

# AIR POWER

SUMMER 2012 - Volume 59, Number 2  
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# *History*



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Features	Making Do: The Air War in East Africa, 1940-1941 <i>Daniel J. Kostecka</i>	4
	The Bamboo Fleet: How a Ragtag Airlift Operation Supported Besieged U.S. Forces in the Philippines in World War II <i>John F. Farrell</i>	14
	American Airmen Held as POWs in Far East Russia during World War II <i>George A. Larson</i>	24
	Closing the North Atlantic Air Gap: <i>Where Did All the BRITISH Liberators Go?</i> <i>John F. O'Connell</i>	32
Book Reviews	<i>Mosquito Mayhem: de Havilland's Wooden Wonder in Action in WWII</i> By Martin W. Bowman. Review by Al Mongeon	44
	<i>How the Helicopter Changed Modern Warfare</i> By Walter J. Boyne. Review by John F. O'Connell	44
	<i>Bombs Away! The World War II Bombing Campaigns over Europe</i> By John R. Bruning. Review by Kenneth P. Werrell	44
	<i>Mission to Berlin: The American Airmen Who Struck the Heartland of Hitler's Reich</i> By Robert F. Dorr. Review by Steven D. Ellis	45
	<i>Realizing Tomorrow: The Path to Private Spaceflight</i> By Chris Dubbs and Emeline Paat-Dahlstrom. Review by Grant T. Weller	45
	<i>Shooting the Front: Allied Aerial Reconnaissance in the First World War</i> By Terrence J. Finnegan. Review by Scott A. Willey	46
	<i>Air Force: An Illustrated History</i> By Chester G. Hearn. Review by Elizabeth Yarlett	46
	<i>Come Up and Get Me: An Autobiography of Colonel Joe Kittinger</i> By Joe Kittinger and Craig Ryan. Review by Matthew Dietz	47
	<i>Confronting the Chaos: A Rogue Military Historian Returns to Afghanistan</i> By Sean M. Maloney. Review by Gary Lester	47
	<i>U.S. Marine Corps Aviation Since 1912, Fourth Edition</i> By Peter B. Mersky. Review by Joseph T. Anderson	48
	<i>Dambuster: The Life of Guy Gibson, VC, DSO, DFC</i> By Susan Ottaway. Review by Anthony E. Wessel	48
	<i>The Tejas Story: The Light Combat Aircraft Project</i> By Philip Rajkumar. Review by Gerald Abbott	49
	<i>Finish Forty and Home: The Untold World War II Story of B-24s in the Pacific</i> By Phil Searce. Review by Joe McCue	49
	<i>F-5 Tigers over Vietnam</i> By Anthony J Tambini. Review by Mark R. Cordero	49
	<i>The Right of the Line: The Role of the RAF in World War II</i> By John Terraine. Review by Daniel J. Simonsen	50
	<i>Final Cut: The Post-War B-17 Flying Fortress and Survivors, Fourth Edition</i> By Scott A. Thompson. Review by Scott A. Willey	50
	<i>The Science of Bombing: Operational Research in RAF Bomber Command</i> By Randall T. Wakelam. Review by R. Ray Ortensie	51
	<i>Call Sign Dustoff: A History of U.S. Army Aeromedical Evacuation from Conception to Hurricane Katrina</i> By Darrel Whitcomb. Review by Alexander X. Milhous	51
	<i>Launch Pad UK: Britain and the Cuban Missile Crisis</i> By Jim Wilson. Review by Curtis H. O'Sullivan	52
	<i>Black Sheep: The Life of Pappy Boyington</i> By John F. Wukovits. Review by Steven Agoratus	52
Books Received	53	
Coming Up	54	
President's Message	56	
Letters, News, Reunions, and History Mystery	60	



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All of the featured articles in this summer 2012 issue of *Air Power History* are about World War II. They share another similarity as well—all four spotlight interesting but little-known episodes of that conflict.

In the lead story, “Making Do,” Dan Kostecka takes us to East Africa in 1940, where an ill-equipped and ill-supplied contingent of the Royal Air Force and its British Commonwealth allies face off against Italy’s *Regia Aeronautica*. Fortunately for the British, the Italians’ air arm was in no better shape. After seventeen months of fierce fighting, the Allies won and secured for themselves air and sea lines of communications to North Africa, the Middle East, Iran, and India.

The second article, “The Bamboo Fleet,” by John Farrell, is another story of wartime scarcity. Here, a group of U.S. Army Air Forces pilots flew decrepit, unarmed military and civilian planes through hostile skies to deliver ammunition, fuel, medicine, and personnel to relieve their beleaguered comrades stuck on Corregidor and Bataan. Although the outcome was never in doubt, the pilots of the Bamboo Fleet sought only to delay the inevitable Japanese takeover.

Article three, “American Airmen Held as POWs in Far East Russia,” by George Larson, concerns the treatment of B-29 crews by the Soviets. Although the U.S. and the USSR were allies in the European theater, the situation was quite different in the Far East, where Joseph Stalin practiced neutrality to avoid having to go to war against Japan. The American airmen, who were forced to land in the Far East, were caught in the middle, while U.S. diplomats developed strategies to free them.

In the fourth article, “Closing the North Atlantic Air Gap,” John O’Connell, a former U.S. Navy submarine commander, asks why the most effective antisubmarine weapon—the very long range B-24 Liberator—was not made more available to RAF Coastal Command. In the course of his research, O’Connell came across disturbing allegations that blamed Admiral King, the U.S. Navy CNO for the shortfall presumably because King wanted the planes for the Pacific theater. O’Connell followed the evidence and found the allegations against King baseless. Actually, during 1941 and 1942, the British received a great number of B-24s. But most of the planes went to bombardment and transport units. Moreover, of the few B-24s assigned to Coastal Command, very few went to 15 Group.

Don’t miss the twenty new book reviews by our steadfast gang of reviewers. Also, check new books received, upcoming symposia and professional meetings, reunions, news, letters to the editor, and the ever-popular “History Mystery.”

Who won the Best Article published in 2011? Turn to page 60 for the answer.

Finally, keep up with the latest developments concerning the Foundation. See General Meyerrose’s report on page 56.

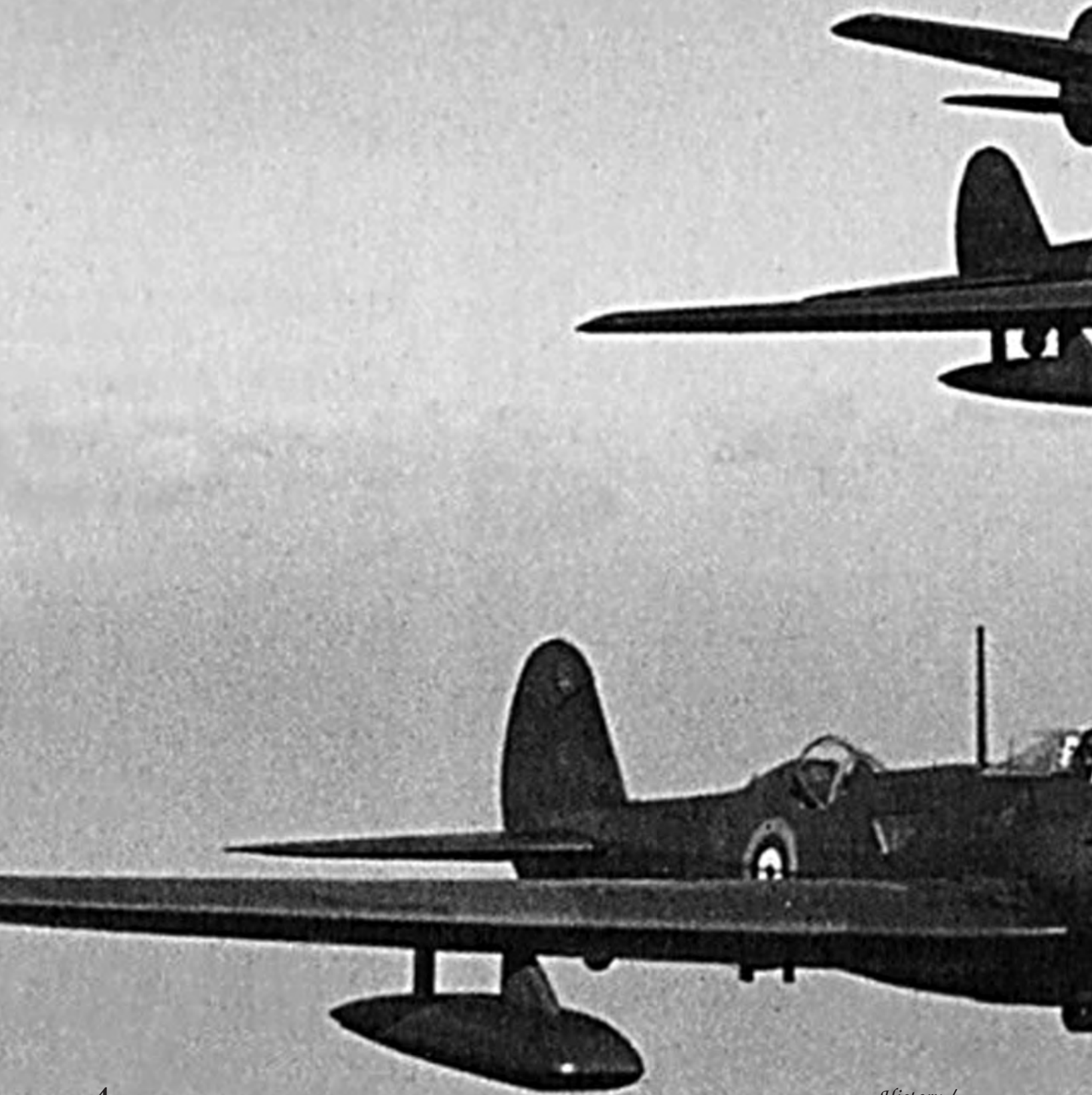
The most significant consequence of the Foundation’s financial woes is that the Fall and Winter 2012 issues will be published only on-line. This practice of two paper issues and two electronic issues, will continue until further notice.



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# MAKING DO: THE AIR WAR IN EAST AFRICA, 1940-1941





Daniel J. Kostecka



(Overleaf) The obsolete British Vickers Wellesley medium bomber was a workhorse of RAF bomber squadrons in East Africa.

**YOU COULD TELL HOW FAR YOUR UNIT WAS FROM THE HOME ISLANDS BY THE TYPE OF AIRCRAFT WITH WHICH IT WAS EQUIPPED**

1940 Map of Italian East Africa and Somaliland Protectorate. ([www.etsy.com](http://www.etsy.com), accessed on June 5, 2011.)



In the Royal Air Force (RAF) during the Second World War it was said that you could tell how far your unit was from the Home Islands by the type of aircraft with which it was equipped. This maxim more than applied to the air units of the British Commonwealth deployed to East Africa in 1940 and 1941 to protect British Imperial interests from Italian forces attempting to conquer Benito Mussolini's new Roman Empire. Flying a mixed bag of British, American, and even German aircraft, many of which were better suited for training squadrons or even museums, and tasked to defend an area half the size of the United States, Commonwealth air forces faced a daunting task. Fortunately for the British, the Italians were in even worse shape. Although more homogenous in terms of equipment, the aircraft of the *Regia Aeronautica in Africa Orientale Italiana* (AOI— Italian East Africa) were generally inferior to that of their enemies and Italian forces were primarily trained and equipped for colonial operations, not modern warfare.<sup>1</sup> Additionally, due to British control of the sea-lanes, the Italians could not expect substantial reinforcements whereas British naval superiority and external lines of communication ensured Commonwealth air forces received meager, yet crucial reinforcements from the far-flung reaches of the British Empire.<sup>2</sup> While lacking the intensity of other theaters, the air war in East Africa still saw more than seventeen months of fierce fighting in difficult conditions and over long distances and the ultimate victory of the Allies in this theater played a key role in securing important air and sea lines of communication to North Africa, the Middle East, Iran, and India.

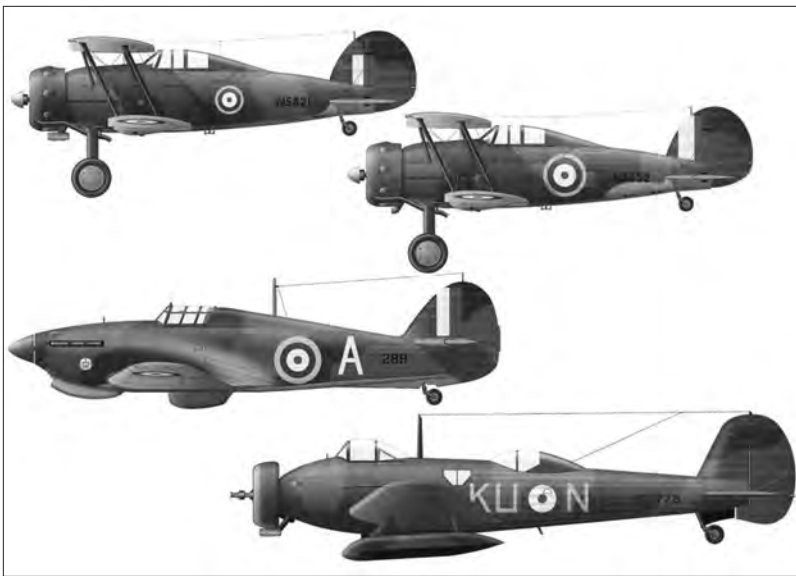
Aerial warfare was not new to the skies of East Africa. In World War I, British colonial forces employed aircraft in limited numbers against Col. Paul von Lettow-Vorbeck's *Schutztruppe* with varying degrees of success.<sup>3</sup> Most notably, in 1915, a small number of land- and sea-based British aircraft were instrumental in helping to locate the German cruiser *Konigsberg* which had taken up refuge in the Rufiji River Delta after preying on British shipping in the Indian Ocean early in the war. After *Konigsberg* was located, British aircraft also played an important role as gunnery spotters and in assessing damage for the Royal Navy monitors tasked with destroying it.<sup>4</sup> Elsewhere in East Africa, British colonial forces operated their small air force of land based aircraft and float planes from crude airfields and lakes in roles such as close air support, reconnaissance, and liaison with limited success although this theater of operations in the Great War did see the first use of an airplane as an ambulance.<sup>5</sup>

More significantly, in 1935 and 1936, Italy employed an air arm of 150 aircraft in its conquest of Abyssinia. The Italians employed aircraft for transport, close support, and the terror bombing of cities and even used aircraft to drop mustard gas on Abyssinian troops. In fact, in one week in February 1936, forty tons of mustard gas was dropped on Abyssinian troops by the *Regia Aeronautica*, and in March 1936, air dropped mustard gas played a key role in halting an Abyssinian counter-attack against Italian Somaliland.<sup>6</sup> The subsequent capture of Abyssinia's capital, Addis Ababa, on May 5, 1936, ended a short but devastating war that saw the death of more than 700,000 Abyssinians along with approximately fourteen million of their farm animals.<sup>7</sup> Strategically, the war led to the consolidation of Abyssinia, Eritrea, and Italian Somaliland into the single entity of *Africa Orientale Italiana* (AOI), continuing a downward spiral in Italian relations with Great Britain and France and setting the stage for the fighting in the East African Theater between Italian and Allied forces during World War II.<sup>8</sup>

While aerial warfare was not new to East Africa, during World War II, for the first time, both sides possessed not only an air force, but also enough aircraft to have a decisive impact on operations in the theater. While Italy's decision to go to war on June 10, 1940, caught the Italian commander in AOI, Prince Amedeo, the Duke of Aosta, unprepared, his strategic position appeared quite advantageous at first glance. His ground forces consisted of 250,000 soldiers and his air force, numbering about 200 operational aircraft, supplemented by approximately 130 more in reserve or various states

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(Top) Italian aircraft flown in East Africa during World War II.

(Above) British aircraft flown. ([www.warandgame.com](http://www.warandgame.com), accessed June 5, 2011.)

**WHEN ITALY ENTERED THE WAR, THE RED SEA AND GULF OF ADEN WERE DECLARED COMBAT ZONES BY THE UNITED STATES**

of maintenance represented, at that point in the war, a significant commitment of air power by a continental nation to its overseas colonies.<sup>9</sup> Italy also possessed a small naval force in the region known as the Red Sea Flotilla consisting of seven destroyers, eight submarines, and fourteen additional vessels, such as, torpedo boats, armed merchant cruisers, and a hospital ship. This small force meant that beginning in June 1940, when Italy entered the war, the Red Sea and Gulf of Aden were declared combat zones by the United States and thus due to its neutrality laws, American merchant ships were forbidden from delivering supplies to British controlled ports in the region.<sup>10</sup>

Although impressive in numbers, the *Regia Aeronautica* in AOI under the command of General Pietro Pinna was not prepared for modern warfare. Of the 187 operational combat aircraft deployed at the beginning of hostilities, 136 were bombers organized into twenty-three squadrons of about six aircraft apiece and fifty-one were fighters organized into squadrons of about nine aircraft apiece. Of the bombers, eighty-two were Caproni CA.133s, a hope-

lessly obsolete high wing monoplane with a fixed undercarriage. Whether it was used as a bomber or a transport, this slow and poorly armed aircraft was only useful when the enemy possessed negligible air defenses. Of the remainder, forty-two were Savoia-Marchetti Sm-81s and while this aircraft was superior in performance to the CA.133, it was still so ineffective that it was quickly relegated to night bombing missions. Only the twelve Savoia-Marchetti SM.79s equipping the 6th and 7th Squadrons could be called modern bombers in terms of speed, range, and bomb load, and overall these aircraft probably represented the most capable bomber employed by either side in East Africa although they were too few in number to be able to make much of a difference.<sup>11</sup>

Of the fighters, the twenty-four Fiat CR.42s Falcos (Falcons) of the 412th, 413th, and 414th Squadrons represented the most well equipped fighter squadrons on either side at the start of the war. The CR.42 has the distinction of being the pinnacle of biplane fighter design. It was the *Regia Aeronautica's* primary fighter during the early years of the war and was produced in greater numbers than any other Italian aircraft in World War II.<sup>12</sup> Faster and more heavily armed than its British counterpart, the Gloster Gladiator, and more maneuverable than the Hawker Hurricane, Italian pilots employed the CR.42 to good effect during the war in East Africa. Four pilots made ace flying the CR.42 in East Africa including Mario Visintini, the top scoring biplane ace of World War II. Four other aces also made some of their claims while flying the nimble biplane over East African skies.<sup>13</sup> The remainder of the Italian fighter force in AOI consisted of the 410th and 411th Squadrons equipped with the Fiat Cr-32, the forerunner to the CR.42. An excellent fighter when introduced in 1934, the Cr-32 enjoyed a considerable degree of success in the Spanish Civil War. However but by 1940, it was obsolete and often proved to be slower than the bombers it was tasked to intercept although its pilots did enjoy some success over East Africa with three aces making a portion of their claims in the Cr-32.<sup>14</sup> In addition to the five squadrons of CR.42s and -32s, a sixth fighter squadron, the 110th, was equipped with nine aging Meridionali Ro-37bis two seat reconnaissance biplanes that proved ineffective as interceptors.<sup>15</sup> Along with their generally obsolete airframes, most Italian aircraft did not carry radios making air-to-air and air-to-ground coordination difficult if not impossible.<sup>16</sup>

Balancing out the bomber and fighter squadrons was a transport force of 25 aircraft consisting primarily of CA.133s and Sm-73s, the transport aircraft upon which the Sm-81 bomber was based. The *Regia Aeronautica* in AOI also possessed 134 additional aircraft that were in various states of maintenance or were placed in reserve status due to a shortage of pilots. This force was comprised of eighty-three CA.133s, seventeen Sm-81s, six Sm-79s, sixteen Cr-32s, eight CR.42s, and four Ro-37bis reconnaissance aircraft.<sup>17</sup>

With only twelve modern operational bombers and twenty-four barely modern operational fight-



A pair of Italian aces, Luigi Baron (above), and Mario Visintini (right).

**THE REGIA AERONAUTICA IN AOI WAS ALSO DESPERATELY SHORT OF MUNITIONS**

ers, General Pinna's forces were in bad enough shape when the war began. However, an obsolete inventory of combat aircraft was only the tip of the iceberg. The *Regia Aeronautica* in AOI was also desperately short of munitions with bombs over 100kg in short supply. The small stock of 250kg bombs was held in reserve for use against ships in harbors while aircraft flying other missions generally carried 50 or 100kg bombs—hardly large enough to do significant damage against most targets unless a direct hit was scored.<sup>18</sup> Additionally, the majority of the airfields in AOI were around the periphery of the territory and thus vulnerable to air attack and of being overrun, while only a small number of airstrips were long enough to operate the two most modern aircraft employed by the Italians—the SM.79 and CR.42. Due to the lack of suitable airfields, the fighters and the units equipped with the more modern bombers were concentrated in central Ethiopia or near the coast of the Red Sea in Eritrea.<sup>19</sup> It was with this obsolete and poorly supported air force that General Pinna was assigned the mission of defending an area six times the size of the Italian homeland while also conducting offensive operations against British airfields, ports, and naval units operating at sea.

**FACING REGIA AERONAUTICA IN AOI WERE THE EQUALLY OBSOLETE AIR FORCES OF THE BRITISH EMPIRE**

Facing *Regia Aeronautica* in AOI were the equally obsolete air forces of the British Empire. With roughly 100 operational aircraft available in June 1940, British and Imperial air forces began the war outnumbered almost two to one and dispersed at bases throughout the region. To the north and west of AOI, in the Sudan, was the Advanced Striking Force of the RAF under the control of 254 Wing composed of three bomber squadrons: Numbers 14, 47, and 223) equipped with the obsolete Vickers Wellesley, based at three airfields near Port Sudan.<sup>20</sup> Withdrawn from service in all other theaters, the Wellesley had set a world long distance flight record in 1938 when two aircraft completed a 7,162-mile flight from Ismailia, Egypt, to Darwin, Australia, in forty-eight hours.<sup>21</sup> Despite its obsolescence, the rugged and long-legged

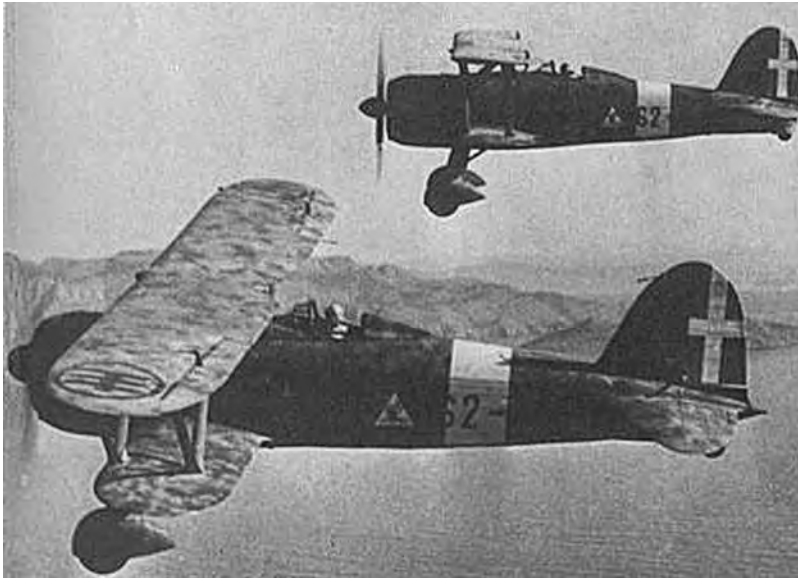


Wellesley was a workhorse of RAF bomber squadrons in East Africa, providing valuable service throughout the theater of operations flying long range missions against Italian airfields and ground troops.<sup>22</sup> Attached to 47 Squadron was a flight of seven Vickers Vincent general purpose biplanes for Army co-operation duties while a detachment of nine Gloster Gladiator biplane fighters from 112 Squadron arrived on 3 June 3, and were split between Summit and Port Sudan.<sup>23</sup> The Gladiator represented the ultimate in British biplane fighter design and served as the primary fighter for British air forces operating in East Africa through early 1941 and five aces, all South African, made some of their claims while flying the Gladiator over East Africa.<sup>24</sup> The missions of British air units over the Sudan included the protection of shipping in the Red Sea (including anti-submarine patrols), air defense, and close support for land forces.

Complementing the forces in the Sudan was a small number of air units based in the protectorate of Aden under the command of Air Vice Marshal (AVM) George Reid. This force consisted of 8 Squadron operating a mix of Bristol Blenheim I bombers and Vincent biplanes, 94 Squadron equipped with sixteen Gladiators, and 203 Squadron operating Blenheim IV long range fighters. Also, at the start of hostilities reinforcements were already flowing to Aden. Blenheim I bombers of 39 Squadron arrived from India while the Blenheim Is of Singapore based 11 Squadron were on their way.<sup>25</sup>

South of AOI in Kenya there were no RAF units and none scheduled to reinforce the British colonies in Southern Africa. However, in this area the forces of the Empire were able to lend a hand. In April 1940, the Rhodesian Air Force deployed to Nairobi its lone squadron equipped with a mix of Hawker Audax, Hardy, and Hart two seat general purpose biplanes where it was designated 237 Squadron RAF.<sup>26</sup> In May 1940, South African units began





(Above) The CR.42 Falco.

(Right) The Caproni CA.133 medium bomber and transport.



**DESPITE THE BEST EFFORTS OF THE COMMONWEALTH AIR FORCES ... THE FIRST VICTORIES IN THE WAR IN EAST AFRICA WENT TO THE ITALIANS**

arriving in Kenya to reinforce the Rhodesians. On May 19, 11 Squadron equipped with twenty-four Hawker Hartebeeste ground support biplanes and a single Fairey Battle deployed to Nairobi, followed on May 25, by 12 Squadron equipped with thirteen South African Airways Junkers Ju-86 airliners converted for bombing. In early June, 1 Squadron of the South African Air Force (SAAF) was in place with its Hawker Fury and Hurricane fighters with a further twelve pilots detached to Egypt for conversion training with the Gladiator—they were to arrive in Kenya in late July. Overall, by the start of hostilities with Italy in June 1940, three SAAF squadrons equipped with a total of forty-six aircraft were operating out of bases at Nairobi, Mombasa, and Dar-Es-Salaam. For transportation and logistics, the SAAF also contributed 10 Junkers Ju-52 transports, requisitioned from South African Airways and three obsolete but still useful Vickers Valentia biplanes from 50 Squadron.<sup>27</sup> The employment of Ju-86s and Ju-52s by the SAAF is one of the few examples of an Allied air force employing German built aircraft in combat during the Second World War.<sup>28</sup>

War in East Africa began on June 11, 1940, when eight Wellesleys of 47 Squadron struck three Italian airfields destroying 780 gallons of gasoline. This effort was complemented by four SAAF Ju-86s bombing Italian positions near the Kenyan border, six hours before South Africa officially declared war on Italy while six Blenheims from Aden attacked Italian targets along the Red Sea coast.<sup>29</sup> The first air-to-air kill of the campaign was a Sm-81 shot down by a Gladiator of 94 Squadron on June 13, during an attack on Aden.<sup>30</sup>

Initial attacks by the Italians focused on port facilities at Aden, airfields in the Sudan, and Allied positions in Kenya in support of Italian ground troops pursuing raiding parties from the King's African Rifles.<sup>31</sup> One of the most successful Italian air attacks of the early stages of the war came on the early morning of June 13, when three CA.133s attacked the airfield at Wajir in Kenya. Braving

heavy anti-aircraft fire, the Italians pressed their attack and according to British records damaged two Hawker Audaxes and destroyed 5,000 gallons of fuel.<sup>32</sup> These types of harassment attacks with small numbers of aircraft characterized the air war in East Africa for both sides and while sometimes the attacks caused significant damage, for the most part the damage was minor in spite of the often optimistic claims from the air crews.

