

# THE UNITED STATES NAVAL WAR COLLEGE

## SCHOOL OF NAVAL COMMAND AND STAFF

### THESIS



"RIVERINE WARFARE: THE NEED FOR  
A BROWN WATER NAVY"

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United States Naval War College  
School of Command and Staff,  
Newport, Rhode Island

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A BROWN WATER NAVY

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## Abstract of

### RIVERINE WARFARE: THE NEED FOR A BROWN WATER NAVY

Riverine Warfare is a term not usually associated with Sea Power. It is an area where few U.S. Navy officers have had experience. Even though we now have a large riverine/inshore warfare force deployed to South Viet Nam, it is a phase of naval warfare in which we do not have established doctrine.

In the past our Navy has enjoyed a great deal of success in riverine operations. Both in general war (the Civil War) and in limited war operations (the Yangtze Patrol) our river forces have made significant contributions.

Other countries have also had success with riverine operations. The Russians in the Russo-Turkish War of 1877-78 and, more recently, France and South Viet Nam have had particularly effective riverine warfare units.

When the requirement for U.S. riverine forces was established in Viet Nam, the world's most powerful navy found that its inventory of riverine/inshore craft was non-existent. With the help of the U.S. Coast Guard and a crash procurement program in Washington, "brown water" forces were deployed in less than six months.

The current build-up of U.S. forces for a river campaign in the Mekong Delta may well determine the future of the Navy's riverine warfare forces. Our Navymen there are literally "writing the book."

It is concluded that Sea Power is being extended far inland today by the Navy's riverine forces in South Viet Nam. It is also concluded that both in the Civil War and in Viet Nam the Navy lost valuable time

because planners did not consider the "brown water" environment an area of Navy responsibility. Finally, it is concluded that today's international situation necessitates that the Navy maintain a high state of readiness and flexibility. This state of readiness may be questionable, however, unless a permanent riverine/inshore warfare organization is established.

The recommendations submitted by the thesis are interim, subject to revision after the termination of hostilities in Southeast Asia. They include:

1. Establishment of riverine task forces in both the Atlantic and Pacific Fleets.
2. Immediate development of tactics and doctrine for naval forces engaged in riverine operations.
3. Establishment of a permanent Naval Inshore Operations Training School, including a section responsible for the development of new hardware and doctrine.
4. Riverine Warfare units becoming components of the Selected Reserve Program of the Naval Reserve.

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## INTRODUCTION

Numerous articles have been written on the subject of riverine/inshore warfare during the past year. Undoubtedly this interest has been precipitated by the Navy's involvement in South Viet Nam and the type warfare we are currently engaged in there. Several proponents have suggested that riverine warfare reflects Sea Power extended to a "brown water" environment.

One of the objectives of this thesis is to stimulate Navy interest in the need for and importance of riverine warfare forces. The fact that the Navy was assigned a riverine/inshore warfare mission when it had neither craft, current experience nor doctrine should be thought-provoking for the professional naval officer. Significant too, are the numerous countries possessing extensive inland waterways that may be targets for future Communist aggression.

Past riverine operations by the U.S. and other navies were investigated. The Western Rivers campaign, the Crimea, the Yangtze, Indo-China and South Viet Nam; all were successful riverine operations that proved that national objectives of those nations concerned could be gained by the judicious use of sea power in a riverine environment.

The future of the Navy's riverine warfare force will probably be determined by the degree of success attained in the current operations in Viet Nam. Therefore, prospects for the development of our riverine forces are speculative at this time. These speculations are offered in Chapter 4.

Additionally, the recommendations submitted in this thesis are interim, subject to revision after the termination of hostilities in Southeast Asia.

# RIVERINE WARFARE: THE NEED FOR A BROWN WATER NAVY

## CHAPTER I

### A LOOK AT THE PAST

When the term Sea Power is mentioned today, the professional naval officer immediately thinks of carrier striking forces, guided missile cruisers and destroyers, nuclear powered submarines, logistic replenishment groups, antisubmarine warfare forces and amphibious task forces.

It is certainly expected that he will associate Sea Power with the modern day "blue water" navy. But what about a "brown water" navy? Should not Sea Power include control of all navigable waters, whether it be blue or brown? Have our planners been too preoccupied with "blue water" operations because they expected to fight the next war in the same fashion as World War II and Korea?

There are many students of naval warfare who believe that riverine warfare (or "restricted-water operations" or "in-shore operations") is a part of amphibious warfare. Many, however, do not share this belief.

Granted, the Amphibious Force Commander is the logical type commander to train the personnel and provide logistical support for a riverine warfare unit, but it would be questionable to consider the specialized riverine warfare unit as amphibious warfare, per se.

Although today we have a large "brown water" counter-insurgency force deployed in South Vietnam, it is significant that the United States Navy still does not have any official doctrine, promulgated Navy-wide,

for forces operating in a river environment. Also, we had no trained, experienced cadre of personnel when the decision was made to deploy "brown water" units to South Vietnam and our inventory of craft for this operation was non-existent.

Certainly, some of the wind was taken out of our Sea Power sails when the United States Coast Guard, the peace-time sea arm of the United States Treasury Department, announced on 29 April 1965 that they were sending 82-foot WPB cutters to South Vietnam to support the Navy's counter-insurgency effort.

Fifty foot, Navy manned "Swift" boats (originally designed as crew boats for the off-shore oil rigs in the Gulf of Mexico) were to follow about five months later.

Now, as in the past, it appears that the "blue water" trained United States Naval officer is inclined by experience and duty preference to overlook the importance and potential of extending Sea Power to a riverine and restricted waters environment. Therefore, perhaps we should review some significant points in the history of inshore and riverine warfare.

#### The American Civil War

There were no decisive naval actions fought on the high seas during the Civil War, but it was indeed a maritime war. Because of the geography of the Southeastern portion of the United States, the Union Navy made a major effort to gain control of the coast and inland waters, on which the economic life of the South depended. The naval superiority of the North was somewhat nullified in earlier days of the war due to the lack of a



"brown water" navy to operate on the rivers of the South. In the struggle for control of the coast, estuaries and rivers there was, to a large extent, what has been called "fleet-against fort" action, Union fleet against Confederate fort.<sup>1</sup> In these actions, Union Navy officers had to fight their ships up rivers, often between bluffs, through mine fields and uncharted shoals, but not on the high seas where they had been trained.

