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THE BRITISH QUEST FOR "BEANS, BULLETS, AND BLACK OIL" IN THE PACIFIC

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> ….the war with Japan is not one in which we in this country are playing the part of benevolent assistants. Even if we are compelled, for the time being, to devote the greater part of our human and material resources to the task of defeating Germany, we are still principals in the Far Eastern War.
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> Anthony Eden
> British Foreign Secretary 14 December 1943[1]

INTRODUCTION

Historically, warships, due to their environment and sailing routines, are normally viewed as sovereign and autonomous vessels, able to go anywhere at anytime. While the need to carry all material requirements from the outset of a voyage meant that sustainment at sea reached a high level of administrative complexity and efficiency long before this competency was achieved in land warfare, it did not mean that warships were totally self-reliant. In fact, when one looks at the past, it quickly becomes clear that the opposite is true. For example, in the days of sail, supplies were a concern to all naval officers and every captain intimately understood the limitations of his ship due to food (that is victuals), water, or ammunition. There was a fine balance between how much foodstuffs (before refrigeration) could be carried versus munitions and associated sailing material. And, when essential items ran out, a ship either had to land sailors to acquire the needed stores or visit a foreign port. Thus, the need for strategic bases and coaling stations became an essential consideration.

As time progressed and warfare became more complicated, so too did the needs of a nation's fleet. Ships benefited from the technological revolution that took place in the latter 19th century, which meant that advances in ship design and equipment necessitated

[1]John Winton, The Forgotten Fleet (London: Michael Joseph, 1969), 17.

further logistics support. Jon Tetsuro Suminda highlighted this idea in his article *British Naval Operational Logistics:*

> In the age of sail, warship maintenance required considerable routine work on the wooden hull, the removal of marine growth from the hull bottom, and the replacement of worn or damaged masts, spars, rope and sail. The much more durable steel hulls of the warships of the First World War required far less general care and little in the way of top hamper replacement. But the periodic cleaning of hull bottoms was still necessary to keep barnacle and sea weed from increasing drag, which reduced speed and increased fuel consumption; mechanically complex armament required regular and careful adjustment; and most of all, the steam propulsion system demanded minor repair and at regular intervals major overhaul.[2]

By the twentieth century, there was a great concern for available dry docks to perform regular maintenance as well as refits to ensure a ship's seaworthiness. Furthermore, the greater firepower associated with modern guns meant that more ammunition was fired, thereby requiring additional shells. More importantly, the mechanical engineering revolution moved men-of-war from being dependent on wind, to being coal-driven, and then finally to oil-burners which necessitated frequent fuelling stops to replenish themselves. With the advent of these and other complex engineering equipment, a multitude of spare parts and machinery repairs beyond that which the ship could carry, was needed.[3] Thus a direct link was made to a ship's support requirements and its operational capabilities.

Yet, it was the Second World War that elevated logistics, specifically the ability to get the right material to the right place at the right time, to new importance. With the improved technology used in this war, more and more specially designed parts (as well as

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[2] Jon Tetsuro Suminda, "British Naval Operational Logistics" The Journal of Military History Vol 57 No 3 (July 1998): 455.

the need for standardization of parts for such items as marine engines and guns) were required to ensure equipment and machinery worked as expected. Coupled with the huge additional requirements for fuel, food and material, not to mention the consequence of space and distances that necessitated the creation of advance bases, the Second World War was, especially in the Pacific Campaign, a "war of the logisticians."[4] Such an expression is perhaps more meaningful when it is emphasized that in 1945 the USA was supplying 600,000 long tons of stores from the continental US to the Pacific theatre each month.[5] Historian John Costello, in his book *Pacific War 1941-1945*, noted:

> By 1945, the Pacific front was being sustained by the Navy and a waterborne supply operation that was one of the organizational miracles of the war. The greatest sea and air offensive of all time involved fourteen thousand ships backed by almost a quarter million fighting men who were relying on a floating conveyer belt of transport ships to ferry everything from the last bolt, clip of ammunition, pint of ice cream, gallon of oil and high explosive shell across the ocean from the United States.[6]

Without an ability to support and sustain its ships deployed half-way around the world, the Americans could never have achieved the successes they experienced against the Japanese. The vast area over which the Pacific campaign was fought mandated numerous new and innovative facilities, both ashore and afloat, to maintain the thousands of ships in theatre. The creation of such a vast logistical capability posed numerous challenges but was overcome in a variety of ways. First, the United States Navy (USN) established fleet trains called Service Squadrons where flotillas of ships (and mobile floating docks) were amassed and used to repair and maintain warships, submarines and

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[3] Duncan Ballantine, US Naval Logistics in the Second World War (Newport, RI: Naval War College Press, 1998), 10.
[4] Worrall R. Carter, Bean, Bullets and Black Oil (Newport, RI: Naval War College Press, 1998), xix.
[5] Carter, 287.

aircraft as well as keep them stocked with victuals and stores.[7] At sea, American ships became adept at an evolution known as "underway replenishment," in which cargo, fuel and personnel were transferred from logistic ships to combatants which steamed alongside. The goal was to deliver safely the maximum amount of material in the minimum time achieved through "a practical blend of seamanship and engineering."[8] Furthermore, the Americans adopted a strategy of "forward basing" where they built supply bases near the fighting to ensure warships remained in the operational area longer. So sophisticated had the sustainment and delivery systems become in the Pacific theatre that the USN had advanced the science of logistics further than any other nation by the war's end, making it extremely difficult for other navies to copy. The Royal Navy (RN) learned this lesson when it re-entered the Pacific conflict in 1945.

Three years previously, the Japanese in Borneo, Hong Kong, and Malaya had defeated the British. Consequently, Britain had lost all of its bases of operations in the Pacific. From a naval perspective, this loss meant there were no RN resources, either ashore or afloat, east of Ceylon in the Indian Ocean.[9] This shortfall precluded their ability to sustain themselves in the Far East and largely left the Americans to fight the Japanese alone from the opposite direction.[10] While the Americans did experience some initial losses in 1942, they soon were able to halt the Japanese advance and took the offensive.

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[6] Quoted from Carter, xxii.
[7] Vice-Admiral Sir Peter Gretton, Maritime Strategy – A Study of Defense Problems (New York: Frederick A. Praeger, 1965), 25.
[8] Marvin Miller, Underway Replenishment of Naval Ships (Port Hueneme, California: US Government Press, 1987), 3.
[9] Winton, 273.
[10] This should not be construed to mean that the Americans were the only participants in the war against Japan as both Australia and the Netherlands did contribute forces to the

So successful were the Americans that by 1944 it had become clear that they were capable of independently defeating Japan. If this were accomplished it would give the United States primacy in the Pacific and leave Great Britain without a post-war role. This was something totally unacceptable to the still Imperial-minded Prime Minister Winston Churchill to accept. As a consequence, Churchill was determined that British forces were to play a role in "South-East Asia in order to expunge the shame of defeat and recover its lost colonies by its own efforts and not be dependent for their return upon American largess."[11] Thus, when Prime Minister Churchill met President Roosevelt at the Quebec Conference (known as the *Octagon Conference* in military vernacular) in September 1944, he was determined to have British forces make a large contribution in directly defeating Japan.

At the conference, the British offered a sizeable fleet to "take part in the main operations against Japan." President Roosevelt immediately accepted the offer "on the largest possible scale," especially when Prime Minister Churchill caveated his offer with the assurances that not only would the fleet be powerful and well-balanced, but have a fleet train of "ample-proportions" that would ensure self-sustainment.[12] However, while the British Pacific Fleet (BPF) eventually assembled was the largest one ever amassed by Great Britain in the Second World War – and therefore very powerful – the latter portion of Prime Minister Churchill's optimistic remarks about naval self-sufficiency was

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war. However, in comparison to the vast American resources deployed, they were minor players.

[11] H.P. Willmott, Grave of a Dozen Schemes – British Naval Planning and the War Against Japan 1943-1945 (Annapolis: United States Naval Institute Press, 1996), 10.

[12] Admiral of the Fleet Ernest King, US Navy at War 1941-1945 Official Reports to the Secretary of the Navy (Washington, DC: United States Navy Dept Press, 1946), 238 and

something much harder to deliver.[13] In fact, despite Winston Churchill's promise to the contrary, the logistic systems established to support the BPF proved to be inadequate and it was only sustained through the good graces of the USN.

SYNOPSIS AND OVERVIEW

The RN faced major challenges in operating over the huge expanse of the Pacific Ocean. The vast spaces involved entailed large distances between allied bases, which, along with the style of warfare prosecuted, necessitated a type of naval support that the British simply were unaccustomed to giving their fleets. The RN's inexperience in logistics, different concepts of naval support, as well as a lack of understanding and preparation, meant that the RN was never self-sufficient in this theatre and, in fact, needed substantial assistance from the Americans. This dependency was understandable when one remembers that by 1944 USN logistical structures and practices had become essential procedures in naval warfare. The evolution of American replenishment-at-sea (RAS) techniques that allowed naval forces to remain at sea almost indefinitely, was indispensable in providing fuel, provisions and stores to ships enroute, or returning from engaging the enemy. Furthermore, the concept of forwarding and floating basing not only permitted the American forces to position themselves tactically, but also re-position supply, refuelling, or ammunition depots as well as repair facilities to be closer to the action. Altogether, these sites permitted American ships to maximize their time in theatre

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Michael Coles, "Ernest King and the British Pacific Fleet: The Conference at Quebec, 1944 ("Octagon")." The Journal of Military History 65, no. 1 (January 2001): 110.