Despite the best efforts of the Commonwealth Air Forces to apply pressure to the Italians, the first offensives and the first victories in the war in East Africa went to the Italians. In early July, in order to tie down the British and prevent raids into Italian territory, the Italians attacked along the frontiers of the Sudan and Kenya. In the Sudan, supported by the *Regia Aeronautica*, Italian troops captured the border towns of Cassala, Gallabat, and Kurmuk, while in Kenya the Italians took the town of Moyale without the loss of any aircraft. In all cases Italian troops heavily outnumbered the colonial garrisons which retreated in good order after offering initial resistance.<sup>33</sup>

However, these actions were nothing more than minor border skirmishes and the Italians failed to use these early victories to make further territorial gains in the Sudan or Kenya. The real prize, at least from the standpoint of Italy's initial war aims was British Somaliland. The Italian invasion of the British colony began in early August 1940, with Italian commanders under enormous pressure from Rome to produce a victory. The British were outnumbered and with no hope of reinforcement, particularly after the fall of France and the elimination of any assistance from French Somaliland. However, the British were determined to put up a fight and RAF units did their part to keep pressure on advancing enemy troops.<sup>34</sup> Fighters based at airfields in Somaliland and bombers flying from Aden attacked Italian airfields and advancing Italian columns. During the height of the campaign, between August 5 and 19, Aden-based air units flew 184 sorties, dropping sixty tons of bombs for the cost of seven aircraft.<sup>35</sup> Wellesleys flying from Aden even provided air cover to convoys in the Red Sea. Bomber sorties from Aden were often flown without fighter support due to Italian pressure on RAF fighter airfields in Somaliland.<sup>36</sup> South African units operating from airfields in Kenya contributed to the fight with attacks on Italian airfields in Ethiopia. However, it was not enough and on August 19, 1940, the last British troops were evacu-



(Above) The Fairey Battle.  
(Right) 3 Sqn Capt. Jack Parsonson.



**DESPITE THE INITIAL VICTORIES IN EAST AFRICA GOING TO THE ITALIANS, THE LONG TERM TRENDS WERE NOT ON THEIR SIDE**

**FOR THE ALLIES, THE OPPOSITE WAS THE CASE**

ated from Somaliland. The Italians had the victory they needed, albeit after suffering almost ten times the casualties they inflicted on their British opponents.<sup>37</sup>

Despite the initial victories in East Africa going to the Italians, the long term trends were not on their side. All of Italy's victories in Somaliland as well as capture of border towns in the Sudan and Kenya involved higher casualties than they inflicted on their enemies in battles where Italian troops held a significant numerical advantage. Additionally, while the *Regia Aeronautica* managed to receive a trickle of reinforcements through the end of 1940, the year ended with Italy's air component in East Africa weaker than when the war began. The *Regia Aeronautica* began the war with 187 operational fighters and bombers and flew in an additional 74 aircraft during the early months of fighting, including thirty-six CR.42s disassembled and stowed in the cargo holds of Sm-82 transports.<sup>38</sup> However, the *Regia Aeronautica* in AOI closed out 1940 with only 132 operational fighters and bombers (along with another 125 in various states of repair) due to high losses in seven months of fighting. Making matters worse, British success against Italian forces in Libya in early 1941 shut down the airborne reinforcement route and Italian forces would only receive twenty-one new aircraft in 1941.<sup>39</sup> On October 22, the *Regia Aeronautica* also began to feel the pinch of its untenable supply situation when it was put on strict fuel rationing.<sup>40</sup>

For the Allies, the opposite was the case. A small but steady stream of reinforcements improved both the quantity and quality of aircraft available to the British and South Africans. Throughout the summer and fall of 1940, 1 and 2 Squadrons of the SAAF replaced their aging Hawker Furies with Hawker Hurricane Mark Is to complement their Gladiators. In October 1940, 3 Squadron SAAF arrived in Kenya equipped with Hurricanes. The arrival of 3 Squadron in Kenya enabled the transfer of some of 2 Squadron's aircraft north to the Sudan to reinforce a detachment of 1 Squadron that had transferred there in September. The British even welcomed two French Air Force, U.S.-built Martin 167F reconnaissance bombers flown to Aden from Syria by French pilots after the fall of France. In early August 1940, Fairey Battles of 11 Squadron of the SAAF flew their first sorties against the Italians. Obsolete in other theaters, the Battles proved effective in close air support and offensive counter air missions in East Africa. One mission by Battles of 11 Squadron highlights the difficulties aircrews in East Africa faced

in assessing damage done to enemy targets. On August 28, 1940, 11 Squadron dive bombed a "substantial vehicle park" at Mogadishu in Italian Somaliland claiming the destruction of 800 trucks. However, when Mogadishu was captured in February 1941, the trucks were discovered to be worn out wrecks that had been dumped there in 1936 after the Italian conquest of Ethiopia.<sup>41</sup>

Additional bombers also arrived in theater with aircraft from the Blenheim equipped 84 Squadron of the RAF based in Iraq arriving in Aden and Blenheims from 45 Squadron arrived in the Sudan from Egypt in August and September. By the end of 1940, Allied units had achieved quantitative parity and qualitative superiority over the Italians with the aircraft available to the SAAF in Kenya more than doubling from its strength at the start of the war. The British and South Africans also consistently employed the flexibility of their exterior lines of communication by shifting units to satellite airfields, between Kenya and the Sudan as needed, as well from the Sudan and Aden to Egypt and from Egypt to the Sudan and Aden based on the demands of commanders in theater. This flexibility increasingly allowed Imperial air forces to achieve local air superiority when and where needed.<sup>42</sup>

After the fall of British Somaliland, the British spent the fall of 1940, consolidating their positions in East Africa, integrating the above mentioned reinforcements, and launching harassment raids into Ethiopia. Italian air operations mirrored British attacks and on October 16, 1940, the *Regia Aeronautica* executed a particularly impressive counter air mission. In the early morning hours a single Vickers Vincent attacked the Italian airfield at Tessenei in Ethiopia. The offending aircraft was in turn followed home to its base at Gedaref in the Sudan by a single CA.133. After making an unsuccessful attack run the CA.133 returned to Tessenei and reported the location of the British airfield. A follow up attack by nine CR.42s of 412 Squadron led





(Above) Capt. Brian "Piggy" Boyle.

(Right) The Vickers Wellseley over East Africa.



**BRITISH  
OFFENSIVE  
OPERATIONS  
IN THE  
NORTH WERE  
JUST AS  
IMPRESSIVE  
AS CUNNINGHAM'S  
DRIVE  
ON ADDIS  
ABABA**

by a single SM.79 destroyed eight of 47 Squadron's Wellesleys and two Vincents while also damaging an ammunition dump. Participating in the attack was the *Regia Aeronautica's* leading East African ace, Capt. Mario Visintini.<sup>43</sup>

The year 1941 began with the Allies poised to take the offensive and in early January British troops reoccupied the frontier posts in the Sudan after the Italians pulled back to consolidate their lines.<sup>44</sup> With an increasing number of Gladiators and Hurricanes equipping their fighter squadrons RAF and SAAF operations put a great deal of pressure on the *Regia Aeronautica* wearing it down through the attrition of constant operations. In early February, Italian commanders informed Rome that without reinforcements the *Regia Aeronautica's* ability to conduct effective operations would cease. Losses due to all causes as well as damage to aircraft meant that on February 1, the Italians had eighty-two fighters and bombers available for operations, a drop of almost 40% in one month. By March 1, the number of operational aircraft available to the *Regia Aeronautica* was down to forty-two despite a small number of reinforcements from Italy and the return of damaged aircraft to service, a drop of almost 70 percent from the beginning of the year. Additionally, increased RAF and SAAF fighter activity meant that the Italian's primary bomber, the CA.133, could not operate without heavy fighter escort.<sup>45</sup> During the fighting in early 1941, three South African pilots from 1 Squadron—Ken Driver, Brian "Piggy" Boyle, and Robin Pare all earned their fifth victories, achieving ace status.<sup>46</sup>

Allied offensive operations in East Africa in early 1941, quickly gained momentum. In February, troops under the command of Lt. Gen. Alan Cunningham, younger brother of the renowned Fleet Admiral Sir Andrew Cunningham, launched what was intended to be a limited offensive from Kenya into Italian Somaliland. Cunningham's army composed of troops from East, West, and South Africa reached the port of Mogadishu before the end of the month and pursued the retreating Italians into Ethiopia.<sup>47</sup> During the advance, Cunningham's troops were ably supported by SAAF units based in

Kenya. Ju-86s of 12 Squadron conducted deep strikes against Italian positions and lines of communication while Fairey Battles of 11 Squadron flew close support missions and harassed retreating Italian columns. Cunningham's advance was also received air and gunfire support from the Royal Navy. Fairey Swordfish bombers operated from the aircraft carrier HMS *Hermes* while in one particularly effective joint operation on February 15, the cruiser HMS *Shropshire* provided gunfire support to Cunningham's troops with Hurricane's from 3 Squadron flying air cover and a U.S. built Martin Maryland reconnaissance bomber directing the cruiser's gunfire.<sup>48</sup> Cunningham's forces continued their advance and on April 3, 1941, they entered Addis Ababa. In less than eight weeks, Cunningham's men advanced almost 2,700 kilometers, through harsh terrain, while defeating a numerically superior army.<sup>49</sup>

Although they faced tougher opposition, British offensive operations in the north were just as impressive as Cunningham's drive on Addis Ababa. After a hard fought siege of over one month, the Italian fortress town of Keren in Eritrea fell on March 27, to British, Indian, and Free French troops.<sup>50</sup> Outnumbered on the ground, but better trained and better equipped the Allied troops, led by the 4th and 5th Indian Divisions ultimately succeeded against the determined Italians in large part due to air superiority won by the RAF and SAAF. On March 15, alone, Blenheims and Wellesleys dropped 38,800 pounds of bombs on the Italian defenses.<sup>51</sup> Sustained ground support operations were enabled by the air cover provided by 1 and 2 Squadrons of the SAAF with 1 Squadron now fully equipped with Hurricanes. The importance of the increasing number of Hurricanes in achieving air superiority during the fight for Keren over the *Regia Aeronautica's* dwindling inventory of Cr-42s and Cr-32s was later acknowledged by Winston Churchill in his postwar writings.<sup>52</sup>

During the offensive against Keren, Italian pilots fought back valiantly against impossible odds. Italian pilots often launched single attacks against Allied bombing raids and continued to make claims with aces Mario Visintini, Luigi Baron, Aroldo Soffritti, Antonia Giardina, and Carlo Canella from 412 Squadron adding to their scores. However, down to only fifteen serviceable CR.42s, the end result was inevitable and the fighting



Italian Savoia-Marchetti SM.79 Sparrowhawks.

**WITH THE CAPTURE OF MASSAWA AND ADDIS ABABA IN APRIL 1941, THE FIGHTING IN EAST AFRICA BEGAN TO WIND DOWN**

around Keren even saw the death of Italy's East African *aces of aces*, Mario Visintini, who crashed into a mountain on February 9.<sup>53</sup> Once Keren fell, the Italian position in Eritrea became untenable with Allied troops capturing Asmara just north of the Ethiopian border on April 1, 1940, and the port of Massawa a week later, although the destruction at the port rendered it useless until repairs could be made. In addition to the drive through Eritrea, on March 16, two battalions of Indian troops landed at Berbera in British Somaliland, only to find the Italian garrison commander and sixty of his men lined up in formation waiting to surrender.<sup>54</sup>

During the final drive through Eritrea, British air power scored a significant strategic victory in early April 1941, with the final destruction of the *Regia Marina's* Red Sea Flotilla. While the original force had been gradually worn down due to combat losses and lack of fuel and spare parts, the flotilla remained a small but viable *fleet in being* that still posed a threat to Allied shipping. This continued to keep the Red Sea designated as a combat zone by the United States and thus forbade entry to American merchant ships.<sup>55</sup> However, as the situation on the ground deteriorated for Italy, the Red Sea Flotilla's position became untenable. Its commander, Admiral Mario Bonetti, ordered the remaining four submarines to Bourdeaux, France, to join the *Regia Marina's* submarine flotilla operating there, while three armed merchant cruisers were ordered to Kobe, Japan, with one succumbing to the guns of the light cruiser HMNZS *Leander* en-route.<sup>56</sup>

Finally, in late March 1941, with British troops closing in on their main base at Massawa, Admiral Bonetti ordered the six remaining destroyers of the flotilla on a desperate mission to attack British shipping in the Suez Canal and the Red Sea. One destroyer ran aground and had to be scuttled on April 1, 1941, while on April 3, the other five came under attack by the Swordfish attack aircraft of *HMS Eagle's* 813 and 824 Naval Air Squadrons, temporarily operating ashore at Port Sudan as well as by RAF Blenheims from 14 Squadron and Wellesleys from 223 Squadron. Two of the destroy-

ers were sunk, while the other three were damaged and eventually scuttled.<sup>57</sup> In addition to losses in warships, almost 90,000 tons of Italian and German merchant shipping were scuttled in Massawa on April 4, with another 62,000 tons of Italian merchant ships scuttled on April 10.<sup>58</sup> While the final destruction of the Red Sea Flotilla by the Fleet Air Arm and the RAF in April 1941, is not listed among the great victories of air power over naval forces in World War II, the battle had a strategic effect on the course of the war disproportionate to the tonnage of ships sunk. The destruction of the Red Sea Flotilla cleared that crucial waterway of Axis warships, allowing President Roosevelt to declare on April 10 that the Red Sea and Gulf of Aden were no longer combat zones, permitting unarmed American merchant ships to directly supply British forces operating in Egypt and the Middle East.<sup>59</sup> In addition to securing sea lines of communication, British victories in East Africa and the Red Sea also helped secure air lines of communication which would permit the movement through the region of air units destined to reinforce Allied positions in North Africa, the Middle East, and India.

With the capture of Massawa and Addis Ababa in April 1941, the fighting in East Africa began to wind down although Italian troops would continue to hold out at the inland fortress of Gondar until November 1941. However, after April, the air war for the Italians was for all practical purposes over. Down to just seven fighters, six bombers, and minimal supplies, the *Regia Aeronautica* in AOI was limited to occasional harassment attacks and attempting to provide aerial resupply to isolated Italian garrisons.<sup>60</sup> To the credit of the Italians, they managed to keep two CR.42s operational through October 1941, flying reconnaissance missions and attacking British ground troops and vehicles. For the British, while some units re-equipped with new aircraft and were redeployed to Egypt after the fall of Addis Ababa, most units continued to soldier on with their aging and well worn equipment flying reconnaissance, bombing, and close support missions until the end of the campaign. Very little air to air combat occurred although the remaining two CR.42s along with occasional supply flights flown to Gondar from Italy through Vichy French controlled Djibouti proved to be a considerable annoyance to the British who were determined to end these activities by the Italians. In September 1941, B Flight of 3 Squadron SAAF, recently re-equipped with twenty P-36 Mohawk fighters deployed to the theater where one of their missions was flying patrols against Italian aircraft using Djibouti's airspace.<sup>61</sup> On October 5, 1941, Capt. Jack Parsonson strafed an Italian Sm-75 cargo plane on the airfield at Djibouti, the only enemy aircraft destroyed by the P-36 in East Africa.<sup>62</sup> Later that month on the 24th, one of the two remaining CR.42s in AOI was shot down while on a reconnaissance sortie by Lt. L. C. H. Hope of the SAAF. Appropriately, Lieutenant Hope was flying a Gladiator, the CR.42's primary opponent in the theater of operations. His victory was the last against an Italian aircraft in East Africa and the



last air to air kill by a Gladiator pilot serving in British markings. On the 25th, Hope flew over Italian positions and dropped a message, "Tribute to the pilot of the Fiat, he was a brave man, South African Air Force."<sup>63</sup>

Except for mopping up operations against Italian troops operating as guerillas in the mountains, the war in East Africa came to an end in November 1941. The last sortie flown by the *Regia Aeronautica* in AOI was on November 22, when the remaining Cr-42 strafed a British artillery position, killing the regimental commander. The Italians burned the Italians to prevent its capture. On the 27th, British and South African aircraft flew their last sorties of the campaign when thirty planes dropped some 12,000 pounds of bombs on Italian

positions around Gondar. The Italians surrendered later that day.<sup>64</sup> It was a hard fought campaign by both sides with imagination, courage, and determination in extremely difficult conditions with obsolete equipment and particularly for the Italians, at the end of very long and often tenuous supply lines was over. The campaign ended with the capture of more than 20,000 Italian and native troops and resulted in the first substantive ground victories for the British in the Second World War and secure lines of communication through southern and central Africa and in the western Indian Ocean. These lines of communication would be vital to sustaining the flow of supplies to Allied forces in North Africa and once Japan entered the war in December 1941, throughout the periphery of the Indian Ocean. ■

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# THE BAMBOO FLEET: HOW A R SUPPORTED BESIEGED U.S. FO WORLD WAR II



# BAGTAG AIRLIFT OPERATION FORCES IN THE PHILIPPINES IN



John F. Farrell

(Overleaf) A still from a captured Japanese propaganda film shows what is believed to be a Bellanca on the side of the runway at Kindley Field, Corregidor. "Jitter Bill" Bradford flew a Bellanca as part of the Bamboo Fleet. (Japanese Government photo.)

**THE BAMBOO FLEET WAS BY ALL ACCOUNTS AN EXAMPLE OF COURAGEOUS AIRMEN AND LEADERSHIP EMPLOYING RESOURCEFUL AIRLIFT INNOVATION IN EXTREMIS**

The history of airlift has often been characterized by courageous Airmen employing innovative leadership and resourcefulness to accomplish the mission. At the beginning of the Cold War in 1948, Airmen employed innovation and physical courage to break the Soviet blockade of Berlin by successfully airlifting sufficient, food, fuel and other supplies often under difficult conditions to the citizens of that beleaguered city. On the occasion of the 60th anniversary of the Berlin Airlift, Secretary of the Air Force Michael Donley paid tribute to "Men of innovation and resilience...men of courage and honor... men who would accomplish the mission regardless of the challenges before them"<sup>1</sup> This historical example of airlift innovation and courage established by a strategic need is renowned throughout the Air Force and the general public. Less well known but perhaps more astounding is an innovative airlift operation born of sheer desperation to resupply military forces in the Philippines in the earliest days of World War II. Cut off from any land supply, blockaded by sea, and with no conventional military airlift assets available, brave Airmen under extremely austere and grueling conditions, displayed the hardiness of spirit to procure, maintain, and fly an eclectic group of military and civilian aircraft dubbed the Bamboo Fleet to ferry supplies and personnel to and from Bataan and Corregidor. While all the Philippines eventually fell to the Japanese, the efforts of these pilots and mechanics saved lives and bought the Allies additional time to prepare for offensive operations against the Japanese in the Southwest Pacific theater of operations. The Bamboo Fleet was by all accounts an example of courageous Airmen and leadership employing resourceful airlift innovation *in extremis*.

Following the December 7, 1941, attack on the United States Pacific Fleet at Pearl Harbor, Japanese armed forces moved to secure their sea lines of communication with the Dutch East Indies by invading and occupying the Philippine Islands. The rapid advance of Japanese ground forces convinced General Douglas MacArthur, Commander of U.S. Army Forces in the Far East (USAFFE), he could no longer defend the entire island of Luzon. On December 23, he instead directed the remainder of his forces retreat to the more defensible Bataan province.<sup>2</sup> Jutting thirty miles south from the island of Luzon, this mountainous peninsula forms the northern boundary of the mouth of Manila Bay. Together with Corregidor, a tadpole-shaped island fortress two miles off the southern tip of Bataan, American and Filipino forces were to guard the

entrances to Manila Bay while awaiting reinforcements that would never arrive. U.S.-chartered inter-island blockade runners managed to resupply Bataan and Corregidor until late February 1942, when the Japanese Navy virtually isolated American forces. By the first week of March, heavy shipping losses from Japanese attacks forced Brig. Gen. Richard Sutherland, MacArthur's chief of staff, to order cessation of further attempts to resupply Corregidor or Bataan by surface ship.<sup>3</sup> Supplies were still arriving to the southern islands of Cebu and Mindanao, but the problem was getting them to the forces on Bataan and Corregidor.

No conventional airlift aircraft were available to resupply the besieged forces. The B-17 bombers at Clark Air Base had been evacuated first to Mindanao and then to Australia, leaving only the Seversky P-35s and Curtiss P-40 Warhawks from the 24th Pursuit Group. By the time they deployed to Bataan airfields, combat losses resulted in only a single P-40 and two P-35s remaining in the inventory. Despite their unsuitability, these fighter aircraft were often used for airlift missions. They were soon transporting passengers and performing courier service, delivering official dispatches and mail to ground units throughout the islands. The P-40s were also used in airdrop missions, delivering medical supplies and ammunition to guerrilla forces. They were even involved in psychological operations, dropping propaganda leaflets.<sup>4</sup> To supplement their fleet on these noncombat missions, the pilots enlisted the use of a Stearman PT-13 (O-1 in Air Force nomenclature), an open cockpit biplane trainer appropriated from the Philippine Army Air Corps.<sup>5</sup> They also utilized a Stinson O-49 observation aircraft.<sup>6</sup> These fighters and trainers, however, had limited space for passengers and cargo. Two passengers often had to crowd into the rear cockpit of the PT-13, and two people sometimes squeezed into the cramped P-35 and P-40 baggage compartments. One pilot even had two passengers in his P-40 baggage compartment while performing a bombing mission.<sup>7</sup> An attempt at using the P-40 as a transport by filling every nook and cranny with supplies resulted in overloading the small aircraft to the point that it nearly crashed on takeoff.<sup>8</sup> In order to augment their limited air transport capability, more capable local civilian aircraft were commandeered and a military aircraft was salvaged for use. These aircraft would become the Bamboo Fleet.

While fighters and trainers performed similar missions, only four aircraft were specifically consid-

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Caricature accompanying Roland Barnick's account of final flight from Bataan in January 1943 *Air Force* magazine.



**WHILE FIGHTERS AND TRAINERS PERFORMED SIMILAR MISSIONS, ONLY FOUR AIRCRAFT WERE SPECIFICALLY CONSIDERED TO HAVE COMPRISED THE BAMBOO FLEET**

ered to have comprised the Bamboo fleet. One of the civilian aircraft was obtained through barter. On March 7, 1942, Capt. William Bradford flew a Stearman O-1 biplane trainer to the island of Panay on a courier mission and to survey the Iloilo airfield. While there, he noticed a 1933 Bellanca Skyrocket he had previously flown as a civilian pilot for an air transport company and later sold to the Filipinos. The island's commanding officer had been using the Bellanca as an observation aircraft. The closed-cockpit of the six-seat Bellanca offered limited visibility for reconnaissance; conversely the open-cockpit O-1 offered increased visibility but, with only the additional seat, limited cargo and passenger carrying capacity. Bradford, therefore, successfully negotiated a trade.<sup>9</sup> His old Bellanca, however, was not in the best shape; in fact, it had previously been condemned for flight.<sup>10</sup> There were only about 200 flying hours left on its single engine, the battery was out, and it had no radio.<sup>11</sup> An intelligence officer stated just as he was about to be evacuated on the Bellanca that the plane was "woefully small, fragile, and entirely inadequate."<sup>12</sup> A senior air officer opted to be evacuated on a PT boat through mine-infested waters patrolled by Japanese naval vessels rather than trust his life on the airworthiness of the decrepit Bellanca.<sup>13</sup> This much maligned aircraft would prove to be the workhorse of the Bamboo Fleet.

The fastest plane in the fleet was the

Beechcraft Staggerwing, a four-place single engine biplane. Whereas the other aircraft in the fleet were limited to a velocity of less than 100 miles per hour (mph), the Beechcraft's 450-horsepower engine could propel the aircraft to a respectable 170 mph.<sup>14</sup> The Staggerwing was also previously owned by Bradford's company.<sup>15</sup> Someone had flown it into Bataan airfield, so it was pressed into service.

The least capable aircraft in the fleet was a vintage 1934 Waco biplane. This aircraft was provided by a Philippine Army Air Corps officer who initially flew the Waco down to Del Monte Field on the southern island of Mindanao as emergency backup air transportation for the B-17s that were evacuating MacArthur and his staff to Australia.<sup>16</sup> Bradford had also sold the plane to the Philippine Bureau of Aeronautics prior to the war.<sup>17</sup> As it had the smallest cargo capacity of the four aircraft, the Waco was the least utilized aircraft of the Bamboo Fleet.

The only military aircraft considered part of the Bamboo Fleet was a single-engine Grumman F2J4 Duck, a U.S. Navy amphibian aircraft. The Navy accepted delivery of these aircraft in 1934, and used them primarily for antisubmarine patrol, target-towing, and sea-rescue.<sup>18</sup> Three Ducks were found run aground and submerged in Mariveles Harbor on the southern tip of Bataan after being strafed by Japanese fighters. After determining one of the Ducks to be salvageable, Mariveles airfield com-



Brig Gen Harold H. George  
first conceived of the  
Bamboo Fleet

**CAPT. WILLIAM BRADFORD WAS...NICK-NAMED "JITTER BILL" BECAUSE OF HIS RAPID-FIRE SPEECH AND NERVOUS IDIOSYNCRASIES**

mander Capt. Joe Moore directed his engineering officer, Lt. Roland J. Barnick, to recover and repair the aircraft.<sup>19</sup> Barnick was described as a "North Dakotan farm boy with a resourceful mind and an engaging grin."<sup>20</sup> He employed "ingenuity and a lot of hard work," in leading his repair team to employ a barge, runway cable and a crane to hoist the derelict Duck out of the bay and get it into flyable condition.<sup>21</sup> Pilots complained the aircraft engine was temperamental and prone to cutting out at altitude.<sup>22</sup> Out of all the dilapidated aircraft in the Bamboo Fleet, Barnick assessed the Duck as "particularly lame" and held together "mostly by faith."<sup>23</sup> When Philippine journalist Carlos Romulo first gazed upon this aircraft that was to fly him out of Bataan, he thought, "It was the funniest looking plane I had ever seen. It looked like something reclaimed from the city dump."<sup>24</sup> Nevertheless, this funny looking plane would be his last, best hope for escaping Japanese capture.

Despite media reports at the time, bamboo was never used as fuselage patching material as the fleet's moniker suggests. The sturdy plant indige-

nous to the region was actually a euphemism for many local operations, such as the communication grapevine being called the Bamboo Telegraph, or the later Bamboo Curtain used as the East Asian version of the East European Iron Curtain.<sup>25</sup> Given the lack of available supplies and spare parts, however, the pilots and mechanics did perform some equally innovative maintenance that kept the fleet flying for one more day. Native Philippine wood other than bamboo was used as large patches for the fuselage.<sup>26</sup> The bullet holes in the salvaged Navy Duck were patched not with bamboo, but with scraps of rubber from inner tubes.<sup>27</sup> After the Duck experienced a cracked cylinder head on a mission, Barnick was able to cannibalize the part from one of the other submerged Ducks.<sup>28</sup> Ground crews replaced landing wheels on both the Beechcraft and the Duck with common truck tires.<sup>29</sup> Even a wheelbarrow tire was used to replace a tail wheel.<sup>30</sup> As a joke, a pilot submitted a supply requisition that included bailing wire, chewing gum, and bicycle tape.<sup>31</sup> It seemed no idea was too outrageous to keep the Bamboo Fleet flying.

The Bamboo Fleet was the brainchild of Brig. Gen. Harold Huston George. The then Colonel George, V Interceptor Commander, was ordered to Australia with his staff on December 24, 1941, to organize defense air bases. As the senior officer after the December 24 departure of Far East Air Force (FEAF) Commander Lt. Gen. Lewis Brereton, George took command of the remnants of the FEAF in the Philippines, which now consisted primarily of fighters on airfields at Bataan and Mindanao. As such, he was promoted to brigadier general on January 30, 1942.<sup>32</sup> George saw the possibility of creating a ferry service to fly supplies into besieged Bataan. Prior to evacuating with MacArthur to Australia, George briefed Bradford on his aerial supply plan, in which long range bombers would fly supplies from Australia to Mindanao, and then the Bamboo Fleet would fly these supplies to forces on Bataan.<sup>33</sup> Bradford unofficially assumed command of the Bamboo Fleet operation.<sup>34</sup>

Capt. William Bradford was the perfect choice to lead the Bamboo Fleet. Nicknamed "Jitter Bill" because of his rapid-fire speech and nervous idiosyncrasies, his expertise and experience were critical to the success of the operation.<sup>35</sup> Bradford was an Army Reservist who arrived in the Philippines in 1931, as general manager and senior pilot of the Philippine Air Taxi Company. That position gave him the opportunity to fly all three civilian aircraft that would become part of the Bamboo Fleet.<sup>36</sup> He had flown more than 3,000 hours in the Bellanca alone.<sup>37</sup> He was also considered the most experienced pilot in the Philippines, having logged over 5,000 flight hours and flown into virtually every airfield in the islands. Believing war with Japan was inevitable and that the Philippines would be a vulnerable target, he volunteered to reactivate his commission in 1940. When the Japanese invaded, Bradford was tasked to fly one of the six unarmed Beechcraft aircraft of the Philippine Air Lines to transport personnel, deliver payroll, and supply





Maj. Gen. Jonathan M. Wainwright (left) with General Douglas MacArthur in the Philippines on October 10, 1941.

