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<p>UNITED STATES SUBMARINE OPERATIONS DURING THE KOREAN WAR ARE CRITICALLY ANALYZED FROM AN OPERATIONAL PERSPECTIVE. THE KOREAN WAR REPRESENTED A PROTOTYPE FOR FUTURE MAJOR REGIONAL CONFLICTS (MRCS). EXAMINING THE OPERATIONAL COMMANDER'S USE OF SUBMARINES AGAINST A RELATIVELY WEAK NAVAL POWER, IN A CONFLICT DOMINATED BY LAND BATTLE, PROVIDES LESSONS WHICH MAY BE APPLICABLE TO FUTURE MRCS. BRIEF HISTORICAL AND OPERATIONAL OVER-VIEWS ARE FOLLOWED BY OPERATIONAL ANALYSES OF SUBMARINE COMMAND AND CONTROL, OPERATIONAL RECONNAISSANCE MISSIONS, AND THE WAR'S IMPACT ON THE SUBMARINE FORCE. CONCLUSIONS DISCUSS LESSONS LEARNED FOR PRESENT AND FUTURE OPERATIONAL PLANNING. COMPARED TO THEIR SIGNIFICANT CONTRIBUTION DURING WWII, U.S. SUBMARINES DID NOT PLAY A MAJOR ROLE IN KOREA. THEIR EMPLOYMENT WAS MOSTLY DIRECTED TOWARDS TRAINING AND RECONNAISSANCE OPERATIONS. KOREAN WAR OPERATIONAL RECONNAISSANCE SET THE STAGE FOR SUBMARINE OPERATIONS THROUGHOUT THE COLD WAR.</p>			
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AN OPERATIONAL ANALYSIS OF UNITED STATES SUBMARINE EMPLOYMENT  
IN THE KOREAN WAR

by

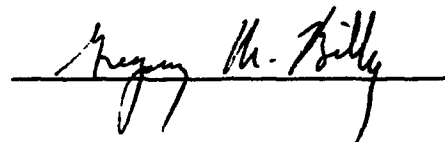
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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Joint Military Operations Department.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract of  
**AN OPERATIONAL ANALYSIS OF UNITED STATES SUBMARINE EMPLOYMENT  
IN THE KOREAN WAR**

United States submarine operations during the Korean War are critically analyzed from an operational perspective. The Korean War represented a prototype for future Major Regional Conflicts (MRCs). Examining the Operational Commander's use of submarines against a relatively weak naval power, in a conflict dominated by land battle, provides lessons which may be applicable to future MRCs. Brief historical and operational overviews are followed by operational analyses of submarine command and control, operational reconnaissance missions, and the war's impact on the submarine force. Conclusions discuss lessons learned for present and future operational planning. Compared to their significant contribution during World War II, U.S. submarines did not play a major role in Korea. Their employment was mostly directed towards training and reconnaissance operations. Korean War operational reconnaissance set the stage for submarine operations throughout the Cold War. Submarine employment in the Korean War was affected by three key issues: difficulty in preventing blue-on-blue engagements, communications limitations which inhibited rapid, reliable submarine operational tasking, and defensive mining of the littoral region. These three issues will continue to challenge Operational Commanders when employing submarines in future MRCs.

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## CHAPTER I

### INTRODUCTION

A bellicose nation lead by an unstable dictator launched a sudden, unprovoked attack on its neighbor. The world reacted with dismay as the powerfully equipped attacker quickly overwhelmed its neighbor's weak forces. Under United States' leadership, the United Nations condemned the vicious aggressiveness as a violation of national sovereignty. The United States, making a major military commitment, lead a coalition to defend the victim nation and restore the status quo. This familiar scenario could easily be mistaken for Iraq's 1990 invasion of Kuwait. But it was 1950, and the place was the Korean Peninsula.

Traditionally, the Korean War has been considered the first battle in the long struggle to contain Communism. Viewed from a post-Cold War perspective however, the Korean War can be seen as a prototype for today's Major Regional Conflict (MRC). As the United States refocuses its warfighting philosophy away from the Soviet threat, towards a flexible response to regional conflicts, lessons learned from the Korean War can prove valuable to today's operational planners.

