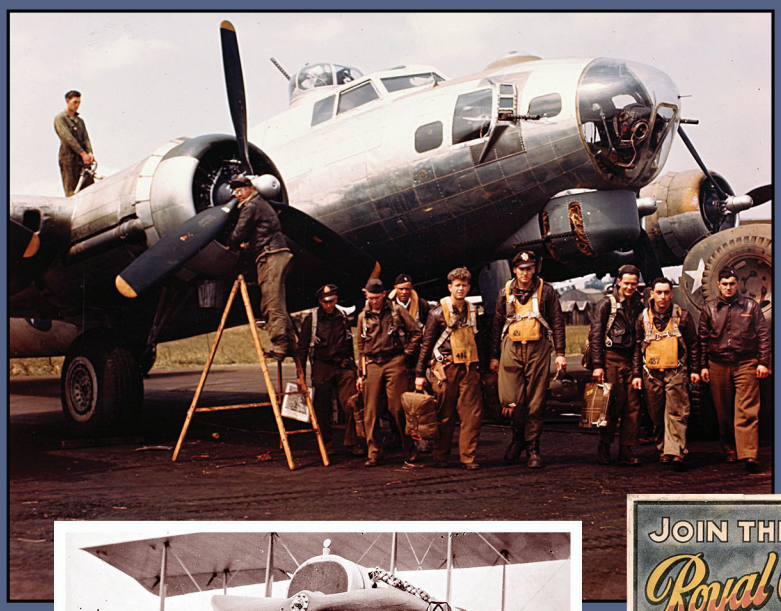
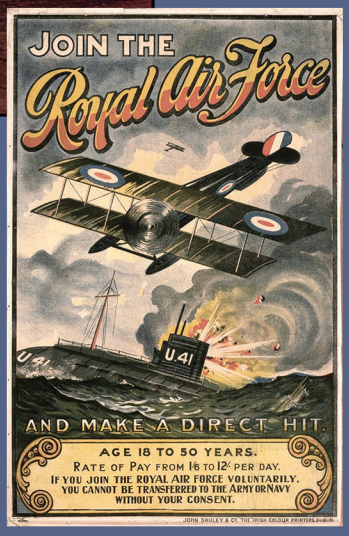
Journal of Military Aviation History





Volume 1

Published by
Abilene Christian University
The Old Primero Historical Foundation

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BOOK REVIEWS

THE POLITICS OF OPERATIONAL PLANNING: IRA EAKER AND THE COMBINED BOMBER OFFENSIVE IN 1943

Luke Truxal

When analyzing military planning it is easy to critique flaws that appear evident on paper. This presents a one dimensional view of operational warfare. Planning is a multi-dimensional process. Sometimes the plan reflects policy though it is not the most efficient means to wage war. In 1943, the Combined Bomber Offensive (CBO) relied on such a directive. The Allies drew up a document that satisfied every air force commander in the theater, but failed to specify an objective other than the destruction of Germany. The Allies created the CBO as a product of coalition politics between air force leaders, their superiors, and two nations. They drew up a plan that appeased all of the parties involved. As a result, the final plan for the implementation of the CBO did not focus on a single objective and laid the ground work for deviation from the plan by all parties that participated in the CBO.

A bombing campaign must have a clear goal in mind. What happens when there are multiple, but equally prioritized objectives? Operation Pointblank, the operational plan for the implementation of the Casablanca Directive and Combined Bomber Offensive authorized a bombing campaign that failed to focus on one specific objective or for that matter doctrine. Incorporating everyone's ideas is not an efficient

Journal of Military Aviation History, Volume 1 (2017): 1-21.

means of waging warfare. In 1943, no country was capable of producing an air force capable of fulfilling the Pointblank objectives. The following pages will illustrate the evolution of an operational plan built not in a vacuum, but in the melting pot of conflicting ideas, objectives, and doctrines. In short, Pointblank was the result of international and inter-military politics.

The fact of the matter is that militaries, countries, and allies do not always choose the best plan. In theory the best plan of attack would have been to overwhelm the German Air Force with bombers and fighters through daylight bombardment missions. This provided the opportunity to bomb with greater accuracy and it allowed the Allies to engage German fighters effectively. Realistically, the Allies adopted the strategy they had, because it was a series of compromises between two nations. Pointblank accommodated the wishes of the Eighth Air Force's commanding officer, Major General Ira Eaker, and Bomber Command's, Air Marshal Sir Arthur Harris. On one hand, we have the United States Army fighting with itself. During his time as commander of the Eighth Air Force, Eaker had grown agitated by the number of aircraft diverted from his air force to other American air forces, and in particular those associated with the Mediterranean Theater of Operations. Eaker wanted to divert bombers back to his theater of operations. As a result his joint British and American staff drew up a force allocation plan that reflected these wishes. Harris represents the international conflict between two coalition partners that wish to pursue two completely different air strategies. Harris made his own edits to Pointblank days before it became operational to ensure that he could deviate from the American vision of the coming air offensive. The scheme they agreed upon allowed Harris and Eaker to execute divergent operational concepts.

The process of planning Operation Pointblank began a month before the agreement at Casablanca. In December 1942, General Muir S. Fairchild, a member of the Joint Strategic Survey Committee, ordered Colonel Byron E. Gates to form an American operations analysis group.[1] Fairchild told Gates, Major W. Barton Leach, and Captain Guido R. Perera that he wanted a report on future strategic bombing operations. Fairchild posed this question: "How can Germany be so damaged by air attack that an invasion of the Continent may be made possible within the shortest possible period—say one year?"[2] On 9 December 1942, Arnold

[1] James Parton, *"Air Force Spoken Here" General Ira Eaker & the Command of the Air* (Bethesda, Maryland: Adler & Adler Publishers Inc., 1986), 249.
[2] Ibid, 250.

ordered the formation of the think tank, which became known as the Committee of Operations Analysts (COA).

The COA sent their report to Arnold on 8 March 1943. The group listed potential targets by priority from highest to lowest included: single-engine fighter aircraft, ball bearings, petroleum products, grinding wheels and abrasives, nonferrous metals, synthetic rubber and rubber tires, submarine construction plants and bases, military transport vehicles, transportation, coking plants, iron and steel, machine tools, electric power, electrical equipment, optical precision instruments, chemicals, food, nitrogen, and AA and antitank artillery.[3] Many officers in the USAAF were disturbed that transportation and electric power were not in the top group. In AWPD-1 and AWPD-42 these systems were considered high priority targets, but the C.O.A. thought that these targets were outside the operational capabilities of the Eighth Air Force.[4]

While the COA unofficially listed their priorities, the Combined Chiefs of Staff (C.C.S.) agreed to their own targets and priorities at the Casablanca Conference that took place from 14 to 24 January 1943. The COA laid the groundwork for the selection of targets during the planning for the CBO. By leaving the operational and aircraft requirements in Eaker's hands they acknowledged that they were unable to put a date on when a ground invasion was possible.[5] Once submitted, their report ended the first stage of the planning.[6] Now it was upon Eaker's shoulders to formulate how his forces went about destroying the systems listed.

As Arnold's research team prepared their report, another issue came to a head that affected Pointblank's planning. Prior to the Casablanca Conference, the Eighth Air Force lost a significant number of its bombers and nearly all of its fighters to Operation Torch, the Allied invasion of North Africa. This set a significant precedent that continued through the 1943 campaign. Air forces in the Mediterranean Theater received air assets prior to or directly from the Eighth Air Force. Eaker's most experienced bomb groups, most of the fighters, and

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[3] John F. Kreis ed, *the Piercing Fog: Intelligence and Army Air Forces Operations in World War II*, (Washington D.C.:Air Force History and Museums Program, 1996), 154.

[4] Ibid, 155.

[5] Kreis ed, *the Piercing Fog*, 156.

[6] Alan J. Levin, *The Strategic Bombing of Germany, 1940-1945* (Wesport, CT: Praeger Publishers, 1992), 85.

numerous ground personnel were sent to support land operations in North Africa, Sicily, and Italy. This caused the Eighth Air Force to wage a private war over the allocation of heavy bombers with the Northwest African Air Forces (NAAF) under Lieutenant General Carl Spaatz.

The NAAF began operations on 18 February 1943.[7] Assigned to support the drive on Tunis, it received priority above all other theaters, including the Eighth Air Force in England. The strategic arm of the NAAF was the Northwest African Strategic Air Force (NASAF) under the command of Major General James H. Doolittle. His XII Bomber command of the Twelfth Air Force transferred to the NASAF. The NASAF was not a true strategic air force like the Eighth in England. Doolittle's command targeted "grand tactical targets, enemy lines of supply, and logistical support."[8] Doolittle's command carried out an air interdiction campaign against German forces in the Mediterranean Theater. The NASAF's limited the ability of the German army to maneuver and receive supplies.

Another arm of Spaatz's command was the Northwest African Tactical Air Force (NATAF) under the leadership of Air Marshal Arthur Coningham. The NATAF included the XII Air Support Command from the Twelfth Air Force.[9] These two portions of the NAAF proved to be critical during the Battle of Kasserine Pass, which began on 19 February 1943. Understandably, during the opening moments of the battle American air units failed to properly coordinate their attacks.[10] Yet, over

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[7] "Headquarters Northwest African Air Forces General Order Number 1," 18 February 1943, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C; See also Richard G. Davis, *Carl A. Spaatz and the Air War in Europe*, (Washington, D.C.: Center for Air Force history, 1993), 178.

[8] "Headquarters Northwest African Air Forces General Order Number 1," 18 February 1943, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C; See also Richard Davis, *Carl A. Spaatz and the Air War in Europe,* 180.

[9] "Headquarters Northwest African Air Forces General Order Number 1," 18 February 1943, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C; See also Richard Davis, *Carl A. Spaatz and the Air War in Europe,* 179.

[10] Thomas E. Griess ed., *The Second World War: Europe and the Mediterranean*, (Garden City, New York: Square One Publishers, 2002), 175; Christopher Rein, *The North African Air Campaign: US Army Air Forces from El Alamein to*

the course of the German offensive the Americans recovered from their setbacks and launched more effective air attacks against Axis positions. From 20 February to 24 February 1943, Spaatz released the Doolittle's strategic bombers to Coningham. The Australian unleashed a massive bombing campaign against German and Italian ground components. Axis columns came under heavy aerial bombardment as they withdrew from the region. Field Marshal Erwin Rommel, who commanded the Axis troops at Kasserine Pass, recalled that his forces "were subjected to hammer-blow air attacks by the US air force in the Feriana-Kasserine area."[11] The very aircraft transfers that plagued Eaker's campaign against Germany played a crucial role in turning back Rommel's counter-attack in Tunisia.[12]

Eaker overlooked these accomplishments by Spaatz as he lodged complaints about the lack of heavy bombardment groups allocated to his theater of operations. Eighth Air Force personnel objected to losing aircraft as far back as Torch. Those in England reluctantly gave up valuable air components for what many American commanders deemed to be a diversion in the desert. Eaker's first criticism about the state of his command came on 30 January 1943 in a letter to Arnold. Shortly after the Wilhelmshaven raid he fired off a message asking Arnold for aircraft and in particular replacement crews.[13] He detailed how the North African campaign seriously hindered his air force's combat capabilities. "We have been about bled to death by the African operation, and setting this up as a separate theater may help some on that

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Salerno, (Lawrence, Kansas: University of Kansas Press, 2012), 117-122. Rein provides an excellent analysis of the Northwest African Air Force's failures at Kasserine Pass. Amongst the reasons he lists behind the poor performance of the NAAF is the reorganization of the air forces that took place on the eve of Rommel's attack at Kasserine Pass.

[11] Griess ed., *The Second World War: Europe and the Mediterranean* , 183.

[12] Rein, *The North African Air Campaign: US Army Air Forces from El Alamein to Salerno*120-121. Rein contends that the planes deviated from the Eighth Air Force to the NAAF influenced the fighting at Kasserine Pass through operational level attacks. He correctly posits that had Eaker retained the aircraft lost during the Torch transfers then those planes would have made no impact on the fighting in North Africa, where they played a more critical role.

[13] Ira Eaker to Henry Arnold, 30 January 1943, Ira Eaker Papers, Library of Congress, Washington, D.C.

score."[14] A day earlier Eaker sent a letter to Spaatz begging him to refrain from taking more aircraft from his "little Air Force."[15] Spaatz replied that it was crucial that Eaker send him all of the P-38s and more bombers.[16] Spaatz's position is understandable. Fifteen days later after the Battle of Kasserine Pass he received a report from Doolittle detailing the fighter situation in Tunisia. According to Doolittle's assessments, the Germans and Italians possessed 295 single engine fighters. In comparison, the Americans had 437 single engine fighters.[17] While Spaatz may have had the upper hand, there was no guarantee he could retain it with a four to three advantage. He needed every single engine fighter on hand if he wanted to gain and maintain air superiority over Tunisia.

Two weeks later, Eaker brought up the issue of aircraft allocation again. The general argued that he did not have the equipment or personnel to maintain consistent operations over Continental Europe. He pointed out that he did not receive a sufficient number of aircraft. "We were just getting up off the floor from the loss of our P-38 fighters, when we received cables indicating the diversion of our next two heavy groups to the [Twelfth] Air Force."[18] Eaker also pushed off some of the responsibility of decreased operations onto Arnold's inability to send the Eighth Air Force reinforcements. "It is perfectly obvious to me that the limiting factor on the number of missions we execute will not be the weather, but the rate at which you can furnish aircraft and crews." Finally, Eaker concluded by telling Arnold to prevent "other Air Forces from stealing all our planes and pilots."[19]

After another two weeks, and on schedule, came another complaint about aircraft allocations from the Eighth Air Force. "We have to date, received but 24 replacements crews and 63 replacement

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[14] Ibid

[15] Ira Eaker to Carl Spaatz, 29 January 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[16] Carl Spaatz to Ira Eaker, 10 February 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[17] James H. Doolittle, "Fighter Superiority," 24 February 1943, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C.

[18] Ira Eaker to Henry Arnold, 15 February 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[19] Ibid.

aircraft. We have lost 75 planes and crews in over 2206 sorties."[20] Casualties limited operations while Arnold expected Eaker to intensify his bombing campaign. Eaker continued his criticism of the Mediterranean Theater's ever increasing demand for heavy bombers. He stated that the agreed upon quota for bombardment groups in Africa was four, but five groups had been assigned to the region with two more on the way.[21]

In their 1941 book, Winged Warfare, Arnold and Eaker suggested that air superiority operations should target the destruction of an enemy's aircraft industry.[22] This explains why Eaker believed air operations in the Mediterranean were a diversion from his vision of the main air effort, the German aircraft industry. Air superiority had been achieved in North Africa, but not the complete destruction of the Luftwaffe. Eighth Air Force commanders believed that the USAAF had forgotten its most important duty, strategic bombing. Arnold agreed with this assessment.

> There are two main theaters where we can get at the heart of our enemies' countries. One of course is England…In my opinion, any other air operations that we endeavor to carry out are mere diversions…For political and other reasons we must keep up these air forces and we must supply them with sufficient replacements to maintain a constant operating strength, but I am hopeful that in spite of pressure being brought to bear, we won't have to increase their strength.[23]

This letter shows Arnold's position within the greater context of the air wars being waged around the world. Arnold believed that the Eighth Air Force's operations were the primary air effort against the Axis, but due to conditions on the ground he needed to supply other combat commands with aircraft. Arnold felt Eaker needed to be informed that there were other theaters in the war besides his own. At the same time he agreed with Eaker's view of air operations.

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[20] Ira Eaker to Henry Arnold, 26 1 February943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[21] Ibid.

[22] Henry Arnold and Ira Eaker, *Winged Warfare*, (New York: Harper & Brothers Publishers: 1941), 132.

[23] Arnold to Eaker, 15 March 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

On 8 March 1943 the COA submitted their report to Arnold.[24] He passed on the report to Eaker's new superior officer, Lieutenant General Frank Andrews and Spaatz on 24 March 1943. Andrews replaced Eisenhower as commander in chief ETOUSA Accompanying the report was Colonel Charles Cabell, one of Arnold's closest advisers.[25] Cabell briefed Andrews and Eaker on the COA report and expressed Arnold's own opinions of it to the two generals. They received the report enthusiastically. Eaker told Arnold that he saw the report in the same light.[26] Arnold requested that the air staff in England complete a report that detailed how many planes they needed to accomplish the objectives listed in the COA report.[27] Eaker saw this as a chance to shift the focus of the air war back to England. He ended his letter writing campaign temporarily. Now the general was going to draw up a plan that gave him both the aircraft and air offensive he desired.

Eaker immediately formed a joint staff containing both RAF and USAAF officials. The Americans were Hansell, Brigadier General Frederick Anderson, Cabell, Colonel Richard Hughes, and two others. The British contributed Air Commodore Sidney Bufton, the RAF's own precision bombing advocate.[28] Eaker's influence over the planning for the Combined Bomber Offensive became apparent in the composition of the planning committee. Hansell and Anderson commanded two of Eaker's combat wings. Hansell became the committee's chair.[29] The reason Hansell chaired the staff lay in his previous experience. He was in charge of the Air War Plans Division 1942 (AWPD-42) committee prior to being assigned to the Eighth Air Force. AWPD- specified how the United States would carry out the air war globally. The USAAF used AWPD-42 as the basis for the force allocation portion of Pointblank.[30] AWPD-42 never dealt with how the U.S.A.A.F. intended to destroy these systems. Instead, they focused on the allocation of

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[24] John F. Kreis ed, *the Piercing Fog: Intelligence and Army Air Forces Operations in World War II,*154.

[25] James Parton, *"Air Force Spoken Here,"* 251.

[26] Ira Eaker to Henry Arnold, 5 April 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[27] James Parton, *"Air Force Spoken Here,"* 251-252.

[28] John F. Kreis ed, *the Piercing Fog,* 191.

[29] Ibid.

[30] Charles Griffith, *The Quest: Haywood Hansell and American Strategic Bombing in World War* II (Maxwell Air Force Base, Alabama: Air University Press, September 1999), 96.

aircraft for coalition and U.S. air forces.[31] AWPD-42 called for the buildup of USAAF forces in England to a total of 7,268 planes. Planners only designated 824 aircraft to the North African theater.[32] The plan identified 177 targets that could be destroyed in 66,045 sorties. Planners believed that the loss of these targets would destroy the Luftwaffe, eliminate the U-boat threat, and lead to the destruction of the German war economy.[33] AWPD-42 called for a force of 2,965 heavy bombers by January 1944 and projected a 20% monthly attrition rate.[34] The Allies possessed the capabilities to back up their optimistic projections. Throughout the course of the war Allied aircraft production soared to 151,000, while the Germans countered with 43,000.[35]

AWPD-42 did not receive a positive reaction from American leaders. Brigadier General Laurence Kuter wrote Spaatz that the plan wasn't feasible. "It's clear that we cannot build the AWPD-42 program."[36] AWPD-42 reflected America's inexperience and lack of intelligence.[37] After the war Hansell said the idea that the bomber could penetrate German airspace without long-range escort fighters was the plan's "greatest fault."[38] The British had their own doubts about AWPD-42 as well, but Air Marshal John Slessor advised Portal that it would be best to avoid publicly objecting to it.[39]

Hansell and his joint RAF-USAAF committee melded the COA report with the AWPD-42 force allocation plan to create the "Eaker Plan." The "Eaker Plan" focused on how the RAF and Eighth Air Force would accomplish the objectives laid out in the C.O.A. report. This rough draft mixed Eaker's desire for aircraft with Hansell's vision of the

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[31] Jay A. Stout, *The Men Who Killed the Luftwaffe: The U.S. Army Air Forces against Germany in World War II* (Mechanicsburg, PA: Stackpole Books, 2010), 98.

[32] Charles Griffith, *The Quest,* 96.

[33] John F. Kreis ed, *the Piercing Fog*, 150.

[34] Alan J. Levin, *The Strategic Bombing of Germany* ,77.

[35] Richard Overy, *Why the Allies Won*, (New York, NY: W.W.& Norton Company Inc.,1996), 2.

[36] Charles Griffith, *The Quest* , 99.

[37] John F. Kreis ed, *the Piercing Fog,*151.

[38] Stephen McFarland and Wesley Phillips Newton, *To Command the Sky: The Battle For Air Superiority Over Germany, 1942-1944* (Washington: Smithsonian Institution Press, 1991), 82.

[39] Rober S. Ehlers Jr., *Targeting the Third Reich: Air Intelligence and the Allied Bombing Campaigns*.(Lawrence, Kansas: University Press of Kansas, 2009), 142.

air war. The plan should be called the Eaker-Hansell Plan, but Eaker received full credit when he presented it in Washington prior to the Trident Conference. The "Eaker Plan" contained six primary objectives: Submarine Construction Yards and Bases, German Aircraft Industry, Ball Bearings, Oil, Synthetic Rubber, and tires, Military Transport Vehicles.[40]

The German Air Force became an intermediate objective. Intermediate in this case did not mean secondary. The joint committee considered the Luftwaffe a major obstacle to success. Allied intelligence suggested that German fighter production increased by 44% since 1941, while Axis bomber production dropped.[41] This pointed to an impending escalation of the air war. In this way, Allied intelligence proved to be incredibly accurate. The writers of the "Eaker Plan" realized the need to defeat the Luftwaffe at the earliest possible date. Ultra intercepts gave the Allies a partial picture of the Luftwaffe's deployment in multiple theaters. However, they did not give exact locations of German air units once they reached a theater of operations. So while the Allies knew approximately where the Luftwaffe was deployed, they did not know how the Germans dispersed their planes.[42]

The strategic bomber offensive forced Germany to make major strategic and operational decisions with their air and ground forces to meet the new threat in the west. In 1942, the Luftwaffe deployed 60% of its planes in Russia. By July 1943, the Germans shifted the majority of their forces back west. Only 36% of the German Air Force faced the Russians. Overall, the Germans only contributed 21% of their fighters to maintain air superiority over the Red Air Force.[43] The situation became so bad in July that Hitler recalled the 3rd Fighter Wing from Russia, JG 27 from Italy, and JG 51 from Sardinia to defend the Reich.[44] Luftwaffe pilot and general, Adolph Galland, recommended that the periphery defense, used up to this point in the war, needed to be abandoned. In his opinion, German fighters were no longer able to mass

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[40] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences, Trident Conference, May 1943*, CD-ROM (MilSpecManuals.com, 2011), 10-11.

[41] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences,* 12.

[42] John F. Kreis ed., *the Piercing Fog,* 147.

[43] Rober S. Ehlers Jr., *Targeting the Third Reich,* 155.

[44] Samuel W. Mitcham Jr., *Men of the Luftwaffe*, (Novata, California: Presidio Press, 1988), 227.

effectively against the bomber stream.[45] The Luftwaffe was now spread thin due in no small part to Soviet advances in the east and Allied advances in the Mediterranean. There were just not enough fighters to cover the entirety of Western Europe and contribute aircraft to support ground operations in other theaters. During this period, German ground defenses improved significantly. Hitler cut down on the navy's building program to build tanks, anti-tank guns, and anti-aircraft artillery.[46] Compared to 1943, German flak strength increased dramatically in the west. On the Western Front, Axis heavy flak batteries increased by 68% and in Germany by 65%. However, on the Russian Front Germany did not increase its flak batteries from 1942.[47]

The authors of the "Eaker Plan" proposed that German aircraft and engine production needed to be targeted immediately.[48] The plan indicated that Germany had increased its fighter production since the United States entered the war from 1,185 fighters to 1,704 fighters. An increase of forty-three percent.[49] The authors argued, "Even if the present wastage rates continue, we cannot hope to reduce German fighter strength by mere attrition. We have seen how it grew in the face of a three-front wastage."[50] Planners argued that despite the wastage of approximately 600 German fighters per month since the Americans arrived, German aircraft production had produced over 800 fighters in February 1943 alone. They projected that the Germans would gain an extra one hundred fighters each month at the current attrition rate. The plan concluded that before any other strategic attacks are waged, German aircraft production needed to be targeted first and foremost to clear the way for future bombardment missions.[51]

They believed that the destruction of the German Air Force could be completed in their four phase plan. Realizing that they did not possess the current bomber force necessary to penetrate into Germany, planners called for a buildup of the Eighth Air Force from May 1943

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[45] Adolph Galland, *The First and the Last: The Rise and Fall of the Luftwaffe: 1939-1945*, trans Mervyn Savill (New York: Ballantine Books, 1954), 185.

[46] Edward B. Westerman, *Flak: German Anti-Aircraft Defenses, 1914-1945*, (Lawerence, Kansas: University of Kansas Press, 2001), 189.

[47] Ibid, 192.

[48] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences,* 15.

[49] "The Combined Bomber Offensive Plan from the United Kingdom," Tab C, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C.

[50] Ibid.

[51] Ibid.

until July 1943. During this phase planners projected that the American bomber force needed to reach 944 heavy bombers no later than 30 June. During this phase the Americans were to target: German fighter factories, German naval facilities, petroleum, and finally ball bearing factories. Finally, this phase expected the Americans to launch at least twenty-eight missions with at least one hundred bombers.[52]

The plan stated that the second phase would begin in July 1943 and last October 1943. During this phase the Americans were to begin depleting the German fighter forces and attacking facilities in Germany. The plan called for 1,192 heavy bombers by 30 September 1943. The two systems that were to be targeted during this phase included German aircraft factories and submarine facilities. The number of expected missions increased to forty-eight missions of with at least one hundred bombers.[53]

The third phase, from October 1943 to January 1944, called for follow up attacks on targets previously destroyed during the first two stages. It also demanded attacks against all of the major objectives of the CBO. The required force was set at 1,746 heavy bombers by 31 December 1943. Along with aircraft facilities and fighter factories, ball bearings, petroleum, rubber, and military transport vehicles received top priority. During the third phase planners expected to see sixty-six missions of at least one hundred bombers.[54]

Finally, the last phase set the stage for operations continent. Lasting from January 1944 to April 1944, this phase began to lay the groundwork for landings in France. All previous targets were included on the list with the addition of the German transportation and rail networks across Europe. Expectations were that by 31 March there would be a force of over 2,700 heavy bombers active in the theater. Planners expected the air forces in this theater to fly one hundred

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[52] "The Combined Bomber Offensive Plan from the United Kingdom," Tab A, Chart I, Carl Spaatz Papers, Manuscript Division, Library of Congress, Washington, D.C.

[53] "The Combined Bomber Offensive Plan from the United Kingdom," Tab C, Chart II.