[13] By the end of the war, the British had committed no fewer than five fleet, four light fleet, seven escort carriers, four fast battleships, eight light cruisers, 28 destroyers, 33

and, in fact, carry the war to the enemy. As a consequence, logistics played a critical and successful role in the USN concept of operations. While the Americans had advanced logistics far beyond anything seen before, many did not understand the inherent challenges in providing such support, especially in a theatre so large as the Pacific. In facing this problem, the RN never fully comprehended the complexities of trying to replicate American styles of support in a short period of time.

The RN's traditional methods of supporting itself prior to Japan's entrance into the Second World War contrasted sharply with that of the Americans. As British practices in the Pacific were curtailed with the loss of RN naval facilities in 1941 and 1942, they had to consolidate and test new concepts of operations in the Indian Ocean prior to the BPF being dispatched to the region. To support itself a fleet train of logistic ships was created on the American model. Yet, with limited experience in building such logistical ships, and with inadequate shipbuilding capacity in the United Kingdom due to other needed construction, the Admiralty had to look outside of Great Britain to construct and crew the requisite fleet train. Additionally, the British intended to adopt many American support concepts, such as forward and floating basing, to ensure its autonomy in theatre. Again, this concept would prove easier to do in theory than in practise as the RN simply did not have the available assets as the Americans had. Yet, in borrowing such concepts, the British clearly viewed the USN as having superior logistic capabilities. Unfortunately, it was a system that the British were incapable of duplicating.

The problems and shortfalls that the RN actually encountered in the Pacific theatre were numerous. A poorly constituted fleet train, made up of old and obsolete

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escorts, an auxiliary anti-aircraft ship, three fast minesweepers and 22 submarines. For

vessels for the task at hand, meant that the RN had a difficult time in keeping up with the fast pace of action the Americans were proceeding with. Inadequate refuelling techniques and a shortage of oilers made it difficult for the RN to stay on station. An imperfect supply system and poor shore support amplified the overall inadequate preparations of the British. Furthermore, as naval aircraft and aircraft carriers played a decisive role throughout the war in the Pacific, the support that these assets required and received was crucial to overall success. Unfortunately, this care was significantly lacking and meant that the RN fleet air arm simply was not as combat ready, or reliable, as their American brethren. Altogether, these deficiencies meant that the support provided to the BPF during the assault on Okinawa and final preparations for the invasion of the main islands of Japan was far inferior to what the Americans were accustomed to. The BPF was reliant on the American support system for a critical part of its existence and therefore did not live up to Churchill's promise of being a fleet "independent for a considerable time of shore base resources."[14]

ACADEMIC OVERVIEW

Logistics in warfare is a subject that seldom receives the in-depth analysis as tactics or individual battles have. Instead, only a handful of books have been devoted to the subject (and then mostly land or army focussed). The most recent addition to this limited collection, Thomas Kane's *Military Logistics and Strategic Performance*, offers an excellent analysis of the importance that American logistics made in the Pacific

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more information see Willmott, 1.

[14] US Naval Historical Center, Official Papers of Fleet Admiral E.J. King Series II Roll No. 6 – Conference Minutes, 238.

campaign. Furthermore, the seminal pieces on USN logistics at that time, specifically, Duncan Ballantine's dissertation entitled *US Naval Logistics in the Second World War* and Worrall E. Carter's examination of the Service Squadrons in the Pacific called *Bean, Bullets and Black Oil,* were essential in providing the needed backdrop on American support activities.

Unfortunately, since these and other books only give British participation in the Pacific passing comments, it is difficult to gain fully an accurate insight into the RN's support structure. While this shortfall may seem logical as the aforementioned books are aimed at examining USN history, even books dedicated to the RN offer limited assistance. For example, Captain Stephen Roskill (the RN's official historian for the Second World War) in his books *White Ensign – The British Navy at War, 1939-1945* and *War at Sea,* provides only one small chapter on the BPF experience. So too does Sir James Butler's *History of the Second World War Volume III,* and then only passing commentary on the fleet train and its problems. Ironically, these books provide little direct commentary about logistics, although they all acknowledge it as a central component to conduct operations. The UK Ministry of Defence's official history of the Pacific Campaign, *War With Japan Volumes I-VI*, however does offer some good insight especially with respect to the limitations of RN aircraft and aircraft carrier support. H.P. Willmott's *Grave of a Dozen Schemes – British Naval Planning and the War Against Japan 1943-1945,* articulates the problems behind the planning in dispatching and supporting the BPF. Finally, John Winton's *Forgotten Fleet* and Peer Smith's *Task Force 57* provided excellent overviews of all British activities in the Pacific, including logistics.

While secondary resources provided adequate background information, it must be pointed out that a significant portion of information on the BPF's support structure, its limitations contained there within, and the American concerns about it, was gained from primary sources. The most important of these were the Admiralty Records, USN historical records, and Admiral King's reports and his papers from the Second World War. These sources provide intimate insights into USN thinking and practices and, most importantly, details about BPF problems.

UNITED STATES NAVY CONCEPT OF LOGISTICS

The Japanese bombing of Pearl Harbor in December 1941 caught the US off guard and demonstrated just how unprepared the USN was for war. This situation was ironic given the fact that they had planned for a war against Japan for the better part of two decades. Notwithstanding, the Americans never seriously considered the idea that the Japanese would attack Pearl Harbor, even though they had carried out a successful surprise attack against the Russians at Port Arthur four decades earlier. Possibly, due to this fact, the Americans had a wholly inadequate logistic system for the US Pacific Fleet. In fact, they lacked the "back-up" necessary to carry out sustained operations over great distances and for protracted periods of time.[15] As one naval officer explained, "until logistical support had been adequately built up, United States potential could not and did not move."[16]

[15] Vice-Admiral George Dyer, Naval Logistics (Annapolis, MD: United States Naval Institute Press [USNIP], 1960), vi.
[16] Dyer, vi.

Due to this unpreparedness, coupled with the numerous tactical and operational victories the Japanese experienced in the early stages of the war, the initial concern of American forces was simply to minimize enemy damage and rectify logistical shortfalls.[17] Only then could the Americans fully implement their intended strategy of "island hopping," whereby their forces would strategically move from island to island with each successive occupation providing the staging area for the next amphibious assault. However, without a proper support apparatus in place, power projection through the use of aircraft carriers and naval aircraft was impossible, and no offensive action could took place. Therefore, several capabilities needed to be developed or improved upon which would prove instrumental to the war effort. The first was the need to establish forward or advanced bases, a concept that had been USN doctrine for nearly two decades.

American war plans dating back to the 1920s required US forces to use Manila (an American protectorate at the time) as a "Western base" in case of war against Japan. However, over time, it became apparent that the United States Army could not guarantee that Manila would be retained in a major war. Subsequent plans called for the Caroline and Marshal Island chains to be used as advanced bases.[18] An advanced base was defined as a "temporary base located in or near forward areas, outside the zone of the interior, the primary mission of which is to support wartime operations of the Armed Forces."[19] Such bases were essential because they provided essential nodal points to consolidate fuel and

[17] Within six months of the attack on Pearl Harbor, the Japanese had taken Hong Kong, Wake Island, Singapore, Rangoon, Malaya, the Philippines, and numerous other territories.
[18] Thomas Kane, Military Logistics and Strategic Performance (London: Frank Cass, 2001), 39.

material for the advancing forces as well as essential repair facilities for warships. Such centres were crucial because "the effectiveness of any offensive is greatly increased by decreasing the distance from which it is launched."[20] The need for those facilities were so apparent and necessary that, while planning for war against Japan in the 1920s, American fleet commanders "assumed that they would not be able to fight unless they had access to port facilities within the operating radius of their ships."[21] Unfortunately, by 1940, the USN had no properly equipped advance base other than Pearl Harbor which, given the huge expanse of the Pacific Ocean, meant that the USN would not have the prerequisite facilities necessary to wage war in certain regions.[22] Such a tragic predication became reality with the raid on Pearl Harbor, and the loss of various American strategic islands such as the Philippines and Wake Island early in the war. This shortage of basing was an unacceptable situation and the Chief of Naval Operations (CNO) soon dictated that "advanced operating positions be established at the earliest possible date."[23] Shortly thereafter, the US selected the safety of Allied ports in the Fijis and New Caledonia as "fuel and staging stations" and "distribution points for material and supplies."[24] Once large facilities on these islands were firmly established and the requisite stores and ships accumulated, the offensive was launched with new bases being created on captured territory. So important were such facilities that Admiral Ernest King,

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[19] Dwyer, 120.
[20] Henry E. Eccles, Operational Naval Logistics NAVPERS 10869 (Washington: Bureau of Naval Personnel, 1950), 71.
[21] Kane, 39.
[22] King, 197.
[23] US Naval Administration Histories in World War II – Office of Chief of Naval Staff - The Logistics of Advance Bases No 21, p 67.
[24] Admiral of the Fleet Ernest King, US Navy at War 1941-1945 Official Reports to the Secretary of the Navy (Washington, DC: United States Navy Dept Press, 1946), 38.