As in Operations Desert Shield/Desert Storm (hereafter referred to as the Gulf War), Korean War commanders had difficulty effectively incorporating submarines into operational planning. In a conflict dominated by land battle, against a

relatively weak naval power, military planners saw little need for the submarine force's contribution. The submarine force, too, had difficulty articulating its role.

Compared to their significant contribution in the Pacific Theater during World War II, U.S. submarines did not play a major role in Korea. The roles they fulfilled, mostly training and reconnaissance operations, were generally fabricated by submarine force leaders who saw a submarine contribution as vital to avoiding severe post-war budget cuts, sure to occur when the American public demanded their "peace dividend."

The Korean War has been called "The Forgotten War." Nowhere was this more true than in the case of submarines. Since little has been written about Korean War submarine operations, research for this paper primarily focused on Interim Evaluation Reports produced by the Commander in Chief, U.S. Pacific Fleet (CINCPACFLT) during the war, and subsequently declassified. In addition, oral histories collected by the United States Naval Institute offered a unique perspective of the war by some of those most directly involved.

This paper analyzes United States' submarine employment in the Korean War. The format consists of an historical and operational overview, followed by operational analyses of submarine command and control, reconnaissance missions, and the war's impact on the submarine force. Conclusions discuss lessons learned for present and future operational planning.

## CHAPTER II

### THE SITUATION

#### A Historical Perspective.

Analysis of Korean War submarine employment requires an understanding of the preconceived notions and issues of the period. The submarine force's World War II successes and its predilection for operating independently, post-war force restructuring, and an emerging view that submarines were less relevant in the era of the atomic bomb, combined to influence submarine employment in the Korean War.

World War II submarine operations had been spectacular, with a "force manned by less than two percent of the navy's personnel" sinking "over 5 million tons of merchant shipping, or half again the tonnage of all other forces combined."<sup>1</sup> Yet most submarine successes had occurred while operating independently, away from the joint operations that came to characterize U.S. military campaigns in World War II.

After World War II, military reduction and reshaping significantly impacted submarine force assets. The submarine force was reduced from hundreds of submarines during the war "to seventy-two active submarines by 1950."<sup>2</sup> And while the 1950 submarine force was mainly comprised of older Fleet-type submarines, there was "an on-going modernization and conversion program, the Greater Underwater Propulsion (GUPPY) Program."<sup>3</sup> The GUPPY modifications added a snorkel and made other



improvements that enhanced submarine speed, stealth, and submerged longevity. In addition, some "GUPPY conversions received additional alterations enabling them to perform specific missions including: troop and cargo carrier, polar picket, oiler, and guided missile launcher."<sup>4</sup> Despite this move towards a smaller, more capable force, "neither the ASW [Anti-Submarine Warfare] nor the missile programs had reached the point where they would [be] effective against the enemy during the Korean War."<sup>5</sup>

Finally, at the Korean War's start, some saw the submarine force's relevance declining in the face of more immediate communist threats. Rear Admiral William D. Irvin, at the time Commander Submarine Force, Pacific (COMSUBPAC) Intelligence Officer, summarized the submariners' concerns:

"This is crazy. We sit back and say nothing and do nothing and watch all the resources being poured into this Korean conflict that will have to be taken from our already shrunken force and they will take it from...those that are not needed. Now, if you take the attitude that you're not going to do anything or say anything and that you're not going to participate, it won't be five minutes before the powers that be will strip you of your forces and give it to the others that were actively engaged."<sup>6</sup>

Ironically, the submarine force's circumstances before the Korean War were very similar those that existed before the Gulf War, 40 years later. The submarine force was in a transition period. Past success were overshadowed by force reductions and new, as yet undefined, Cold War (or, in the case of the Gulf War, post-Cold War) responsibilities. In 1950, the submarine force appeared not to have a clear vision of its role. These factors

combined to influence submarine operational employment during the Korean War.

Operational Summary.

The War's sudden outbreak on 25 June 1950 caught the United States by surprise, forcing operational commanders to react quickly with little planning. Despite CINCPACFLT's grumbling that "the nature of the Korean War relegated the U.S. submarine effort essentially to the role of a threat in being,"<sup>7</sup> in fact, submarines were active throughout the war.