[54] "The Combined Bomber Offensive Plan from the United Kingdom," Tab C, Chart III.

missions with one hundred heavy bombers during this phase of operations.[55]

We can draw some conclusions from this four stage plan. First, Eaker and his planning committee expected to receive a large number of heavy bombers during each phase. Even under the best of circumstances, these force level numbers would be hard to meet. At this point in time Eaker and Spaatz had been fighting over a few hundred bombers. According to the new plan, Eaker could now reasonably expect to have over one thousand at his disposal by no later than October. The chief beneficiary of the plan was the Eighth Air Force. Secondly, the plan dictated that the German fighter threat would be destroyed in the second phase, which ended October 1943. This was an ambitious timeline considering the experience, quality, and size of the Luftwaffe. Yet, the timeline likely appeased any concerns that Eaker's boss, Arnold might have over the slow start that the bomber offensive had gotten off to. Finally, the inclusion of naval targets and the fourth phase would likely garner positive reviews from American naval personnel and ground personnel, who might object to plan that placed such enormous assets in the hands of the Eight Air Force. Overall, it was a plan that was designed to pass review and give Eaker the bombers.

Two other targets mentioned in correlation with the air superiority phase were Schweinfurt and Ploesti. The "Eaker Plan" stated that an attack on Ploesti needed to be coordinated with a strategic attack in the west against oil refineries in the Ruhr. Planners felt that an attack against Ploesti alone could not cause enough damage to the Reich's oil reserves.[56] Schweinfurt was a different case. The Allies believed that a successful surprise attack against Schweinfurt might go a long way to ending the war. The committee considered Schweinfurt to be a one raid effort. The Allies needed to succeed in the first raid, because a second might be more costly.[57]

After the committee finished the plan, key participants in the bomber offensive listened to the proposal. On 8 April, Hansell briefed Andrews on the "Eaker Plan." He quickly approved it and gave Eaker

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[55] "The Combined Bomber Offensive Plan from the United Kingdom," Tab C, Chart IV.

[56] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences.,* 19.

[57] Ibid.

orders to fly to Washington to make the pitch.[58] Eaker then forwarded a full copy of the plan along with a note to Andrews on 13 April. In his note he once again emphasized the importance of aircraft allocation to his air force. Eaker wrote, "A decisive proportion of German industry, most vital to her effective continuation in the war, can be destroyed by the join operation of US and British bombers from UK bases, if sufficient forces are provided."[59] Portal also looked over the rough draft and gave it his full support. He encouraged a quick approval of the proposed operation. "The German Fighter strength is increasing and every week's delay will make the task more difficult to accomplish."[60] The CCS enclosed Portal's letter as an attachment to the Eaker proposal.[61] The Eighth Air Force's commander wrote that the plan received universal approval from all of the principal commanders in the RAF and USAAF in England.[62]

After his arrival in Washington, Eaker prepared to present his plan to the Joint Chiefs of Staff (JCS). Eaker rarely failed at pitching an air offensive to the CCS or JCS. At Casablanca, he convinced Churchill to withdraw his objection about daylight bombing. Churchill opposed the day bombing campaign for fear that it would lead to higher losses. During this briefing he impressed the JCS and successfully convinced them of the need to commit more resources to the bomber campaign. They agreed to the operational plan that he and Hansell wrote up. Expected opposition from the Naval Department did not materialize. The plan included provisions to win approval from other branches of the armed forces competing for aircraft. Submarine facilities remained a high priority to get the approval of naval personnel.[63] Keeping the submarine bases as a priority was a crucial factor in garnishing their support. Arnold expressed the overall opinion of the briefing in his last letter to Andrews. "… [H]is [Eaker] presentation was superb. As far as

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[58] James Parton."Air Force Spoken Here," 253.

[59] Ira Eaker to Frank Andrews, "Plan for the Build-up and Employment of the Bomber Offensive, Eighth Air Force," 15 April 1943, Carl Spaatz Papers,Manuscript Division, Library of Congress, Washington, D.C.

[60] Charles Portal to Henry Arnold, 15 April 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[61] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences,* 7-8.

[62] Ira Eaker to Henry Arnold, 16 April 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[63] James Parton. "Air Force Spoken Here," 252-253.

I can see everyone on the Joint Chiefs of Staff is convinced the idea is sound."[64] Eaker and his plan had gained the backing of the JCS.

General George C. Marshall, Chief of Staff of the United States Army, understood the briefing and situation facing American air power globally better than any other person in the room at the time. He was very direct with Arnold after the meeting. "Should we accept without qualification the full estimates?"[65] He continued with several questions about the allocation of bombers that Eaker asked for in his briefing and plan. Marshall asked Arnold if the bomber offensive should eat up as many resources as briefed. He reminded the Chief of the USAAF that operations were ongoing in the Pacific as well as the Mediterranean Theaters.[66]Despite his own warnings, Marshall did support the plan now that a cross-channel invasion was going to be delayed because of the approval of Operation Husky. He now believed the CBO was the only way to strike at Axis held Europe.[67]

The same debate over aircraft allocation came up during the meetings of the CCS at Washington during the Trident Conference in May 1943. According to British sources, "One of the motives behind the plan had been to give the Eighth Air Force 'a definite program of operations' and thereby to strengthen General Arnold's hand in his attempts to secure reinforcements and reduce diversions."[68] Eaker claimed the only requirement for success was the reinforcement of his plan.[69] Portal felt that the Eaker's proposal faced strong opposition in Washington and attempted to rally British efforts to support the plan.[70]

Eaker received greater support for the plan when he argued that the CBO would be the prelude for the land invasion of France. "During the last phase-early 1944-the entire force should be used to sustain the effect already produced and to pave the way for a combined operation

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[64] Henry Arnold to Frank Andrews, 2 May 1943, Ira Eaker Papers, Manuscript Division Library of Congress, Washington, D.C.

[65] George C. Marshall to Henry Arnold, 30 April 1943, Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[66] Ibid.

[67] Ibid.

[68] Sir Charles Webster and Noble Frankland, *Endeavor, Part 4 The Combined Bomber Offensive: The Role of Bomber Command volume II of The Strategic Air Offensive Against Germany 1939-1945*, (London: Her Majesty's Stationary Office, 1961), 17.

[69] Ibid.

[70] Ibid., 19.

on the Continent."[71] While Eaker briefed the JCS on the proposed offensive, the debate over a cross-channel invasion of Europe neared its end. The CCS agreed to launch an invasion of Europe at the Trident Conference, which coincided with the approval of the "Eaker Plan."

The British, who were opposed to an invasion of France, agreed that the plan laid out by Eaker must be put into action as soon as possible. Both the Americans and British feared that the ever increasing German fighter strength posed a direct threat to the future of land operations in either the Mediterranean or the Northwest European Theaters.[72] Portal argued that if the American proposal succeeded the British would benefit from German fighters suffering high losses in attritional battles over Europe.[73] According to the British perspective, "it was clear that the task of the combined bomber offensive, as indicated in the 'Eaker Plan', which was first in importance, was an attack upon the German fighter force."[74]

The RAF did not whole-heartedly support the American plan for the CBO In fact, they had no intention of working in a combined effort with the Americans. Harris and his colleagues viewed the "Eaker Plan" as an American and not British. As a result, significant edits were made after Eaker's briefing in Washington. These changes reflected the night bombing doctrine advocated by Harris. One major revision stated that the plan did not reflect the major effort of the RAF bombing offensive. Instead, targets bombed by the Americans "should be complemented and completed by RAF bombing [of the]the industrial area at night."[75] What this meant was that Harris was under no obligation to support American daylight attacks, but it was recommended that he support them if the Americans bombed the same industrial systems. In short, Harris and Eaker were under no obligation to aid one another. Theoretically, Harris could be forced to support Eighth Air Force operations, something that more assertive leaders were able to achieve in 1944. On 3 June 1943 a draft of the Combined Bomber Offensive plan was sent to Harris. Now

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[71] *Joint Combined Chiefs of Staff: World War II Inter-Allied Conferences.,* 18.

[72] Wesley Frank Craven and James Lea Cate eds., *Europe: Torch to Pointblank, August 1942 to December 1943 volume 5 of The Army Air Forces in World War II* (Chicago, Illinois: The University Press of Chicago, 1949), 373.

[73] Sir Charles Webster and Noble Frankland, *The Combined Bomber Offensive,*, 19.

[74] Ibid.., 21.

[75] Ibid.., 23-24.

under the code name Operation Poinblank, this new directive placed Portal in command of the offensive from England.[76]

The Allies issued the Pointblank Directive on 10 June 1943.[77] What was originally drawn up as an American plan to secure bombers and destroy precision targets, transformed into a plan full of loopholes and escape clauses. Strategically, nothing changed from Casablanca to Pointblank. This plan largely reflected the concerns of the Allied air force commanders involved. It wasn't drawn up so that both air forces could exploit their strengths against the Luftwaffe. Instead, it was a series of compromises that were agreed to so that the CBO could be carried out. The first compromise was getting the Eighth Air Force more heavy bombers. Eaker wanted more aircraft and Pointblank secured thousands for his air force. The American way of bombing argued that an air force needed to strike precision targets during the daylight. Prior to the war Eaker and Arnold further advanced this vision of striking the central nervous system of an enemy nation's industry. The COA report reflected the economic centers that the Americans thought were most vital to the German war economy. After the directive was issued they were allowed to bomb these objectives.

A Combined Bomber Offensive could have still been achieved in spite of the fact that the RAF and USAAF were bombing at separate times. However, Harris wisely revised the plan to preserve the RAF's style of bombing. According to Hansell, the objectives laid out in the Casablanca Directive were open to two significantly different interpretations. The RAF interpreted the document to mean that they were to focus their bombing efforts on attacking the morale of the German people. They emphasized the "undermining of the morale of the German people" portion of the document. For the British, it was through these means that they would bomb Germany to a point where "their capacity for armed resistance is fatally weakened."[78] This opposed the viewpoint of the Americans who felt that Germany should be weakened through "the progressive destruction and dislocation of the German military, industrial, and economic system."[79] They took these

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[76] Ibid.., 27.

[77] Ibid.., 28.

[78] Haywood Hansell, *The Strategic Air War against Germany and Japan: A Memoir.* (Washington D.C.: Office of Air Force History United States Air Force, 1986), 78.

[79] Haywood Hansell, *The Strategic Air War against Germany and Japan,* 78-79.

ideas and placed them into the operational plan, Pointblank. This shows that despite the fact that the debate had ended over daylight bombing, the two air forces were clearly not working together to increase effectiveness. It seems apparent that neither air force intended to give ground on what they considered to be the principal objectives in the CBO. This can seen by looking at the loopholes that Hansell pointed out. Therefore, how could "round-the-clock bombing" have been considered a joint strategy? Even when they bombed the same cities, they did not attack the same targets. With a lack of concentration on a specific objective, the idea of bombing by night and day appeared to be more of an excuse for splitting strategies rather than an actual cohesive plan. These statements by Hansell after the war indicate that nothing changed since Casablanca. Like at the conference, Harris and Eaker were given permission to select targets they felt were necessary as long as they were on the Pointblank approved list.[80] According to one historian, despite the "high-sounding rhetoric about 'round the clock' bombing, each side gave the other one the freedom to go its own way, and the resulting bombing directive was an agreement to disagree."[81] These loopholes provided Eaker and Harris the opportunity to make the tactical decisions that they saw best with regards to their own air force.[82] They also allowed Harris to divert from Pointblank objectives as long as he was attacking strategic targets.

The British should not be judged too harshly for this skillful move. The Americans pulled a similar maneuver earlier that year. At Casablanca, Eaker proposed the use of a loose command structure under Portal. He stated that he preferred to receive his orders from Portal and that the command, as then constructed, worked for the best. "In my opinion the directives received by the RAF Bomber Command from the Chief of Air Staff [Portal], RAF, have always been sound and have always left sufficient latitude to the Commander for the selection of

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[80] Denis Richards, *Portal of Hungerford: The Life of Marshal of the Royal Air Force Viscount Portal of Hungerford KG, GCB, OM, SO, MC.* (New York, NY: Holmes & Meier Publishers, Inc., 1977), 311.

[81] Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945* (Princeton and Oxford: Princeton University Press, 2002),215.

[82] Ibid.

individual targets."[83] This gave the American air forces more autonomy. One historian argues that "the real power was in the hands of Harris and Eaker" when it came to the CBO.[84] Another author wrote that the Allies should not have been surprised that Harris knowingly refused to follow the Casablanca Directive.[85] One British air power historian wrote, "Portal's position was anomalous; through his own Air Staff he could theoretically issue guide-lines for the prosecution of the offensive, but he never chose or saw any need to do so." This historian states that there was never any coordination established between Bomber Command and the Eighth Air Force.[86] Setting up such a weak command structure, where subordinates could do whatever they wanted, led each air force commander to believe he was the main theater of operations. This issue came up during the planning of the CBO and its implementation. These power coalition politics led to a disorganized command that was reflected in Operation Pointblank.

The only thing the two sides seemed to agree upon was the importance of destroying German fighters. However, this was only assigned as an intermediate objective. It was believed that the Americans could knock this force out of the sky using the defensive capabilities of their heavy bombers. The raid on Vegesack suggested that all of this was possible. At the time, many Americans believed that the German fighters were inferior to their heavy bombers.

In short, Operation Pointblank said "yes" to every request made by Eaker and Harris. The CBO continued to pursue competing agendas. By agreeing to implement opposing methods and strategies in the plan, Pointblank became a worthless piece of paper. Instead of being an actual plan it was more of a set of guidelines than a blueprint for air superiority. What it succeeded in doing was to identify the threat that German fighters posed. Finally, it made the Eighth Air Force the premier US air command in the world.

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[83] Ira Eaker, "Why Not Give Our Bombers and the RAF's Bombers the Same Strategic Objective: The Same Targets?" Ira Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

[84] Tami Davis Biddle, *Rhetoric and Reality in Air Warfare,* 215.

[85] Anthony Verrier, *The Bomber Offensive: The Exciting Saga of the American and British Strategic Bomber Offensive Against Germany from 1939-1945*, (London: B.T. Batsford, 1968), 160.

[86] Ibid.,183.

The plan for the CBO established in 1943 was open to interpretation and not an actual plan. By writing this bombing policy the two allies agreed to avoid an argument over bombing doctrine again. Depending on who was in charge of the CBO, Pointblank could be interpreted as strictly or loosely as that officer wanted it to be. In 1943, that man was Air Marshal Charles Portal, who was chosen, because he didn't try to rein in Eaker or Harris. Later, during the 1944 campaign, Eisenhower was unofficially put in charge of the CBO. He interpreted the Pointblank Directive more strictly than Portal. As a result, cooperation that was seldom seen in the 1943 offensive was achieved during 1944. So why did they choose this plan? It appeased everyone at the table, but left open the possibility of a more strictly guided bomber offensive later in the war. Pointblank was a reflection of air force politics rather than a roadmap to victory.

Rarely are battle plans drawn up in a vacuum of military efficiency. Operation Pointblank was no different. The internal politics that led to the creation of Pointblank began with the COA Report. By commissioning his own team to carry out research for the bombing campaign separate from Eaker, Arnold began to intrude into Eaker's domain as commander of the Eighth Air Force. Eaker himself was not innocent of playing inter-service politics. Eaker had demanded more aircraft throughout the spring of 1943. His pleas were met with silence and more diversions. Finally, when offered the chance to draw up his own operational plan for the CBO he made his move. Eaker drew up a highly ambitious plan that required aircraft deliveries that were not possible in 1943. In the end, Eaker's plan made the American Eighth Air Force the premiere American air command in the world. This was internal military politics at its dirtiest.

Pointblank also reflected the international rivalry between the RAF and USAAF. Eaker and Harris had two completely different visions for the future air campaigns against Germany. They each went out of their way to ensure that they could each pursue these goals. Eaker did so by writing an American centric operational plan. It was a daylight precision bombing plan that reflected American air doctrine, not British. Harris secured his freedom to break with the plan with timely edits that made the document interpretive to its readers. By the time the final draft was produced, Pointblank left all target decisions in the hands of the air

force commanders. In the end, grand strategy took a backseat to the political infighting when it came to creating Operation Pointblank.

Rush by Air
"Cold War Transitions: Congo Civil Wars and Swift Strike Exercises"

Dr. Billy Higgins

The second smallest state in the Union, Delaware has three counties – two at high tide say the residents. The middle one of those three counties, Kent, is home to one of the largest United States Air Force bases. During the Kennedy administration, Dover AFB embraced the 1607th Wing of MATS. Dover was almost the counterpart to the giant of WESTAF, Travis AFB in California. Almost, because headquarters of EASTAF was not actually at Dover, but 70 miles up the road at McGuire AFB, New Jersey. The 1607th Wing, however, had some 53 C-124s, and to fly them, three squadrons of aircrew numbering between them some 330 pilots, 170 navigators, 240 flight engineers, and 139 loadmasters.[1] Two squadrons with 27 C-133s and crewmembers were based at Dover, too, along with "tenant" units of SAC equipped with B-52s and ADC equipped with F-102s and F-106'.

Coming to an operational unit after two years of Air Training Command presented a new life, where real work meant realopportunities

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[1] *History of 1607th Air Transport Wing, Heavy*, June 1964 – December 1964. These are figures are for that particular period of time, buy typify the unit strength from 1954 through 1964.

Journal of Military Aviation History, Volume 1 (2017): 23-29.

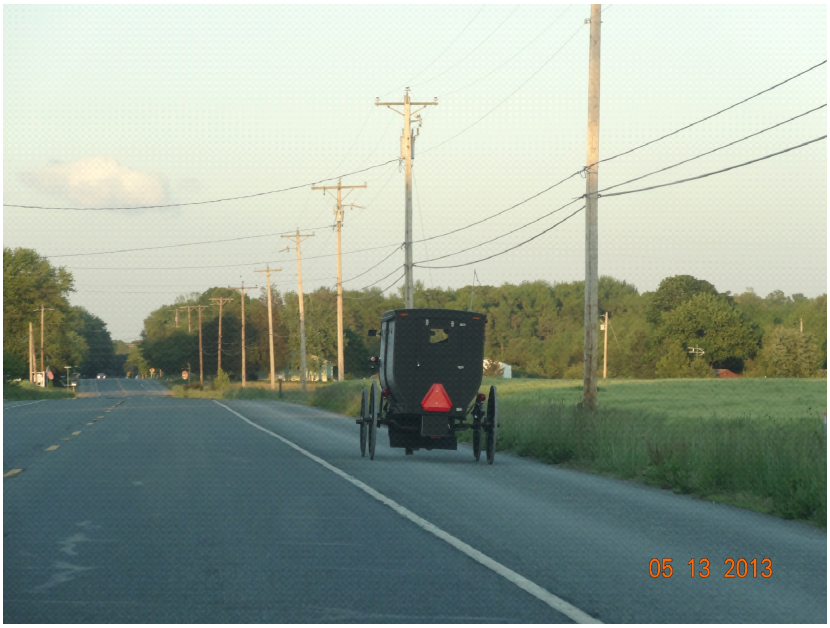
to serve the country and see the world. Here, neophyte transport navigators checking into their squadron quarters would get a guided tour of their operational airplane. The flight line buzzed and roared with airplane activity. At Dover, which had that diverse mission, the C-124s parked in rows near the terminal impressed with their stately size and perfect alignment. Barely visible at the end of the field, the SAC tenant unit had its B-52s array on its separate ramp that veered directly onto the runway in case of a scramble. At the supply store, navs were issued brown leather nav kits and flight suits on which they would sew MATS and squadron patches. Plague shots and passports were obtained, necessary for the global mission of the C-124 crews.

A priority order of business upon arrival was to find living quarters. On the sprawling base there were plenty of converted barracks in which to house bachelor officer. Married officers could obtain a housing allowance with which to rent a house or apartment. The largest in Dover was named the Caesar Rodney Apartments. Caesar Rodney is considered to be, in Delaware at least, a founding father. As presented by teachers in local elementary schools, Rodney rode the seventy miles from Dover to Philadelphia in a driving rainstorm arriving on July 1, 1776, to break the tie in Delaware's three man representation at the Continental Congress, using the phrase, "I vote for Independence." Rodney did his part in the American Revolution and stayed active afterwards. He died in 1784, though, before the Constitutional Convention. His legacy to the new United States lived on and Delaware did become the first state to ratify the new Constitution as it emerged from the Convention in 1787 earning its right to the nickname, "The First State," which still appears as a motto on automobile license tags. Just a few miles from the Caesar Rodney Apartments, is the capitol of Delaware, a colonial brick building fronted by the Dover Green, where in 1962 a whipping post stood on the corner of the grounds and a repeated misdemeanor offender was sentenced to the lash. He was never tied to the post for administration, however, another court interceding to halt what most people thought of as over-the-top punishment.[2]

Dover had prominent town life features such as a weekly market for the conservative Mennonite farmers who came to town in their enclosed one-horse buggies. Delaware rural roads have a lane for horse traffic

[2]The last man sentenced to a lashing was in 1963, but it was not carried out.

and Dover had a designated parking area for the conveyances. Bearded men with wide brimmed hats, plain clothes, and females wearing no makeup, hair in buns covered by a white cap and floor length dresses talked earnestly with each other, dealing with issues in a world much different than that going on at the air base a few miles to the south.



Rehoboth Beach thirty miles down the coast from Dover boasted fresh caught seafood and the Bottle & Cork ("World's Greatest Rock 'n Roll Bar") where college kids, young officers from Dover, staffers from inside the beltway, and Philadelphia secretaries mingled in the summer to converse, dance, do the limbo, and maybe watch a sunrise from the beach.

Near Dover AFB, a village, Kitts Hummock, fronts Chesapeake Bay which is protected from crashing ocean waves by a peninsula of land occupied by the state of New Jersey eighty miles across the bay toward the rising sun. That bit of shelter creates a special habitat occupied, by among other sea creatures, something called a horseshoe crab, because it looks like the underside of a horse's hoof. It consists mainly of a large soft shell and a six inch spike of a tail that it can erect

so that it points straight up, which it will do as in scrunches down to cover its body in the beach sand. This crab has no edible meat and if a beach comber or swimmer happens to step on the spike, well, it feels like stepping on a twenty penny nail. Yet it is a unique form of life requiring this unique habitat. Edible crabs, along with clams, abound in Delmarva.

Bars and taverns strung out along the beach highway have frequent clambakes to go along with their shuffleboard tournaments. Pucks are called quakes in Delaware, further distinguishing the small state which in 2008 saw its favorite son, Joe Biden, elected to the vice-presidency of the United States, on the ticket with Barrack Obama, the first African American to be elected to that high, precious office, and commander in chief of the U.S. military.

In the 1960's, C-124 crew members arriving at Dover for the first time from Air Training Command where they had lived and worked in the spacious states of Texas and California are immediately struck by the nearness of everything around Dover. Washington, D.C. lays just two hours away, New York City four. Philadelphia, Baltimore, Atlantic City are in easy driving distances. Although nice to think about, such get-a-ways for Air Force officers were rare, as flying schedules, training, and duty assignments made for long work weeks. Pilots seemed to spend every waking hour studying, simulating, staying current, or checking out on some skill in the plane. Navigators had some of these duties, too, but for the most case, time each month was spent away from home station on a flying mission. Rated officers were capped at 330 flying hours for a quarter and typically that meant about 100 hours per month which translated to about 15 – 16 days out of thirty on a trip. Most of those C-124 trips from Dover were directed to Europe.

A priority purpose of the 1607th mission was to keep NATO allies supplied with material. In 1960, the U.S. Army had more than a half million soldiers and airmen in Europe.[3] Although these American soldiers were not supplied all by air or even mostly by air, the crisis of the blockade and subsequent Berlin Airlift, came the recognition of the need for heavy transport airplanes in case other means failed. To keep the air supply channels open and lubricated, many missions were flown

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[3] http://www.heritage.org/research/reports/2004/10/global-us-troop-deployment-1950-2003

seemingly for that purpose. Apocryphal stories were told about one C-124 delivering a single I-beam to an ally and the second C-124 on loading it for the trip back home.

In 1954, the newly created the 1607th at Dover AFB received its first C-124s, then fresh and un-fatigued. In the same year, Globemaster IIs from another base, the 62nd Troop Carrier Wing at McChord AFB, carried French troops from their home stations in Europe to Dien Bien Phu where the great battle for French Indochina – Vietnam - was occurring. Perhaps the reinforcements were too little, too late, but a major lesson learned was the reliability and power of the C-124s in that all thirteen of them assigned made the 22,000 nautical mile circumnavigation of the globe successfully in an average flying time of one hundred nineteen hours actualizing a new day for troop transport where a full division could be deployed from thousands of miles away in a very short span of time.[4] The Globemaster with its dogged reliability and its voluminous cargo bay won over air strategists. Consequently, numerous airlift and Atlantic crossings were in store for these huge airplanes of MATS especially those of the 1607th extending by the mid-sixties, to all airlift wings when C-124s were landing daily in South Vietnam. Thus, the heyday of the C-124 was dawning.

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[4]Frederick A. Johnsen, Lockheed C-141 Starlifter. (North Branch, Minnesota: Specialty Press Publishers, 2005), 6.

Dover's first C-124 arrived in 1955. Photo courtesy of the Air Mobility Command Museum, Dover AFB, Delaware.

Dover C-124s, as much as any base and any transport airplane, represented Air Force responses to the realities of 1961-1963, that is the commitments of the Kennedy administration to a military designed for counter-insurgency actions rather than nuclear warfare, the U. S. Army's commitment to Air Cavalry units dependent on helicopter transport to fire zones, and the increasing aggression of North Vietnam toward South Vietnam, a hot spot ten thousand miles from the United States.[5] While

[5]In the campaign of 1960, Kennedy articulated his ideas of a new force to meet Soviet challenges other than what had been conventional wisdom, that is reliance on nuclear weapons to deter aggression. Some thinking during the later days of the Eisenhower administration concerned the option of limited nuclear warfare to confront limited-war situations. See General Frederic H. Smith, Jr., "Nuclear Weapons and Limited War," *Air University Quarterly Review*, 12, 1 (Spring 1960): 3-27.

military jet airlifters were on the drawing board and some C-130A Hercules turbo-prop were already carrying out its missions, at that time the Globemaster II size, operational numbers, trained crews and maintenance proved ready, willing, and able to meet the seminal demands of the American Century.

While not diminishing the airlift missions needed by NATO, NORAD, and humanitarian causes, the 1607th began, mostly through gigantic exercises, the tasks of training its C-124 crews for the new army and the new national strategy of containing Communism. Formation flying, paratroop drops, short field landings, and engine running off loads signaling a day when airlifting counter-insurgency forces to far-away places, like Vietnam, and landing them in forward positions would be on the menu.[6]

Dover AFB was perfectly situated to combine the missions. With field conditions preferred by giant airplanes, with an elevation of less than thirty feet above sea level, 10,000 foot runways, and convenient to major sea ports and cities of the eastern seaboard, Dover had the advantages and features for sustainable giant air plane operations.

