The Bomber Menace, 1917-1933: The Evolution of the First Ultimate Weapon and the Inability to Cope with It

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THE BOMBER MENACE, 1917-1933:
THE EVOLUTION OF THE FIRST ULTIMATE
WEAPON AND THE INABILITY TO COPE WITH IT

by

Ingo E. Banse

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
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Last, but certainly not least, I acknowledge the indispensable assistance and personal sacrifice of my wife, Jennifer Jean Banse. Besides working an eight-hour day and attending to the usual domestic necessities, she also voluntarily forfeited much of her remaining free time in converting my virtually undecipherable handwriting into readable
typed pages. Perhaps even more important, her untiring patience and understanding kept me from the precipice of insanity. I would also like to note that the wonderful faculty members in the History Department with whom I have had the privilege to work made my graduate work a pleasure at Western Michigan University. But I wish to make it plain that I alone am responsible for the views expressed in the following pages.

The readers' attention is also called to the footnoting procedure I have adopted for this investigation. Whenever an author of a memoir or firsthand account is clearly identified within the text, or when a writer is directly referred to in the text as a correspondent or an editor, it seemed best to cite the footnote numeral immediately behind the designated person. On the other hand, whenever I have quoted an authorless source within a sentence, the substance of a source, or simply paraphrased material without referring directly to an author, I have placed the footnote citation at the end of the pertinent sentence. It should also be pointed out that I considered it best to retain the original British spelling in direct quotations and official titles.

Ingo Erich Banse
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The lives of 6,000,000 persons in New York City and its suburbs were snuffed out yester­day afternoon at 2:50 o'clock when an air fleet of six hundred Coalition bombing planes laid a blanket of diphenyl chloroarsine and cacodyl isocyanide gas over Manhattan Island and the metropolitan area, killing every man, woman, child, beast, plant, and other living things in New York City's five boroughs and their immediate environs. . . . Over 36,000,000 persons are reported to have been killed by gas throughout the world in the past twelve hours. New York, London, Paris, Calais, Brussels, Berlin, and Vienna are unpopulated cities today, for air raids took the lives of all their inhabi­tants yesterday afternoon and last evening.

This graphic 1931 account of Armageddon was not the product of a science fiction writer nor was it written for one of the flourishing pulp magazines. Rather, it was an ominous warning written by a sober American journalist for a respectable magazine. He was indisputably concerned with the destructive power of the strategic bomber. Moreover, the article illustrated an anxiety prevalent throughout the western world. Even a brief survey of newspapers, magazines, and books in all significant western nations reveals how intensely fear of the bomber gripped the imagination of informed people between the two world wars.

The source of this fear can be traced to the summer of 1917 when the Germans revolutionized warfare by initiating the first prolonged
independent strategic bombing operations. Almost all of the German bombing raids were directed against England. In response to these attacks the British developed a surprisingly intricate air defense system. Nevertheless, the bombers continued to reach London and its environs until the spring of 1918. By then, too, other bombing formations swept across western Germany, France, Austria, and Italy.

In the years following the Armistice, the bomber loomed ever larger in the minds of political leaders, far-sighted military officers, and air oriented observers. They were confronted with the world's first ultimate weapon; a weapon unstoppable once unleashed and capable of destroying entire cities—even civilization itself. Permeated with the horrors of World War I the concerned statesmen adopted two policies to counter the bomber menace: the threat of instantaneous reprisal and desperate attempts to limit or abolish the bomber. However, this bomber menace is conspicuously missing in post-World War II historical literature. Therefore, this study will attempt to partially fill this gap.

With the abundant information available and the advantage of the perspective acquired after more than forty years, it is feasible to investigate how military and political thought was influenced by the strategic bomber and how this, in turn, permeated the population at large. This investigation will only attempt to examine the situation as it existed between 1917 to 1933. Furthermore, it does not concern itself with the details of national and international policy during
this period. Numerous renowned historians have already examined these questions from every viewpoint. It is hoped that this investigation will contribute to a better understanding of the interwar period. Nor is this study without contemporary relevance. Although today's version of the ultimate weapon has been refined to a frightful level of destructiveness, a comparison of the human response in the two periods is indeed interesting. Finally, the result of this investigation is submitted, with all due modesty, in the spirit in which the Byzantine Emperor Maurice offered his treatise on the art of war in the sixth century:

If, then, anything of value be found in this work, thanks be to Almighty God, who has given us the skill to express it. And if any commander, through his own experience and diligence, shall find a better guide, thanks be again to God, the Giver of all good things; but may our work be judged leniently, by reason of our zealous endeavor.
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CHAPTER I

THE THRESHOLD OF A NEW ERA

Perhaps the spectacle was prophetic of the war of the future, when invading aircraft, equipped as these were with bombs, will fly so tightly packed and so well drilled in aerial tactics that they will be to all intents and purposes flying fortresses, strong against assault.