Submarines were involved from the very start in operational reconnaissance and intelligence collection, vital functions directed by the Operational Commander. Admiral Stuart S. Murray, then Commander of Submarine Forces, Atlantic (COMSUBLANT) recalled that

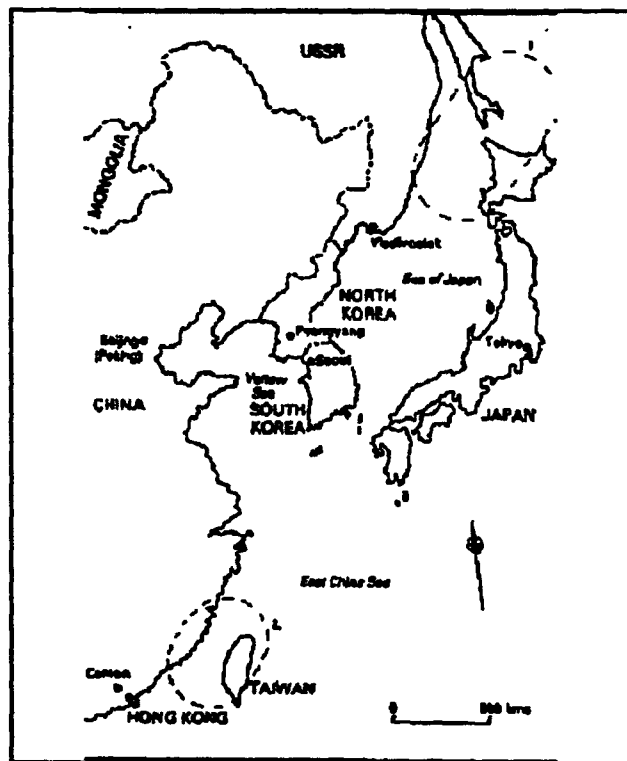
"in a matter of a few hours after President Truman's announcement [I] received orders to deploy several of the submarines up to the Northern Atlantic just in the event that the Russians should decide to come down. As a matter of fact, we covered all the area from Barents Strait right on down to south of the Greenland, Iceland, UK line...and placed them on patrol there ...but that was called off mostly in a matter of about three or four weeks."<sup>8</sup>

In the Pacific, with all surface assets engaged in Korea<sup>9</sup>, "[U.S.S.] Pickerel and [U.S.S.] Catfish were ordered to conduct a reconnaissance of the China coast keeping commander Seventh Fleet apprised of any immediate threat to the island of Formosa by the Communist forces."<sup>10</sup> These patrols, which commenced 13 July 1950, "were cancelled on 1 August 1950, when surface vessels of the Seventh Fleet commenced patrol there."<sup>11</sup>

Once this initial flurry of activity subsided, submarine operations fell into the pattern that would characterize the bulk of their activity in the theater of operations. "Since there was no naval opposition or enemy merchant traffic suitable for submarine targets involved in the Korean War, the operations of the WESTPAC [Western Pacific] submarines were mainly confined to reconnaissance patrols and [exercise] services to ASW forces."<sup>12</sup>

**Figure 1**

**East Asia showing approximate areas of submarine reconnaissance operations in 1) La Perouse Strait, and 2) Formosa**



Source: Callum A. MacDonald, Korea The War Before Vietnam (New York: The Free Press, 1986), p. xx.

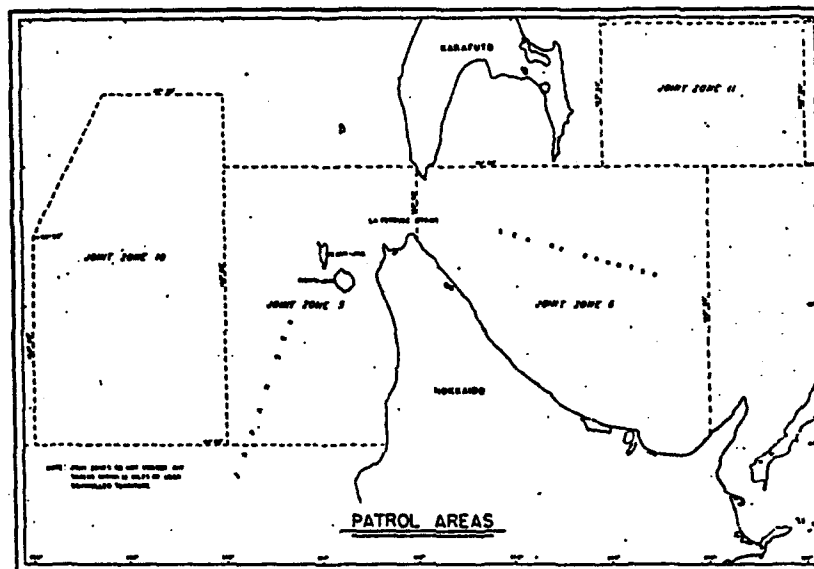
In addition, submarines contributed to power projection by conducting "[o]ne amphibious raid and several special clandestine operations...."<sup>13</sup>

