Partnership of Necessity: The Anglo-American Intelligence Relationship from 1921 to 1942

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PARTNERSHIP OF NECESSITY:
THE ANGLO-AMERICAN INTELLIGENCE
RELATIONSHIP FROM 1921 TO 1942

by
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B.A. May 1989, University of Virginia

A Thesis submitted to the faculty of
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ABSTRACT

PARTNERSHIP OF NECESSITY: THE ANGLO-AMERICAN INTELLIGENCE RELATIONSHIP FROM 1921 TO 1942

H. Douglas Brooks III
Old Dominion University, 1995
Director: Dr. Carl Boyd

Throughout the period between the two world wars, Great Britain and the United States were embroiled in an imperialistic rivalry focused heavily in East Asia. The strong sense of competition and mistrust between the navies of the two nations hindered the development of close cooperation as war became imminent in the late 1930s. This state of affairs encompassed every aspect of naval operations, including signal intelligence whose officials sought to forge a working relationship beneficial to both countries in the opening days of the Second World War. Old prejudices and out-dated perceptions of national interest were difficult to overcome even in the face of necessity and desperation caused by the widely successful Axis advances around the world. Two decades of intense rivalry and distrust were put aside at last when a truly functional signal intelligence agreement was signed by the United States and Great Britain in October 1942.
To my Mother and Father,
whose love, sacrifice, and encouragement
made this possible
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CHAPTER 1
INTRODUCTION

The United States emerged from its Civil War in the 1860s with a revived military presence and a burgeoning economy; these conditions led it to become more aggressive in its dealings with the outside world. This new found spirit culminated in "manifest destiny" in North America and old-fashioned imperialism in the Caribbean, Central America, and East Asia as the young nation sought to expand its territory and commercial markets. The American embrace of imperialism eventually led to war with the weakened Spanish Empire in 1898 and the gunboat diplomacy of the Theodore Roosevelt Administration just after the turn of the century.

The United States Navy surged forward in the early years of the twentieth century, having had a strong tradition dating back to its Revolutionary War origins. Through modernization and expansion, the navy became Theodore Roosevelt's "Great White Fleet" and a force to be reckoned with on the global scene. The combination of imperialism and naval power encouraged the nation to become involved actively in events around the world that had traditionally been avoided. The United States, a former British colony, had joined the great game, jockeying for
position around the world with the great European powers. The rampant imperialism of the last half of the nineteenth century was one of the leading causes of the First World War. Because of its new-found membership in the club of imperialist nations, the United States was dragged begrudgingly into that conflict. By throwing its lot in with the Allied Powers, the United States committed itself to permanent involvement in world affairs whether its leaders chose to recognize the fact or not.

The United States' participation in World War I marked the end of adolescence for the dominant power in the Americas. The flexing of economic and military power in 1917-18 by the United States verified to the world that the country had matured. A new great power had reached adulthood.

The guns were barely silent in "the war to make the world safe for democracy" when the old imperialist monster began to raise its head over the conference tables at Versailles. The victorious powers jumped all over each other trying to obtain the territories and markets of the defeated, like vultures over carrion. Despite the high-minded rhetoric of President Woodrow Wilson, the United States was in the thick of the fray, primarily concerned that Great Britain would gain naval strength from the interned German fleet and increase its influence in East Asia. Of course, a series of treaties was finally agreed
upon after many months of posturing, cajoling, and bargaining. However, the signing of these formal agreements in no way meant that the competition among the great powers was over. If anything, a new round was just starting.

Great Britain and the United States remained embroiled in an imperialistic rivalry focused primarily on East Asia throughout the interwar period, despite the outwardly friendly and prosperous relationship of the two kindred states. This, in turn, led to a strong sense of competition and mistrust between the navies of the two nations, impeding meaningful cooperation as war became imminent in the late 1930s. It was with this backdrop in mind that the signal intelligence (sigint) organizations sought to forge working relationships beneficial to both countries in the opening stages of the Second World War. With primary emphasis on naval matters, this work will demonstrate how two decades of often intense rivalry and distrust hindered the formation of a truly functional signal intelligence partnership, which was not officially consummated until well into 1942.
CHAPTER 2
TWO DECADES OF RIVALRY

The Washington Conference of 1921-22 was the culmination of post First World War American foreign policy. The Department of State had been suffering from the embarrassment of the Senate's rejection of American entry into the League of Nations for two years when Secretary of State Charles Evans Hughes called for a conference on naval arms limitation. The secretary had three objectives in calling for the conference. First, he hoped to prevent a renewal of the Anglo-Japanese Alliance of 1902. Second, he wanted Great Britain to agree formally to naval parity with the United States. Finally, Hughes wanted to reassert America's geopolitical stake in world affairs. In order to achieve these goals, Hughes broadened the original scope of the meeting to include discussion of Pacific and East Asian political affairs as well as naval armaments. By doing this, and insisting that the conference be held in Washington, Secretary Hughes sought to insure that the initiative and agenda for the talks remained firmly in

Being manipulated by the American secretary of state did not sit well with either the British or the Japanese. The British government of Prime Minister David Lloyd George was interested in achieving a naval limitations agreement because of dire fiscal restraints, but definitely did not like the idea of open discussion of political matters concerning East Asia. From Lloyd George's point of view Hughes' announcement of the convention in Washington could not have come at a worse time. The invitation for the upcoming naval conference was made while Britain was holding an Imperial Conference with its Dominions to determine imperial defense policy and the renewal of the Japanese alliance.

This was perfect timing from the American point of view since dissension on both issues was openly rife among the Dominion and British governments. To Lloyd George this was extremely frustrating because it gave the Dominion prime ministers a way to avoid firm commitments to naval defense policy until after the conclusion of a naval arms limitation agreement.\footnote{Ibid., 298.} This was exactly the opposite of what Lloyd George needed politically.

Led by strong Canadian opposition, the Imperial
Conference was leaning toward dropping the Anglo-Japanese Alliance in favor of better relations with the United States. This was important because Canada was the wealthiest of the Dominions and in the best position to bolster British naval power significantly. Canadian Prime Minister Arthur Meighen's hostile stance toward increased defense estimates was bolstered by the prospect of a new naval limitations treaty. His conviction was enough to freeze the wavering Australians and New Zealanders into inaction, thereby tabling the British call for increased expenditures for the time being.\(^3\)

Meanwhile, the Japanese also were perturbed. A simple naval agreement was acceptable to Tokyo in order to avoid a costly naval race with the United States and to avoid, as William Braisted recounts, "the international ostracism that would surely follow her refusal to enter a naval agreement."\(^4\) However, the political issues that could arise at the conference were of more importance to the Japanese. These issues included possible diplomatic isolation after the refusal of the British Imperial Conference to renew the alliance, uncomfortable matters regarding Japanese activity in China, and dangerous questions involving Japanese

\(^3\)Ibid., 297-98.

fortification of the mandated islands. Upon his arrival in Washington, Japanese Navy Minister Admiral Kato Tomosaburo desperately sought, though unsuccessfully, to keep these issues off the agenda.

Coming into the conference, the three main powers each had different, conflicting long term foreign policy goals. For the United States, the conference represented a way to assure American power in the Pacific where its imperialistic designs were still very much on the rise. As early as 1916, the Americans had become concerned about their East Asian possessions and the possibility of Anglo-Japanese naval domination. The Congress responded that year with a Naval Act that provided for an accelerated building program designed to augment the fleet by 156 ships of all classes. This act provided for the most powerful navy in the world and was intended to send a message to both Tokyo and London. By 1921, however, the enthusiasm in Congress and among the American public for such a massive program had waned, so the conservative Harding Administration decided to use diplomacy to achieve its ends.

Great Britain still possessed the most powerful navy as it entered the Washington Conference, but its political and naval leaders were concerned that America's building program

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5Ibid.

would soon give it parity and eventually superiority over the Royal Navy. Because of their dire fiscal situation following the war, the British were prepared to concede parity to the Americans but not superiority. Thus the British delegation was probably the most eager one to conclude an agreement.\(^7\)

The Japanese concerns arose directly from this view of American intentions. Japan, as a rapidly emerging world power, was intent on absorbing large tracts of East Asia into its empire. The Japanese did not fear a superior American or British navy as much as it did active collaboration on the part of the two English speaking nations.\(^8\) Content with accepting a force ratio less than the Anglo-Americans, the Japanese were more concerned with preserving the status quo in Pacific island fortifications.\(^9\) They believed this would hinder the movement of the American fleet because the United States had done little to fortify its bases in the Philippines and Guam where the potential existed to create well protected fleet refueling and repair facilities. Meanwhile, Japan's mandated island possessions remained closed to foreign inspection in accordance with

\(^{7}\)Ibid.


\(^{9}\)Braisted, *The United States Navy in the Pacific*, 607.
Japanese law.\textsuperscript{10}

In fact, the United States Navy's Office of Naval Intelligence (ONI) was concerned deeply about Japanese activities on the islands, including the possibility that they were being secretly fortified. In 1920, the Director of Naval Intelligence (DNI), Rear Admiral Albert P. Niblack, commented: "Information that would indicate the existence or nonexistence of fortifications on [the islands] . . . is the most important single intelligence item which the Office of Naval Intelligence lacks."\textsuperscript{11}

Britain, on the other hand, was keenly aware of its declining power in the area vis-à-vis Japan and the United States. What the Balfour delegation at the Washington Conference sought most fervently was an end to capital ship design rivalry, with a guarantee safeguarding British interests in the East Asia. With an overstretched defense establishment and their Dominions' restive clamoring for political equality, the British wanted to avoid a naval race at all costs.

In light of all this, Hughes' proposal of a 5:5:3 naval tonnage ratio on the opening day of the conference was


received with much relief in London. Admiral Kato responded a week later with a counter of 10:10:7, claiming a larger allowance was necessary "to meet the minimum required for Japan's national security." However, the Americans had an advantage over their two principle adversaries. The Black Chamber, a secret codebreaking unit headed by Major Herbert O. Yardley, had been reading Japanese message traffic with some success since 1919. On 28 November 1921, Yardley's group solved its most important message to date. The cable instructed Admiral Kato to

avoid any clash with Great Britain and America . . . in regard to the armament limitation question. . . . endeavour to limit the power of concentration and maneuver of the Pacific by a guarantee to reduce or at least maintain the status quo of Pacific defenses and to make an adequate reservation which will make clear that [this is] our intention in agreeing to 10 to 6 ratio. Yardley quickly rushed this explosive information from the Black Chamber's New York hideaway to the State Department in Washington. With this knowledge in hand, the American delegation held firm to its position until the Five-Power Naval Treaty Pact was signed into being on 6 February 1922.

The United States and Great Britain worked closely

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Braisted, *The United States Navy in the Pacific*, 597-601. The Washington Conference was opened officially by President Harding on the morning of 12 November 1921.