L. E. O. Charlton on 13 June 1917 Gotha Raid on London

Aeronautical advancement remained predominantly in civilian hands during the half decade following the Wright brothers first successful flight. Only small groups of intrepid officers risked their lives and careers to advance aviation in their respective nations. In the United States Lieutenants Benjamin D. Foulois, Henry H. (Hap) Arnold, and Thomas DeW. Milling labored to raise the Aviation Section of the Signal Corps (founded 1907) to European standards. Yet despite their efforts and Congressional appropriations for the establishment of a military flying school at College Park, Maryland, American aviation made little headway. Conservative officers flatly refused to have anything to do with airplanes. They argued that aircraft flew too fast to permit accurate military observation, and even worse, they unnecessarily complicated the problems of modern warfare.

In France aviation advanced at a more rapid pace in spite of an airship oriented military leadership. When general antipathy towards airplanes and their "somewhat crazy" pilots began to evaporate in the summer of 1909, not even the airship proponents could prevent the
formation of a military aviation "Phalanx" in February 1910 or their participation in the autumn maneuvers. A year later French pilots pioneered aerial artillery observation, and in February 1912, they were organized into the Aviation Bureau of the Engineers. Under this reorganization the embryonic air service received its own aviation parks and repair shops for twenty-seven field squadrons, but suddenly atrophied to a mere twenty-two pilots in 1913. ¹ Public indignation, aroused by the disclosure of this situation, created a minor governmental crisis. Consequently, the Minister of War separated aircraft and airship units of 21 February 1914 and placed each under its own command structure. This timely decision undoubtedly enabled the French to mobilize the second largest air service in August 1914.

Imperial Germany, the home of Graf von Zeppelin, also remained airship oriented until 1909 when the General Staff displayed its first cautious interest in aircraft. Although the General Staff established a flying school at Döberitz and placed all air personnel under the command of transport troops, the rudimentary air arm began the year 1910 without aircraft. In fact, German airmen were anything but happy when their first aircraft turned out to be mere copies of Wright "box kites." Another two years passed, however, before the German aircraft industry received the needed support which enabled the Germans to mobilize the largest air contingent at the start of World War I.

British aviators fared little better than their American cousins until Louis Blériot flew across the English Channel on 25 July 1909. His feat excited the imagination and patriotism of Captains J. D. B. Fuller, Bertram Dickson, and a handful of others who likewise recognized this new threat to British security. Their unflagging efforts were instrumental in the establishment of the Air Battalion of the Royal Engineers on 1 April 1911 and the creation of the Royal Flying Corps (RFC) one year later. Spurred by the Zeppelin scares of 1912 and 1913, the RFC counterbalanced inadequate equipment and insufficient strength with esprit de corps and personal initiative. This quickly became the trademark of the Upavon Central Flying School under the direction of Major Hugh M. Trenchard; but the older services took little interest in aeronautical acrobatics. In fact, Sir Douglas Haig, future Commander-in-Chief (C-in-C) of the British Expeditionary Force in France, remarked in 1911 that flying would never benefit the army, and as late as 1914, urged his officers not to be so foolish as to think that aircraft could be usefully employed for reconnaissance purposes.¹ In the view of most ranking officers in 1914 aircraft were nothing more than a nuisance and a poor substitute for cavalry.

The Bitter Fruit of Trench Warfare

As far as those in authority were concerned the First World War began generally as envisioned. Ultimatums and declarations of war were issued. The armed forces were mobilized. Pride and passion exploded into a storm of patriotism. Socialists, monarchists, and republicans rallied to the colors. Men marched to war amidst a crescendo of martial music and through crowds of cheering people who deluged them with flowers and encouragements. Women kissed their loved ones farewell knowing that they would only be gone six weeks, certainly no more than three months. But it must be kept in mind that the Europeans who cheered the war in 1914 were imbued with frenzied enthusiasm nourished by nearly half a century of peace. Psychologically they were still rooted in the nineteenth century.