With little room to maneuver in the northern Yellow Sea, U.S. submarines operated almost exclusively on the Korean Peninsula's eastern side (Figure 1). Most reconnaissance patrols, intended to provide early warning of Soviet aggression, occurred in an area between the Soviet Sakhalin Peninsula and Japan, in four Joint Zones near La Perouse Strait (Figure

2). Beginning on 4 November 1950, these patrols continued until war's end, interrupted only for short periods each winter near Christmas. In total, 31 submarine patrols were made in this area during the Korean War.<sup>14</sup>

Figure 2

Joint Zones Near La Perouse Strait



Source: Commander in Chief, U.S. Pacific Fleet, Interim Evaluation Report No. 6, 1 February 1953 - 27 July 1953, (Pearl Harbor: 1953), Chapter 6 Submarine Operations, p. 6-30.

In addition to the La Perouse Strait patrols, at least three special reconnaissance operations occurred. In August 1950, *Pickrel* conducted detailed photo surveillance along the North Korean coast, locating landing areas for a planned amphibious raid by *U.S.S. Perch*. In September, while on a La Perouse Strait patrol, *Pickrel* conducted reconnaissance inside a Soviet restricted area near Vladivostok without authorization.<sup>15</sup> The final special patrol was by *U.S.S. Scabbardfish* off the South

China Coast in December 1952 (details of this patrol were not released).

"The only actual combat mission performed during the war was made by the *Perch*, which participated in a landing raid with Royal Marine Commandos against the enemy east coast of Korea on 1 October 1950."<sup>16</sup> Mines along the North Korean coast precluded further operations of this type.

By far the majority of submarine at-sea time was spent providing exercise services to U.S. and British ASW units. Over the duration of the war, services comprised 57% of submarine employment; after 1951, services accounted for more than 60% of submarine operating time. Submarines spent their remaining at-sea time either on patrol (40%) or independent training (3%).

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'Data derived from Commander in Chief, U.S. Pacific Fleet, Interim Evaluation Reports.

## CHAPTER III

### AN OPERATIONAL ANALYSIS

Submarine employment in the Korean War will be evaluated by analyzing its effect on various aspects of operational art. First, force command relationships and associated communications connectivity will be evaluated for their impact on operational employment. Then, a major operation (in this case, reconnaissance patrols) will be dissected to measure its effectiveness against the four operational art considerations:

- "(1) What military condition(s) must be produced in the operational area to achieve the strategic goal?
- (2) What sequence of actions is most likely to produce that condition?
- (3) How should the resources of the joint force be applied to accomplish that sequence of actions?
- (4) What is the likely cost or risk to the joint force in performing that sequence of actions?"<sup>1</sup>