Commander-in-Chief of the USN Fleet, poignantly explained that the entire Pacific Campaign was a "battle for advance bases where we can establish supply ports, ship repair facilities, and landing fields to act as a backdrop for a continuing offensive."[25] A post-war report re-iterated these bases' importance as centres not only for offensive operations, but also for their ability to permit sea denial to opposing forces:

> As we progressed across the Pacific, islands captured in one amphibious operation were converted into bases that became spring boards for the next advance. These bases were set up for various purposes depending on the next mission. At first they were mainly air bases for the support of bombers and for the use of protective fighters. This gradually changed to the establishment of staging bases for the anchoring, fuelling, and refitting of armadas of transports and cargo ships, and for replenishing mobile support squadrons, which actually accompanied the combat forces and serviced them at sea. Further advances made necessary the development of repair and refitting bases for large amphibious forces.[26]

These bases were not a small undertaking, but constituted a central component to the Pacific campaign with in excess of 400 being built by the war's end.[27] In fact, "in no case during World War Two was a major offensive blow struck until a large advanced base had been built."[28] This schedule permitted the Americans to control the operational tempo and rhythm of their advance. To construct these bases, the USN created the famous Navy's Construction Battalions, known affectionately as the "Seabees." This unit was composed of construction workers who were given uniforms and placed under the naval code of discipline. These sailor-construction workers were frequently landed early during an amphibious operation and, often under enemy fire, cleared an area for an airfield or naval station. Their expertise was pivotal to the US quickly building up their

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[25] King, 32
[26] King, 197
[27] The number of 400 also includes advance bases in the Atlantic theatre. See King, 198.
[28] Eccles, Operational Naval Logistics NAVPERS 10869, 70.

widespread advance base system. Yet, the Seabees were only one of many agencies that were needed to make forward basing a reality. In fact, the scope of the advance base program was so gigantic that at its peak, the construction and manning of these facilities involved nearly one-fifth of the entire personnel of the Navy.[29] Furthermore, to facilitate the bases' expeditious creation, standardized and pre-determined lists of material and personnel were made. These pre-packaged lists were termed "LIONs" for major naval bases, "CUBs" for smaller bases and "ACORNs" for naval air stations. Such lists, coupled with intricate planning, made the USN the best-supported fleet in the world. Other facilities were also exploited.

Land bases had certain inherent disadvantages, not the least of which was the fact that as the Americans advanced towards Japan, the bases became located further and further to the rear of the action. This ever-increasing distance required ships to spend more time traveling to and from ports to get fuel and supplies, thus taking them away from the operational area. To overcome this problem, the USN established "floating bases," whereby ships "changed from being the transportation means used to deliver material to bases, to being the bases themselves."[30] Under this concept, support ships, from oilers to floating dry docks to repair ships, were anchored in harbours to provide a wide array of services to US forces. Again, this was idea was not new to the USN.

Civil Engineer A.C. Cunningham first proposed the concept of floating bases at the turn of the century. He had advocated the need for moveable bases made up of sectionalized floating dry docks, colliers, ammunition, repairs, supply and hospital ships.

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[29] King, 198.

[30] Floating bases were not a new concept as the US Atlantic Fleet had established a floating logistical base in Queenstown, Ireland, during the Great War. See Carter, xxiii.

Under his vision, these ships would move with, or behind, the main battle fleet offering all the services that would be found back at a dockyard.[31] This idea was further supported by numerous other articles, such as the one written in 1905 in the prestigious Society of Naval and Marine Engineers, entitled "*Fuel for Ships of War*" which highlighted the concept's importance:

> In order for ships to be supplied, they must either go to a permanent station or a moveable station must come to it. If the fleet goes to the station then the fleet's military value is lost during that time (of transit). If the moveable station can go to the fleet, then the only time that will be taken away from the militarily duties will be the actual time needed for transferring fuel. It is obvious that to supply a fleet during a campaign that moveable fuel ships or colliers is the most desirable.[32]

This theory became reality in 1925 when the USN's Base Force was created. Organized like a train, it provided a floating base that could move progressively forward behind the fleet as those ships slowly extended their range of operations. It therefore provided the USN with great mobility and flexibility as the fleet could move with the "ebb and flow of a campaign" and did not require the massive amount of material needed to construct buildings and dockyards at a shore base.[33] This concept would eventually form the backbone of at-sea-support for American ships and prove instrumental in the forthcoming war.

The Base Force eventually assumed the name of Service Fleet and its mission was to "furnish logistic support, including general stores, provisions, fuel, ammunition, maintenance, repair, salvage, and such other services as necessity may dictate the support

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[31] Duncan Ballantine, US Naval Logistics in the Second World War (Princeton, New Jersey: Princeton University Press, 1947), 16.
[32] Quoted from Thomas Wildenburg, Gray Steel and Black Oil (Annapolis: United States Naval Institute Press, 1996), 2.
[33] Dwyer, 125.

of an advanced major fleet anchorage."[34] To fulfill its mandate the fleet was divided into groups of roving oilers capable of refuelling ships while still underway and mobile service groups, capable of providing engineering support, both emergency and regular maintenance, to ships when they came into a protected anchorage or harbour. Regrettably, it quickly became apparent that the mobile assets, which the Americans had at the outset of the war, were inadequate for the job at hand. As one admiral pointed out, "oilers were almost as rare as carriers" while maintenance vessels were even more of a scarcity.[35] Consequently, for the first six months of the war, the Service Fleet was restricted to simply sustaining the Pacific Fleet at Pearl Harbor.[36] Nevertheless, over time, the Service Force Pacific Fleet grew substantially. From only 61 ships in 1941, it contained 324 ships by September 1943. By January 1944, this number had risen to 510 ships and by March 1944 there were no less than 990 ships available to service combat ships.[37] This massive growth was a clear indication of the importance and necessity that naval logistics was playing in the war. And nowhere was this importance demonstrated more acutely than in the role oilers were to play.

Oilers, with the ability to replenish other ships without stopping, were instrumental to the war effort. Fortunately, the procedure to pass fuel and other essentials while sailing had started to be developed during the Great War by the Americans, procedures which they advanced substantially over time. Ironically, Admiral Chester Nimitz, (the future Commander-in-Chief of the Pacific Fleet), who would use refuelling-

[34] Carter, xxiii.
[35] Kane, 46.
[36] Some refuelling was carried out in the Pacific but this was done as part of the assets assigned to the Asiatic Fleet.
[37] Carter, 9.

at-sea throughout his campaigns, had been one of the earliest advocates of such a skill and had been instrumental in its development during the Great War.

During that conflict, the small destroyers of the USN could not cross the Atlantic without stopping to refuel in Iceland or some other port along the route. This shortcoming encumbered the overall efficiency of USN forces operating in European waters. In an attempt to expedite the ocean crossing, the Americans trialed various mechanisms to refuel ships at sea with one such initiative taking place in 1917 by Chester Nimitz aboard *USS Maumee.*[38] He devised a rudimentary system consisting of booms and hoses whereby *Maumee* was able to transfer fuel to ships sailing astern. So successful was this system that thirty-four ships received fuel from *Maumee* over a three-month period precluding the need for these ships to enter into port.[39] It therefore sped up their Atlantic crossing times in terms of days and enhanced the efficiency of the USN. With such practical experience behind him, there can be no doubt that Nimitz understood the operational benefits that this capability offered, a realization he would utilize twenty years later.

With a proven capability, the Americans continued to investigate and modify their refuelling techniques during the inter-war years. The most important of these investigations took place in the late 1920s when, after a series of trials to determine the safest and most efficient manner to conduct underway fuel replenishment, the CNO directed that all tankers be equipped with alongside fuelling gear at the time of their

[38] He was both the ship's Engineering and Executive Officer.
[39] Marvin Miller, Underway Replenishment of Naval Ships (Port Hueneme, California: US Government Press, 1987), 9.

commissioning.[40] This decision was important because, up to that point, many naval officers believed that refuelling astern was more reliable because rough seas would produce too great a roll to transfer fuel while sailing abeam. The aforementioned trials proved that refuelling abeam (known as broadside refuelling) could be used "with greater dispatch in all weather than the astern method."[41] Additionally, with practice, more than one ship could be fuelled simultaneously, thus further expediting the entire evolution. Such refuelling skills became a force multiplier which enabled American ships to remain at sea longer.

Furthermore, the USN made use of other innovations that improved both the speed and effectiveness of underway replenishment. For example, flexible rubber hoses were constructed which eased tension and therefore lessened the chances of separation. More efficient pumps transferred oil quicker, while automatic tension engines kept fuel hoses above water. Yet, the most important revelation of the inter-war years was the realization by war planners of the importance that underway replenishment could play in the progress of the war. In this regard, war planners deemed the ability to fuel at sea "with speed and certainty [to be] of the highest importance." These naval officers also expressed a need that underway refuelling become a "routine peace time exercise, to be carried out at least once annually by each Navy tanker."[42] As a result, broadside refuelling became a mainstay in the USN's fleet of destroyers and other small ships. However, it would not be until the late 1930s that Rear-Admiral Nimitz, then commander of Battleship Division 1, was able to convince the necessary authorities that much larger

[40] Wildenberg, 38.
[41] Wildenberg, 38.
[42] Wildenberg, 41.

ships, such as battleships and aircraft carriers, could actually manoeuvre well enough to partake in the evolution and therefore also benefit from such a capability.

By the time the US declared war in 1941, the USN were accomplished practitioners of underway replenishment. Developing such a technique nearly to perfection provided great benefits to American naval forces. In fact, so important would this skill become in the Pacific that Admiral Nimitz claimed it to be the USN's secret weapon.[43]

This high praise of fuelling was easily understood as it permitted highly valued units to remain engaged in combat longer. For example, an aircraft carrier needed to be withdrawn from a naval engagement (due to a lack of aircraft fuel and munitions) after conducting only two days of air strikes in order to replenish. Without the Service Fleet present, the aircraft carrier would have to be taken out of the combat theatre for no less than ten days in order to sail back to the nearest advanced base to receive the requisite fuel, stores, and munitions to continue the engagement. With the resources that the Service Fleet offered, the aircraft carrier could re-supply itself within 48 hours. Such a difference in timings could prove critical in a combat operation.