Local people were and are quite aware of the giants, sometimes in three to nine ship formations, as they plied the skies above Delaware, but never did the odd-looking Globemaster develop a romanticism that attached itself to the awesome bombers or the sleek fighter airplanes sharing those same skies. Unfair maybe since Dover C-124s carried nuclear weapons, too, albeit just for transporting and always safety armed, but nevertheless real atomic bombs. On one ill-fated occasion, a C-124 lifted off from Dover with three nuclear weapons and one nuclear capsule aboard. The fissionable core was not installed in the bombs which was indeed a fortunate safeguard on this particular mission. Soon into the flight, the Globemaster lost number one and number two engines on the port wing of the airplane. To maintain altitude for a return to an emergency field, the aircraft commander ordered the jettison of cargo through the freight elevator well. The first weapon left the plane at 4,500 feet altitude and the second was jettisoned at 2,500 feet. No detonation occurred even as the bombs hit the surface of the water the impact of which no doubt damaged them. They

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[6]Dover AFB, *The Airlifter*, January 1961, Vol. 6, No. 1, page 1.

evidently sank instantly to the bottom. Immediate search efforts could recover neither weapon nor any debris from the depths of the ocean. The C-124 landed safely at an Atlantic City airport.[7]

Even with some highly exotic and newsworthy uses of Dover C-124s - the world-wide tour by a Globemaster exhibiting the Mercury capsule piloted by astronaut John Glenn made newspaper headlines - the airplane seemed irrelevant. But how wrong that impression would be demonstrated very soon in Africa.

In the summer of 1960, a United Nations peace-keeping force arrived in the Congo, much of it transported by Dover Globemasters. This unfolding civil war signaled a departure from John Foster Dulles, Secretary of State in the Eisenhower administration, and the limited response inherent in the Dulles' "Massive Retaliation" strategy to deter aggression. Emerging threats were not conventional, however, could not be properly met with a foreign policy that relied upon SAC to destroy the enemy if they dared attack us or one of our allies or clients. "Ike's Bluff" as it has been termed, was to stare down any unruly behavior anywhere and especially if complicated by our chief adversary, the USSR. But times, they were "achangin!"

The Greek Civil War in 1948, had prompted the Truman Doctrine in which the president had specified that U. S. power would be used to stop the spread of Communism. The Marshall Plan, a corollary, had sought to use money as the instrument to prevent that spreading, thus originating U. S. foreign aid programs. Harry Truman ran for re-election in 1948 and won a surprising uphill battle against Republican challenger New York governor Thomas Dewey. Dixiecrats, wildcatting

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[7] Department of Defense, "Narrative Summaries of Accidents Involving U. S. Nuclear Weapons, 1950-1980," 9. http://www.dod.mil/pubs/foi/operation_and_plans/NuclearChemicalBiologicalMatters/635.pdf Another incident involving a nuclear weapons and a C-124 occurred on July 6, 1959 after the plane on a nuclear weapon ferrying mission crashed on takeoff from Barksdale AFB, Louisiana. The ensuing fire destroyed the airplane and the nuclear weapon that was aboard without its exploding. Safety devices prevented the detonation but the accident did result in a limited amount of radioactive contamination in the immediate area. Ibid., 17. Another C-124 was involved in a nuclear accident at Wright-Patterson AFB, Ohio, on October 11, 1965. Minor contamination found on the airplane which was restored to service after normal cleaning. Ibid., 27.

Southern Democrats irate over the military integration order by the president, fielded their own candidate, Strom Thurman, taking many of the South's Democrat electoral votes away from Truman.* Dewey was formidable in his own right and was widely predicted to win the election over the divided Democrats. Truman, whose prospects for victory looked dim, campaigned hard and won the election anyway.

* A tradition started with C-17 Globemaster III's to name them after specific American people as the U.S. Navy does with its aircraft carriers. One C-17 is named The Spirit of Strom Thurman and is stationed with the 437th Airlift Wing, Charleston AFB.

The American people decided, perhaps, that Truman's experience was the best bet between the candidates at this crucial time when the U.S. – U.S.S.R. alliance that had defeated the Nazis was coming apart. A Communist coup in Czechoslovakia deposed popular president Edward Benes who died in September after he resigned in the face of Soviet troop intervention. The Berlin Airlift that started on June 26, 1948 continued until September 1949. These threats led to meetings to prepare for mutual defense by Western European countries in 1948, a forerunner to the inclusion of the United States and Canada in forming the North Atlantic Treaty Organization (NATO), the treaty signed in April 1949.[8] With bipartisan agreement, NATO would insure globalization of United States aims and responses.

While that provided a measure of comfort for our European allies, their nerves were still frayed by the monumental Red Army facing them across the "Iron Curtain." If attacked, NATO forces, small in comparison, would be overwhelmed by the Red Army which would, of course, bring on the spread of Communism. U.S. troops in Europe formed not a stout line of defense, but only a "trip wire" which if triggered would result in "the launch." With Western Europe at stake, a launch would most definitely occur. That strategy preoccupied the Eisenhower administration that followed, and massive retaliation developed as a national strategy. But that strategy could not account for

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[8]The treaty was signed in Washington, D. C. by Dean Acheson, Truman's secretary of state, and ratified in July by the Republican majority U. S. Senate. The original NATO members were Belgium, Netherlands, Luxembourg, France, United Kingdom, Portugal, Italy, Norway, Denmark, Iceland, Canada, and the United States. Greece and Turkey joined in 1952. As in the Hegelian view, every thesis gets its antithesis, so the Soviet Union formed the Warsaw Pact in opposition to NATO.

confrontations that were starting to occur in the developing world.

In the late 1950's and 1960's independence movements in former colonies broke out around the world. In African countries, violent conflict between leaders and groups vying for political power often accompanied wars of liberation and even after independence had been won from the imperialistic European powers who with the Berlin Conference of 1889 had systematically divided up the "Dark Continent" between them. King Leopold of Belgium staked a claim to the interior of sub-Saharan Africa as his private possession. It was called the Belgium Congo.

The Congo, a vast land in the middle of the great continental plateau of Africa, is bisected by the equator and is one of the hottest and rainiest places on earth. Its river, the Congo, carries an immense volume to the sea, and ninety percent of the population lives along the river which acts as a great inland artery. Beyond the river settlements stretched enormous unbroken rain forests. But, unlike the Amazon, the Congo does not provide ocean vessel access from its mouth in the Atlantic into the interior. Geography prevents that in the form of two hundred foot escarpments that appear at the edge of the plateau 100 miles inland from the coast preventing further passage. Ship-borne cargo from the sea cannot enter the Congo basin, the physical geography of the continent thus isolating central Africa and its people. Imports from outside reach inland markets in the country via bearers or by air transport.

As Belgium slowly and reluctantly granted measures of independence, the Congo, colonized for eighty years, and held back by geography and imperialism, saw no unified government emerge. In June, 1960, Congo became independent but with no consensus and rivals to the elected government gearing up for armed conflict in pursuit of their aims, the super powers began to see opportunities for getting a foot in the door. In Africa, the situation was complicated and both sides settling on the use of surrogates rather than nuclear threats to advance their interests. In effect, this was a test for Khrushchev's new theory that the Soviet Union could compete with the United States and win – my vas pakhoronim - in emerging African states such as Egypt, and now

the Congo, without setting off massive retaliation.[9] Congo like many other former European colonies was not under the defense umbrella of NATO which, with U.S. insistence, adopted at its founding charter a clause excluding territories below the Tropic of Cancer.

With Belgium administrators and military officers staying put in the former colony, much was about to go wrong. Patrick Lumumba, the elected Prime Minister and a charismatic socialist, asked for United Nations assistance as he faced a serious threat of secession in Katanga province from his rival, Moise Tshombe. Tshombe, a Methodist and former businessman – what's not to like? Western diplomats might have thought" - had hired white mercenaries, led by former Belgian officers, with which to battle Lumumba's Congolese government troops. Noting that chaos was about to descend in central Africa, UN Secretary General Dag Hammarskjold responded to Lumumba's request by sending a substantial international military force to the Congo to intervene in the crisis. The United States and the Soviet Union agreed to provide the airlift.

While the Russian transports were slow to materialize, by January 1961, as many as nineteen C-124s and C-130 Hercules were providing help to beleaguered people in the Congo. Orders were to assist the evacuation of Europeans, mostly Belgians but some four hundred Americans worked or served in the Congo as well. Dover AFB C-124s took on the lion's share of the airlifting, flying 9,000 troops from nine countries and 4,500,000 pounds of cargo picked up from nine airfields stretching from Ireland to Pakistan in an operation initially dubbed Operation Safari, the name soon being changed to Operation New Tape, out of kindness one supposes. Globemasters carried troops in and out of the Congo, including a contingent of 500 United Arab Republic soldiers in Equator province.[10]

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[9]An offhand remark by the Soviet premier on November 18, 1956, in Poland, was interpreted by the U. S. public as a threat burying us under rubble with a nuclear bombardment. The wise-cracking Nikita might have meant that, he never explained the remark, but more likely it was an ominous translation of indomitable peasant will more closely resembling "I will be at your funeral."

[10]*New York Times*, January 27, 1961, 4.

UN troops loading on a Dover AFB C-124 at Elizabethville, Congo, 1961.

Katanga had one jet fighter, piloted by a Belgian that ruled the skies, "playing a key role in the fighting" until Swedish fighters were deployed by the U.N. force and gave protection to ground forces of Lumumba.[11] Showing the level of international cooperation achieved by Hammarskjold, India sent fighter planes to do air battle and give air support for United Nations troops as well. Katanga was worth fighting for since within it lay uranium and vast copper deposits making it resource rich. Copper had been mined and exported from there since the first millennium. The sixties were the beginning of affluent years in the United States and the housing boom needed copper imports driving the market upward. Indeed, over the next twenty years, world copper production doubled.[12] Oil was still cheap on the world markets, copper was not.

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[11]*New York Times*, September 22, 1961, 5.

[12]World copper production went from 4 million tons in 1960 to 7.2 million tons in 1980. From 1980 to 2010, production again doubled to 16 million tons. United States Geological Survey, *Minerals Yearbook*, 2012.

The warring factions trumped Hammarskjold's indecisive efforts to use the multi-national force in any meaningful way to stabilize the elected government which caused a desperate Lumumba to request support from the Soviet Union. This appeared to reduce Congo independence into a minor league version of the Cold War where battles occurred between Maoist factions and those who were not Marxists each supported but not controlled by one of the super powers. "Not controlled" was a key to the rise of a dictatorial regime uncommitted to either side, but brutal and exploitive in its own way.

The airlift to the Congo logged 40,000 flight hours, most of that in the first year and a half when C-124s from the 1607th were virtually the only MATS aircraft used in New Tape.[13] From European bases such as that in Chateauroux, France, isolated airways to Leopoldville (now Kinshasa) took Globemasters twenty-two flight hours. Many missions bound for the Congo stopped over at Wheelus AB, the American-operated field in Libya. Navigators flight planned in the base ops there using incomplete charts of the African continent much of which in the pre-satellite era remained as uncharted as in the days of Henry Stanley. ONCs depicted most of the massive Sahara Desert in white, meaning that there was scant navigational knowledge of an area that is equal in size to the lower 48 states. Celestial navigation over the Sahara was impeded by sand storms that reached flight levels. Radio beacons as well as airport towers operated only during day light hours, if then."[14] A generalized preflight briefing for the intrepid 1607th crews that carried troops and material to this war zone in the Third World was fly south for ten hours and pick up the Leopoldville RDF.[15]

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[13]Harry Heist, "The Flying History of the 1607th Air Transport Wing (H), Dover Air Force Base. An undated pamphlet available through the Air Mobility Command Museum. Heist is the Museum archivist.

[14]Col. David M. Sibbald, "Abandoning the Congo," *Hanger Digest*, Vol 3, No 2 (April 2003): 6.

[15]Cecil Brownlow, "Congo Airlift Provides Tough Support Test for USAF," *Aviation* Week 73, 7 (August 15, 1960): 32-34. Digitized by the International Studies Association, "Background on World Politics," 4, 3 (Autumn 1960): 95 and accessible through JSTOR using this link: http://www.jstor.org/stable/3013739

Dover crews flew across the continent mostly VFR which offered wonderful views of the most spectacular landscapes and wildlife in the world and landed on legs with troops or material at places like Addis Ababa, Ethiopia, (elevation 7,000 feet), Entebbe, Uganda, Khartoum, Sudan, and Leopoldville in the Congo. Pakistani troops carrying field packs and wearing their unit berets boarded at Karachi with carbines and automatic weapons. Crews bunked in the airplane, in a vacated dormitory at Lovanium University in Leopoldville, at the Lake Victoria Hotel, and once at least in a private villa of a Belgium family so recently and quickly evacuated that dirty dishes were still in the sink. Aircrew members wore civvies and were sustained nutritionally over the course of a typical twenty day TDY by the standbys: a can of Beanie Weenie, dessert of Oreos, and topped off with a Winston or Marlboro cigarette.[16]

As one C-124 pilot told it, "A crucial navigation beacon, Lake Awasu, between Stanleyville and Addis, was never on the air . . . finally we located the village and spotted the antenna and the shack which housed the generator. We buzzed the village and even dropped a note, but no joy. It finally came on the air the day we left for home and we later learned that to turn it on, a soldier was dispatched from Addis on a nine-day trek mounted on a donkey." [17] Intrepid was not strong enough to describe one incident in Leopoldville when Congolese troops boarded a C-124 and marched the crew off the airplane at gun point. Some were jailed and three were struck repeatedly with rifle butts. Eventually released, the crew received the Air Force Commendation Medal and the three who had taken the physical beatings were awarded the Purple Heart, perhaps the first time that had occurred in Sub-Saharan Africa. Anti-aircraft incidents occurred as well. In December 1961, a Globemaster II was hit by enemy ground fire on landing approach to Elisabethville, the capital of Katanga province. The C-124 landed safely even though the gunfire put one engine out of commission.[18]

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[16]*Hanger Digest*, Air Mobility Command Museum, Vol 3, No 2 (April 2003): 4-8

[17]Sibbald, 6.

[18]*New York Times*, December 8, 1961, page 1.

Lumumbu was murdered in 1961, after being captured, held, and beaten unmercifully by Congolese soldiers in the cargo compartment of an airlifter flown by an Australian crew. By 1965 pro-Western Moise Tshombe had been exiled. Ironically, Daj Hammarskjold, too, was a casualty of the Congo crisis, killed in a crash of a UN Douglas DC-6 airliner in September 1961 over the Congo-Zambian border while en route to negotiate a cease fire between UN non-combatants and Katanga troops of Tshombe.[19]

Army general Mobuto Seis Seko who the United States backed as a capable politician, consolidated power and exercised it to create a dictatorship that lasted thirty-two years from 1965 until he was weakened by prostate cancer and deposed in 1997. In 1971, Mobuto, who channeled billions of dollars reaped from copper resources into his private Swiss bank accounts, renamed the country Zaire in what he termed the Africanization movement. To publicize that and his own world image, Mobuto promoted a spectacular heavyweight championship fight in 1974 between Muhammad Ali and George Foreman. An award-winning documentary entitled "When We Were Kings" revealed the political tensions of that bout and indeed the whole era. C-124s are not mentioned, though of course Ali and entourage and Foreman whose baggage included his very large pet German Shepherd arrived by airplane. Foreman may or may not have known that German Shepherds were used by Belgium Congo police and were the icon of colonial repression.

Isolation for people of central Africa continues into the twenty-first century and makes the Democratic Republic of the Congo – the name was changed back after Mobutu's fall – one of the more self-indulgent countries in the world. The experience did show that through uncertain surroundings and hardships in operating the Globemaster on its mission to the Congo, it was a reliable large scale airlifter. Remarkably, not a single C-124 was lost in fulfilling this UN mission.

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[19]The four engine, piston-powered DC-6 was built in the Douglas plant at Santa Monica. The Air Force version was named the C-118 *Liftmaster*. Goran Bjorkdahl insists that Hammarskjold's plane was downed by enemy fire with intention. See newspaper articles such as Julian Borger "Dag Hammarskjöld: evidence suggests UN chief's plane was shot down," *The Guardian*, August 17, 2011.

The C-124 showed that it could take a punch. Could it be that this record dispelled any doubt in the Pentagon of the capability and the reliability of the Globemaster in dispensing U. S. military power to the far corners? The Congo offered a proving ground for a vigilant, on-going, global U. S presence to meet the exigencies of the Cold War and the 1607th crews and planes proved equal to the task. The U. S. would and could compete with the Kremlin in the emerging countries. The Globemaster would and could provide the airlift for global gamesmanship.

Not that the end results of the Congo game and U. S. and U. N. intervention was all that positive where making the world safe for democracy was concerned. Indeed, if analysts had been on their toes a message might have been received about what aftereffects of outside military assistance without much cultural awareness would have. The African airlift and American participation in it did not offer a promising model for continuing the U. S. export of its interests into places unable to change centuries of non-democratic rule. Capable though the Air Force and the airlift might be, the experience proved that favorable outcomes were difficult to achieve.

As the Congo crisis subsided, Dover C-124s continued flying missions in airlift support of Thule, of the NATO forces in Europe, to the Caribbean, and to the Far East. Even so, with the overwater duties, an obvious shift in mission readiness and aircraft and crew duties was occurring with a new game afoot. Joint service exercises began to dominate the scene. Proof by experiment was needed for rising limited war options. An extraordinary amount of time, energy, and resources were devoted in the early sixties to training operations dubbed Swift Strike, Desert Strike, and Gold Fire. Where was it leading to? Vietnam, of course, as the Kennedy administration sent the first helicopters there in 1961.

In two years of joint exercises, MATS proved again and again that it could respond to the Pentagon priorities of the age. The military planners sought to place in operation Commander-in-Chief John Kennedy's reasoning that counter-insurgency would be the more effective method of stymieing Communist advances in the Third World during this world wide Cold War period. On July 21, 1963, in the southeastern United States, seventy-five thousand men launched a one-month long inter-service war game termed Operation Swift Strike. It was the largest peacetime maneuver in U. S. history. This integrated Air

Force-Army combat force, firing blanks but noisy enough to awaken imaginations of the American Civil War in this southern area, intended to demonstrate its readiness to "meet a military emergency anywhere in the world." (Italics added). [20] It succeeded in transporting 34,000 troops and 27,000 tons of material into an area while training for assault of enemy troops and re-supply of forward positions. Operation Gold Fire followed the next year, moving the combat zone to the foothills of the Ozarks, perhaps better to simulate the terrain of the central highlands. C-124s, along with the sturdy C-130s hit the ground hard practicing short field landing techniques. These maneuvers claimed much of the time and budget resources of Dover and other MATS bases as crews practiced lifting and dropping troops into battle zones. Congo had demonstrated the long range and extended time capabilities. The stateside exercises would condition aircrews no less than the troops for even more direct involvement in distance crises. While the C-124 played a valuable role in the preparatory exercises and in the early years of combat in Vietnam, little recognition came to the Globemaster. Any example of that is in an Air University Review article entitled, "USAF Airlift and the Airmobility Idea in Vietnam" which barely mentions the C-124 while concentrating on the contributions, laudable to be sure, of the C-123s and C-130s.[21]

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[20] *The Gadsden Times,* September 17, 1963, 1.

[21] Ray L. Bowers, "USAF Airlift and the Airmobility Idea in Vietnam." *Air University Review*, November-December, 1974.

C-124 formation dropping troops from the 101st airborne over the Kentucky countryside.

Not only training, but fighting equipment seemed be designed especially for Southeast Asia and the new counter-insurgency strategies to be implemented there. The new M16, for example, appeared in 1963 and was thought be its designers to be as effective as the Soviet bloc AK-47 Kalashnikovs for jungle warfare. It replaced the wood stock M14 for U.S. Army troops in Vietnam. Bell developed an improved UH-1, the D model, which joined the US Army inventory in 1963 and could carry twelve soldiers with heavy armament on a 290 mile round trip.

In Asia, insurgencies with Marxist leanings in Malaya, Indonesia, and the Philippines worried American military and civilian administrators. But it was in Vietnam that the worries advanced into preventive military measures with the sending of U. S. Army advisors into the field to mentor South Vietnam soldiers. The Congo Airlift and the joint military-airlift exercises that followed it were, in retrospect, the natural forerunners to full U. S. commitment to contain Communism by force if necessary by battling insurgency on the ground halfway around the world. Korea had been a little different. Indeed, it was a far off war

on the Asian land mass, a predicament that West Pointers from Douglas MacArthur on had sworn to avoid, but the Korean War had been forced on the United States because not only the government of South Korea was in danger of being extinguished but Japan, nearly defenseless, could be in peril especially if the U. S. folded in Korea.

Vietnam, however, presented more options, not a cut and dried fight them here situation. The domino theory certainly decried the fall of friendly Southeast Asian governments to Communist force, but even so, bad as that would be, it was not catastrophic to most Americans, not like losing China had been or Japan would have been.

At the same time, rapid increase in available aircraft technology meant that the C-124 was nearing the end of its prominence as a MATS airlifter. The C-130 Hercules could fly across oceans with cargo and troops and land in forward areas. Charleston AFB received the first C- in December 1964. Many more were in production. The Boeing 707 rolling off the lines in plants in Washington and Kansas would become as successful an airplane ever built perhaps more so than the Douglas C-47 had been. It could carry some cargo and a lot of soldiers at much faster speeds. Both of these airlifters were available in 1965. In 1965, an article in the Airlifter reported the coming replacement of C-124s by the brand new C-141 Starlifters, a jet transport developed by Lockheed and built at Marietta, Georgia, and at Oklahoma City's Tinker Field. In the statistics given by the author of this article, A2C Walt Rykiel, the Globemasters of Dover had logged 870,000 hours in the air and covered some 174 million miles into most corners of the earth.[22] During its eleven years of duty with the 1607th, 32 crew members were lost in the five deadly crashes that occurred. Ironically, the 1607th's other heavy lifter, the turbo prop C-133 Cargomaster also built by Douglas had five crashes in the same period in which 33 crew members died, a total of 65 airmen lost by the 1607th ATW from 1957 to 1965.[23]

In 1965, however, the 285 Globemasters that remained in the MATS inventory, gave strategic military planners a huge resource in airlift and in planning. Enough perhaps to tip the balance toward favoring U. S. military deployment with active combat troops and

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[22]Walt Rykiel, *Airlifter,* 1965, page 1.

[23]Walt Rykiel, *Airlifter,* 1965, page 1.

equipment to Vietnam. In 1965, the stateside large scale maneuvers ended. The training was over and the real war about to begin. Globemaster navigators would be called on to use their skill to guide planes over the vast Pacific.

"They Developed it but apparently have no Requirements for it:" Why the USAF was the Last Major Air Arm to Adopt All-Cannon Armaments for its Fighter Aircraft

Roger Horky

The United States Air Force (USAF) was the last of the world's major air arms to operate day fighter aircraft armed with machine guns instead of cannon.[1] The fighter forces of most other air services made

[1]For the purposes of this work, a "fighter" (also referred to as an "air superiority aircraft") is defined as an airplane designed to destroy other aircraft as its primary role. Note that this definition, and most of the ones below, must be qualified with "generally" and "usually." There are no hard-and-fast rules regarding aircraft categorization, and there is often considerable overlap from one classification to another, even within a single air force.

The generic term "fighter" usually implies a "day fighter" which, as its name implies, is designed to operate only in clear weather, its crew relying on "the Mark I eyeball" to detect the enemy (although they can and have been used at night, usually in desperation when no dedicated night fighter types are available). A "night fighter" (note the qualifying adjective, further evidence that the generic "fighter" operates primarily in daylight) is one designed for nocturnal combat, and usually possesses a radar with which the crew searches for targets. It is usually employed against bombers. The term "night fighter" is rarely used today, having been supplanted by the term "all-weather fighter," which better describes its abilities.

An interceptor is a fighter designed for a defensive role. Its purpose is to engage and destroy incoming bomber and attack aircraft before they reach their targets. They are often referred to as "point-defense aircraft" or "home defense fighters." They usually have a good rate of climb but are often short ranged.

The term "bomber destroyer" has passed in and out of vogue but its adherents have never explained precisely how one such differs from an interceptor.

An "escort fighter" is a fighter that accompanies attack and bomber aircraft to

the transition from machine guns to cannon before or during World War Two.[2] The USAF, however, continued to specify machine guns for its day fighter designs well into the jet age. This work is an examination of the reasons the US Air Force, traditionally one of the most technologically advanced air arms in the world, lagged so far behind its counterparts in this particular area.

A number of possible explanations for this phenomenon present themselves. One is that the drastic reductions in the American defense budgets after World War Two prevented the USAF from investing in new armaments. Another is that the leaders of the USAF were resistant to change—military officers have a reputation for conservatism. A third

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their targets. Their function is to protect the strike aircraft from defending interceptors. They are sometimes referred to as "penetration fighters," a term coined in the mid-1940s.

A "fighter bomber" is a fighter able to carry ordnance for air-to-surface missions. It differs from an "attack aircraft" in that it has an air-to-air ability. Note that attack aircraft are usually designed for the role while fighter-bombers are often air superiority designs that have been relegated to the attack role after having been succeeded by newer, more advanced types.

Although some air forces assign different designations to day and night fighters, and/or fighters and attack aircraft, no air arm in history has ever deemed the difference between interceptors and escort fighters significant enough to warrant separate designations.

[2]Machine guns and cannon are both types of automatic weapons. The generally accepted difference between the two is size. Anything with a bore diameter of 20 millimeters or greater is considered a cannon. Note that in the non-metric United States, indigenous weapons designs are usually referred to by "calibre" (the bore diameter expressed in inches), while imported types commonly retain their metric identifications, at least until the 1980s.

Another distinction is that a machine gun (MG) almost invariably fires a solid projectile. There are several types of machine gun ammunition: "ball" (an ordinary solid bullet), incendiary, tracer, armor-piercing, and a few less common varieties. Aircraft machine guns are divided into two classes, light rifle-calibre guns, with a bore diameter (calibre) of .30 or .303 inches (7.62 mm), and heavy guns of .50 calibre (12.7 mm).

A cannon may fire a solid round but is usually loaded with explosive shells. The most common calibres of fighter-borne cannon are 20, 23, 30, and 37 millimeter. Larger cannon have been installed on aircraft but these were intended for air-to-surface attacks (although the Germans experimented with an airborne 50 mm cannon for use against American bombers during World War Two, and several other services have attempted using 40-mm cannon for air-to-air combat).