Most of these "fleet-against fort actions" were joint operations with Union Army forces. Several actions of this type in which the Union Navy attempted operations without Army support resulted in defeats. i.e. Drewry's Bluff in May 1862, and in the ironclad attack on Charleston in April 1863.<sup>2</sup>

Eventually Union Navy Sea Power reached thousands of miles inland on the Mississippi River system. The strategy in the West being to split the Confederacy along the line of this great river system.

It is interesting to note that in the Fall of 1861 there was a dispute between the high level officials of the Union Army and Navy on the subject of who would control the river gunboats. Although the Navy actually had no gunboats on the Western Rivers at the time, they won out over the Army and thus the river war became a naval war. Their objectives were essentially still one of Sea Power--seize and maintain control of the waterways, prevent the enemy from using the rivers as supply lines, shell Confederate shore installations, convoy Union supply boats and transports, and provide gunfire support for the Union infantry.

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<sup>1</sup> RADM John D. Hayes, USN (ret.), "Sea Action in the Civil War," United States Naval Institute Proceedings, November 1961, p. 64.

<sup>2</sup> Hayes, p. 65.

Our Navy's planners of the 1860's had not foreseen the need for a "brown water" navy, so our inventory of gunboats for the Western Rivers campaign (much like our situation in early 1965) was non-existent. Government representatives led by CDR John Rogers, visited riverboat centers such as St. Louis, Cincinnati and Cairo in search of suitable boats.<sup>3</sup> Civilian boat yards on the Western Rivers responded in a timely manner to the stepped-up Union requirements in both new construction and conversion of existing river-craft. (Again this is somewhat reminiscent of the Navy's urgent requirement for patrol craft for the Vietnam counter-insurgency effort in early 1965.)

In carrying out the successful Western Rivers campaign, the Union Navy encountered many problems that sound familiar today--control of the river banks by guerrillas, the sinking of some of the best Union gunboats by mines and the need for salvage operations due to the frequent hazards to navigation.<sup>4</sup> Additionally, the Navy's first hospital ship, the USS Red Rover, was commissioned during the river war in an attempt to alleviate the suffering of battle casualties and the ever present high disease rate.

In the end, the Union Sea Power prevailed in the rivers and restricted waters and contributed significantly to the downfall of the Confederacy.

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<sup>3</sup> LTJG John C. Roberts, USN and LTJG Richard H. Webber, USN, "Gunboats in the River War, 1861-1865," United States Naval Institute Proceedings, March 1965, p. 85.

<sup>4</sup> Robert C. Duncan, America's Use of Sea Mines (Washington: U.S. Govt. Print. Off., 1962), p. 29.

## The Russo-Turkish War of 1877-1878

To the student of naval warfare the success of the Imperial Russian Navy on the Danube River in 1877-78 is a classic in naval planning.

The Treaty of Paris of 1856 which ended the Crimean War required that Russia destroy her Black Sea fleet. Therefore, the Russians expected to be badly beaten at sea if they went to war against Turkey, who possessed one of the strongest, most modern fleets of that day.<sup>5</sup>

In 1876, a young Imperial Russian Navy lieutenant, Stepan Osipovich Makarov, set to work on the invention of new weapons and tactics for the expected war with Turkey. Makarov, who was destined a Vice Admiral and commander of the Russian Pacific fleet during the Russo-Japanese War, proposed the use of steamers to transport small torpedo boats to the scene of attack. The small craft would then be released in order that they could each carry a torpedo to explode against the hull of the enemy ship. This was a revolutionary proposal since neither movable torpedoes nor fast torpedo boats were in existence then.<sup>6</sup>

Prior to crossing the Danube, the Russians pre-positioned their steam powered torpedo boats at various strategic points along the river. Most of the torpedo boats were transported by either rail or wagon to desired locations on the Danube.

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<sup>5</sup> Alfred P. Brainard, "Russian Mines on the Danube," United States Naval Institute Proceedings, July 1962, p. 52.

<sup>6</sup> D.W. Mitchell, "Admiral Makarov: Attack! Attack! Attack!," United States Naval Institute Proceedings, July 1962, p. 58.

These daring new tactics plus the use of mine barricades resulted in the Turkish fleet being reduced to ineffectiveness by the time the war was only two months old.

The neutralization of the Turkish river fleet demonstrates how a joint Army/Navy riverine operation of a weak naval power can be successful against a significantly stronger naval power provided it is well thought-out and planned for in advance.

#### YANG PAT, The Yangtze Patrol

For three quarters of a century, from 1866 until 1941, the United States Navy maintained an uninterrupted naval operation on the Yangtze River system in China. This small flotilla of "brown water" ships sailed China's principle river with a mission to protect American lives and property.

Although fleet units from the East Indies and the China Squadrons had from time to time made previous visits up river, two sidewheel steamers were sent to China in 1866, specifically for river duty.

After the Spanish-American War we acquired a number of ex-Spanish gunboats in the Philippines which were used to augment our river force in China.

YANG PAT's flat-bottomed fleet extended the United States Navy's Sea Power inland past mountain-ringed Chungking--1,400 miles from the sea. These specially constructed, odd-looking gunboats had their propellers housed in tunnels, providing some protection from floating logs and shoals expected in the uncharted rivers with their ever shifting sand bars. They

also were built with three rudders in order to provide more powerful steering control.<sup>7</sup>

The normal complement of these gunboats was five officers and fifty enlisted men. Their main battery consisted of a three inch gun (open mount) and several machine guns. Not only did these sturdy little craft protect Americans, but their high powered communications equipment acted as the eyes and ears of the United States Navy and Foreign Service over the vast stretches of water that constituted the principle highway for millions of Chinese.

Frequently the gunboats of YANG PAT were fired upon by forces of the various Chinese war-lords and in December 1937, four years before Pearl Harbor, Japanese aircraft attacked and sank the gunboat USS PANAY without provocation. Three PANAY crewmen were killed and United States-Japanese relations were very tense as a result.

A few days prior to the Pearl Harbor attack, three YANG PAT gunboats sailed to the Philippines, only to be destroyed during the battle of Corregidor. The three other gunboats that remained in China soon fell victims to the Japanese.