**WITH THE NOTABLE EXCEPTION OF BRADFORD, THE BAMBOO FLEET FLYERS WERE PRIMARILY FIGHTER PILOTS**

drugs and medical supplies to the front lines near Lingayen Gulf, oftentimes against the threat of Japanese air attack.<sup>38</sup> Bradford's experience and courage had a calming effect on the other pilots, thus belying his reputation for nervousness.

With the notable exception of Bradford, the Bamboo Fleet flyers were primarily fighter pilots and not airlifters. Fifteen pilots remained on flying status at Bataan field, while others were incorporated into infantry units for ground defense.<sup>39</sup> Of the remaining flyers, six Airmen were designated as dedicated Bamboo Fleet pilots, although other pilots flew a few missions. They alternated flying various aircraft of the Bamboo Fleet, plus their own fighter aircraft. Flying these diverse aircraft under such adverse conditions definitely challenged these pilots' skills because, except for Bradford, few of the other Army pilots were experienced in flying the aircraft of the Bamboo Fleet. Moore's flight training for the Navy Duck consisted of a single briefing with the former Navy pilot of the aircraft who by happenstance was recuperating from his wounds in the Corregidor infirmary.<sup>40</sup> Other pilots were not even

that fortunate. As Moore flew the last P-40 out shortly before Bataan fell, Barnick was then slated to fly the last evacuees out of Bataan in the Duck on April 8, 1942. Having never flown the plane before, he now had to pilot a strange aircraft at night using a flashlight to read the instruments with a propeller stuck at the lower power setting of full pitch against enemy antiaircraft fire. On top of all these technical and operational problems, an earthquake hit Bataan just as they were taking off (Barnick initially thought his passengers were shaking the aircraft). Barnick managed to barely lift off when he started receiving fire from American forces on Corregidor who mistook his unfamiliar plane for a Japanese aircraft.<sup>41</sup> Fortunately, he completed his mission.

As with the fighter aircraft, the initial missions of the Bamboo Fleet were comprised mostly of transporting passengers. Between 100 and 120 personnel were evacuated through the Bamboo Fleet.<sup>42</sup> Bradford alone evacuated twenty-two key personnel from Bataan.<sup>43</sup> Some of the more interesting Bamboo Fleet evacuees included a Chinese emissary from Chiang Kai-shek caught on Luzon when the Japanese invasion commenced.<sup>44</sup> Also evacuated on the same flight were two Nisei American spies who had been undercover among the Japanese community in the Philippines gathering intelligence.<sup>45</sup> Had they been taken prisoner, their ethnicity and status as spies would have made them subject to treason in the eyes of the Japanese. Had the Bamboo Fleet not gotten them out, they would have most probably been executed. Most of passengers, however, were fellow pilots. Although fighter pilots served in infantry units while on Bataan, their skills and experience would be needed in cockpits for the future air operations. Some were ferried to airfields in Mindanao to fly up some of the three fighter aircraft shipped in from Australia, but most were being evacuated to Australia to serve in other flying units.

While the fleet flew out passengers, the return trip would usually bring extra food and ammunition to Bataan. As the siege wore on, medical supplies became the more vital cargo, particularly quinine to ward off and treat malaria. By the end of January, most of the troops were infected with malaria parasites. By March 23, 1942, 750 cases of malaria were reported daily. The Bamboo Fleet's flying in 758,000 quinine tablets helped alleviate the situation, but three million tablets per month were required to prevent the spread of malaria.<sup>46</sup> Despite their efforts, whatever supplies the Bamboo Fleet could fly in was never enough.

Besides flying out passengers and trying to keep forces on Bataan supplied, the Bamboo Fleet airlift also served to help maintain the morale of the forces. Personal cablegrams from an operating station in Cebu often made it through to individual soldiers and airmen. Less than three weeks prior to Bataan's capitulation in the midst of Japanese bombing, weak from lack of food, and wracked with malaria, one fighter pilot noted in his diary how two cables from his wife and parents lifted his spirits.<sup>47</sup>



Carlos P. Romulo was evacuated from Bataan on the Grumman Duck piloted by Roland Barnick.

**THIS INNOVATIVE AIRLIFT PLAN WOULD NOT HAVE SUCCEEDED ABSENT THE RAW PHYSICAL COURAGE OF THE BAMBOO FLEET PILOTS**

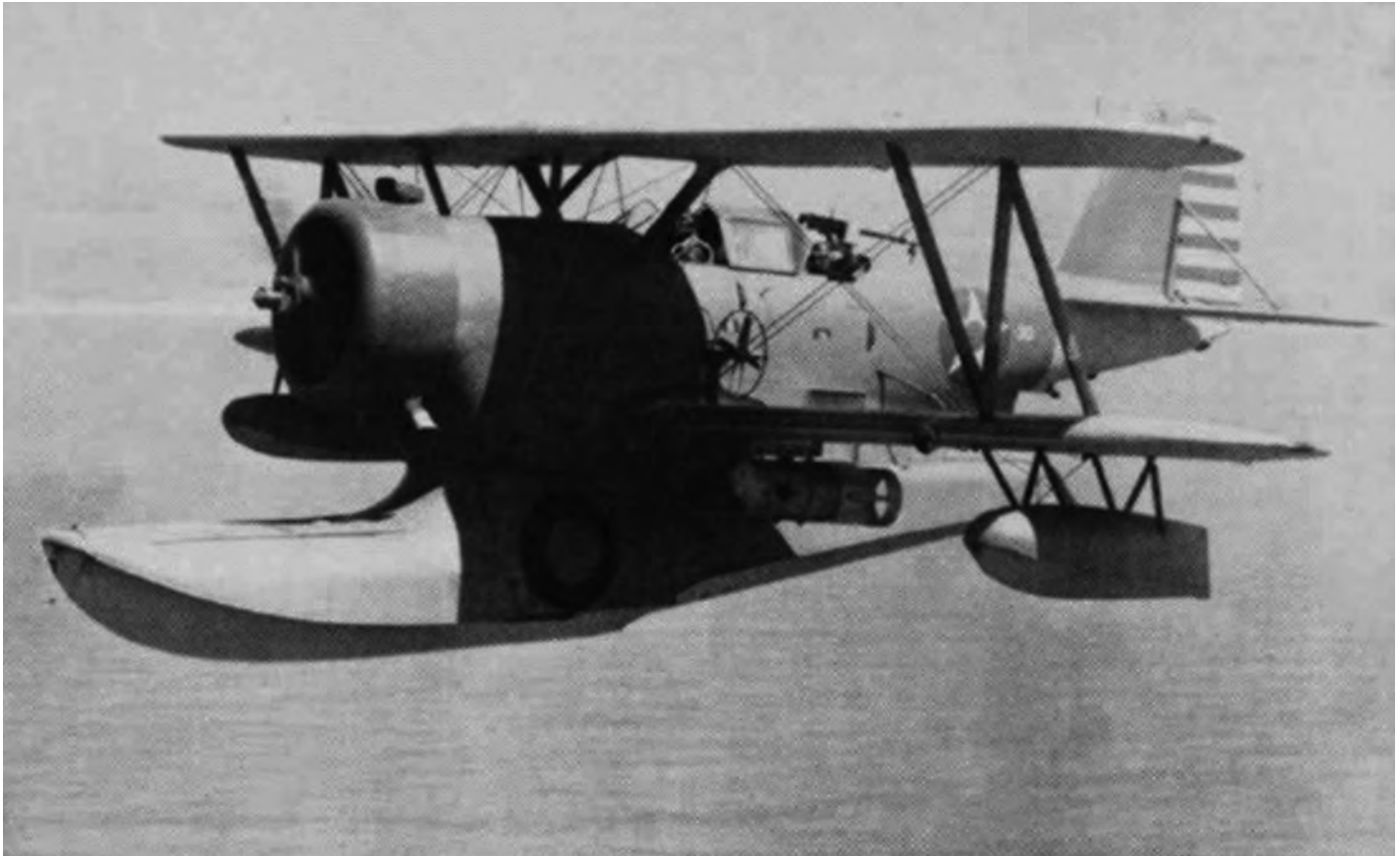
With increasingly bad news from the Philippines reaching the home front, soldiers and airmen could also get word to their anxious families on their status. Coveted luxury items would occasionally make it through to the forces. The fleet flew in sugar and confections, some made by the Filipinos.<sup>48</sup> Joe Moore often brought in candy with the Duck, so the aircraft was christened *The Candy Clipper*.<sup>49</sup> The fleet sometimes brought in liquor.<sup>50</sup> The nurses in the hospitals anxiously awaited underwear, makeup, and other feminine products.<sup>51</sup> Warding off despair during a military situation that was becoming increasingly hopeless was perhaps one of the greatest services performed by the Bamboo Fleet

As the need was great, the aircraft were routinely in danger of being overloaded by carrying more passengers and cargo than was allowed. Aircraft designed to carry between 250 to 600 pounds were regularly hauling 500 to 1,400 pounds of cargo and passengers.<sup>52</sup> Bradford often had to forego taking his own parachute along when flying in enemy skies to conserve weight.<sup>53</sup> Limitations on the amount of cargo were geared more toward volume as opposed to weight. Joe Moore was sure his

Duck was always overloaded due to the lack of climb performance. As the Duck's boat hull made an acceptable cargo compartment, it was always filled to capacity. "Being a fighter pilot, I didn't know much about weight and balances," he said. "We just filled every nook and cranny full, including the rear cockpit."<sup>54</sup> It once took three attempts to get the overloaded Duck to liftoff.<sup>55</sup> When Barnick flew the Duck out of Bataan for the last time, he found that he had to jettison equipment and cargo just to keep airborne. Carlos Romulo recalled, "We threw overboard our baggage, our tin helmets, our parachutes, even our side arms."<sup>56</sup> Floorboards and anything else considered nonessential that could be stripped from the hull were tossed overboard by the Duck's worried passengers. The lightened Duck was then barely able to climb to altitude to complete its final mission.<sup>57</sup> Overloading these aircraft did seriously jeopardize flight safety but, given the alternatives, such as malnutrition, more deaths from disease or capture by Japanese forces, it was a risk the pilots were willing to take.

Flying under these extreme conditions demonstrates that this innovative airlift plan would not have succeeded absent the raw physical courage of the Bamboo Fleet pilots. Indeed, piloting overloaded aircraft appeared to be the least of the hazards these airmen faced. Flying mostly at night under blackout conditions with little illumination into these unimproved runways was hazardous enough, but the occasional missions flown in daylight made these unarmed aircraft nearly defenseless against Japanese fighters. One particular mission was especially perilous. After the fall of Bataan, Corregidor's increasingly desperate situation for more medical supplies in the closing days of the siege forced MacArthur's replacement, USAFFE Commander Gen. Jonathan Wainwright, to insist that an emergency supply flight be made to the island despite everyone's belief that the sortie would be most likely be a suicide mission. If the aircraft was able to dodge Japanese patrols and somehow make it to Corregidor, the pilot would then be forced to land at Kindley Field, a 1,600-foot irregular, uneven and crater-pocked runway that fellow pilot Richard Fellows described as a "terrible field" even by Bamboo Fleet standards.<sup>58</sup> Two pilots who had flown out of Kindley Field in the smaller Waco and O-1 aircraft deemed a landing on the field to be almost impossible.<sup>59</sup> Due to blackout conditions to avoid Japanese bombs and shelling, the only runway lighting for night flights was a searchlight that would dip its beam long enough to momentarily illuminate the landing strip. Wainwright considered landing on this strip "was as dangerous as over-water flying and Corregidor shelling."<sup>60</sup> Even if the pilot could successfully land the plane on Corregidor's single landing strip, the chances of making a flight back out were slim. Hence, the best the pilot might hope for would be to be taken prisoner by the Japanese after Corregidor's inevitable capitulation. Understanding the risks, the pilots agreed to draw cards to determine who would fly the Bellanca, the Bamboo Fleet's remaining aircraft, to the island. Bradford shuffled





(Above) Grumman J2F Duck in 1942, similar to the model in the Bamboo Fleet.  
(Below) Beech Staggerwing.

the deck and supposedly drew the low card, the two of diamonds.<sup>61</sup> The other pilots immediately suspected he already had taken the low card prior to the

draw to ensure he would be the one to fly the mission. Bradford denied the allegation, but did acknowledge that his flying experience both in the Bellanca and in





William "Ed" Dyess after returning to the United States following his escape from Japanese captivity. He managed the pilot force for the Bamboo Fleet.

**STRATEGICALLY,  
THE BAMBOO  
FLEET MADE  
LITTLE  
DIFFERENCE  
IN THE WAR**

the Philippines made him the logical choice. He successfully made the flight to Corregidor and landed at the field, but his Bellanca veered off the side of the runway and crashed when attempting a takeoff the next day. Bradford and his passengers survived but the Bellanca was a total loss. To show his gratitude for making the flight, Wainwright arranged for Bradford to fly out on one of the last two Navy Catalina flying boats to fly into Corregidor prior to its surrender to the Japanese forces.<sup>62</sup> Bradford's miraculous one-way flight into Corregidor marked the final mission of the Bamboo Fleet.

The pilots' physical courage was reinforced by their hardiness of spirit, given they were tasked to make these flights under deteriorating health. Malaria and dysentery on Bataan were wreaking havoc on the pilot force. Above the door of the thatched hut that served as the Bataan Field clubhouse read a placard, "The Dysentery Cross Awarded to the Quartermaster by the Men of Bataan Field."<sup>63</sup> Bataan Airfield Commander Capt. William Dyess stated, ". . . I was fighting on two fronts that day—both against the [Japanese] and diarrhea."<sup>64</sup> The lack of food was also taking its toll on the pilots. Bradford had lost forty pounds.<sup>65</sup> By the middle of March 1942, 60 percent of the pilot force was deemed incapable of flying their aircraft due to malnutrition, and those who could fly were

completely spent after a mission. The situation became so unsafe that the flight surgeon threatened to ground every pilot unless they received ample food. As a result, extra rations for the pilots were arranged to be transported from Corregidor.<sup>66</sup> The Bamboo Fleet pilots were somewhat more fortunate than other pilots on Bataan in that they could eat better when flying down to Del Monte or Cebu. Capt. Moore made it a point to shuttle extra pilots to these supply points for two days so they could regain their health by eating more and better food.<sup>67</sup> When a pilot was flown to Cebu on April 3, en route to Mindanao to pick up a P-35, he was amazed to find that only a trickle of the available supplies was getting to Bataan. He noted in his diary "It seems impossible that 400 miles north of here about 70,000 men are starving to death when there is so much of everything down here."<sup>68</sup> His frustration only seemed to further motivate the Bamboo Fleet pilots to bring much more into Bataan.

Strategically, the Bamboo Fleet made little difference in the war. Despite their best efforts, there was little the four small aircraft and tenacious pilots could do to prevent Bataan and Corregidor from falling to the Japanese. The Bamboo Fleet, however, did have an impact in the defense of the Philippines. There is no doubt these flights saved many lives, both through the evacuation of personnel and the delivery of medical supplies. Every person they evacuated was one less potential combat casualty, or victim of the Death March or Japanese prison camp. Many of the pilots they evacuated would go on to fly and fight again in the Pacific and other theaters of the war. The delivery of medicine, particularly quinine, also made a critical difference between life and death for many military personnel. Lt. Col. William Kennard of the Medical Corps, himself a Bamboo Fleet evacuee, claimed that "through the initiative and sheer guts of the Air Corps pilots" the drugs they delivered enabled the treatment of several malaria cases and prevented morbidity. He also contended that treating malaria maintained the fighting force and delayed Bataan's surrender by at least two weeks.<sup>69</sup> Those two weeks helped keep resistance alive in the Philippines for a total of six months, four months longer than the Japanese had planned. Those extra months required the Japanese to invest additional manpower and resources in the Philippines as opposed to other areas of the Pacific theater, thus buying MacArthur more valuable time in preparing his forces to repel and eventually counterattack the enemy. In novelist and historian Walter Edmonds' assessment of the overall effort in the initial months, he stated "Their accomplishment, little as it may have seemed in that enormous area of island-studded seas, was probably the deciding factor that kept the Japanese from trying to isolate Australia before we were able to prevent him."<sup>70</sup> As President Franklin Roosevelt started in his May 6, 1942, message to Wainwright shortly before the fall of Corregidor and the surrender of the Philippines, "The American people ask no finer example of tenacity, resourcefulness, and steadfast courage."<sup>71</sup> ■

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# American Airmen Held as POWs in Far East Russia during World War II





# George A. Larson

(Overleaf) A Boeing B-29 Superfortress on display at Lackland Air Park, Lackland AFB, San Antonio, Texas. (Photograph by author.)

(Right) Ramp Tramp II on the apron.

**ONE B-29 BOMBED A TARGET OF OPPORTUNITY WHEN IT WAS UNABLE TO REACH THE PRIMARY TARGET**

**THE SQUADRON DEBRIEFING REPORT OF RETURNING B-29 AIRCREWS INDICATED "RAMP TRAMP" HEADED FOR AND LANDED IN SOVIET TERRITORY**

One of the lesser known stories of World War II concerns the internment of American aviators in the Soviet Union. In the China-India-Burma (CBI) Theater of Operations, American and British engineers built or upgraded airfields to accommodate B-29s around Kharagpur, India, sixty-five miles west of Calcutta. These bases were located along the Bengal-Nagpur Railway or off spur lines from the main railway network. The bases—Chakulia, Dudhkundi, Kharagpur, Pirdoba and Charra—were home for B-29s in the CBI when not forward deployed to Chinese built bomber airfields. Chengta was the Chinese part of the Very Heavy Bomber (VHB) deployment against strategic targets in the Japanese home islands. The forward air bases—Hsinching (40th Bombardment Group), Pengshan, Kunglai and Kwanghan—became operational on May 1, 1944.

On July 29, 1944, B-29s of the 771st Bombardment Squadron (BS) took off to attack the Japanese Iron and Steel Works at Anshan, Manchuria. The squadron launched eight B-29s, with seven hitting the primary target with excellent results. One B-29 bombed a target of opportunity when it was unable to reach the primary target. One crew was reported missing, aircraft number 42-6256, called "Ramp Tramp."<sup>1</sup> The squadron debriefing report of returning B-29 aircrews indicated "Ramp Tramp" headed for and landed in Soviet territory.<sup>2</sup>

"Ramp Tramp," commanded by Captain Howard R. Jarrell (crew consisting of Pops Bailey, Early Lewis, Keat Paul, Frank Sommers, Jerome Zuercher, Frank Carney, Herbert Bost, Mike J. Losik and George Hummel), was badly damaged. Jarrell decided to head toward Vladivostok, believing they could not make it back to a base in China. Once Soviet mechanics repaired and refueled the aircraft, they could take off and return to China. During the flight to Vladivostok, the B-29 suffered several electrical systems failures, with the radio able to receive but not transmit. However, once the B-29 landed at Vladivostok, the Russian air force retained the aircraft and interned the crew. "Ramp Tramp" was one of three intact B-29s, that landed in Russia.<sup>3</sup>

On August 21, 1944, sixty-one Chengtu, China based B-29s assigned to the 40th BG attacked the Imperial Iron and Steel Works at Yawata on a daylight mission. Yawata, one of the B-29s primary targets flown from the forward air bases in China, was located on Kyushu Island near the Shimonoseki Strait at the north end of the island. The raid cost



fourteen B-29s (one to AAA, four to Japanese fighters, one to ramming by a Japanese fighter, and one to aerial bombing from a Japanese aircraft above the bomber formation).<sup>4</sup>

The crew of a 40th BG aircraft 42-24829 assigned to the 395th BS, "What Happened?" bailed out near Vladivostok. The pilot, Maj. Richard McGlinn, rescued forty-four days later, had nearly starved to death. The crew consisted of:

Aircraft cmdr/pilot, Maj. Richard M. McGlinn  
Co-pilot, 1st. Lt. Ernest E. Claude  
Flight engineer, 1st. Lt. Aiman W. Conrath  
Bombardier, 1st Lt. Eugene C. Murphy  
Navigator, 2d. Lt. Lyle C. Turner  
Radar operator, SSgt. Melvin O. Webb  
CFC/gunner, SSgt. William T. Stocks  
Tail gunner, SSgt. Charles H. Robson  
Right gunner, Sgt. John G. Beckley  
Left gunner, Sgt. Louis M. Mannatt  
Radio operator, Sgt. Otis Childs

The crew had flown to the CBI from the United States, landing at Chakulia in April 1944. They flew

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over the Hump (Himalayas) a few times and completed two combat missions. Their plane was lost in July 1944, in a crash shortly after takeoff from Chakulia, when two engines failed. They received a replacement aircraft, 42-24829 in early August 1944. Major McGlinn kept a diary of the mission and exploits of his crew that began on August 20, 1944.

*We were in the air before dawn. We enjoyed good weather all along the route; in fact, it was excellent bombing weather over the target in Japan. Just before the IP, radio operator Sgt. Childs indicated his radio was inoperative. I gave a visual hand signal for an echelon to the right, Captain Woolsey in aircraft number 42-93466, which took the lead, replaced in turn by Captain Doyle in aircraft number 42-93237. Japanese anti-aircraft (flak bursts) were really intense and coming right at us. We had dropped our bomb and started a right turn when, bingo, number two engine was hit, and it did not keep its oil very long so we feathered it. We again took the lead, being a cripple, and Japanese fighters were waiting for just such a set up. We waded through the attacking fighters, but this did not end our troubles in going such a distance to our destination. We concluded that if we could get to Vladivostok, a good airplane delivered to our friends, the Russians, even though they were not at war with Japan. En route, we could dispose of the airplane in the sea, if necessary, rather than let the Japanese get their hands on it. We waved goodbye to members of our formation, ducked under number two aircraft, and headed north. We had good cloud coverage as far as protection from Japanese fighters, but this later worked toward our disadvantage up the Korean coast. While*

*on instruments, we saw that we were flying a difference of some 50 degrees between Flux Gate and Magnetic, which threw us off course and our direct route to Vladivostok. Now, we did not know exactly where we were.*

*Darkness had set in, and when we altered course and came upon lights, we were not certain if they were our friends or Japanese. We flew over a lighted area and on one occasion, and there were searchlights playing, but we could not prove it was not a Japanese ruse. We therefore flew on a course of 360 degrees for 40 minutes, hoping we would be near a railroad spur running northeast from the Trans Siberian Railroad. Plans for abandoning the aircraft were carried out, and our base was so informed even though it was going from QDM's (used to request a magnetic heading toward a radio station with wind effect disregarded) back to A-1 (BG staff operations). I went aft and explained the situation to the men. They were in excellent spirits. We were pretty well equipped for a bailout in a temperate climate but not into a heavily forested area.*

*Cloud coverage below gave us no hint of lights, which was not too pleasant! Lt. Turner went to the rear and we were on the intercom with him giving an account of the men leaving. Those in the front dropped through the nose wheel door before I went down the hatch after cutting the master switch. McGlinn and his crew bailed at 11,000 feet. The "CAIT" (control and instrument trim) left on AFCE (Automatic Flight Control Equipment) with nose turned down in hope she might land somewhat intact, and we could get equipment such as radios, life rafts, additional food and water, plus 101 other items that would aid us in keeping us alive until rescued.*

**WE COULD  
DISPOSE OF  
THE AIR-  
PLANE IN  
THE SEA, IF  
NECESSARY,  
RATHER  
THAN LET  
THE  
JAPANESE  
GET THEIR  
HANDS ON IT**

**ON 24  
AUGUST,  
SINCE WE  
LIVED OFF  
THE LAND,  
WE SUPPLE-  
MENTED OUR  
MEAGER  
RATIONS  
WITH ANY-  
THING THAT  
CRAWLED**



*What a predicament, being hung up in the forest of Siberia with nothing to do but sit in the rain and sweat out daylight. The ground was hardly visible because of the density of the trees. Off to the west I could make out a canyon running northward. I used my trench knife to cut short pieces of shroud line to make a safety belt to hold me against the tree. I dropped my jungle kit to the ground and cut the shrouds to start the silk canopy on the way down, with the help of the wind and rain. The ordeal of extraction from the tree was very tiring. It took me six hours of hard work to go down 60 feet. About eight feet from the ground, I stopped and became hung up and was actually choking. I managed to hack the shroud belt and drop to the ground. I made a temporary camp of my chute, but it was soaking wet, as were my clothes, and it seemed impossible to get a fire going to dry out.<sup>5</sup>*

The crew landed in three scattered groups. Nine of the eleven-crew members landed on the western slope of a mountain range and found their way to a river valley below. McGlinn and Charles Robson, the tail gunner, landed on a mountainous highland and together they marched north. They hoped to find a rail line that ran to the coast. Instead, they wandered deeper into the wilderness.<sup>6</sup>

*On 21 August, the scattered crew was slowly collecting in the dense forest, the largest being a seven man party. On 24 August, since we lived off the land, we supplemented our meager rations with anything that crawled. We had several good messes of frogs, which were boiled in our skillets and eaten whole,*

*sometimes we used the frog heads as fish bait, however, it was the only part we wasted.<sup>7</sup>*

In September 1944, Russian engineer Alexander Pobozyh Supervisor of a State Railway Survey Team working in the Sikhote-Ann Mountain Range evaluating and laying out a route for a second line to the Trans-Siberian Railroad. Pobozyh:

*On 20 September 1944, late in the evening, a Russian radio operator and guide arrived at the camp of Major McGlinn and First Lieutenant Caudle on exhausted horses. The radioman handed the Major a sealed packet, which contained a printed letter in English. "This is a government mission to rescue two men who, along with nine men already rescued (2nd Lt. Lyle C. Turner, 1st Lt. Eugene C. Murphy, 1st Lt. Aiman W. Conrath, Sgt. Otis Childs, SSgt. Melvin Webb, SSgt. William Stocks, SSgt. Charles Robson, Sgt. John Beckley and Sgt. Louis Mannatt), parachuted from an Allied B-29 into the vicinity of the Khodzyai Ridge, about 60 miles from Khabarovsk."*

*I explored the valley of the Khoso River, a tributary of the Khungari with selected men in a search party. Two planes flew reconnaissance the next day, and after preparing a first aid kit, five of us left in two boats. At daybreak on the 25th, Sasha, Kilya and I set out making rapid progress, as we only had to clear ourselves occasionally. Often we would come out on the bank to examine it and shout. By noon, I was hoarse. We had already decided to return when suddenly some weak voices nearby seemed to respond to my call. We pushed our poles eagerly; saw*

C-46 "Commando" parked between four B-24 "Liberator" Bombers, in China.