The Campaigns in August did little to alter pre-war conclusions. The Germans unleashed one and one-half million men through the gap between the Dutch border and the Ardennes. The Fortress of Liége was systematically reduced by 420-mm field guns and capitulated on 16 August. Brussels fell on 20 August. Meanwhile, the Battles of the Frontier in Alsace-Lorraine presaged the new character of this war. Completely dedicated to L'attaque à l''entrance, a doctrine advocating a series of unhesitating glorious charges, the French attacked en masse all along the frontier. Attired in red trousers and blue overcoats, encumbered with heavy field packs and led by white-gloved officers, the French frequently charged over as much as half a mile before grappling with their Feldgrau foe. Consequently, the seemingly
ubiquitous machine guns exacted a heavy toll and by 25 August the French were thrown back to Nancy and Verdun.

After sweeping through most of Belgium, the Germans enjoyed similar success against Field Marshal Sir John French's British Expeditionary Force (BEF) at Mons. After a brief, but fierce, engagement, the heavily outnumbered British retreated before General Alexander von Kluck's First Army. Then, on 31 August, General Helmuth von Moltke made the first of the many grave errors so characteristic of this war; he abandoned the planned sweep west of Paris and turned east of it in expectation of rolling up the Fifth French Army. The maneuver exposed von Kluck's own flank, and a timely French counter-attack brought about the strategic victory on the Marne. Because of this setback General Erich von Falkenhayn replaced von Moltke on 14 September and immediately moved his headquarters from Luxembourg to Charleville on the Meuse.

The six weeks following the Battle of the Marne are marked by a series of attempts by each side to turn the opponents' western flank. This final period of mobility has often been called "The Race to the Sea." S. L. A. Marshall¹ more trenchantly called it "a succession of lurches." He also attributes General J. C. Joffre's (French C-in-C) slow reaction in covering this open flank to a shell shortage. B. H. Liddell Hart,² on the other hand, ascribed it to Joffre's limited

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imagination which never quite grasped the situation. When he finally awoke to the idea of moving fresh troops laterally by rail to outflank the Germans, it was always "an army corps too few and twenty-four hours too late."

The First Battle of Ypres (20 October—24 November) concluded the lateral movement towards the Channel and nearly wiped out the BEF. The Germans incessantly attacked the salient around the Belgian village of Ypres for ten days and nearly broke through. Then the British counter-attacked; but each successive attack only strengthened the embryonic trench system. When the battle finally ebbed, very little of the original BEF survived. As a result of the Ypres stalemate there existed a continuous trench system from Switzerland to the Channel. This anomalous development cost each side nearly a million casualties. Only Falkenhayn recognized the inevitability of a long war. Consequently, he ordered that field fortifications be refined and the railroad expanded laterally behind the front to assure continuous movement of reserves and supplies.¹

The year 1915 is notable for two distinct traits: increased lethal firepower concentrated in a refined trench system and extreme Allied optimism. As Liddell Hart² pointed out, the wisest course of action would have been to postpone action until munitions were stockpiled and the armies reinforced. But the French desire to regain lost territory, combined with a total lack of imagination and ill-founded

¹loc. cit., p. 131.
²loc. cit., p. 146.
optimism, spurred Joffre to launch a series of premature offensives. This, more than anything else, explains the costly battles of Artois, Champagne, and Neuve Chapelle which spanned the first four months of 1915. These attacks gained little, if any, ground and only managed to sink the trenches more firmly into the ground. Having learned absolutely nothing, the Allies continued to launch a series of diffused and unconnected attacks throughout the spring and summer. Among these, the Second Battle of Ypres clearly illustrated the hideous consequences of inept leadership.

None of the battles of 1915 approached Allied expectations. Each one began with a thunderous roar of cannon only to degenerate into unconnected and miserable local exercises of meaningless slaughter. Yet the Allies believed that only bad weather and inadequate supplies prevented these "brilliant" tactical victories from developing into total victory.¹ By the end of the year the Germans lost over 600,000 men and the Allies nearly 1,500,000 plus their first C-in-C—Haig replaced French in November.

The year 1916 marked the watershed of the war. Before the battles of Verdun and the Somme, Allied commanders frequently voiced optimistic forecasts on the rapid and successful conclusion of the war. They were not concerned with troop morale even after one and one-half years of appalling casualties. All this changed in the two immense battles of 1916.

In December 1915 Falkenhayn arrived at the dubious conclusion that Germany's one chance of victory rested on his ability to bleed the French Army white. He also realized that the French would not accommodate him unless he chose a sentimental target. The ancient citadel of Verdun met all criteria. The French could never willingly surrender the town where Charlemagne's heirs divided Europe and where Vauban had so diligently labored to give the word "France" that certain ring of arrogance. Moreover, the main German railroad line came close enough to facilitate rapid reinforcement and supply.