Ibid., 603. The Japanese response was delayed owing to congestion on the single trans-Pacific cable connecting Washington and Tokyo.


Ibid., 313. Emphasis retained from original.
together to insure that an agreement was reached, however, there is no evidence that the United States shared its intelligence coup with the Balfour delegation or the British government in London. Yardley, the most prolific source on the subject, does not even mention the British. It is doubtful that the American government would have entrusted this information to the British for three reasons: first, all countries guard their intelligence assets with the utmost secrecy; second, the United States had the upper hand in the negotiations and knew that Britain was firmly committed to an agreement along the lines of the American proposals; and finally, Secretary Hughes and his colleagues did not really know how far to trust the British because the prospect of a renewal of the Anglo-Japanese Alliance was still alive.

In the immediate aftermath of the treaty, the primary signatories concentrated on adapting their navies to meet the restrictions of the pact. The seemingly triumphant Americans were slow to realize that the Royal Navy had come away from the conference the real winner. The treaty ratios allowed the British the luxury of having guaranteed superiority over both Japan and the strongest European power at the time, France. With a 5 to 4.5 margin over those two rivals, Britain could protect both its European and East Asian interests. Without the treaty, Britain would never have been able to do that with its post-war financial
However by 1925, old suspicions and jealousies had begun to resurrect themselves. Isolationists in the United States Congress continually hampered the efforts of the navy to achieve the equality with the Royal Navy so desperately sought at the Washington Conference. In preparation for its 1927 budget request the United States Navy's General Board estimated that twenty-four 10,000 ton cruisers, 245,000 tons of destroyers, 50,000 tons of submarines and one aircraft carrier were needed over the next few years to achieve and maintain parity with the British.\(^\text{17}\)

In addition, the General Board, which was responsible for procurement planning, was also adamantly opposed to future accommodations with the British. The British decision to ignore American attempts to extend the Washington Conference ratios to include all classes of ships angered the American navy leaders. American planners insisted that British cruiser production, combined with its overwhelming superiority in overseas bases, made parity impossible without substantial new American building. General Board member Rear Admiral William W. Phelps asserted that Britain was America's present rival in world trade and


\(^{17}\text{Roskill, Naval Policy between the Wars, 1:457-58; O'Connor, Perilous Equilibrium, 13.}\)
commerce, and that the American tariff system blocked British expansion. Therefore, he reasoned the British had been maneuvering since the end of the First World War to break down the American protective system.\textsuperscript{18}

This constant obsession with parity was matched on the other side of the Atlantic where the Admiralty was seeking funds incessantly to increase and modernize its cruiser and destroyer inventories. The Admiralty's goal for the elements of its fleet not governed by the Five-Power Treaty was 70 cruisers, 144 destroyers, 72 submarines, and 110 minesweepers by 1 April 1936.\textsuperscript{19} In addition to this, primary emphasis was placed on the buildup of Singapore as the bastion of British naval power in the Pacific. To meet the needs of a large fleet in time of war, a floating dry dock, heavy coastal defense guns, and a new anchorage in the Johore Strait were allocated for Singapore from 1925 to 1928.\textsuperscript{20}

Singapore was supposed to be able to hold out for at least 42 days after the outbreak of war with Japan once these improvements were made. This was the time allotted for the main British fleet to arrive and relieve the besieged garrison. Then the base would be used to support the main fleet in action against the Japanese throughout

\textsuperscript{18}O'Connor, Perilous Equilibrium, 13-14.

\textsuperscript{19}Roskill, Naval Policy between the Wars, 1:457.

\textsuperscript{20}Ibid., 461.
East Asia. The British consistently believed that half-hearted measures would be enough to constrain the Japanese.

Throughout the 1920s the American navy was intent on matching the British for the sake of prestige. The obsession with naval armament levels that gripped most of the American navy's top brass spilled over into the intelligence arena as well. The Office of Naval Intelligence was charged with collecting, analyzing, and disseminating information on foreign navies, including their installations, capabilities, and intentions. For most of the 1920s ONI was preoccupied with counter-espionage and bean counting, whereby tables of comparative naval strengths, types of ships, and tonnages for foreign navies were drawn up and kept updated. This vein of intelligence work was culminated in the fall of 1927 with the appointment of Captain Arthur J. Hepburn as Director of Naval Intelligence. This followed the failure of the Geneva naval disarmament conference held in June, which collapsed over the refusal of both the Americans and the British to compromise on the size, armament, and number of cruisers to be allowed each participant.\footnote{O'Connor, Perilous Equilibrium, 17-19. The main participants were the United States, Great Britain, Japan, Italy, and France.} Hepburn was charged with "the preparation of information, statistics, tables, and charts" to be used in the next naval disarmament conference
scheduled for London in 1930.\textsuperscript{22}

ONI also expressed great concern over the possible fortification of the Japanese mandated islands\textsuperscript{23} as early as 1920, before the Washington Conference. Several different attempts to use scientific expeditions and secret agents failed to come up with any useful information regarding island fortifications, therefore ONI decided to try a more stable approach. Upon learning that the new scout cruiser Milwaukee was going to make its shakedown cruise near the islands, the DNI received permission to pack the ship with intelligence gear and personnel. The Milwaukee's 1922-23 cruise proved quite successful. It returned with superb pictures and data that indicated extensive harbor dredging by the Japanese, but no evidence of fortifications or gun emplacements. ONI was extremely satisfied with this information and ceased its more exotic activities in the region.\textsuperscript{24}

Although the Milwaukee's and similar expeditions did not provide a complete picture of Japanese activity in the

\textsuperscript{22}Dorwart, Conflict of Duty, 43-44. An agreement finally was reached at the London Conference to extend ratios to all classes of warships. The increased cost of competition coupled with the beginning of the world-wide depression provided the primary impetus for this agreement.

\textsuperscript{23}These islands previously under German control were transferred to Japanese custody by the Treaty of Versailles. They included the Caroline, Marshall, and Marian island chains.

\textsuperscript{24}Dorwart, Conflict of Duty, 32-36.
islands, ONI was closer to the truth than it thought. The Japanese in fact were not fortifying the islands, despite many rumors to the contrary. In all of the island battles during the Pacific War, the United States never came across a gun larger than 6-inch or a fortification of pre-1941 vintage. Japanese activity during the inter-war years consisted primarily of building minor facilities and a few airfields, all of which were within the bounds of the Washington Treaty.

Compounding the American intelligence shortfalls in the late 1920s was the poor state of the Black Chamber. At its peace-time height in May 1919, the Black Chamber had a budget of $100,000 and employed 51 people. Of this $100,000 the State Department provided $40,000 and the War Department $60,000. However, by 1929, the unit's production and budget had decreased dramatically, due largely to Yardley's complacency and preoccupation with private interests. The death blow came in May 1929 when the new Secretary of State, Henry Stimson, declared the Black Chamber's work to be unethical. Stimson ordered the immediate withdrawal of State Department funds which now comprised $15,000 of the organization's $25,000 budget, thus bringing about the Black Chamber's demise.26

25Prados, Combined Fleet, 95-98.

26Records of the National Security Agency/Central Security Service, "A Brief History of the Signal Intelligence Service," SRH-29, U.S. National Archives,
The closure of the Black Chamber ended the State Department's involvement in the breaking of foreign codes, leaving this work in the hands of the military services. The files of the defunct organization were boxed up and turned over to William Friedman of the army's Chief Signal Section in October 1929. Subsequently, Friedman was appointed to head up a new sigint operation subordinate to the army's Chief Signal Officer. The small group composed of nine initial members was named the Signal Intelligence Service (SIS). Gradually, more people and responsibilities were added to SIS as it became increasingly successful, especially following its solution of the Japanese "RED machine" cipher in 1936.

The 1930s also ushered in an era of world-wide economic depression that had profound effects on the military policies of the great powers. In the United States it

Washington, D.C., Record Group 457, in Top Secret Studies on U.S. Communications Intelligence during World War II, pt.3, Organization and Administration (Old Dominion University Library; Bethesda, MD: University Publications of America, 1989, microfilm), 3-10, reel 1, frames 0003-0010 (hereafter cited by SRH number, with filing designations in this three part microfilm series).

Specific care will be maintained to delineate between this unit and the British Special Intelligence Service also abbreviated SIS.

SRH-29, 11-13, frs.0011-0013. Carl Boyd, Hitler's Japanese Confidant: General Ōshima Hiroshi and Magic Intelligence, 1941-1945, with a foreword by Peter Paret (Lawrence: University Press of Kansas, 1993), 10-11. This diplomatic cipher was introduced in the early 1930s on the Japanese Cipher Machine, Type A.
cemented isolationalism as the best course for America to heal its wounds, which resulted in the Neutrality Acts of 1935 and 1937 and in armament expenditure reductions. Japan responded to the crisis by becoming increasingly militaristic in pursuit of its long-standing dream of colonial expansion on the Asian mainland. Like all great nations of the time, Japan viewed imperialism as the key to economic prosperity. The acceleration of Japanese designs in China led inevitably to increased tensions with Great Britain.

By the mid-1930s Britain was a beleaguered empire beset with a host of potential threats around the globe. The rise of fascism in Germany and Italy threatened British interests in the Mediterranean, North Africa, the Middle East, and even the home islands themselves. Meanwhile, the growing aggressive tendencies in Japan jeopardized Britain's possessions in China, Hong Kong, and Singapore, not to mention Australia and New Zealand, all of which looked to London for most of their protection. To face these dilemmas the British had inadequate military resources and a profound lack of accurate intelligence on the war potential of enemy states, especially in the Pacific. As late as 1941, to quote historian Peter Lowe:

Of the various elements in the British government, not one can be said to have produced a cogent and accurate estimate of Japanese capabilities. The Foreign Office seemed to regard Japan as a second- or third-rate power
given to bluffing.\textsuperscript{29}

The British, instead, preferred to rely on dubious economic forecasts like a 1937 report that indicated Japan's economic vulnerabilities would be her downfall in any future war. With a shortage of industrial plant capacity and skilled labor, combined with a decided dependence on foreign sources of raw materials, the British Chiefs of Staff predicted that under continuous economic pressure Japan would be forced to sue for peace within two years of a war's outbreak.\textsuperscript{30}

Japan's military capabilities generally were written off with similar aplomb. For instance, the Admiralty even took comfort in racially inspired misconceptions of Japanese capabilities to bolster a growing sense of impotency in the face of their threat to British interests. For most of the 1920s and early 1930s Britain relied on a plethora of mostly bad information. British naval intelligence came up with estimates that Japan was a second-rate naval power whose efficiency was only 80 percent of the Royal Navy's.\textsuperscript{31}

Numerous examples of purely arrogant underestimation of the


\textsuperscript{30}Ibid., 458-59.

