy elements overseas as necessary.

3. River Assault Group--to maintain a ready force of riverine assault craft, while operating in close coordination with the Fleet Marine Force, prepared for deployment to inshore areas where force or a show of force of this type is required.

4. Special Warfare Group--to maintain a ready force of SEALs, underwater demolition teams, and other clandestine elements; to furnish elements for both covert and overt missions.

It is obvious that close coordination would be necessary between the groups, for any operation might require the services of several or all of the groups. In such circumstances an overall inshore operations commander would direct the activity of these forces. In essence, that is one of the functions of COMNAVFORV in Vietnam today.[6]

Regardless of the ultimate form of organization, or the niche into which inshore operations are placed, the Department of the Navy must now assess the future role of such operations in the overall Navy mission. The lessons of the past, the experiences of the present, and the instability of the future necessitate a long, hard look at the problem. Planners must ask: (1) does the U.S. Navy need any or all of these capabilities? If so, (2) how will they be integrated into the Navy system? And, (3) most difficult, what percentage of the precious budget dollar and meager manpower assets of the Navy will be allocated to inshore operations?

V--THE APPRECIATION

> We have yet to organize and procure a naval group to deal specifically with "wars of national liberation" even though, like so many dead skunks, they promise to lie athwart the Joint Chiefs of Staff's doorsteps for decades to come.[1]

Fortunately, the first part of the above quote is no longer valid; but the U.S. Navy's responsibility for inshore operations, awakened by the war in Vietnam, must not be allowed to drift into slumber again. The purpose of this paper has been to analyze the threat; to assess it against the past, present, and future uses of inshore operations; and to determine whether there is a continuing need for such a capability in the U.S. Navy.

From all indications the primary need for an inshore operations capability is to counter Communist-inspired insurgencies. To meet this threat the U.S. Navy must assist in developing the required capabilities within the nations threatened. To do this an organization must be established within the Navy to direct the development of doctrine, operational concepts, boat types, and personnel requirements. This organization will also be required to provide operational units as contingencies arise.

Great naval powers have, by tradition, been blue-water oriented, and rightly so, for control of the high seas must be the mission of such navies. However, the means of accomplishing this mission has been as evolutionary as history. Thus the sailing ship of the line gave way to the battleship, and the battleship to the aircraft carrier, as the symbol of fleet power. It is natural for a navy to develop the weapons systems that appear to best meet the major threat it faces. It is also easy to neglect those less glamorous elements needed to counter the less obvious, and often more insidious, threats to one's interests. The state of the Allies' antisubmarine warfare capability at the beginning of World War II and the unpreparedness of the Navy for inshore warfare in Vietnam are examples.

With carrier-based aircraft, the Polaris missile system, and a triphibious landing force, all capable of projecting their respective elements of seapower over most of the world's landmass, it makes sense that the influence of seapower should not terminate where the oceangoing ships of the fleet scrape bottom. Control of coastal and inland waters can, at times, be decisive. This was evident in the past and is true today. The U.S. Navy must possess the capability of projecting its influence into those inshore waterways considered to be of tactical or strategic value.

In the cost effectiveness sense, dollar for dollar and man for man, the necessary investment in an inshore operations capability may be quite low in terms of net effect on the future.

In conclusion, the writer strongly recommends the following courses of action:

1. The establishment of a long-range study group within the Department of the Navy to determine the requirements for inshore operations in the future. The

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study group must then arrive at the organizational structure for an inshore operations force, resolve the command and control problems, and set out initial broad guidance.

2. The activation of an inshore operations force to furnish ready units for operations where needed. As an indispensable adjunct to its mission, this force would also direct and coordinate the development of doctrine, tactics, boats, equipment, weapons, training of personnel, and all other related items.

3. The initiation of a thorough review of the Navy's Military Assistance Programs. In those nations where inshore operations are considered important, action can be taken to adapt or establish an indigenous coastal or inland waterways force. The U.S. Navy's inshore operations force should furnish the expertise and trained personnel required for these programs.

4. The organization of an inshore operations capability within the U.S. Naval Reserve. Although the Chief of Naval Reserve Training would control such units, close coordination would be maintained with the inshore operations force.

5. Lastly, it is recommended that the duckbilled platypus be selected as the insignia for the new force. This egg-laying, fur-covered mammal is amphibious, it has webbed feet, a tail like a beaver's, a bill like a duck's, and a bark like a dog's--a conglomeration of characteristics most representative of the tasks envisioned for the proposed inshore operations force.