Although these little craft were short-lived at the out-break of a general war, their effectiveness in projecting the power of the American Navy far into the Chinese mainland can not be denied.

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<sup>7</sup>RADM Kemp Tolley, USN (ret.), "Yang Pat - Shanghai to Chungking," United States Naval Institute Proceedings, June 1963, p. 87.

## CHAPTER II

### "DINASSAUTS" AND THE RIVER ASSAULT GROUP

In many countries, water routes are a primary means of transportation and communication, especially if there are few and inadequate railroads, roads, or trails. In some sections of the country, they may be the only avenues of approach to areas occupied by hostile forces. So long as water routes are more economical in the time and money than other available means, they will be employed by the local inhabitants and their use must be seriously considered in the plan of campaign of any force entering the country for small war operations. Such river operations as appear practicable should be coordinated with land operations which are to be conducted simultaneously.<sup>1</sup>

The most extensive river-warfare operations since the American Civil War have been conducted in French Indochina from 1946 to 1954 and, more recently, in South Viet Nam. Although their doctrine differed somewhat, the French and South Vietnamese navies operated in the same geographical area and with the same type of equipment. In fact, many of South Viet Nam's present day River Assault Group (RAG) units formerly belonged to the French Navy's Assault River Divisions (DINASSAUT's).

The basic difference between the two is that the French Navy maintained a clear line of control over the actions of the DINASSAUT, just as the U.S. Navy did during the Western Rivers campaign of the Civil War. However, the RAG's have been under the operational control of the South Vietnamese Army. Another basic difference is that the RAG has no permanent assigned landing force, but instead South Vietnamese Army or

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<sup>1</sup>Small Wars Manual (U.S. Marine Corps, 1940), p. 10-1.

Marine units are assigned temporarily to a RAG for specific missions.<sup>2</sup>

A close examination of these two "brown water" operations will provide the U.S. Navy with a wealth of recent, practical knowledge of naval units engaged in riverine and restricted-water missions in a combat environment.

### The DINASSAUT

The French armed forces in Indochina were immobilized when the Japanese occupied that country during World War II. Until March of 1945 the French forces primarily were used as internal security forces throughout Indochina's three kingdoms. On 9 March 1945, however, only five months before their surrender, the Japanese attacked the French forces and destroyed their effectiveness as a fighting unit.

When the Japanese were defeated in August 1945, the French Navy established the Naval Brigade Far East and its elements dis-embarked at Saigon on 19 October 1945. Early in the spring of 1946 additional naval units moved into the Haiphong area of northern Indochina, as the Chinese Nationalist occupation forces withdrew. These naval forces were formed into two river district flotillas, one being assigned to the area of the Red River Delta in the north, the other having the responsibility for the vast Mekong Delta with its 2,500 miles of interconnected waterways in the south.<sup>3</sup> It

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<sup>2</sup>Major Richard M. Meyer, USA, "The Ground-Sea Team in Riverine Warfare," Military Review (U.S. Army Command and General Staff College), September 1966, p. 58.

<sup>3</sup>COL V.J. Croizat, USMC(ret.), "Naval Forces in River War," United States Naval Institute Proceedings, October 1966, p. 53.

was at this time that the eight-year war began against the Communist Vietminh, a war in which the French Navy river forces played an effective and valiant part.

Within each of the two river districts the French organized several Naval Assault Divisions—the famous DINASSAUT'S. They were formed for the specific purpose of supporting landborne units along the rivers, canals and interior waterways. Primarily composed of locally-modified former U.S. landing craft, the average DINASSAUT had about twelve ships. Although they varied in organization according to the area in which assigned, a Naval Assault Division usually included an armored Landing Ship Support, Large (LSSL) as flagship; two LCM Monitors; about six armored LCVP'S—each capable of carrying about twenty troops; several French-built Vedette Sten's (or FOM'S) which were used for fire support, minesweeping, and advanced patrol; and 4 to 6 additional armored LCM'S carrying Marine commandos.<sup>4</sup> These units were often augmented for particular operations by Landing Craft Tanks (LCT'S) and Landing Craft Infantry (LCI).

The LCM Monitor proved to be an especially effective weapon system. Equipped with a 40-millimeter cannon, two .50 caliber and two .30 caliber machine guns, plus a 81-millimeter mortar; these formidable little craft provided fire support in depth for the infantry landing forces, as well as providing countering fire to river-bank ambushes. Also, this concentration of mobile riverborne firepower permitted effective attacks on the Vietminh's

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<sup>4</sup> Bernard B. Fall, Street Without Joy (London: Pall Mall Press, 1964), p.44



numerous inland river supply lines.

In addition to ambushes, the DINASSAUT's were especially troubled with the enemy's use of shore-controlled mines. Even up to the day of cease-fire, the French had not solved this problem.<sup>5</sup>

Partial success against the shore-controlled mine was attained by using heavy wire drags from minesweepers to burrow into the mud of the bottom in order to sever the control wires. This tactic, along with that of having an aircraft (when available) fly ahead of the DINASSAUT units and locate the camouflaged fire control points, as well as any ambushes around the bends of rivers, proved to be the most effective counter-measure to the Vietminh's mines.

In view of the recent reported sinking of a U.S. Navy 57-foot mine-sweeping boat (MSB-54) with heavy casualties in the Long Tau River, fifteen miles south of Saigon;<sup>6</sup> it would seem that a careful analysis of the lessons the French learned is in order.

The success that the DINASSAUT's achieved are significant, since they represent the application of extending seapower to an inland, "brown water" environment.

Ambassador Robert McClintock, who was Charge d'Affaires of the American Embassy in Saigon during the French Indochina War has stated:

The war was never at a posture where the impact of naval power would prove decisive. It was fundamentally a land war

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<sup>5</sup> Robert McClintock, "The River War in Indo-China," United States Naval Institute Proceedings, December 1954, p. 1310.

<sup>6</sup> "57-Foot Sweeper Sunk in Long Tau," Navy Times, 9 November 1966, p.2.

and, above all, a guerrilla war. But it was also a war in the mud, the flooded Deltas, the rivers of endless ambushade. The French Navy met the requirements of this type of conflict in admirable fashion, adopting its techniques and use of naval craft to action across rice paddies and through the mangrove swamps of Cochín-China (South Viet Nam). That the war was not won is not reflection upon the French Navy. It's annals will imperishably list the valiant efforts of the DINASSAUT's, the river flotillas, and the little ships with the amorous names.<sup>7</sup>

### The River Assault Group

Shortly after the Vietminh defeated the French in 1954, the United States undertook a military and economic assistance program to aid the newly formed Republic of South Viet Nam.