\textsuperscript{31}Wesley K. Wark, "In Search of a Suitable Japan: British Naval Intelligence in the Pacific before the Second World War," Intelligence and National Security 1, no.2 (May 1986): 195.
Japanese were believed by officials in London, including speculation that British 14" guns were superior to Japanese 16" guns and that Japanese "slant eyes" would hinder straight shooting and night vision.\textsuperscript{32} To be sure, these were extreme examples, but they were indicative of the type of information being passed back to the Admiralty by its intelligence organization in East Asia.

The British even managed to turn a positive step into a failure. The Far East Combined Bureau (FECB) was set up in Hong Kong in 1935 to monitor and exploit Japanese communications as the beginning of a more serious attempt to evaluate Japanese intentions. However, the bureau was rendered ineffective because of inadequate manning and financing.\textsuperscript{33}

The United States was just as blind to Japanese intentions and capabilities, despite its limited attempts to penetrate the mandated islands, observe Imperial Navy exercises, and explore fleet bases in Japan. As a very homogenous and tightly controlled nation, Japan was a difficult society to penetrate for western spies and informants. Furthermore, the Japanese did not allow nearly the amount of access to their navy yards, ships, and maneuvers as the western powers did. This lack of access for ambassadors, military attaches, and visiting businessmen

\textsuperscript{32}Ibid.

\textsuperscript{33}Lowe, "Great Britain's Assessment of Japan," 457.
deprived the United States of its primary means of intelligence gathering. Therefore, the United States had no greater wealth of sound information than the British, and went about its collection in just about the same lackadaisical manner.

Nevertheless, between 1934 and 1937 ONI published some monographs that revealed details on geography, population, and possible fortification of some of the mandated islands. Although the monographs claimed that fortifications existed on at least six islands in the three chains, they did not contain any specifications, exact locations, or probable armaments. Essentially, the monographs were based mostly on old 1920s data, hearsay, and speculation. In fact, a naval officer on his way to be the assistant naval attache in Tokyo found that "I could have done as well, reading books on Japan and Japanese industry that I was aware of and had in my own library." The American estimates, at least, were a little more realistic than Britain's. For example, in 1934 DNI Captain William Puleston gave credit to Japanese aviation, commenting "Japanese aviators are as good and probably better than U.S. aviators in instruments and night flying." However, he did not complete his assessment with concrete facts or figures.

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34 Dorwart, Conflict of Duty, 62.
35 Ibid., 89.
36 Ibid., 62.
Despite the fact that both countries had a common interest in fathoming the Japanese, no exchanges or corroboration of the scant intelligence available was forthcoming until just before the outbreak of the Pacific war. Apparently, there was no need since both countries believed the situation in the East Asia to be in hand. The Anglo-Americans should have been paying closer attention, however, because the Japanese already had served them a warning notice.

The Japanese threw down the gauntlet to the western powers with their departure from the League of Nations in March 1933 after being censured by that body for their aggression in China, and by abrogating the Washington Treaty in August of the following year. As part this resurgence, the Japanese were determined at last to achieve parity with the Anglo-Americans in naval matters. Herbert Yardley's 1931 disclosure of the Black Chamber's activities had already spurred anti-American sentiments in Japan. Over 30,000 copies of the Japanese translation were sold in less than a month. This caused difficulties for American naval officers studying in Japan, as well as for the United States Army's fledgling sigint unit. Publication of The Black Chamber shocked the Japanese cryptographers, according to


38SRH-29, 12, fr.0012.
the eminent American cryptanalyst William Friedman, "leading them out of their blissful ignorance and causing them to develop really complex methods which are now giving us many difficulties."\(^3^9\)

Both the United States and Great Britain accelerated their own rearmament programs in response to the rapid increase of the Japanese and German naval armament programs. Britain, feeling an immediate threat from both nations, used the opportunity from 1934 to 1939 to embark on a massive building program. However, despite the number of ships delineated in Table 1., Britain was still unable to meet its commitments in the East Asia. This was due in most part to the fact that a majority of new ships built in the 1930s merely replaced obsolete ones in His Majesty's aging fleet.

\(^3^9\)Ibid. Friedman was writing in 1942 and asserted elsewhere in the quoted document that repercussions of Yardley's disclosures took ten years to be fully realized.
instead of adding additional, quantitative strength.

For President Roosevelt the question of naval rearmament was a tricky one. The president had to sell his armament programs to an isolationist Congress in a piecemeal fashion, and then supplement them with discretionary budget authorizations set up by New Deal legislation. Thus the United States authorized ship construction in two big spurts, in 1934 and 1937, whereas the other powers' programs were spread out over each year.

The last two years of peace prior to 1 September 1939 saw the United States and Great Britain begin to exchange information on technical and tactical matters, as well as agree on general lines of responsibility in the Pacific. In talks between the Royal Navy and the United States Navy that lasted from 3 to 14 January 1938, the American representative, Captain Royal E. Ingersoll, indicated that 85 percent of his navy's important units in the Pacific were manned and ready. The British side was encouraged by this information and agreed in principle to divide the Pacific into two zones. The British would cover a line from Singapore through the southern Philippines to the New Hebrides while the Americans would assume responsibility for the entire west coast of North and South America.

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40 Roskill, Naval Policy between the Wars, 2:359-64.
41 Ibid., 1:457-59.
42 Ibid., 2:365-68.
This was a landmark agreement, even though the talks were informal and neither side was bound by a written statement or treaty. The only negative aspect of the conference was that nothing was done concerning intelligence sharing. At last the rival English-speaking powers had come to realize that their true enemies resided in Berlin and Tokyo and not in London or Washington. In the decade since the London Naval Conference, the two former competitors had grown closer out of necessity. Alone, neither country could immediately meet all of its commitments, in cooperation they could form a more credible deterrent. Therefore, two decades of rivalry ended under the shadow of the Axis, as both the United States and Great Britain sought to find more common ground. Although, there was still a long way to go before a true alliance would be formed, at least the two nations had turned the corner before the Axis struck.
In the 1930s, Great Britain and the United States were traveling along opposite paths regarding their intelligence organizations. At the same time, German and Japanese intentions were becoming more suspect. In response to a series of events during 1936, including Germany's reoccupation of the Rhineland, Italy's ongoing war in Ethiopia, and the outbreak of civil war in Spain, Britain took a major step toward gearing up its intelligence services to meet these threats. A Joint Intelligence Committee (JIC) was set up to bring together the representatives of the three military intelligence services and those of the Foreign Office, namely the Secret Intelligence Service (SIS) of which the Government Code and Cipher School (GCCS) was a part. The purpose of this gathering was to collate and reconcile the various estimates on the intentions of foreign states. It was hoped that a consensus could be reached by the separate services on estimates for the European fascist powers, Japan, and the
Soviet Union.\(^1\)

However, the JIC did not have much success until SIS became a willing partner in the spring of 1938. Back at his desk after a lengthy sabbatical, Major Stewart Menzies (the deputy director at the time) decided to follow a proposal put forth by Brigadier F.G. Beaumont-Nesbitt\(^2\) and requested that the SIS be represented at any interdepartmental discussions, making SIS a full, participating member of the JIC. This request marked the end of SIS's isolation from the government machine and breathed a new sense of vitality and significance into the organization.\(^3\)

While these significant steps were being taken back in London, an activity of far greater importance was taking place in the woods outside of Warsaw. There, a group of Polish cryptanalysts led by Marian Rejewski had been reading the German ENIGMA ciphers with some success since 1933. The Poles were aided in their endeavor by Colonel Gustav Bertrand of the French secret service who had obtained seven sets of ENIGMA documents from a German traitor, Hans Thilo-


\(^{2}\)Beaumont-Nesbitt was deputy director of military intelligence at the War Office.

Especially important were two operational instructions that contained precise drawings of the ENIGMA machine and instructions on how frequently the machine's settings were to be reset. This information allowed Rejewski and his team to reconstruct the machine itself and to devise a method for figuring out the key settings. Hence, from 1933 the Poles read ENIGMA traffic with growing success well into 1938.

During the first half of 1938, the Polish Cipher Department reached the apex of its independent achievements. German Army and Luftwaffe traffic was being read almost daily. German naval signals still were causing considerable difficulties because of the five-rotor alignment on their ENIGMA machines, instead of the three used by the other services. Favorable progress was being made on the solution to this problem, so the Poles believed they would be able to keep up with German signal traffic.

However, in the autumn of that year, B-Dienst (the German cipher service) instituted a new series of settings for the machine's rotors that put the Poles back in the dark. Nevertheless, it was not long before Rejewski came up with yet another brilliant solution. By linking six reverse

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5Ibid., 20-22.
6Ibid., 35.
engineered ENIGMA machines together with a few added twists, he broke back into ENIGMA again. This new machine was called a "bomba" after an ice cream treat the Poles were eating at the time of its first success.7

By the summer of 1939 the small Polish staff was swamped by the enormous mass of intercepts being acquired. With war looming on the immediate horizon, General Waslaw Stachiewicz, the Polish chief of staff, made the decision to invite the British and French to come and take a look at the Polish setup. Nothing was to be held back, all successes and failures were to be shared with these important allies. On 24 July a high level British group arrived in Warsaw including Commander Alistair Denniston, Major Menzies, and Alfred Dillwyn Knox, the leader of the so far unsuccessful team trying to break ENIGMA at the GCCS. The British delegation was quite amazed at what they saw out in the Pyry Forest. What the Poles lacked were not ideas or technical expertise but a trained manpower pool and material resources, which the British had in relative abundance.8 The Poles simply could not produce enough bombes, as they came to be known in Britain, and perforated tabulating sheets to keep pace with German changes to their Enigma

8Ibid., 50-52.
system. In return for material assistance, the Poles were offering their considerable talent and inventions.

Before any concrete cooperative agreements could be made, however, the threat of war caused the Poles to make a decision crucial to the course of the Second World War. Facing the horrible though realistic probability of an overwhelming German invasion, the Poles decided to divide their cryptanalytic resources between Britain and France to avoid discovery and capture by the Germans. On 16 August, Bertrand was met by Menzies at Victoria Station in London; he personally had brought over Britain's share of the Polish largess, one ENIGMA machine and a complete set of drawings for a bombe. Two weeks later Poland disappeared into the six year nightmare of Nazi occupation.

Poland's generosity had a great effect on the fate of the entire world. Without the significant contributions obtained from ULTRA, the processed intelligence gained from the ENIGMA machine, it is very questionable whether Britain could have survived the ensuing Battles of Britain and the Atlantic. These successes and Britain's survival were owed in a large measure to Polish courage and tenacity.

At the outbreak of war in September 1939, the Government Code and Cipher School employed 90 men and women of all three military services and SIS. Established by the

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9Garliński, Intercept, 45.