As the war progressed, Service Squadrons not only transferred fuel, victuals and ammunition, but also replacement personnel and even aircraft. These latter achievements were accomplished by having escort carriers and converted aircraft carriers incorporated into the Service Squadrons.[44] With such a wide variety of capabilities, Rear Admiral Donald Beary, one of the Service Squadron commanders, boasted that his ships were

[43] Miller, 9.
[44] Such ships often carried additional air technicians to work on damaged or broken aircraft.

"capable of furnishing all essential services normally available in port with the exception of repair facilities. Thus, the endurance of the fleet at sea is limited only by battle damage, human and mechanical endurance."[45] With such capability, it was easy to understand that the Service Fleet was a huge force-enhancer and that, "more than any other single factor…[it] gave the fleet the 6,000–mile operating range that the campaign needed."[46]

By 1944, the USN had created the greatest maritime force in history and was confident in eventual victory. This feat had been achieved because, as Admiral Raymond Spruance, Commander of the US 5th Fleet, explained: "in any exchange of blows, the side which pushes its bases toward the enemy while keeping the enemy at a distance from its home territory is going to [naturally] come out on top."[47] This ability to push the enemy closer and closer to his homeland was due to the massive emphasis the American forces had placed on logistic systems. This accomplishment was due in no small part to the role that both forward and mobile bases played in maximizing the fleet's striking power. Utilizing both styles of bases was essential because, as Admiral Spruance again explained: "each had its advantages, and neither alone could do the job."[48] These bases, combined with the USN's excellent abilities to re-replenish its ships at sea made logistics "

> might draw continued support, without adequate auxiliary vessels, repair facilities, skilled craftsmen, garrison forces, supply ships, tankers and transports – to mention only the more obvious resources – our fleet was unable to operate continuously in this area as a naked man to cross the Sahara.[50]

While aircraft carriers and naval aircraft gave the US power to clash with the tenacious Japanese, it was American logistical capabilities that permitted them to be effectively equipped to fight the Japanese unaided onto the enemy's doorstep, and even into their homeland. However, the concept of the US continuing their advance and independently defeating the Japanese was not what all the Allies had in mind.

British politicians and military leaders, led by Winston Churchill, had for some time been emphatic that Great Britain must play a major role in directly defeating Japan in order to permit them, among other things, an opportunity to reconstitute its empire. As such, British planners had examined various opt1.550, Br93nd m

> British force would be noticeable and nothing but the best would be tolerated.[53]

This task was not easy to accomplish because the USN leadership had no need, or apparent desire, to incorporate British ships into their plans. There was a wide array of reasons for this attitude, including the blunt assessment of historian John Charmley who said:

> The very speed with which the Japanese overran the British Empire in the Far East convinced many Americans that the British were not only imperialists, but bungling imperialists.[54]

Nowhere was such contempt more apparent than in Admiral Ernest King, Commander-in-Chief US Fleet, whom many ingenuously characterized as having Anglophobia.[55] Perhaps this trait was one reason why Admiral King fought so adamantly against the inclusion of British naval forces that, in his view, offered little added benefit but had the potential of being detrimental to his overall strategy. As the British had spent over five years in trade defence in the Eastern Atlantic and Mediterranean, the "navy and nation were [therefore] ill-placed to meet the demands imposed by changes of role and theatre."[56] Furthermore, the Pacific theatre was, simply put, massive as compared to what the British had been operating in with their war with Germany. The engagements that the RN had participated in, specifically in the North Sea and the Mediterranean, might be considered littoral actions due to their proximity to land. This experience meant that they had little need for forward basing away from British territory. Thus, when the RN became

[53] Winton, 48.
[54] Coles, 113.
[55] Winton, 36.
[56] Willmott, 140.

more involved in the Pacific, its vastness might have caught some by surprise. Such a view is easy to understand when one envisions Admiral Fraser's comment that fighting in the Pacific was like "having a fleet based in Alexandria, with advanced anchorages at Gibraltar and the Azores, attacking the North American coast between Labrador and Nova Scotia."[57] Such distances would no doubt produce logistical problems for the RN that if they could not overcome, might make their presence truly a hindrance to the US war effort. Possibly due to this fact, the USN's "attitude towards the Royal Navy was based upon an unpalatable but inescapable truth; unless a British fleet in the Pacific could be self-supporting, it would not only be a doubtful help, it might even be a definite hindrance in the war against Japan."[58] Consequently a major discrepancy existed about how the RN believed they show be employed and how the USN envisioned their Allies' assistance.

For the Americans, the "most desirable solution" would be for the British to carry out independent actions in the Indian Ocean rather than be combined with USN forces.[59] For the RN, while this tasking would mean that their lines of supply from India would be shortened, and therefore improved logistical support would be available, it also relegated their forces to the periphery and marginal theatre of operations meaning they would miss out on the big naval war in the Pacific. With such a view in hand, the American Navy attempted to delay making a definitive decision about British participation in the main operations against Japan for as long as possible. Nevertheless, the issue came to a fore when Prime Minister Churchill explained at the *Octagon Conference*:

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[57] Winton, 269.
[58] Winton, 36.

> There were certain elements inimical to Anglo-American good relations which were putting it about that Great Britain would take no share in the war against Japan once Germany had been defeated. Far from shirking this task, the British Empire was eager to play the greatest possible part. They had every reason for doing so. Japan was as much the bitten enemy of the British Empire as of the United States. British territory had been captured in battle and grievous losses had been suffered. The offer he, the Prime Minister, now wished to make was for the British Main Fleet to take part in the main operations against Japan under United States Supreme Command.[60]

The President accepted the offer with no apparent consultation with his naval staff. Afterwards, the P2 241.83682 557 0 0o90 529.56 Tmr P2 241.83682 553180.0250 529.56 TminimMir

forces to be self-supporting."[63] This requirement was indispensable because Admiral King "worried not only that the Royal Navy was ignoring the enormous problems of supplying a fleet in the Pacific, but also that British requirements would strain American local resources."[64] With such fear in hand for the Americans, and with the British anxious to prove otherwise, all participants mutually agreed on the need for the RN to support themselves. Due to the great importance placed on this issue, the British Chiefs of Staff gave their assurances and even had it formalized in the final synopsis of the meeting.[65] As a result of this pledge, Admiral King prohibited any undue American support to the RN in the hopes that they would truly be self-sufficient.

In the end, due largely to political pressures, the *Octagon Conference* proved to be a turning point in British involvement in the Pacific because it guaranteed their participation in the main operations. Prime Minister Churchill elaborated further on this point after the conference:

> The new phase of the war against Japan will command all our resources from the moment the German War is ended. We owe it to Australia and New Zealand to help them remove forever the Japanese menace to their homeland, and as they have helped us on every front in the fight against Germany we will not be behindhand in giving them effective aid. We have offered the fine modern British fleet and asked that it should be employed in the main operations against Japan. For a year past our modern battleships have been undergoing modification and tropicalisation to meet wartime changes in technical apparatus. The scale of our effort will be limited only by the available shipping.[66]

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[63] NARA, M995 RG 165 Reel 3 No. 6, Minutes of the Combined Chiefs of Staff 174th Meeting, 14 September 1944, p.209.
[64] Coles, 121.
[65] NARA, M995 Reel 3 No. 6, Minutes of the Combined Chiefs of Staff 174th Meeting, 14 September 1944, p.209.
[66] Winton, 47.

In making this speech the Prime Minister expected that by the end of 1944, the British armada deployed against Japan would include:

2 Battleships;
4 Fleet Carriers;
2 Light Fleet Carriers;
14 Escort Carriers (many built in the USA);
8 Cruisers (many refitted in the USA);
24 Fleet Destroyers; and
60 Escort Vessels (mostly American built).

Plans at the time called for this formidable fleet to be subsequently increased with freed-up assets after the defeat of Germany to include:

4 Battleships;
4 Fleet Carriers;
7 Light Fleet Carriers;
18 Escort Carriers;
12 Cruisers;
60 Fleet Destroyers;
100 Frigates; and
24 Submarines.[67]

However, the Americans had never considered the presence of these forces in any of their operational planning, never mind logistical planning.[68] The onus was, therefore, on the British to ensure that any possible logistical problem was solved prior to the fleet's arrival in theatre. Unfortunately, as the emphasis was to get a large combatant force in place quickly, logistical requirements were secondary considerations. This was ironic because the number of His Majesty (HM) Ships able to be deployed to the region was "limited by the available facilities for their logistic support."[69]

[67] Ministry of Defence, War With Japan Volume VI The Advance To Japan (London: HMSO, 1995), 12.
[68] Coles, 121.
[69] Ministry of Defence, 13.

While the Admiralty was aware of Churchill's promise, there can be no doubt when one looks at the subsequent actions of the RN, the fact remains that they were incapable of fulfilling their Prime Minister's guarantee of being self-sufficient. Yet, such a letdown should not be viewed as a surprise. If one looks at the history of the RN's logistical concepts and the massive obstacles that awaited it in the Pacific, the challenges were simply too many to be overcome swiftly.

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ROYAL NAVY CONCEPT OF LOGISTICS

During the Pacific campaign, the RN underwent monumental changes in both its logistical concepts and techniques that were very different from its traditional support methods. In the past, the British could rely on Imperial territory for bases to facilitate the transfer of troops and ships from one part of the Empire to another when needed. Such dependencies also ensured that a ready supply of materials and stores were available at a low cost. This imperial system in which British naval supremacy had no true rival, meant that the RN had the luxury of staying close to their bases. This style of warfare was, unfortunately, not to be found in the Pacific. Here, as discussed, the Americans had devised a new system of support that was essential to fight. This system, which included advance and afloat basing, the fleet train, and RAS techniques, had all proven to be indispensable and was one which had to replicated in order to supply and maintain the BPF while in Pacific theatre. Unfortunately, this goal was no easy task.