When the South Vietnamese Navy was created in 1954 it was designed to fight and win, not in classic naval engagements of the past, but in the deadly counter-insurgency war against the Communist Viet Cong.<sup>8</sup>

The operating forces were organized into four separate "type" commands. They included the River Force, the Marine Corps, the Coastal (Junk) Force and the Sea Force--their "blue water navy".

There are three separate elements in the River Force: the River Escort Group, the Transport Group, and the River Assault Group (RAG).

Although both the River Escort Group, which provides escorts for the convoys of sampans carrying essential cargoes on the inland waterways, and the Transport Group, who provides logistic support for units of the River Force at it's various locations in the Mekong and Saigon River

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<sup>7</sup>Robert McClintock, p. 1311.

<sup>8</sup>LT R.P.W. Murphy, USNR and COL E.F. Black, USA, "The South Vietnamese Navy," United States Naval Institute Proceedings, January 1964, p.53.

Deltas, have important missions, it is the RAG where the striking power of the River Force is concentrated.

This writer accompanied units of RAG 22 on a patrol down the Song Nha Be River in February 1966 while on temporary duty with the Naval Advisory Group, Vietnam. A typical River Assault Group, RAG 22 is based at Nha Be in the Rung Sat Special Zone about fifteen miles south of Saigon. The Rung Sat Special Zone consists of the major arterial river system leading from Saigon to the South China Sea and is surrounded by a mangrove swamp area that has hundreds of small canals and interwinding waterways.

Although patterned after the French DINASSAUT's, the RAG's do not have a permanent assigned landing force and are under Vietnamese Army control (usually the Division Tactical Area Commander or the local Province Chief).

There are seven RAG's in the River Force and they are assigned the following missions:

1. To provide riverborne assault lift and to deliver gunfire support for ground troops.
2. Conduct river patrols, which includes delivering harassing fire on enemy base camps and sinking illicit river traffic.
3. Escort of river convoys.
4. Perform logistic lift tasks.

Each of the seven RAG's is commanded by a South Vietnamese lieutenant commander and usually consists of the following units: one LCM Commandant armored mobile command boat; one LCM Monitor armored and armed with a 81 mm mortar, a 40 mm cannon and four machine guns; five armored LCM's; six armored LCVP's; six French-built FCM patrol boats equipped with one

.50 caliber and three .30 caliber machine guns.<sup>9</sup>

When participating in a joint operation, these units can lift between 350 and 400 troops (about one half of a U.S. battalion) and provide gunfire support for the force.

The RAG's still must contend with some of the problems that the DINASSAUT's once faced—ambushes and shore-controlled mines. However, there is much more air support available today in Viet Nam than there was in the days of the French. Since each RAG has been assigned a U.S. Navy officer and enlisted petty officer advisors, there is additional liaison by which to obtain adequate U.S. air support for RAG combat missions.

Just as the DINASSAUT's did in the past, Vietnamese River Assault Groups are proving the validity of the riverine warfare concept.<sup>10</sup>

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<sup>9</sup> This was the actual organization of RAG 22 in February 1966.

<sup>10</sup> COL V.J. Croizat, USMC (ret.), p. 56.

## CHAPTER III

### THE U.S. NAVY'S INSHORE AND RIVERINE CAMPAIGN IN SOUTH VIET NAM

From the DMZ (Demilitarized Zone) on the 17th Parallel to the island of Phu Quoc in the Gulf of Siam, South Viet Nam's coastline stretches over 1200 miles. At any given time it has been estimated that between two to four thousand of Viet Nam's 50,000 registered junks may be sailing off this vast coast.<sup>1</sup>

In South Viet Nam today the U.S. Navy is conducting two major operations in which American sea power is being projected into an inshore and riverine environment. These two, Operation Market Time and Operation Game Warden, are counter-insurgency efforts being carried out by our newly formed "brown water" navy.

Market Time is a counter-sea infiltration effort that projects into the shallow waters of the entire South Vietnamese coast. Game Warden is a river patrol operation on the major rivers of the huge Mekong Delta. This operation extends sea power over a hundred miles inland to control waterborne insurgency.

As was the case at the beginning of the U.S. Navy's Western Rivers Campaign during the Civil War, Operations Market Time and Game Warden have created requirements for new type naval craft, as well as new doctrine and tactics.

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<sup>1</sup>RADM Leroy V. Swanson, USN, "Market Time-Game Warden: The Navy in Viet Nam," Naval Engineers Journal, June 1966, p. 392.

There are some students of naval warfare who believe that the Navy should maintain a specifically designed counter-insurgency task force.<sup>2</sup> Undoubtedly if such a counter-insurgency task force had been in existence in early 1965, the Navy could have responded much more rapidly to the stepped-up tempo of operations in South Viet Nam's rivers and shallow coastal waters.

#### Operation Market Time

Market Time began in February 1965 when a small steel-hulled freighter from North Nam was sunk while unloading large quantities of arms and ammunition at Vung Ro Bay, north of Nha Trang.<sup>3</sup> A month later when another large amount of sea-infiltrated arms was found in the same area, it became obvious that a U.S. Navy coastal patrol effort was needed to augment the patrol already being performed by the South Vietnamese Navy, in order to prevent further Viet Cong sea-infiltration.

In March 1965 Navy units commenced Market Time patrols under the operational control of Commander Seventh Fleet. This force proceeded to build up very rapidly. Designated Task Force 115, the Market Time coastal surveillance force's operational control was shifted to Chief, Naval

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<sup>2</sup> CDR A.G. Nelson, USN and LT Norman G. Mosher, USN, "Proposed: A Counter-insurgency Task Force," United States Naval Institute Proceedings, June 1966, p. 36-45.

<sup>3</sup> Thomas L. Moore, JO2, USN, "Duty: Coastal Surveillance," All Hands, September 1965, p. 15.