10Ibid., 51-52.
in 1919 from the remnants of the wartime Room 40 and MI 1(b), the purpose of GCCS was to maximize the use of the four main signal intelligence processes: interception, traffic analysis, cryptanalysis, and interpretation. GCCS was nominally under the control of the Foreign Office and directed by the head of SIS. Despite many efforts by the various military services, particularly the Royal Navy, to remove their assets from the GCCS umbrella, the organization held its ground. By the time of the 1939 move to its permanent war station at Bletchley Park near London, GCCS had become a vital cog in Britain's intelligence wheel.

In his official history of British intelligence in the Second World War, historian F.H. Hinsley laid the matter to rest very succinctly,

> the earlier decision to carry out all peace-time cryptanalysis at one place, on an inter-departmental basis, had combined with the fact that Sigint was a continuum of processes, which could not easily be separated from each other, to produce a situation where powerful arguments in favour of preserving an inter-departmental basis for Sigint even in time of war cut across the plans for re-organising Service Sigint on a Service basis.

The United States intelligence community would have

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11Room 40 and MI 1(b) were the Admiralty's and War Office's respective signal intelligence organizations.

12F. H. Hinsley and others, eds., British Intelligence in the Second World War: Its Influence on Strategy and Operations (London: Her Majesty's Stationary Office, 1979), 1:20-23. Hereafter the use of Bletchley or Bletchley Park should be considered synonymous to GCCS, as is custom in most published works concerning sigint matters.

13Ibid., 23.
done well to emulate their English cousins in terms of organization and respect for the importance of signals intelligence. At this same time, the United States intelligence apparatus still was trying to recover from the debacle of Secretary of State Henry L. Stimson's closure of the Black Chamber in 1929. Preferring to hide behind its powerful cloak of neutrality and self-interest, the United States allowed its intelligence apparatus to remain so small and underdeveloped during the 1930s that it could not be an effective and equal partner in intelligence sharing of any kind.

However, as early as January 1932, the army and the navy came to an understanding concerning mutual cooperation. A draft document dated 18 January established that the primary interest of OP-20-G, the navy cryptanalytic section, lay in the naval codes and ciphers of all foreign governments, while that of the army was in military codes and ciphers of said governments. This distinction was made "to prevent unnecessary duplications of effort and to permit a free exchange of technical information between the two sections."14 Though, just to make sure there would be no misunderstandings or delineation of specific spheres of influence, the following caveat was added, "Nothing in this policy shall be construed as an agreement that will prevent

either cryptanalytic section from studying at any time it may desire any code or ciphers of a foreign government in which it has interest."¹⁵ Unfortunately for the United States, interservice cooperation remained on this low level throughout the 1930s.

While 1939 was a year of tension and action in Britain, President Roosevelt watched the international scene very carefully. Despite being unable to assist the British actively because of the various Neutrality Acts, Roosevelt was still eager to do what he could to foil Axis plans. As the crisis deepened that year, the Congress became more flexible and loosened its naval purse strings. First, the president's requests for three Deficiency Acts were passed with little difficulty, allowing for an addition of 145,000 sailors and 25,000 marines to bring the fleet up to its full manning strength. Then, in an even more surprising move, Congress authorized a navy budget of $290.1 million for 1940, an increase of $20.1 million over the navy's actual request.¹⁶ As Table 2 clearly shows, the Roosevelt Administration convinced an awakening Congress to nearly double 1939's ship construction outlay for 1940, demonstrating that the legislative body finally was beginning to realize the Axis menace.

¹⁵Ibid., 1, fr.0394.

¹⁶Roskill, Naval Policy between the Wars, 1:472-74.
Table 2
U.S. Naval Construction Budgets 1934-40

<table>
<thead>
<tr>
<th>Year</th>
<th>Navy Request</th>
<th>Ships</th>
<th>Congressional Authorization</th>
<th>Ships under Construction</th>
<th>Ships in Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>1934</td>
<td>$38.8 million</td>
<td>22</td>
<td>$33.4 million plus $2.3 million from NIRA</td>
<td>46</td>
<td>436</td>
</tr>
<tr>
<td>1935</td>
<td>$32.4 million</td>
<td>22</td>
<td>$33.6 million plus $40.7 million from Emergency Relief &amp; Public Works</td>
<td>64</td>
<td>462</td>
</tr>
<tr>
<td>1936</td>
<td>$140 million</td>
<td>77</td>
<td>$126.9 million</td>
<td>79</td>
<td>491</td>
</tr>
<tr>
<td>1937</td>
<td>$168.5 million</td>
<td>99</td>
<td>168.5 million</td>
<td>71</td>
<td>535</td>
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<tr>
<td>1938</td>
<td>$157 million</td>
<td>121</td>
<td>$130 million</td>
<td>70</td>
<td>533</td>
</tr>
<tr>
<td>1939</td>
<td>$143.7 million</td>
<td>110</td>
<td>$154.1 million</td>
<td>77</td>
<td>546</td>
</tr>
<tr>
<td>1940</td>
<td>$270 million</td>
<td>125</td>
<td>$290 million</td>
<td>138</td>
<td>592</td>
</tr>
</tbody>
</table>

Source: Stephen Roskill, Naval Policy between the Wars, 2:472-74

Although procurement outlays increased dramatically between 1935 and 1940, American leaders made relatively little use of military intelligence in deciding exactly what to buy. As historian David Kahn recounts, "Such matters as whether Germany had 100 divisions or 300 and whether Japan had 10 carriers or 20 were not even raised when policymakers examined the basic issues of strategy."\(^{17}\) Historian Ernest May backs up Kahn's analysis: "The available evidence supports a conclusion that, as of the 1930s, no great power evidenced much understanding of the proclivities of potential enemies."\(^{18}\) If the government in Washington did

\(^{17}\)David Kahn, "The United States Views Germany and Japan in 1941," in Knowing One's Enemies, 478.

\(^{18}\)Ernest R. May, "Conclusions: Capabilities and Proclivities," in Knowing One's Enemies, 525.
not press its military or foreign services to produce a comprehensive threat picture, then how could it have a comprehensive procurement strategy? The important thing, to the navy brass, apparently was the simple fact that more money now was available.

Much to Roosevelt's, as well as Britain's regret, congressional generosity did not extend to the repeal of the Neutrality Acts themselves. Thus, the British were forced to live with the "cash and carry" provision of the 1937 Neutrality Act until late in 1940, when British cash reserves were almost exhausted and their merchant fleet seriously depleted by the U-boats. At least it was better than its predecessor, the Neutrality Act of 1935, which forbade the sale of war material to any belligerent.

As the year 1939 drew to a close, Britain stood nervously with its west European allies facing the Germans in the "Phony War" while the United States watched intently, slowly rearming its navy. Meanwhile, Japan was busy consolidating its gains in its ongoing war with China. Gradually, the idea of cooperating with Britain on intelligence matters began to gain credence among some in the American military, mainly in the army's G-2 branch and Signal Intelligence Service. The following year promised to be one of momentous events and major changes.

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19 Roskill, *Naval Policy between the Wars*, 1:475-76.
CHAPTER 4
1940 — BREAKTHROUGHS AND OVERTURES

The explosion of the German army through the Ardennes in May 1940 shocked the world. Within six weeks the combined armies of Great Britain and France were routed and the French forced to sue for terms. Now that the balance of the war was tilted firmly in Germany's direction new attitudes were needed if Britain was to survive.

The first major step taken to enhance Anglo-American cooperation was Colonel William Donovan's trip to London in July 1940. Donovan, the future head of the Office of Strategic Services, was on a fact-finding mission on the personal invitation of William Stephenson, the head of the British secret services in the Americas.¹ The trip was approved by President Roosevelt, who gave Donovan official government credentials. For his part, Roosevelt hoped to obtain a more objective report on Britain's ability to endure the Luftwaffe's onslaught and possible German invasion. The president could not rely on his anglophobe ambassador to the Court of St. James, Joseph Kennedy.

The British immediately recognized the importance of

Donovan's visit and detailed a high-level group of chaperons to show the American the robustness of the British people and their defenses. Prominent among Donovan's tour guides was Stewart Menzies who went to great lengths to ensure that his visitor was shown every aspect of the British war effort, and its most secret activities, including ULTRA\textsuperscript{2} and Britain's deception operations. Donovan's trip was remarkable in that virtually nothing was held back from a man who was still no more than a private citizen.\textsuperscript{3} Undoubtedly, the British believed that Donovan had, or soon would have, great influence with President Roosevelt and wanted to assure that he be won over to their cause.

It is unclear how much of Bletchley and ULTRA Donovan was shown, or understood, but he certainly saw enough of Britain's will to fight to come back singing the empire's praises. He arrived back in Washington where he boldly declared that Britain would not fall. In subsequent discussions with the president and the military leadership, Donovan stressed the importance of sending immediate aid to the beleaguered island nation. Donovan's enthusiasm was contagious. The president was encouraged greatly by his report and pressed upon his military service chiefs the necessity for sending sorely needed military equipment to

\textsuperscript{2}ULTRA was the cover name the British gave to intelligence gleaned from breaking the ENIGMA's codes and ciphers.

\textsuperscript{3}Brown, The Last Hero, 150.
Britain, leading ultimately to the destroyer-for-bases deal in September 1940 and the passage of lend-lease legislation in March 1941.  

Donovan's July trip, followed by a longer one in December, did far more than just gain the British a few obsolete American destroyers. The most important aspect of these trips was the unparalleled precedent they set for future Anglo-American cooperation during the war. Donovan cannot be given enough credit for fostering good relations with the British. From Churchill to Menzies to the British military chiefs, "Wild Bill" established personal relationships, demonstrated American good will, and provided a back-channel conduit to the president. The backing of a man of Donovan's stature enabled Roosevelt to push against the bounds of neutrality toward open assistance to the British.  

Meanwhile, hard work and diligence were beginning to pay off for the undermanned staff at army SIS. On 25 September after nearly two years of relentless toil, William Friedman's group was able to decipher a complete message

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5Donovan was a prominent Republican lawyer who had served as Acting Attorney General and had won the Medal of Honor during the First World War.
from the Japanese Type-B machine. Only 25 Type-B machines were actually built by the Japanese, but they were distributed to Tokyo's most important overseas missions where they were used to transmit extremely sensitive diplomatic reports on a new cipher, code-named PURPLE. This was a fantastic breakthrough on par with the Polish penetration of ENIGMA, even though it would be a few weeks before Friedman's assistant, Frank Rowlett, could produce a successful replica of the machine itself. Like the Germans, the Japanese would go through the entire war believing their diplomatic codes to be secure when in fact, they were providing the enemy with exact knowledge of Axis war plans and objectives.