With an amazing degree of secrecy the Germans assembled 1,220 artillery pieces of all calibre and began the longest battle in history (21 February—15 December) with an unprecedented bombardment. Over two million shells—at a rate of 100,000 an hour—drenched the fort-studded six-mile front.1 The world disintegrated around the French soldiers who now saw war plunge to new depths of depravity. In the following months entire forests vanished and infantrymen perished by the thousands. Often firing 1,500-2,000 rounds an hour, the artillery dominated everything for nearly a year. A bullet wound was a godsend since most casualties resulted from shell-fire. Altogether both sides fired 40 million shells or two hundred for each casualty—enough to fight eight wars the size of Korea.2 It was slaughter without limits; horror beyond belief. After ten months the Verdun "Mincing Machine" claimed half a million Frenchmen and nearly 400,000 Germans.

1 ibid.
2 loc. cit., p. 246.
The successful defense of Verdun was both a symbolic and Pyrrhic victory. Three-fourths of the French Army went through that charnel house. Some units returned two or three times. Although the Battle of the Somme saved Verdun, it could not save French morale. Only a few months later General Robert Nivelle discovered how vapid French morale had become. Henceforth the burden of attack rested on the British.

Even though Haig advanced the date of the Somme Offensive from August to 23 June, he refused to dispense with the week-long artillery preparations; he believed that this would allow his men to simply walk over to the German line. It never occurred to him that this process of flattening the trenches would create thousands of equally protective shell holes. In any event, the Germans were well prepared and not at all surprised on 1 July 1916.

Describing the first day of the Somme, Marshall\(^1\) rhetorically wrote that the British jumped into the "exploding unknown" at 7:28 A.M. But Liddell Hart,\(^2\) who was there, wrote that "the whole mass of assaulting infantry was formed up in a series of close-packed lines, which were to advance simultaneously." And so eight waves, not more than 100 yards apart, advanced shoulder to shoulder at a slow pace toward the German lines along a fifteen-mile front. This attack, reminiscent of the eighteenth century, marked the nadir of modern infantry

\(^1\)loc. cit., p. 251.  

attacks. Struck down like human bowling pins, the British lost nearly 60,000 men that day. In World War II it took the first twenty days of the Normandy invasion before the combined Anglo-American casualties reached this level.

After the first day Haig should have quit. But he stubbornly adopted Falkenhayn's tactic of attrition and the Somme deteriorated into a blood bath rivaling Verdun. The assiduous attacks and mutual slaughter continued into November when winter rains finally suspended operations. Altogether the battle cost the British 420,000 casualties, the French 195,000, and the Germans 650,000.

The shock-waves of the Verdun-Somme disaster reached the highest governmental echelons. On the German side the Hindenburg-Ludendorff team replaced Falkenhayn. In France Joffre was "kicked upstairs" and the minister of war vanished in the governmental shake-up. In Britain Prime Minister Asquith gave way to David Lloyd George. Only Haig survived the general shake-up. The Battle of the Somme undeniably cast a long shadow. Few men have more poignantly described the bitter fruit sown by this offensive than former Air Marshal Sholto Douglas:

In the minds of the men of my generation the year 1916 stands for only one thing: the battles that were waged on the Somme during the summer and autumn. In those battles there died the last shreds of the blithe spirit with which we had set off to the war nearly two years before, and in its place came the beginning of the disillusionment that was to enter into the hearts and minds of so many of my generation. . . . It was in that year of 1916 that the world which we had been brought up to believe in finally seemed to fly to pieces. . . .

The year 1916 closed in an atmosphere of disappointment and frustration. Offensives on all fronts had misfired. The Somme had failed to produce any visible results in any way proportionate to the drain of British manpower. The British were also disappointed with the negative results of the great naval battle off Jutland. Meanwhile, the submarine threatened to sever Britain's lifeline. Among the Allies there developed a growing sense of depression and the first suggestions of a possible peace settlement. Furthermore, Russian strength was visibly at its nadir and Joffre warned that the French Army could fight only one more big battle.¹

The Germans were not in much better shape. The demoralizing effects of Verdun and the losses on the Somme negated success in the East. On the home front German civilians began to feel the full impact of the blockade. Bread was rationed, butter was scarce, and the "Turnip Winter" left deep scars. Not surprisingly the Germans increasingly considered Britain the strongest foe. Victory, they concluded, hinged on their ability to "knock out" Britain.