Cannon projectiles are larger and heavier than simple bullets, so cannons generally have a lower rate of fire (or "cyclic rate") than machine guns. However, the invention of the "Gatling"-style cannon (one with multiple revolving barrels) makes it possible to fire at a rate of four or even twelve thousand rounds per minutes (although most modern aircraft rarely carry more than 1,000 rounds per gun).

is that there was no perceived need for weapons upgrades. Or it could be that the USAF had experimented with cannon and found them wanting.

This last thesis is very attractive, given that the USAF's predecessor organization, the United States Army Air Forces (USAAF or, for convenience, AAF) operated two types of cannon-armed day fighters, the Lockheed P-38 Lightning and the Bell P-39 Airacobra,), during World War Two.[3] Neither aircraft, however, possessed an all-cannon armament. The prototype of the P-38 was equipped with a single 37-mm cannon and four .50-calibre machine guns but production models replaced the cannon with a 20-mm weapon (either an M1 or an AN-M2C, both of which were variants of the Swiss-designed Hispano-Suiza HS404, built in the United States under license).[4] The P-39 had a single 37-mm Browning M4 cannon (an export variant carried a 20-mm weapon) and, depending on the model, various combinations of .30- and .50-calibre machine guns.

All of the American-built "Hisso" cannons, as Hispano-Suiza designs were known, were unreliable, suffering a high rate of misfires. Their chambers were too long (by a mere one-sixteenth of an inch), which prevented their firing pins from making full contact with a round's primer at times.[5] Additionally, the Hispano required a rigid installation but American aircraft designers often failed to create gun mounts stiff enough to support them properly.[6] As a result, the guns were difficult to maintain as the stresses of flight and gunfire could cause their parts to fall out of alignment. During World War Two, the AAF trained thousands of armorers; these men were processed far too hastily to develop fully the skills they needed to take care of such temperamental weapons.

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[3] The USAF became independent of the United States Army in 1947.

[4] Note that there a number of accepted abbreviations for weapons sizes. In the text, the terms "x-mm" and "y-calibre" will be used. However, all direct quotations will retain their original language to demonstrate the fascinating variety of styles developed over the years.

[5] George M. Chinn, The Machine Gun: History, Evolution and Development of Manual, Automatic, and Airborne Repeating Weapons, v. 1 (Washington: USGPO, 1951), 577-578, 588-590.

[6] Anthony G. Williams and Emmanuel Gustin, Flying Guns: The Development of Aircraft Guns, Ammunition and Installations, 1933-45 (Shrewsbury, UK: Airlife, 2003), 151.

The American-made Browning cannon used in the P-39 was equally problematic. "In service the M4 revealed itself to be a very troublesome weapon, quite often jamming after the first shot and almost always after a few rounds. Pilots complained vociferously about this 'single-shot cannon.'"[7] Although AAF Material Command blamed the problem on poor maintenance in the field, the M4 was indeed defective. Its chute for the ejection of spent cartridges was poorly designed, although this fault was eventually rectified.

The other day fighters operated by the AAF during World War Two carried machine guns exclusively. At the start of the war, there was no standard armament for Army fighters, most types carrying a mix of .30- and .50-calibre machine guns, but by 1944 it was obvious that the "day of the 30 ha[d] long since passed"[8] and so all AAF fighters were equipped with a battery of six or eight Browning M2 .50-calibre machine guns.[9] There are many advantages associated with mounting a single type of weapon in an aircraft. One is that it reduces maintenance requirements and another is that it eliminates the need to stock different types of ammunition, both being important concerns for units in the field. The most important, however, is that there is no need for pilots and armorers to account for variations in the ballistic characteristics of the guns. "The differing trajectories of the projectiles meant that they could only be adjusted to strike a single aiming mark at a particular range. . . [and d]ifferent times of flight could also cause significant problems in deflection shooting [calculating the point where moving projectiles will reach a moving target by "leading" it, as hunters do with ducks and quarterbacks do with receivers]."[10]

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[7] Ibid., 154.

[8] J. P. Monroe, quoted in Joint Fighter Conference, Report of Joint Fighter Conference: NAS Patuxent River, MD, 16-23 October 1944 (Naval Air Station Patuxent River MD: n.p., 1944; reprint, ed. by Francis H. Dean, Atglen, PA: Schiffer, 1998), 158. The work will hereafter be referred to as Report of Joint Fighter Conference.

[9] The majority carried six, three in each wing. The Republic P-47 Thunderbolt carried eight.

[10] Anthony G. Williams, Rapid Fire: The Development of Automatic Cannon, Heavy Machine Guns and their Ammunition for Armies, Navies and Air Forces (Shrewsbury, UK: Airlife, 2000), 147.

The Browning M2 was a remarkably reliable weapon and was easy to maintain. In 1943, General Henry "Hap" Arnold, the commander of the Army Air Forces, noted that

> [t]his weapon, together with its ammunition, is the backbone of offensive and defensive guns for American aircraft and was brought to such a state of perfection by the Ordnance Department during the years of peace prior to the present conflict that it has enabled the Army Air Forces, the U. S. Navy [USN], and Marine Corps [USMC] to show a definite superiority in aircraft gun power throughout this global war.[11]

A year later, an American naval officer observed, "As it is, we have the 50-cal. gun which has reached its peak. The only improvements will be minor."[12] The "Ma Deuce," as the M2 became known, remains in production to this day, testifying to the quality of its design, which dates to 1918. The Navy had similarly good experiences with the M2. On a single combat cruise, one aircraft carrier expended some 200,000 rounds of .50-calibre ammunition "with only two serious jams and two dozen stoppages of all types."[13] Whether the ammunition was fired by guns on the ship itself or by the guns on the airplanes it carried is not specified. Either is possible, as the M2 was the standard weapon for American naval fighters as well as those of the AAF.

The USN, like the USAAF, began World War Two with a day fighter force made up exclusively of machine-gun armed aircraft, although all of its fighter types had carried only .50-calibre Brownings since before the conflict. The types on hand at the beginning of the war, the Grumman F4F-3 Wildcat and Brewster F2A Buffalo, carried four, while those introduced during the conflict (the -4 model of the Wildcat, the Grumman F6F Hellcat, and the early models of the Vought F4U

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[11] Quoted in Chinn, The Machine Gun, 338. The specific report from which this quotation was taken is not identified, except as having been written in November 1943, and its author is referred to as simply "the commanding general of the Army Air Forces."

[12] J. P. Monroe, quoted in Report of Joint Fighter Conference, 157.

[13] Malcolm F. Schoeffel, quoted in Chinn, The Machine Gun, 338.

Corsair) were, like their AAF counterparts, armed with six. However, in April, 1945—just five months before the end of the conflict—the USN began operating another Corsair variant, the F4U-1C, which differed from its predecessors by having four 20-mm cannon. The Navy had high hopes for the more heavily-armed fighter. One officer said, "I am personally very anxious for the first report on that [the F4U-1C], and I think that the first time they open up on a Jap[anese] fighter, it's going to fly into a million pieces."[14]

The Navy's anticipatory enthusiasm for the cannon-armed Corsair is difficult to explain given the AAF's problems with its cannon armaments; it is almost as if the USN's leaders were unaware of the Army Air Force's trouble. Indeed, at the Joint Fighter Conference of 1944 (a meeting of aircraft engineers and manufacturers, combat and test pilots, naval and military officers, and aerodynamicists to discuss the current state of fighter aircraft design), Commander J. P. Monroe of the Armaments Branch of the USN's Bureau of Aeronautics asked outright "if somebody in the Army could explain why the Army is not interested in the 20-mm gun. They [sic] developed it but apparently have no requirements for it while the Navy feels quite differently about the gun."[15]

Colonel Lee Coats, a representative of the AAF's Proving Ground Command at Eglin Field, Florida, responded not by referring to the cannon's shortcomings but by observing that:

> the feeling in the Army generally is that we would like to have a lethal density pattern. The most bullets going across one place at a given instance. We would like to have the smallest caliber gun that can do the job. If it takes a 22-mm [sic] to tear a Messerschmitt or a Mitsubishi apart, we want 20's, but as long as a 50 [calibre] will do the job we feel that if we can carry a greater number of guns and a greater amount of ammunition with the same weight, with an equal or greater fire power, that is the gun we want. . . . A

[14] J. P. Monroe, quoted in Report of Joint Fighter Conference, 157.

[15] J. P. Monroe, quoted in Report of Joint Fighter Conference, 169.

> Jap[anese soldier] doesn't care whether he gets killed by 20 mm's or a 50 caliber.[16]

"Density pattern" refers to how concentrated an aircraft's fire is. An airplane with all of its guns in its nose, such as a P-38, can deliver a compact burst of firepower, all of its projectiles traveling in a relatively tight grouping. An aircraft with wing-mounted weapons (such as most of the AAF's World War Two fighters) will have a gap between the lines of fire from its left- and right-side guns, greatly increasing the chances that its target might be hit by the rounds of just one or two weapons rather than its entire battery. This problem can be alleviated by "harmonizing" its guns, aligning them so that its shells or bullets will meet at a specific point ahead of the airplane ("The most bullets going across one place at a given instance"). The closer the target is to that position, the more projectiles will strike it.[17]
Colonel Coats went on to observe that the Army believed that standardized bore sight patterns gave "the mediocre pilot a better opportunity to hit an airplane in flight."[18] The leaders of the AAF knew that most of the thousands of pilots it trained during the conflict were not born marksman. They reasoned that their pilots would more effective endeavoring to score many damaging hits rather than a single killing blow.
The F4U-1C was the Navy's first operational cannon-armed fighter. When it was introduced, all of the other major air arms in the world except the USAAF had already made the transition from fighters armed with machine guns to fighters armed with cannon (in other words, the USN was the second-to-last air service in history to do so). The Japanese Navy had begun using cannon-armed day fighters about a year before Pearl Harbor; the Japanese Army did not introduce its first until 1943 (although neither service had fighters armed

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[16] Lee Coats, quoted in Report of Joint Fighter Conference, 169. Messerschmitt and Mitsubishi were Axis aircraft manufacturers; the former German, the latter Japanese.

[17] This is a gross oversimplification, of course. Most guns have a small but significant amount of scatter inherent in their designs. Additionally, an airplane's wings twist and flex in flight, shifting the alignment of the guns within them. There are a host of other factors that degrade accuracy of an airplane's guns as well, the effects of which are, of course, exaggerated by distance.

[18] Lee Coats, quoted in Report of Joint Fighter Conference, 170

exclusively with cannons for another year). Many European air arms had cannon-armed fighters in operation before the war began, although the British and Italians delayed, introducing their first cannon-armed fighters in 1941 and 1943, respectively.
There was a time when all fighter aircraft, no matter their country of origin, were armed with machine guns. Yet, as was noted above, almost every major air arm in the world except for the two American services had cannon-armed fighters in action before the United States entered the conflict. The Americans were not unaware of this development, having observers in the war zones. Their decision to eschew cannon-armed fighters thus seems particularly curious. What did the Americans see and not realize, or, perhaps, what did they see and choose to ignore?

The majority of the American observers were assigned to the United Kingdom, and so were able to watch developments in the British air service, the Royal Air Force (RAF), especially closely. The RAF began the war with two basic fighter types, the Supermarine Spitfire and Hawker Hurricane, each of which carried eight .303-calibre machine guns. When these aircraft were designed in the early 1930s, the RAF's leadership calculated that, given the speeds of aircraft available during that period, a fighter pilot would usually be able to fire upon another airplane for just over two seconds.[19] However, "[t]he belief held in Whitehall [before World War Two] was that a single-seat fighter was too light to accommodate cannon" and thus the only way to produce a weight of fire sufficient to ensure the destruction of the target in such a short time was to install eight .303 (rifle-calibre) machine guns, the standard aircraft weapon of the

[19] Squadron Leader Ralph Sorley (later Air Marshall Sir Ralph Sorley) is often given credit for having originated the idea of an eight-gun fighter (Paul Jacobs and Robert Lightsey, Battle of Britain Illustrated [New York: McGraw-Hill, 2003], 44, 96). However, Sorley's role is exaggerated, the result of a self-promoting article he wrote in 1957 (Colin Sinnott. The RAF and Aircraft Design, 1923-1939: Air Staff Operational Requirements [London: Frank Cass, 2001], 115-1160.

era, in each fighter.[20] Until the 1930s, most fighters carried just two of these guns.[21]

In the summer of 1940 Germany began a strategic bombing campaign against England, soon called the Battle of Britain. Within three months, the Spitfires and Hurricanes of RAF Fighter Command had shot down enough bombers to compel the Germans to suspend daylight bombardment operations. Yet the victory revealed a glaring weakness in the two British fighters. Rifle-calibre machine guns—even eight of them—were not powerful enough to destroy a medium-sized bomber expeditiously.

As a result the Spitfire and Hurricane were modified to carry heavier armaments. A version of the Hurricane with twelve .303s was produced, but proved disappointing. Far better were the Spitfire Vc and Hurricane IIc, both introduced in 1941, each carrying four 20-mm cannon. The four-cannon battery made short work of most bombers, contributing to the German decision to stop bombing by day.[22] No longer having to devote itself exclusively to defensive operations, RAF Fighter Command began offensive fighter sweeps over occupied Europe. The heavy cannon armament proved to be as effective at attacking surface targets as it was at shooting at German aircraft and became the standard armament for British fighters.

Yet the AAF's leaders believed that none of the RAF's experiences applied to their service. The United States was well beyond the range of any potential enemy's bombers, and so did not need interceptors. Other fighter types were equally superfluous. “The No. 1 job of an air force is bombardment. We must have long-range

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[20] Harry Woodman, “Armament Development,” in Biplane to Monoplane: Aircraft Development 1919-1939, ed. Philip Jarrett (London: Putnam, 1997), 190. “Whitehall” is a common synecdoche indicating the British government.

[21] The standard of a single pair of light machine guns was established in World War One. The underpowered aircraft of the era could rarely carry heavier loads, although most air services experimented with three- and even four-gun armaments irregularly throughout the conflict. In the interwar period, most fighters carried just the one pair of guns. It was the British who began the trend towards the heavier batteries in the early 1930s, although other air services were quick to follow suit (Sinnott, RAF and Fighter Design, 111-114).

[22] The most important reason, however, was the Germans' need to conserve their bombers for the invasion of the Soviet Union, planned for early 1942.

bombers which can hit the enemy before he hits us; in short, the best defense is attack,"[23] was the prevailing attitude in the AAF. Its bombers could reach targets far beyond the range of any fighter, and as a result, "close pursuit [=fighter] support of modern long-range bombardment can no longer be provided clear to the target or objective, [because] the high speed and great defensive fire power of modern bombers makes close support by large numbers of pursuit airplanes no longer so vitally necessary as heretofore."[24]A well-armed bomber, AAF leaders believed, could fight its way to any target, despite the evidence of the Battle of Britain, and American aircraft, unlike their European counterparts, were particularly well protected, being equipped with heavy .50-calibre, not rifle-calibre, machine guns.[25]

They were wrong. Antiaircraft guns and interceptors exacted a high toll of AAF bombers during the early years of the American strategic bombing campaign against Nazi Germany. There was little that could be done about the former, but the latter threat could be reduced by assigning fighters to escort the bombers. Doing so, however, had the effect of forcing the Americans to eschew the deep-penetration missions they had theretofore practiced until the range of

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[23] H. H. Arnold, First Report of the Commanding General of the Army Air Forces, January 4, 1945, to the Secretary of War, in Reports of General of the Army George C. Marshall, Chief of Staff; General of the Army H. H. Arnold, Commanding General, Army Air Forces; Fleet Admiral Ernest J. King, Commander-in-Chief, United States Fleet and Chief of Naval Operations (New York: Lippincott, 1947), 304. Hereafter referred to as "Arnold, First Report."

[24] Oscar Westover, testimony, Military Establishment Appropriation Bill for 1938: Hearing before the Subcommittee of the Committee on Appropriations House of Representatives, 75th Congress, 1939.

[25] The three main American heavy bombers of World War Two, the Boeing B-17, the Consolidated B-24, and the Boeing B-29, were each armed with at least ten fifty-caliber machine guns in five positions, nose, tail, dorsal, ventral, and left and right waist. European bombers were generally equipped with thirty-caliber guns and did not have ventral or waist gun positions, although some had a single twenty-millimeter cannon (heavier than the fifty-cal) in their tails.

The most common explanation for the name "Flying Fortress" is that it refers to the B-17's bristling defenses. However, an alternative story links the name to the aircraft's original function. The isolationist United States needed to rely on its shore batteries to protect itself from invasion. The B-17 served to extend the range of American coastal defenses from gun range (20-some miles) to the high seas.

their fighters could be improved. “The equipment of our escort fighter aircraft with extra long-range disposable fuel tanks now enables them to give our bombers continuous cover to and from targets formerly out of tactical range” wrote General Arnold in early 1945.[26]

The heavy machine-gun armaments of the American escort fighters were powerful enough to damage or destroy the interceptor aircraft they were used against. They also worked well against ground targets when the German air force had lost enough interceptors to allow American fighters to be assigned to duties outside of guarding bombers. There was thus no reason to replace them. As General Arnold proclaimed, “The Army Air Force put its faith in the American 50-caliber machine gun.”[27]

Unlike the AAF, which was dedicated to strategic bombing, the United States Navy was not committed to any particular concept of air power. Its leaders saw the airplane as an adjunct to surface vessels, able to bombard enemy shore installations and ships (like a battleship) and to provide early detection and defense against threats to the fleet (like a destroyer). They thus had no real reason to reevaluate the armaments of the USN's fighter aircraft.

American aircraft carriers operated in the Atlantic and off of Europe and Africa, but their fighter pilots rarely got opportunities to fight against German and Italian aircraft. Most of the Navy’s air-to-air fighting took place in the Pacific against the Japanese army's and navy's air arms. All Japanese aircraft were notoriously fragile. They were designed to emphasize range or agility, or both, which was generally achieved by reducing weight—usually at the expense of armor and firepower.[28] In the first two years of the conflict, the lightweight Japanese aircraft had a performance advantage over most Allied types, but once the Americans and British began operating well-armored airplanes with heavy guns, Japanese aircraft had trouble both inflicting and sustaining damage. In 1943 and 1944, USN fighter pilots exacted a terrible toll on the Japanese air forces.

By 1944, however, Japanese losses had been so heavy that Imperial commanders became increasingly desperate, willing to try almost anything to halt the American advance across the Pacific. During the invasion of the Philippines in October, they introduced a new weapon, the kamikaze, or suicide attack airplane. Japanese pilots volunteered to fly their aircraft into allied warships, sacrificing their

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[26] Arnold, First Report, 349.

[27] Arnold, Ibid., 309.

[28] The Italians shared with the Japanese a belief that agility should be the primary attribute of a fighter design, one of the reasons they lagged so far behind other nations in adopting cannon-armed fighters.

lives to ensure the destruction of the Emperor's enemies. A single airplane and its pilot were considered a small price to pay for the destruction of a battleship or aircraft carrier.

The USN's commanders quickly realized that it was not sufficient to merely damage a suicide airplane. As long as it could fly, it could still fulfill its mission. What was needed was a way to destroy kamikazes outright in one attempt. The solution was to develop a fighter armed with cannons. "Unimpressed with the apparent inability . . . of six .50-caliber machine guns to drop a kamikaze in timely fashion, the Navy emphasized the installations of four more powerful 20-mm cannon, which . . . set the new standard in [American] naval fighter design."[29] The USN placed orders for several types of cannon-armed fighters, but only one, the F4U-1C referred to earlier, saw action during World War Two. As a variant of an existing type, the cannon-armed Corsair was easier to put into production; two other cannon-armed fighters, Grumman's F8F Bearcat and F7F Tigercat, had to be developed from scratch and so entered service too late for combat.

Although the USN adopted the 20-mm cannon with seemingly little reservation, naval airmen found it as disappointing as their AAF counterparts did. As ace pilot Howard Finn recalled: "We also had the 20 mm cannon which was a more effective strafing weapon than the .50 cal gun, although they were not as reliable. They seemed to get jammed more often, and it was not uncommon to only have one of the four cannons able to fire. They were also prone to freezing at high altitude."[30] As a result, the cannon-armed Corsairs were eventually restricted to flying at low and medium altitudes when on anti-kamikaze patrols, high altitude coverage being provided by older-model F4Us equipped with machine guns.[31]

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[29] Richard P. Hallion, "Military Technology and the Pacific War." in Pearl to V-J Day: World War II in the Pacific: A Symposium sponsored by the Air Force History and Museums Program and the Air Force Historical Foundation, July 20-21, 1995, Naval Officers' Club, Bethesda, Maryland, eds. Jacob Neufeld, William T. Y'Blood, and Mary Lee Jefferson (n.p.: Air Force History and Museums Program, 2000), 87.

[30] Howard Finn, quoted in Mark Styling, Corsair Aces of World War 2 (London: Osprey, 1995), 77.

[31] Styling, Corsair Aces, 84.

That's The Way It Was
Fortress Leading Lady and Her Crew

Preston P. Clark Jr.

PREFACE

These are pages from a gunner's diary. They were written at a U.S. Air Force base in England during the spring, summer and fall of 1944. The story actually began in November, 1943 when ten Americans in their teens and 20's, trained in various specialties of aerial warfare as practiced on heavy bombers, were brought together as a combat crew for training at Dalhart Army Air Base, Dalhart, Texas.

Unfortunately. the diary does not date back to those days at Dalhart. Let it suffice to say that it was snowing cats and dogs when we got there, we were snowbound on Christmas day, and we saw nothing but snow all the way to Nebraska when we flew away in February.

At the Point of Embarkation, Kearney , Nebraska, they gave us a new crew number - 165 - another clothing check and several more health, security and survival lectures. It was blowing up a snow storm when we taxied out and took off from the Kearney strip headed for New England. We called at Grenier Field, N.H. and Presque Isle, Maine, then hopped up to Goose Bay, Labrador, across to Iceland, and then over to Prestwick, Scotland.

We left our airplane at Prestwick and rode an English train down to a U.S. Air Force staging base, "somewhere in England." The

Journal of Military Aviation History, Volume 1 (2017): 1-59.

whole crossing from Dalhart to England covered only about a week even with the time lost eating, sleeping and briefing at the various way stations.

The enlisted men were sent from the staging base to The Wash, over on the southeast coast, for a bit of brushing up on 50-caliber machine gun marksmanship. We never did find out what the officers were doing those two weeks, but general consensus was that they were holed up in some swank London boarding house, enjoying their last, fast-fading days as non-combatants.

We finally got a reprieve from The Wash and headed south again, arriving some five hours after at the typical little English town of Bury St. Edmunds. The picturesque hamlet got its name from the boy King of East Anglia. Name of the town was switched from Beodericsworth ("full of happiness and prosperity") to St. Edmund's Bury when St. Ed was laid to rest there in 807 A.D.

The officers must have grown tired of London, or wherever they'd been. We found them awaiting our arrival at the base, some six miles or so out of Bury, at a little wide place in the road called "Rougham."

We found that we had become Crew 69 of the 410th Bombardment Squadron, 94th Bombardment Group (Heavy). We were assigned bunk space in one of the Nissen huts, which looked like giant oil drums cut in half down the middle with the oval side up. The 94th was scattered about over some eight or ten square miles of thickly wooded southern England. We thought at first we'd landed in the middle of Sherwood Forest. It was a beautiful place, at its freshest and greenest when we arrived.

We didn't have much time to enjoy the scenery. They put us right to work. We got there in March, just when the cold days of English winter were fading into the good-flying weather days of spring. We arrived about the time they started sending the heavies over in lots of 800 to 1,000, with an equal number of fighters to go along for protection. Every time the weather was clear enough they were sending out a maximum effort - all the ships they could put into the air. The idea was to destroy German resources and to weaken the enemy in every way possible so that the invasion of the Continent, which came four months after our crew reached England, would have the best possible chance for success.

We started out flying an old olive drab-colored Fortress named "The Erie Ferry." It was number 653. Then we flew a couple in number

180, "The Eagle's Wrath," before we were assigned an airplane of our own. They gave us a shiny silver new B-170. It was the pride of the U.S. Air Force (notwithstanding opinions of the average B-24 crew member to the contrary) and they called it the Flying Fortress because it fairly bristled with 50-caliber machine guns - 12 of them. The Fortress could carry 10 tons of bombs and had a range of better than 3,500 miles. Her wing span was 103 feet 9 inches; her height 19 feet 1 inch; and she measured 74 feet 9 inches from nose to tail. Loaded, she weighed 65,000 pounds, and empty approximately 35,000. She got the tremendous power to carry all that weight from four 9-cylinder, 1,200 horsepower Wright Cyclone engines (never let an airplane engine be called a motor). Her top speed was 300 miles per hour; she cruised at about 225 most of the time.

When we started trying to choose a name for the new 17 it was about as big a problem as naming a new baby. We surveyed the ships around us and noted these names: Tuff Eddie, Idiot's Delight. Airborn Spare, Mighty Warrior (Gagon 's crew), The Gimp (Stopulos' crew in the 94th), Dutchess, Frenese I and II, Gremlin, The Shady Lady, Fortress McHenry, Morgan's Raiders, My Asam Dragon, The Rebel Queen, Mission Mistress, Flak Buster, Rosie, Joker, St. Christopher's Kids, Friday 13th, The Latest Rumor (Baytos' crew in the 100th), Nick's Place, Shack Bunny (385th), Puddin, The Better Half and Old Hound Dog.

By the time we got a ship of our own, we had been shifted to another squadron as a Pathfinder (lead) crew. That's what really suggested the name we chose for our new ship, number 668. We christened her the "Leading Lady," and had the name painted on both sides of her nose in script two feet high. We flew her on a lot of rugged raids and she took a lot of battle damage, but she was still operational when we left England. Last we heard of her they said she'd gotten too old to lead the way so they took the Mickey (radar) equipment out of her and made her a wing ship in the 385th Bomb Group. After the Lady had given up the best flying hours of her life and sustained terrific battle damage, they had to stick her back in the rear end of a strange squadron in a strange group. With "Leading Lady" painted on her nose in letters two feet high.

One more paragraph of preface, and then the diary. The members of the crew about which the material was written were:

V. Allan Wertsch, pilot, Delevan, Illinois.
Ralph S. Taylor, co-pilot, Grande Lodge, Michigan .
Richard P. Getz, navigator, San Diego.
Mari J. Counihan, bombardier, Iron River, Michigan.
John S. Stepanski, Jr., Mickey navigator, Detroit.
Fred , Arthur Muehler, engineer and top turret gunner,
Pacific, Missouri.
Cecil R. Mahathey, assistant engineer and left waist gunner;
Winston-Salem, N.C .
Lloyd Elliott, radio operator-gunner, Bakersfield, California.
Preston P. Clark, Jr., gunner, Abilene, Texas.