Advisory Group, USMACV on 31 July 1965.<sup>4</sup>

To accomplish their mission of interdicting the flow of men, weapons, ammunition and supplies by sea routes into the hands of the Viet Cong, Market Time was faced with two categories of sea-infiltration. Small junks and sampans were used by the VC to move supplies short distances in shallow coastal waters. Larger coastal freighters and trawlers that sail outside the 12 mile limit until abeam a predetermined rendezvous point, at which time they head into the coast and off-load their cargo of arms. The North Vietnamese steel-hulled freighter sunk at Vung Ro Bay in February 1965 was carrying out this type of "perpendicular penetration".<sup>5</sup>

In order to detect and intercept suspicious ocean-going traffic, Market Time forces are maintaining an outer patrol at about 12 to 15 miles off shore with ocean minesweepers (MSO's), coastal minesweepers (MSC's) and radar picket destroyer escorts (DER's). These forces are assigned to CTF 115's control from the Seventh Fleet. The sea-going search units are supplemented by coastal air patrols carried out by U.S. Navy VP aircraft.

When it was determined that a shallow-water, inshore patrol was necessary to stop the infiltration by the small junks and sampans, it became evident that the world's mightiest navy did not have small shallow-draft, fast patrol boats in its vast inventory. Fortunately,

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<sup>4</sup>Hanson W. Baldwin, "U.S. Navy Plays Growing Role in Protection of Viet Nam Rivers," New York Times, 13 March 1966, p. 4.

<sup>5</sup>LT R.T. Nelson, USCG and LT D.G. Currier, USCG, "Operation of Coast Guard Patrol Boats in Southeast Asia," Naval Engineers Journal, June 1966, p. 404.

however, our sister service, the United States Coast Guard, promptly provided seventeen 82 foot WPB class cutters and their crews to the Market Time force.

In July 1965, after a hurried outfitting for combat operations and intensive crew training, the first of the WPB's arrived in Viet Nam—less than three months after the original decision to assign USCG units to Market Time.

Based at Da Nang in the north and on the island of Phu Quoc near the Cambodian border in the south, the WPB's were the first inshore patrol boats to form an entry barrier at each end of the 1200 mile South Vietnamese coastline. Ideally suited for this type duty, these craft and their crews ( 2 officers, 9 enlisted) are performing in the Coast Guard's traditional, highly effective manner.<sup>6</sup>

At the same time the Coast Guard was outfitting the WPB's for Market Time operations, the Navy's Bureau of Ships undertook a crash procurement project to meet our urgent requirements for a fast, shallow-draft inshore patrol boat, which was to be designated the PCF (Patrol Craft Fast).

After an intensive survey of the small boat industry, BUSHIPS selected the Sewart Seacraft firm of Louisiana, builder of the "Swift" boat, to produce the PCF.

The Navy ordered 104 Swifts, which were originally designed as commercial water taxis for the offshore oil industry in the Gulf of Mexico.<sup>7</sup>

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<sup>6</sup> CAPT Phil H. Bucklew, USNR, "Navy Small Craft in Market Time," Naval Engineers Journal, June 1966, p. 399.

<sup>7</sup> Swanson, p. 393.



The Swift is a fifty-foot, all-welded aluminum alloy boat that is propelled by twin screw diesel power. They have a top speed of 25 knots and a draft of less than four feet. Armed with twin .50 caliber machine guns forward and a .50 caliber machine gun mounted on an 81 mm mortar aft, these radar-equipped PCF's have a crew of one officer and five enlisted men.

Although they did not arrive in Viet Nam until several months after the WPB's, the Swifts promptly established themselves as highly effective components of Task Force 115. At present there are more than 80 Swift boats operating in Viet Nam's coastal waters and it has been reported that in an eight month period they stopped and searched over 72,000 junks, in addition to participating in numerous gunfire support missions.<sup>8</sup>

Units of the South Vietnamese Navy's Sea Force and Coastal (Junk) Force also participate in Market Time (under their own operational control). In order to fully integrate the efforts of all the Market Time forces it was necessary to have rapid and reliable communications between TF 115 units and bases, and CTF 115's headquarters in Saigon. As a result, five Coastal Surveillance Centers were established at bases along the entire length of the South Vietnamese coast.

Manned by officers and men of both navies, these Coastal Surveillance Centers are located on Phu Quoc island in the south, at Da Nang in the north, at Vung Tau on Cape St. Jacques southeast of Saigon, and at Nha Trang and Qui Nhon in the II Corps area.<sup>9</sup>

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<sup>8</sup> Bob Neil, "Sailing the Midget Fleet," All Hands, November 1966, p.3.

<sup>9</sup> Moore, p. 15.

These CSC's have the responsibility of keeping track of all patrolling Maritime Time units, gunfire support ships and unidentified contacts in their respective areas. Additionally they serve as an operational communication station and intelligence reporting center for CTF 115. Providing Market Time headquarters in Saigon with electronic "eyes and ears" over the entire South Vietnamese coast, these centers make a significant contribution to the effectiveness of our "brown water" operations in Viet Nam.

#### Operation Game Warden

The principle river system in southern Viet Nam is the Mekong. One of the world's ten largest rivers, the Mekong has its source in the Tibetan highlands about two thousand miles upstream from where it empties into the South China Sea.

Over a third of the population of South Viet Nam lives in the Mekong Delta.<sup>10</sup> This area is often referred to as the Vietnamese "rice bowl". Its 2500 miles of inter-connected waterways have long been a known haven for large elements of the Viet Cong.

Into this vast area of meandering rivers and interwinding streams and canals have come the first river patrol boats designed for the U.S. Navy since the Civil War.<sup>11</sup>

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<sup>10</sup> COL Victor J. Croizat, USMC (ret.), "Naval Forces in River War," United States Naval Institute Proceedings, October 1966, p. 53.

<sup>11</sup> "New Type River Boat Ordered for Viet Nam," Navy Times, 30 November 1965, p. M 10.