FOOTNOTES

I--THE THREAT

1. Bernard Brodie, *A Guide to Naval Strategy* (Princeton: Princeton University Press, 1944), p. 170.
2. Letter from Chief of Naval Operations to Commanders-in-Chief Atlantic, Pacific and European Fleets, Ser 0040P34, 5 June 1961, p. 1.
3. Robert P. Beebe, "Operations in Restricted Waters," *United States Naval Institute Proceedings*, June 1962, p. 31.
4. U.S. Army Combat Developments Command, *Riverine Operations, Interim Training Text*, TT 31-75 (Fort Belvoir, Va.: January 1967), p. 5.
5. Mao Tse-tung, *Basic Tactics* (New York: Praeger, 1966), p. 43.
6. *U.S. Government Organization Manual 1967-68* (Washington: U.S. Govt. Print. Off., 1967), p. 401.
7. James A. Hodgman, "Market Time in the Gulf of Thailand," *Naval Review 1968* (Annapolis: U.S. Naval Institute, 1968), p. 66-67.
8. Sergei Gorshkov, quoted in "Russia, Power Play on the Oceans," *Time*, 23 February 1968, p. 23.
9. The sinking of the Israeli destroyer *Elath* by a *Komar* launched surface-to-surface guided missile, the first such incident recorded, is *de facto evidence* of the capability of these boats.
10. *Jane's Fighting Ships 1967-1968* (New York: McGraw-Hill, 1968), p. 333, 449.
11. "Russia, Power Play on the Oceans," *Time*, 23 February 1968, p. 23.

II--THE PAST

1. Alfred T. Mahan, *Lesson of the War with Spain* (Boston: Little, Brown, 1899), p. 261.
2. William O. Stevens and Allan Westcott, *A History of Sea Power* (New York: Doubleday, Doran, 1944), p. 89-90.
3. Also known as the War between the States, the Great Rebellion, or the War of Yankee Aggression, depending on one's place of birth.
4. Elmer B. Potter, et al., eds., *Sea Power; a Naval History* (Englewood Cliffs, N.J.: Prentice-Hall, 1960), p. 250.

5. Theodore Roscoe and Fred Freeman, *Picture History of the U.S. Navy* (New York: Scribner, 1956), art. 842.

6. John D. Mulligan, *Gunboats down the Mississippi* (Annapolis: U.S. Naval Institute, 1965), p. 31.

7. The Joint Chiefs of Staff, *Unified Action Armed Forces*, JCS Pub. 2 (Washington: 1959), p. 44, defines mutual support as, "Commanders of units or forces operating within mutually supporting distance should plan for mutual support to facilitate attainment of the common objective."

8. H. Allen Gosnell, *Guns on the Western Waters* (Baton Rouge: Louisiana State University Press, 1949), p. 165.

9. The saving factor for the U.S. Navy in the Civil War was the large selection of commercial boats and ships it could modify for the river and coastal missions, plus a great pool of experienced civilian manpower including pilots, engineers, fishermen, and merchant marines from which to draw.

10. Robert A Theobald, "A Preliminary Study of Naval Operations in Shoal and Restricted Waters," Unpublished Thesis, U.S. Naval War College, Newport, R.I.: 1954, p. 15-16.

11. Sir Winston L.S. Churchill, *Frontiers and Wars* (New York: Harcourt, Brace & World, 1962), p. 132.

12. Sir Winston L.S. Churchill, *The River War* (London: Longmans, Green, 1899). It is noted that one of the commanding officers of one of these gunboats was Lt. David Beatty, the Admiral Beatty of World War I fame and later First Sea Lord.

13. Wilfrid Nunn, *Tigris Gunboats* (London: Melrose, 1932), p. 40.

14. Theobald, p. 27-28.

15. William D. Blevins, "The Navy's Role in Counterinsurgency," Unpublished Thesis, U.S. Naval War College, Newport, R.I.: 1963, p. 13, 15-16.

16. Bernard B. Fall, *Street without Joy* (Harrisburg, Pa.: Stackpole, 1961), p. 39.

17. P. Ortoli, "The French Navy in Indochina," *La Revue Maritime*, December 1952, p. 1499-1500.

18. Blevins, p. 22.

19. Richard M. Meyer, "The Ground-Sea Team in River Warfare," *Military Review*, September 1966, p. 55.

20. *Ibid.*, p. 54-55.