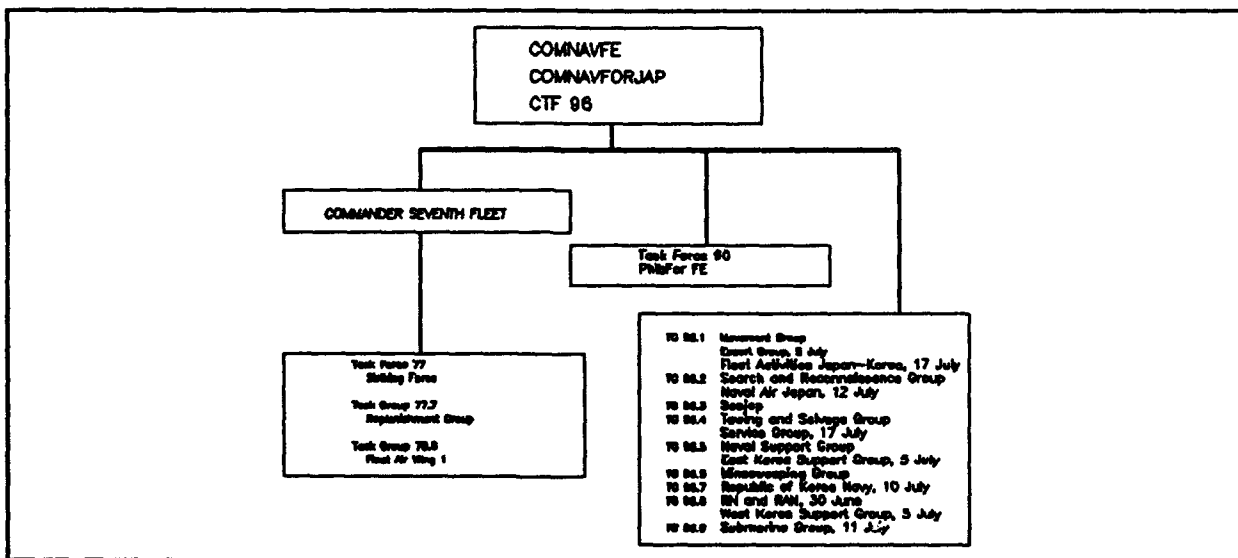
#### Command and Control.

"'Command and control' (C<sup>2</sup>) denotes the process that commanders employ in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission."<sup>2</sup> The beginning of the Korean War revealed significant deficiencies in the C<sup>2</sup> process associated with submarine employment. While these shortcomings were eventually resolved, the bad precedent they set may have been a factor in the operational commander's reluctance to use submarines more extensively later in the war.

Submarines normally assigned to Commander, Seventh Fleet (COMSEVENTHFLT) as Task Group 70.9 were assigned to Commander, Naval Forces Far East (COMNAVFE) as Task Group 96.9 on 26 July 1950, just as hostilities began (Figure 3).<sup>3</sup> While this reassignment enhanced COMNAVFE's ability to apply forces within the theater of operations, confusion resulted when Task Group 70.9 remained designated within COMSEVENTHFLT's organization until 15 April 1951.<sup>4</sup>

"At the opening of the Korean hostilities a certain degree of misunderstanding existed between COMNAVFE and his senior subordinate commanders on one hand and CINCPACFLT and COMSUBPAC on the other, as to who had operational control [the equivalent of Combatant Command] and operational responsibility, of submarines in WESTPAC."<sup>5</sup>

Figure 3  
Naval Operating Commands, June 1950



Source: James A. Field, Jr., History of United States Naval Operations Korea (Washington: U.S. Govt. Print. Off., 1962), p. 57.

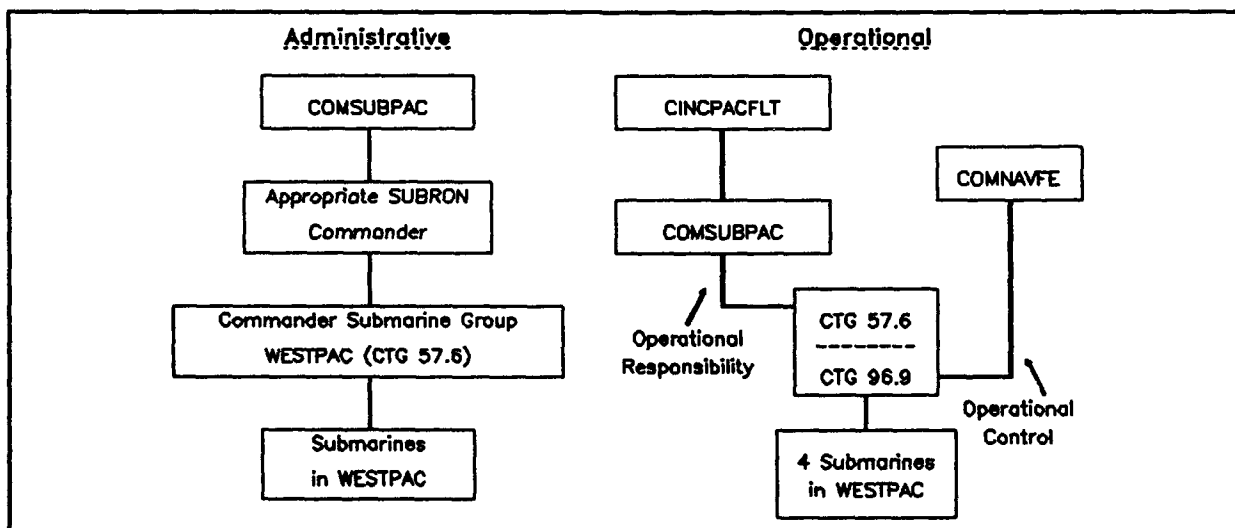
By 1 November 1951 these misunderstandings had been resolved and workable command relationships were established. The somewhat complex setup was explained in a CINCPACFLT report:

"The Commander Submarine Group, WESTPAC was a task group commander (CTG 96.9) directly under COMNAVFE and as such was directly responsible to him for operational control of submarines in NAVFE waters. He was also a task group commander (CTG 57.6) directly under COMSUBPAC and as such directly responsible to that commander for operational responsibility for all Pacific Fleet submarines in the NAVFE area. In addition to the above he had certain planning responsibilities to COMSEVENTHFLT in connection with submarine lifeguard operations." (Figure 4)<sup>6</sup>

Resolving the command relationships did not correct all submarine command problems in the Korean War. Submarines were not co-located with other naval assets in the theater: COMNAVFE was at

Figure 4

WESTPAC Submarine Command Relationships  
as of 1 November 1951



Source: Commander in Chief, U.S. Pacific Fleet, Interim Evaluation Report No. 6, 1 February 1953 - 27 July 1953, (Pearl Harbor: 1953), Chapter 6 Submarine Operations, p. 6-3.



Sasebo, Japan, while the submarine Task Group commander, his small staff, and all submarines were located at Yokosuka. Initially, a senior submarine officer was ordered to COMNAVFE for temporary assigned duty (TAD) as Submarine Liaison Officer on COMNAVFE staff. However, "in view of the limited submarine operations, this TAD was terminated on 11 September 1950, the Submarine Task Group Commander [in Yokosuka] assuming additional duty as NAVFE Liaison Officer."<sup>7</sup> Without a Submarine Liaison Officer readily available in Sasebo, on the COMNAVFE staff, planners were probably less inclined to explore innovative ways to employ submarines in the theater of operations. Lack of continuity on the submariners side undoubtedly exacerbated this problem, as submarine Task Group Commanders were changed at intervals of 2 to 3 months.<sup>8</sup>

Many Korean War command relationship problems appeared to have been rooted in a reluctance by force commanders to relinquish their assets to a joint commander. This mind-set was evident within the submarine force, and probably existed in the other communities as well. "Had the situation developed into a full scale war," stated a CINCPACFLT report, "...it would have been necessary for full and direct operational control of all U.S. submarines to revert to COMSUBPAC, in order that the overall missions of the Submarine Force could be effectively carried out."<sup>9</sup>

Submarine communications difficulties impacted the "control" element of the C<sup>2</sup> process. When hostilities began "...it soon

became apparent that the excessive volume of high precedence intelligence summaries, weather messages and similar traffic monopolized the [four times per day, shore-to-submarine radio] broadcast to the extent that there was no assurance that actual operational messages would be delivered promptly."<sup>10</sup> This problem was not remedied until 1 October 1952 when a dedicated submarine Very Low Frequency (VLF) broadcast was established, with message traffic screened and controlled by the CTG 96.9 in Yokosuka. "This procedure gave submarine communications in WESTPAC the reliability...so vital to safe and efficient operations."<sup>11</sup>

#### Reconnaissance Patrols.

The major function of submarine assets was providing reconnaissance at the periphery of the theater of operations, a mission which did not differ greatly from that assigned submarines at the start of World War II. Evaluated against the four operational art considerations listed above, the reconnaissance operations were only somewhat successful.