This new riverine patrol force, designated Task Force 116 and called Operation Game Warden, is also under the command of Chief Naval Advisory Group/ Commander U.S. Naval Forces Vietnam in Saigon.<sup>12</sup>

The backbone of Operation Game Warden is the PER (Patrol Boat River). This craft, with the distinction of being the first of its type, was also procured by BUSHIPS on short notice. The first PER's arrived in Viet Nam in March 1966, only six months after General Westmoreland, COMUSMACV, laid the requirement on the Navy for these craft.<sup>13</sup>

Built by the United Boat Company of Bellingham, Washington, the fiberglass PER is 31 feet long and weighs about seven tons. It attains a top speed of 25 knots from its twin-diesels that are incorporated with a Jacuzzi water jet pump. This unique propulsion unit allows the PER to operate in water as shallow as 15 inches. Oddly, the PER does not have any rudders. However, its two propulsion water jets give the craft high speed maneuverability.<sup>14</sup>

Although it is armed with twin .50 caliber machine guns forward and a .30 caliber machine gun aft, the radar-equipped PER was designed to utilize its speed and maneuverability as its main defensive weapons.

In carrying out Game Warden's mission of denying the Viet Cong the

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<sup>12</sup> Hanson W. Baldwin, "Navy Patrolling Viet Nam's Rivers," New York Times, 15 May 1966, p.18.

<sup>13</sup> Swanson, p. 394.

<sup>14</sup> Bucklew, p. 398.

use of the Delta's waterborne lines of transportation and communication, the PER patrols are instructed not to "shoot it out" with the VC, but when contact is made withdraw to a safe distance and call for an air strike.<sup>15</sup>

Concurrently with the input of PER's into the Delta was the assignment of several LST's to the area to provide floating bases for armed Huey helicopters. Also under TF 116 operational control, the Huey's are in constant radio contact with the PER patrols and can arrive on the scene in minutes, should contact be made with VC forces.

To train the four-man PER crews, the Navy has established a new Naval Inshore Operations Training School at Mare Island, California.<sup>16</sup> These "brown water" crews, usually headed by a first class boatswain's mate, receive an intensive four week operational course to prepare them for duty in the Mekong Delta. The course includes gunnery, survival training, radio procedures, operation of radars, Vietnamese language familiarization and both day and night drills with the PER's in the shallow waters of the upper Bay.<sup>17</sup>

Perhaps this new Inshore Operations School will prove its worth in future operations in which the Navy becomes involved in "brown water" operations.

Market Time and Game Warden are both prime examples of the U.S. Navy's flexibility. We responded on short notice to the problem of stopping

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<sup>15</sup> Swanson, p. 394.

<sup>16</sup> "New Program to Train Men in River and Coastal Combat," Navy Times, 12 October 1966, p. 3.

<sup>17</sup> "School for Patrol Boat Crews," All Hands, November 1966, pp.8-9.

waterborne insurgency by the use of seapower in riverine and inshore environments.

It is widely acknowledged that the armed forces of the United States will be employed for many years to come in and near countries exposed to communist insurgency. Most of these countries—and this is true of lands in Southeast Asia and the Western Hemisphere—have long coastlines and major river systems along and on which American naval power can be utilized. Though the high seas may be the classic area of naval action, it is a certainty that the United States will be deeply involved in naval warfare on inland and coastal waters in Asia. This, in turn, will compel the United States to seek unorthodox naval equipment, for the weapons suitable in restricted waters are not always suited to blue water operations.<sup>18</sup>

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<sup>18</sup> Anthony Harrigan, A Guide to the War in Viet Nam (Boulder, Colo.: Panther Publications, 1966), p. 64.

## CHAPTER IV

### RIVERINE WARFARE AND THE FUTURE

Will the present conflict in South Viet Nam bring about the establishment of a permanent riverine or inshore warfare force in the Navy, just as World War II brought about the establishment of the Amphibious Force? Is a riverine warfare force needed for future contingencies? What type craft will the force be composed of? How will it be deployed?

These are some of the questions concerning riverine warfare that our future naval planners and leaders will have to answer.

Although we are at present deeply involved in riverine and inshore warfare in South Viet Nam, some Naval officers still say, "It isn't our bailiwick!" Perhaps this was the attitude of our planners in early 1965 when the Coast Guard was the only service with shallow-water craft immediately available for Market Time operations.

The confirmed "blue water" sailor who is reluctant to involve the Navy in riverine operations should be reminded that the Department of Defense has formally assigned the Department of the Navy the responsibility of organizing, training and equipping Navy and Marine Corps forces as "...may be essential to the prosecution of a naval campaign." Also included is the responsibility for "...conduct of such land operations as may be essential to the prosecution of a naval campaign" and "... to seek out and destroy enemy naval forces."<sup>1</sup>

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<sup>1</sup>Department of Defense Directive 5100.1, Functions of the Department of Defense and Its Major Components, 31 December 1958 (Washington: U.S. Govt. Print. Off., 1958), pp.9-10.

Additionally, the fact that the Joint Chiefs of Staff have recently laid the requirement on the Navy to provide a unified commander, COMUSMACV, with riverine and inshore forces, should convince even the skeptics that the Navy has a "brown water" responsibility and mission.<sup>2</sup>

Before examining the possible requirements and status of riverine forces in the distant future, it should be remembered that we are presently engaged in a war in South Viet Nam where large scale riverine operations are taking place. Therefore, a look at today's river campaign is in order.

#### What Next in the Delta?

Although at the time of this writing there has not been an official announcement from Washington, there have recently been many indications that the U.S. was planning to commit ground forces into the Mekong Delta in the near future.

One newspaper reported that General William C. Westmoreland, U.S. Commander, has ordered a Delta base to be built at My Tho, about 40 miles southwest of Saigon. It also stated that a detachment of American support troops—engineers, communication and security forces—has already arrived at the base site. When completed the base would be capable of accommodating a full brigade of up to 5,000 troops.<sup>3</sup>

Another recent newspaper article reported that, "A brigade of the

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<sup>2</sup> RADM Leroy V. Swanson, USN, "Market Time—Game Warden: The Navy in Viet Nam," Naval Engineers Journal, June 1966, p. 394.

<sup>3</sup> "Vanguard Moves to Mekong Delta," Newport Daily News (Rhode Island), 13 January 1967, p. 1.

Ninth Infantry Division is expected soon to start operations fighting in mud up to a soldier's knees in the Delta's rice fields and along the 2,500 miles of waterways that crisscross its monotonously flat plains." This article also stated that by the end of 1967, plans called for one full American division to be assigned to the Delta.<sup>4</sup>

Up to the present, U.S. forces in the Fourth Corps tactical area (which comprises all of the Delta except its two northern provinces) has been limited to Army and Navy advisers to Vietnamese units, Game Warden and Market Time forces and some Army aviation units.