The significance of even a partial break into PURPLE already had been grasped by the army's higher echelons. On 31 August Brigadier General George V. Strong, of the newly formed American Military Observer Mission in London, made an astounding offer to share intelligence information at a meeting with the British Chiefs of Staff before an entire text of PURPLE even had been deciphered. Mentioning "certain methods by which the sources of information at the disposal of the United States might be placed at the disposal of the

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7West, Sigint Secrets, 205.

8Smith, The Ultra-Magic Deals, 44.
British Government," Strong undeniably sought an intelligence-sharing deal with Britain.9 F.H. Hinsley corroborates this in his account of the same meeting,

An Army representative [Strong] on the American delegation outlined the progress his service was making against Japanese and Italian ciphers and formally proposed to the Chiefs of Staff that the time had also arrived for the free exchange of intelligence."10

Strong's offer appears quite bold given the circumstances. At this point, American SIS's penetration of the PURPLE traffic just was beginning to make some headway. Furthermore, he tendered his offer without the support of his U.S. naval counterpart, Rear Admiral Robert Ghormley, who sat quietly throughout the entire session.11 Given the heretofore dubious American record of achievement in sigint matters, this state of affairs was not likely to encourage the British to accept the general's offer.

Why would the British want to divulge their most precious secret to a nation not yet entirely committed to the war in exchange for some tidbits from a partially broken Japanese code? Well aware of the dubious relationship of the two United States military services and the embryonic stage of American cryptography as a whole, the British were lukewarm to Strong's offer at the outset.12

9Ibid., 43.

10Hinsley, British Intelligence, 1:312.

11Smith, The Ultra-Magic Deals, 44.

12Ibid.
When thought of in a larger context, British caution in this regard is more understandable. Strong's offer was made while the British were still reeling from the rapid French defeat of May and June. What intelligence information had the Germans gained? Could they have discovered the ULTRA secret from the French? The answers to these crucial questions still were not known in August 1940. As historian Constantine Fitzgibbon put it,

since it could not be known during that desperate summer how much the Germans had discovered, or might discover, from French sources, the first consideration was maximum security such as had perhaps never before been practised by any major power engaged in a major war.\(^{13}\)

At this stage the British had to be extremely careful, since a change in German code procedures or equipment could carry with it the key to Britain's very survival.

The British did agree, however, to provide the American ambassador with a copy of the Dominions Wire, a regular bulletin based on the Joint Intelligence Committee's daily intelligence summary, in order to assuage the pride of their erstwhile ally.\(^{14}\) This Dominions Wire was hardly the type of information the United States Army wanted, but at least it was a start. Meanwhile, Colonel Donovan had returned to the United States recommending that "a full exchange of intelligence by direct liaison between the two naval


departments," which the president duly encouraged. At last the stage was set for some real progress to be made.

A boost toward intelligence cooperation also came from an ancillary direction in August 1940. A British scientific mission, led by Professor Henry Tizard, was sent to Washington under the urging of the British Ambassador, Lord Phillip Lothian. The mission's purpose was to build up confidence in Britain's strength and ability by sharing with the Americans Britain's most closely held military secrets. Tizard's group divulged Britain's most advanced new weapons, including radar, asdic, and proximity fuses. Although the mission was not authorized to disclose ULTRA, the magnitude of its openness and generosity enhanced the trust developing between the two nations. This trust was vital to future moves in the arena of cryptanalysis.

Meanwhile, the cryptographic intelligence organizations of the American army and navy were coming together with a broad outline to improve the delineation of responsibilities. Neither the army's SIS nor the navy's OP-20-G worked in a vacuum. Since the mid-1930s the navy had standing agreements with the army, the Federal Bureau of Investigation (FBI), and the Federal Communications Commission (FCC) on intelligence gathering. The cooperation

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15Ibid.

among these organizations was fairly good for the most part, although much duplication of effort caused by institutional jealousies came into play.\(^7\)

As the prospect for war began to loom larger in the summer of 1940, the two services intensified their efforts to cooperate with each other. On 25 July, just prior to the breaking of PURPLE by the SIS, Captain L. F. Safford\(^8\) sent out a memorandum discussing the division of code breaking and interception. In the memorandum he stated that "it is mutually accepted by the Army and Navy that all navy radio traffic should be handled by the Navy and all military radio traffic by the Army."\(^9\) The disagreement lay in the decision over who would decipher which diplomatic traffic. Safford went on to delineate the four most feasible ways to divide the diplomatic traffic; by nationality, type of cryptographic system, office of origin, or finally by which station transmitted the traffic. The army, represented by Colonel Spencer Akin and General Joseph Mauborgne, rejected the first three methods and urged adoption of the fourth. Safford, in turn, rejected option four and urged ONC Director Rear Admiral Leigh Noyes to push for adoption of

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\(^7\)"Army-Navy-FBI COMINT Agreements," SRH-270, 3-5, reel 5, frs.0401-0403.

\(^8\)Captain Safford was then head of OP-20-G.

\(^9\)SRH-200, 1, reel 4, fr.0411.
option one, by nationality.\textsuperscript{20}

Under Safford's scheme, Japanese diplomatic traffic would be handled by the navy and German diplomatic traffic by the army.\textsuperscript{21} However, before a decision could be reached along those lines, Friedman's unit at SIS broke the PURPLE code and gave the army logical rights over Japanese diplomatic traffic. Eventually, a compromise was reached whereby the two services would continue alternating days deciphering and translating the diplomatic messages for analysis and distribution. This system first was developed in early 1937 so that OP-20-G could ease the burden of SIS with its exploitation of the Japanese Type-A, known as RED, intercepts.\textsuperscript{22} The "odd-even" system was still in effect when the war broke out in December 1941.

Appearing outwardly cumbersome, this method seemed to have worked quite well. The alternating days of responsibility allowed for each service to work on backlogged messages on their "day off" that probably would not have been reviewed. Furthermore, it fostered a certain friendly rivalry to be accurate and timely, while also serving to enlarge the pool of expertise with the PURPLE system.

Despite the opposition of Safford, but with the

\textsuperscript{20}Ibid., 1-3, frs.0411-13.

\textsuperscript{21}Ibid., 3, fr.0413.

\textsuperscript{22}Boyd, Hitler's Japanese Confidant, 10-11.
encouragement of Secretary of War Stimson, Admiral Ghormley followed Strong's example and moved ahead with cryptographic negotiations in London. Ghormley met with Admiral John Godfrey (the British Director of Naval Intelligence) and Menzies on 22 October in what in all likelihood was the start of general cryptographic negotiations between Britain and the United States. In an obviously planned move, Secretary Stimson convened a meeting in Washington the next day to solidify support for Ghormley's actions. The conference included officials from the highest levels of both the War and Navy Departments who eagerly discussed the making of an ULTRA-MAGIC deal. After a strong endorsement by Admiral Harold Stark (the Chief of Naval Operations), all those present came to a consensus that a deal should be struck subject to approval by President Roosevelt. In a telephone conversation the following day General "Pa" Watson, the president's military aide, informed Stimson that "the President was perfectly satisfied to rest upon the judgement of Knox [the Secretary of the Navy] and [yourself] in this matter and approved of what [you] proposed to do." Following this rather sudden decision to reach an agreement with the British, a general pact on cryptanalysis was concluded with the British in December 1940. Unfortunately, the text of this agreement still has not been


24Ibid., 50-51.
made public, so its specifics are not known. However, the course of events that ensued indicates that the agreement must have spelled out the terms of a British-American deal to share information on codes and ciphers of other countries, most likely Germany, Italy, and Japan. Preparations immediately got underway for a joint army-navy mission to travel secretly to Britain. This group, eventually led by the brilliant cryptanalyst Abraham Sinkov, was charged with delivering the United States' most valuable cryptanalytic device, the PURPLE machine, to Bletchley Park.²⁵

The year 1940 had provided many shocks to the world's geopolitical balance, yet it was just a harbinger of things to come. Adolph Hitler's triumphant march through northern and western Europe from April to June left Britain and America stunned and taken aback by the power of Blitzkrieg. Subsequently, the bold Japanese occupation of Haiphong and several military bases in French Indochina in September reminded the Anglo-Americans that they had concerns on the opposite side of the globe as well.²⁶ Also, all doubts as to where the confrontation lines lay were dispelled when the Japanese signed the Tripartite Pact on 27 September. Combined with efforts to ensure good relations with the

²⁵Ibid., 53.

Soviet Union, the Tripartite Pact was the last piece of the diplomatic puzzle for the Japanese. The way was now clear for their long-desired move against all of Southeast Asia. It was with these thoughts in mind that leaders in Washington and London rang in the new year.

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CHAPTER 5
1941 - YEAR OF PROMISE

The year 1941 began with the momentum of events clearly on the Axis side. Most of continental Europe was under firm fascist control while Britain faced the triple threat of the ongoing German air and naval campaigns, as well as the impending possibility of invasion. Japan, with constant German encouragement, seemed poised to strike in the Pacific, although it was not clear what immediate objectives the Japanese had in mind. In any event, a Japanese move south would be counter to Anglo-American interests.¹

In light of this increasing Axis hegemony, the United States was determined to follow up on the intelligence cooperation breakthrough that occurred in December 1940. Despite the temporary incapacitation of William Friedman, the army and navy decided to press ahead with its planned mission to Bletchley Park. Friedman had a mental collapse brought on by stress and overwork just after New Year's. His illness was indicative of the type of mental strain most cryptanalysts were under, and highlighted the need to separate administrative functions from actual cryptanalytic

¹Weinberg, A World at Arms, 249.
work. The decision was made to send Abraham Sinkov in Friedman's place, despite the fact that Sinkov, who carried only the rank of an army captain, did not have nearly the breadth of cryptanalytic experience or stature within the community as Friedman. It is true that there was no one else with Friedman's credentials, but there were naval cryptanalysts available with more experience and higher rank. With all of the high-level missions and conferences criss-crossing the Atlantic during this time, it was easy for a group so junior as Sinkov's to get lost in the traffic.² It was certainly an error of collective judgement for the army and navy cryptographic leadership to send such an obscure group to Britain for such an important visit.

Not surprisingly, the Sinkov mission got little of immediate value in exchange for its magnanimous offering, a PURPLE analog machine, the keys to the Japanese navy's merchant-ship code, and various partial solutions to Japanese fleet codes.³ Naturally, the Americans were treated with every courtesy and given a thorough tour of Bletchley Park - the first given to any Americans - but they did not receive any specific information on the ENIGMA machine, or the bombes. Equally disappointing, Sinkov's group was not given any concrete assurances of future


sharing of ULTRA information.\textsuperscript{4}

The Sinkov mission was truly a missed opportunity for a significant, all-encompassing agreement on specific sigint sharing, since it followed the general pact agreed to the previous December. Sinkov and his colleagues observed the inner workings of Bletchley and came to understand the efficiency of its hut system, but they were in no position to insist on more, despite the importance of the gift they had conveyed. The authorities at Bletchley probably viewed the arrival of this group as an indication that the American sigint community was satisfied with the general accord, and eagerly assumed that the United States was simply being generous with its gift of the PURPLE analog machine. In the words of historian Bradley Smith, "[The Sinkov mission] had arrived at a moment when the usual British reservations about security were compounded by a belief that too much had already been given to the Americans."\textsuperscript{5} However, had a more senior group been sent with the power and authority to push the British, a full cryptanalytic agreement might have been possible. Instead, twenty more months would pass before this goal was achieved.