**Military conditions desired.** Both reconnaissance operations for which information is available, those near La Perouse Strait and Formosa, were undertaken for nearly identical purposes. In both cases submarines were used to provide covert, non-provocative monitoring of potentially hostile countries that bordered the theater of operations. Near Formosa, submarines were ordered to report "...any immediate threat to the island of Formosa by the Communist forces, ...any changes in the pattern

and volume of coastal traffic, and...any large movement of seaborne traffic within the area."<sup>12</sup> Similarly, near La Perouse Strait

"[t]he patrolling submarine endeavored to conduct an undetected patrol assisting in the surveillance of USSR shipping and alerted to provide early warning of impending attack against our forces or Japan....In this latter connection the submarines were told to be alert for the following:

- (1) Flight of a large number of aircraft on a course from USSR territory toward Japan.
- (2) Sighting of a large group of vessels, with air cover and naval escort, on a course toward Japan.
- (3) Total cessation of all sea-borne traffic.
- (4) Institution of the convoy system or absence of normal running lights on USSR vessels at night."<sup>13</sup>

**Sequence of actions required.** All Korean War submarine reconnaissance operations followed essentially the same sequence of actions. CTG 96.9 designated and assigned patrol areas; the submarine observed and/or recorded data; the submarine reported the reconnaissance results; the collected data were evaluated; and the evaluated information was disseminated to users.

The La Perouse patrols illustrated some of the difficulties encountered with this sequence of actions during the Korean War.

One problem was that patrol areas were inflexible. The low confidence in submarine communications coupled with a fear of blue-on-blue engagements probably combined to make patrol areas rote. In fact, Joint Zones 10 and 11 (Figure 2) were not established until two years into the war, after submarine commanders complained that heavy fishing traffic made Joint Zones 5 and 6 too restrictive.<sup>14</sup>

Collection itself proved to be a major obstacle. Inadequate observation and recording gear, ranging from periscopes that iced over to Electronic Counter-Measures (ECM) gear that neither received all Soviet radar frequencies nor recorded waveforms, was made even less effective by unfavorable weather conditions that damaged poorly designed equipment.

Finally, the evaluated information was not always disseminated to those who needed it. In *U.S.S. Pomfret's* patrol report, the Commanding Officer suggested "...that the results of USAF nightly surveillance over the Sea of Japan could be put on the [communications broadcast]...[I]f edited pertinent daily aircraft intelligence on ship movements in the Northern Sea of Japan were available it would surely influence the submarine's daily patrol station."<sup>15</sup>

**How resources applied.** While submarines were the primary reconnaissance platform against the USSR and, at the war's start, China, surface and air assets were also used. Submarines were somewhat limited in the area they covered, yet they provided the operational commander with a continuous, covert presence that allowed for better observation of trends and enemy operating patterns.

The best example of joint force application in the reconnaissance role occurred in the La Perouse Strait area and the Sea of Japan. Daily Air Force flights over the Sea of Japan were combined with nearly continuous submarine patrols in the choke point between the Soviet's major naval bases at Vladivostok

and Petropavlovsk, providing the operational commander with a very complete picture of naval action on his eastern flank.

**Risk.** As North Korea possessed virtually no ASW capability, and the United States was not at war with either the Soviet Union or China, the major risk to joint forces during reconnaissance operations came from blue-on-blue engagements.

During the Korean War the attitude of many non-submariners that "...the existence of submarines not known to be friendly was there and that [was] considered a threat,"<sup>16</sup> gave submariners cause for concern. CINCPACFLT worried that

"Existing provisions for the protection of our Submarines from attack by friendly forces were not sufficiently well known by those who needed to know....From best information available, Army and Air Force Commands are not following the recommended procedure."<sup>17</sup>

Although submarines on reconnaissance patrols were not expected to attack surface contacts, the risk existed. In at least one instance a submarine which had not been alerted to blue forces in its area surfaced in sight of four U.S. Navy warships as they proceeded in formation south along the east coast of Japan.<sup>18</sup>