**DURING THE WAR, THE SOVIET ARMY INTERNED THIRTY-SEVEN AIRCRAFT CREWS IN SIBERIA. THESE INCLUDED ONE CREW OF A B-25 FROM THE DOOLITTLE TOKYO RAID**

*a thin column of smoke, and then two men standing near a campfire on the bank. I wanted to yell, we have come for you, and a lot more, but I did not know any English words. Not knowing how to greet those people from far across the ocean, I shouted Mister America. In a few minutes, a most confused conversation started as we tried to gesture with words in English, Russian and Udeghe, but none of us understood a thing. The Americans broke into tears and got on their knees to pray.<sup>8</sup>*

During the war, the Soviet Army interned thirty-seven aircraft crews in Siberia. These included one crew of a B-25 from the Doolittle Tokyo Raid. Out of the sixteen B-25s launched from the USS *Hornet*, this crew was the only one, which did not crash. Lieutenant Edward York's B-25 developed fuel flow problems when it departed Japanese home island airspace. York decided to alter course and try to make it into Russian airspace, landing at Vladivostok. After landing, the Russian Army impounded the aircraft and interned the crew.<sup>9</sup>

After rescue of the two-downed aircrew by the Russians, McGlinn's crew was reunited. They ended up in a Russian military hospital in Khabarovsk. On October 28, the crew packed their personal effects and were transported to a Russian military officers' rest camp, now holding twenty-six Americans. The camp consisted of rough wood buildings on ten acres along the Amur River. Khabarovsk's security was for great concern to the Soviet Army being twelve miles from Japanese Army troops stationed along the Manchurian border with Russia. During the first week of November, McGlinn's crew received warm winter clothing:

shirts, pants, jackets, gloves and shoes (Lend Lease shipments of clothing produced in the United States for the Russian military). On November 11, another twenty Americans arrived. On November 15, thirty-nine Americans (leaving a seven-man crew of a B-24 in the camp) boarded a military troop car on the Trans Siberian Railroad for the trip to Tashkent. The Russian troop car was fitted with narrow, short benches for sitting, as well as sleeping. Tashkent was 5,000 miles east of Khabarovsk. Most of the rail trip was over double tracks, which allowed east and west trains without creating rail car backups. Russian soldiers guarded each bridge, protected by barbed wire and sand bag machine gun emplacements. The Americans also noticed large barbed wire enclosures with watchtowers and lights. These were Soviet political prison camps. The train stopped at some of the larger Russian cities along the railroad line: Chita, Irkutsk and Novosibirsk. At Irkutsk, the train station was as large as New York's Grand Central Station. The Americans saw damaged military equipment on railroad flat cars on sidetracks in the rail yard, from the fierce fighting against the Germans.

The trip across Russia took ten days. On November 19, the train passed Lake Baikal, traveling through forty tunnels during one two-hour time span. The train journey passed through eight time zone changes. On November 21, the train reached Novosibirsk and the large train station there, reported by the Russians on the train as the largest in the world. On November 24, the train passed close to Lake Balkhash. The train transited the Soviet Republics of Mongolia, Siberia, Kazakhstan, and entered Uzbekistan and its capital, Tashkent. The group of thirty-nine joined sixty-two additional





**U.S. DIPLO-  
MATS IN  
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AND THE  
ALLIED WAR  
EFFORT,  
ESPECIALLY  
THE WAR  
AGAINST  
GERMANY**

Americans at the camp. Some of these Airmen landed in Soviet territory as early as June 1944. This brought the total of interned Americans to 101. The Americans upgraded the internment camp with baseball diamonds, along with basketball and volleyball courts. Supplies arrived from the American Embassy in Moscow, including English reading materials and a radio. On November 27, the Americans sent cablegrams and letters to their families in the United States. On November 30, the U.S. Army Military Attaché to Moscow, Lt. Col. Robert McCabe, arrived at the camp. McCabe brought the Americans proof their relatives in the United States knew of their condition. He also brought mail sacks of letters for those in the camp before the train containing thirty-nine Americans arrived.

At midnight, on December 5, the Americans left Tashkent. McCabe told them of the plan. On December 7, the Americans headed toward Tiflis. Late in the afternoon, the troop car was disconnected from the train and shuttled onto a railroad siding. Russian Army trucks were supposed to pick up the Americans and take them to the border. However, it did not go as agreed. The problem was that the American columnist Drew Pearson wrote a story claiming one of the Doolittle Tokyo Raiders, who landed in Russia, was released at the Russian/Iranian border. The Russians feared trouble on the Manchurian border with Japanese Army units. Russia was not at war with Japan, because of the newspaper article, the Russians stopped the movement of interned Americans from Russia into Iran.

Thirty-four Americans attempted to cross into Iran anyway, but only seven evaded Russian troops, with thirty-seven returning. At 9:00 AM, on

December 11, the Americans left for Tashkent, only thirty miles from the Iran border. The following day, the seven Americans were caught by Russian troops at the Iranian border and returned to Ashkhabad, arriving on December 17. Back at the camp, Russian troops threatened the Americans with transfer to a Prisoner of War (POW) camp if anyone else tried to make it to the Iranian border.<sup>10</sup>

Premier Joseph Stalin feared an attack from Japan, would have required the movement of Soviet troops engaged in combat against Germany to the Far East. U.S. diplomats in Moscow convinced Stalin that the interned American Airmen were vital to the U.S. and the Allied war effort, especially the war against Germany. The diplomats told Stalin there was no time to train replacement aircrews, complicated by the decreasing pool of qualified men for pilot and aircrew training from America's shrinking manpower pool due to a two-ocean war. The Russians had to keep the transfer of the interned Americans secret from Japanese diplomats in Moscow. The Narodnyi Kommissariat Vnutrennikh Del (NKVD) or People's Commissariat for Internal Affairs (NKVD) arranged four separate escapes. Many Russian troops involved were not told of what happened other than that Stalin had ordered the transfer. U.S. diplomatic traffic made formal complaints about conditions the Americans held in Siberia, demanding changes for health reasons. Stalin agreed to move the interned Americans to camps in Central Asia, where warmer climate would make them more comfortable. The Americans moved through a series of camps until reaching Uzbekistan or Turkmenistan. From these camps, agents assigned to the assisted in their escaping



B-24 Liberator.

from Russian control to cross the border into Iran. Once into Iran, the Americans became the responsibility of U.S. Army personnel for movement home to the United States.<sup>11</sup>

The Americans were worried about getting out of Russia. On December 16, twenty-nine Americans arrived at the camp in Tashkent. On January 8, 1945, supplies arrived from Moscow. On January 17, Major Paul Hall arrived from Moscow with a bag of mail. The Americans had to swear to secrecy about the plans and trip. On January 24, the Americans turned in their extra clothes, indicating a departure was imminent. On January 26, the Americans signed pledge of secrecy about their Russian captivity. They were loaded into covered Russian Army trucks for the trip to Teheran. They did stop long enough to eat and relax, taking a swim in the Caspian Sea, even though the water temperature was cold. The Soviet Army delayed the

Americans at the border crossing point for one hour. They rode all night, stopping at 1:30 p.m. to eat their second meal. They crossed the mountain terrain during the night, enduring the drop in temperature.

From January 30-31, the Americans traveled 900 miles, arriving at a U.S. Army run hospital. Hospital personnel dusted them with insecticide to kill the Russian bugs picked up during internment. They took a hot shower, a shave, a good meal and slept in a warm bed. In two days, 131 Americans were loaded into five C-46s, flown to Suez, Egypt. They spent ten to twelve days in an isolated tent camp while arrangements were made for their final shipment home. They boarded C-46s for the flight to Naples, Italy. The Americans were loaded into trucks for an hour trip to the dock area. They walked up the gangplank of the Liberty ship USS *John Sullivan* for the sea voyage to New York City and home.

On the second or third day of the sea voyage to New York City after joining a convoy at Oran, the Liberty ship passed Gibraltar. The Liberty ship's alarm sounded to crew and passengers to General Quarters. The escorts reported a German submarine to be prowling around another convoy outbound from the United States, approaching the homeward bound convoy. One of the Liberty ship's officers briefed the Americans onboard that German submarines did not attack westward sailing, empty Liberty ships. After witnessing the sinking of the eastern bound Liberty ship, the trip returned to a pleasant journey, warm and calm weather, even in February. Only the last two days of the ocean trip to New York City turned cold and stormy as the Liberty ship neared the U.S. Atlantic coast. Twenty-three days after leaving Naples, Italy the Liberty ship dock in a heavy fog in Brooklyn, New York on March 6, 1945. The Americans went to Fort Hamilton, New York. Within a few days, all of the repatriated Americans were on their way home on thirty-day leaves.<sup>12</sup> ■

## NOTES

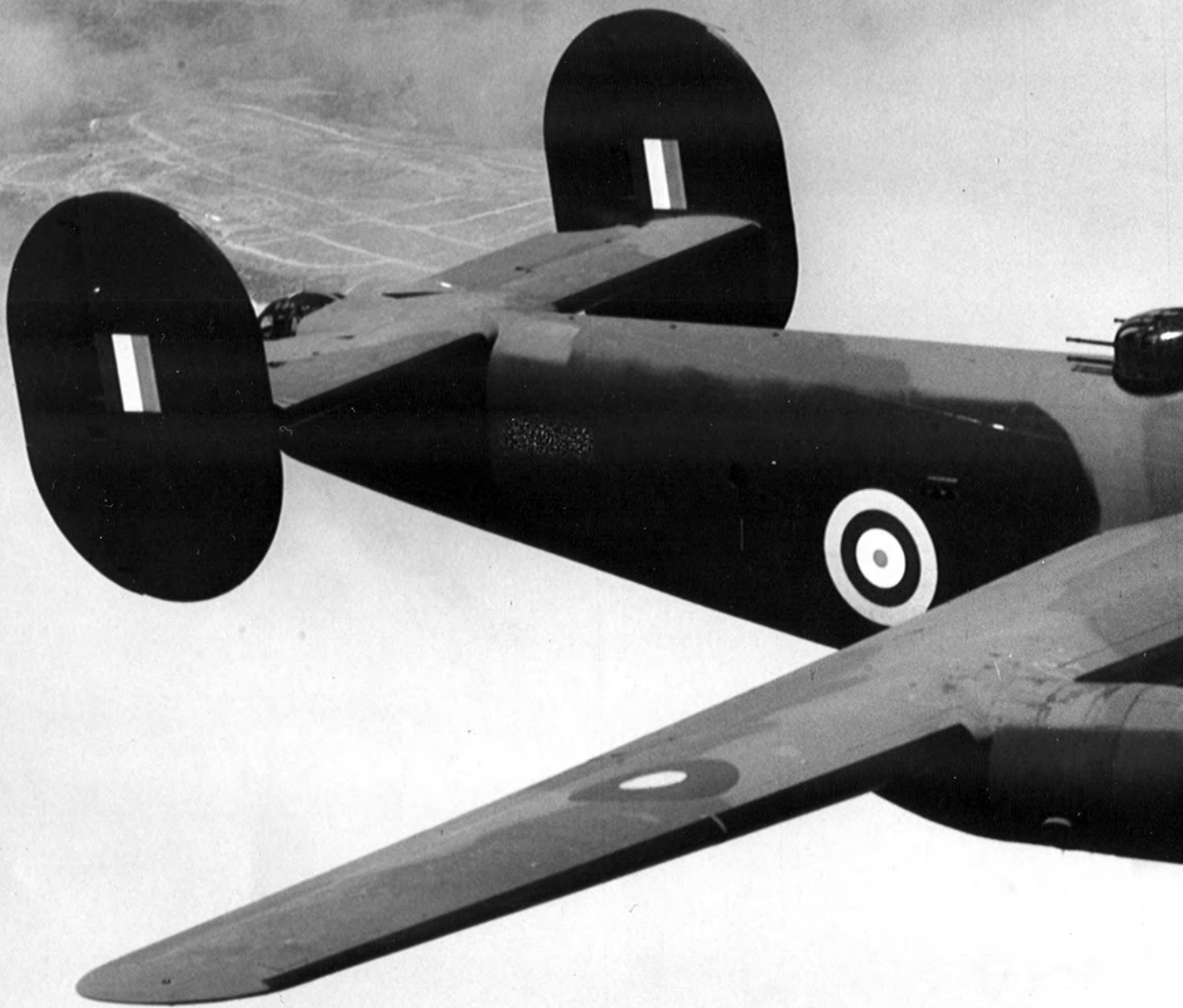
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# Closing the North Atlantic

## Where did all the B-24s





# Atlantic Air Gap: C-54 Liberators Go?



John F. O'Connell

The Battle of the Atlantic, fought primarily between Great Britain and Germany, from 1940 through May 1943, was principally won by *strategic air power*. The term strategic air power does not normally include antisubmarine warfare (ASW) aircraft. However, a very few ASW-configured, very long range (VLR) aircraft carried out vital strategic offensive and defensive duties during the Atlantic battle.

If Great Britain lost the battle, she might be forced out of the war with unknowable consequences. However, with Great Britain eliminated and only the Eastern front to concern it, Germany might have defeated the USSR and established hegemony in Eurasia.

If Great Britain won the battle, she could serve as a huge marshalling yard for armor, artillery, and infantry formations, gathered for the invasion of France sometime in early 1944.

The Atlantic battle pitted massed German submarines (U-boats) against Allied merchant convoys carrying supplies to the British Isles. The following table shows the actual losses of ships and tonnage in the North Atlantic, as well as the number of U-boats sunk each year:<sup>1</sup>

Year	Number of ships sunk	Tonnage sunk	Number of U-boats sunk
1940	349	1,805,494	23
1941	496	2,421,700	35
1942	1,006	5,471,222	86
1943	285	1,659,601	237
1944	31	175,013	242
1945	19	122,729	151

The table shows clearly that 1943 marked a significant change in ship and tonnage losses and in the number of U-boats sunk. After 1943, U-boats represented a lesser strategic threat to Great Britain. This article deals with the role of very long range aircraft, specifically the Consolidated B-24 Liberator, which enabled the British to win the Atlantic Battle. The article also suggests that British could have won the Atlantic Battle a full year earlier—if the American B-24 Liberators delivered to the Royal Air Force had been properly allocated to the battle. Instead of 1,006 ships/5,471,222 tons being lost during 1942, those losses might have been reduced to only 28 ships/150,377 tons.

The safe arrival of convoys was necessary to the United Kingdom's survival and to the buildup in the United Kingdom of sufficient quantities of equip-

ment and troops to conduct an invasion of occupied France, scheduled for 1944. The aviation gasoline that allowed U.S. Eighth Air Force and Royal Air Force (RAF) Bomber Command to operate from the United Kingdom against Germany and occupied Europe had to be imported into the UK by sea.<sup>2</sup>

The German strategy was simple: sink enough ships to fatally weaken England. The tool the German Navy used was its U-boat arm, commanded by Admiral Karl Doenitz. Doenitz saw the problem very clearly. His solution was to employ U-boats in massed formations, he called wolf packs, at night on the surface to defeat the merchant convoys.

Convoys had the advantage of removing the many vulnerable independent merchant ships from the ocean and bunching them together where armed escorts could hinder a surfaced submarine from disturbing them with gun or torpedo. If a submarine attacked while submerged, it might sink a ship or two, but the escorts would harry it with depth charges, keeping it deep while the convoy sailed out of reach. Most ships in convoy would arrive safely—the whole point of the convoy scheme.

During the late 1930s, Doenitz made the massed U-boat night surface attack his signature tactic in a number of exercises in the Baltic and Atlantic. By staying on the surface, the value of Asdic (active sonar) used to detect submerged submarines was negated.<sup>3</sup> The Type VII U-boat that comprised most of the German U-boat Arm was designed specifically to reduce its visibility when surfaced, and to enhance the ability of U-boat watch officers and lookouts to detect surface ships before they could spot the U-boat. Doenitz understood the basic theory behind the Observation-Orientation-Decision-Action (OODA) loop many years before Colonel John Boyd, USAF first articulated it in the 1950s.<sup>4</sup> In his U-Boat Commander's Handbook, Doenitz includes the exhortation "He who sees first has won."<sup>5</sup>

The Type VII U-boat—using its twin diesel engines—had a surface speed of about seventeen knots at a time when most convoys were limited to eight or nine knots. The speed advantage allowed the U-boat to overtake a convoy. The surfaced speed advantage was entirely dependent upon a lack of enemy air coverage in the U-boat operating area. At first sighting of an aircraft, the U-boat watch officer dived the boat to avoid attack, thus losing the ability to move rapidly on the surface. Once submerged the U-boat was limited to low speeds on the battery, perhaps three to five knots, too slow to keep up with

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CARRYING  
SUPPLIES

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U-660 was a German Type VIIC submarine which was commissioned on Jan. 8, 1942. The photo shows her surfacing after being attacked by depth charges from the HMS *Lotus* and HMS *Starwort*, Nov. 12, 1942.



**IT WAS NOT POSSIBLE TO CONCENTRATE U-BOATS TO FORM WOLF PACKS WHEN ENEMY AIRCRAFT WERE PRESENT**

even a slow convoy. In the presence of aircraft in daylight, or radar equipped aircraft during darkness, the U-boat was forced below the surface where it was no longer a threat to ships.

It was not possible to concentrate U-boats to form wolf packs when enemy aircraft were present. Adequate air cover ensured the safe arrival of ships even if no U-boats were sunk. This last point seemed to be difficult to comprehend for a number of prominent figures on the Allied side. To some, the defeat of the U-boat could only be measured by the number of U-boats sunk. A very few realized that the defeat of the U-boat was better measured by the number of convoys that escaped attack, or by the number of ships that made port in the UK with their cargoes—whether or not the opposing U-boats were sunk.

Winston Churchill, prime minister and supreme British warlord, at one time remarked that the only thing that really bothered him was the U-boat threat.<sup>6</sup> However, some of his actions at key points during the Battle of the Atlantic seemed to indicate that his focus got blurry from time to time, when he directed activity that effectively hindered the extension of air cover over vital areas of the North Atlantic. The basic problem concerned the allocation of very long range (VLR) aircraft within the RAF, and even within Coastal Command itself.

Within the RAF two commands contended for long range and very long range aircraft. They were Bomber Command, led by Air Marshall Arthur Harris, which wanted them reserved for night area bombing attacks on German cities. The other contender was Coastal Command, tasked with supporting the Royal Navy, with air antisubmarine warfare.<sup>7</sup>

Coastal Command started the war with a collection of antique aircraft. The RAF acquired Lockheed Hudson patrol bombers and Consolidated Catalina flying boats from the U.S. to help stock its squadrons with modern aircraft. It also put in orders for the Consolidated B-24, a long range aircraft. Bomber Command quickly rejected the B-24 as unsuitable for night area bombing of Germany because of the high visibility of its engine exhaust flames.<sup>8</sup> Those flames would have made it easy for German night fighters to intercept even without air intercept radar.

Despite rejection by Bomber Command, the British Air Ministry sent a number of B-24s to the Middle East Air Command, where they were used in attacks against enemy targets in the Mediterranean area.<sup>9</sup> The Air Ministry also allocated a number of B-24s to transport duties, under Air Ferry Command or British Overseas Airways Corporation (BOAC) control. A very few B-24s were allocated to 120 Squadron, Coastal Command for antisubmarine warfare (ASW).

British historian John Terraine noted that the “convoy battles of October 1940 could be fairly classed as catastrophic.”<sup>10</sup> Thirty-eight merchant ships were sunk in three nights of surface attacks by wolf packs. These victims came from convoys SC 7 and HX 79A, bound for the UK from Canadian ports. The losses represented roughly 45 percent of the total number of ships involved. A Defense Committee meeting on October 21, 1940, approved reinforcement of Coastal Command with a third long-range squadron fitted with Air to Surface Vessel (ASV) radar. After November 1940, there was a temporary decline in ships sunk by U-boats. Many of the boats that had ravaged SC-7 and HX-79A

**WITHIN THE RAF TWO COMMANDS CONTENDED FOR LONG RANGE AND VERY LONG RANGE AIRCRAFT**



U.S. Tanker sunk by  
German U.Boats off Virginia  
coastline.



## A CRITICAL AIR GAP EXISTED IN THE NORTH ATLANTIC BETWEEN ICELAND AND NEWFOUND- LAND

were back in port for refit and crew rest. Furthermore, British air ASW patrolling had increased, particularly that by long range Sunderlands. As a result, Doenitz shifted his U-boat operating areas to west of 15 degrees west longitude to clear them away from Sunderland patrol areas.<sup>11</sup>

However, a critical air gap existed in the North Atlantic between Iceland and Newfoundland south of Cape Farewell, a stretch some 600—700 nautical miles long. Within that area U-boats were free to move around on the surface by day or night. The only protection provided each convoy were a very few escort ships. The typical convoy consisted of forty to fifty ships, and the escort was usually a mixed bag of a destroyer or two, and some corvettes, totaling five or six escort ships. Some escorts were from Allied navies, introducing language and doctrinal complications. Early in the war, escort groups were assigned at the last minute and had no workup period to learn to work together.

Doenitz's orders to his U-boat commanding officers were simple: the first U-boat to spot a convoy trailed it, while sending off radio signals to U-boat headquarters and other U-boats in the general vicinity. Each U-boat within range closed on the convoy whose position, course and speed were reported. After dark, on the first night after a wolf pack formed, the U-boats attacked. Their attacks were individual, on the surface. Their low surfaced silhouettes usually enabled them to evade the escorts in darkness and get into firing positions. After firing, they would exit the convoy and reload their tubes before closing in to re-attack.

Hitler's War Directive Number 23 of February 6, 1941, noted that the "heaviest effort of German war-operations against the English war-economy

has lain in the high losses in merchant shipping inflicted by sea and air warfare." One month later Winston Churchill focused attention on the battle by issuing his Battle of the Atlantic directive. He noted that his "greatest fear was the submarine campaign against Britain's lifeline."<sup>12</sup>

By May 1941, some nine Catalinas had been transferred from the U.S. Navy to the RAF under the Lend Lease program. In June 1941, Air Marshal Sir Philip Joubert de la Ferte took over Coastal Command from Sir Frederick Bowhill. Consolidated Liberators were beginning delivery from the U.S. About 50 percent of aircraft were fitted with ASV II radar. The patrol endurance and radius of action for the various ASW aircraft were as follows:

Whitley and Wellington	2 hours at 500 miles
Sunderland	2 hours at 600 miles
Catalina	2 hours at 800 miles

By August 1941, some sixty-seven Catalinas were in service with Coastal Command. However long range Halifax bombers were reserved for Bomber Command.<sup>13</sup>

Joubert soon noted that ASV radar was being used almost entirely for navigation, and not to detect U-boats. He instituted a training program to correct that deficiency, but it took almost a year to accomplish his goal.

In June 1941, the first deliveries of its B-24 Liberators were made to the RAF. A few went to Coastal Command, but others were reserved for top-priority trans-Atlantic air transportation. The first Coastal Command squadron equipped with B-24s with ASW adaptations and extra fuel tanks was established in September. However, one month

An LB-30, late in the war.  
(Photo courtesy of Robert  
F. Dorr.)



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later, half of those aircraft were withdrawn from Coastal Command for other purposes.<sup>14</sup>

Coastal Command's 120 Squadron at Nutts Corner, Northern Ireland, took delivery of the first B-24s fitted with ASV radar in June 1941.<sup>15</sup> Operating under 15 Group, its responsibilities were to cover the Atlantic area from the UK westward to near the east coast of Canada and the U.S.

Throughout the summer of 1941, Joubert's requests for more long range aircraft for ASW were rejected. All new bombers were reserved for Bomber Command. Bomber Command even tried to get some earlier deliveries back from Coastal Command. Winston Churchill, the Air Staff, and Air Chief Marshal Sir Charles Portal, the senior RAF officer, were all in league in supporting Bomber Command requirements for long range aircraft for strategic bombing of German cities over Coastal Command's requirements for long range ASW.

Between October 1941 and January 1942, Joubert was forced to send 166 aircrews overseas, including some complete Catalina squadrons, because of the Japanese threat. By December 1941, some sixty-five LB 30s (Mk II Liberators) were in British hands.<sup>16</sup> However, 120 Squadron (15 Group) of Coastal Command had only one squadron of sixteen Liberators. In February 1942 Joubert complained to the Secretary of State for Air, the head of the Air Ministry, about his lack of aircraft.<sup>17</sup>

During December 1941, noted surface Escort Group commander Cdr. Johnny Walker, RN, reported a Liberator arriving over convoy HG 76 (from Gibraltar to UK), some 700 miles south of the UK. It patrolled for some hours until relieved by another Liberator. Van der Vat uses this example to

point out that the North Atlantic air gap could have been closed much earlier if Liberators had been in place to operate from Iceland and Newfoundland.<sup>18</sup> Incidentally Admiral Doenitz called off wolf pack attacks on that convoy when the first Liberator was reported overhead.<sup>19</sup>

Joubert noted the deterrent effect the presence of land-based aircraft had on U-boat operations. He recorded that U-boat attacks on ships had almost ceased within 300 nautical miles of Coastal Command air bases.<sup>20</sup> British historian van der Vat states that Coastal Command had only one squadron (sixteen aircraft) of Liberators by May 1942.<sup>21</sup> That is probably incorrect. The Liberator sighted by Walker in December 1941, had to have come from 19 Group, based in southern England, whose responsibilities included convoys to and from African ports and the Mediterranean Sea.<sup>22</sup> Assuming a notional sixteen B-24s per squadron (twelve active and four reserves) and at least one B-24 squadron assigned to 19 Group that meant that Coastal Command had a total of twenty-four B-24s available for ASW. Whether 19 Group should have had any when 15 Group was stretched so thinly in the North Atlantic is another matter entirely.

In January 1942, Coastal Command had twenty-nine Sunderlands in the Atlantic, plus nineteen Wellingtons and seventeen Whitleys. Coastal Command had only forty-eight very long range aircraft (thirty-eight Catalinas and ten Liberators).<sup>23</sup> On June 23, 1942, the Admiralty addressed a paper to the Chief of Air Staff, Air Chief Marshal Sir Charles Portal, noting that "we had lost a measure of control over sea communications of the



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MOST OF  
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SURFACE  
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world...[and that]...ships alone were unable to maintain command at sea."<sup>24</sup>

On July 12, 1942, Sierra Leone convoy OS 33 was attacked. U-boats sank five ships but lost one U-boat. U-202 sighted convoy OS 34, and sank two ships but also encountered Liberators operating 800 miles from their base in southern England. Doenitz was greatly disturbed by that report.<sup>25</sup> He knew that the ability of the U-boats to form wolf packs depended upon an absence of air cover. In mid-August SL 118 (another Sierra Leone convoy) lost three ships before a Liberator from Cornwall arrived on scene and drove the U-boats underwater.<sup>26</sup> Here again is clear evidence of Liberators from 19 Group operating well to the south of the North Atlantic scene, more indication of their dispersion rather than concentration in the area that mattered most.

On August 21, 1942, Doenitz noted an increase in enemy flights using an excellent locating device (ASV radar). U-boat operations in the eastern Atlantic were more difficult as a result. Allied aerial reconnaissance reached almost as far west as 20 degrees west longitude, forcing U-boats into the mid-Atlantic where they could still operate freely.<sup>27</sup>

The TORCH landings in North Africa took place in November 1942. Support for the invasion stripped the North Atlantic convoys of most of their surface escorts. Two squadrons of U.S. Navy Liberators were soon based in Morocco to support the invasion and its shipping. Van der Vat, a British historian, states baldly "It was the second time that the obdurate Admiral King almost lost the war single-handed", referring to the USN Liberators use off North Africa rather than in the North Atlantic air gap.<sup>28</sup>

On December 6, 1942, convoy HX 217 was attacked by twenty-two U-boats as it entered the air gap. The next day, seven U-boats were in contact with the convoy when a Liberator from a 120 Squadron detachment at Iceland arrived, some 800 miles from its airbase. There were eight U-boat sightings by the aircraft and seven attacks with depth charges. The Liberator spent 7.5 hours with the convoy, out of a 16 hour 25 minute mission. There were no successful U-boat attacks on ships of that convoy.<sup>29</sup>

The Germans had determined the frequency of the British radar locating set (ASV II) which was being used so effectively in conjunction with the Leigh-light to detect, illuminate and attack U-boats crossing the Bay of Biscay at night on the surface. They developed an ESM set, called *Metox* after the name of the French firm which manufactured it. The British answer was the development of 9.7 cm radar (ASV III) whose signal lay outside the *Metox* frequency detection range.

In December 1942, the question of which RAF command would have priority for delivery of the new airborne radar came up for decision. Coastal Command used it (as ASV III) for ASW. Bomber Command used it (as H2S) for blind bombing of targets in Germany. Churchill ruled in favor of Bomber Command. The first forty ASV III sets that arrived at Coastal Command in January 1943 were assigned to the Leigh-light equipped Wellingtons being used in the Bay of Biscay battle against transiting U-Boats. That decision reflected a bias within Coastal Command itself in favor of its use in an "offensive" battle vice a "defensive" battle over and around the convoys.

From January 1942 through January 1943,



A Catalina flies over Greenland, in this case, in U.S. livery.