Meanwhile, the United States pressed ahead with its own sigint resources. As relations deteriorated with the Japanese throughout 1941, President Roosevelt and his senior

\textsuperscript{4}Ibid.

\textsuperscript{5}Ibid., 58.
advisors relied on the PURPLE intercepts, synthesized into a coherent intelligence product known as MAGIC, to stay one step ahead of the Japanese in a dangerous game of brinkmanship. In his book *Double-Edged Secrets*, W.J. Holmes described U.S. foreign policy during the interwar years perfectly:

In the years between the disarmament conference in 1922 and the attack on Pearl Harbor, the courage and boldness of our speech steadily increased while our relative naval strength declined. Our naval policy and our foreign policy in Asia were incompatible with each other. Both had the support of Congress and of the general public, but their incompatibility certainly led to peril in action.6

Following the Japanese occupation of all French Indochina in July 1941, Roosevelt froze all Japanese assets in the United States and on 1 August declared a total embargo on shipment of high-octane gasoline and crude oil to Japan.7 The pre-Pearl Harbor drama in Southeast Asia now was entering the final act, and the Japanese had two alternatives: knuckle under to American demands or seize an alternative source of oil.

No one in the American high command expected the Japanese to abandon their expansionist program and hence, lose face. The questions were where and when the Japanese would strike next. The Dutch East Indies with its vast

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reserves of oil was the obvious answer to the first question, but determining when was the most crucial problem for the United States Navy. Prior to the embargo, the Americans had taken steps to strengthen their position in East Asia. On 29 March 1940, British and American naval officials produced the ABC-1 report which provided the framework for cooperation in the Pacific. The next month, Dutch officials in the East Indies approved of the idea, hoping that a collective front would deter the Japanese from moving south. Unfortunately for these erstwhile allies, the Japanese were not intimidated by their rhetoric, and since no concrete plan of operations was ever worked out the Japanese attack was met with ineffective, piecemeal defensive efforts.

As it existed in 1941, Admiral Husband E. Kimmel's Pacific Fleet was decidedly weaker than Admiral Yamamoto Isoroku's Combined Fleet and could serve at best as only an impediment to Japanese designs. Although America's immediate prospects in the Pacific looked bleak, the American high command was convinced that the time would come when they could go over to the offensive in the Pacific while continuing to fulfill its "Germany first" commitment. As Chief of Naval Operations Admiral Harold N. Stock warned Japanese Ambassador Admiral Nomura Kichisaburo,

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While you may have your initial successes due to timing and surprise, the time will come when you too will have your losses, but there will be this great difference. You will not only be unable to make up your losses but will grow weaker as time goes on; while on the other hand we will not only make up our losses but will grow stronger as time goes on. It is inevitable that we shall crush you before we are through with you.  

Stark, of course, was referring to the United States' vast industrial superiority over the Japanese in general, and the Two-Ocean Naval Expansion Act of June 1940, in particular. Even though prominent Japanese leaders including Nomura and Yamamoto knew this to be true, the Japanese cabinet made the decision for war anyway, in the hope that if they struck quickly and decisively they could emerge victorious.

Before going further into the Anglo-American partnership issue, it is important to establish the state of the United States Navy's cryptanalytic establishment. In January 1941, signal intelligence, cryptography, and physical security for United States naval communications were all handled by a small section of the Office of Naval Communications (ONC) known as OP-20-G. In the overall

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10Ibid. The act authorized $4 billion for the construction of 7 battleships, 18 carriers, 27 cruisers, 115 destroyers, and 43 submarines to be completed by 1946. These ships were in addition to the 358 combatants already in service and the 130 already under construction.

naval hierarchy, the communications division was on the same level as the Office of Naval Intelligence (ONI), both answering directly to the Chief of Naval Operations (CNO). It is logical to assume that friction would have occurred between these two entities, one charged with intercepting and decoding foreign messages and the other with disseminating the intelligence gleaned from those same messages. Indeed, this was exactly the case. In the years leading up to the war the two offices feuded constantly over who should control the products of radio intelligence. This fact was not lost on the British whose consolidation of cryptanalytic organizations under GCCS was completed in 1922.\(^\text{12}\) Regrettably, the recalcitrance of the two American organizations in regard to their relations with each other encouraged British reluctance to establish closer sigint ties with the United States prior to the war. Fortunately for the United States, these differences were largely put aside after the outbreak of the war and the two departments worked together with unparalleled efficiency for the duration of the conflict.

The manning for OP-20-G was less than one thousand officers, enlisted, and civilians during 1941. And of these, only 366 worked in the three main processing centers,

\(^{12}\text{Hinsley, British Intelligence, 1:20.}\)
Negat, Hypo, and Cast.\textsuperscript{13} The remainder manned roughly twenty D/F-intercept stations located in the Atlantic and Pacific Ocean areas.\textsuperscript{14} These stations were vital to the organization because of the relative limitations of the radio signal receivers of the time. Due to atmospherics and limited range of transmission, intercept stations needed to be as close to the source or a relay tower as possible.

Interception of Japanese naval communications was of major importance to OP-20-G. Without intercepts, no decryption or traffic analysis could be done. At the beginning of the war there were only four intercept facilities operating in the Pacific covering the Japanese and sixteen operating in the Atlantic against the U-Boat threat.\textsuperscript{15} The second crucial aspect of interception was the role of direction finding. Direction finding was of extreme usefulness because it permitted traffic analysis to be done in the absence of a break in the actual code.

The Pacific situation in the fall of 1941 provides a clear example of the strengths and shortfalls of traffic analysis. Traffic analysis did not rely on direction finding alone, a working knowledge of Japanese navy call

\textsuperscript{13}SRH-197, 31-33, frs.0380-82. These centers, commonly referred to as stations, were located respectively at Navy Department headquarters in Washington D.C., the submarine base at Pearl Harbor, and Cavite naval base in the Philippines.

\textsuperscript{14}Ibid., 7, fr.0356.

\textsuperscript{15}Ibid., 14-15, frs.0363-64.
signs was crucial. Even when the Japanese changed codes, they usually did not change the call signs for all of their ships and shore commands. This situation had allowed Lieutenant Commander Edwin T. Layton, the Pacific Fleet Intelligence Officer, to amass an extensive card file listing of Japanese naval units and commands. Through the use of his card system and traffic analysis, Layton was able to determine accurately the massive Japanese naval build up in the Marshall Islands and the South China Sea in November 1941. However, Station Hypo's inability to read JN-25, the main Japanese naval code, combined with the radio silence of the Japanese Carrier Striking Force precluded Layton from pinpointing the carriers' location during the last month of peace. This radio silence, the Achilles heel of signal intelligence, underscored the fact that traffic analysis could only be relied on so much in the absence of the ability to read the main operational codes of the enemy.

Meanwhile, the British, having survived the worst of the Luftwaffe in the Battle of Britain, had channeled their best sigint resources toward the German naval ENIGMA machine. Throughout the first half of 1941, the German U-boats wreaked havoc in the Battle of the Atlantic while analysts at Bletchley Park toiled in frustration. However, a major


17 Ibid.
break came for the British on 8 May when U-110 was captured with its ENIGMA machine and codes intact.¹⁸ Fortunately for the cryptanalysts at Bletchley, the Germans did not discover that the submarine had been boarded and still believed their codes to be impenetrable. This gave the British an upper hand for the first time in the war. By June, the British were reading the German naval code, HYDRA, on a daily basis, obtaining current information on the U-boat fleet's order of battle, state of readiness, and tactics.¹⁹

The signing into law of the Lend-Lease Act on 11 March transformed the political and supply relationships between Great Britain and the United States. By early summer it had become quite obvious to both sides that greater naval cooperation was needed to protect the crucial convoys from the U-boat menace. This, in turn, necessitated greater intelligence sharing between the two navies.

In late April, the British naval attaché in Washington approached the American DNI and offered Admiralty estimates concerning Axis submarine dispositions. Although the information provided in these reports did not come from ULTRA at this time, they were snapped up eagerly by OP-20-G. Despite the fact that no cryptanalytic agreement existed between the two navies, common sense and common interest had


¹⁹Ibid.
won out at last.\textsuperscript{20}

After the major break into HYDRA following the capture of U-110, the British were in a quandary about what to provide the Americans. Menzies' assertion that "no adequate cover could be provided if the contents of precise Enigma signals were to be distributed in the U.S."\textsuperscript{21} formed the backbone to his intense opposition to direct American access to ULTRA. Therefore, it was decided that U-boat locational plots would be given to the American Naval Mission in London, but the source of the information would be disguised; traffic analysis was a feasible alternative.\textsuperscript{22} Although still somewhat conservative given the level of American involvement at this stage, at least this exchange was a step in the right direction.

Anglo-American relations were given another major boost in August 1941. At the secret meeting he held with Prime Minister Churchill off the coast of Newfoundland from 9 to 14 August, President Roosevelt pledged to treat Hitler's Germany as the primary enemy. In the event America went to war against the Axis powers, the first priority in men and materiel would be sent to fight Germany while a defensive posture would be assumed against the Japanese. In addition to agreeing on trade, aid, and convoy details, the two heads

\textsuperscript{20}Smith, The Ultra-Magic Deals, 78-79.

\textsuperscript{21}Hinsley, British Intelligence, 2:55.

\textsuperscript{22}Ibid., 86-88.
of government signed the Atlantic Charter, which proclaimed the Four Freedoms and denounced post-war territorial annexations by either country.  

Now the ice was broken officially. After two decades of sparring and jealousy, the two leaders of the United States and Great Britain put aside their nations' rivalry and pledged to cooperate more fully against their common enemies. The Atlantic Charter was the first leg in the impending landmark alliance between Britain and the United States. The two countries essentially were as close as they could get on overall strategic issues without the United States being an active belligerent in the war.

Still, the Atlantic Charter brought forth a loud clamor from the isolationists in Congress, causing Roosevelt and the American military to proceed with deep caution lest the congressmen repeal hard-won legislation like Lend-Lease and the navy construction bills. The navy, especially, could not afford a tightening of the congressional purse-strings with an undeclared hot war raging in the Atlantic and tensions escalating rapidly in the Pacific. Therefore, little progress on intelligence sharing was made in the final months of 1941, because the administration did not want to provoke further congressional displeasure by making more agreements with the British.