Due to its expansive empire, the Royal Navy had traditionally utilized a different concept of logistical support than its American counterpart. While the USN had developed a plan of forward basing in lieu of large, permanent bases, the opposite was

true for the RN. By the turn of the 20th century, large dockyards in southern British coastal towns provided the necessary facilities to support the RN in its home waters. However, due to the universal interests of Great Britain with its "empire on which the sun never set," these facilities were not sufficient. Consequently, the RN established bases at strategic locations around the world to ensure that it had the necessary support mechanisms to command the seas. As Gilbert Tucker explained in *The Naval Service of Canada – Its Official History*:

> The overseas territories, however, added greatly to the resources of the Royal Navy in a number of ways, and above all by providing it with conveniently-placed harbours and bases in almost all the areas where it might be called upon to operate. A number of possessions overseas, in fact, were acquired expressly in order to provide bases for the fleet. The unique structure of the British sea power rested in part upon and unrivalled appanage (sic) of seaports, a number of which occupied some of the choicest strategic positions in the world. The imperial annals are sprinkled with the names of Aden, Cape Town, Gibraltar, Halifax, Hong Kong, Malta, Minorca, and other only less renowned than these.[70]

By the 1930s, the RN had come to rely on these large bases as the nodal points for their fuel, stores, and victuals. In fact, the "Royal Navy had grown used to "short-haul" operations, where the fleet returned to its base after a few days."[71] In the Pacific – the largest ocean in the world – a central strategic point was needed to protect British interests. In 1921, Singapore was chosen to be that place and by 1938 a huge naval base and army fortress had been constructed which had turned the small island into Great Britain's bastion of power in the Pacific. As the fortification grew, so too did a belief about its invincibility. So great was this perception to become that Admiralty planners

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[70] Although the quote does not include it, one should understand that Esquimalt, near Victoria, was another such base. Gilbert Norman Tucker, The Naval Service of Canada Volume I (Ottawa: King's Printers, 1952), 46.
[71] Winton, 270.

were told that they could always assume that Singapore would be available to support any and all British activities in the region.[72] However, modern developments such as airplanes and airborne weapons had "greatly increased the vulnerability of permanent bases."[73] These and other weapon systems, along with amphibious operations, were major contributors to Singapore's unexpected capitulation on 15 February 1942. Not only were the British stunned at its loss, but the RN was left without its most important base. With no equivalent to the USN Seabees, the British did not have the expertise to construct any replacement base (even assuming they had territory at their disposal) quickly. Relegated to the Indian Ocean and with the Japanese advancing towards India overland through Burma in what was largely deemed a secondary (and therefore low priority) theatre, the RN needed a limited operating range to defend the remaining territory. As such, there was no need for the British to develop any form of fleet train. Subsequently, RN ships operated from the underdeveloped bases in India under the control of Admiral Sir James Sommerville (Commander-in-Chief Eastern Fleet). [74]

Although no fleet train was needed for operations in the Indian Ocean, it must be pointed out that the RN had, at least once, considered developing its own fleet train. As early as 1936, segments of the Admiralty were consciously aware that such a need might arise. The Admiralty authorized a committee to "consider the numbers and types of auxiliary vessels required for maintaining supplies to the fleet in certain emergencies and the arrangements for manning and filling out the vessels required, taking into

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[72] Winton, 272.
[73] Sir James Butler, History of the Second World War Volume III - United Kingdom Military Series (London: HMSO, 1961), 393.
[74] Admiral Louis Mountbatten in the South-East Asia Command had nominal control over landing craft, amphibious ships and their escorts.

consideration the possibility of certain bases not being available."[75] However, probably due to the onslaught of war, no tangible results were forthcoming from the committee and consequently no innovations were initiated. The same lack of development was true with respect to RAS techniques.

Even though the RN had first experimented with fuelling-at-sea in 1906, the procedure had not proven critical to its success in the Great War because HM Ships remained close to their homeports at Scapa Flow, Portsmouth and Dover. Due to the low priority the fleet train had received in that war, it should be of no surprise that, unlike their North American counterparts, refuelling got little attention during the inter-war years although it was practiced sporadically. Notwithstanding this irregularity, the RN did acquire commercial tankers that were given special fittings to accommodate naval hoses. These "station ships," as they became known, were positioned at various British bases to refuel ships (in actual fact they were essentially in-harbour tankers). Largely due to their limited capabilities, these vessels simply refuelled warships while at anchor making it difficult for their crews to develop and retain this proficiency at sea.

Whilst in the early years of the Second World War there was little need for replenishment while underway, this requirement slowly manifested itself as ships increased in speed and size (thereby utilizing more fuel). During the later years of the Battle of the Atlantic, the RN utilized refuelling-at-sea more frequently, although with equipment and techniques that were inferior to that employed by the USN. For example, the RN refuelled using the restrictive astern method, whereby only one ship could be refuelled at a time. It was not until 1943, nearly fifteen years after the

[75] Winton, 272.

Americans had adopted the broadside method, that the RN accepted the practise. Moreover, it was not until mid-1941 that the RN started to use more manageable rubber hoses (nearly twenty years after USN had done so). Furthermore, the RN did not practice all RAS innovations that the Americans were employing in the Pacific, including transfer of ammunition. Consequently, "Pacific Ocean logistics represented a totally new development for the RN whose short-range, cold climate fleet had seldom operated far from its established basses and had limited experience in replenishment at sea."[76] The RN, therefore, had much to learn about naval logistics. The need to acquire this new expertise meant the RN had a phenomenal learning curve to overcome in a period measured in months, instead of the years that the USN had had.

As the British started planning in haste to dispatch a fleet to the Pacific, it was expected that the war against Japan was long from being over as it was estimated that the Japanese would continue to fight well into 1946 or even 1947. With such a timeline in mind, the forecast for the Pacific War went as follows: invasion of Malaya, August 1945; recapture of Singapore by January 1946; and an amphibious assault on the Southern island of Japan (Kyushu) for November 1945 while the main island (Honshu) would be invaded in the spring of 1946. Based on these timelines, British planners worked feverishly to construct a plan on how to support the large naval force it had promised. Yet, almost each facet of the plan was difficult to fulfill.

On 22 November 1944, the BPF was formed in the Indian Ocean and placed under the overall command of Admiral Sir Bruce Fraser. He and his staff worked ashore while the BPF at sea (referred to as Task Force 57) was commanded by Vice-Admiral Sir

[76] Coles, 121.

Henry Rawlings. The fleet train (Task Force 112) was to be commanded by Rear-Admiral Douglas B. Fisher.[77] While the BPF had intended to sail immediately to the Pacific theatre, delays in re-equipping the fleet with the American-built *Avenger*, *Hellcat* and *Corsair* aircraft stalled the deployment until early in the New Year. This delay, in certain respects, was fortunate because it permitted more time to set up the necessary infrastructure to support such a large fleet.

Due to the need for the BPF to have a large base with sufficient technical expertise to repair its ships, as well as the ability to supply requisite material and stores, the RN had two choices for the location of its main or rear base: Australia or India. Both possibilities had severe limitations. In the end Australia, which was being used by General Douglas MacArthur for his rear logistics base, was selected. Sydney, although a long distance from the expected operational area, was still much closer than the alternative of Bombay[78]. Furthermore, Sydney had a better dockyard infrastructure with docks for heavy cruisers and a large dry dock nearing completion for capital ships.[79] While the Admiralty expected (unfortunately erroneously as shall be seen) that it could rely on a Dominion of the Commonwealth to support its rear activities, the important question of where to position the RN's other support bases still needed to be solved.

The Americans had learned from experience that it was uneconomical in time and shipping to operate a fleet more than 2,000 nm from its base of support. Since the BPF would, at a minimum, be operating at least 3,500 nm from Sydney, an intermediate and

[77] This position was referred to as RAFT or Rear-Admiral Fleet Train.
[78] Bombay is on the West side of India, and therefore on the 'wrong side' of the country to help support operations in the Pacific.
[79] Ministry of Defence, 15.

even advance base, would be needed.[80] Consequently, without a base of their own, the British had no other option but to turn to the USN for access to one of theirs.

It soon became clear that the level of support that the Americans were willing to give the British, at least officially, was very limited. Any hopes "inspired by the apparent lavishness of American logistic provision, that there would in fact be 'excess facilities' in the Pacific, were quickly dispelled in discussions between the British and US Naval Staff representatives in Washington."[81] Indeed, it appeared that Admiral King's insistence (and hence direction) on the British supporting themselves was well known. Such a stance was understandable given the fact that the USN was already supporting two separate fleets and therefore did not have much to spare.

While other options were available as to where the British could establish their bases, they could not build up such facilities before October 1945. Consequently, after much discussion, it was finally agreed that the British could use the large American naval base at Manus in the Admiralty Islands (see Illustration 1) as an intermediate facility.[82] This site was chosen for both its availability and its proximity to the expected area of operations. While many British thought that once they arrived in theatre the Americans would be more forthright with their generosity than simply offering the RN the use of anchorages and bulk fuel supplies as originally agreed to, RAdm Fisher was shocked to find out on his visit to Manus that the Americans were actually going to abide by Admiral King's restrictions. This reality meant that access to such necessities as Manus' 1,500 bed hospital or even the niceties of using its 7,000-seat open-air cinema, were to be off limits.

[80] Winton, 281.
[81] Ministry of Defence, 13.