**DURING THE CASABLANCA CONFERENCE IN JANUARY 1943 THE BRITISH STATED NEW ASW REQUIREMENTS**

four RAF squadrons attached to the Middle East Air Command, operated Liberators in a bomber role: 108, 159, 160, and 178. Assuming the normal twelve active aircraft per squadron, that totals forty-eight Liberators used as bombers by Middle East Air Command. This was at a time when U-boats were sinking vital ships in the North Atlantic, particularly in the air gap which could only be covered by VLR aircraft.

In January 1943, U-514 sighted an all-tanker convoy headed north from Trinidad. U-514 sank one tanker and then lost contact. The convoy consisted of nine tankers headed for Gibraltar carrying fuel for U.S. forces in North Africa. On January 8, the convoy steamed into the *Delphin* U-boat patrol line. Its escort consisted of one destroyer and three corvettes. U-boats sank six more of the tankers. On January 23, a Combined Chiefs of Staff report of a plenary meeting noted “The defeat of the U-boat remains a first charge on the resources of the United Nations.”<sup>30</sup>

During the Casablanca Conference in January 1943 the British stated new ASW requirements: sixty-five more surface escorts, twelve escort carriers (CVEs), and as many very long range (VLR) Liberators as possible—with some to be based in Newfoundland to close the air gap. Terraine notes that the matter of VLR aircraft priorities was still unresolved and was not advanced at Casablanca.<sup>31</sup>

The Coastal Command order of battle for February 1943 shows the assignment of Liberators to the following Groups and subordinate Squadrons:

15 Group (North Atlantic) - 120 Squadron  
AHQ Iceland (North Atlantic) - 120 Squadron (det)

16 Group (Channel) - 86 Squadron  
19 Group (Bay of Biscay) - 224 Squadron

Once again, assuming twelve active aircraft per squadron, we find perhaps twelve Liberators providing vital ASW protection to the North Atlantic convoys, while another twelve are engaged in operations over the English Channel, and a third set of twelve are pursuing the ongoing campaign against transiting U-boats in the Bay of Biscay. This mis-assignment lay completely on Coastal Command’s own doorstep. Air Officer in Command Joubert could have had thirty-six VLR Liberators in action over the North Atlantic but apparently chose not to do so. Nesbit indicates that the Coastal Command order of battle on February 5, 1943, when Sir John Slessor took over from Joubert, included four squadrons of Liberators. If that was true then it would have been possible to have had forty-eight VLR Liberators in action over the North Atlantic.<sup>32</sup> However Terraine states that there were “...still only two squadrons of Liberators in Coastal Command” in February 1943.<sup>33</sup> Later Terraine states that in March 1943, Coastal Command “...now had two squadrons of B-24Ds—Liberator IIIs.” Conversion of the B-24D to a maritime version called for stripping out fuel tank self-sealing features, removing additional armor in the bomber version as well as the bottom power turret. The conversion could then take off with 2,000 gallons of fuel plus a load of eight 250- pound depth charges. On March 17, one of these converted Liberators flew eight hours fifty minutes from Aldergrove in Northern Ireland to rendezvous with convoy SC 122. On return it had been in the air eighteen hours and twenty minutes. Another of these con-

A Leigh light, like this one, mounted under the wing, was often used in antisubmarine warfare to illuminate U-boats on the surface.



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THE FIRST  
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MARCH 1943**

versions carried out a twenty-hour, thirty-minute mission.<sup>34</sup>

In June 1943, Coastal Command had forty-eight Liberators including those engaged in convoy protection, according to Sir John Slessor, Air Officer Commanding Coastal Command. He goes on to state the USAAF (East Coast) had seventy-two Liberators and the U.S. Navy some forty-eight.<sup>35</sup> His words are self-damning because they reveal that not all Coastal Command Liberators were engaged in convoy protection as they should have been. We have seen earlier that a number were involved in the Bay of Biscay offensive against transiting U-boats. His remarks about USAAF and USN Liberators then implicitly shift the blame for the absence of an adequate number of Liberators over the North Atlantic to Great Britain's ally rather than his own Coastal Command and the RAF.

Great Britain purchased 139 Model LB-30 Liberators (serials AL 503 through AL 641) from the United States. These had originally been ordered by France, but after the fall of France in June 1940, the order was taken over by the British. The first aircraft, serial AL 503, crashed into San Diego Bay on June 2, 1941. Some fifty-four Liberators were retained by the U.S. Army Air Corps after the attack on Pearl Harbor. The remaining eighty-four Liberators were delivered to Great Britain.<sup>36</sup> What duties they were assigned makes for interesting reading. Some forty-four Liberators were assigned to duty in Middle East Air Command. Some of these wound up in the Indian Ocean Theater of Operations. Another twenty-six were assigned to British Overseas Aircraft Company (BOAC) or to Ferry Command or for transport duties.

The Admiralty Staff Review of 1943 noted that "The Germans never came so near to disrupting communications between the New World and the Old World as in the first twenty days of March 1943." It appeared possible that we should not be able to continue convoy as an effective system of defense.<sup>37</sup> It referred to the fact that four convoys (SC 121, HX 228, SC 122 and HX 229) consisting of 202 ships total suffered the losses of thirty-nine ships sunk by U-boats (19.3 percent).<sup>38</sup>

Six Liberators (serials AM 258 through AM 263) were delivered between January and May 1941. These were purchased by the British government. They were considered Mk I Liberators. All were assigned to BOAC or the Return Ferry service. The assignment of a limited number of Liberator long range aircraft to ferry duties is quite understandable. Ferrying of aircraft from Canada to the UK began in 1940. The ferry aircrews had to return to Canada to continue their duties. Until a return air ferry service was available they went westward by ship, taking ten to fourteen days for the return.<sup>39</sup>

By August 1941, delivery of the 139 Liberators originally destined for the French Air Force but taken over by the British government after the fall of France, began. By December 1941 some 65 had been delivered.<sup>40</sup>

Between April and August 1941, another twenty Liberators were delivered to the UK, serials AM 920-through AM 929. These were LB-30B models (B-24As). Of the twenty some fifteen were assigned to 120 Squadron in Coastal Command. However, only nine were permanently assigned. Another six were temporarily assigned to 120 Squadron for use in training their aircrews. After

IN MARCH 1943, COASTAL COMMAND HAD ONLY THREE SQUADRONS OF LIBERATORS

THE AIR GAP WAS ESSENTIALLY CLOSED BY VLR AIR-CRAFT AT THE END OF MARCH 1943

that four went off to transport duties elsewhere and two went to Middle East duties.

During 1942, some twenty-three USAAF Liberators were returned to British control; bringing the RAF LB-30 total to eighty-seven aircraft.<sup>41</sup>

Van der Vat notes that in March 1943, Coastal Command had only three squadrons of Liberators (fifty-two aircraft on paper), while all U.S. Liberators were in the Pacific, bombing Germany, or in North Africa (two squadrons). Van der Vat goes on to say "(Admiral) King was effectively subverting Casablanca and the Allied Agreement on 'Germany First' by giving priority to his Pacific front in vital VLR (aircraft) resources."<sup>42</sup>

Subsequently, the March 1943 Convoy Conference agreed on twenty Liberators to be provided to the Royal Canadian Air Force. President Roosevelt intervened later in the month and directed that the U.S. Navy provide sixty Liberators to the North Atlantic Theater, and the U.S. Army Air Forces seventy-five Liberators. The RAF was directed to provide 120 Liberators. The last number is fascinating to contemplate. At a time when Coastal Command's 120 Squadron had only a few VLR Liberators to contest the Battle of the Atlantic, the RAF as a whole apparently had a number of Liberators "up its sleeve" doing other things than ASW in the North Atlantic. Allied shipping losses in March were 693,000 tons, of which 627,000 tons were lost to U-boats.

During the Casablanca Conference, a study estimated requirements for eighty VLR aircraft for convoy cover in the North Atlantic. Allocation of incoming Liberators (under Lend Lease) was modified to reduce Coastal Command's allotment in order to reequip an RCAF squadron in Newfoundland with Liberators.<sup>43</sup>

During March 1943, some seventeen convoys were attacked and eighty-two ships were sunk. Three days of attacks, mostly in the "gap" cost convoys HS 229 and SC 122 twenty-one ships.<sup>44</sup>

In February 1943, Coastal Command had eighteen Liberators available for convoy protection in the Atlantic. Nine were in Iceland (120 Squadron) while another nine were attached to 19 Group, which was responsible for convoys between the UK and African ports.<sup>45</sup> 19 Group also ran Bay of Biscay operations against U-boats in transit to and from their French bases.

The air gap was essentially closed by VLR aircraft at the end of March 1943 according to van der Vat. Actually it was a combination of airborne radar carried by VLR aircraft, well trained surface escort groups with HF/DF to localize U-boat radio transmissions, CVEs that were just entering effective operational service—all underlain by Bletchley Park's interception and breaking of Enigma transmissions that allowed a victory in the Battle of the Atlantic in April-May 1943. But the key element was an adequate number of VLR aircraft operating over the North Atlantic vastness. As discussed in detail earlier the key to wolf pack tactics was the ability of U-boats to operate at high speed on the surface to

close convoys. Take that ability away and convoys were relatively safe.

In April 1943, convoy ONS 4 was supported by the first escort carrier to operate in the North Atlantic, HMS *Biter* (BAVG-3).<sup>46</sup>

Perhaps the precise turning point of the Battle of the Atlantic took place on May 19-20, when convoy SC 130 was attacked by a wolf pack of thirty-three U-boats. No ships were lost and five U-boats were sunk. On May 22, 1943, USS *Bogue's* (CVE-9) aircraft sank a U-boat 600 miles southeast of Greenland. On May 23 HMS *Archer* (BAVG-1) aircraft sank another 670 miles southeast of Greenland.<sup>47</sup> By the end of May 1943, some forty-one U-boats<sup>48</sup> had been lost. Admiral Doenitz admitted that he had lost the Battle of the Atlantic.

Sir John Slessor, Air Officer in Command of Coastal Command, appeared to understand the real point of the Atlantic Battle when he noted that "Our object in the Battle of the Atlantic was to ensure the safe and timely arrival of convoys, or, in more simple terms, to prevent our ships from being sunk." However, he then displayed rather muddled thinking when he went on to state, "the only sure way of ensuring the safe and timely arrival of shipping, was to kill U-boats at sea."<sup>49</sup> He seemingly missed the point that the mere presence of ASW aircraft in the air in the vicinity of the convoys drove the U-boats underwater where they were relatively harmless.

Regarding the air gap, Slessor went on to note that there was not a single VLR aircraft west of Iceland and only a handful east of it, although the U.S. Navy had taken delivery of full fifty Liberators by the end of 1942. He went on to state that some fifty Liberators defeated the U-boat campaign by mid-summer 1943. Turning once again to savage the Americans, he stated "(Admiral) King's obsession with the Pacific and the Battle of Washington cost us dear in the Battle of the Atlantic."<sup>50</sup>

It is clear from the information available in various source documents that the RAF actually had enough Liberators available to it to close the "air gap" sometime during 1942, rather than a year later. A careful examination of Liberator delivery dates to the RAF indicates that from June 1941 to the end of April 1942, at least 113 Liberators were handed over. The failure of the RAF to prioritize the assignment of long range (1,800 miles) and very long range (2,400 miles) Liberators to Coastal Command is difficult to understand today. It is also difficult to comprehend why within Coastal Command, 120 Squadron and other squadrons covering the North Atlantic Theater were not afforded absolute priority in the distribution of those Liberators that were allocated to Coastal Command.

The assignment of Liberators to Middle East Air Command for bomber duty took place at a time when U-boat sinking's were threatening the UK's very existence. Although they may have played an important operational role in the Middle East Theater, the North Atlantic Theater was the only theater of operations where Great Britain could



Whether LB-30s or B-24s like these, the Liberator proved vital in winning the war in the Atlantic.



[PORTAL] BEARS DIRECT RESPONSIBILITY FOR DIVERTING A LARGE NUMBER OF LIBERATORS TO THE MIDDLE EAST

have been defeated - in a national sense. If she lost the Battle of the Atlantic she would lose the war. The Admiralty clearly recognized this point.

The Chief of the Imperial General Staff, General Lord Alanbrooke, was chairman of the British Chiefs of Staff Committee, and as such Winston Churchill's chief adviser on the conduct of the war. There is little evidence that Alanbrooke recognized the importance of the Battle of the Atlantic or tried in any way to recommend action to ensure that the "air gap" was closed in 1942 or later.

Marshall of the Royal Air Force Sir Charles Portal was Chief of the Air Staff from 1940 to 1945. He was in a position to take an overall view of the RAF and the responsibilities assigned to its major commands: Bomber, Fighter and Coastal; and the assignment of resources to support them. He bears direct responsibility for diverting a large number of Liberators to the Middle East Air Command, as well as to transport roles at a time when Coastal Command desperately needed them for the North Atlantic battle.

Another diversion of Liberators took place in mid-1942. Winston Churchill was concerned that the Eighth Army in the Western Desert lacked enough armor-piercing tracer ammunition so that every field piece could serve as an anti-tank weapon. Ferry Command of RAF was directed to lay on a massive airlift. To meet the demand, "...fourteen Liberator bombers were taken off the delivery Line... and ...delegated (for transport duties) for the emergency."<sup>51</sup> This is another example of Churchill's meddling in military affairs at the tactical-operational level, while neglecting the overall strategic problem of getting ships safely across the North Atlantic. Those fourteen Liberators represented almost a full squadron, which might have been of

immense help in Coastal Command over the North Atlantic.

Arthur Percy goes on to state, "Records indicate that as late as August 1942 RAF Coastal Command was allocated just five Consolidated Liberator aircraft to protect the Atlantic convoys."<sup>52</sup>

Given that the Atlantic Battle was finally won in April-May 1943, with a total force of perhaps four squadrons of VLR Liberators, one can look at the number of Liberators in the RAF inventory and their delivery dates, and reasonably conjecture that the same battle might have been fought and won in April-May 1942. Chapter 6 Individual Aircraft Histories of Oughton's *The Liberator in Royal Air Force and Commonwealth Service* provides details about each aircraft and when it was delivered to the RAF (see pp. 97-123). By April 20, 1942, the RAF had "taken on charge" a total of 113 Liberators.

From May 1942 through April 1943, 918 ships of 5,012,571 tons were lost in the North Atlantic. Taking Terraine's data from Appendix D of *Business in Great Waters*, in which he lists shipping losses by month throughout the war, we can compare the actual North Atlantic losses for 1942 and 1944. They were:

Year	Ships sunk	Tonnage lost
1942	1,006	5,471,222
1944	31	175,013
Ratio 1944/1942	0.03	0.03

Since 1942 represented unrestricted U-boat operations in the "air gap" and 1944 the period in which the air gap no longer existed, we can credibly

use the ratio of the relative ship and tonnage losses to see what the losses for the period from May 1942 to April 1943 might have been if the RAF had concentrated its B-24s in the North Atlantic in 1942.

Applying that ratio shows that the notional sinkings during that lost year would have amounted to only twenty-eight ships and 150,377 tons. Failure to achieve ASW “air superiority” over the North Atlantic region cost the Allies some 890 ships and 4,862,194 tons of cargo, as well as a significant number of merchant seamen’s lives.

It is clear that the RAF had more than enough B-24s available to it to have handily won the Battle of the Atlantic in early 1942. The ships, cargoes, and

merchant seaman lost during the following year are a tragic monument to shortsightedness and lack of an adequate strategic grasp by a number of prominent figures in the British government and the Royal Air Force.

If an adequate number of B-24s had been made available to Coastal Command, and allocated properly to 15 Group, the Battle of the Atlantic would have ended in a British victory a full year earlier, in April-May 1942. Since escort carriers and dedicated supporting surface Escort Groups were not available until the following year, the toll of sunken U-boats would have been fewer—but the battle won nevertheless. ■

## NOTES

1. Terraine, John, *Business in Great Waters*, pp. 767-69.
2. Craven, Wesley F, and James L. Cate, ed., *The Army Air Forces in World War II, Vol. 2, Air Logistics in the European Theater of Operations*, p. 617. In 1942, it was agreed that all aviation gasoline to be shipped to the UK would be consigned to the British, under Lend Lease, at the American port. The British Petroleum Board then allocated gasoline to American air bases in the UK, crediting the value to the reverse Lend Lease account.
3. Asdic is the British term for active sonar. Developed after World War I it seemed to offer a solution to the problem of dealing with submerged U-boats. Royal Navy trials indicated a high detection probability of submerged targets by destroyers using Asdic.
4. O’Connell, Captain John F. USN (Ret.), *Submarine Operational Effectiveness in the 20th Century, Part Two (1939-1945)*, pp. 6-7. OODA stood for “Observe-Orient-Decision-Action. Boyd derived it from experiences in aerial combat over North Korea between U.S. and Soviet-supplied jet fighter aircraft.
5. *The Submarine Commander’s Handbook*, New Edition 1943, Thomas Publications, Gettysburg, Pa., 1989.
6. Much earlier, in March 1939, Churchill sent a memorandum to Prime Minister Chamberlain stating “The submarine has been mastered.” See John Terraine, *Business in Great Waters*, p. 177.
7. Air ASW operations were also conducted by Fleet Air Arm (FAA) aircraft carried aboard RN aircraft carriers, but these operations were limited to a fairly short range from the aircraft carrier. Long range ASW air operations had to be carried out by either land based or flying boat aircraft under Coastal Command.
8. Joubert, Air Marshall Sir Philip, *The Fated Sky*, p. 209. Joubert goes on to state that not until late 1942 did a reasonable number of B-24s reach Coastal Command.
9. German and Italian air defenses in the Middle East area were considerably less developed than those over Germany.
10. Terraine, John, *Business in Great Waters*, pp. 265-68. While British scientists were very innovative, British electronic production was rather backward. In 1935, British radio set productivity was less than a quarter of that in the United States in terms of output per man-hour. See Terraine, *Op cit.*, pp. 282-84.
11. *Ibid.*, p. 271.
12. Van der Vat, Dan, *The Atlantic Campaign*, pp. 177-78.
13. Terraine, *Op. cit.*, pp. 365-66.
14. Van der Vat, *Op. cit.*, pp. 206-27.
15. Nesbit, Roy Conyers, *The Battle of the Atlantic*, p. 152.
16. Oughton, *The Liberator in RAF and Commonwealth Services*, p. 13.
17. Terraine, *Op. cit.*, pp. 428-29.
18. Van der Vat, *Op. cit.*, pp. 216-19.
19. Nesbit, *Op. cit.*, pp. 85-86.
20. Joubert, *Op. cit.*, p. 213.
21. Van der Vat, *Op. cit.*, pp. 272-274. The nominal strength of a bomber squadron was sixteen aircraft: twelve operational and four in reserve. The author will use that arithmetic is discussing Liberator assignments.
22. Bowyer, Chaz, *The Royal Air Force 1939 – 1945*, p. 48. Bowyer’s Figure 3 shows the operating boundaries of Coastal Command’s numbered groups.
23. Nesbit, *Op. cit.*, p. 120.
24. *Ibid.*, p. 442.
25. Terraine, *Op. cit.*, pp. 460 - 61.
26. Van der Vat, *Op. cit.*, p. 291. Cornwall was the location of several 19 Group air bases.
27. *Ibid.*, p. 479.
28. Van der Vat, *Op. cit.*, pp. 298-99.
29. Terraine, *Op. cit.*, p. 506.
30. *Ibid.*, pp. 514-15.
31. *Ibid.*, p. 515.
32. Nesbit, *Op. cit.*, p. 166. Nesbit lists four Liberator squadrons on charge to Coastal Command.
33. Terraine, *Op. cit.*, p. 523.
34. *Ibid.*, p. 566.
35. Slessor, Sir John, *The Central Blue*, p. 533.
36. Oughton, *Op. cit.*, pp. 97-115.
37. Van der Vat, *Op. cit.*, p. 322.
38. To put these losses in perspective, Eighth Air Force losses at Schweinfurt and Regensburg in late 1943, amounted to sixty B-17s of 360 attacking, about a 17 percent loss rate. See Neillands, *Op.cit.*, pp. 248-55. That led Eighth Air Force to cease its attacks on targets beyond the range of escort fighters.
39. Percy, Arthur, *Lend-Lease Aircraft In World War II*, p. 46.
40. Bowman, Martin W., *Consolidated B-24 Liberator*, p. 121.
41. *Ibid.*, p. 12.
42. *Ibid.*, p. 326.
43. Slessor, *Op. cit.*, p. 523. It seems strange that RAF Coastal Command had not much earlier tried to get some VLR Liberators assigned to RCAF to help close the air gap.
44. *Ibid.*, p. 510.
45. Terraine, *Op. cit.*, pp. 535, and. 539-40.
46. Nesbit, *Op. cit.*, p. 172.
47. *Ibid.*, p. 176.
48. Terraine, *Op. cit.*, pp. 607-08.
49. Slessor, *Op. cit.*, p. 508.
50. *Ibid.*, pp. 498-99.
51. Percy, *Op. cit.*, p. 90.
52. *Ibid.*, p. 21.

**Mosquito Mayhem: de Havilland's Wooden Wonder in Action in WWII.** By Martin W. Bowman. Barnsley, South Yorkshire, UK: Pen & Sword Aviation, 2010. Photographs. Index. Pp. 266. \$35.00 ISBN: 978-1-84884-323-3

“Mossie” and “Wooden Wonder” are names given with respect to one of the wonders of World War II aircraft. When almost anyone who is even remotely acquainted with World War II aviation hears the term Flying Fortress, Mustang, Liberator, or Mosquito, they will know or at least have a pretty good idea what is being referring to.

The Mosquito began as a private venture, was refused by the Royal Air Force several times, had its production suspended in favor of the Tiger Moth training biplane at one point, and was bought originally as a fast bomber but first deployed as a night fighter. The legendary aircraft eventually saw service with nineteen countries (maybe twenty, if rumors of at least one airframe being reported in the colors of *Luftwaffe* KG.200 are true). The type was considered to be the best at virtually every type of mission in which it was used. On its first mission as a photo-reconnaissance type (the PR.1), it easily outran three Bf 109s, a feat that was to be replicated many times over during the next three plus years.

*Mosquito Mayhem*, one of Martin Bowman's more recent books for Pen & Sword, is a collection of stories of flying virtually every type of mission flown by the Mosquito. Bowman—who has written about seventy-nine books so far—seems to have a soft spot for the Mosquito: nine of his works, by my count, cover this aircraft type. His in-depth research has allowed him to write a type of book not normally found in military aviation, one whose perspective is from the people who flew the type operationally. All standard mission types are covered as are more specialized missions such as the raid on the Amiens Prison in 1944, when pinpoint bombing allowed almost 400 French men and women, most of whom were Resistance members, to escape.

One aspect of the book that I found to be a strong point (though, admittedly, it took some getting used to) was inclusion of footnotes that are used to expand the narrative to provide further context. Unfortunately, given the length of time from the events portrayed, most of the players are no longer with us. Furthermore, many did not even survive the war, as the casualty rate among the crews was high.

Bowman has added a unique book to the library on this most interesting fighter, bomber, photo-reconnaissance, high-speed

transport, and high-speed mail plane (see the stories of delivering the mail to Europe at the end of the war for a look at a different type of mission). Obviously, his interest in the type has paid dividends in finding a new angle to put forth. All in all, the book is a good read for those interested in the type—not particularly a niche book, but certainly not something the general reader will necessarily pick up.

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**How the Helicopter Changed Modern Warfare.** By Walter J. Boyne. Graetna, La.: Pelican Publishing Co., 2011. Index. Photographs. Notes. Appendices. Pp. 352. \$29.95 ISBN: 978-1-5898-0700-6

Walt Boyne is a distinguished author with extensive military flying experience. Those attributes show to advantage in his treatment of the development of the helicopter and his exploration of the changes it has brought to the battlefield. He is analytic and critical where necessary in examining the significant temporal and financial differences between development and deployment of helicopters versus fixed-wing aircraft.

Boyne touches on the early military application of helicopters in the waning days of World War II and devotes a fair amount of time to the Korean War, which saw the helicopter begin to emerge as a factor on the battlefield. He deals evenhandedly with doctrinal problems between the Air Force and the Army, particularly over “close air support.” He notes the Marine Corps emphasis on helicopters in “vertical envelopment” as a reaction to the potential use of nuclear weapons and their effect on amphibious operations.

The book expertly discusses the use of the helicopter by French forces in Algeria from 1954 to 1962, and shows how it broke the back of the FLN military effort. That military success, a happy mixture of innovative tactics and terrain, of course, later gave way to a political loss. Boyne shows how U.S. forces, using helicopters to advantage in Vietnam, essentially defeated the Viet Cong and North Vietnamese regular forces in a military sense. It is interesting to note that the terrain in Algeria and Vietnam were completely different, yet the mobility that the use of an adequate number of transport helicopters (slicks), supported by attack helicopters and fixed-wing aircraft, gave to ground forces enabled the respective French and American-South Vietnamese ground forces to defeat their opponents in battle.

Boyne describes the failure of Soviet helicopter operations in Afghanistan and chalks it up to the limited number of helicopters deployed and to the great number of small surface-to-air missiles the Soviets faced, courtesy of covert U.S. aid to the *Mujahedeen*. He goes on to describe, in some detail, development of helicopters both in the U.S. and abroad, giving credit to many individuals and firms involved.

The book examines in great detail the various roles of the helicopter on the battlefield, emphasizing the air-evacuation role that significantly decreased the loss rate of wounded soldiers. It also passionately discusses the much higher loss or damage rates experienced by helicopters in combat as compared to those experienced by fixed-wing combat aircraft. Boyne ascribes the difference to a failure on the part of the Services and Congress to adequately fund helicopter research and development. When the helicopter and its operators are thrust into combat, they have to make up technical deficiencies with raw courage and tactical innovation.

Overall this is a fascinating and thoroughly readable book. The photographs are excellent as are the appendices which deal with development (Appendix One) and specifications of U.S. and Soviet helicopters (Appendix Two).

One very minor nitpick: if General Billy Mitchell was court-martialed and convicted in 1925, and resigned his commission in 1926, how could he be directing early Army parachute troop operations at Kelly Field in 1928?

*Capt. John F. O'Connell, USN (Ret.), Docent, National Air and Space Museum*



**Bombs Away! The World War II Bombing Campaigns over Europe.** By John R. Bruning. Minneapolis, Minn.: Zenith Press, 2011. Maps. Photographs. Bibliography. Index. Pp. 292. \$50.00 ISBN: 978-0-7603-3990-9

*Bombs Away!* is a delight to the eye, a large (10-1/4 x 12), handsome book with perhaps 450 clear photos (some in color and some new—or certainly rare) that is printed on sleek heavy paper in an uncluttered presentation. The intent, Bruning states, is to focus on the air crews who waged the bombing campaign against Germany as well as the civilians who were on the receiving end of the bombing. At first glance, the book appears to be another well-done coffee table book covering the bombing offensive against Germany, but it is more. In a fast-reading text, the author gives a background to the strategic bombing concept; its



employment by the Germans, British, and Americans; the fierce air battles; and the results. Bruning's commentary puts the photos and the bombing campaign into context, showing both the overall picture as well as many significant and interesting details. Thus, it is a photo book with substance, in a class by itself.

*Bombs Away!*, however, is not without flaws. While the photos are wonderful, the inclusion of some can be questioned as being repetitious or meaningless. Overall, the layout is uncluttered and well-done, but at points the photos interrupt the text, some photos do not match the text on the same page, and the sequence of photos defies the chronology. These are minor issues, however, for the text presents more serious problems. As is to be expected, some assertions can be challenged. More significant are issues of balance. The book concentrates on the USAAF Eighth Air Force, although RAF Bomber Command dropped more than half the total tonnage on Germany. The Fifteenth Air Force also gets scant mention, validating the American airmen's wartime ditty sung to the tune of "As Time Goes By," from the movie *Casablanca*, "It's still the same old story, the Eighth gets all the glory, while we go out to die. The fundamental things apply, as flak goes by." Then there are items left out. Although 44 percent of American heavy bomber tonnage dropped in Europe was aimed by use of "blind" (non-visual) bombing means (with "accuracy" measured in miles), this is not mentioned. Only two of two-score Medal of Honor winners involved in the bombing campaign are cited by name or illustrated despite the author's stated intention. The bibliography is much too brief to be of much value, and there are no footnotes. And, while Bruning has most of the big items correct, his conclusion on the last page cannot go unchallenged. He writes that "Though the strategic bombing campaign materially contributed to the defeat of Nazi Germany and played a key role in that; air power failed completely in the greatest hope of its prewar advocates: that it could minimize victory's cost." Yes the Allied airmen suffered heavy losses, but I believe their efforts shortened the war and thus reduced casualties (Allied and German, civilian and military).