The last improvement made by the United States

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Ibid., 83.
intelligence community prior to the Japanese attack on Pearl Harbor was the establishment of an American Joint Intelligence Committee in September. The principle task of the committee was the preparation of daily military and related intelligence summaries for the president and the upper levels of his cabinet. Additionally, the committee, composed of four naval and three army officers, was to ensure the production of special intelligence reports as required by the president and his advisors. In effect, the Joint Intelligence Committee was to serve as a clearing house for intelligence dissemination at the highest levels.

While the sense of cooperation was beginning to take hold in the Atlantic, the old rivalry was beginning to wear down in the Pacific as well. In early 1941, a small group of Americans traveled to the British Far East Combined Bureau in Singapore with a purpose similar to Sinkov's in London. Fortunately, this trip produced a far more tangible result, an exchange of liaison officers between the Combined Bureau and the U.S. Navy's Station Cast in Manila in June 1941. This move established a secret channel of communication between Singapore and Manila which was used to share vital information on JN-25. The arrangement proved extremely beneficial to the Americans because the British

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officer assigned to Station Cast was an experienced cryptanalyst and Japanese linguist.\textsuperscript{25} Since the British were ahead of the Americans on JN-25, having had success with this cipher as far back as September 1939, their liaison provided a means for the Americans to make rapid advances in its tracking of the Japanese fleet.\textsuperscript{26}

Despite this opening exchange of information, however, both countries still mistrusted the other’s intentions in East Asia. Britain was still fearful of American encroachment as its power waned in the southwest Pacific during 1941, while the United States still wanted to avoid being associated with British colonialism. As with operations in the Atlantic, both nations wanted to cooperate, but they were fearful of moving too fast or giving too much away. Indeed, this manner of thinking caused paradoxical actions by both countries.

This dichotomy was illustrated quite clearly on more than one occasion. Even though they were sharing information on JN-25, the British warned Australian authorities not to give information from most secret sources to the Americans. Meanwhile, the Americans, who were relying on British help with JN-25, refused to join in an emergency transmission network in East Asia that would

\textsuperscript{25}Lewin, The American Magic, 46-47.

\textsuperscript{26}Hinsley, British Intelligence, 1:53; Layton, "And I Was There", 206.
enable the British and American armies to communicate with each other or directly with London and Washington. With this type of haphazard intelligence arrangement in place, there should be little wonder about how the Japanese were able to shock the world on 7 December. It would take the combined disasters of Pearl Harbor, the Philippines, and Singapore before the next step would be taken toward intelligence-sharing in the Pacific.

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\(^{27}\)Smith, The Ultra-Magic Deals, 85.
CHAPTER 6

1942 — PARTNERS AT LAST

The attack on Pearl Harbor galvanized the United States into action. Congress immediately declared war on the "Empire of Japan" after an impassioned address by President Roosevelt. Germany's and Italy's subsequent declarations of war against the United States completed the circle. The isolationist camp in Congress now was overcome by events leaving Roosevelt free to run the war and uphold his guarantees to Britain unhampered by political restrictions.

For his part, Prime Minister Churchill was intent on making up for lost time. He arrived in Washington on 22 December with his top military advisors. Churchill was very much concerned that the Americans would be swayed by emotion into concentrating their efforts on Japan rather than Germany.1 In a series of meetings, which came to be known as the Arcadia Conference, the British and American leaders forged a lasting bond and planted the seed that would grow into an Allied victory in the war.

Four major decisions were made during the three week conference. First and foremost, the British delegation was

1Weinberg, A World at Arms, 306.
able to secure a renewed pledge from the American high command to treat Germany as the number one priority. Second, the Combined Chiefs of Staff organization was established to provide a unified command structure. Third, a landing would be made in North Africa as soon as possible in order to drive the Germans from that continent and establish a base for further action. And finally, all raw materials and shipping resources would be pooled together and allocated by joint agreement.\(^2\) The fact that each of these decisions reflects the British point of view demonstrates that His Majesty's Government entered the alliance on a more than equal footing.

This advantage lay primarily with Britain's greater degree of organization and its possession of a blueprint for action. Churchill presented his so-called "Arcadia Plan" at the White House on the first evening of his visit. It called for the massive production of armaments, maintenance of close communications, the wearing down of Germany through indirect means, and a defensive holding pattern in the Pacific.\(^3\) Though these concepts were broad and were not directly incorporated into the agreement detailed above, they did provide the basic underpinnings of British policy.

While the British Chiefs of Staff Committee had been an integrated entity for some time, the American service chiefs

\(^2\)Ibid.

still functioned in relative isolation, each answering to a separate cabinet-level department. The British insistence on creating a combined staff had the added purpose of forcing the Americans to become more centrally organized themselves, with the creation of their own Joint Chiefs of Staff. This essential organizational framework became the foundation on which everything else was built. Without it, the various and many sources of friction that developed between the two countries over the next three and a half years of war could have proved much more difficult to overcome.

The immediate aftermath of the Pearl Harbor debacle was also a time of great opportunity for cryptanalysis. A week before the Japanese attack, Admirals Stark (CNO) and Mores (DNC) had raised the issue of an increase in cryptanalytic cooperation with Admiral Sir Charles Little, head of the British Joint Staff Mission. Therefore, they were certainly eager to conclude an agreement after 7 December, when America's fortunes became tied to Britain's irrevocably. However, despite the urging of Sir Edward Travis, the new chief of the GCCS, Admiral John Godfrey (British DNI) and Brigadier Menzies squashed the sharing initiative once again. The reasons cited this time included a perceived American intelligence shortfall at Pearl Harbor, no clear

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5Smith, The Ultra-Magic Deals, 100-103.
evidence that the disaster would lead to tightened security measures, and no urgent operational necessity to provide more than was already being given in the prosecution of the U-boat war. This was the optimum moment for the British to establish a working relationship with the United States in the sigint war as they had at the strategic level. Instead, Churchill's government chose to hold back in this crucial area until matters became somewhat more desperate.

The ensuing German move in the Battle of the Atlantic forced the British decision-makers to reevaluate their position. Anticipating a lack of American preparedness for full-scale war, Admiral Karl Doenitz unleashed his U-boats on the eastern seaboard of the United States during the third week of December. This operation, codenamed DRUMBEAT, caught the United States Navy totally unprepared and inflicted heavy shipping losses from Maine to Florida. In the first three months of 1942, 1.25 million tons of shipping were lost in the North Atlantic, the vast majority in waters for which the United States Navy was responsible. The resulting civilian panic and virulent press reaction had a rippling effect on Washington policymakers, resulting in loud criticism of the navy and its new CNO, Admiral Ernest

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6Ibid., 102.

J. King. 8

To make matters worse, the German Naval Staff changed the main U-boat operating code from HYDRA to TRITON, including the addition of a fourth rotor, on 1 February 1942, thereby putting GCCS back into the dark for most of the year. 9 This action caught the British codebreakers by surprise which led to charges of perfidy from Washington. The Americans did not understand why British submarine reports were becoming so brief in America's greatest hour of need because the British had yet to tell them that most of their U-boat intelligence was coming from cryptanalysis. Without ULTRA the Allies were forced to rely on HF-DF, sightings, and analysis of past patterns to avoid and detect the U-boat wolf-packs. This method proved to be ineffective for the most part, and Anglo-American shipping suffered tremendous losses for the next ten months. 10

In a feat of cryptanalysis of its own, B-Dienst, the German cryptanalytic organization, broke into the Allies Naval Code Three, which was used to control routing and rerouting of North Atlantic convoys. 11 B-Dienst's break

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8Ibid., 117-18.


11Smith, The Ultra-Magic Deals, 118.
completed a very successful string of good fortune for the Germans. Dönitz's U-boats were enjoying their greatest successes of the war and the governments in London, Washington, and Ottawa began to worry that Britain's lifeline actually could be cut. This led the British to call for a three-power conference on radio communications to convene in Washington. The purpose of which was to reach an agreement on naval sigint matters.  

The ensuing conference of sigint representatives from the three countries (United States, Canada, and Great Britain) lasted from 6 to 17 April and covered virtually every aspect of signal intelligence. After agreeing on an agenda, the conference broke up into several committees to discuss the various fields involved. The committees then reunited on 17 April and the chairmen gave brief reports on their committees' work and offered their recommendations for approval by the whole conference.  

The decisions reached by the conference were wide ranging, but they basically divided the sigint responsibilities by geographic orientation. The primary responsibility for Japanese naval, military, and weather ciphers rested with the Americans, while both the United States and Canada were responsible for the German and Japanese ciphers. The United States and Great Britain divided responsibility for their own ciphers.

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12Ibid., 119.

States and Great Britain would work on the Japanese Flag Officers' and diplomatic codes. On the German side, London took the lead on U-boat, military, air, and weather ciphers, with Washington assisting on general naval codes. Vichy French and Italian traffic were to be handled by the British for the time being, and the Canadians were relegated to just interception assistance since the British and Americans had greater manpower and technical resources.¹⁴

The conference's suggestions were received enthusiastically by the heads of the respective cryptanalytic organizations involved, but they were not developed into a formal agreement. The recommendations were adhered to for the most part as guidelines for the delineation of interception responsibilities only. Much duplication of code-breaking effort continued by all sides.¹⁵ However, attitudes on both sides of the Atlantic were beginning to change because America was actually in the war. The sheer volume of work and lack of success against TRITON was forcing the cryptographic leaderships of both countries, though primarily Great Britain's, to realize that cooperation was essential if the true potential of signal intelligence was to be exploited.

Meanwhile in the Pacific, similar activity was taking place owing to enemy action. The parallel conquest of the

¹⁴Ibid., 6-7.

¹⁵Hinsley, British Intelligence, 2:56.
Philippines and Singapore by the Japanese provided the opportunity for the Americans and the British to establish a combined sigint unit. Unfortunately, since its formation came under American auspices, the opportunity to establish an all-encompassing entity similar to Bletchley Park was lost. Instead, General MacArthur allowed two sigint units to be set up, though both were combined operations with Australians and Britons working alongside Americans.

The American refugees from Station Cast in the Philippines were joined by an Australian unit and a small British detachment from Singapore to become the Fleet Radio Unit, Melbourne, or FRUMEL for short. The liaison officers formerly exchanged by Station Cast and the Far East Combined Bureau were among those relocated to Melbourne. FRUMEL was charged with the assault on Japanese naval codes as well as responsibility for PURPLE traffic, beginning its work in May 1942.\(^{16}\) The army side of the operation, known as Central Bureau, was established on 15 April 1942 from the remnants of the U.S. Army's Station 6 from Corregidor, Australian veterans of the campaigns in North Africa, and British evacuees from Singapore. Central Bureau, which came to be headed by Captain Sinkov in June, took on the exploitation of Japanese army codes, against which the Allies were having

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little success. In fact, the Japanese army's wartime codes resisted the cryptanalytic efforts of all the allied powers until the spring of 1943 when the British Wireless Experimental Centre in New Delhi, Central Bureau, and American army SIS broke the water transport code simultaneously. This was a high-level system that was used to direct the Imperial Army's logistics fleet.