In fact, the Americans expected every item from aircraft parts to toilet paper to be supplied and shipped by the British. Fortunately, the American commander of the base, of his own volition, eventually chose to interpret his orders quite liberally. In fact, he disregarded them. So much so that by the time the BPF and fleet train arrived in Manus "anything that could be given without Admiral King's knowledge" was provided.[83] In the end, the American commander even offered the facilities of a complex located on a nearby island (that included a hospital, cinema and church) to his British guests. Such support was very fortuitous for the British because, as shall be seen, this assistance was instrumental in the RN's ability to sail and fight in the subsequent months.

SUPPORT OPERATIONS TO THE ROYAL NAVY IN THE PACIFIC – 1945

Although the logistic plans might have appeared to give the impression that the support structure was falling into place, it soon became apparent that these plans were not as solid as originally hoped for. Even prior to the arrival of the fleet, RN logistic plans faced difficulty. Such problems started with Australia, which Admiral Fraser doubted "had any idea of the implications behind basing of the fleet in their country."[84] Although Sydney was selected as the rear base for ostensibly rational reasons, the Australians appeared to be far from eager in accepting this responsibility. Waterfront labour disputes had produced "chronic strike situations" along most of the Eastern Australia and the government was reluctant to become involved in ordering labour back to work, even if it

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[82] Some initial thought and discussions was given to using Espiritu Santo in the New Hebrides. But it was discarded as being to far away from the potential operations area.
[83] Winton, 307.
[84] Captain S. W. Roskill, The War at Sea Vol III Part 2 1st June 1944 – 14th August 1945 (London: HMSO, 1961), 33.

meant supporting the war effort. Such reluctance was carried over to providing scarce building materials since these items would be needed in the post-war period.[85] This lack of enthusiasm by Australia to provide cheap

was his staff that it could only concern itself with immediate events and therefore precluded itself from doing any long-range planning.[89]

As far as the fleet train was concerned, the RN faced massive challenges in amassing the wide assortment of vessels need for the plethora of activities expected. As mentioned previously, the RN had virtually no fleet train, save for some stations ships, at the outbreak of war. Fortunately, over time, some small progress had been made to build up a nucleus of vessels capable of replenishing and repairing ships. The first step took place in 1942 when five liners were taken up from trade for conversion as repair ships or depot ships for destroyers and submarines. By 1944, the RN had amassed 395 auxiliary vessels spread throughout the world.[90] Regrettably, the majority of these were for short haul only and consisted largely of old colliers, coasters, accommodation ships, and hulks.[91] They were not the types of ships needed to repair and refuel vessels far from any coastal area in a major combatant area. Thus, in September 1944, when naval planners identified the vast number of ships needed to partake in the Pacific fleet train, their requirements far surpassed what was then available in the RN. These ships included (along with its shortages):[92]

Armament Supply Issuing Ships – 13 required but only two available;

Naval Store Issuing Ships – 12 required, two available, three being built in Canada;

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[88] Willmott, 140.
[89] Winton, 298.
[90] Included in this number were numerous captured German and Italian merchant ships that were assigned to the British merchant fleet.
[91] Willmott, 85.
[92] For definitions of the role each class of ship was expected to do perform, see Appendix 2

Naval Store Carriers – 16 required (including eight for the East Indies) – one available, six were undergoing conversion and the other nine were "obviously going to be very difficult to obtain."

Distilling Ships – five required, one available;

Air Store Issuing Ships – three required, one available, one being built in Canada;

Victualling Store Issuing Ships – 22 or 24 required, nine likely to be available, three more being refitted, two not altogether satisfactory might be released from the Mediterranean, at least seven more were needed;

Hospital Accommodation Ships – four required, three in sight and one not yet in sight; and

Amenity Ship – one required and being provided on highest priority.[93]

Such an armada was not readily available and those merchant vessels that could be found all too often had to be upgraded or refitted in preparation for their deployment to the Pacific. Two dehabilitating factors came into play here. The first one was the length of time the Admiralty originally thought it had to assemble such an armada. As the Japanese were expected to fight well into 1947, the Admiralty felt relatively secure that the full fleet train need not be fully operational immediately. In fact, it was estimated that they would have until Autumn 1945 to accomplish this task (an optimistic estimate). When the Americans moved much quicker in their advance towards the Japanese home islands than originally anticipated, the British were simply unprepared to put together the necessary ships in such a short time frame.

[93] All the information on the fleet train requirements was taken from Ministry of Defence, 16.

Secondly, there was insufficient room in British yards for such conversions or construction to take place. Such difficulties were exasperated by the fact that the Ministry of War Transport had "failed to comprehend the magnitude of the task" of amassing the armada, "the number of ships required," and indeed the "feasibility of the whole scheme for sea borne requirements."[94] The UK had put most of its building efforts into naval surface ships and landing craft at the expense of the merchant fleet. It therefore had limited numbers of hulls available for conversions. With the need to reconstruct Great Britain after the war, many civil servants were aware that merchant ships were essential to the post-war rebuilding effort as they were needed to import necessary material. Thus, there was reluctance by many bureaucrats (as there had been in Australia) to support many of the RN's shipping requests, especially given the fact that the number of ships it required kept on growing. By February 1945, in addition to the number of ships already mentioned, Admiral Fraser further requested nine large and four small Harbour Oilers, three Harbour Water Tankers, four Water Freighters, four Armament Store Issuing Ships, eight Armament Store Carriers, four Victualling Store Issuing Ships, two Naval Store Issuing Ships; five Naval Store Carriers, six Bulk Issuing Ships or Naval Store Carriers.[95] With calls for additional ships, it was clear that the RN did not know what it truly needed to support its fleet. Increasing ship requirements indicated a lack of understanding of the magnitude of the task at hand.

With limited shipyard space available, the Admiralty looked optimistically across the Atlantic for support. In Canada and the USA, which was seen as a land of plenty when compared to the resources available in wartime Great Britain, it was believed that

[94] Peter C. Smith, Task Force 57 (London: Crecy Books, 1994) 111.

the vessels for the fleet train could be constructed effortlessly. Fortunately for the Admiralty, some space was found. In Canada, eight Escort Maintenance Ships, five LST Maintenance Ships, two Armament Maintenance Ships, one Local Craft maintenance Ship, four major Landing Craft Maintenance Ships, and One Coastal Force Maintenance Ship were built.[96] The greater problem was not building the hulls, but in outfitting other ships with the proper machinery and equipment to perform the specific logistic function.[97] Often, due to the obsolete material found in British merchant vessels, more repairs and alterations were required than in their American counterparts, thereby delaying their eventual sailing.[98] This factor, along with a lack of space in ship repair and refit yards, were the reasons that, while 83 major conversions had originally been forecasted, only 21 were actually carried out.[99] In addition, under the Lend Lease Agreement, the US was asked to provide any available logistics ships already under construction. This request re-inforced the view that Great Britain was incapable of constructing the requisite platforms for their fleet train.[100]

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[95] Ministry of Defence, 16.
[96] National Archives of Canada, Records RG Series D-1-C Vol 8150 File NSS 1655-13 War Against Japan, Organization and Employment of British Pacific Fleet.
[97] While the famous 10,000 ton *Victory Ships* were relatively easy to build, there was great delay in fitting and reconverting these ships with the requisite systems (pumps, hoses, hydraulics, and other associated equipment) needed to perform logistical work.
[98] Coles, 121.
[99] D.K. Brown, ed. The Design and Construction of British Warships 1939-1945. The Official Record Vol 3 – Landing Craft and Auxiliary Vessels Annapolis: Naval Institute Press, 1996), 14.
[100] This fact is re-inforced when one realizes that Great Britain had long been reliant on the US for many of its ships, both merchant and combat. For example, the 1942 Appropriations Act made the provision for 1,799 naval vessels to be built for the Allies under Lend Lease. The great majority of which were to be constructed for Great Britain. For more information see the US Naval Administration Histories in World War II, Office of Chief of Naval Staff US Naval Historical Center (US), No 19 The Evolution of Lend-Lease, 41.

As the ships were not available from within the Commonwealth, the fleet train would have to amass vessels from a plethora of nations. The result was, as one historian called it, the "most extraordinarily motley collection of shipping ever assembled in British Maritime history."[101] The crews of these ships consisted of a hodgepodge of nationalities, which included sailors from Holland, Australia, Denmark, Lascars (South-East Asia), Chinese, and Papuans to name but a few. With such an assortment of ships and sailors, the fleet train's capabilities could nowhere duplicate the efficiencies or abilities of the USN Service Fleet. Consequently, "it was no wonder that the Americans with their modern homogeneously manned trained of ships, looked upon the British fleet with frank amazement."[102] Notwithstanding the various views held by the Americans, the RN did its best to assemble the necessary support armada.

In the end, over 100 vessels of 30 different specialized types sailed in the fleet train. Unfortunately, after five years of war, with the conflict still going on in Europe, there simply was not enough ships or trained personnel in the British Commonwealth to meet the need. As Roskill explained:

> We accepted the principle that in all-important respects the British Pacific would be self-supporting, and we were well aware that without a "Fleet train" on the American model it would be impossible for it to carry out protracted operations far from any permanent base. Unfortunately the Admiralty found it extraordinarily difficult to acquire ships which were suited to such work, since most of our best merchantmen were needed to sustain the already much reduced programme of imports into Britain and to supply our armies overseas. The consequence was that the Admiralty had to do the best it could with a heterogeneous collection of ships drawn from a wide variety of sources.[103]

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[101] Winton, 270.
[102] Winton, 270.
[103] Captain S.W. Roskill, White Ensign – The British Navy at War, 1939-1945 (Annapolis: United States Naval Institute Press, 1966), 434.