Although the South Vietnamese Army has assigned a force of some 40,000 regular troops to the Delta's Fourth Corps area, the military situation there has developed into a stalemate. Partly due to the reluctance of its commander, plus the fact that Viet Cong strength there has soared to 82,000.<sup>5</sup>

Since the stage has been set for the beginning of large-scale combat operations by U.S. forces in this strategically vital area, the proponents of riverine warfare will be observing these actions with keen interest.

What type assault craft will be used in this river campaign? What doctrine pertinent specifically to riverine operations is available to our forces entering the Delta?

After a careful observance of the sequence of events during the past

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<sup>4</sup>"Saigon, Road Ahead Still Long." New York Times, 1 January 1967, p.1E.

<sup>5</sup>"World of Water." Newsweek, 19 December 1966, p. 55.



year, it seems that the USMACV planners anticipated the eventual introduction of U.S. ground forces into the Delta when they laid the requirements on the Navy for the Game Warden PBR's.

Recent newspaper articles support this opinion. One of these articles reported that planning was underway for a river campaign that would involve launching special assault units, probably U.S. Army infantry, from Navy barracks ships stationed off the mouths of the Delta's principle rivers. This article also made the following statement: "Working in secrecy, the U.S. Navy is developing a new type of assault craft to carry the infantry from the barracks ships to objectives up river along the banks."<sup>6</sup>

Another recent article reported that a new type of heavily-armed river patrol boat has been ordered into production for use in Viet Nam. Called assault support patrol boats (ASPB's), the new craft is reported to have been designed from the keel up for river combat. It will be manned by a crew of five and will be able to operate in four feet of water. Although no troop-carrying capacity was listed, the articles did state that the ASPB will be armed with two .30 caliber machine guns, a grenade launcher, a 20 mm cannon and a 81 mm mortar. It is fifty feet long and weighs 63,500 pounds fully loaded.<sup>7</sup>

The article also reported that the Gunderson Brothers Engineering Corporation of Portland, Oregon had received a contract to build 32 of the craft for the Navy.

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<sup>6</sup>"River Warfare Set Against Viet Cong," Newport Daily News (Rhode Island), 6 October 1966, p. 12.

<sup>7</sup>"New Type River Boat Ordered for Viet Nam," Navy Times, 30 November 1966, p. M 10.

Another new type craft to make its appearance in the Delta is the Patrol Air Cushion Vehicle (PACV). This is a surface effects designed vehicle that rides on a cushion of air four feet above the surface and reportedly can attain speeds up to 60 knots over water, marsh, mud and land.<sup>8</sup> The PACV is 39 feet long, 23 feet wide and carries one .50 caliber machine gun atop the pilot house.

Built by Bell Aerosystems Corporation, three PACV's were deployed to South Viet Nam in May 1966.<sup>9</sup> They have been formed into PACV Division 107 and at present these revolutionary new craft are undergoing evaluation under actual combat conditions.

Some experts have predicted a great future for the PACV--even performing many of the duties of helicopters.<sup>10</sup>

The ability to operate in areas that are even too shallow for low draft craft such as the PER's certainly seems to give the PACV a great deal of potential for riverine operations. Perhaps the forthcoming Mekong Delta campaign will be the key to the PACV's future in the Navy.

The announcement by COMUSMACV that a reinforced battalion of the U.S. Ninth Infantry Division had moved into the Delta base brings up the question of availability of doctrine for riverine operations.<sup>11</sup>

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<sup>8</sup> John B. Chaplin, "The Air Cushion Vehicle Evaluation and Potential," Naval Engineers Journal, June 1966, p. 429.

<sup>9</sup> Bob Neil, "Sailing in the Midget Fleet," All Hands, November 1966, p.5.

<sup>10</sup> CAPT P.H. Bucklew, USNR, "Navy Small Craft in Market Time," Naval Engineers Journal, June 1966, p. 398.

<sup>11</sup> "Battalion of GI's, Artillery Move to Mekong Rice Bowl," Newport Daily News (Rhode Island), 25 January 1967, p. 1.

Extensive research revealed that there is a definite lack of doctrine existing specifically for riverine warfare. The only current publication available in the Navy/Marine Corps inventory is Interim Doctrine for Riverine Operations (Tentative Fleet Marine Force Manual 8-4). This manual was developed by the Marine Corps Landing Force Development Activities, Marine Corps Schools, Quantico, Virginia. It presents interim concepts of doctrine, tactics, techniques, equipment and organization for the employment of Marine landing forces in a riverine environment in Vietnam. The Marines expect to publish a follow-on, permanent doctrine for riverine warfare in June 1967.

This manual is very well written and should be of great value to the forces in the Mekong Delta campaign. However, its use is primarily intended for the employment of amphibious landing forces and does not cover the operations of Navy-controlled units.

Although quite old, the Marines have another publication that contains a wealth of practical material on river operations. The Small Wars Manual, U.S. Marine Corps was last published in 1940 and it contains a chapter on riverine operations.

Material from both of these Marine Corps manuals should be of great value to the naval planners assigned the responsibility for developing doctrine for riverine warfare. When such doctrine is developed, obviously it will reflect many lessons learned in the Mekong Delta campaign. Meanwhile, our navymen in the Swift's, PER's, PACV's and ASPB's will have to "write the book" while they fight the war.

As the tempo of operations increases in the Delta, it may prove worthwhile to incorporate Army or Marine assault force training at the

site of the recently established Naval Inshore Operations Training School.<sup>12</sup> If this is not feasible, joint riverine pre-deployment training exercises possibly could be scheduled.

Anthony Harrigan, military writer of the Charleston (South Carolina) News and Courier, recently stated:

But naval warfare is a matter of seizing on opportunities. It makes no difference whether the water available for a naval operation is two feet or 500 fathoms in depth. If some form of naval vessel can operate successfully in the environment, then there must be a mission for the navy. It is an error to think of naval operations strictly in terms of blue water.<sup>13</sup>

#### AFTER VIET NAM

As in all wars in the past, the end of the Viet Nam conflict should bring about a careful review and analysis of our current structure of forces and tactics. Battle reports from the "brown water" fleet in the Mekong Delta should be thoroughly reviewed by our future naval planners.