21. U.S. Army, TT 31-75, p. 4.

22. Robert McClintock, "The River War in Indochina," *United States Naval Institute Proceedings*, December 1954, p. 1303.

23. Roy Stratton, "Navy Guerrilla," *United States Naval Institute Proceedings*, July 1963, p. 87.

24. Kemp Tolley, "Yang Pat--Shanghai to Chungking," *United States Naval Institute Proceedings*, June 1963, p. 81-83.

25. Theodore Ropp, *War in the Modern World* (Durham, N.C.: Duke University Press, 1959), p. 286-87, 352.

26. Letter from President, U.S. Naval War College to Chief of Naval Operations, "Naval Operations in Restricted Waters," U.S. Naval Station, Newport, R.I.: 9 July 1954, p. 1.

27. "New Gunboat to Join Fleet Soon," *Navy* (U.S.), February 1966, p. 15. (CODAG--combination diesel and gas turbine).

28. U.S. Marine Corps, *Interim Doctrine for Riverine Operations*, FMFM 8-4 (tentative) (Quantico, Va.: April 1966).

III--THE PRESENT

1. Statement by Lt. K.L. Allison, a U.S. Navy adviser to a Vietnamese River Assault Group. "Death on the River," *Newsweek*, 1 November 1965, p. 41.

2. R.P.W. Murphy and E.F. Black, "The South Vietnamese Navy," *United States Naval Institute Proceedings*, January 1964, p. 53-54.

3. *Ibid.*, p. 54.

4. *Jane's Fighting Ships, 1963-1964* (New York: McGraw-Hill, 1963), p. 442.

5. Fall, p. 343.

6. Murphy and Black, p. 55.

7. *Ibid.*, p. 55.

8. Leroy V. Swanson, "Market Time-Game Warden: the Navy in Vietnam," *Naval Engineers Journal*, June 1966, p. 392.

9. Hodgman, p. 38.

10. *Ibid.*, p. 39.

11. Phil H. Bucklew, "Navy Small Craft in Market Time," *Naval Engineers Journal*, June 1966, p. 399.

12. Hanson W. Baldwin, "Spitkits in Tropic Seas," *Shipmate*, August-September 1966, p. 10.

13. Letter from Chief, U.S. Navy Research and Development Unit, Vietnam, to COMNAVFORV, "Final Report, Vietnam Evaluation Personnel Air Cushion Vehicle (PACV)," serial: 05 of 29 January 1967.

14. Baldwin, p. 12.

15. "Floating Bases Are on Order for Viet River Patrol Boats," *Navy Times*, 1 November 1967, p. 32.

16. American University, Foreign Areas Studies Division, *Area Handbook for Vietnam* (Washington: 1962), p. 36.

17. U.S. Army, TT 31-75, p. 199-207.

18. "Decision Is Made: Bigger War in Vietnam," *U.S. News & World Report*, 3 October 1966, p. 42. The 9th was at that time located at Fort Leavenworth, Kansas--an "ideal" location for riverine training.

19. U.S. Army, TT-31-75, p. 25.

20. *Ibid.*, p. 208-12.

21. Tom Buckley, "Allies Will Intensify Operations in Mekong Delta," *The New York Times*, 6 December 1967, p. 5:3.

22. JCS Pub 1, p. 46, defines direct support: "A mission requiring a force to support another specific force and authorizing it to answer directly the supported force's request for assistance."

23. Hanson W. Baldwin, "Waterborne U.S. Assault Force Proves Itself in the Mekong Delta," *The New York Times*, 4 December 1967, p. 6:4.

IV--THE FUTURE

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2. W.F. Searle, Jr. "The Case for Inshore Warfare," *Naval Review, 1966* (Annapolis: U.S. Naval Institute, 1966), p. 22.

3. Andrew G. Nelson and Norman G. Mosher, "Proposed: a Counterinsurgency Task Force," *United States Naval Institute Proceedings*, June 1966, p. 42.

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5. Michael L. Yaffee, "Bell Expanding Air Cushion Vehicle Effort," *Aviation Week & Space Technology*, 20 March 1967, p. 63.

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V--THE APPRECIATION

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