In hindsight, one must credit Great Britain with being able to assemble any fleet at all. While the US had taken years to build up its fleet train, the RN was able to lay the foundation for theirs (although far short of its true requirement) in approximately six months – an otherwise formidable accomplishment. Yet, assembling a rudimentary fleet train did not necessarily correlate to having the requisite logistical capability to sustain such a large fleet so far from its bases. This shortcoming would be highlighted when the BPF commenced to work alongside US ships during the invasion of Okinawa *(Operation Iceberg)* where the shortcomings of the British fleet train became more acute.

The capture of Okinawa, which was the southernmost of the major Japanese home islands and located only 350 miles from Kyushu, would provide an excellent staging area for the future invasion of Japan. With this strategic importance in mind, 1,500 ships under the control of Admiral Chester Spruance launched their attack on 1 April 1944.[104] Included in this number was the BPF and its fleet train. Unfortunately, almost immediately, the RN faced numerous logistical difficulties that either impeded its work or forced the Americans to assist them. Such problems could be categorized into three groups: problems with the ships; poor preparations; and more importantly, refuelling difficulties.

As mentioned earlier, the ships that made up the fleet train were not necessarily ideal for the task at hand. However, as they became available, they were put into service. Despite some attempts at making the ships more conducive to a tropical climate (they often were poorly configured and lacked efficient air conditioning systems), life on board both the combatant and fleet train ships were "a misery of heat and humanity, with

[104] Ministry of Defence, 191.

officers and ratings suffering from an epidemic of boils and prickly heat."[105] While such conditions definitely impacted on a crew's moral, it was the limitations of the ships themselves that proved the greatest hindrance.

For example, the RN used three different classes of aircraft carriers and, as each had different hangar heights, no less than five different types of aircraft were needed.[106] A lack of standardization meant that the carriers could not service aircraft other than their own.[107] These factors meant a wider variety of spares needed to be carried in the storerooms of the aircraft carriers and ships of the fleet train because interchangeability of aircraft parts was virtually non-existent. All of these factors resulted in British rates of aircraft serviceability being very low compared to that of the Americans.[108] Such practices and shortages led to improvisation in maintenance that "came closer to causing a complete breakdown of operations than any single factor."[109] This fact was made even more troublesome given the fact that British ships had larger aircraft maintenance departments than US Ships and that, even though the British carriers displaced about the same as American Essex carriers, they accommodated only about half as many planes. [110] Yet, these problems paled in the face of the massive difficulties encountered by supporting the ships with their essence of existence – fuel. It was here that "the

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[105] Gray, 206.
[106] The carriers were actually designed for operations in the North Sea and Mediterranean where closeby bases could provide their requisite repair and overhaul needs. Thus, they were ill suited to operate in the large expanse of the Pacific.
[107] Willmott, 142.
[108] It should also be stated that the RN had a different philosophy with respect to aircraft maintenance. While the USN would fly a plane until it was unserviceable, the RN had to work hard to maintain available aircraft since they would not be getting any more from the USN through the British Air Commission.
[109] Willmott, 142.
[110] Willmott, 139 and E.B. Potter, Nimitz (Annapolis: Naval Institute Press, 1976), 348.

deficiencies of the fleet train were chiefly felt."[111] Nowhere would fuel play a greater role than in the battle for the small Japanese home-island of Okinawa.

The original plan for capture of Okinawa called for the BPF to be supported from Manus Island.[112] Unfortunately, the RN had done little preparation, which meant that when the fleet arrived they were almost totally dependent on the good graces of the USN to assist them in readying for the oncoming battle. Such actions manifested Admiral King's worst fears that the British would become a burden onto the USN. This realization was demonstrated by some simple facts.

Due to the distances involved at Manus' harbour, service craft were essential to transport material from ashore to the ship. However, the British had underestimated their requirements and did not have enough auxiliary vessels to service their needs. As a result, 54% of all deliveries were carried out by USN vessels.[113] Furthermore, swells in the harbour meant that large catamarans would be needed for refuelling large ships. The RN had not stationed any there and were consequently dependent on US craft. British planners even overlooked basic essentials such as water, and were consequently short 179,000 gallons of water per day.[114] All of these shortcomings indicated a lack of effective planning, a deficiency that was apparent throughout the campaign. Consequently, when the BPF and fleet train departed Manus, it had not been an easy storing routine because they had relied on the USN for much of their support. As RAdm Fisher later explained:

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[111] Ministry of Defence, 204.
[112] Ironically the island was Australian but was occupied and administered by the USN with a commodore in charge. Thus the British were to be lodgers in one of their dominion's territories.
[113] Ministry of Defence, 205.

> In effect, when the time came, we received considerable additional assistance from the US Navy in a variety of matters, and without such assistance our difficulties would have been far greater than they were.[115]

As the Allies had progressed their attack so quickly since the initial planning phases, they were now fighting over 2,000 nm

Moreover, the oilers were still manned for freighting duties, which meant they had insufficient personnel for the laborious and time-consuming conditions of refuelling at sea.

To add to these problems, the BPF was critically short of oilers, a problem that would plague them for the duration of the Pacific campaign. The "inadequate number of tankers and their low speed" meant that the "most careful planning was necessary" for ships to withdraw from fighting "to fuel on pre-selected dates."[120] So acute was this problem that fleet train staff believed that even if one oiler had been lost or forced to withdraw from service during *Iceberg*, the operations of the fleet would have been, "if not jeopardized, then seriously imperilled."[121] This deficiency greatly reduced the British "efforts to stay the full course with the Americans."[122] In fact, while American ships were expected to spend most of their time on station, Adm Fraser had already made it known that due to the limited logistic support available to him, he would not be able to carry out prolonged operations. Indeed, he predicted that his ships' endurance would be limited to only eight days.[123] This restriction was largely due to the shortage of ships in the fleet train which not only were required to take material from the advance base to the fleet, but also from Australia to Manus and Leyte:

> The British Pacific Fleet at no time achieved even the minimum number of vessels that it required. Those they did eventually assemble formed a dubious group, with a few notable exceptions and included several foreign vessels without even the most rudimentary knowledge of naval operations and requirements.[124]

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[120] Fisher, 224.
[121] Willmott, 142.
[122] Ministry of Defence, 215.
[123] Potter, Nimitz. 348.

Eventually, the defenders on Okinawa were either killed or surrendered, but not before they (including their Kamikazee attacks) inflicted heavy damage on the attackers, including their ships. Unlike American ships, which could be repaired on the spot from either the fleet train or one of their mobile bases, the British ships that had sustained battle damage had no choice but to withdraw to Sydney for repairs. Not being repaired in location caused some embarrassment and problems, but even more major problems awaited. Due to the limitations of Sydney, the battleship *HMS Howe* had to retire 5,000 nm to Durban, India for repairs. The loss of such an important asset was noticeable and identified the "sorry commentary on the state of the RN's support organisation in the Antipodes."[125] This loss was exasperated by the fact that the RN had to dock destroyers and escorts in US docks no less than eleven separate occasions.[126] So poor were British engineering facilities that by the end of the war their repair facilities and their staffs were only at thirty percent of their planned strength.[127]

While the problems with supplies and refuelling became visible during *Iceberg*, they continued to be highlighted as the Allies began their attack on the Japanese home islands. During that time, Admiral "Bull" Halsey (Commander of the US 3rd Fleet whose force included the BPF) worked his ships incessantly, a pace that made it difficult for the British to keep up. As Adm Fraser stated:

> With easy grace he (Halsey) is striking here one day and there the next, replenishing at sea and returning to harbour as the situation demands.

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[124] Smith, 108.
[125] Coles, 232.
[126] Fisher, 222.
[127] Fisher, 223.

> With dogged persistence the BPF is keeping up…but it is tied by a string to Australia and much handicapped by its few small tankers."[128]

So acute had the oiler situation become during the bombardment of Japan that Adm Fraser had to convert two escort carriers (HM Ships *Arbiter* and *Ruler*) into auxiliary oilers and even refuelled British cruisers (HM Ships *Newfoundland* and *Achilles* to name but two) from US tankers when no RN tankers were available. [129] Such shortcomings and reliance on USN assets indicated that the RN might have been more effective if they had operated in the less-glamorous Indian Ocean (as Admiral King thought more appropriate) where its supply lines would have been much shorter and distance to bases less.

As the bombardment of the Japanese homeland commenced and plans were finalized for the invasion of Japan, (known as *Operation Olympic*), the challenges associated with sustaining the BPF mounted. Fortunately, the atomic bombs dropped on Hiroshima and Nagasaki concluded the war before the RN became even more reliant on the USN. Nevertheless, the problems that the British warships encountered were noticeable to many people. As the RN Liaison Officer in *USS Shangri La* submitted: "TF 37 [the BPF] …would have been unable to continue operations because of lack of logistics support."[130] Even Adm Fraser's final report to the Admiralty outlined that the manner and speed with which the war ended resolved an impossible logistical problem with respect to *Olympic*.[131]

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[128] Sir James Butler, History of the Second World War Volume III - United Kingdom Military Series London: HMSO, 1961), 372.
[129] Gray, 246.
[130] Coles, 128.
[131] Willmott, 143.

Ironically, when the war did end, the BPF was nowhere near the fighting. It was on its way back to Australia for additional repairs and fuel. Possibly due to this fact, its brief existence, or its relatively small size compared to the US armada, the BPF assumed the name of the "Forgotten Fleet."