In addition to these there was a lad named Alfred Beacom, a Bostonian, who was a member of the original crew, from Dalhart until about the time we reached England. He was replaced by a Polish boy named Ted Kosinski, who was with us from Wash days until we became a lead crew. Then there was a kid from Staten Island on the original crew whose name was Lawrence Dunn. We never called him anything but Larry. He was the ball turret gunner and stayed with us till we became a lead crew and got the radar hat in place of the ball turret.

The diary is reproduced on the following pages, just as it was first written. It is the mission-by-mission account of the Operational Tour of the "Leading Lady," a great airplane, and of the crew who flew her, a great bunch of guys.

The Thirty-Two Missions

Easter Sunday, April 9, 1944
MISSION 1. Warnemunde, Germany

On April 9, 1944, the nation observed its third wartime Easter. For many U.S. servicemen, it was a day of war, rather than one devoted to the remembrance of Christ.

On Easter Sunday, 1944, we flew our first combat mission as Crew 69 of the 94th heavy bombardment group, U.S. Eighth Air Force.

From a base near Bury St. Edmunds in West Suffolk, southern England, we took off before dawn for a daylight raid on five targets in northern Germany and Poland. In one of the deepest penetrations made

by the 8th Air force up to that time, an estimated 500 to 750 American B-17 Flying Fortresses and B-24 Liberators with nearly 1,000 escorting fighter planes made a wide sweep over the Baltic Sea.

The Forts and Liberators bombed aircraft factories in Posen, Poland and four other cities north and northeast of Berlin. Pilots or the escorting Mustang, Lightning and Thunderbolt fighter planes reportedly shot down 20 Nazi planes in an air battle and destroyed others on the ground at German airfields.

For Crew 69 it was a nine-hour mission, four hours on oxygen at 25,000 feet, five hours over enemy territory. We got some close flak over the target - an aircraft factory at Warnemunde - but some of the more experienced fliers termed it "just medium."

We had good fighter escort all the way and saw no enemy fighter planes. Other bomb groups which made the deeper penetrations to Posen, Poland; Gdynia, the Polish port near Danzig; and Marienburg told of fierce opposition in some instances and placed the number of enemy interceptors at about 600 planes.

Posen, about 150 miles east of Berlin, was the site of large manufacturing plants for Focke-Wulf fighter planes, relocated there from German cities to escape destruction. German military men had claimed the city was out of reach of allied bombers. It had never been attacked.

A communique issued by Lieut. Gen. Carl A. Spaatz' Strategic Air Forces headquarters said that Focke-Wulf plants in all five of the target cities were bombed in clear weather. The plants were described as interrelated factories that constituted a vital production complex for single engined fighters of the Luftwaffe.

To reach their targets the American bombers crossed and re-crossed the most heavily defended parts of Germany and proved that hardly an acre of Hitler's fortress was safe from daylight bombing raids.

After nine hours in the air, Crew 69 landed back at its base in England with one mission completed and 31 more to go. The United States that day lost 31 heavy bombers and eight fighters. Some 318 American fliers were dead or missing in action. Many others were wounded.

We had no way of knowing how many Germans were dead or injured because of the bombings. That was Easter Sunday, 1944.

April 10. MISSION 2. Diest-Schaffen, Belgium

This was a lot easier than the first one, a six-hour flight. We were only over enemy territory about two and one-half hours. The overcast caused us to miss the primary target and we unloaded on the secondary, an aircraft assembly plant. Flak was light. We were briefed for 33 guns at the target but received no battle damage to "The Erie Ferry."

We encountered no fighter opposition, had very good fighter escort and saw no ships go down.

April 11. MISSION 3. Stettin, Germany

Today we had it rough. Our primary target was Posen, Poland. We missed it and hit the secondary, an aircraft assembly plant in Stettin, northeast Germany.

The fighter support was inadequate, with no help from the Danish coast to the target and back to the Danish coast. Just before bombs away we were attacked by 12 M.E. 110's. They made two frontal passes, sweeping under our formation. They did not knock down any of the ships in our group but a plane went down from the group directly behind us.

Flak was heavy over the target - 60 guns - but our ship received no battle damage. We were flying zero-one-three, one of the 332nd squadron's ships.

As we entered Germany one of our Forts aborted for Sweden with number one and number two engines knocked out by coastal flak.

On the way out Vaughn's ship went down. He just made the Danish coast but two of his boys bailed out over the Baltic Sea. A fire was seen in the middle of the ship.

Donald Cash's crew that we trained with at Dalhart, went down on this one, we learned a few days later. They came across and started flying the same time we did, so it must have been one of their first five raids. On that crew were Lt. John E. Harris, pilot; Lt. Milton Y. Wilson, co-pilot; Flight Officer John Marchetti. navigator; Lt. Jim B. Goodner, Jr., bombardier; S/Sgt. Thomas O. Obechina, engineer; S/Sgt. Clinton M. Gill, radio operator-gunner; Sgt. Edward A. Braun, gunner; Sgt. Jennings A. Ball, gunner; Sgt. Roger W. Fuller, gunner: and Sgt. Donald L Cash, gunner.

Some time later Fred received a clipping from his folks, taken from the Pekin (Ill) Times, concerning this crew, this raid and this war. The clipping carried a two-column picture of Cash's crew, taken at Dalhart, and a sort of editorial which read:

Sometimes I wonder if we appreciate the SIZE of the battle that is NOW going on over Europe.
I mean the air war.
The world was shocked by Tarawa.
Worst death toll in Marine history.
Even a book has been written about it.
Say - a battle as costly as Tarawa is going on nearly every day in the air over Europe.
See that picture above?
Take a good look at the man standing on the right hand end of the line.
He's a Pekin boy, just 21.
Sgt. Roger Fuller. .
Last week. his parents, Mr. and Mrs. Dwight C. Fuller, 1220 Charlotte Street, got word that he had been "missing in action since April 11."
We checked up in back copies of the Times and found that 61 bombers had been lost by the U.S. Air Force alone that day.

April 12. MISSION 4. Augsburg, Germany

This was to be a tough one but the mission was abandoned just after we got over France, because of bad weather and low thick clouds.

We went to bed thinking we would get credit for the mission. When we went down to the operations shack the next morning, however, there was a notice on the bulletin board: "No credit for mission of 4-12-44." Third Division Head quarters had rescinded the credit.

But on April 16, four days later, another order came through giving us credit for the mission after all. We were very glad to hear this.

April 13. A Close Call For Crew 69

The thirteenth was an unlucky, or in another sense, a very lucky day for Crew 69. On the way to Augsburg again, we got hit by three 50-caliber machine gun bullets. Some guy in another 17 in the formation was a touch careless with his test firing. We always test fire the guns soon after leaving England.

One of the slugs came through the nose of 493, barely missing Counihan and ripping through Getz' pant leg, grazing the skin.

Another bullet knocked out a quarter of the ship's oxygen supply.

The third was a tracer bullet. It started a fire in the wing. which put itself out a little later. If the tracer had been the one which tore into the oxygen system we might have blown up, they said.

We aborted from about half way across the Channel, therefore received no credit for the raid. McMeekin's crew, who shares Hut A with us, claims that Lt. Wertsch is bad luck for their ship, 493. He flew his first mission in it as Mac's co-pilot with Mahathey flying left waist. They caught a lot of flak and lost the hydraulic system. It was in the hangar for a couple of weeks and then we happened to get it the day it came out. We really fixed it up good this time. Since the left wing cannot be replaced they have decided to junk the ship. A lucky day for Getz and Crew 69.

The boys from the PRO - public relations office - took Getz' picture with his pant leg ripped open to show what a close call he had. The picture appeared in lots of stateside newspapers, especially in sunny Cal. The caption they wrote for the picture was dramatic as hell, even if it didn't pay a great deal of attention to humdrum facts. The caption read "... A bullet from a German fighter plane cut the leg of his trousers and heated flying suit and put a slight bump and scratch on his leg."

April 16. McMeekin's Crew Goes Down

Everything went right today for Crew 69, but the same cannot be said for some of the other guys.

A practice mission for the morning was scrubbed. At noon we learned that we had been given credit for the mission of 4-12-44. This meant the difference in making staff by May 1 for Ted and Cecil.

We left on a 48-hour pass to London at 4:20 p.m. Took a taxi tour, and saw all the crumbly old sights; the bomb holes from the Blitz and lesser, current air raids; and London's streams of humanity, including that flowing through Picadilly Circus.

We returned to the base on the afternoon of the eighteenth, just as the group was staggering back from Berlin.

On April 18, combined operations cost the Eighth Air Force only 19 heavy bombers lost. But of those 19, ten were lost by the 94th, three of which were from the 410th Squadron. They ran into swarms of M.E. 109's and F.W. 190's square over the target, and their fighter escort and fifties weren't enough protection.

Pomerance, McMeekin and Brinkmeyer didn't get back. They carried all of Milio's, Scotty Davis', Darby's, Martin's, Workman's and Curt's clothes and stuff away from the hut before we went to bed.

They were on their twenty-fourth mission with only four to go. Chris, the bombardier, was on his twenty-seventh.

April 19. MISSION 5 Werl, Germany

We were pretty shaken up about losing the ships, especially Mac's, on yesterday's Berlin raid when we took off on this one. It turned out easy, although long. It was about an eight hour mission.

We encountered no fighters and no close flak, and had excellent fighter protection from P-38 Lightnings, P-47 Thunderbolts and P-51 Mustangs. It seems that we always have extra good fighter cover the day after we lose a lot of ships to German fighter attacks.

The country we flew over, at the edge of the Ruhr Valley (flak alley) and through Belgium, was very pretty. This was our Air Medal Mission.

April !0. MISSION 6. Abbeville, France

We had heard about how some guys make a lot of "no ball" missions and how easy they are.

We made one of them today, and although we were over enemy territory for only 20 minutes, it was a rough go. The flak was as close and as thick and as much as we've seen to date.

We left Lt. Getz at home, much to his disapproval, and used U. Kacusuta's tail gunner in the nose. He was a fair fill-in but the crew was not quite the same without the navigator. Intercom trouble almost caused us to have to turn back.

We bombed by squadrons. Bartos' navigator and bombardier suffered minor injuries from flak fragments. Ace, Bartos' right waist gunner and one of our buddies, said it was his closest call yet in 22 raids.

We encountered no enemy fighters and had good fighter cover. We flew over London, the world's largest city, on the way out. Some sight from 18,000 feet.

April 22. MISSION 7. Hamm, Germany

We took off for Target Germany on April 21 but the mission was abandoned before we hit the Channel because of very bad weather over the Continent.

On the twenty second we flew a circle around the Ruhr Valley to rack up our seventh raid. We hit a rail marshalling yard at the edge of the Ruhr. American fighters provided good protection and we saw no bandits. Flak was heavy and our ship , "The Erie Ferry" (now assigned to us) received minor battle damage.

A Fortress in the group just behind us caught fire and exploded - no chutes.

Bartos was hit bad, caught fire, and lost his interphone and oxygen systems. Ace bailed out over Germany along with the left waist gunner, who was on his first mission (Manning' s left waist) and the radio operator.

Bartos brought his airplane and the rest of his crew back okay on the deck.

We saw all three chutes open. Anyone would probably have jumped under the circumstances that Ace was under. You can't stay alive very long without any oxygen. We found out that the tail gunner (Shapiro) and the ball gunner became anoxiated, which probably kept them from bailing out. They regained consciousness when Bartos took the ship down on the deck. You can get along without the oxygen masks anywhere below 10,000 feet. Lt. Manning flew co-pilot for us. Taylor stayed home.

Rodery, Bartos ' regular left waist gunner, stayed on the ground, letting the new boy make his first trip with the seasoned crew, which is standard operating procedure. Rodery later finished 30 and stayed in the ETO in order to stay out of the South Pacific. Would he have jumped had he been at Bartos' left waist position today? Quien Sabe?

April 23. Some Air-War Terminology

After two hours sleep we were awakened for an early morning mission. It was scrubbed at 7 o'clock because of bad weather. You have to be wise to the bulletin board lingo to know what is going on around here. Scrubbed means marked-off, cancelled. "Two balls" means a 30-minute delay. "Strike" means a 1-hour delay, and "mission scrubbed" generally gets three cheers from the restless crowd. "Ball game today" means we are flying forth to do battle .

"Stand by til 2300 hours" means maybe. A "no ball" target is a very easy mission, sometimes called a milk run.

But the thing we'll probably remember most and longest is the wav the C.Q. - charge of quarters - comes stomping in at the midnight hours, turns on all the harsh lights in the hut and bellows like a wild bull: "WERTSCH'S CREW - MUEHLER, ELLIOTT, KOSINSKI, MAHATHEY, CLARK. BRIEfING AT 2:30. BREAKFAST AT 1:30. YOU AWAKE?!?!" Who in the E.T.O. could sleep through that, especially if they are a light sleeper? It was weird and a little nauseating at first, knowing we were going back into the flak again and again and again until we went 30-odd times. Finishing up is a shore dimly seen; in fact, not seen at all. All we can see is the endless expanse of our operational tour. It is a kind of a feeling of futility, with a touch of amazement that we have gotten this far, and hopeless speculation on how much longer the luck will last. We got used to the feeling, however, and now each time the C.Q. rolls us out it is a little easier to go than the time before.

April 24. MlSSlON 8. Freidrichshafen, Germany

We had another rough one today. A nine-hour mission six and one half hours on oxygen at 23,000 feet, 30 degrees below zero temp, and four and one-half hours over enemy territory.

We flew clear to the Swiss border to bomb a ball bearing works at Freidrichshafen in southwestern Germany.

Lt. Taylor stayed home again and Lt. Miller flew his first mission as our co-pilot. We also took along a photographer, a guy named Hanlon, who was on his seventh mission. The flak at the target was heavy - 90 guns - but we received no close bursts. We didn't run into any German fighters and had excellent cover by P-47's, 38's and 51's. Passed within sight of Brussels on the return trip.

April 25. We Get a New Ship, and a New Job

No ball game today. We caught up on a little much-needed sack time, all except the skeleton crew.

Major Stevenson is grooming Lt. Wertsch and Crew 69 for a group lead job. That is likely to mean a captaincy for the pilot, silver bars for Getz and Counihan and the title of "spare" for Taylor and me. I'd hate to quit flying with Fred, Lloyd , Cecil, Ted, Dunn, Getz, Counihan, Wertsch and Taylor, but they say that spare isn't such a bad deal at all. Everything happens for the best, anyway. We were assigned a new ship today. No name yet.

April 27. MISSION 9. Abbeville, France

The job we did at Abbeville on the twentieth of April wasn't completely satisfactory so they sent us back there again today. We carried 16 500-pound demolition bombs.

The ack-ack was heavy and thick again and Crew 69 had a pretty close call. We caught enough flak to send the ship to the repair depot for a new left wing. There were no fight er attacks and we had ample fighter support.

We took off at 7 o'clock and got back on the ground at 12 noon. Had chow and took off again at 2:30on our tenth mission. This was the first "double attack" (in a single day) of the Eighth Air Force of the war. We're expecting them to be frequent occurrences in days to come.

April 27. MISSION 10. Luxemburg Airfield

This was our second raid of April 27. Our primary target was a pilot school and airfield in Luxemburg but 9/10 cloud coverage caused us to miss it, so we unloaded on another airfield on the way home. We carried 36 100-pound fragmentation bombs.

Had we flown the briefed course all the way and hit the primary target we would not have seen any flak at all. But as it turned out we flew right past the flakless primary and then got samples, it seemed, from every ack-ack crew in Luxemburg and Belgium.

The target we hit must have been important because we got a lot of flak there. Then we got into more of the flack bursts as we crossed the coast coming home.

The 447th Bomb Group was leading the wing and it seemed that the lead ship got the whole formation into trouble. As we crossed the coast the flak almost got us and got one of the ships in the 447th. A direct hit on their number two engine sent them into a shallow spiral. The ship was enveloped in flames for about 15 seconds and then blew up. As she blew up we saw about six chutes blossom, seemingly blown open by the explosion. Those men were over the Channel when their chutes opened but they were carried back onto the Belgian coast by the wind. We saw no fighters bearing swastikas - only Thunderbolts and Lightnings.

We got another cluster for the blue and orange Air Medal today.

April 30. A New Squadron

We have not flown a mission since April 27. Missed the one to Cherbourg the twenty-eighth. Big B. on the twenty-ninth and the long one today to some spot in southern Germany. They did not give us the 48-hour pass which we had counted on getting this weekend. We have been transferred to the 333rd Bomb Squadron, which under a new set-up is to be a Pathfinder squadron altogether.

We had to leave Larry Dunn back at the 410th as a spare, since the Pathfinders do not carry ball turrets. They carry radar hats instead.

We will fly group lead every fourth mission the group makes, and deputy group lead on rare occasions. Also, we may be called upon now and then to lead another group.

When we fly deputy group lead I will fly tail gunner and Lt. Taylor will fly co-pilot. On days when we lead the group, Taylor will fly tail and Ted, Mahathey and I will take time about staying on the ground, the two who fly going as waist gunners.

We have a new man on the crew - Lt. John Stepanski, a radar specialist. He is called the Mickey Man. The radar equipment, located in the radio room. just aft of the bomb bay amidships, is called the Mickey set.

The 333rd doesn't seem to be as good an outfit as the 410th was, but we will probably soon get used to the changeover. The crew that was to move out of the hut which we moved into was not able to do so. The supply sergeant moved them out. They went down yesterday on their third raid, the rugged one to Big B. Seems that every time we move into a hut the former tenants get shot down.

May 19. MISSION 11. Berlin, Germany

We figured we would have to go to Big B. sooner or later, but we kept hoping it would be later - say two or three years later. Since we've been lying around and haven't pulled a mission since April 27, it was a blow something like a sharp right in the stomach when we heard the briefing officer say very solemnly "your target for today is the center of the city of Berlin."

We went and we got back. There were quite a few M.E.'.s and F.W.'s over the target area, but we brought "603" back almost undamaged.

We saw some ships in t her groups go down when German fighters broke through our protecting formations of P-51's and 38's, and we also saw some of the German fighters go down. Our group lost only one ship, which was flying number seven position in our squadron. The tall radar man was riding in this one - the Tech Sergeant. Instead of getting hit by flak or fighters, this one went down when the B-17 just above it dropped one of the 500-pound demolition bombs on its stabilizer. It was a new crew, first raid. What a hell of a way for them to go down.

This was a nine hour mission, three hours over enemy territory and four and one-half hours on oxygen. Lt. Taylor flew as gunnery officer in the tail. It's a hard proposition for a man who's been piloting 17's to

just ride along in one as a tail gunner, but the co-pilot seems undisturbed.

Ted has gotten a transfer back to the 410th. I am now the official right waist gunner of Crew 43. We got a new crew number when we transferred to the 333rd.

We are still sweating out our second pass. The pilot made First Lieutenant on May 5. Fred and Lloyd now have two rockers and Cecil and I have made Staff.

May 24. MISSION 12. Berlin, Germany

After this one we came to the conclusion that our crew is officially checked out as group lead for all Berlin raids. We had sack time for four days after our first visit to Big B. while the group made three easy ones. One was to Kiel with Captain Gagon and Company leading the 447th. Then came the day for another Berlin [illegible] the time for Wertsch's crew to take to the blue - simultaneously.

Instead of going by way of the Danish Peninsula and the Baltic Sea as we did on the nineteenth, we went in between Hamburg and Kiel and came back out the same route. This trip we didn't see any bandits and had good fighter support all the way. The flak was about the same as on our other Berlin raid, a lot of it as far as the eye could reach in all directions but none close enough to damage our ship. We flew "595" and brought her back with only three small holes in the wings.

Our group took off with 21 ships but we went over the target with only 14. We didn't lose any, they just turned back and scooted home for first one reason and then another. aborting a dangerous practice. There is considerable safety in numbers, and German fighters like nothing better than to spot a 17 hightailing it for home alone.

We led the 94th but salvoed with the wing lead. Had about 6/10 clouds over the target. Lt. Taylor flew the tail and Captain Scarrum flew co-pilot. A ship from the high squadron threw a small scare into us, almost ramming down on top of our ship just before bombs away.

May 26. A Toast To The Host Of Those Who Fly

Here is a poem, written by the keeper of this record more than a month ago, when we had about four missions behind us, a couple of days after McMeekin's crew went down over Berlin.

After yesterday's Berlin raid, following our May 11 flight to Big B. and possibly preceding more of the same, it seems appropriate that the verses should be included at this point. The poem reads:

A toast to the host of those who fly ... To the ones who will live, and to those who die ... To the ones who go down, and to those who come back ... To the ones who fight M.E. 's and sweat out the flak.

A toast to the skipper, the man at the stick ... He keeps her tucked in when the fighters are thick ... To the kid in the stinger, the boys in the waist ... Who've seen buddies go down to the death they have faced.

To the radio man and the engineer ... And the dropper of demos. the bombardier ... To the man who maps and plans the course ... Into whose hands is trusted the mighty force.

The ball turret gunner, the co-pilot too ... Indispensable members of every crew … A toast at the end to the crew as a whole ... A toast to the teamwork of every soul.

A toast to the host of those who fly … To the ones who will live, and those who die... Drink a toast, say a prayer for the next of kin ... For your target today is the heart of Berlin.

May 27. MISSION 13. Karlsruhe, Germany

Today we made what most of the boys prefer to call their "12-B" raid, but for us it was lucky 13.

We saw the Alps again, as we did on April 24, the day we went to Freidrichshafen.

The 94th led the wing and we flew deputy lead. There were no clouds over the target, a rail marshalling yard, so we were able to bomb visually. Looked as if we did a good job. The Germans, able to track us visually, also did very well.

We all agreed that we would rather ride out Berlin's flak any day than what we encountered over Karlsruhe. However, we were lucky to get only slightly shot up over Berlin, while others were being shot down.

On today's raid we got 12 sizable holes in "634," including one through the left waist window, which just missed Mahathey, and one through the side of the radio room, which missed Lloyd just enough to scare the fool out of him.

Our group lost no ships. Taylor saw a plane in a wing behind us get a direct hit by AA, just as we crossed the coast going in at Brest, France. We came out between Ostend, Belgium and Dunkirk, France, missing the flak of both cities.

Our fighter support wasn't as good as usual but we luckily did not see any bandits on the whole trip. Major Chambers, fresh from Second Air Force desk duty, flew as our co-pilot to get his fifth mission.

Lt. Taylor flew as tail gunner-observer again but he is now getting credit for co-pilot time even when he flies tail position.

It was about an eight hour mission, five and one-half hours on oxygen, three and one-half hours over enemy land, 23,000 feet altitude and a temperature of minus 20 degrees - very cold for May.

It looks as if we are going to get that pass we've been waiting on for a month and a half now - tomorrow. It will be our second pass, a 72-hour one starting Sunday at 7 p.m. We may have to check the Mickey set in our ship, the "Leading Lady," tomorrow afternoon before we go - T.S. We hate to check it, but we darn sure like for it to work when we need it to steer us out of Germany.

May 31. Gagon's "Mighty Warriors"

We finally did get another pass of 72 hours duration. We went to London, all except Lt Wertsch. There didn't seem to be as much to do this time as there was the first.

I will take some space at this point to mention a few of our close comrades-in-arms - Captain Gagon's crew.

At Dalhart we were Crew 720 and Gagon's bunch was 738 so we knew them pretty well from classes and flying together there. Also, Dunn and Stienhorst and Fred and Mac were old pals from Tech School days. We also bunked with them at Kearney, along with Harris' crew that went down April 11.

After flying away from Kearney we did not see the boys again until April 28, on which day both our crew and theirs were transferred to the 333rd Squadron - they from the 447th Bomb Group and we from the

410th Squadron of the 94th. We were surprised to see them, and even more so when we found that we were to be billeted together in Hut 80. It is a very small war after all.

Gagon's crew named their ship the "Mighty Warrior."

Hut 80 is a gunner's madhouse. We get along swell and have a lot of fun horsing around, playing six-pence limit poker, volleyball, sabotaging each other's sacks, going to movies together, making toasted cheese sandwiches late at night with stuff borrowed from the messhall, and dreaming up other activities designed to reduce the old E.T.O. boredom. The officers' hut is about 500 yards away, through the trees.

June 2. MISSION 14. Pas De Calais, France

We were surprised to learn at this morning's briefing that we, a Pathfinder crew, would only be over enemy territory for ten minutes on this one. The entire Eighth Air Force went to the coast of France to pound the invasion coast and blow up as many of the Germans big guns as possible. We went to the French coastal town of Pas De Calais, pronounced "Paddy Kalay" by local airmen.

We led the 94th's B Group in ship 668, the "Lady," and were to bomb by PFF - radar. As bad luck would have it, however, our Mickey set went kablooey and since there was a 10/10 !aver of clouds blanketing the coast line preventing us from bombing by "G" or visually, we brought our high explosives back to the base.

We saw very little flak, none close. No enemy planes. We were afraid we wouldn't get credit for this one, it was such a milk run, but we did.

As soon as we landed they gassed and loaded the ships again for another stab late in the afternoon. Same target, the French coast.

Gagon's crew flew deputy leap with the 385th. Kilpatrick stayed home. We took Major Chambers again and also captain Hauk as observer. Lt. Taylor may transfer back to the 410th so he can fly the rest of his raids in the co-pilot's seat, instead of the tail end of a Fortress.

Talk of an invasion of France gets stronger as the days pass, over here and in the papers and reports that reach us from the states. To the folks back home the invasion of the Continent seems imminent and inevitable, but some of the guys in the E.T.O. have been sweating it out

for so long they're beginning to wonder whether such an invasion is actually going to come off at all.

Today the Eighth Air Force concentrated all its striking power in a two-mission assault on the big guns along the French coast. This afternoon a large force of C-47's, towing gliders, flew over our base. A few days ago in London we saw quite a lot of paratroopers and airborn infantry. Now, all overnight passes for all G. I.'s and officers have been cancelled. Indications all point toward an invasion all right.

June 3. An Abortion

Today we were briefed to bomb Pas De Calais again. and there we went. That is, we went to within ten miles of the target. Then we pulled out and came home 30 minutes ahead of the others. Abortion Lead Ship, we were.

Gagon and crew were briefed to do the same as we, but they were luckier. Their lead ship had Mickey trouble and turned back and they took over the lead. Another milk delivery - no flak, no fighters.

Winging over the Thames River at 10,000 feet today we were aware of a big increase in the number of naval vessels thereon. Also, the Eighth Air Force made another all-out assault today on the invasion coast. Looks as if things are heating up.