In brief, *Bombs Away!* is a very well-done photo history of the bombing campaign against Germany. If the text doesn't always measure up to the high standard of the photos, nevertheless it complements them and makes this much more than just another coffee table book.

Kenneth P. Werrell, Christiansburg, Virginia



**Mission to Berlin: The American Airmen Who Struck the Heartland of Hitler's Reich.** By Robert F. Dorr. Minneapolis, Minn.: Zenith Press, 2011. Map. Diagrams. Photos. Notes. Appendices. Index. Pp. 328. \$28.00 ISBN: 978-0-7603-3898-8

Author of dozens of books and countless magazine articles, Robert Dorr (also technical editor of *Air Power History*) is probably best known for his series of works for Osprey Publishing on various bomber units that served with different Army Air Forces in World War II. In this effort, he puts faces on the numbers by introducing the reader to some of the men who participated in the Eighth Air Force's February 3, 1945, attack on Berlin. Along the way, he discusses the overall U.S. involvement in the Combined Bombing Offensive against Germany.

In nine of seventeen chapters, Dorr relies on letters, diaries, and interviews to recount, in considerable detail, the experiences of selected Boeing B-17 crewmembers. The other eight chapters mostly alternate and detail the attack in various phases. In these chapters, Dorr covers the history of the Eighth Air Force, a simultaneous Consolidated B-24 attack on the oil refineries at Magdeburg, and the attack's impact on Berlin. On several occasions, he points out that this particular attack was the largest launched against any single target by the Eighth Air Force. The Eighth dispatched 1,003 B-17s and 434 B-24s along with 948 fighters, almost all of which engaged targets of opportunity. The German *Luftwaffe* never challenged the bombers. Antiaircraft fire was intense, accounting for the loss of about twenty-five bombers. In addition, several aircraft were lost due to non-combat causes. Two diverted to Sweden, and several landed in Soviet-occupied Poland.

The author's choice to alternate chapters between the mission details and the Eighth Air Force history caused me considerable confusion. In addition, he frequently presented information that struck one as unnecessary or superfluous. Perhaps a better approach might have been to briefly summarize in the first couple of chapters the growth in Eighth Air Force operations over the previous two-and-a-half years.

Dorr touches on fighter support for the mission as well as the overall purpose of the attack. He suggests Eighth Air Force commander Jimmy Doolittle opposed the mission, intended as the first in a series of city-busting efforts known as Operation Thunderclap. London and Washington pushed the attacks with the intent of crushing German morale in an attempt to

bring the war in Europe to a swift conclusion.

The two maps (one of the bases in England and the other showing the route to the target and back) are useful. The acknowledgments would have been more helpful at the beginning rather than the end. The third of four appendices lists the sequence in which the various bomb groups struck Berlin. The notes stress the sources of comments attributed to various airmen. Missing almost completely are references supporting the author's points of view on various matters related to Eighth Air Force operations.

This work is strongest when it sticks to the actual mission. Unfortunately, at times, it has a tendency to read a bit like a laundry list. It is probably of greatest interest to the descendants of family members who want to know more about what it was like for their fathers or grandfathers to attack the heart of Germany in early 1945.

Lt. Col. Steven D. Ellis, USAFR (Ret.), docent, Museum of Flight, Seattle, Washington



**Realizing Tomorrow: The Path to Private Spaceflight.** By Chris Dubbs and Emeline Paat-Dahlstrom. Lincoln: University of Nebraska Press, 2011. Photographs. Bibliography. Index. Pp. xiii; 299. \$34.95 ISBN: 978-0-8032-1610-5

This book tackles the various ongoing projects to achieve human space travel outside of official government efforts. The topic does not lend itself to a straightforward narrative. Most space historians discussing a specific program such as Apollo, Mir, or the Space Shuttle, can find a readily identifiable beginning and definite end and can structure their study between those points. Private space flight lacks a program, or perhaps has many, and is more threads in hand and produce a coherent and highly readable study.

The authors begin their story with the end of the American moon program. Space enthusiasts were strongly disappointed with the cancellation of the later scheduled Apollo missions and the seemingly uninspired NASA follow-on programs. For many, NASA went from being a champion of space exploration to an impediment, a bureaucracy that would not allow common men and women to achieve the dream of reaching space in their lifetimes. Gerard O'Neill's visionary ideas of extensive orbital colonies, and the tepid response of NASA officials exemplified the divide and inspired a series of activists to try to make their own ways to space.

The book details a number of private

rocket development efforts, but the first private citizens to travel to space went courtesy of either Soviet or American government programs. It provides an excellent discussion of these programs—part publicity stunts, part exercises in international diplomacy, part dreams taking form—that lofted scientists, journalists, lawmakers, and industry representatives (including Charles Walker, who contributed the Foreword). The loss of the Space Shuttle *Challenger*, in 1986, derailed many such programs, forcing would-be citizen explorers to find other paths.

The financial woes of the late Soviet Union and early Russian Republic opened another path. Space tourists (a term self-described citizen explorers tend to resent) could, for the right price, train as cosmonauts and visit the International Space Station. Private space flight advocates realized, however, that such opportunities would remain expensive luxuries restricted to the ultra-rich. More widespread access to space would require developing private vehicles, and even private space destinations, rather than buying space on government flights. Dubbs and Paat-Dahlstrom go on to detail a variety of largely unsuccessful efforts to develop a private space vehicle, before Spaceship One claimed the Ansari X Prize for private, repeatable sub-orbital flights, in 2004, perhaps opening a new era of private spaceflight.

*Realizing Tomorrow* is part of the “Outward Odyssey: A People’s History of Spaceflight” series. Like the other volumes in this series, it focuses on the human element of space exploration, eschewing detailed technical description in favor of biographical studies of the dreamers, scientists, engineers, financiers, investors, and travel agents, as well as the would-be and actual astronauts. This is a very human book, despite the technical subject.

Dubbs and Paat-Dahlstrom have conducted extensive oral history interviews, and thoroughly mined published print and electronic sources. There are few archival sources, reflecting the unofficial nature of the programs they study. Scholars will be disappointed with the lack of footnotes, making it difficult to track down the sources for specific quotations and facts; but all readers will benefit from the extensive bibliography. This book is the standard for the study of private efforts at human spaceflight. Highly recommended.

*Lt . Col. Grant T. Weller, USAF, Ph.D., HQ USAF*



**Shooting the Front: Allied Aerial Reconnaissance in the First World War.** By Terrence J. Finnegan. Stroud, Gloucestershire, UK: Spellmount, 2011. Maps. Tables. Diagrams. Illustrations. Photographs. Notes. Appendices. Bibliography. Index. Pp.408. £30.00 ISBN: 978-0-7524-6052-9

Some readers may remember a review I did in the Spring 2010 issue of *Air Power History* on a book with a very similar title. This is Terry Finnegan’s revised and updated version of that book—and it is even better than his first version. This edition can now be considered as “The” sourcebook for anyone wanting to understand the origins of modern air power and overhead reconnaissance.

Finnegan is a retired USAF Reserve colonel who spent his career in the intelligence business. So, he certainly understands the subject matter and has the needed appreciation for what is important in the story of exploiting the new airplane technology to provide intelligence information to ground commanders. And that’s what this book is about—selling the idea of looking at the ground from the air and, more importantly, photographing it to provide proof of what was seen and a durable record of the results of the reconnaissance efforts.

The format of this book is, in some regards, different from that of the first edition. Finnegan has retained the *West Point Atlas* maps—in my view, one of the most valuable features. One cannot follow war stories without maps—too many books these days try to describe battles without maps and generally fail miserably. However, the book’s only weak point also involves the maps. The original book was 8-1/2 x 11 inches. The *West Point* maps were bigger than the new book’s 9-1/2 x 6-1/2 inch format allows. They are, therefore, more difficult to read, but squinting a little bit can get a reader through!

As with the first edition, this book begins with a history of the war on the western front. Finnegan has beautifully interwoven the battle history with the development of the aerial reconnaissance tool that became so important in the war’s execution. This is actually one of the finest short histories of the First World War that I’ve read. While following the battles, the reader gains an understanding of the difficult task faced by the apostles of this new technology. As expected, the ground generals did not universally buy into the potential of the airplane—even when photographs showing detail never before available to combat commanders began to arrive. Finnegan well documents, aerial photographic reconnaissance became the

mainstay of artillery spotting; knowledge of infantry contact as battles unfolded; and deep looks at enemy preparations, logistics, and communications networks.

One cannot understand, however, how the photos and personal reports impacted the armies without understanding the people, organizations, communications, and tools involved, and how these evolved during the four years of the war. Finnegan wasn’t idle in between editions. He conducted even more research and added to the vast amount that preceded the first book. This has further increased our knowledge of the contributions to the intelligence and reconnaissance business by Steichen, Moore-Brabazon, Campbell, Laws, Bellenger, MacDonough, Trenchard, Pépin, Duval, Foch, Henderson, and many others. The depth of the research comes through with thorough documentation (over 1,800 notes) and a marvelous fifteen-page bibliography.

The first book was printed on glossy paper with high-quality photos; so is this edition. The main difference is the smaller size with its smaller print. The appendices retain their usefulness as well. If you bought the first edition, great. You should still buy this version because of the extra material Finnegan has included. It is a fairly expensive book but one that is well worth the cost.

*Col. Scott A. Willey, USAF (Ret.), Book Review Editor*



**Air Force: An Illustrated History.** By Chester G. Hearn. Minneapolis, Minn.: Zenith Press, 2008. Maps. Tables. Diagrams. Photographs. Bibliography. Index. Pp. 192. \$29.95 ISBN: 978-0-7603-3308-2

In this book, Chester Hearn has created a comprehensive and colorful depiction of the saga of the United States Air Force. His work covers flying, from its earliest development to its projected role in the future of the United States. Hearn’s service in the armed forces and status as an experienced and qualified writer are evident as he deals comfortably with all manner of technological and political topics, delving into the breadth of USAF existence.

Hearn introduces his book with a broad description of air force history that he calls “unique in its rapid development.” The reader then traverses that history in detail, beginning with balloons. Hearn carefully recounts the role of ballooning in the Civil War and on San Juan Hill before describing the development of the first “flying machines.” Slowly, the book

acquaints the reader with the difficult adventure that was the progression of flight. Each major military conflict is covered in turn and by chapter, from the First World War to the Cold War and Middle East clashes. Hearn concludes with a description of the Air Force's condition today and its expected development in the future.

This book is a study in numbers, statistics, and the role of influential individuals. It relies heavily on inventory data; in some chapters, the data appear to help describe Air Force capability at the time, but in others it overwhelms readers with technical details. For example, the section titled "Operation Iraqi Freedom" describes the Joint Direct Attack Munitions: "The JDAMs guided air-to-surface system—designated GBU-31, GBU-32, or GBU-38—uses as the payload the 2,000-pound BLU-109/Mk-84, the 1,000-pound BLU-110/Mk-83, or the 500-pound BLU-111/Mk-82 warhead."

An audience unfamiliar with people significant to the Air Force's history, however, benefits from Hearn's detailed recitation of their roles, whether they flew planes or commanded wings. Hearn includes the decisions, debates, and conflicts that influenced and ultimately determined the direction of the Air Force. His precise and comprehensive overview covers exactly the topics a student would need to understand major conflicts and how this branch of the military evolved into what it is today. This overview is enhanced by his candid assessment of people and operations. Hearn's appraisals seem well-balanced and fair, even as he takes stances on many decisions and conflicts among USAF and U.S. leadership. The exception to this tempered analysis, perhaps, is Hearn's evaluation of the Vietnam War, which leaves the reader little doubt about the author's defensible frustration with political leaders of that era. Overall, his style regarding personnel and politics is enjoyable and informative.

Scattered throughout the book are numerous photos, maps, charts, quotes, and biographies. While some charts fail to add real value, most add interest and context; and nearly all the photos and biographies are interesting and enlightening. The layout is visually pleasing and makes the book interesting for either a cursory or thorough reading. I found several typos in the text, though none was significant enough to disrupt the flow, understanding, or enjoyment.

*Air Force: An Illustrated History* concludes with a chapter that demonstrates Hearn's comfort with current Air Force doctrine and equipment, as he touches on most of the USAF's distinctive capabilities

and inventory. Hearn succeeds in instructing and entertaining his audience as he traverses history and peers into the future, adeptly discussing personal, financial, political, and military influences throughout.

2d Lt. Elizabeth Yarlett, USAF



**Come Up and Get Me: An Autobiography of Colonel Joe Kittinger.**

By Joe Kittinger and Craig Ryan. Albuquerque: University of New Mexico Press, 2010. Photographs. Appendix. Index. Pp. xv, 256. \$18.45 ISBN: 978-0-8263-4803-6

"Adventure is out there!" The catch phrase from Disney's balloon-centric movie *UP* is a fitting summary of retired Colonel Joe Kittinger's outlook on the world. On August 16, 1960, Kittinger jumped from a balloon gondola at 102,800 feet. He set four records that have stood for more than fifty years and captured in one moment a metaphor for his entire life. An easy and entertaining read, Kittinger's recent biography truly captures that spirit of adventure and calculated risk, while chronicling his life through all of its ups and downs. [Pun intended.]

Colonel Kittinger's biography covers the standard fare: early years, various parts of his military career, a smattering of personnel life, and his harrowing story of flying combat missions in Vietnam and serving nearly eleven months as a POW. However, the bulk of the work provides an inside view of Project Excelsior and other related Air Force high-altitude test programs in which he participated, as well as his post military life in competitive ballooning. In addition to his record-setting skydive, Kittinger set several aviation records. He was the first man to fly a balloon solo across the Atlantic Ocean and set gas-balloon world distance records in two balloon classes. Many of his ballooning records stood for almost twenty years, until they were eclipsed by Steve Fossett's solo round-the-world flight in 2002. It is in the telling of the ballooning adventures that the book is at its best, with Kittinger recounting the intimate and often unbelievable details with a literary twinkle in his eye. Although he commits a few instances of "fighter pilot storytelling," the only real drawback to the book is Kittinger's choppy and occasionally disjointed writing style. While these flaws provide minor distraction from the narrative, in the end they show the genuine nature of the story and reveal what we already know: Kittinger was an adventur-

er, not a writer.

*Come Up and Get Me* is a short, easy read of only 256 pages; but it contains a significant number of daring-do tales, making it enjoyable for anyone who likes "a good story well told." Furthermore, the historical significance and uniqueness of the feats accomplished by Colonel Kittinger make the work serious enough for those who want to expand their knowledge on a wide range of subjects from competitive ballooning to the early days of the U.S. space program.

Maj. Matthew Dietz, USAF, F-15E Pilot, NATO Combined Air Operations Center, Poggio Renatico, Italy



**Confronting the Chaos: A Rogue Military Historian Returns to Afghanistan.**

By Sean M. Maloney. Annapolis, Md.: Naval Institute Press, 2009. Photographs. Notes. Index. Pp. xvi, 256. \$34.95 ISBN: 1-59114-468-7

"Security and development go hand in hand. You can't have one without the other," concludes Dr. Maloney, advisor to the Canadian Army's Chief of the Land Staff and associate professor of history at the Royal Military College of Canada. *Confronting the Chaos* is little concerned with combat, and focuses on the incredibly important non-combat aspects of the counter-insurgency campaign. Provincial Reconstruction Teams (PRTs) are at the heart of the "security and stability" campaign in Afghanistan. The enemy understands this and directed significant amounts of violence against the aid and construction efforts of a relatively small group of military and civilian aid workers.

The war in Afghanistan has undergone several phases; but, early in 2003, a weak Afghan central government needed help in the provinces outside the capital of Kabul. Since then, the PRTs have expanded from about thirty to more than 100 personnel to "extend the Authority of the Central Government; assist in establishing stability and security; and enable reconstruction." These teams establish good relations with regional political, military, community, and religious leaders to engage and influence them to achieve security. Teams maintain an understated presence that is non-threatening to the Afghan people but achieves its effects through non-violent means while retaining a robust capacity to project force.

*Confronting the Chaos* tells the story of walking this tightrope. The seemingly impossible task is made more difficult by a society riddled with corruption, greed, and



the self-interests of drug and warlords. The narrative is intensely personal and told by a teller who is interested in achieving a stable and secure . Dr. Moloney has established friendships with military members and Afghans working in this difficult country. The PRT story is told clearly and with compassion for the plight of a long-suffering but courageous people.

Since August 11, 2003, NATO has assumed responsibility for stability in Afghanistan. The country was divided into sections, with member nations assigned areas of influence under the umbrella of the International Security Assistance Force (ISAF) These sections each host a PRT under the control of the ISAF member in that section. The problems of multinational relationships and partnerships between ISAF members compound the internal Afghan problems to create situations that are frustrating for PRT team members. Thus, for example, the Afghan President is little more than the glorified mayor in Kabul; and the central government's influence does not stretch much beyond the city limits, making the PRTs more important in extending the central government's influence into the provinces. These teams have enjoyed some successes, some failures, and many false starts.

This book the second of a trilogy dealing with Sean Maloney's experiences in Afghanistan in 2004. The prequel to this book, *Enduring the Freedom*, describes events during his first visit from mid-2002 to the end of 2003. The third book in the series, *Fighting for Afghanistan: A Rogue Historian at War*, will relate the story of his journey to in 2006 to observe the operations of a combined American, British, Canadian, and Dutch brigade. *Chaos* chapters contain footnotes, but the book suffers from the lack of a bibliography, largely because the personal experiences of the author constitute most of the narrative. The book is a valuable account for those who seek to understand this highly complicated conflict and catch a glimpse of "modern nation building."

*Dr. Gary Lester, Deputy Historian, Air Force Operational Test and Evaluation Center (AFOTEC) Kirtland AFB, New Mexico, and former Deputy Historian, Air Force Central Command (AFCENT).*



**U.S. Marine Corps Aviation Since 1912, Fourth Edition.** By Peter B. Mersky. Annapolis, Md.: Naval Institute Press, 2009. Maps. Photographs. Notes. Appendices. Index. Pp. xvi, 405. \$49.95 ISBN: 978-1-59114-516-5

This is a book about Marine corps Aviation with a forward by John Glenn—and it lives up to its billing. Peter Mersky was commissioned through Aviation Officer Candidate School and retired as a Commander in the Naval Reserve. He was assistant editor and then editor of *Approach* magazine, a publication of the Naval Safety Center and the absolute centerpiece promoting safety in Naval Aviation. He has written over a dozen books and reviewed nearly six hundred. His knowledge of his subject is impeccable. We are fortunate to welcome this fourth edition which brings us from 1997 through the important Middle East conflicts until 2009. Mersky fully captures the spirit of Marine Aviation as it has continually had to justify its existence and its importance as a vital part of the Marine Air Ground team. He clearly relates the long history and interactions of Marine Aviation and its roots and relationships within the larger umbrella of Naval Aviation.

The book is fittingly dedicated to the late Lt. Gen. Thomas Miller, USMC, a former squadron mate and close friend of Senator Glenn, who was a three-war Marine, an accomplished test pilot, and a pillar of Marine Aviation. He was also largely responsible for the Marine pursuit of vectored-thrust and tilt-rotor powered-lift developments. He was the first Marine to fly the Harrier-series aircraft and finished his career directing all Marine Aviation.

As early as the second page, Mersky weaves a great story of the first Marine Aviator, 1st Lt. Alfred A. Cunningham: "... and after only two and one-half hours of instruction, Cunningham soloed on August 20, 1912. He cited the reason for the brevity of his instructional period: "There being so few civilian flyers, the factory had to pay them a huge salary to teach us, and they were anxious to make it short and snappy."

Having been a Marine aviator for thirty-two years, I am familiar with many of the people and events that Mersky documents. In particular, I lived at the "Rose Garden" that he describes on page 245; he has totally captured the facts and essence of what took place there. In every case cited in this book where I have personal knowledge, the story is told completely and accurately. What I found striking was that this book was not just a wonderful history compilation, but also that it was as readable as any novel one might encounter. Mersky also generously provides wonderful photo coverage in each chapter.

My bottom line is that it is great history and a most entertaining read.

*Maj. Gen. Joseph T. Anderson, USMC (Ret.), Fairfax, Virginia*



**Dambuster: The Life of Guy Gibson, VC, DSO, DFC.** By Susan Ottaway. UK: Pen and Sword, 1994 (Reprint 2007). Photographs. Appendices. Index. Pp. xii, 196. \$24.95 Paperback ISBN: 1-84415-605-2.

Wing Commander Guy Gibson gained fame as the leader of the unit that attacked the Mohne and Eder dams in Nazi Germany, using Barnes Wallis' innovative "bouncing" bombs. The raids caused tremendous damage and loss of life, interrupting German war production and earning Gibson the Victoria Cross, Britain's highest military award. Although the title comes from that famous mission, this book is not specifically about that action. Rather, it is more an attempt to chronicle the all-too-short life of its best-known participant.

Born in India, the son of a career civil servant, Guy Gibson joined the Royal Air Force in 1936 and was in combat from the outset of the Second World War. After completing his first tour in bombers, he requested a second combat tour in lieu of the normal instructor billet. Assigned to a night fighter squadron, Gibson shot down three enemy aircraft, with credit for one probable: a fair achievement given the quality of airborne radar during that period. Inevitably, he was assigned to a training unit since such postings were considered "rest" periods for weary aircrews. Gibson nevertheless lobbied vigorously for an operational billet. His stay with the training unit was brief; and, soon, he was again flying bombing missions, this time in Lancasters.

By the time he was awarded the Victoria Cross, Gibson had flown more than 170 combat sorties. Determined to keep their newest hero safe until the end of the war, his superiors sent Gibson on a public relations tour of England and America. He again grew restless and, after repeated requests, was allowed to return to operations, this time as a pathfinder flying Mosquitos. It was on one of these missions that Gibson's luck finally ran out. He was twenty-six years old.

Despite his prowess in the air, we learn that Gibson, the commanding officer was a harsh taskmaster not well-loved by his men. In the precarious first years of war, his tough demeanor served him well as he pushed his men to the limits when Britain needed every ounce of effort to avoid defeat. The author makes much of Gibson's unhappy marriage, but the exact

cause of his unhappiness is difficult to fathom. Married to a modestly successful stage actress several years his senior, it seems likely that Gibson, like many young men, simply married too early and possibly for the wrong reason. In any case the strains of war and command would inevitably take a toll on any relationship. Ottaway's recurring reference to Gibson's unhappiness seems speculative at best.

Well illustrated with photos from Gibson's family and friends, Ottaway's extensive research is evident. However, the lack of notes or even a bibliography limits its usefulness as a reference work. Nevertheless, it is an enjoyable book, even if more suited for the general or youthful reader.

*Maj. Anthony E. Wessel, USAF (Ret.), Oklahoma City, Oklahoma*



**The Tejas Story: The Light Combat Aircraft Project.** By Air Marshal Philip Rajkumar, Indian Air Force (Ret). New Delhi, India: Manohar Publishers & Distributors, 2008. Photographs. Index. Pp. i, 174, Rs. 525 ISBN: 81-7304-764-2

This book captures Air Marshal Rajkumar's experience as he worked in the "technology demonstration phase of the LCA [Light Combat Aircraft] programme." He details a close and personal association with the LCA program over a nine-year period starting in 1994 at the Indian Aeronautical Development Agency and ending with his retirement from government service in 2003.

It is written in the first person as a narrative and thus must be treated with some concern over the potential lack of balance as problems and issues are discussed. Nonetheless, Rajkumar makes an exemplary effort to fully discuss the points of view of the various stakeholders when issues arise. Of interest to me was his candid explanation of the aims of the program: "... bridging the technology gap in aeronautics [between India and the west], indigenization and delivery of a ready-to-go-to-war machine to the IAF [Indian Air Force] at a reasonable cost and time-frame ..."

In the Air Marshal's view these aims were largely achieved with the most notable exception of the Kaveri engine. It had been designed and produced in India but had yet to be certified for use on the LCA, thus necessitating use of General Electric engines.

The book is a superb—albeit overly long—case study useful to anyone associated with program development. All of the

stakeholder turf, technical and resource themes, and political issues are covered including such exogenous issues as the assassination of Rajiv Gandhi coupled with an erupting foreign-currency-exchange crisis. Subsequent government reaction included placing the LCA program on a "low priority list."

Although Rajkumar's science and engineering background leads him to explore in great depth the many technological problems faced in the program, he also does an excellent job of detailing the organizational and resource arguments, and the political issues that tend to impinge upon any serious weapon development program. There is much to learn from his experiences on the LCA program.

I recommend the book to those interested in aircraft program development, especially as an avenue for the creation of indigenous industrial capabilities.

*Dr. Gerald Abbott, Professor of Acquisition, Industrial College of the Armed Forces, National Defense University*



**Finish Forty and Home: The Untold World War II Story of B-24s in the Pacific.** By Phil Searce. Denton: University of North Texas Press, 2011. Notes. Photographs. Bibliography. Index. Pp. xiv, 373. \$29.95 ISBN: 978-1-574441-316-8

This is a wonderful World War II story of combat air operations in the Pacific. It is full of detailed combat mission information and reads like a fast-paced novel. It is Phil Searce's first published work and covers a topic to which he is emotionally attached—the war flying exploits of his father, Sgt. Herman Searce, a 42d Bomb Squadron radioman in B-24 Liberators.

Searce's book is more than just an historical record of one individual; it is a detailed description of B-24 combat flight operations in the Pacific. It begins with Herman's enlistment at age sixteen—he lied about his age in order to enlist—and continues with initial gunnery training and then his assignment as a radioman in the newly manufactured B-24 Liberator bomber. Searce also presents a sense of life in Hawaii during the years 1942-1943, with the continual buildup of military personnel on this island fortress. The story then takes the reader through the island hopping campaign, in which Seventh Air Force was a major participant, to include air bombardment missions against such targets Nauru, Yap, Tarawa, Haha Jima, Iwo Jima, Kwajalein, Saipan, and Guam.

Searce relates in detail the flight activity of many of the bomber aircraft and

aircrews from the 42d Squadron. Readers become familiar with several aircrews and their combat exploits; the details of combat flights are the major highlight in this story. Searce graphically depicts the mission scenarios in which B-24 operations were conducted. The reader can almost smell the aircraft, sense the apprehension in the crew as they approach the target, hear the engines roar, and feel the Japanese anti-aircraft shells burst. In short, he puts the reader in the cockpit of these missions.

I have a special affinity for the content of this book, as I flew B-52 aircraft from Guam during the Vietnam War. From my perspective (about thirty years after the timeframe of this book) I can attest to the accuracy of details concerning long-range bomber missions over the expansive regions of the Pacific Ocean. Searce's writings described these operations as "hours of boredom and minutes of hectic terror." That's the way I remembered it as well.

In summary, this book is well worth the time and effort to read. It is a work that captures the intensity of World War II bomber combat operations in the Pacific Theater of Operations. It introduces the reader to new characters who protected our way of life and assisted in the defeat of the enemy. Many of these characters gave their lives for us and their sacrifice is presented in sufficient detail to appreciate the environment in which they fought and the bravery shown. The many episodes are presented in chronological order, thereby allowing the reader to navigate through the buildup of Allied forces in the Pacific, the strategy used to win battles, the people who faced these dangers, and the costs of those victories. Searce dedicates this book to his father, the central character in the book; but its thrust is the B-24 bomber and all the men who flew the aircraft during World War II. From my perspective, the book is a total success.

*Col. Joe McCue, USAF (Ret.), Leesburg, Virginia*



**F-5 Tigers over Vietnam.** By Anthony J Tambini. Wellesley, Mass.: Branden Books, 2001. Photographs. Appendices. Index. Pp. 93. \$14.95 Paperback ISBN: 0-8283-2059-4

A lightweight combat aircraft first flown in the late 1950s, the Northrop F-5 Tiger, became one of the most successful American-made fighters exported to allied countries. The sleek little aircraft is still in use by several air forces today.