It may be that one of the most significant lessons the Navy will learn from Viet Nam will be the need of a permanent riverine task force. Since this has been recommended recently by several writers, discussion of the specific composition of such a force in this thesis is not considered

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<sup>12</sup> Frank Macomber, "Navy Opening River Warfare Center," Navy, October 1966, p. 35.

<sup>13</sup> Anthony Harrigan, A Guide to the War in Viet Nam (Boulder, Colo.: Panther Publications, 1966), p. 64.

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to be necessary. However, our recent experiences should have convinced our country's leaders that a riverine task force can project sea power hundreds of miles inland in many locations throughout the world.

Such a task force would probably be under the cognizance of the Amphibious Force Commander for training and administration. However, to be effective for various contingencies, the task force would likely have to be augmented by amphibious, gunfire-support, mine-countermeasures and possibly air units.

The highly successful deployment of the USS KRISHNA (ARL-38) as a mother ship for the Market Time Swift Boats operating in the Gulf of Siam should prompt some thinking about follow-on construction for our ageing  
16  
ARL's.

With the introduction into the fleet of additional fast amphibious ships, the sea-lift of a riverine task force in the future could be carried out in minimum time. Certainly another future asset to tomorrow's riverine forces will be the new-construction patrol motor gunboats (PMG's) that will be entering the fleet this year. These 165 foot craft are armed with one 3 inch/50 caliber-mount, one 40 mm gun and two .50 caliber machine guns and can attain high speeds with its combination gas turbine and diesel engine propulsion plant.

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<sup>14</sup> CDR A.G. Nelson, USN and LT Norman G. Mosher, USN, "Proposed: A Counterinsurgency Task Force," United States Naval Institute Proceedings, June 1966, pp. 36-95.

<sup>15</sup> Harrigan, pp. 63-68.

<sup>16</sup> LCDR William R. Harris, USN, "Market Time Mother Ship," United States Naval Institute Proceedings, December 1966, pp. 148-151.

It is this writer's opinion that in the future both the Atlantic and Pacific Fleets should have a riverine/inshore task force available for limited-war contingencies at all times. This force could well be a Navy "fire brigade" similar in status to the Naval Operations Support Group (UDT, Beach Jumper Units, Seal Teams). In addition to having flexibility to cope with limited-war riverine operations, such a force would provide the Navy with an immediate trained cadre for future large-scale inshore naval campaigns.

The composition of such a force would, of course, have to be tailored for each operation and it should frequently conduct training with Marine or Army units.

As a result of experiences in the Mekong Delta, new hardware will probably be developed for riverine warfare. Possible new developments may include waterborne Ontos-type amphibious vehicles with six 106mm recoilless rifles or self-propelled barges configured to carry heavy artillery. Long range (300-500 yds.) flame throwers would also appear to be useful weapons for PER's and Swift Boats in future riverine operations.

Another possible future application of riverine warfare forces that warrants study is the Naval Reserve program. What better way could the Navy stimulate civic interest and promote recruiting than by assigning Swift Boat units to the numerous Naval Reserve Training Centers located on navigable rivers?

If made a part of the Selected Reserve Program, these units could drill one week-end a month, plus conduct an annual two-week summer cruise. Such a program should be especially popular with the younger officers and

enlisted men. It also would take advantage of the wide-spread popularity of boating that has arisen in the United States during the last decade.

A Naval Reserve Riverine Division commanded by a reservist lieutenant-commander could consist of four Swift Boat units commanded by reservist lieutenants located in four different cities on the same river system. For example: In the State of Louisiana there are seven cities with existing Naval Reserve units that are on navigable rivers.<sup>17</sup> A Swift Boat could sail to New Orleans from any of the cities via the Mississippi River system or intercoastal waterways. Therefore, in Louisiana and adjoining states, it would be possible to conduct squadron-size riverine operations in the Mississippi River Delta during an annual summer cruise.

The Navy would undoubtedly improve its public image (a matter of recent concern of the Secretary of the Navy) by "showing the flag" on our country's vast network of rivers and inland waterways. This public image could further be enhanced by naming the Naval Reserve Swift Boats after various small communities located on our nation's navigable waterways.

Most important, however, would be the large pool of trained, experienced Naval Reservists available for immediate mobilization who, in most cases, could report for duty in their assigned Swift Boats.

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<sup>17</sup> BUPERS Instruction 5400.1M, Tables of Organization for the Naval Reserve, Fiscal Year 1967, 10 June 1966 (Washington: 1966).

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

The fact that the Navy was assigned a riverine warfare mission in Viet Nam is significant. This is especially true since we have had little recent experience and had no established forces for riverine operations.

It is likely that the future of riverine warfare in the U.S. Navy will depend upon the degree of success attained in Viet Nam. Therefore, the recommendations submitted here are interim, subject to revision after the termination of hostilities in Southeast Asia.

#### Conclusions

It is concluded that the U.S. Navy today is extending Sea Power far inland on Viet Nam's rivers, canals and waterways--just as navies have done successfully in numerous operations in the past.

It is further concluded that, although the Navy has conducted extensive riverine operations in the Civil War and presently in Viet Nam, on both occasions valuable time was lost because planners had not considered the riverine environment an area of Navy responsibility.

The final conclusion is that in today's international situation our Navy must maintain a high state of readiness and flexibility. However, our readiness may be questionable unless the Navy establishes a permanent riverine/inshore warfare organization, to fill the need for a "brown water" navy.



## Recommendations

1. Initiate procurement of suitable riverine/inshore craft, in order that a Riverine Warfare Task Force can be established in both the Atlantic and Pacific Fleets. Type command cognizance of these task forces would appear most likely to be assigned to the respective Amphibious Force Commander.
2. Expedite the development of tactics and doctrine for naval forces engaged in riverine operations. In view of the likelihood that many of these operations will be of a joint nature, investigate the feasibility of preparing a joint Army-Navy-Marine riverine warfare manual instead of using separate service publications.
3. Establish a permanent Naval Inshore Operations Training School that includes provisions for conducting joint service training in riverine operations. The school should include a development section which would be responsible for the development of riverine warfare hardware and doctrine.
4. As soon as current commitments allow, establish Riverine Warfare units as a component of Selected Reserve Program of the Naval Reserve.

"If we desire to secure peace,  
it must be known that we are  
at all times ready for war."

George Washington

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