CONCLUSION

With no bases in the Central Pacific, a limited fleet train, and very little experience in underway replenishment, the RN faced many concerns from the USN about its presence in the pacific with US naval forces.[132] When the British entered the Pacific war, they did so with an almost naïve sense of opportunity and ability that resulted in unsubstantiated faith in their own capabilities. With an historical practise of returning to port to re-supply and refuel, the British were unaccustomed to the concepts of deployed support that the Americans had developed. While British operations in the Pacific were satisfactory (in the sense that they did carry out some offensive actions), their ability to stay in theatre for prolonged periods of time was extremely restricted due to logistic limitations. Although the British made major advances in developing logistical support in a relatively short period of time, the fact remained that the British relied on American expertise and material, both ashore and afloat, to support their war effort. This reality was wholly contrary to the original promise made by Prime Minister Churchill. Moreover, British bases, both rear and intermediary, were either insufficient to meet demonstrated needs or required unforeseen American assistance. Sydney proved to be far

[132] Up to this time the RN had only been involved nine times in carrier operations that utilized two or more aircraft carriers in all of the war, and a majority of those used only two. For more information see Willmott, 139.

from the ideal rear support base because of labour unrest and limited docking facilities. More importantly, it proved incapable of carrying out all the necessary repairs required of the RN's biggest warships.

While such problems did not prevent the BPF for being based there, or severely inhibit its fighting ability, it nevertheless highlighted the fact that Australia was far from being an ideal staging area for the RN. As well, many of the needed supplies did not make the long journey to Australia prior to the BPF's deployment against Okinawa. Such shortcomings had manifested themselves earlier at Manus. Here, the British were dependent on American support far more than expected and no doubt more than what Admiral King would have granted if he had been aware of the RN's requirements. Shortages in harbour craft, water, and other auxiliary equipment no doubt placed a strain on US resources. Fortunately, the base commander and his staff provided assistance far above what was expected of them.

The most critical aspect of the British war effort was the difficulty in assembling its fleet train. Planning which foresaw the British Fleet operating in the theatre for years hampered the urgency to get all the naval assets into theatre as expeditiously as possible. Lacking the multitude of ships needed to sustain properly their Pacific Fleet, the British had to re-configure numerous merchant ships, build new ships, or hire foreign vessels to work with their warships. Lacking the dockyard space to do this, they had to delegate work to the Dominions or even the US in order to assemble the minimum fleet required. Notwithstanding the miscellany of ships eventually assembled, the fleet train proved to be insufficient for British needs. This deficiency forced them either to utilize American Service Squadrons or even leave the operational area more frequently than planned in

order to gain fuel or essential supplies. The most noticeable shortcoming, however, was the scarcity of oilers, an indispensable asset in the vast Pacific theatre. The few oilers that were found in the British fleet train were old and extremely slow. This limitation caused underway replenishment to be much more slower than expected, thus impeding the over effectiveness of the BPF. Together, all these factors indicated that "had the invasion of Kyushu gone ahead the BPF would have been seen to falter in full view of Britain's allies and Commonwealth."[133] Fortunately, the destruction of Hiroshima and Nagasaki and the subsequent quick end to the war precluded the BPF from becoming a major, and possibly unacceptable strain, on the American support systems.

In the final analysis, while the role and valour displayed by the ships and crews of the BPF during its fight in the Pacific cannot be disregarded, their contribution was not critical to the ultimate victory. More importantly, this contribution was hampered because the RN's logistical needs were not only different from anything practiced before, but far exceeded anything that the British expected or could provide.[134] This meant that, as time progressed, the British in the Pacific became more and more reliant on the USN for various services and support. Consequently, the BPF was not the self-sufficient force originally promised by Prime Minister Winston Churchill.

[133] Coles, 128.
[134] Including Lt Hampton Gray, RCNVR, who posthumously won the Victoria Cross for his actions in Onegawa harbour.

Appendix 1 – Abbreviations

Adm – Admiral

BPF – British Pacific Fleet

CNO – Chief of Naval Operations

HM – His Majesty's

nm – nautical miles

RAS – Replenishment-at-sea

RAdm – Rear-Admiral

RFA – Royal Fleet Auxiliary

RN – Royal Navy

TF – Task Force

US – United States

USN – United States Navy

USS – United States Ship

Appendix 2 – Selected Types of RN Logistical Ships

Air Stores Issuing Ships* – Carried bulk stores of aircraft spare parts over and above those held by other specialty ships (e.g., Aircraft Maintenance Ships) that could be drawn upon when necessary.

Aircraft Component Repair Ships* – Its function was general maintenance work such as the repair of propellers, hydraulic fittings, instruments, electrical equipment, bomb gear release, and all airfoils other than the fuselage.

Aircraft Maintenance Ship* – Main function was to perform maintenance work including major inspections of aircraft (including fuselage repairs); functional tests of completed aircraft and their installations (radio, armament, etc); and major engine and component repairs only.

Amenities Ships – Ships that could provide overseas forces with amenities that could make their lives a little less tedious. Items in these ships might include messes, chapels, a theatre, reading and writing rooms, and even a brewery.

Distilling Ships - Used to distil salt water into fresh water.

Escort Maintenance Ships – Designed to maintain 25 frigates, corvettes, etc each. These vessels were constructed in Victoria or Vancouver Canada.

Hospital Accommodation Ships – Used for the care or transport of casualties.

Naval Stores Issuing Ships – Were capable of issuing various stores to service 30-40 destroyers or escorts.

Oilers – Specialized in carrying fuel oil, diesel oil and gasoline and could provide these commodities while underway to other ships.

Rescue Ships - Rescue Ships were especially equipped for rescuing survivors from wrecked and blazing ships.

Victualling Store Issuing Ships – These ships had large refrigerated spaced which had fresh and frozen provisions. It could carry 30,000 men/months of provisions and 10,000 men/months supply of clothing and mess gear.

* Aircraft Maintenance Ships, Aircraft Engine Repair Ships and Aircraft Component Repair Ships together formed the Fleet Aircraft Maintenance Group (FAMG).

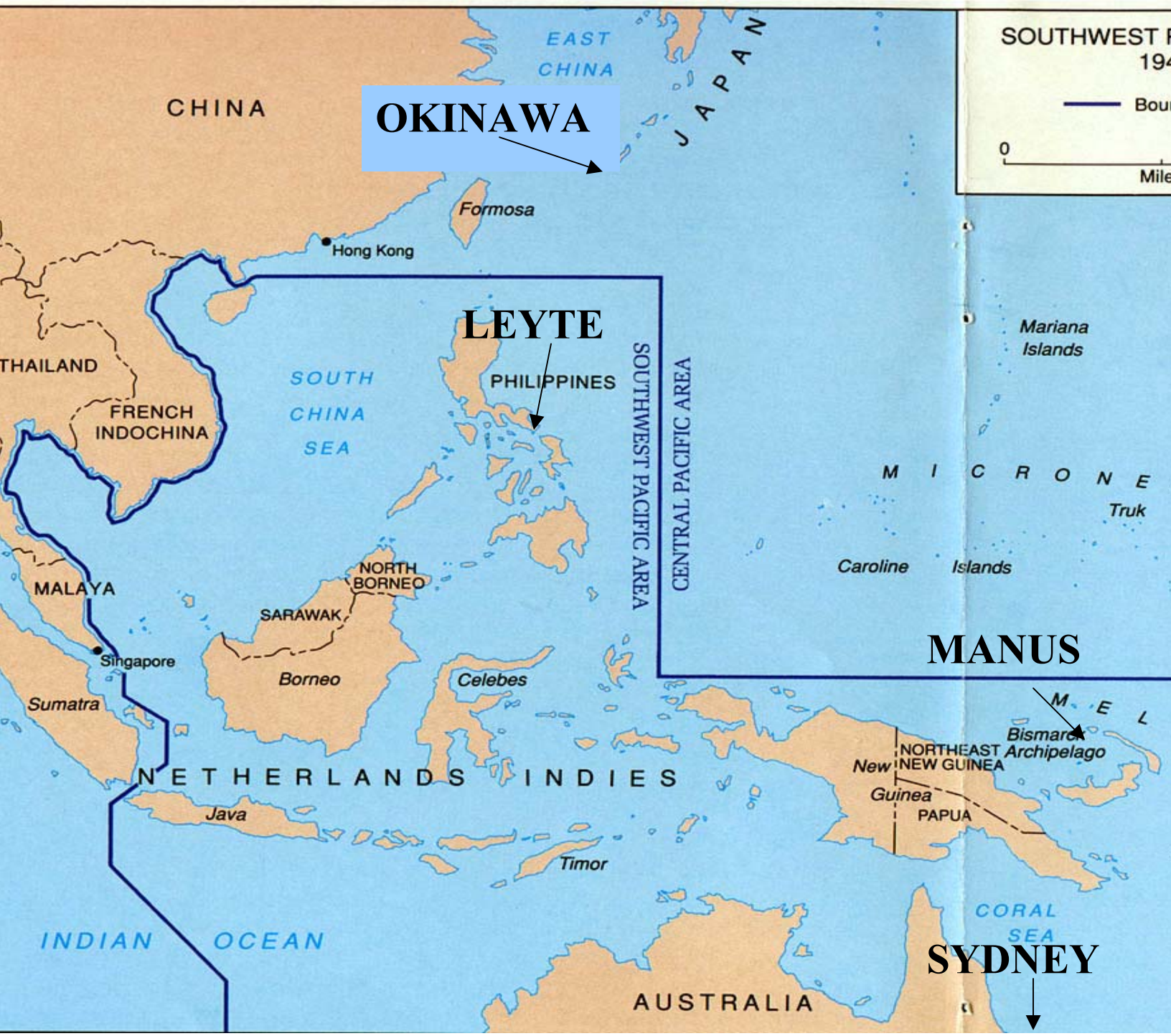

Illustration 1 – Map of the Pacific

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