June 4. MISSION 15. Pas De Calais, France

Today we led the 100th Bomb Group to the invasion coast for another easy "no ball" mission. Our target was a battery of heavy coastal guns above Boulogne.

We were to bomb by PFF but our Mickey set went haywire again just before the LP. Nevertheless, we went on in to the target on our "G" set and Counihan bombed visually through 8/10 clouds. We were only over the coast about ten minutes and encountered no enemy fighters and only meager flak. A major from the 100th flew as observer and didn't make too good an impression. Bitched about the bombing or something.

June 5. MISSION 16. Boulogne, France

On this one we flew deputy lead for the 94th. We were briefed to hit a "no ball" airfield in northern France, on a trip that would keep us over enemy territory for only 45 minutes. But 10/10 clouds prevented visual bombing so we came back across the Channel, and using Beachy Head as I.P. we hit the invasion coast again, just above Boulogne near the Sea.

We were over enemy territory about ten minutes and didn't catch even a single burst of flak. No fighter opposition. If we keep getting targets like this we may finish 30 yet. Someone jumped from another ship over the Channel for no apparent reason. One chute. Taylor flew co-pilot and Lt. Koener flew as tail gunner-observer.

This was the fourth day in a row we've pounded the French coast. We got a good look at the coastline from 24,000 feet. All we could see was bomb craters everywhere.

We read in the Stars and Stripes today that there was a false report sent to the states by a British broadcasting station yesterday saying that the invasion of France was under wav.

Tonight everyone on the field is restricted to base. If there is going to be any invasion of the French coast, it will no doubt be very soon.

D DAY, June 6. MISSION 17. Caen, France

"MUEHLER, ELLIOTT, MAHATHEY AND CLARK BREAKFAST AT 11:15, BRIEFING AT 12. THE TRUCKS ARE WAITING."

It was late on June 5, eve of the invasion, when we were rousted out of our bunks by these loud-shouted words of the C.Q. We'd heard them often before - the same words the same way - but never quite this early before mission time. We'd never before had a midnight briefing.

Overhead we could hear the constant drone of aircraft, and there was a light pattering rain on the roof of Hut 80. It was cold midnight, and it was tense, and there was a lot of running about and nervous excitement. The air was "charged" as they say. There were other noises too- racing jeeps, squealing brakes and the whispering, fast-talking, grim voices of men around us. Someone said "this is it" and someone else said "yeah, today's the day. There was warm water in the wash room.

Fred. Cecil and I were worried about Lloyd, who was last seen at 11 having a couple at the N.C.O. Club. None of us expected to be rolled out before 2:30 at the earliest. And there we were eating the powdered eggs at half past 11.

Pushing on to Ops we found that Elliott had showed up at briefing in his Class A uniform. He was probably the best. dressed enlisted man on today's mission.

Our ship already had its guns mounted, which was another new twist. We always clean and mount the guns ourselves, for every mission. We went to the 333rd equipment room and got our gear and went out to the ship. Elliott came out about 30 minutes later and gave us the word. We were to takeoff at 3:00 a.m., and blast the invasion coast at 7:I5 at Caen, France. The first invasion troops were to hit the beach at 7:25, Paratroopers were already dropped and dug in behind the German coastal defense area, Lloyd said.

It was 1 o'clock on the morning of June 6that we heard the invasion word. We wondered what our folks back home were doing as darkness fell on Illinois,Texas and California. It was still early the night of June 5 back there. We felt awe inspired and maybe a bit pompous knowing that we were among the small segment of the earth's people who knew right at that moment that the great invasion was being thrown at Adolph Hiller's Atlantic Wall, at least I did.

Instead of carrying an officer as observer in the tail we took along a spare gunner named Smith. He flew right waist and I rode the stinger.

We took off at 0300 hours, assembled quickly in the darkness and left the English coast at 0620 hours. Although we had very little practice in night formation flying, our pilots got the formations together real well. The sky was lit up like a Fourth of July fireworks show with formation lights, field lights, flares, aldis lamps and twinkling stars.

We were expecting to get a look at the big push but our vision was stymied by 10/l0 clouds. We had ringside seats at 11,000 feet and couldn't see a thing but snowy white clouds below us. No fighters, no flak. Every gun and every plane the Germans have was brought to bear on the Allied troops that hit the beaches this historic bloody morning.

The Order of the Day from Five-star Gen. Dwight D. Eisenhower, Supreme Commander of the Allied Expeditionary Force, was distributed to assault elements after their embarkation and read to all other troops by their commanders. It was a masterpiece of morale boosting and

exclamation points, aimed at filling the troops with enough self-confidence to get them out of the barges onto the beaches. It read:

Soldiers, sailors and airmen of the Allied Expeditionary Force!

You are about to embark upon the great crusade, toward which we hove striven these many months. The eyes of the world are upon you. The hopes end prayers of liberty-loving people everywhere march with you.

In company with our brave allies and brothers in arms on other fronts, you will bring about the destruction of the German war machine, the elimination of Nazi tyranny over the oppressed peoples of Europe, and security for ourselves in a free world.

Your task will not be an easy one. Your enemy is well trained, well equipped and battle hardened. He will fight savagely.

But this is the year 1944! Much has happened since the Nazi triumphs of 1940-41. The United Nations have inflicted upon the Germans great defeats in open battle, man to man,. Our air offensive has seriously reduced their strength in the air and their capacity to wage war on the ground.

Our home fronts have given us an overwhelming superiority in weapons and munitions of war, and placed at our disposal great reserves of trained fighting men. The tide has turned! The free men of the world are marching together to victory!

I have full confidence in your courage, devotion to duty and skill in battle. We will accept nothing less then full victory!

Good luck! And let us beseech the blessing of Almighty God upon this great and noble undertaking."

Back home, President Franklin D. Roosevelt led the nation in prayer. In Abilene a community-wide prayer service was held at the First Baptist Church at 9 o'clock on the evening of D Day, with a radio installed so the assembly could join with the President. Text of the prayer, printed in probably every stateside newspaper, included the following paragraphs:

Almighty God: Our sons, pride of our notion, this day have set upon a mighty endeavor, a struggle to preserve our Republic, our religion and our civilization, and to set free a suffering humanity…

These men are lately drawn from the ways of peace. They fight to end conquest. They fight to liberate. They fight to let justice arise; for tolerance and good will among all Thy people. They yearn but for the end of battle, for their return to the haven of home.

Some will never return. Embrace these, Father, and receive them, Thy heroic servants, into Thy kingdom ...

With Thy blessing, we shall prevail over the unholy forces of our enemy. Help us to conquer the apostles of greed and racial arrogancies. Lead us to the saving of our country, with our sister nations into a world unity that will spell a sure peace - a peace invulnerable to the schemings of unworthy men. And a peace that will let all men live in freedom, reaping the just rewards of their honest toil.

Thy will be done, Almighty God. Amen!

June 8. A Word About Pathfinders

The invasion, now in its third day, is going strong but we are pretty much in the dark as to how things look for our side. According to the Express, the Daily Mail and other English newspapers it seems that the British army, Royal Navy and RAF are fighting bloody, courageous, victorious battles - and the Americans are also taking part.

We had crash alarms - air raid alerts - throughout the night just past and this morning we heard some washroom rumors about German aircraft coming over and shooting up the surrounding area. For the past three weeks all personnel on the base have been under orders to carry a weapon. Most of the ground boys are toting carbines or M-1's. Most of the combat crewmen have 45's. We have been warned to be on the lookout for attempts, especially by airborne troops, at counter-invasion.

So much for the invasion. Here are a few notes on PFF, which means Pathfinder Force and applies to airplanes that can find their way by radar navigation when the earth is hidden by clouds.

Back in April Major Stevenson, C.O. of the 410th Squadron, was casting his eye about for a squadron lead crew to replace Koval's crew which was about to finish up. He picked our crew.

About the same time, G.H.Q. was making changes in the Eighth Air Force Bomber Command. They called upon the 410th to transfer its next squadron lead crew to the 333rd to fly as a Pathfinder.

Since we had just put in ten missions in the past 18 days, the prospect of a four-week layoff was as welcome as a warm day in December. We moved over to the 333rd, lost Larry and Ted and added a Mickey man, Lt. John Stepanski. The PFF radar equipment is referred to as the Mickey set and the operator as the Mickey Man.

Stepanski started out as a navigator and had nine missions in when he was pulled off his crew and sent to bone up on the new radar navigation equipment and technique.

From April 27 to May 19 we didn't fly a single combat mission. We missed some tough ones, including the one that came back from Czechoslovakia all shot up to hell. We flew a practice mission almost every day, checking the Mickey set and practicing flying lead position. A lot of times though, Cecil and I stayed home - when they took only a skeleton crew. Fred and Lloyd didn't like this too much because they were always part of the skeleton.

On May 19 we flew our first Pathfinder mission to Berlin, and on May 24 our second to the same city.

Since we'd understood that Pathfinders would fly only on the long hauls, and since we hadn't had a pass for six weeks, we were pretty much teed off. But when the invasion drew near we started leading the Forts to the French coast and got in four easy missions in a row, which we considered fair compensation.

Everyone says we are gonners as a lead crew because the Germans always aim their 88's at the lead ship and Jerry fighters are always out to get Pathfinder planes. A PFF ship is as easy to spot straggling home solo as it is at the spear head of an air wing. The radar hat is a dead giveaway. The hat is a large white sack-like object which protrudes from the ship's belly in place of the ball turret. It sticks out like a sore thumb wrapped with white gauze. And having a radar hat instead of a Sperry lower ball turret with twin 50's doesn't add any to our firepower protection from belly attacks by German fighters.

The Mickey set is the only thing that could have been used by the heavy bombers, it seems, to prepare the French coast for, and assist in, the invasion. The coast has been blanketed by a thick cover of 10/10 clouds for the past two weeks, making visual bombing impossible.

June 11. MISSION 18. Pas De Calais, France

Today, Sunday, was our first raid since D Day. It was another easy one to the French coast and we saw no flak, no fighters.

Anyway, it doesn't make much difference how tough or how easy they are from here on out, if the rumor we hear is true that General Doolittle has raised the finish mark from 30 to infinity.

The coastline was visible today, but we did not see any of our troops because we were over the Calais area.

We had breakfast at 12, took off at 4:45, and got back at 8:15. Captain Hauk flew as our Command Pilot, with some new Lieutenant going along as observer. We used Captain Butler's ship, 633, and she was exposed to enemy ack-ack for only five minutes of the three and one-half hour trip.

June 14. MISSION 19. Florennes, Belgium

Breakfast at 12, briefing at 1, take off at 4:20, ETR 9: 20. The C.Q. has started giving us the estimated time of return when he rousts us out. That way we can speculate on the duration and destination of the raid as we take on the midnight breakfast.

We led the wing to a German airfield deep in Belgium and did a fair job, judging from all accounts at the post-mission cross examination by Intelligence, called G-2 for short.

This business of interrogation after each mission is all very interesting. Crew members shuck out of their heated suits, take their equipment and put it up, and then pedal over to the operations building. There someone has been thoughtful enough to have a lot of nut butter and jelly sand-wiches and gallons of hot chocolate all ready. We are really fagged and starved after 6 to 12 hours of flying, especially mission flying. These sandwiches and cups of chocolate they give us would be good any time you were even just normally hungry, but after a mission they seem to be the best food and drink you've ever tasted.

The crew all goes in and sits down around a large table with the Intelligence officer, and some bartender-like enlisted man brings in a tray-load of double shots of Scotch whiskey, one for each crew member. Some drink the Scotch and some don't, and some drink several.

Then the G-2 officer asks the crew all about the raid. He asks the bombardier how well we hit the target; and the navigator about the course and if the flak briefing was correct and if the Germans have any new flak emplacements; and the gunners about bandits that attacked the formation and about ships they saw go down; and the pilot about how well the formation stuck together; and so on. It's all very interesting and they use this information in planning future raids, keeping the flak maps up-to-date and for other purposes.

But back to the Florennes mission. Getz steered us around the flak towers and right square over the target then safely out again. Lt. Col. K.S. Steele, the Command Pilot, wanted to tack on to a group ahead of us on the way out, but Lt. Wertsch convinced him that we should rely on the calculations and decisions of our own navigator. This saved us from going over some flak areas that the group ahead of us flew dangerously close to.

The ground was visible from our 18,000-feet-high "Leading Lady." They put some new parts in our- Mickey and finally got it to working again. Lt. Counihan had the target in his bombsight for about ten miles before bombs away.

The Germans missed the best chance they've had yet to put our crew out of action. The gunners who were firing at us today must have been all women and kids, the way they missed us when we were so low and so plainly visible. There was an acre of flak but it was all way off to our left even though we passed right over the airfield.

The Eighth Air Force set a new record today as to number of planes sent out on one raid -1,500 heavies.

Ted made his twenty-third mission, with Manning in number four position of our element. Dunn flew with Moak off our left wing tip for his fourteenth. Gagon's crew, taking time about flying with ours, stayed home and practiced.

We were approached by the duty sergeant with an 18-sortie form yesterday. Fred, Lloyd and Cecil signed up to stay here as instructors. I signed up for another theater.

There was an awards presentation the day before yesterday at which we all got an oak leaf cluster for the Air Medal and Gagon's bunch got the medal itself. We are running just a few missions ahead of them.

Getz made First Lieutenant June 6. That should be easy for him to remember.

June 19. MISSION 20. St. Jean, France

We didn't do so hot today. The PFF is just fine for bombing the coast line and sizable cities through 10/10 clouds, but it's no good on pint-size airfields. You have to see an airfield to be able to bomb it with any degree of accuracy.

When we were about 30 minutes inside of France we got the word from a Mosquito pilot that the primary target was blanketed with 10/10 clouds, but we droned on down to within 50 miles of Spain so the major in command could "get a better look…"

We were briefed to fly and bomb at 18,000 feet, but we had to climb to 28,000 coming back to get over a cloud layer. Even then our low group got lost and came home alone.

We couldn't see a thing but snow-white clouds below but we made two dry runs on where we thought the target was. Then the major said that we were just wasting gas and that we might as well go home. So we came home, through only one flak area, thanks to Getz and Step. We were leading the wing in 668, the "Lady."

There was good fighter cover and we saw no enemy aircraft. We went on a 48-hour pass when we got down.

An Operational Tour is now 35 missions, officially, but there is a pro-rata clause now which takes care of crews, like ours, which started when the limit was 30. We have to fly 33.

June 23. MISSION 21. Epernay, France

There's not much to write about this one. We brought our bombs back again.

We crossed the French coast just above Caen and were able to see the naval action near and on the beach, for the ground was plainly visible there. We were too high to see any gun flashes or troops but a couple of smoking ships and many columns of smoke rising from the town and sur-rounding area were grim reminders of what was going on below. P-38's were swarming over the deck like hornets, buzz-bombing, strafing and raising sand in general.

Our flux-gate compass and our magnetic compass were both haywire and our Mickey was very weak but we went deep into France

and out again without getting hit by flak. Neat coordination between the two navigators was no small part of our success.

We were leading the wing in 663 and had Col. Steele along as command pilot. The weather man was wrong again and we found 10/10 clouds at the target. It was a rail marshalling yard at the edge of Epernay in northeast France, too small to blast by guidance from PFF. Our bombardier had no chance to bomb visually and there wasn't much sense in riding out the ack-ack so we turned off the bomb run and headed for our secondary target, Florennes.

When Col Steele saw that the 10/10 clouds made the secondary also immune from our bombs he asked Getz for a heading back to England.

We were headed straight for a flak area at Charleroi so Getz told the pilot to correct 10 degrees left. About a minute later the wing ahead of us called back over VHF that they had flown over Charleroi's flak and advised us to side-step it. One of their ships received a direct hit. The flak kept coming but we were at a safe distance off to the left of the smutty bursts.

We now have three first-lieutenants on the crew. Counihan swapped his gold bars for silver ones on June 24.

June 25. MISSION 22. Zebra

We feel that if we haven't been doing so much good for the cause on our last eight missions we made up for it somewhat today, with a raid called "Zebra."

We flew to the Alps mountains, let down to 1,000 feet to drop parachutes with supply canisters containing ams and ammunition to the French guerrillas, and then climbed on course back to 16,000 feet and came home.

We were flying lead for the high group. The low group dropped their chutes from 500 feet. We were too close to the wooded mountainous slopes for comfort. It was very thickly settled country, with houses and villages on every slope, every hill, every valley - very picturesque.

Some colonel flew with us as observer and when we let down he came back through the ship taking snapshots with his candid camera. He acted as if he hadn't had so much fun before in his life. He even operated Fred's upper turret.

Captain Scarrum flew with us again as command pilot. Since we were flying 310, not a Mickey ship, we used Bloom in the ball turret.

June 29. MISSION 23. Wittenburg, near Leipzig, Germany

We were to get a 48-hour pass starling at 6 p.m. today but that didn't keep us off the Leipzig leading list.

We went in over the Zuider Zee and came out the same way. Caught no flak going in until we got to the target. Then it seemed that they had turned all the flak guns in Germany on us. The bursts were like Berlin's in intensity and Abbeville's in accuracy.

The sound of those flak bursts is deadly and frightening, as if each burst is the last one you'll ever hear. It's hard to say exactly what they sound like because we've never heard anything like them before. It is something like being inside of a barn with a galvanized roof, with someone throwing big shovelfuls of sand down onto the roof. It is a doom-like ka-RUMpp, ka-RUMpp, ka-RUMpp with the accent on the middle and the whole thing a sort of muffled, thunderous blast. It is very bad when you can see the black, greasy puffs getting nearer and nearer your wingtip. The worst is when you hear the ka-RUMpp deafeningly loud and you hear the shrapnel tearing and ripping metallically through the ship's Alclad covering. Then you know the bursts are very close and the next one may go off three feet beneath where you're crouching, or perhaps right in the middle of the bomb bay.

Then you know that the flying shrapnel is close enough to kill a man instantly, or tear his stomach open or his leg off and leave him suffering, dying slowly, or permanently crippled or disfigured.

We were leading the 94th and bombing by groups. Our target, a synthetic oil refinery just below Leipzig, was already ablaze as we made the turn on the I.P. Lt. Counihan was just about ready to punch the button and send the tons of high explosives carried by the 8 ships in our group crashing down upon the oil storage tanks, but about a second before he would have said bombs away, the flak closed in like an intense hailstorm. As if the Germans were aiming their 88's at our trigger finger, a piece of steel tore into the ship's nose and jarred the bombsight hilter-kilter. There was no command for bombs away, and we rode out the flak with the 500- pounders still slung on their racks in the bomb bays.

Captain Butler, riding with us as command pilot, called on Getz for a heading that would take us to the secondary target, a nearby airfield.

There was no flak at the secondary, although we had been told there would be. We had good results there, scoring hits on many of the buildings and revetments. It was a long haul home but we made it all right, around, between and past the flak barrages. We didn't see any of the Luftwaffe and had ample help from P-38's, 47's and 51's all the way. We caught up with the wing and came home with them.

We saw one flamer go down over the primary target, and one chute got out. It was an eight and one-half hour mission, six and one-half hours on oxygen and three and one-half hours over enemy territory. We were all too tired to go on pass so they moved it up a day.

July 7; MISSION 24. Kolledo, Germany

Our primary target for today was a synthetic plant 20 miles west of Leipzig. A very effective smoke screen laid down by the Germans prevented our bombing it and we unloaded on our secondary, an airfield on the route out.

The wing ahead of us must have reached the target before it was covered by the smoke screen, as there was a great column of black rising through the screen. Over the primary target there was a very intense, concentrated flak barrage. There was another terrific barrage off to our left. We flew directly between them, at a safe distance from both. We were briefed to catch flak at the secondary but not a burst did we see.

Captain Lewis, who led the 447th over the primary, received considerable battle damage, including a hole in his number-one gas tank. He lost all of the gas out of that tank. Both of his wingmen were shot down by anti-aircraft guns at the target.

There were enemy planes in the area which attacked our formations, but none attacked our group. We had good fighter cover.

Going in over the Zuider Zee and coming back out the same way, we were over the enemy territory three and a half hours; in the air eight hours. Col. Riva, our new C.O., flew with us as command pilot.

Just after we passed over the Zuider Zee I saw a peculiar thing that might be some kind of German anti-aircraft rocket. I was watching a bunch of Forts way out at 3 o'clock level when all of a sudden there was

a brilliant flash of fire very much like an airplane exploding, but there was no plane there. Maybe it was just a single flak burst.

A couple of 17's ran together because of prop wash in another wing. It was Mahathey's twenty-fifth mission.

July 8. MISSION 25. Paris, France

We went within 16 miles of Gay Paree on this one. The flak was ample - we got about ten holes in 634 and were very lucky at that. One piece in at the tail door, missing Lt. Taylor's posterior by a scant foot. Four ships in our group brought back wounded men, and one co-pilot was killed and his pilot badly wounded. One ship returned with a flat tire, another with no hydraulic system and several with feathered props. We saw one ship get a direct hit going in and another got it over the target. The first one was off to our right It never did explode, just spiraled down and hit the ground burning.

Colonel Dougher was riding with us and we got along fine with him. We led the wing again.

It was like old times back in the 410th, flying two days in a row. We had good escort and encountered no German fighters. After riding through the heavy Oak at the primary we bombed the secondary and found no flak there. This makes three times in a row that we have gone to the secon-dary.

Just as we left enemy territory a group of B-24's almost dropped their bombs on us, as they were jettisoning them in the Channel.

July 16. MISSION 26. Stuttgart, Germany

Before taking off today, we heard two announcements that didn't boost our spirits one particle. The first was that we were going lo take a load down to Herr Hitler's favorite beer town - Munich.

The second was that we weren't going to get any flak leave, which nearly all crews get after about 25 missions-one week with pay at some swank English plantation run by the American Red Cross.

Lloyd stayed home and sweated us out, grounded for a couple of days. After powdered eggs at the little cafe they call the mess we took off at 4 a m. We were on oxygen six hours, over enemy territory about five, and got back at 1 p.m.

We led the wing to the I.P. for Munich, then ran into a cloud bank we couldn't get over or under and had to head back toward England. We blasted Stuttgart on the way home.

Col. Dougher rode with us as command pilot. First thing he did when he got back on the ground was to congratulate Getz on the navigating. When we couldn't bomb the primary, the colonel chose Stuttgart from a list of opportunity targets Step called off to him which included Augsburg, Karlsruhe, Ludwigshafen and others. It had to be a large German town that we could bomb by PFF.

There was heavy and intense flak at Stuttgart and we got about ten holes in our ship. We had to switch to spare 633 just before take-off, because we couldn't start number two engine on 634. We weren't attacked by German fighters, and had good support by 38's, 47's and 51's. Munson, Melton's radio operator, flew with us in Lloyd's place.

No flak leave - what a lousy deal.

July 21. MISSION 27. Regensburg, Germany

Quoting from the Stars and Stripes on this one, since their report was fairly factual:

"An entire Fortress wing. which recently took port in bombing attack on German aircraft assembly plants at Regensburg, was directed over the target by a navigator whose wounds hod been bleeding steadily for two hours, and who collapsed soon after the bombs were released. 'We were hit by flak as we crossed the enemy coast, and our navigator was wounded in the leg,' 1/lt. Verner A. Wertsch of Delevan, Illinois, the pilot, related. 'We wouldn't turn back because we were the lead plane.' "

That's the way our favorite newspaper summed up the ac ion of July 21 in its column "Notes From the Air Force." We left the English coast today with an 18-ship group, leading the Fourth Combat Wing to Regensburg. We got to the enemy coast with 17 ships. In a short while two more planes aborted, leaving us 15. We kept boring into Germany, and everything went smoothly for a while. It was only a short while though. and suddenly tail gunner Taylor's voice jumped out at us harshly from the intercom: "We're getting flak right on us!" We looked toward 6 o'clock and saw the jet black bursts. very close and creeping closer. It was very startling, like getting stung on the ankle and suddenly realizing

you are standing in the middle of a red ant bed. The first few bursts blossomed in the midst of the formation just bellow us. At Lt. Taylor's warning our pilot started a turn to the right. He said "Okay, I'm starting a turn to the right," as cool as ice water.

The Germans corrected their aim and let go another salvo of 88's. This time they got a direct hit on our left wingman, a 332nd pilot named Gregg who had flown seven missions. At the same moment, a chunk of steel tore into Getz' left leg, right at the ankle bone, and our right wingman lost his number two engine. Gregg went down in flames and the right wingman - F.M. Smith who was flying deputy lead on his twenty-eighth and last raid - turned back for home.

This left us with 13 ships. and in the next five minutes two more aborted. We kept ploughing on toward the target and led the 447th and 385th over Regensburg with an 11-ship group.

Getz lost a lot of blood but even though he spent six torturous hours at altitude he never lost consciousness, contrary to the S&S write-up. Counihan and Fred stopped the bleeding after about 15 minutes and made the navigator as comfortable as possible. He refused morphine. You could see his point in wanting to stay conscious in case we had to bail out.

Step took over the task of navigating the wing to the target with the Mickey set. In spite of being over the heaviest flak areas in Germany for five hours we didn't get any other flak except at the target. Col. Steele flew as command pilot.

Although the clouds were heavy most of the way down, the weather was CAVU - ceiling and visibility unlimited - over Regensburg. We bombed the target, a Messerschmidt factory, visually. There was quite a Jot of flak there but we'd evidently been through our share of hell for the day . We slipped through the target defenses okay.

Didn't run into any German fighters and had good support from Mustangs and Thunderbolts. The flight was eight hours long, six and one-half hours on oxygen and five over Naziland.

The doc said there was no bone broken in Getz' leg and that he will be okay in a few weeks. The piece of steel they took out of the leg was about an inch and a half square and a quarter-inch thick. He was lucky it hit him in the ankle in stead of the head. We may fly without him for the next few. We may even get a bid to the flak house - rest home.

July 27. Flying Rumors

We haven't flown any since the rough one to Regensburg, but there have been plenty of rumors flying. Every time anyone goes away from the hut they come back with the latest rumor. We even have a ship named "The Latest Rumor.·"

Scuttlebutt, the Navy calls them.

Here are some of the very latest on the general theme that the group is going to soon depart from the European Theater of Operations.

1. The paymaster is going to pay us all off in U.S. currency on July 31 - U. States, here we come!
2. They' re making carpenters out of kitchen police - manpower to build boxes to ship our equipment out in. Where to? How in hell should I know?
3. They're cutting stencils with Chinese addresses on them, for the boxes they are making for the trip we'll soon be taking. Looks like we're on our way to the CBI.
4. Headquarters just sent down an order to take an equipment inventory of all stuff on the base.
5. And old Joe says he knows a Pfc. who has a brother up at headquarters . Well, this brother's best pal works for a lieutenant who says he saw the orders for the 94th to go back to the states.
6. Headquarters just got in six typewriters that type nothing but Chink.
7. And they just got in a bunch of bomb bay tanks on the field.