The blue-on-blue risk undoubtedly affected submarine employment. These concerns may have been a factor in choosing submarine patrol areas at the periphery of the theater of operations. Additionally, lack of compatible Identification Friend or Foe (IFF) equipment limited submarines' "...capability in 'life guard' and 'radar picket' assignments."<sup>19</sup>

Overall, three aspects of these reconnaissance operations prevented them from completely achieving the operational commander's desired military conditions. First, the patrols near La Perouse Strait were not completely covert. CINCPACFLT observed that "...transits of Tsugara and La Perouse Straits are made on the surface. It appears that the enemy and USSR must be well aware of the patrol."<sup>20</sup> Secondly, the manner in which resources were applied prevented them from being completely non-provocative. *Pickrel's* penetration of a Soviet restricted area near Vladivostok risked bringing the USSR into the war had a mistake been made, while replacing submarines near Formosa with Seventh Fleet ships "...looked like 'dragging coat tails', inviting the enemy to come out and fight."<sup>21</sup> Finally, suspending the La Perouse patrols for several weeks around Christmas each year could have afforded the USSR an opportunity to attack without warning.

#### Impact on the Submarine Force.

Probably more relevant than the Submarine Force's impact on the Korean War was the war's impact on the Submarine Force. Wartime reconnaissance patrols were a harbinger of what would become the Submarine Force's major role during the remainder of the Cold War. "The Far East patrols...afforded a good opportunity for training in [operational reconnaissance] patrol procedures. The submarines patrolled very close to Soviet territory...."<sup>22</sup> Although the Korean armistice was signed, a significant Soviet submarine force expansion meant that "[t]he

requirements for submarine operations in the Far East remained the same..." and "two additional submarines were assigned...."<sup>23</sup>

Additionally, Korean War operations provided many lessons about equipment that were incorporated into the ongoing design of nuclear-powered submarines. CINCPACFLT observed that

"[o]perations during this period, although of a passive nature, ...permitted some evaluation of submarine equipments and procedures. They served to again emphasize deficiencies in need of correction such as fogging of periscopes, and habitability. Submarine hull and torpedo deficiencies were also revealed...."<sup>24</sup>

## CHAPTER IV

### CONCLUSIONS AND LESSONS LEARNED

The submarine force was active in the Korean War from the start, playing a small, but important role. From an operational perspective its most significant contribution was the conduct of operational reconnaissance. Though not done here, operational analysis of the one submarine amphibious mission would have indicated many of same employment shortcomings evident in the command and control area and reconnaissance patrols. CINCPACFLT summarized the Submarine Force's contribution with little fanfare:

"The Submarine Force remained, ...throughout the Korean War, a threat in being in WESTPAC. Reconnaissance patrols contributed to intelligence. The services rendered to Hunter/Killer and other ASW groups helped to promote the readiness of our ASW forces in the Far East."<sup>1</sup>

#### Lessons Learned.

Viewed as the prototype Major Regional Conflict, the Korean War provided several lessons on employing submarines as part of a joint force.

A submarine's major utility lies in its covertness. As demonstrated by patrols near the USSR, a submarine provides the operational commander with a non-provocative means of monitoring other regional players' activities.

Submarines have three key limitations which must be considered when employing them as part of a joint force. First,



because of the difficulty in discerning between friendly and enemy submarines, strict procedures must be in place to prevent blue-on-blue engagements. The procedures must be disseminated to all components of the joint force, they must be practiced, and they must be followed. In the Korean War, inadequate procedures for protecting friendly forces may have limited the joint commander's options in assigning submarine patrol areas.

Second, without reliable communications, submarine operations become inflexible and of limited use to an operational commander in a dynamic situation.

Finally, although not analyzed extensively in this paper, the Korean War showed that defensive mining by an enemy could completely prevent submarine operations in the littoral region. In a statement that, for all but the newest attack submarines, is as true today as it was in 1951, CINCPACFLT stated:

"The lack of effective mine detecting sonar is a serious military deficiency in present day submarines. Further, that without it submarines are not capable of accomplishing all of the missions assigned in current operation plans without risk of prohibitive losses."<sup>2</sup>

"The Forgotten War" did not resound with glorious submarine victories. Still, as an example of submarine operations in a Major Regional Conflict it provided a good case study to illustrate the opportunities and challenges which submarines provide to an operational commander.

## NOTES

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