In this short but absorbing book, Anthony Tambini (author of *Douglas Jumbo's: The Globemaster*) provides a fascinating look and chronology of the F-5's wartime service with the air forces of both the United States and the former Republic of South Vietnam from its operational debut in 1965 to the fall of Saigon ten years later. Tambini is well qualified to pen this account, as he served in theater and worked closely with the South Vietnamese Air Force (VNAF) as a civilian technical advisor in the last years of the war.

Tambini divides the story into five chapters. He starts with the aircraft's beginnings in 1955, with the N-156 program that evolved into the T-38 Talon trainer. Lucidly described are the aircraft's initial design and the recommendations that soon followed from allies for a low-cost, easily maintained, and affordable combat aircraft. Of note in this segment is the U.S. Army's interest in the program.

Subsequent chapters closely look into the operational history of the F-5 under the three-phase Skoshi Tiger program in 1965. The USAF's 4503d Tactical Fighter Squadron flew the aircraft into combat over Vietnam. Although the aircraft performed well, the Skoshi Tiger program was terminated; and the F-5s were turned over to the VNAF, where they became the mainstay for air defense as well as close support, ground attack, and photo reconnaissance missions.

By the early 1970s, the VNAF would become the fourth largest air force in the world. Among the stable of aircraft used were more than 180 F-5's. Tambini ably covers some of the most notable VNAF F-5 sorties, along with discussions on modifications made to the aircraft while in VNAF service. He also covers the final days of the conflict during which some of the fighters were captured intact by the North Vietnamese and subsequently used to attack Southern bases. Tambini also presents the threats encountered by VNAF pilots, ranging from machine guns to Soviet-built Strela surface-to-air missiles. Finally, he details the F-5's combat effectiveness and the morale boost that it gave to the South Vietnamese.

This is a finely written and researched book. The Vietnam War and associated USAF activities have been widely covered, but only a few authors and books document the Air Force and aircraft of . This book adds to that story. A significant part of the book is its 15-page photo section. Many of these have not been published before. The text is well supplemented by appendices that provide illustrations, specifications, and weapons data for the three models of the F-5 that flew with

the USAF and VNAF during the war.

*F-5 Tigers over Vietnam* is a fascinating read and a welcome and valuable contribution to the historiography of this magnificent aircraft, the South Vietnamese Air Force, and the air war in Vietnam.

*Cmdr. Mark R. Condono, Philippine Coast Guard Auxiliary*



**The Right of the Line: The Role of the RAF in World War II.** By John Terraine. South Yorkshire, UK: Pen & Sword Books, Reprint, 2010. Notes. Photographs. Maps. Appendix. Bibliography. Index. Pp. 841. \$29.00 ISBN: 978-1848841925

This book is a reprint of the late noted British military historian John Terraine's 1985 history of the Royal Air Force (RAF). By titling this work *Right of the Line*, Terraine puts forth his thesis. In military history, the "Right of the Line" is the "place of honour" and "the place of greatest danger," and, according to Terraine, the role played by the RAF in the European theater. He argues that air power played a "significant, often dominant" role in the war. It was Fighter Command that kept Germany at bay during the Battle of Britain, and "Bomber Command, in her [Great Britain's] days of weakness, was her only offensive weapon."

In this massive work, Terraine focuses only on the war in Europe. He initially intended to include the RAF's Pacific theater operations but concluded that the length of text for Europe alone made Pacific Theater inclusion prohibitive. In order to fully discuss the RAF during World War II, Terraine begins with the interwar years' doctrinal and force-structure foundations that shaped the RAF. To address the entirety of the RAF's European operations, even in a volume as large as this, is a difficult task. To meet this challenge, Terraine keeps his focus at the strategic and operational levels of war. To add context and detail, he relies on well-placed quotes from key participants and excerpts from original documents. This approach is well done and adds to the value of the overall text. There is the occasional foray into tactics, to include excerpts from mission reports, but the tactical level is clearly not the focus.

No history of the World War II RAF would be complete if it did not address the morality of Bomber Command's area bombing campaign. Terraine's approach to the issue is interesting. He describes the targeting of German morale as a failed task and a "cosmetic word for massacre."

He then goes into counter claims that the bombing of Dresden was unnecessary: in February 1945, the end of the war was not in immediate sight and leaders were doing all they could to end the war as quickly as possible. This included firebombing Dresden. Despite describing area bombing as a "displeasing spectacle," Terraine does not blame the RAF or call the service immoral. Rather, he quotes Dr. Noble Frankland: "The great immorality open to us in 1940 and 1941 was to lose the war against Hitler's Germany."

The text is well documented with over 100 pages of notes. Terraine used many primary and secondary sources as well as the RAF's official history. Students and researchers will find the set of three separate indexes (general, RAF specific, and aircraft) helpful. However, none of the seven limited appendices focuses on cumulative RAF accomplishments.

Readers looking for detailed discussions on individual topics will be disappointed. The task of effectively covering an entire war prohibits detailed discussions; however, readers looking to see how various events and decisions affected the RAF throughout the entirety of the war will certainly appreciate the book. The lengthy text serves as an excellent reference for those interested in the RAF during World War II, and merits inclusion in the libraries of air power-minded historians.

*Lt. Col. Daniel J. Simonsen, USAF, (Ret.), Ruston, Louisiana*



**Final Cut: The Post-War B-17 Flying Fortress and Survivors, Fourth Edition.** By Scott A. Thompson. Missoula, Mont.: Pictorial Histories Publishing and Aero Vantage Books, 2011. Photographs. Appendices. Index. Pp. 256. \$24.95 Paperback ISBN: 978-1-57510-156-9

This is Thompson's third redo since he wrote the first version of the book back in 1990. I'm sorry I missed the first three if they were anywhere near the quality of this edition. Thompson, himself, notes how surprised he was at how much change had occurred in the world of the remaining B-17s since he first wrote his book.

*Final Cut* is not like the other "five million" books written about Boeing's Flying Fortress. Most of them cover the development and wartime history of what is, arguably, one of the most famous aircraft types ever built. Thompson picks up the story with disposition of the thousands of Forts starting at V-E Day. That is covered in Part One of the work.

The two chapters in Part Two cover



the B-17s post-World War II military use. Drone control, reconnaissance, search-and-rescue, transport, and other roles were performed by reworked B-17s for many years. The only thing missing that I would have liked to have seen, even briefly, was the bombing role of the three B-17s that found their way into the new Israeli Air Force in the late 1940s.

Part Three's four chapters look at civil use of the former bombers in the myriad roles they have played since 1945: crop dusters, movie and television actors, aerial surveying, firefighting, and many more.

However, the real meat of this book—and the reason most people will want to read it—is in Part Four. In forty-eight “chapters,” each B-17 surviving anywhere in the world, whether flying or static, is individually covered with a nicely written history and lots of pictures. Three of these are currently at the National Museum of the United States Air Force and are the only remaining B-17s that saw combat during the war: B-17D *Swoose*, B-17F *Memphis Belle*, and B-17G *Shoo Shoo Shoo Baby*. In addition to the forty-eight individual aircraft chapters, two additional chapters cover new-builds and known unrecovered aircraft. Several projects are underway to make B-17s (including a “C” and an “F”) from whatever parts could be found plus a great many newly manufactured parts, many of which are major structure. There are about a dozen unrecovered wrecks in various locations, and these are mentioned briefly in the final chapter of Part Four.

Rounding out the text are eight useful and well-organized appendices covering topics such as civil B-17s, movies that have a B-17 appearing even in a cameo role, and the firefighting B-17s.

So what are the book's strengths? Tops on the list have to be the more than 400 photos. Modelers might be disappointed in these, since the majority are black-and-white. But the internet can fill this need in many cases. Except for the soft cover, the book has the quality of a Schiffer publication (gloss paper and high-quality photo reproduction) without the cost, upside-down and mislabeled pictures, and typos often found in those books. I'd list the weak points, but I don't think there are any. *Final Cut* is a high-quality book that should appeal to anyone interested in the iconic B-17.

Col. Scott A. Willey, USAF (Ret), Book Review Editor, and Docent, NASM's Udvar-Hazy Center

### **The Science of Bombing: Operational Research in RAF Bomber Command.**

By Randall T. Wakelam. Toronto: University of Toronto Press, 2009. Maps. Tables. Diagrams. Illustrations. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. 384. \$55.00 Paperback. ISBN: 0-8020-9329-6

Randall Wakelam is director of research and symposia at the Canadian Forces College and an assistant professor of Defense Studies with the Royal Military College. In *The Science of Bombing*, he examines the contributions of scientists assigned to RAF Bomber Command's Operational Research Section (ORS) and their singularly unrecognized contributions in the command's successes. This analysis of the role of the ORS examines how that headquarters directed the strategic bombing campaign against Germany. Wakelam's used original sources, including the unpublished history of the ORS written by the scientists themselves, reports produced by the Section, and relevant headquarters documents.

Wakelam asked why career aviators would turn fundamental areas such as navigation and aircraft protection over to scientists who had “by and large never flown in a bomber, let alone at night on a raid over hostile territory.” The answers were important to Wakelam, an aviator himself and military educator, who felt that something was missing in the story of Bomber Command losses.

The story begins in 1939, when Bomber Command was just three years old and numbered some 200 aircraft of various vintages, some even obsolete. The need for post-attack photo reconnaissance and bomb damage assessment to confirm damage done during raids was recognized; however, adequate aircraft and cameras had yet to be designed or procured. Target identification and marking at night were seen as major problems, but lack of a testing range made the process slow and ineffective. Thus, when war came in 1939, Bomber Command was neither trained nor equipped to take the fight into enemy territory by day or even to locate the target area.

Bomber Command followed the lead of Fighter and Coastal Commands and set up an ORS within the headquarters that employed scientists from a wide variety of backgrounds. They collected, reviewed, and analyzed data and then presented the findings to the command with conclusions and recommendations as to what courses of action might be available. One of the first ORS tasks was to measure the accuracy of bombing operations. This involved

looking at navigation as well as addressing problems with training and visual target identification—all useful in getting more bombs onto targets. Interestingly, the scientists found a link between target location, defenses, and weather which affected bombing accuracy.

Bomber Command's motto, “Strike Hard, Strike Sure,” preached a doctrine of strategic bombing that aviation planners believed would bring certain victory. British Prime Minister Stanley Baldwin said in 1932 that “the Bomber will always get through.” British and American aviators held to the theory for decades. However, events from 1939 to 1941 suggested otherwise to Bomber Command with poor bombing accuracy and high attrition rates. Within ORS's first year, some fifty scientists and support staff tackled the issue of making the bombing campaign more efficient. Their work went on for over four years and involved hundreds of other studies and investigations which looked at all aspects of how Bomber Command planned and conducted its raids: training, navigation, target recognition, aircraft performance, and enemy air defenses.

*Science of Bombing* is a wonderful work laid out in chronological order. Wakelam's thorough research and excellent writing allow the reader to see how Bomber Command helped its crews “always get through.”

R. Ray Ortensie, Staff Curator, HQ, Air Force Materiel Command



**Call Sign-Dustoff: A History of U.S. Army Aeromedical Evacuation from Conception to Hurricane Katrina.** By Darrel Whitcomb. Frederick, Md.: Office of the Surgeon General, Borden Institute, 2011. Maps. Tables. Diagrams. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. viii, 450. \$35.00 ISBN: 978-0-1608-7937-1

Quick—if you were seriously wounded in combat, what is your best chance for survival? If you said getting medically evacuated (MEDEVAC) to safety, you would be right. If you did not know the answer to that question, you should read Whitcomb's book. It will inform you about the most instrumental lifesaving development of the twentieth century.

Whitcomb established himself as an expert in the field of combat search and rescue by authoring *The Rescue of Bat 21* and *Combat Search and Rescue in Desert Storm*. *Call Sign-Dustoff* transitions into the field of MEDEVAC, the use of heli-



copters to pick up and deliver wounded soldiers to safety. It focuses on the ambiguity of belonging to both medical and aviation organizations, asking the fundamental question, "is aeromedical aviation an aviation mission that entails the movement of people, or is it a medical operation that entails the use of aircraft?" This question is paramount to understanding MEDEVAC, because the answer places MEDEVAC responsibilities under either medical or aviation command.

Whitcomb bases his study on oral history interviews of MEDEVAC personnel as well as articles, staff studies, and reports from MEDEVAC founders such as Maj. Gen. Spurgeon Neel. Whitcomb concludes that MEDEVAC members regard themselves as military medical personnel first, with the primary mission of caring for injured soldiers. The most compelling argument for this is an analogy that MEDEVAC is akin to medical ambulance transit, only through the air. This argument separates MEDEVAC from Army aviation, making the distinction that MEDEVAC missions have almost no prep time, as they occur instantaneously. Army aviation, however, has a large amount of prep time for planned missions. This distinction emphasizes different needs for different missions. This is not to say that MEDEVAC is completely removed from Army aviation; rather, it requires a different set of rules.

Whitcomb relates the evolution of MEDEVAC from its inception through conflicts such as Korea, Vietnam, Afghanistan, and Iraq, in addition to MAST (Military Assistance to Safety and Traffic) operations. He presents the various aircraft used, adaptation of new technology and new techniques for evacuation, overall mission effectiveness, and suggestions for improvement. Whitcomb debriefs each engagement and focuses on how MEDEVAC evolved through conflicts. For example, in Korea, litter kits were mounted on the sides of H-13s, leading some patients to freeze to death. The problems faced included a small capacity for patients, no in-flight medical treatment, and no standardization for MEDEVAC requests. The next chapter describes the transition to UH-1s, new training and organization, and deployment of MEDEVAC to Vietnam. The chapter concludes with the problems faced there, such as determining safe landing zones and vulnerabilities, rescuing under fire, and another overall assessment of effectiveness. This format gives the reader insight and perspective into the MEDEVAC narrative.

Most books on MEDEVAC, such as Roald Dahl's *The Forgotten Warriors*,

Michael Nosovel's *Dustoff: The Memoir of an Army Aviator*, and John Cook's *Rescue Under Fire*, concentrate on its role in Vietnam. *Call Sign-Dustoff*, however, tells a larger story, describing how these engagements defined the role of MEDEVAC and contributed to its heritage. While the role of Medevac in Vietnam is important, it is only a small part of the overall study. The book covers MEDEVAC's inception through Vietnam in roughly fifty pages. This leaves nearly 300 pages to cover the remaining thirty years, thus emphasizing its usage in more modern conflicts.

At the end, the reader will be thankful for the coverage of the lesser-known history and perplexed at the consolidation of MEDEVAC under Army aviation. After all, the previous 300 pages focused on the unique and separate role of MEDEVAC—this is the lasting impression Whitcomb wanted to impart to his readers.

*2d Lt. Alexander X. Milhous, USAF, USAFA, Colorado Springs, Colorado*



**Launch Pad UK: Britain and the Cuban Missile Crisis.** By Jim Wilson. Barnsley, South Yorkshire, UK: Pen & Sword Aviation, 2008. Maps. Diagrams. Photographs. Appendices. Bibliography. Index . Pp. vii, 200. \$39.99 ISBN: 978-1-84415-799-0

Jim Wilson was a journalist in Norfolk when the Thor missiles were based there and, much later, was awarded the Order of the British Empire by the Queen for his services in that field. But this book may be the high point of his career.

The story of those missiles has not been well recorded. East England became the West's first launch pad for nuclear ballistic missiles and, thus, was a prime target for pre-emptive strikes. The weekend of October 28-29, 1962, was the most dangerous in human history. We were on the brink of mutually assured destruction. For five Cold War years, sixty Thor missiles were ready to fire within fifteen minutes, each with a 1.44-megaton warhead. This book is their story.

There were twenty Thor bases, each with three launch pads. At the time of the Cuban Missile Crisis, missiles from the U.S. couldn't reach the Soviet Union, but those from England could. The Thor bases thus became the first-strike target for the Soviets, and they started plans for their own missiles in Cuba that could hit the major cities of the U.S. Wilson's story summarizes the grave problems this caused.

Armageddon was near.

Wilson gives a good rundown on missile development rivalry to show where it fit in during the Thor's short five years on stage. Thor was a stop-gap weapon pending development of intercontinental-range replacements. With a circular error probable (CEP) of two miles, it was intended for strategic targets such as cities rather than those requiring pin-point accuracy. Some think that Thor restrained Khrushchev from overreacting to the Gary Powers U-2 shoot down in 1960. Sixty missiles aimed at the key points of the Soviet Union encouraged discretion.

The book contains an excellent selection of both maps and pictures. Wilson devotes a good deal of space to matters such as dual firing control and the non-nuclear protests at the bases. These topics were of concern at the time but seem less so now. Wilson also covers in detail the initial training of Thor crews in the U.S. and construction of the twenty bases. This is followed by the routine of maintenance, continued training, and safety. A chapter is given to "rural convoys"—moving men and equipment. Much of this may not have a wide appeal today, especially in this country. However, overall the book gives a realistic feel to a critical time in our history.

*Brig. Gen. Curtis H. O'Sullivan, ARNG (Ret.), Salida, California*



**Black Sheep: The Life of Pappy Boyington.** By John F. Wukovits. Annapolis, Md.: Naval Institute Press, 2011. Photographs. Notes. Bibliography, Index. Pp. 189. \$34.95. ISBN: 978-1-59114-977-4

This book is an insightful addition to the field of Boyington/Black Sheep scholarship. For eighty-four days in late 1943 and early 1944, Marine Fighter Squadron 214 (VMF-214), commanded by Boyington and dubbed the "Black Sheep Squadron," set marks in leadership, combat prowess, and team spirit that have been studied and emulated ever since. VMF-214 was constituted in-theater in mid-1943 from replacement pilots and casualties due to the urgent need for air power in the Rabaul campaign. Boyington organized a cohesive combat unit, trained it on tactics that would effectively drive the enemy from the sky, and garnered high numbers of kills.

Boyington's upbringing, virtues, and faults made him a person of both stellar achievement (air combat tactician and leader) and lost opportunity (alcohol addiction, early retirement from the Marines, lost jobs, and broken marriages). His life is familiar: rough-and-tumble childhood; the

# Books Received

Delpech, Therese. *Nuclear Deterrence in the 21st Century: Lessons from the Cold War for a New Era of Strategic Piracy*. Santa Monica, Calif.: RAND Corp., 2012. Notes. Bibliography. Pp. xxiii, 181. \$24.95 Paperback ISBN: 978-0-8330-5930-7

Kalic, Sean N. *US Presidents and the Militarization of Space, 1946-1967* College Station: Texas A&M University Press, 2012. Photos. Notes. Appendices. Bibliography. Index. Pp. xii, 282. \$40.00 ISBN: 978-1-60344-691-5

Knutsen, Dale E. *Strike Warfare in the 21st Century: An Introduction to Non-Nuclear Attack by Air and Sea*. Annapolis, Md.: Naval Institute Press, 2012. Illustrations. Appendices. Index. pp. x, 195. \$27.95 ISBN: 978-1-61251-083-5

Wildenberg, Thomas. *Destined for Glory: Dive Bombing, Midway and the Evolution of Carrier Aipower*. Annapolis, Md.: Naval Institute Press, 2012. Photographs. Illustrations. Notes, Bibliography. Index. Pp. xvi, 259. \$22.95 Paperback ISBN 978-1-59114-969-9

## PROSPECTIVE REVIEWERS

Anyone who believes he or she is qualified to substantively assess one of the following new books is invited to apply for a gratis copy of the book. The prospective reviewer should contact:

Col. Scott A. Willey, USAF (Ret.)  
3704 Brices Ford Ct.  
Fairfax, VA 22033  
Tel. (703) 620-4139  
e-mail: [scottlin.willey@gmail.com](mailto:scottlin.willey@gmail.com)

brief flirtation with Boeing; the disappointing but instructive sojourn with the Flying Tigers, in which he absorbed the legendary Claire Chennault's lessons on air combat tactics; the all-too-short Black Sheep era that earned him a Medal of Honor; the POW ordeal; and his slide into alcoholism and unfulfilled potential, redeemed only much later in life. Wukovits uniquely ties together Boyington's background, career, and life to convincingly show how his need to be accepted and his tendency toward self-pity shaped his day-to-day experiences. At times, such characteristics caused him to fail, as they did with the Flying Tigers. At others, as with the Black Sheep and in POW camp, they enabled Boyington not only to survive but also to inspire others as a leader.

Wukovits speaks from personal experience in revealing how the disease of alcoholism affects a person's life, experiences, and choices, and how difficult it is to understand the depth of addiction, seek treatment, and live productively day-to-

day. This fresh perspective enables a new understanding of previous Boyington and Black Sheep scholarship, notably Bruce Gamble's thorough biography, *Black Sheep One*, and the encyclopedic *The Black Sheep*, and such participant memoirs as Frank Walton's *Once They Were Eagles*. Boyington's own memoir, *Baa Baa Black Sheep*, is mined and dissected throughout.

The book is comprehensively sourced from original unit records and histories; interviews with Flying Tigers, Black Sheep, and fellow POWs; oral histories; books; articles; and contemporary publications. It places VMF-214's exploits in the larger context of the Pacific War, clearly elaborates the role and significance of the Solomons air offensive, but does not bog down in official terminology or technical terms. Wukovits lets Boyington's story speak for itself.

That said, there are technical errors such as referring to .50 caliber machine guns as 50 mm throughout. That should

have been caught in the editing process. Strangely for a military history, there are no maps. Although the places and military campaigns named will be familiar to historians, maps would have been a helpful reference for the general reader. However, these are minor flaws that detract little from the overall powerful impact of this story.

This book should be read by those desiring to understand leadership style, substance, and method, especially those sections on Boyington's VMF-214 and POW experiences. As a military biography, it joins the ranks of those works that plumb the complex factors that produce great combat leaders. It is a solid addition to the corpus of biography on such great fighter pilot tacticians as Sir Douglas Bader and Brig. Gen. Robin Olds.

*Steven Agoratus, Hamilton, New Jersey*





# Coming Up



Compiled by  
George W. Cully

#### June 13-17, 2012

The **Council on America's Military Past** will hold its 46th annual conference in Lexington, Virginia. For details, see the CAMP website at [www.campjamp.org/](http://www.campjamp.org/) or write to the Council on America's Military Past, P.O. Box 4209, Charlottesville VA 22905.

#### July 10-14, 2012

The **International Committee for the History of Technology** will host its 39th annual symposium in Barcelona, Spain. The theme of this year's gathering is "Technology, the Arts and Industrial Culture." For more details, see the Committee's website at <http://www.icohetc.org/index.html> or contact Prof. Antoni Roca Rosell at [antoni.roca-rosell@upc.edu](mailto:antoni.roca-rosell@upc.edu).

#### July 11-15, 2012

The **International Organization of Women Pilots**, better known as "the Ninety-Nines," will hold its annual International Conference at the Marriott Providence Downtown in Providence, Rhode Island. For details, see the Organization's website at [www.ninety-nines.org](http://www.ninety-nines.org), or contact the Organization at [99s@ninety-nines.org](mailto:99s@ninety-nines.org), tel. (800) 994-1929.

#### August 3-5, 2012

The 15th annual convention of **The Mars Society** will be held in Pasadena, California. This year's meeting will be held in conjunction with the anticipated landing of the NASA spacecraft *Curiosity*, which is expected to touch down on the surface of Mars on August 5. For details, visit the Society's website at <http://www.marssociety.org/> or contact [info@marssociety.org](mailto:info@marssociety.org), tel. (303) 980-0890.

#### August 6-9, 2012

The **Association for Unmanned Vehicle Systems International** will host "Unmanned Systems North America 2012" at the Mandalay Bay Resort and Casino in Las Vegas, Nevada. For details, view the Association's website at [www.auvsi.org](http://www.auvsi.org), or contact via [info@auvsi.org](mailto:info@auvsi.org), tel. (703) 845-9671.

#### August 6-11, 2012

The **Society of American Archivists** will hold its annual meeting in the San Diego Hilton Bayfront hotel in San Diego, California. The theme of this year's meeting is "Beyond Borders." For details, view the Society's website at [www2.archivists.org/conference](http://www2.archivists.org/conference).

#### September 6-9, 2012

The **Tailhook Association** will hold its annual Reunion and Naval Aviation Symposium in Reno, Nevada. For details, view the Association's website at <http://www.tailhook.org/> or contact the Association's Reunion Coordinator, Mr. Marc Ostertag, at [tag@tailhook.net](mailto:tag@tailhook.net), tel. (800) 322-4665.

#### September 7-8, 2012

The **World War I Historical Association** will hold its annual National Seminar at the USMC University in Quantico, Virginia. For further information, see the WWIHA website at [www.worldwar1.com/tripwire/smtw.htm](http://www.worldwar1.com/tripwire/smtw.htm) or contact Ms. Carol Vandenbruhl at [cvandenbruhl@netscape.net](mailto:cvandenbruhl@netscape.net), tel. (248) 471-2366.

#### September 11-13, 2012

The **American Institute of Aeronautics and Astronautics** will host "AIAA Space 2012," its premier annual event on space technology, policy, programs, management, and education, at the Sheraton Pasadena in Pasadena, California. For details, see the Institute's website at [www.aiaa.org/SPACE2012/](http://www.aiaa.org/SPACE2012/) or contact the Institute at [custserv@aiaa.org](mailto:custserv@aiaa.org), tel. (703) 264-7500 or (800) 639-AIAA.

#### September 14 & 18, 2012

The **Space Foundation** will host two events to honor the 30th anniversary of the founding of Air Force Space Command. The event on September 14 will be held at the Broadmoor Hotel in Colorado Springs, Colorado; the event on September 18 will be held at the Army-Navy Club in Washington, D.C. For further information, check the Foundation's website at [www.spacefoundation.org](http://www.spacefoundation.org).

#### September 17-19, 2012

The **Air Force Association** will present its 2012 Air & Space Conference and Technology Exposition at the Gaylord National Resort & Conference Center on the Potomac River's National Harbor, directly across from Alexandria, Virginia. View the Association's website at [www.afa.org/events/conference/2012/default.asp](http://www.afa.org/events/conference/2012/default.asp) for details, or contact the AFA's exhibitions director, Mr. Dennis Sharland, at [DSarland@afa.org](mailto:DSarland@afa.org).

#### September 23-26, 2012

The **Association of Old Crows** will host its 49th International Symposium and Convention at the Phoenix Convention Center in Phoenix, Arizona. For details, see the Associations' website at <http://www.crows.org/> or pulse a Headquarters Crow at tel. (703) 549-1600.

#### September 26-29, 2012

The **Society of Experimental Test Pilots** will host its 56th annual Symposium and Banquet at the Grand Californian Hotel in Anaheim, California. For details, see the Society's website at <http://www.setp.org/> or contact the Society at [Setp@setp.org](mailto:Setp@setp.org), tel. (661) 942-9574.

#### October 4-7, 2012

The **Society for the History of Technology** will hold its annual meeting at the Copenhagen Business School in Copenhagen, Denmark. One of this year's major themes is "Technology, East-West Relations, and the Cold War." For more information, see the Society's website at [http://www.historyoftechnology.org/annual\\_meeting.html](http://www.historyoftechnology.org/annual_meeting.html), or contact them by e-mail at [shot@virginia.edu](mailto:shot@virginia.edu).

#### October 6, 2012

The **National Aviation Hall of Fame** will host its 50th annual enshrinement ceremony, in which four figures distinguished for their aviation-related achievements—Geraldyn "Jerrie" Cobb, Keith Ferris, Richard T. Whitcomb and Lt Gen Elwood R. "Pete" Quesada—will join the ranks of previous honorees. For details, see the NAHF's website at [www.nationalaviation.org](http://www.nationalaviation.org).

### October 10-14, 2012

The **Oral History Association** will hold its annual meeting at the Cleveland Marriott Downtown hotel in Cleveland Ohio. For more details, see the OHA's website at [www.oralhistory.org](http://www.oralhistory.org).

### November 15-16, 2012

The **Air Force Association** will host its annual Global Warfare Symposium and Air Force Ball at the Century Plaza Hyatt Regency hotel in Los Angeles, California. For details, see the Association's website at [www.afa.org](http://www.afa.org).

### November 15-18, 2012

The **History of Science Society** and the **Philosophy of Science Association** will co-host their annual meetings at the Sheraton San Diego Hotel and Marina in San Diego, California. For details, see the Society's website at [www.hssonline.org](http://www.hssonline.org) or contact them at [Info@hssonline.org](mailto:Info@hssonline.org), tel. (574) 631-1194.