We are enjoying balmy British summertime. Playing a lot of volleyball. Generally we play our crew against Gagon's crew, and sometimes enlisted men against officers. We have a lot of fun with our officers because there is none of that class-system crud that they have to put up with in other branches of the service or in some chicken-sections of the AAF. Sure doesn't do the old esprit de corps any harm, as they say in France.

July 29. MISSION 28. Merseburg. Germany

Of all the combat raids we have flown and the five yet to go, we'll most likely remember the mission over Merseburg as the one on which we came closest to being blasted into eternity.

It started off like any other mission - breakfast at 1 and briefing at 2.

Elliott came out to the ship about 3:30 and asked how we'd like to take a run down to the Leipzig area to see if those hot shot flak throwers were still there. We said nothing would please us less, and began mounting the guns.

Before we got to the I.P. we could see those same greasy black puffs that we saw on June 29 and July 7. The target was a synthetic oil plant at Merseburg, and this was the second day in a row for it to be blasted by the Eighth Air Force. There were no clouds, but the Germans had laid down a fair smoke screen.

We started the bomb run with yellow flares, expecting Step to hit the target with Mickey, but as we got closer Counihan spotted the target through breaks in the smoke screen and was able to bomb visually.

We knew we'd hit something when we saw three columns of heavy black smoke rising about 5,000 feet in the air. Our strike photos later gave proof of good hits.

The anti-aircraft fire was the worst we've ever gone through. We started getting hit ten miles before bombs away, and kept getting hit five miles afterward . We got about 25 holes in the "Leading Lady" and brought her back with a propless number four engine and a feathered number two.

Actually, we came in on one and one-half engines. about the minimum power a Fort can hobble along with. Lt. Wertsch was the only crew member to stop a piece of flak, and it was luckily a small spent piece which just grazed and bruised his left hip a little.

We had to drop out of formation and come back by ourself because the old "Lady" could only limp along at 120 miles per hour, which isn't much better than stalling speed. We tossed out beaucoup equipment over the North Sea in order to lighten the ship's load, and in preparation for ditching.

This wasn't our day for a North Sea soaking though. We finally crossed the English coast, the beautiful English coast, and shortly

afterward touched the limping "Leading Lady's" wheels down back at base.

Col. Riva was our command pilot. Major Blount flew as observer and Lt. Vincent Bahl took Getz' place in the nose. Bahl is Samerdyke's navigator. Getz is fairly okay but won't be able to fly for months, if at all again.

We had good fighter escort all the way home, and caught no other flak after that at the target. Col. Riva was well pleased with the crew and the mission and promised that we could go to the rest home Tuesday.

The mission over Merseburg was told in greater detail in an official account released to stateside newspapers by the base public relations office, as follows:

AN EIGHTH AIR FORCE BOMBER STATION, ENGLAND, July 29 - Leading on Eighth Air force Wing Formation over Germany today, the B-17 Flying Fortress Leading Lady flew into a fierce flak barrage, and although three of its engines were hit refused to take evasive action until the formation had dropped its bombs on the vital oil plants at Merseburg.

A lead plane, upon which the bombing of the entire wing depends, the Fortress carried the formation command er, Lt. Col. Daniel F. Riva, 1024 East Illinois Ave., Spokane, Washington; and Major James E. Blount, 438 Fulton Ave., San Antonio, Texas, second-in-command.

The bomb run completed, and with one propeller spinning so wildly that the vibration almost shook open the seams of the metal fuselage, Leading Lady peeled off from the formation and struck a desperate course for England. Half-way across Germany, one of the three crippled engines began to disintegrate in a shower of sparks and flying pieces of molten metal. The screaming propeller whirled off in mid-air.

'That prop was red hot from half an hour of violent wind milling,' Col. Riva said. 'It shook the plane so hard that the instruments were dancing and we didn't know which direction we were going-up, down, or sideways. When the prop shook off it took half the engine with it. It dropped down to about 100 feet, still spinning, on my side of the cockpit, and then suddenly, just like a boomerang, it zoomed up and whirled back over the wing. If it had ever touched the plane again, we wouldn't be here now.'

Piloted by First Lieutenant V. Alan Wertsch, of Delevan, Illinois, the Fortress ran into its first anti-aircraft barrage as it started the bomb run that meant success or failure for the formation's attack on the Merseburg plant.

'We ran into a wall of flak that followed us all the way in and out of the bomb run,' Lt. Wertsch said. 'There was no way of avoiding the flak without missing the target, so we just kept on plowing through it. I could feel the stuff hitting the plane and could hear the explosions. It was more than enough for us.'

Major Blount, who flew in the co-pilot's position, had several narrow escapes from flak as he helped steady the stricken Fort.

'Flak was flying all through the cockpit,' he said. 'There were pieces jumping between my legs, and I think my legs did a little jumping on their own.'

The three damaged engines were hit almost simultaneously. One, after being hit in the prop governor and spinning at breakneck speed, finally steadied itself . This engine and the one undamaged engine brought the Fortress home. The prop on the second damaged engine was cut out ofter a violent struggle.

Several times during the hectic return to England, the crew prepared to bail out, but each time decided to stick a little longer. Over the North Sec, SOS signals were sent out by the radio operator, Sgt. Lloyd Elliott, 52012 Chester Ave., Bakersfield, California, in preparation for a forced landing in the water.

While lightening the plane to help maintain altitude over the North Sea, 1st Lt. Mark J. Counihan, of Iron River, Michigan, the bombardier, opened the bomb bay doors so that flak suits and helmets and other loose equipment could be tossed out. Fearful that the hydraulic mechanism of the doors had been damaged by the storm of flak through which the plane had passed, Lt. Counihan did not open the doors all the way as he thought they could not be closed again.

When it was found that equipment tossed down the bomb bay was too large to slip through the partially opened doors, Radio Operated Elliott and T/Sgt. Fred A. Muehler of Pacific, Mo., engineer and top turret gunner, volunteered to clear the debris.

Holding by his hands from the catwalk, Sgt. Elliott kicked some of the equipment dear. Then, while Lt. Ralph S. Taylor, 1702 South Pennsylvania Ave., Lansing, Michigan, co-pilot who flew as formation

control officer in the tail gun position, held him by the feet, Sgt. Muehler eased the rest of the debris through the partially open doors with his hands.

Following a course plotted by 1/Lt. Vencent E. Bahl, Route 2, Dubuque, Iowa, the navigator, Leading Lady struggled back to her base through rain and clouds to lan in weather conditions so bad that pilot Wertsch had to make two approaches to the field before he could come in.

Other crew members were 1/Lt. John S. Stepanski Jr., 13235 Mackay, Detroit, Michigan, instrument specialist; Sgt. Cecil R. Mahathey of Hamptonville, N. C., left waist gunner; and Sgt. Preston P. Clark Jr., 766 Sycamore Street, Abilene, Texas, right waist gunner.

August l through 8. Rest Home Respite

When we got back from Merseburg the Colonel (Riva) said we had earned a rest at the flak house so we went there three days later, on an English train. We went to Spetchley Park, near Worcester, which is near Stratford-on-Avon. The officers went to another rest home down around London.

When we arrived at Worcester a Major was waiting for us at the station in a jeep. They took us right on out to Spetchley Park, an Olde English manor house, complete with butler, room service and every type of recreational facility and activity known to the American Red Cross, which runs the haven.

Fred beat me a set of tennis, 6-2, and then we teamed up to take two sets from a couple of boys who had "Chatterbox" painted on their A-2 jackets.

We went swimming at Worcester sea bathing lido (salt water) three days in a row. Mahathey beat us all tossing horse shoes and we spent some time shooting bows and arrows. One day we went horseback riding with hardly any saddle at all.

We had a softball or volleyball game, sometimes both, every day. The last day we were at Spetchley a bunch of casualties back from Normandy, who were recuperating at a nearly hospital, came over and played our teams in both sports. They beat us 14 to 11 in softball and two out of three games of volleyball. Some casualties!

They were a real swell bunch of guys and they were, the same as we, scheduled to go back to combat when their rest leave ended. We won't forget Steph, the paratroop captain. or Mary Ann, the army nurse. They were a sort of handsome, romantic twosome, thrown together by the war gods like the characters in some book like "A Farewell To Arms."

Then there were Martha , Margo, Alice, Mickey and Joyce, the American Red Cross girls who were the hostesses, teammates for the games, dancing partners and friends to the restees. And Ted, the typical English butler who came whistling or humming in every morning at 10 sharp, bringing a glass or fruit juice for each of us. Like bloody rich tourists.

Fred played a round of golf on the Worcester course and we all knocked the balls around on the Spetchley lawn. There was a hamburger-and-beer bust one evening on the spacious lawn with a bunch of English girls out from Worcester as guests.

We had six meals a day-three squares plus tea and crumpets at 10, 4 and 10. Shot considerable skeet and filled in the few spare minutes with ping pong games. We also jeeped over to Stratford on the Avon for a tour of Shakespeare's home place. We saw "The Taming of The Shrew" for eight shillings, sixpence at the Shakespeare Memorial Theater, and visited Ann Hathaway's Cottage and the home of the old bard himself.

E.C. Maxum, "Max" as we called him, the purple heart convalescent from Beaty's crew, went along with us and proved to be a very swell guy. He was about 22 years old and had married shortly before coming overseas. He was as true and sincere and genuine as a man can be, and he was killed in action October 6.

August 9. MISSION 29. Nuremberg, Germany

We got back from the rest home at 11 o'clock on the night of August 8, got to sleep at about 12 o'clock. and got up at 2 this morning for a mission to Nuremberg. No rest for the weary wicked.

We led the division and took Col. Martin along as command pilot. Lt. Bahl flew again as our navigator. He is very competent and likeable. Gagon's crew flew with the 447th. Weather over the continent was the

worst we've seen yet. We flew through a lot of heavy clouds before we finally turned back at a point just below Kassel.

The mission would have been a tough one - 150 flak guns at the target - and long if we had gone all the way. The recall should have turned it into a "piece of cake," as the English airmen call a milk run, but it didn't. We came very near getting shot down.

We had just passed over a rugged flak area when we decided to turn back. We had been to the right of it, but still our high group caught a few bursts. When we turned we made a wide arc to the left and came right back over the center of that same flak patch. The reason we turned that way was that we couldn't make the turn any other way or time. We would have lost our whole wing in a cloud bank just ahead. We had to turn right around and give the Jerry gunners another chance at us, like a deer trapped in a box canyon.

That flak was very deadly, but the wing got through it without losing any ships. We got about 15 holes in 776 and lost number one engine. Counihan got some plexiglass in one eye, but it was nothing serious.

We had another awards presentation when we got back on the ground. Wertsch, Counihan, Cecil and I got the Distinguished Flying Cross, pinned on by Col. Castle. The general orders read "for extraordinary achievement while serving ... on numerous bombardment missions against German-occupied continental Europe." We got the DFCs for so-many missions, not for any individual feats.

August 11. An Old Friend Visits

Had a pleasant surprise today. F. C. (Frankie) Lobasso was lying on my sack when we got home from a practice mission. He had come to our base to visit a cousin of his and heard I was there. We were good friends through gunnery school and phase training, and parted company at Kearney, Nebraska, the Point of Embarkation.

We spent a lot of time together in the Las Vegas Gunnery School swimming pool, along with a kid named Robinson from Dallas. He knew nothing of Robinson's whereabouts but gave news of some other old acquaintances. Andy Anderson finished up in Frankie's group and is waiting to go back to the states. Gerald C. Meyers also. Frank still lacks three.

I told Frank about seeing another of our gunnery school mates at Spetchley Park, a kid named Howard Pippenger who was with us from Shepperd Field to Las Vegas to Salt Lake City. He came to the rest home the day before we pulled out, and said he had flown twenty-seven missions.

Howard had told me about a lot of the lads we trained with. Parks had 20 the last time he'd seen him in London. Johnson went down. Freel was well along on his tour. He said that the big blond Sgt. Hollingsworth, who washed out of pilot school with me at Uvalde, had gone down.

I really enjoyed Frank's visit. It's nice to talk about old times that way. It is also grim, sitting around casually separating the dead from the living of a bunch of guys you were with in the states only six month back.

August 13. MISSION 30. Troop Support Northwest of Paris

We were briefed to catch a lot of flak at 15,000 feet today, on a flight that would have kept us over enemy territory for about one and one-half hours. But for the first time since the trip to the bottom of France eight months ago we didn't get hit by any flak. We did see six ships go down, however, from fighter attacks and flak combined.

We broke up into three-ship elements to bomb, each element having its own special target to go after. Ours was a crossroads. Counihan put the 100-pound general purpose bombs of our three ships right on the bullseye - visually. An element off to our left went through some flak after bombs away and a 332nd ship went down.

Our element was ignored by German fighters. There are so many allied planes in the air over the Second Front, and so many fighters shooting up the German ground troops, Goering just doesn't have enough Luftwaffe to cope with the situation. Also, our fighter-bombers are destroying an amazing lot of German aircraft both on the ground and in the air. Then too, consider all the damage we've dealt. with strategic bombing, to the Germans gasoline and oil supply, rubber supply, ball bearings and other parts supply, aircraft factories and airfields, and rail, communications and tran-sport during these spring and summer months.

We have the Germans on the ropes and they're cut and bleeding and tired and the last round is coming up fast and there won't be any rest periods for them until the end.

They are the fagging, weary underdog, and we are the strong, relentless pursuer. Considering it in this light you get to feeling sorry for them and then you see a Fort blow up with a direct hit from the German 88s and you aren't sorry for them any more. You are then sorry for the guys in the Fort, but you can't help being glad it was the wingman and not your own ship that got the direct hit. That boosts. your own chances for survival one notch higher, from the law-of- averages standpoint.

The crossroads that we blasted was just ahead or the advancing Allied armies, which are strung out along a 400-mile front northeast of Paris. We couldn't see much of what was happening on the ground, even though we were down at the unhealthily low altitude of 15,000 feet.

Major Healey flew as command pilot and Lt. Bahl as navigator. We went in over the Cherbourg Peninsula and came back out over La Havre St. Lo, from 15,000, looked like just a rock pile, a mess of shambles.

August 24. A Sad Day for Gagon's Crew

We have just had a 72-hour pass and I went up to visit Bob by Morrison at his Marauder base. We had a nice time talking over old times at McMurry in the era B.I. - before induction. He put me up at the home of a couple of English ladies, "Lil and Gert." I had a feather bed to sleep on and fresh fried eggs for breakfast.

Some German V-2s, buzz bombs as they are commonly called, hit very close around the B-26 base while I was there. It is just out Chelmsford, about 20 miles from London, at which most of the buzz bombs are aimed.

The buzz bombs, which look like small racer airplanes with short stubby wings, drone along with a monotonous, pulsating sound, like the buzz of a bumble bee magnified about a thousand times. It is a stomach-sickening sound, but as long as you can hear it you're safe. When the motor cuts out, that's when to dive for the nearest air raid shelter, because that means that the bug has run out of fuel. She can not do anything then but glide in for a landing, and when she lands the 500 pounds of dynamite inside her fuselage can be very destructive, depending on where it happens to fall. The V-2s have scared some of us

out of going to London on pass, but the natives who weathered the Blitz aren't very impressed or frightened by the doodle bugs.

Bobby promised to come down to see Eddie Lowe and me as soon as possible. Eddie's a co-pilot over at the 385th.

Gagon's crew led the 447th to Brux, Czechoslovakia yesterday. The flak was heavy and accurate. An 88 shell came up through the base of the top turret, practically tore one of Frank Santistevan's legs off, and went on out the side of the ship without exploding. Frank died soon after they landed back at base. We felt pretty dazed and miserable and sorry around the hut. Everyone liked Frank very much. He was as good as the very best guy you ever knew.

Our pilot made captain on August 22.

August 25. MISSION 31. Moritz, Germany

We took off at 7:30 this morning and got our wheels back on the ground at 4:45 p.m. after a long drawn-out mission. It wasn't a very rough one, but could have been. Bahl and Step took us between and around the rugged flak alleys over the Danish Peninsula Penamunde and finally around Stettin. Flak at the target was fairly accurate but we were only in it for about three minutes and only got one hit, a fist-size hole in the radar hat.

Our target was an airfield just north of Berlin, the Germans biggest experimental airfield, referred to by our briefing officers as "Germany's Wright Field."

We expected to encounter a lot of enemy aircraft, including some of the Germans' new M.E. 163 jet-propelled fighters, but they did not come up. Our fighter protection wasn't as good as it has been in past missions. We had a scanty screen of Mustangs going in and a few Thunderbolts coming out. As things turned out, the fighter cover was sufficient.

Major Jones flew as our command pilot and we liked him. He was well pleased with the crew and especially with the bombing results. The strike photos were on the bullet in board at interrogation and proved that the 94-A Wing, which we led, had plastered the target in sharpshooter style. We saw plenty of smoke, including the black kind that comes from burning oil, rising from the airfield as we headed back for England.

This mission reminded us a little of the third one we pulled, on April 11, to Stettin. We remembered especially how it seemed that we would never finish crossing over the islands and the Danish Peninsula. It was the same yesterday. Those Forts seem about as fast as sick old turtles when you are over enemy territory. You spot a landmark out at 2 o'clock on the patchy earth and it seems that you watch it forever before it slides past and fades away at 5 o'clock. Sometimes it seems that the German anti-aircraft gunners must be all blind not to be able to blast every single one of the sitting duck 17s out of the sky. Looks as if it would be easy as shooting big fish in a small barrel. Lucky for us, the Germans do not find it that simple, because actually we are very high and we are within the range-of their guns for only a very brief time, at an average speed of better than 225 miles per hour.

As on the April 11 mission to Stettin, it seemed that each time we passed from a patch of land to water we had broken out of enemy territory. But then up ahead would be another patch of green and brown. Finally we broke out of the flak noose and started the long haul across the North Sea. It takes forever to get across the North Sea, but it is a great relief to pass out of enemy territory into the no-man's water.

One more raid will make 33 for Captain Wertsch, and will finish him up. And we have been told that when he's through, we're through also. We have hopes for a short one. They usually give you a short one to finish up on.

September 1. MISSION 32. Recall from Frankfurt

The short, easy one to some undefended French bridge that we were counting on for a finale turned out to be a long haul to a factory in Frankfurt, defended by some 90 flak guns. At least that's what we were briefed for, but it wasn't in the cards for us to fly to Frankfurt today.

We were not overjoyed about the day's prospects when the C.Q. rousted us out of the warm sacks at 2:30 a.m. He told us that we were scheduled to deliver mixed demos and incendiaries to somewhere inside Der Fuehrer's domain that would require 800 gallons in the Tokyo tanks. That meant an extra long haul.

It was to be a ten-hour raid, six and one-half hours on oxygen. We were to fly down below Paris and head east. A 100 mile-per-hour tail wind was to take us over the Frankfurt factory at 300 miles per hour.

And with our ground troops pushing farther and farther into France we were supposed to be over enemy territory for only one hour and forty-five minutes.

When we reached the middle of the English Channel we ran into the rottenest weather we'd ever seen. But we kept boring on past Caen, climbing above the cloud bank which was solid from 14 to 17,000 feet.

When we got almost down to Paris we ran up against a cloud bank we couldn't go over so we made a 360 degree turn, found a layer of sky in which we could see all of our ships and those in the low group, and kept going. The high group was lost from view in the clouds above us, and it was pretty scary not knowing exactly where they were and speculating on the possibility of their suddenly dropping right down on top of us or sliding into us from the side. All we could see about 20 yards past the wing tip and above was blinding white clouds. It is slightly dangerous to fly that way, especially with a formation of 36 B-17's. The thick clouds and not being able to see the rest of the airplanes scared me about as much as flak. It was a feeling akin to claustrophobia, added to the apprehension that you have on the last mission of a tour - the finish-up or finish-off raid. You can never consider yourself safe and lucky until you land on the last one, just like a gambler can't call himself winner unless he dies winner.

We made the 360 degree turn right over Paris, and now and then we would get a glimpse of the city through slight breaks the thick white clouds below us. You get the impression of tremendous speed when the clouds are close to you that way, just as you do when landing or taking off, because you're close to something which indicates the swift motion.

The weather was getting worse and worse, and visibility on all sides less and less. Col. Creer, our Command Pilot from Group Operations, finally got a recall over VHF and turned the wing back for England. We had not reached enemy territory, so we figured we wouldn't get credit for the mission. The trip home was glum-nothing like what we'd expected the return from the final combat mission to be. We figured we had one more to go.

We got down, cleaned our guns and hit the sack about the middle of the.afternoon. At 6 o'clock we headed for the mess hall, dropping by the orderly room to check for mail.

"No credit for today's mission, eh Jake'?" someone asked rather tiredly, half-hopefully.

And at that moment old Jake made us the happiest boys in the E. T. 0. Very casually, not knowing the relief his words would bring, old Jake said "Yeah, you got credit. What did you think, you wouldn't get credit?"

Fred, Lloyd, Cecil and I went down to the chow hall and ate a hearty roast beef supper together. We felt very good. For the first time since Easter Sunday, April 9, it seemed that we might well expect to outlive the duration and six.

Our Operational Tour was over.

Post Script
September 16. A Visit From Dinah Shore

The last time I wrote in this book was on September 1, the day we finished our Operational Tour. A lot has happened since then.

Cecil is on his way back to the states. We received a letter from him a few days ago saying that he was at the 18th R.C.D. at Stone. He'd seen Alfred Beacom, one of the original members of our crew at Dalhart. Beacom was returning to Boston after 31 missions with the 457th Bomb Group. Cecil also reported that he was doing k.p. and clean-up chores while waiting to ship home.

Lloyd left few days ago with the enlisted men of Simonds' crew. They went to the 15th R.C.D. Gagon's crew has finished up and gone home.

Fred and I are staying on a while longer. He is working on the flying line, crewing a B-17, and I'm working in the squadron supply room. Only thing disagreeable about the supply room work is picking up guys' equipment and belongings that go down. We were both allowed to keep our flying status and the extra cash that goes with it, and we can take off for the U.S.A. whenever we please. We are still available to fly our thirty-third mission if they call on us, but that is very unlikely.

Cate has one more to go for his pilot to get 33. Munsen finished on the last one. Waters has only three to go. Lt. Taylor has to fly one-more.

We have some new boys in the hut since Cecil and Lloyd moved out. Freemont E. Wood, Ed Herzog, Bob Grebner, Mark Cordell and Dan Nicodem. Good boys. They brought their dog, a black-and-white spotted pup appropriately named Flak, with them. Flak is whip-smart and very playful, just what we need around the hut.

Glenn Miller's band and Dinah Shore played a swell concert and dance in Hangar One last night, climaxing the 94th's gala 200th Mission Celebration. The group flew its 200th raid on August 27, a rugged one to Berlin. The 94th's first mission was flown May 13, 1943, to St. Omer; and its 100th was to Frankfurt, March 20, 1944.

The 200th Mission Celebration was a complete success. We turned in about 1a.m. this morning and slept in till 11. We go off double British summertime tomorrow and there will be no more blackouts.

September 17. Taylor Finishes Up

Melton's crew finished today, with friend Cate flying his thirty-first (last) mission. Lt. Taylor finished also, flying waist gunner with one of the crews. They bombed just ahead of the new invasion troops in Holland, ran into a mess of flak and got a couple of 410th gunners hurt.

All of the bunks in the squadron are being double decked, crowding things up considerably. A lot of men are coming to the base on detached service to study the functions and procedures of a Pathfinder squadron. Rumor has it that even if the 94th goes back to the U.S. or to another theater, the 333rd will remain a training squadron for future Pathfinder crews and personnel. Sounds likely.

October 7. Two Bad Days For the Ninety-Fourth

Fred and I took our furlough on October 1, flew to Blackpool in a B-24, visited the Gartsides at Number 35 Carleton Avenue, spent the last four days of our pass in London, and came back to the base yesterday.

Yesterday was a bad day for the 94th.

The Eighth Air Force - 1,250 heavies and 1,000 fighters strong - went to Berlin.

Wilson and Colestro flew with Davis' crew and Major Blount flew as their command pilot. Davis' crew was hit badly over the target but somehow struggled back to the English Channel, requesting permission to jettison their bomb load. Later they signaled that they were preparing to ditch. Waves on the North Sea were 40 feet high yesterday. The rescue crew found Major Blount floating dead near an overturned dinghy. We have heard unofficially that the others were found this morning, washed ashore.

The entire 385th Bomb Group, including Batty's crew, went down over the target. From what we hear they must have been caught by swarms of F.W.190's. Every ship in the group went down before the fighter escort showed up.

Elwood C. Maxum, the boy who got the Purple Heart over Leipzig and paid for it with two months in the hospital, the boy who spent an idyllic week with us at the Spetchley Park rest home, the boy who flew waist gunner for Captain Batty - Max, we called him - finished his Operational Tour and his young life 18,000 feet above Berlin today.

And Fields, Batty's engineer, who had only two to go to finish. And Denicola, the radio operator.

It was Colestro's last one. Colestro was a friendly Italian, about 21 years old. He got screwed up by an experiment and his crew finished up ahead of him. He saw Salvani and Richtmeyer, two other gunners of his original crew, off to the states just a couple of weeks ago. This was his last mis sion - that is, the last one he would have been required to fly, had he returned. It was his last one any way you look at it.

And there was Wilson, the boy who had a good ground job in the Armament Section until he decided he wanted to fly combat. He had about five to his credit.

Well, yesterday was a bad day. Today was a worse one. The 331st put up a group and the 332nd put up a group. The 332nd pulled a milk run.

Not so with the 331st. They took an 11-ship group over the target - Merseburg. Three of the 11 ships got back.

They ran into fighters again - someone said M.E. 109's. Davis was leading and Mark Cordell was flying waist with him. We heard they were last seen flying level with one wing on fire. Some say that four chutes got out, some say ten. Mark, one of our hut mates, was another fellow who came over as a ground man and then requested flying duty. This would have made him 12, so you might say he wound up with 11½ missions.

Singletary, the gunner on Davies' crew who did 50 missions in the Aleutians on the "Old Glory," should have stopped at 50. He had about 10 or 15 over here.

Johnson was another guy who wasn't satisfied to keep his feet on terra firma. He was on a crew in the 331st on his 22nd mission. He was learning code, procedure, transmitters, receivers and machine guns when

we got here in March. Made his first one about the first of June, and finished up today. Another friendly fellow.