Both FRUMEL and Central Bureau performed admirably during the course of the war, though General MacArthur's command would have been better served by a combination of the two into one unit. Both organizations communicated routinely with their respective superiors in Washington, but they did not have much contact with each other. The intelligence summaries produced by the two offices were rarely coordinated before they reached MacArthur's office. This failing apparently suited MacArthur who fostered this arrangement and allowed it to continue.

Back in the Atlantic, the American and British navies

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17 Ibid., 15, 19-20.


19 Drea, MacArthur's Ultra, 24-25. The General's headquarters actually moved several times during the war: to Melbourne - March 1942, to Brisbane - September 1942, to Hollandia - summer 1944, to Leyte - October 1944, to Luzon - May 1945, and finally to Tokyo - September 1945. In each case FRUMEL remained in Melbourne while advance elements of Central Bureau moved with MacArthur.

still had their hands full with the German navy's Operation DRUMBEAT. With constant urging, Captain H.R. Sandwith, leader of the British delegation at naval headquarters in Washington, convinced the United States Navy that it should at least consider setting up a designated submarine tracking room. On 20 April, Commander Roger Winn, head of the Royal Navy Submarine Tracking Room, arrived in Washington to assist Sandwith in his courtship of Navy Department officials. The efforts of the two Royal Navy officers paid off in June when Commander Kenneth Knowles, the proposed director of the American submarine tracking unit, traveled to London to see first-hand the methods of submarine tracking. While in London, Knowles was let into the ULTRA secret entirely.21 The British readily understood that once the American navy set up its own tracking room it would have to be closely linked to its British counterpart. Full cooperation now was essential since the American side was entirely dependent on Bletchley for ULTRA information.

Knowles' new unit started off with a string of successes facilitated by Bletchley's short-lived break into TRITON during June and July.22 Since this break was based on a partial series of cribs, it could not be sustained, and complete solution to TRITON did not occur until 13 December

22Hinsley, British Intelligence, 2:171.
1942.23 Codenamed "F 211" the American submarine tracking office centralized all U-boat reporting and kept wall charts with the last known position of every identified U-boat. F 211 quickly proved its value to Admiral King and especially to the British, quickly becoming an important cog in the growing wheel of Anglo-American cooperation.24 Now that the Americans had shown themselves worthy, the British were more inclined to move forward in terms of cooperation and sharing.

By June, a second delegation from Bletchley Park had reached another compromise with OP-20-G. In order to prevent OP-20-G's total duplication of effort on German naval ENIGMA, the British agreed to a permanent exchange of personnel between GCCS and OP-20-G, similar to the arrangement between Station Cast and the Far East Combined Bureau in January 1941. Furthermore, GCCS also promised to provide the Navy Department with a bombe to save it the difficulty of developing its own.25 Step by step, Bletchley and OP-20-G were edging toward a full-blown cooperative agreement, with the army SIS right behind them. Yet, one more pique of dissatisfaction was needed to bring it about.

During the summer of 1942, OP-20-G prepared itself to make an all out assault on TRITON. Because F 211's

23Gannon, Operation Drumbeat, 393.
24Smith, The Ultra-Magic Deals, 123.
25Hinsley, British Intelligence, 2:56.
understanding with Bletchley was only verbal, the ever suspicious leaders of OP-20-G feared the British could decide to withdraw their information at any time and leave the U.S. in the dark. Many among the leadership of OP-20-G believed the British had done exactly that during the early stages of Operation DRUMBEAT and were determined to guarantee that the American navy had its own sources. By September, OP-20-G also had grown tired of waiting for the bombe promised by Sandwith in June and announced that it had developed a more advanced machine of its own and had made a contract to have 360 copies built.26

This alarmed the British, who wanted to control ULTRA's production and distribution from Bletchley. However, despite the success of June-July, GCCS realized that a permanent solution to TRITON could only be found by an all out technical attack on the cipher.27 This would require the technical and production assistance of OP-20-G because a large number of high-speed bombes would be needed to effect a permanent break into TRITON.

Two special representatives, John Tiltman and G.C. McVittie, were sent over quickly from Bletchley to begin negotiations with OP-20-G. However, it became apparent rather swiftly that OP-20-G was not going to give up its own program for bombe development. Commander Joseph Wenger, the

26 Ibid., 57.

27 Smith, The Ultra-Magic Deals, 125.
program's initiator, believed that the United States should push ahead on its own and convinced the Navy Department to do just that. On 10 September, the department approved $2 million dollars for the project with an initial target of 112 machines.\(^{28}\)

Realizing that relations between GCCS and OP-20-G were about to unravel, Edward Travis traveled to Washington during the third week of September to see if an agreement still could be salvaged. After conceding that a division of German ENIGMA work should take place, he was able to persuade Wenger that cooperation was in the best interests of both nations. Finally, on 1 October 1942 Wenger and Travis signed the first agreement between the United States and Great Britain establishing a formal arrangement for signal intelligence sharing.\(^{29}\) At last, the very real threat that the United States could strike out successfully on its own convinced the British that a formal, written sigint agreement was in their best interest.

The Wenger-Travis pact was not comprehensive by any stretch. It was limited to Atlantic naval matters with OP-20-G receiving raw ENIGMA decrypts for the first time, along with full technical assistance from Bletchley Park. In return, Bletchley received an equal share of the new American bombes and the complete cooperation of OP-20-G on

\(^{28}\)Ibid., 126-27.

\(^{29}\)Ibid., 127.
Atlantic naval intelligence.\textsuperscript{30}

On the surface the Wenger-Travis agreement did not appear to be much. Its scope was limited to one specific cipher, naval ENIGMA, and one theater, the Atlantic. Details like how the daily traffic would be divided and what system of communications was to be used were left to be worked out in subsequent meetings.\textsuperscript{31} However, Wenger-Travis broke the ground for future, farther reaching agreements, and brought to an end the last vestiges of a naval rivalry between Great Britain and the United States that had lasted for two decades. Indeed, history will bear the fact that except for a brief period during the First World War, the Royal Navy and the United States Navy had shared little affinity for each other since 1775. Therefore, it was quite remarkable that from 1942 onward the two navies operated almost as one for the duration of the war, setting a standard for wartime alliance partnership rarely matched in the history of war.

\textsuperscript{30}Smith, The Ultra-Magic Deals, 127; Hinsley, British Intelligence, 2:57.

\textsuperscript{31}Smith, The Ultra-Magic Deals, 128.
CHAPTER 7

CONCLUSIONS

The Wenger-Travis Agreement is a fitting denouement, though many more pages could be devoted to recounting the details of Anglo-American cooperation during the final three years of the war. Its conclusion was the result of many years of difficult negotiation and compromise, during which both the United States and Great Britain had to put aside much national pride, mutual distrust, and concern about decades of rivalry. The war most certainly would have been won had there been no cryptanalytic agreements, but it would have been far more costly in human terms as well as in matériel and money.

Cryptanalysis, by its very nature, always has been a very private matter for all governments. The sheer complexity of national interests, defense postures, and leadership personalities preclude any sharing of such vital secrets except during times of great distress. Prior to the Second World War, one would be hard pressed, in fact, to find an example of true and significant intelligence sharing. As close as the British and French alliance of the First World War was, little intelligence beyond tactical, battlefield dispositions was exchanged. Information of
strategic, long-term importance usually was kept secret by the originating government.

Rapid advances in technology caused intelligence cooperation policies to be changed during the Second World War. In 1914 radio communication was a new invention and only industrialized governments, a few military headquarters, and the Royal Navy used the medium extensively. By 1939 all navies, tactical military formations, airplanes, and commercial companies were using radio communications constantly. To exploit this vastly expanded network required increasing numbers of trained personnel and rapid technological advances such as the bombe and IBM tabulating machines. Less industrially developed countries, as in the case of Poland in 1939, simply could not keep pace and were forced to seek help from more powerful allies. Indeed, even allies of arguably equal stature required assistance, such as Britain's appeal to the United States during the TRITON dilemma in 1942. Without cooperation, neither the United States nor Great Britain would have been as successful in their code-breaking efforts against the Germans.

The path for the Anglo-Americans was not an easy one. Foremost among the obstacles confronting the Anglo-Americans was the competition for global commercial markets. As the world's leading industrial powers throughout the 1920s and

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1Fitzgibbon, Secret Intelligence, 87.
1930s both countries sought to preserve and expand their trade markets around the world, especially in East Asia. Naturally, this economic competition spilled over into the military arena as well.

Naval power, as the life-line of empire, had been a direct corollary of economic power since well before the First World War. Protection of overseas colonies and markets had led to the great naval races of the late nineteenth century, when all of the major powers attempted to build great fleets of dreadnoughts. The defeat of Russia in 1905 followed by Austria-Hungary and Germany in 1918 left a power vacuum to be filled by the victors, Japan, Great Britain, and the United States. Though allies during the First World War, all three nations sought to enhance their positions following the armistice of 11 November 1918.

The various naval and armaments treaties marking the interwar period were mere vehicles for each nation to better its position in the global balance of power. Japan sought to fortify and expand its holdings in East Asia while the United States and Britain worked to check each other as well as Japan. This rivalry, more than any other, kept the United States and Great Britain at arms length until it became obvious that their struggle only served to enhance the power of their fascist rivals. Even though they came to

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2The term "allies" is used here in its general sense. The United States was actually an associated power during the First World War.
this realization before the Second World War broke out, the years of competition and mistrust were hard to overcome, especially by the military establishments in London and Washington.

Furthermore, isolationist elements in the United States Congress and hardline imperialists in the British government constantly worked to thwart cooperative gestures from either side. The disastrous setbacks of the first two and a half years of the Axis onslaught were required to overcome this short-sighted opposition. The realization that a complete sharing of assets was necessary to reverse the tide finally took hold after Pearl Harbor. Britain needed the vast material resources of the United States to survive its mortal struggle with Hitler's Germany, and Britain's survival was essential for the United States to avoid virtual isolation in a hostile world. Time was required for the United States to harness its immense potential. A British surrender would have given the Axis such an advantageous position that even a fully mobilized America might not have been able to overcome it.

To say that the Anglo-American partnership was one of necessity is not an overstatement. Each nation found in this unique relationship the help it needed to survive the disastrous early stages of the war. Though intelligence was only one subtle aspect of the wartime alliance, it was a very crucial part. The military and economic union of the
two countries could function to full effect only once this fundamental medium of trust was established. The breaking of the German and Japanese codes, along with the development of the atomic bomb, were among the most vital war winning weapons.
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