### November 28-29, 2012

The **American Astronautical Society** will hold its annual meeting in Pasadena, California. For details, see the Society's website at [astronautical.org/conference](http://astronautical.org/conference), or contact the Society at [aas@astronautical.org](mailto:aas@astronautical.org), tel. (703) 866-0020.

## 2013

### January 3-6, 2013

The **American Historical Association** will hold its 127th annual meeting in New Orleans, Louisiana. The theme of the meeting will be "Lives, Places, Stories," emphasizing the impact of environment and geography upon human history, but other topic proposals will also be entertained. To propose panels or papers, or to request additional information, contact the AHA's meeting program committee via the AHA website: [www.historians.org/perspectives/issues/2011/1109/1109ann4.cfm](http://www.historians.org/perspectives/issues/2011/1109/1109ann4.cfm).

### January 7-10, 2013

The **American Institute of Aeronautics and Astronautics** will host its 51st annual Aerospace Sciences Meeting, to include the New Horizons Forum and Aerospace Exhibition at the Gaylord Texan Resort and Convention Center in Grapevine (Dallas/Ft. Worth Region), Texas. For details, see the Institute's website at [www.aia.org](http://www.aia.org).

### February 21-22, 2013

The **Air Force Association** will present its annual Air Warfare Symposium and Technology Exhibition at the Rosen Single Creek hotel and convention center in Orlando, Florida. For more information, see the Association's website at [www.afa.org](http://www.afa.org).

### March 14-15, 2013

The **Air Force Association** will present its annual Cyber Futures Conference and CyberPatriot Championships competition at the Gaylord Convention Center on the Potomac River, directly across from Alexandria, Virginia. For more information, see the Association's website at [www.afa.org](http://www.afa.org).

### April 8-11, 2013

The **Space Foundation** will host its 29th annual National Space Symposium at the Broadmoor Hotel in Colorado Springs, Colorado. Information and registration details can be found on the Foundation's website at [www.spacefoundation.org](http://www.spacefoundation.org).

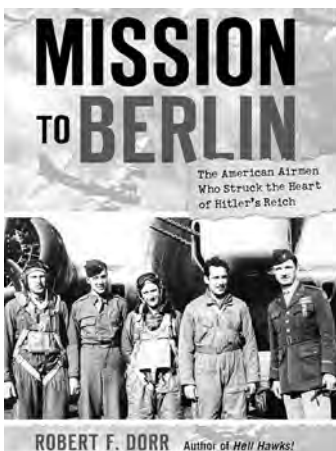
### April 17-20, 2013

The **National Council on Public History** will hold its annual meeting at the Delta Ottawa City Centre in Ottawa, Canada. The theme of this year's meeting is "The Significance of Audiences in Public History." Visit the Council's website at [www.ncph.org](http://www.ncph.org) for details.

Readers are invited to submit listings of upcoming events. Please include the name of the organization, title of the event, dates and location of where it will be held, as well as contact information. Send listings to:

George W. Cully  
3300 Evergreen Hill  
Montgomery, AL 36106  
(334) 277-2165  
E-mail: [warty@knology.net](mailto:warty@knology.net)

## Recently Released



The book "MISSION TO BERLIN" by Robert F. Dorr was published April 15. This is a general-interest World War II history that focuses on the B-17 Flying Fortress crews who attacked Berlin on February 3, 1945, in the largest mission ever flown against a single target. The book also includes a new look at the entire bombing campaign in Europe.

The young men who flew and maintained the B-17 are at the center of the story but "MISSION TO BERLIN" also has lengthy passages about Americans who flew and maintained the B-24 Liberator, P-47 Thunderbolt and P-51 Mustang.

Bob Dorr is technical editor and co-creator of this journal and was recently honored by the Foundation for his work on Air Power History. Bob describes "MISSION TO BERLIN" as a "Stephen Ambrose-style popular history of the triumphs and tragedies of everyday Americans who did something no one had done before. They fought giant battles several miles up in the sky across vast distances inside aircraft where oxygen was always needed and the temperature was almost always below freezing."

"MISSION TO BERLIN" is available from on-line sources and at bookstores. You can order a signed copy directly from the author by contacting Robert F. Dorr, tel. (703) 264-8950, [robert.f.dorr@cox.net](mailto:robert.f.dorr@cox.net)

Thank you for the feedback.

After we described the state of the Foundation in the last issue of *Air Power History*, we heard from several of you. Two themes dominated the inputs—support for the vital function that our organization provides, especially *Air Power History*, and how to help. We personally responded to every note and welcome even more feedback.

At our annual membership meeting in May, we recapped our financials in detail, along with our efforts to make the most out of our available funds. In the face of diminishing corporate support, we need to rely more on the largess of our membership. This can come in the form of recruiting friends and colleagues to join, in addition to memorialization and dedication contributions.

At our last Board of Directors meeting we accomplished two important actions. We certified the membership's election of seven new board officers. I think that you'll agree that these individuals will be great assets for the Foundation as we face our many challenges. Second, we approved a budget that places our costs at a level commensurate with our foreseeable revenue.

There are two major decisions that you will notice. First, we can no longer afford a full-time executive director. Angela Bear, our executive assistant will keep the front office manned and handle member requests and keep our processes working. Jim Vertenten has generously agreed to continually handle some executive director responsibilities on an "on call" basis. Second, until further notice, **we will continue to publish four issues of *Air Power History*, two printed and two on the Foundation web site.**

As we approach our sixtieth anniversary as an organization, we remain committed to strengthening the Foundation and better servicing our membership and followers. Our magazine remains a high quality venue for historical writings. The Foundation's award program continues to honor not only distinguished historians, but those who make history. We continue to have a strong following in the social media arena and I would encourage everyone to participate in these dialogues.

Again, I can't thank you enough for your feedback and loyal support. While our membership numbers are modest, your passion and interest in air power history is inspiring to us seeking to serve you and the Foundation in meeting its goals. We look forward to your continuing support and please contact us with your feedback and ideas.



Dale W Meyerrose, Maj Gen, USAF (Ret)  
President and Chairman of the Board





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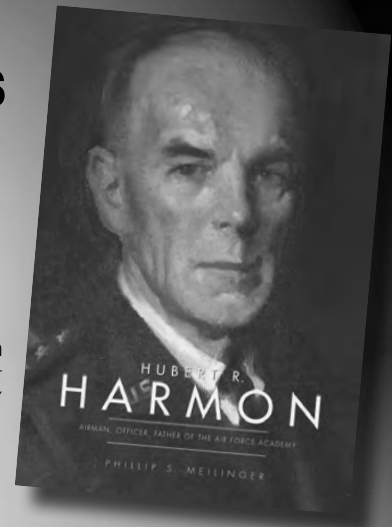
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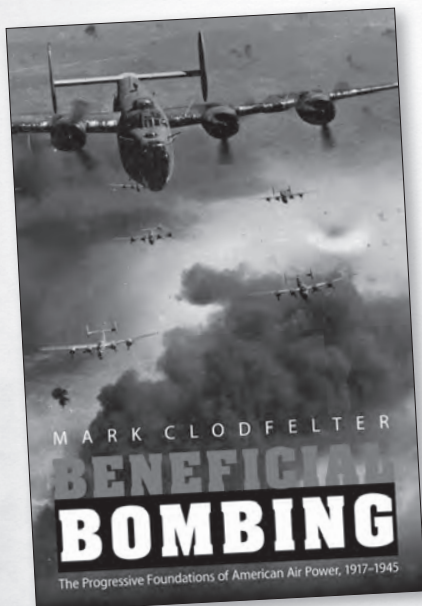
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## The Air Force *Historical* Foundation

Founded on May 27, 1953 by Gen Carl A. “Tooeey” Spaatz and other air power pioneers, the Air Force Historical Foundation (AFHF) is a nonprofit tax exempt organization. It is dedicated to the preservation, perpetuation and appropriate publication of the history and traditions of American aviation, with emphasis on the U.S. Air Force, its predecessor organizations, and the men and women whose lives and dreams were devoted to flight. The Foundation serves all components of the United States Air Force—Active, Reserve and Air National Guard.

AFHF strives to make available to the public and today’s government planners and decision makers information that is relevant and informative about all aspects of air and space power. By doing so, the Foundation hopes to assure the nation profits from past experiences as it helps keep the U.S. Air Force the most modern and effective military force in the world.

The Foundation’s four primary activities include a quarterly journal *Air Power History*, a book program, a biennial symposium, and an awards program.

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## Letters

As a member of the Foundation and a reader of *Air Power History*, I found General Meyerrose's article [Vol. 59, No. 1, page 58] in the Spring 2012 edition alarming, if not surprising. Although I do not know the details of the Foundation's financial situation, I do have one suggestion to cut costs.

I fully support the decision to reduce printed editions of *Air Power History* from four to two per year, but why not totally eliminate the printed magazine and publish it online only? There may be a few readers who do not have computers or tablets, but the choice may well turn out to be between publishing online and not publishing at all. This magazine routinely contains well-researched and well-written articles, and it seems to me that the proportion of the readership capable of accessing the magazine online would be greater than the proportion of computer-literate people in the general population. (It would be interesting to know the ages of the *oldest* subscriber who *does* have Internet access, and *youngest* subscriber who *does not*.) In any case, the trend is clearly toward more electronic publications and fewer paper editions, and that will only accelerate as we go forward. I would go so far as to say that, in the future, people will both *expect* and *prefer* to receive publications electronically. In any case, the move to publish online is clearly the way to go, although I'm sure there will be a few complaints. (*By the way—I am sixty-five years old and live in a military-oriented, age-restricted community, and I do not know anyone under seventy who does not have a computer with Internet access.*)

I subscribe to several other magazines, and where available, I have converted my subscriptions to the online editions. The system that works best for me is to receive an e-mail with a link to the new edition as soon as it is published, so I can then access a web site to download and save the publication as a .pdf file. (I do receive one monthly newsletter that comes as a *very large* attachment to an e-mail, but this is unwieldy and I would advise against the use of attachments.)

In any case, thank you for the update. I know you are doing your best,

and I hope to be reading *Air Power History* for many years to come.

Col. Walter "Wally" R. Berg, USAF (Ret.)  
Melbourne, Florida

## News

### Wolk's "Arnold at Potsdam" is Best Article Appearing in *Air Power History* in 2011

Following on Herman Wolk's book *Reflections on Air Force Independence*, having been named "Best Book of 2009," by the Air Force Historical Foundation, a panel of judges has named the late author's "Arnold at Potsdam" the Best Article to appear in the Foundation's journal, *Air Power History* during 2011.

In this incisive article, Mr. Wolk has re-created General of the Air Force "Hap" Arnold's thinking leading up to the Potsdam conference in July 1945, with particular regard for Arnold's views on the use of the atomic bomb to end the war with Japan. Additionally, Mr. Wolk enlightens us on President Harry Truman's thinking about use of the bomb as well. Unlike General George Marshall, Secretary of War Henry Stimson, and other senior leaders who favored using the bomb, Arnold held that conventional air bombardment and aerial shipping interdiction, along with a naval blockade could bring about the war's end without the need for a bloody invasion and savage, extensive ground fighting. General Arnold had known about the Manhattan Project for some time, and he did not oppose development and use of the bomb. Rather, he saw no military or other compelling reason to employ it. After reading the report of the Trinity test at White Sands, New Mexico, in July 1945, Arnold delivered it to Potsdam, where he had gone with Truman to meet with Churchill and Stalin. Arnold immediately grasped the new weapon's revolutionary significance, but still saw no reason to use the bomb against Japan. Conventional air and naval power, Arnold insisted, would bring an end to the fighting and demonstrate the Army Air Forces' position as an independent service.

In the process of demonstrating Arnold's position, Mr. Wolk also demonstrates that President Truman followed the high level debate on the bomb closely, and that Truman, for substantial military reasons, opted not to stop the use of atomic weapons. The Japanese had so greatly increased their forces on the island of Kyushu and clearly indicated their resolve to "fight to the death" to prevent a successful Allied landing, that our casualties, in all likelihood, would have been extremely high, far more than the American people should be asked to bear. Our intelligence services, through intercepting and reading Japanese message traffic, had realized there were more than twice the number of Japanese Army divisions on the island than we had anticipated as late as June of 1945. Truman, an artillery officer in France in World War I and a National Guard officer for some years after the war, understood fully what this would mean in terms of troop casualties and the effect on the American people.

One of the most important services Mr. Wolk renders in this article is the clarity that he brings to American national decision making at the time. There has been much debate in recent years about the motives for using atomic weapons so late in the war, with some historians and political scientists arguing that Mr. Truman had in mind political reasons (that is, influencing the actions and decisions of Joseph Stalin) rather than the predominantly military ones of bringing about Japan's surrender with the minimum loss of American lives.

Mr. Wolk, with this article, has provided us with an important analysis of how American leaders analyzed military options available to end the war, and he has given us new material and insights into a very controversial period.

Mr. Wolk's winning article is one of a number of first-rate pieces that appeared in *Air Power History* during 2011. Following closely in the scoring were Michael Gorn's two-part work, "The N.A.C.A. and its Military Patrons During the Golden Age of Aviation, 1915-1939," in which Dr. Gorn recounts some of the fundamental accomplishments of the organization that became the National Aeronautics and Space Administration. Also strong in the judges' view was Karl R. Schrader's "Good Men Running around in Circles: Benjamin Foulois,

Billy Mitchell, and the Fight for the Future of the Army Air Service.” In this latter article, Mr. Schrader examines the conflicts, clashes, and accomplishments of some very talented and strong-willed officers who were given the task of organizing from scratch a new air organiza-

tion and putting it into combat in Europe in 1917 and 1918.

This year's judges for the best article competition were: Col. Kenneth J. Alnwick (USAF, Ret.). A member of the Foundation's Board of Directors, Ken Alnwick; is also a noted author and air

power analyst, Col. Philip Meilinger (USAF, Ret.), and Col. Thomas E. Griffith, Jr. (USAF, Ret.) a former Dean at the National Defense University and is the author of *MacArthur's Airman: George C. Kenney and the War in the Southwest Pacific*.

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Available from NewSouth Books: [www.newsouthbooks/tuskegeeairmen](http://www.newsouthbooks/tuskegeeairmen), (334) 834-3556, ISBN 978-1-58838-244-3, \$27.95

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# Reunions

**22nd Military Airlift Sq.** June 5-7, 2012. Fairborn, OH. Contact:

Ray Daley  
4775 Dayton-Springfield Road  
Springfield, OH 45502  
(937) 323-6304.  
dthe2orfs@aol.com

**351st Bombardment Gp.** June 14-17, 2012. Erlanger, KY. Contact:

Deborah Eason  
3722 Sussex Drive  
Milledgeville, GA 31061  
(478) 453-7388  
dbme@windstream.net

**OCS Class 60-B.** June 26-30, 2012. Fairborn, OH. Contact:

Bob Meyers  
2558 Onandaga Drive  
Columbus, OH 43221  
(614) 738-9676  
granpameyers@yahoo.com

**Udorn Air Base.** July 22-25, 2012. Dayton, OH. Contact:

John Moody  
328 N. Elm Ave.  
Fairborn, OH 45324  
(937) 878-1944  
winnemuccajohn@yahoo.com

**Vietnam Dustoff Assn.** July 26-29, 2012. Dayton, OH Contact:

Neal Casperson  
3905 Croydon Road  
Pensacola, FL 32511  
(850) 969-1961  
caspertn@bellsouth.net

**Loring AFB Ramp Rats.** July 26-29, 2012. Fairborn, OH. Contact:

Buzz Stock  
225 Kline Street  
Mishawaka, IN 46544  
(574) 257-4797  
buzzdotcom@sbcglobal.net

**F-15-A Gathering of Eagles.** July 27-29, 2012. Fairborn, OH. Contact:

Donna Friedman  
2508 Cedronella Drive  
Chapel Hill, NC 27514  
(919) 382-7271.

**6147th Tactical Control Gp.** July 30 – Aug. 5, 2012. Dayton, OH. Contact:

Tony Pascale  
164 Timberton Drive  
Hattiesburg, MS 39401  
(601) 544-9248  
tony\_pascale@yahoo.com

**381st Bomb Gp.** Aug. 1-5, 2012. Fairborn, OH. Contact:

Kevin Wilson  
145 Kimel Park Drive - Ste. 370  
Winston-Salem, NC 27103-6972  
(336) 760-2105  
WilsonKvn@aol.com

**B-52 Assn.** Aug. 9-12, 2012. Fairborn, OH. Contact:

Wayne Pittman  
PO Box 340501  
Beavercreek, OH 45434-0501  
(937) 426-1289  
kwavn@earthlink.net

**1st Radio Relay.** Sept. 7-20, 2012. Dayton, OH. Contact:

William Hayton  
385 Lower Gragston Creek Road  
Pritchard, WV 25555.  
(304) 486-5349  
wshayton@netzero.net

**51st Fighter Interceptor Wg.** Sept. 13-16, 2012. Dayton, OH. Contact:

Allie Craycraft  
9501 East Jackson  
Selma, IN 47383  
(765) 744-1489.  
alandjuanita@yahoo.com

**343rd Strategic Recon Sq.** Sept. 19-22, 2012. Fairborn, OH. Contact:

Paul Dolby  
1221 Riverside Drive  
Huntington, IN 46750  
(260) 356-1761  
Paul343rdsrs@yahoo.com

**Professional Loadmasters Assn.** Sept. 19-23, 2012. Fairborn, OH. Contact:

Kent Brown  
28 Pine- view Drive  
Browns Mills, NJ 08015  
(609) 893-1833  
kabrown9@comcast.net

**42nd Bomb Wing (Loring 60s Generation)** Sept. 20-23, 2012. Dayton, OH. Contact:

Col. Paul Maul (Ret.)  
4605 Bobolink Drive  
Castle Rock, CO 80109  
(303) 523-8972  
pablomaul@aol.com

**815th Troop Carrier Sq.** Sept. 20-23, 2012. Fairborn, OH. Contact:

Bob Tweedie  
2783 Double Eagle Drive  
Beavercreek, OH 45431  
(937) 426-7947.  
ineztwbird@aol.com

**PTC 67F (Vance AFB).** Sept. 20-23, 2012. Fairborn, OH. Contact:

Bill Simmons  
5528 Brewer Road  
Mason, OH 45040-9236  
(513) 404-2422  
Bsimmons02@earthlink.net

**B-58 Hustler Assn.** Sept. 25-30, 2012. Dayton/Fairborn, OH. Contact:

Ray Guffe  
8675 West Carol Lane  
Glendale, AZ 85305  
(707) 481-5665  
rweg1@uad1.com

**38th Air Police Sq.** Sept. 27-29, 2012. Dayton, OH. Contact:

Ray Cummings  
1128 Brookdale Ave.  
Bayshore, NY 11706  
(631) 667-7783.  
djraegs@verizon.net

**50th Supply Sq.** (Hahn AB, Germany). Oct. 1-6, 2012. Dayton, OH. Contact:

Dave Thompson  
5122 Havana Ave.  
Wyoming, MI 49509  
(616) 531-2979.  
daves3iron@yahoo.com

**355th Fighter Gp. Assn.** Oct. 4-8, 2012. Fairborn, OH. Contact:

William Cook  
811 Old Forge Road  
Kent, OH 44240  
(330) 541-2653  
bigbilldot@aol.com

**Retired Air Force Chapel Staff Alumni.** Oct. 5-8, 2012. Fairborn, OH. Contact:

Thomas Curry  
2500 Parkway Drive  
Selma, AL 36703  
(334) 872-7895  
tcacpkwy@earthlink.net

**26th Bomb Sq.** Oct. 10-13 2012. Fairborn, OH. Contact:

Jan Demuth  
3486 Weavers Ft. Jefferson Road  
Greenville, OH 45331  
(937) 548-4710  
jan.demuth3486@gmail.com

**463rd Bomb Gp. Historical Society.** Oct. 11-14, 2012. Fairborn, OH. Contact:

Art Mendelsohn, Jr.  
PO Box 1137,  
La Canada, CA 91012  
(714) 547-6651  
swoosgroup@463rd.org  
www.463rd.org



**Tan Son Nhut Assn.** Oct. 11-14, 2012. Fairborn, OH. Contact:  
Johnnie Jernigan  
956 Donham Drive  
Beavercreek, OH 45434  
(937) 426-3785  
jernigan1@ameritech.net

**B-52 DFCS Assn.** June 13-16, 2013. Fairborn, OH. Contact:  
Sharon Lemanek  
1326 Town Hall Road  
Beavercreek, OH 45432  
(937) 426-8557  
kenamel.s.j@fuse.net

**MacDill Flyers.** Oct. 4-6, 2013. Fairborn, OH. Contact:  
Gene Stevens  
3380 Greenburn Road  
Beavercreek, OH 45434  
(937) 429-1552  
genestevens@sbcglobal.net

**3500th Pilot Training Sq.** (Oct. 11-14, 2012. Fairborn, OH. Contact:  
Ed Mentzer  
2734 Pheasant Run Lane  
Beavercreek, OH 45434-6664  
(937) 426-8807.  
edmentzer@aol.com

**510th Fighter Sq.** Sept. 4-8, 2013. Mason, OH. Contact:  
Guy Wright  
1701 Mall Road Apt. 14  
Monroe, MI 48162  
(734) 740-3164  
guywright@chartermi.net

**Ranch Hands Vietnam Assn.** Oct. 10-13, 2013. Fairborn, OH. Contact:  
Jack Spey  
4245 South Rome Way  
Hurricane, UT 84737  
(435) 877-1166  
maresfwb@aol.com

## 2013

**4th Fighter Interceptor Sq.** Apr. 10-14, 2013. Fairborn, OH. Contact:  
Col. Bob Ettinger (Ret.)  
2122 Via Pacheco  
Palos Verdes Estates, CA 90274  
(310)541-8625  
rcettinger@aol.com

**8th Tactical Fighter Sq.** (1972 Takhli). Sept. 5-8, 2013. Fairborn, OH. Contact:  
Ron Hunt  
1328 Meadow Moor Drive  
Beavercreek, OH 45434.  
(937) 426-0867  
ron.hunt.oh@gmail.com

**379th Bomb Gp. Assn.** Sept. 5-8, 2013. Fairborn, OH. Contact:  
Larry Loveless  
140 Newton Road  
Fredericksburg, VA 22405  
(540) 373-1596  
ginlotfarms@verizon.net

**388th Fighter-Bomber Wg.** May 30, - June 2, 2013. Fairborn, OH. Contact:  
Don Rahn  
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## Guidelines for Contributors

We seek quality articles—based on sound scholarship, perceptive analysis, and/or firsthand experience—which are well-written and attractively illustrated. The primary criterion is that the manuscript contributes to knowledge. Articles submitted to *Air Power History* must be original contributions and not be under consideration by any other publication at the same time. If a manuscript is under consideration by another publication, the author should clearly indicate this at the time of submission. Each submission must include an abstract—a statement of the article's theme, its historical context, major subsidiary issues, and research sources. Abstracts should not be longer than one page.

Manuscripts should be submitted in triplicate, double-spaced throughout, and prepared according to the *Chicago Manual of Style* (University of Chicago Press). Use civilian dates and endnotes. Because submissions are evaluated anonymously, the author's name should appear only on the title page. Authors should provide on a separate page brief biographical details, to include institutional or professional affiliation and recent publications, for inclusion in the printed article. Pages, including those containing illustrations, diagrams or tables, should be numbered consecutively. Any figures and tables must be clearly produced ready for photographic reproduction. The source should be given below the table. Endnotes should be numbered consecutively through the article with a raised numeral corresponding to the list of notes placed at the end.

If an article is typed on a computer, the disk should be in IBM-PC compatible format and should accompany the manuscript. Preferred disk size is a 3 1/2-inch floppy, but any disk size can be utilized. Disks should be labelled with the name of the author, title of the article, and the software used. Most Word processors can be accommodated including WordPerfect and Microsoft Word. As a last resort, an ASCII text file can be used.

There is no standard length for articles, but 4,500-5,500 words is a general guide.

Manuscripts and editorial correspondence should be sent to Jacob Neufeld, Editor, *c/o Air Power History*, 11908 Gainsborough Rd., Potomac, MD 20854, e-mail: editor@afhistoricalfoundation.org.



Our mystery aircraft in our Spring issue was the Arado Ar 234 jet bomber and reconnaissance aircraft.

With a top speed of about 540 miles per hour, the Ar 234 may have been the fastest airplane used in World War II. Adolf Hitler prized it highly among the *wunderwaffen*, or “wonder weapons” that would reverse the Reich’s fortunes at a time when Nazi Germany was losing the war.

An engineering team headed by Walter Blume and Hans Rebeski of the company Arado Flugzeugwerke designed the Ar 234. Delayed by the administrative problems that shackled the *Luftwaffe* at the time and by technical issues surrounding its jet engines, the Ar 234 V1 prototype belatedly made its first flight on June 15, 1943, at Rheine Airfield.

Eventually powered by two Junkers Jumo 004B-1 turbojet engines rated at 1,980 pounds thrust, the Ar 234 used rocket assisted takeoff (RATO) boosters for increased thrust during takeoff. Early versions took off from a clunky, jettisonable trolley and landed on skids. Oftentimes, the trolley didn’t fall away during takeoff as it was supposed to, which led to catastrophic results. The RATO units often didn’t work properly, either. The innovative but unreliable trolley was replaced by orthodox tricycle landing gear.

“It was a wonderful plane,” said Willi Kriessmann, a former *Luftwaffe* pilot. “It was designed better than

the Messerschmitt Me 262. It was a single-seater so we didn’t have time to practice” before flying it.

On August 2, 1944, *Leutnant* Erich Sommer buzzed the Allies’ Normandy beachheads at about 460 miles per hour and used two Rb 50/30 cameras to take one set of photos every 11 seconds—history’s first jet-propelled reconnaissance mission.

The German air unit KG 76 (*Kampfgeschwader* 76) used the Ar 234B-2 bomber version to belatedly collapse the Ludendorff bridge at Remagen after the Allies crossed the Rhine. Capt (later, Lt. Col.) Don Bryan, a Mustang pilot of the 352nd Fighter Group locked behind an Ar 234 near the bridge. “I don’t know what the hell was on his mind,” said Bryan in a March 6 telephone interview, “but he should have gotten out of that airplane while he was high enough.” Arado pilot, Hauptman Hans Hirshberger waited too long to jettison his roof hatch and went down with the aircraft. In an extraordinary and tragic coincidence, I was typing the preceding sentence when I received an e-mail message that the popular and affable Don Bryan (1921-2012) had died unexpectedly on May 15.

Arado tested two different configurations for a four-engined version of the AR 234. Plans existed for the manufacture of 2,500 bomber versions but they were cut short by the war’s end. Total Ar 234 production was 224 airframes.

Today, the only surviving aircraft in this series is an Ar 234B-2 bomber (werke number 140312) on display at the Steven F. Udvar-Hazy Center of the National Air and Space Museum, Smithsonian Institution, at Dulles, Virginia, replete with RATO units. It is one of the aircraft Kriessmann flew.

Thirty readers entered our contest and all but one identified the Ar 234. Our latest “History Mystery” winner is Joseph Bassi, Ph.D. of Lompoc, California, a retired Air Force lieutenant colonel. Joe’s prize is a gratis copy of the book “Mission to Berlin,” about American B-17 Flying Fortress crews in Europe in World War II.

See if you can identify our latest mystery aircraft. Remember, we also want to hear from you as to whether you think this long-running contest is too easy or too difficult. Remember the “Mystery” rules:

1. Submit your entry via e-mail to robert.f.dorr@cox.net. Entries may also be submitted on a postcard to Robert F. Dorr, 3411 Valewood Drive, Oakton VA 22124. At the suggestion of longtime reader Earl Lock, we’re eliminating the requirement to use a postcard, since some participants have difficulty getting to a post office.

2. Write a sentence about the aircraft shown here. Include your address and telephone number.

3. A winner will be chosen from among correct entries and will receive an aviation book.

And let’s get serious about those historical treasures in your attic or basement. Some readers

say they just don’t remember where their color slides are. That’s not a good way to assure the preservation of history. Dig out your slide or snapshot of a rare aircraft and lend it to Air Power History for this contest.



## This Issue’s Mystery Plane



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