Some of the folks back home, we hear, seem to think it's all over but the celebrating. Maybe even some of us here in England have toyed with that misconception. Ask any man in the 94th Bomb Group and he'd tell you a different story tonight. The Luftwaffe, though perhaps low on planes and fuel, is still very much in business. Goering's generals are no doubt having an awards presentation tonight, and celebrating a very good day's work.

You look at what happened today, and you wonder how anyone ever comes through 30-odd combat missions over German-held territory alive. You realize you were plenty lucky, and you see how appropriate it was that you received, when finishing your Operational Tour, a certificate of membership in the Lucky Bastard Club.

The certificate is a photostat of a ghastly gray piece of parchment, charred around the edges as though it had been jerked out of a blazing inferno. It has a couple of four leaf clovers; a large horse shoe, and "94" in smokey gray shadow across its face. Covering the whole certificate, in Olde English style lettering, is this legend:

On this 13th day of August, nineteen hundred and forty four, the Fickle Finger of Fate finds it expedient to trace on the roll of the LUCKY BASTARD CLUB the name of S/Sgt. Preston P. Clark Jr., Tail Gunner of the Leading Lady, who on this date achieved the remarkable record of having sallied forth, and returned, no fewer than thirty risky times, bearing tons and tons of H.E. Goodwill to the Fuehrer and would-be Fuehrers, thru the courtesy of Eighth Bomber Command, who sponsors these programs in the interest of government "of the people, by the people, and for the people.

In the lower left corner of the certificate is an Eighth Air Force shoulder patch. The document is signed by C.B. Dougher, Commanding Officer; K.S. Steele, Air Executive; W.E. Creer, Group Operations Officer; James E. Blount, Squadron C.O. (killed in action yesterday) and B.C. Bivins, Squadron Operations Officer. The artist has recorded his signature - Polson --in the lower right hand corner of the diploma.

November 10. The Last Entry

A month has passed since I wrote last in the diary. Much has happened. A lot of us are getting ready to head back for the states. They are streamlining the T.O. and we either go back now or stay with the group for the duration and six.

First it was me, then Frank Toth, who got wounded and didn't get to finish with Stopulous. Greb, the gunner who was in the hospital when his crew (Davis) went down, is going, and Fred has decided he'll go too.

We got Woodie, Grebner and Ed Herzog all excited about the prospects of being home for Christmas, so they are going with us.

The fast approaching, bone-chilling English winter also had a lot to do with our - at least my - decision to pull stakes.

Captain Wertsch is staying on for a while longer, helping out in Group Ops. Taylor wants to get back home to see an infant son who was born about the time the co-pilot finished his missions. He also wants to fly some fighters, to fulfill his longest-standing service-connected ambition. Getz is on his way back to a hospital in the states, with the old sore ankle promising to give him more trouble than was at first anticipated. Counihan will probably stick around England till his captaincy comes through, and Step is staying on a while longer.

This diary will probably have to be sent to some place for safe-keeping - security purposes - until the war's end, whenever that will be. The fanatical Haps seem determined to keep it going for another five years, or as long as they can. Good-bye Diary, hello States.

November 10, 1944

In Retrospect
One Last Word About The War

That's all there is to the gunner's diary. He got back home okay, spent 9 more months in the service, serenely irresponsible at a stateside radio school, and was discharged from the army routine at Scott Field, Illinois, in September, 1945.

The following February he returned to college, on the G.I. Bill of Rights, to resume his education, One day in a literature class he ran across a poem addressed to soldiers. More or less copying the style and meter of the verses, he wrote a few rhyming lines of his own, summing

up memories of nightmarish experiences and his hopes that there would be no repetition of those experiences - the senseless hell-on-earth called war. Those lines are submitted below, as one last word.

Airman rest, the mission's over… Think not of the fearful raid ... Dream not of the flak filled heavens ... Chaos, dead, your bombs have made;

Gunner rest, your work is done ... Your fifties served their deadly worst ... A Jerry barreled in from the sun ... And crashed aflame from one short burst.

Pilot rest, you landed safe! ... You, every duty, have done well… To bring a Fortress back from Leipzig, torn by flak and cannon shell… Crewman rest, the mission's over… Say a prayer for friends who died… And be thankful you are living… Thanks to Him who was your Guide.

Airmen rest, the war is finished… But remember its sharp pain… Use your wisdom and your knowledge…Never let it come again.

Editor's Postscript: Preston P. Clark, Jr. submitted a questionnaire with attachments and a copy of his diary to the East Anglia Air War Project on August 29, 2003. He passed away January 25, 2012 in Austin, Texas. He was 86 years old at the time of his death.

Book Reviews

Bowman, Martin W. *Lost Wings: Downed Airmen On the Western Front 1914-1918.* Yorkshire, England: Pen and Sword Aviation Press, 2016. Pp.236. $44.95.

Lost Wings: Downed Airmen On the Western Front 1914-1918, by Martin W. Bowman is a collection of 24 narratives of British, French, Commonwealth, American, and German pilots -- Freddie West, Harry Beaumont, Raymond Collishaw, Marian C. Cooper, to name a few -- shot down during World War I. Bowman a prolific, popular military historian has written on a wide-range of topics in both aviation and military history. Bowman's book was written in conjunction with the 100th anniversary of World War One and the first large scale employment of aircraft in a combat role.

The selections are based mainly on firsthand accounts, while other chapters are drawn from books and magazines such as the *RAF Flying Review.* The accounts reflect the harrowing careers of the first generation of combat pilots who flew over the Western front. The stories are fascinating and a joy to read. The chapters are short and range from six to 15 pages. *Lost Wings* is a good read, and certainly the book will interest World War I and aviation history enthusiasts.

Despite the excellent selection of narratives there are some caveats. *Lost Wings* has problems – it is uneven in a variety of ways. The book is deficient in design and layout. Bowman does not provide an introduction, which could have laid the thematic groundwork and purpose of the book. In many ways, the reader is left to fend for themselves. Chapter "footnotes" are actually endnotes. Some chapter explanatory notes are extensive and quite helpful, while other chapters do not have any notes. The book does not have a bibliography. The index is limited.

Though *Lost Wings* is a nice collection of aerial combat tales, the author does not place the narratives in proper historical context and there is no analytical framework. Even as a sourcebook, *Lost Wings* comes up short. If one is looking for an academic history on this intriguing topic from any perspective (military or social history), they will not find it in *Lost Wings*. The book is aimed at enthusiasts. The reviewer enjoyed the war stories, but the book's lack of purpose leaves one frustrated.

Erik D. Carlson Florida Gulf Coast University

Dorn, A. Walter, ed. *Air Power in UN Operations: wings for peace*. Burlington, VT: Ashgate, 2014. Pp. 350. Price $49.95.

In this highly informative book detailing United Nations' (UN) aerial operations in conflict zones around the world, readers will gain a sense of how the UN, since its early Cold War inception, functioned in capacities beyond diplomacy. As volume editor A. Walter Dorn, professor at the Royal Military College of Canada, explains, many previous studies of the UN's military missions focused on ground operations. With contributors ranging from military personnel (active and retired) and historians to psychologists, corporate executives, and UN strategists, *Air Power in UN Operations: wings for peace* stands as the first volume to examine how aerial missions for transportation, observation, and firepower complimented UN ground operations and served as vital adjuncts for the organization's broader peacekeeping efforts.

The book's six parts each focus on different historical periods and various locations. In the "UN's first 'air force,'" Dorn, William K. Carr, and Kevin A. Spooner examine what was until the 1990s the UN's largest and most significant aerial operation: the crisis in post-colonial Congo and its breakaway Katanga Province. Carr focuses on the planning and strategic

aspects of UN involvement, specifically the roles that Canada's RCAF played in leading the air operations. Dorn details how fighter jets, provided to the UN by the U.S., Canada, and Sweden, were utilized to weaken Moise Tshombé's air capabilities and minimize the fragile nation's civil war. Spooner also turns his attention to Canada, explaining how prime ministers Diefenbaker and Pearson, shaped by the politics of the early Cold War, weighed policy decisions regarding their roles in the Congo crisis. "Airlift: lifeline for UN missions" centers on how various countries contributed aircraft and logistical support to UN aerial operations. Matthew Trudgen discusses nearly fifty years of Canadian missions for the UN's military observer group in the disputed Kashmir region straddling India and Pakistan. A site of contention since Pakistan's inception in 1947, Canada often vacillated between increasing and decreasing their peacekeeping efforts, reflecting the nation's "international ambitions" (76) amidst the Cold War. More currently, Robert C. Owen details the joint U.S Air Force.-UN 2010 relief missions in earthquake-rattled Haiti; dubbed "Operation Unified Response," he demonstrates that the two groups, despite their long association, "cooperated to a greater degree than they had in years." Finally, Dorn, along with Ryan W. Cross, uses case studies in 21st century Sudan, Haiti, and Libya to illustrate that while the UN is "often rightly criticized" (101) for its lack of cooperation with other agencies, the UN Humanitarian Air Service stands as an understudied counterexample.

Parts three and four emphasize aerial surveillance and the history of creating "no-fly zones," respectively. Dorn, who penned two additional chapters in part three, shows how reconnaissance missions (manned and unmanned) have been advantageous in certain operations by minimizing risk to ground troops and as the "eye in the sky" in locations from Lebanon and Congo to Bosnia and Afghanistan, have also proven controversial when missions employ armed unmanned vehicles. David Neil, employed by the MDA Corporation's unmanned vehicle team, provides a comparison of U.S. and Canadian missions from the later Cold War through the present.

James McKay and F. Roy Thomas discuss the history, strategies, and enforcement of no-fly zones (NFZs). Ranging from the first (created by the U.S. during the 1991 Gulf War) through the 2011 UN-imposed NFZ over Libya (in an effort to curtail the Qaddafi regime's attacking of Arab Spring protesters), they show how these designations are crucial applications of UN airpower. Thomas, who partook in missions over a besieged Sarajevo in the early 1990s, offers his personal recollections of his work with the UN's Military Observers.

Though rare over their history, UN aerial missions have required the use of force. In "Combat: enforcing the peace," the authors explore various cases of force, which were alternately judged as excessive, as with Somalia's infamous "Black Hawk Down" episode in 1993, or not aggressive enough to halt ground-level atrocities, as during the 1994 Rwandan genocide. More, the authors note that such employments of force align with the just war cause and have been necessary to the missions' mandates, civilians, and keeping the "tenuous peace" (213). Finally, in "Evolving Capabilities," Kevin Shelton Smith and Robert David Steele offer their assessments of future roles for UN aerial missions. Smith maintains that while UN aviation is a "far cry" (295) from the early Cold War, progress in terms of safety and aircraft modernization remains to be made. To minimize dangers to personnel, he states that the greatest changes likely will be in the form of unmanned vehicles. Steele compares old, or "state," with new, or "hybrid" mandates for future aerial operations around the globe; while Cold War concerns included Third World civil wars and refugees, hybrid examples include infectious disease, environmental degradation, and transnational crime.

Air Power in UN Operations, while at points technically written and containing numerous acronymic designations, is a very well-researched and ambitious contribution to not only military history and the history of aviation but will surely interest historians and other specialists interested in the Global South, the Cold War, the history of the U.S. and Canada, foreign policy, and the logistics of navigating and operating in conflict zones of various size and scope. The book is aided by

the impressive assemblage of authors, each of whom provides introductions and conclusions to lend their work greater context.

Stephen Nepa Temple University

Ganson, Barbara. *Texas Takes Wing: A Century of Flight in the Lone Star State.* Austin, TX: University of Texas Press, 2014. Pp. 294. Price $29.95

In *Texas Takes Wing; A Century of Flight in the Lone Star State*, author Barbara Ganson explains how the state of Texas was central to the development of aviation technology since 1910. She creates her history based on aeronautical collections of early aviation and oral histories of more contemporary aviators. In creating this history, Ganson accurately depicts Texas as critical to the development of civilian and military flight technology. (Ganson, ix-xi) In the brief stories of dozens of aviators throughout the work, Ganson shows how the climate and geography of Texas aided the development of aviation, and in doing so exhibits how non Texans as well as native Texans were able to use these elements to their advantage.

Ganson does her best in *Texas Takes Wing* when showing that military necessity was the backbone of aeronautical innovation in Texas. She begins her work with the infancy of flight in Texas, when short flights over empty fields were great entertainment for local crowds, and explains that flight development was slow until the first World War created a demand for military air power. At first, Texans trained allied and American fliers for military operations at airfields throughout Texas during the first World War, but Ganson explains that the military operations for planes during the First World War were limited, and that the true usefulness of air power in war was not realized until the Second World War. (Ganson, 33, 37.)

Between the World Wars, Ganson describes how members of different socioeconomic backgrounds were able to participate in the innovations taking place within aviation. Aviation developed with the development of commercial flights by business people. Wealthy entrepreneurs in Texas founded regional airlines, some of which would eventually become international carriers (Ganson, 78-94). Others who did not have wealth before flying became wealthy by either barnstorming or attempting to create speed, distance, and stamina records. The novelty of flight, plus the entertainment involved with attempting aerial stunts, made barnstormers instantly famous throughout Texas, generating wealth for those involved (Ganson, 38-43).

World War II brought the fastest increase in aviation technology and it affected the state greatly. Texas was critical to the innovation and training for success in the skies during the war. Gadsden focuses on the innovations of Colonel William Ocker. His improvements on instrument only flying technology, also referred to as blind flying, improved safety for World War II fliers. Several inventions to make military planes safer and more reliable were created in Texas airfields and on Texas Military bases.

In her well-rounded approach, Ganson excels in illustrating the role women have played in the growth of air travel in Texas since the beginning of the twentieth century. Ganson shows how women from Texas achieved several aviation firsts, such as a Texas woman becoming the first women to fly in Asia (Ganson, 25). During peacetime, woman were stewardesses that were trained at various Texas stewardess colleges including those created by American Airlines and Braniff Air (Ganson 83, 96). They also earned money by taking part in barnstorming activities as well, but generally had difficulty obtaining employment as pilots during peacetime because of the availability of male pilots with wartime flying experience. During the World Wars, however, Ganson shows that Texan women played intrigal parts in the success of flight for the United States. Female aviators would routinely fly in non-combat missions during the Second World War after

completing training at the airbase in Houston, Texas. One female aviator in particular, Marjorie Stinson, was taught to fly by the Wright Brothers in the early 20th century and would go on to teach American and Canadian cadets how to fly in preparation for the first World War.

Barbara Ganson concludes *Texas Takes Win*g with an extensive epilogue explaining that Texas aviation is not only important because of the innovators and circumstances that made advancement possible, but for the Texans that are currently keeping aviation history alive in the state. Ganson believes that Texans have fully embraced the history of flight within the state as it embodies the spirit of the Texan to take risks and exhibit courage. She also briefly touches on space travel, calling it the future of Texas aviation, as well as late 20th and early 21st century innovations in aviation.

With large appendices and a topical approach that makes the book read more like a reference work than a linear history, *Texas Takes Wing: A Century of Flight in the Lone Star State* still achieves its purpose of offering a comprehensive view of the individuals who shaped aviation in Texas by depicting a wide array of great minds who advanced flight in the state.

Dominic Longo Monmouth University

Molkentin, Michael. *Centenary History of Australia and the Great War*. Volume 1. *Australia and the War in the Air*. Melbourne: Oxford University Press, 2014. Pp. x, 284. Price $59.95 (AUD).

The centenary of the Great War, or World War I, has seen a surge in interest in this conflict. It also inspired a publishing "blitz". We have seen a fair number of fine scholarly works appearing but, on the other hand, too many books perpetuating the legends, myths and tall tales of the Great War. Australia and the War in the Air is most definitely not one the latter. It is an

example of impressive scholarship and furthers our knowledge of air forces history.

The Australian Flying Corps (AFC) was formed in 1912 as a small-scale version of Great Britain's Royal Flying Corps (RFC). At the start of the Great War, the AFC had two instructors, a small ground staff, and five aircraft. Its Central Flying School commenced the first course of instruction a month after the war began. As the air war on the Western Front heated up, there was increased demand for pilots, observers, and air mechanics. While the British Empire's other dominions agreed to contribute men to the RFC and Royal Naval Air Service (RNAS), Australia preferred to deploy its own squadrons. A few dozen Australian men made their own way to Britain to enlist in the RFC or RNAS, and in 1916 some 200 soldiers transferred to the RFC. However, the majority of Australians to serve in the air war did so as members of the AFC. The 1st Squadron was dispatched to Egypt in early 1916 and served in the Middle East until the war's end. During 1916-17, the AFC formed three more operational squadrons that were deployed to the Western Front by the end of 1917, and four training squadrons based in England.

Michael Molkentin has established himself as a leading scholar of the AFC. His earlier book, Fire in the Sky: The Australian Flying Corps in the First World War, published in 2010, was well received. It was the first substantial study of the AFC since F. M. Cutlack's official history, The Australian Flying Corps, appeared in 1923. While Molkentin's first book focused particularly on the experiences of pilots and observers, the book under review examines the formation, equipping and training of the AFC, with further development of his analysis of aerial combat. The two books are sufficiently different that readers could acquire both and not be disappointed.

Australia in the War in the Air is based on Molkentin's PhD at the University of New South Wales Canberra but having been further refined it does not read as a dissertation. It was chosen as the first volume of the five-volume Centenary History of Australia and the Great War. Molkentin approaches the subject logically, starting with the origins of military

aeronautics, and continuing with chapters on AFC organization and administration and then recruitment and training. He then explains air war developments on the Western Front and in the Middle East, incorporating within this chapter the service of Australians in the RFC and RNAS. Finally, Molkentin presents several chapters exploring the challenges facing squadrons deployed operationally. These are separated by location (Middle East and Western Front) and further by role (fighter and reconnaissance). The author is at all times mindful of the broader picture, appreciating that the Australians were a distinct minority, and possibly something of an oddity. With one squadron in the Middle East and three on the Western Front, the AFC made "a modest contribution to the air war".

Australian popular memory of the war is heavily influenced by the "Anzac legend"—a notion that in this war Australians showed they were naturally great fighters (and that successive generations have lived up to the legend). While Molkentin never tackles the legend directly, like any Australian scholar he is mindful of it. At one point, while explaining the re-equipping of the 4th Squadron with Sopwith Snipes in late 1918, he notes that only two squadrons (one RFC and one AFC) were equipped with these aircraft before the war's end and that: "Major-General John Salmond (GOC RFC in 1918) allocated the second batch to the 4th Squadron at the beginning of October, believing it to be one of his best fighter units and, being deployed on the Fifth Army's front (where no major offensives were in progress), able to refit without disrupting operations." It is refreshing to see an Australian historian not tempted to stop at the first reason.

One of the strengths of this book is that it is not strictly Australian history that is presented. Molkentin states in the preface that "this book describes and evaluates the Australian contribution to the first major war in the air", but he succeeds in doing something more. Molkentin successfully presents his study of the AFC to an international audience. He acknowledges that virtually everything the Australian airmen did they did as part of the British Empire war effort. Their equipment came from British stocks, they were trained to

British standards, and their tactics were those developed in the RFC and RNAS. A test of any work is whether it contains passages one can imagine quoting. This book contains a fair number, including the following, the selection of which serves to demonstrate that this is really a study of air power in the Great War using the AFC as the case study:

> "… it is anachronistic to judge the efficacy of air power by its level of decisiveness or its ability to change the course of a battle. This is a post-1918 idea, developed in connection with strategic air power. The British Army's leadership never intended the aeroplane to assume a decisive role in the strategic, operational or tactical spheres. From the earliest official expositions on the role of aviation through to staff-level discussions in late 1918 anticipating the following year's campaigns, the aeroplane remained a tool for supporting the army's principal fighting arms—the cavalry, infantry and artillery (and increasingly the tanks). From first to last the empire's airmen worked to increase the efficacy of these arms by providing them intelligence, correcting their fire (and supplementing it with bombing and strafing), maintaining communications between them and protecting them from enemy aircraft. As intended, air power helped Britain and her empire win battles; it neither won them alone nor attempted to do so."

This reviewer's only quibble is a minor one regarding the ground staff of the AFC. Although their recruitment is discussed and some of their challenges are dealt with, there was perhaps scope for a chapter discussing their experience.

Molkentin's study of the AFC is based on impressive research and it is both well written and well edited—as, indeed, can be said of the editing of every volume so far of the Centenary History of Australia and the Great War. Its photographs, diagrams and maps are, like the prose, clear and

effective. This book warrants a place on the bookshelves of any scholar or serious collector of air forces and air power history, anywhere.

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Willbanks, James H. *A Raid Too Far: Operation Lam Son 719 and Vietnamization in Laos*. College Station: Texas A&M University Press, 2014. Pp. 270. Price $35.00.

James Willbank's *A Raid Too Far* is a carefully researched study that allows its geopolitical lessons to percolate up from the nitty-gritty of its operational details. The book recounts the U.S. supported South Vietnamese invasion of southeastern Laos in early 1971. Despite the operation's large scale and its strategic and political importance, Lam Son is not well-known to most Americans. Compared to the Tet Offensive, the Cambodian Incursion, or the Fall of Saigon, it has received less media and scholarly attention. Perhaps this is because Americans did almost none of the fighting and dying on the ground; or perhaps the battle happened at precisely the moment when most Americans began to disengage emotionally from the long and painful Asian conflict in the wake of Richard Nixon's promise of Vietnamization. Besides, the military outcome of the invasion only served to reinforce the misunderstandings, lost opportunities, and disappointments of the larger war—hardly reasons to hold fast to its memory.

As a means of filling the gap in military historiography, as well as an attempt at setting the record straight, Willbank's account (which is one of only two books on the subject) is a worthy undertaking. It belongs to that always-welcome category of Vietnam War books that does not passionately subscribe to either the "bad war" school of interpretation (in which U.S. intervention was a misguided effort to impose its will on an unwinnable situation) or the alternative "right war,

wrong approach" school (in which U.S. involvement was a noble cause undermined by lack of commitment and poor execution). Instead, readers of *A Raid Too Far* may well conclude that in Vietnam nothing—including Lam Son which served as a microcosm of the greater struggle—was ever as simple as American military and civilian leaders hoped it could be. Readers will also be treated to a valuable case study demonstrating that superior airpower alone is usually incapable of achieving victory.

The military objective of operation Lam Son 719 (Lam Son was the birthplace of a 15th-century Vietnamese patriot; 71 was the current year and 9 was the invasion zone's principal highway) was to disrupt communist infiltration of men and materiel via the Ho Chi Minh Trail, thus diminishing Hanoi's ability to project its power into South Vietnam at a time when U.S. combat forces were rapidly leaving the country. On this score Willbanks succeeds in delivering a description of the battle that is factual and clear. Based on American military records and the later testimony of participants as well as recently released Vietnamese documents, he explains the planning, implementation, and aftermath of the operation. He not only tallies the numbers: casualties, armored vehicles and artillery pieces deployed, disabled, lost, or destroyed, sorties flown, aircraft attrition, tons of supplies captured, numbers of friendly and hostile troops committed (broken down by functional groups), and so forth, but he intersperses his numerical reckoning with brief, often emotionally riveting vignettes of personal heroism or fortitude. He also supplies several maps that are useful for enabling readers to visualize the operation, along with twenty or so photos that are helpful if not particularly dramatic. Most important, *A Raid Too Far* documents a specific event—limited in location, duration, and objectives—that revealed the crucial flaws in overall U.S. intervention policy: underestimation of enemy capability and commitment, weakness of South Vietnamese political leadership, ineptitude of senior SVN officers who were political appointments, inability of SVN forces to successfully prosecute major operations without direct (and massive) American ground

support, the expectation that superior weaponry or a superabundance of materiel could compensate for too many SVN political, social, motivational, and military disadvantages, and finally, that Communist adversaries would react to signals of resolve by yielding ground rather than by redoubling effort.

If Americans do recall anything about the ill-fated Lam Son mission, it is pictures of South Vietnamese troops clinging to U.S. helicopter skids in a desperate effort to flee the routing of their units (curiously, no such picture is included in this book). Willbanks makes an aggressive effort to debunk that particular myth of SVN cowardice, explaining (I think, convincingly) that poor planning and leadership were the real culprits of the operation; cowardice was the exception rather than the rule, and in that famous example (which involved few troops in especially harrowing circumstances), latching onto chopper skids was a sensible method of extraction in the face of overwhelming enemy ground fire. If fact, those iconic images of Lam Son might better be viewed as an example of the way American helicopters—and airpower in general—were asked to accomplish the impossible. Since the U.S. Congress had prohibited American ground troops from entering Laos as combatants or advisors, the sole major contribution Americans could make to the actual fighting was air power. And it was brought to bear in abundance.

On the initial day of the operation American fixed-wing tactical aircraft flew 52 sorties while B-52s added another eleven; U.S. helicopter gunships flew 468 missions and helicopter transports each flew as many as fifteen roundtrips into Laos; seven were shot down. Unfortunately the first tactical-air friendly fire incident occurred the next day, as a U.S. Navy jet mistakenly bombed a South Vietnamese taskforce, killing six and wounding 51; this contributed to mistrust between allied ground forces and American tactical air units. During the 45 days of the operation, American helicopters logged over 160,000 sorties; tactical aircraft over 9,000 and B-52s more than 1,300; Military Airlift Command flew over 2,000 support missions. But airpower proved indecisive for several reasons. Prolonged bad weather seriously hampered visibility;

moreover, the North Vietnamese often took the initiative under cover of night. Enemy forces intentionally positioned themselves so near to SVN forces that close air support became too risky. Poor communication (partly because of language differences, partly from lack of experience) between South Vietnamese spotters and American air controllers limited tactical effectiveness. Finally, enemy units deployed tremendous anti-aircraft resources—for instance machine guns were pre-positioned in cross-fire alignments at likely helicopter landing zones—that severely restricted logistical mobility. Despite the professionalism, commitment, and even heroic actions of pilots, the best they could accomplish in the end was to prevent a South Vietnamese defeat from snowballing into an even worse disaster.

In Willbank's final judgment—and it is hard to dispute his findings—top American and South Vietnamese political and military leadership should be held responsible for the flawed planning and sub-par implementation of Operation Lam Son 719. Richard Nixon and (Defense Secretary) Melvin Laird wanted to quiet domestic opposition to the war more than they wanted to win it. SVN president Thieu wanted to preserve his regime (and his "palace guard" army) rather than take the risks needed to defeat the enemy; his generals were likewise complicit. American theater commander Creighton Abrams was guilty of up-beat assessments no matter the realities of events. The fighting men on the ground and in the air could only make the best of an exceedingly difficult military challenge spawned by political self-deception.

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