Both sides desperately searched for some means to resurrect movement in the face of heavy defensive fire. This became increasingly urgent to the British after the abortive Gallipoli venture which prevented them from circumventing the trench system by sweeping through the Balkans and into Austria. Moreover, such minor innovations as the light machine gun, the mortar, and the flame thrower failed to dent the trench barrier. A few key people finally recognized the importance

¹Liddell Hart, The Real War, op. cit., p. 320.
of Colonel Swinton's tank which was invulnerable to machine-gun fire and capable of crossing trenches. But the unimaginative Haig, in his desperate attempt to break through on the Somme, prematurely committed a handful of tanks to battle and thereby lost the efficacy of a massed surprise attack.

A few imaginative Germans likewise sought some way to break the deadlock directly or indirectly. Their first venture failed miserably when the obdurate General Staff hesitantly discharged gas during the Second Battle of Ypres without proper reserves. They next resorted to submarine warfare, but indecisiveness once again frustrated high expectations. Meanwhile, few observers realized that the reorganization of the German Air Force in 1916 and the mandate for General Erich von Hoeppner to organize a strategic bomber force unleashed a new lethal idea.

It is inconceivable that the airplane would have evolved from its negligible role at the outset of the war into such an important means of attack were it not for the long trench stalemate. Nothing else could have spurred aeronautical engineering and aerial tactics as quickly as the necessities of war. Likewise, the necessity of finding an alternative to trench warfare spurred the imagination and some visionaries quickly foresaw the possibilities of long-range bombing. Lord Northcliff aptly pointed this out in a post-war oration:

We thought that the very small piece of sea we had around us would be our safeguard. But one Sunday morning

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1"Our Future in the Air," Times (London), 8 May 1920, p. 17.
M. Blériot arrived at Dover, and a few thinking people began to realize at once that our position was entirely changed. Unfortunately for us most of these thinking people lived in Germany.

Indeed, Major Wilhelm Siegert first suggested bombing England in the fall of 1914 and even received permission from the German Army High Command (OHL) to do so. Only the lack of adequate aircraft thwarted this ambitious plan.¹

In 1916 the High Command clearly recognized the growing importance of airpower by creating a separate air service on 8 October and placing it under Hoeppner's command. Combining enthusiasm for airpower with administrative ability, and relying frequently on the sound advice of his chief of staff, Lt. Col. Hermann von der Lieth-Thomsen, Hoeppner revived Siegert's old plan since a recently developed bomber made it feasible. He pointed out to OHL that airship raids on London were no longer practical and that thirty of the new bombers could be operative by February 1917. Eighteen of them, he added, could carry a payload equal to three airships and "so far three airships have never reached London simultaneously."² He finally received authorization to create an independent "England Squadron" and based it at Ghistelles, Belgium, under the code name Türkenkreuz. Within a few weeks, though, two flights were sent to both Gontrode and St. Denis-Westrem—each about 170 miles from London.


General Hoeppner anticipated that the bombing of British towns would cause enough panic among civilians to compel the withdrawal of English units from France and thereby weaken the Western Front. The audacious general hoped to accomplish this with the Gothaer Wagonfabrik A.G. G.IV twin-engined Gotha. To most pilots of that day the Gotha was the largest and most awesome biplane in existence. Displaying an impressive 77-foot wing span and a sleek 40-foot fuselage, the Gotha could carry a 2,722 pound bomb load up to 500 miles. Although limited to a 21,000-foot ceiling, it easily carried a three-man crew at 12,000 feet at nearly 80 mph: nor was the Gotha defenseless. With one machine-gun mounted forward, one aft, and one aimed downward to the rear, British pilots soon learned to respect it.\(^1\)

Much to Hoeppner's annoyance, though, the promised aircraft failed to arrive in February 1917. The "England Squadron" did not receive its full complement of bombers or trained personnel until March. Because of the squadron's unique mission and the complete lack of training manuals or experience, the spirited crews chafed at the bit as they endured several more weeks of simulated bomb runs and practice flights over water. In the last week of May the crews finally received the long-awaited order to embark upon an independent strategic bombing campaign.

Hoeppner did not confine himself to a single weapon system; he anxiously awaited the Riesenfleugzeug (giant airplane). Even before

\(^{1}\)Grey, Janes All the World's Aircraft, 1919, op. cit., p. 299; John W. R. Taylor, ed., Combat Aircraft of the World (New York: G. P. Putnam's Sons, 1969), p. 160. One of the many myths coming out of the war had it that the Gotha was but a mere copy of the British Handley Page which fell into German hands.
the war the Zeppelin works at Stuttgart considered building such aircraft, but dropped the idea when the General Staff expressed no interest in them. Therefore, credit for the first four-engined giant aircraft flight goes to Igor Sikorsky of Imperial Russia. His "Ilia Mourumetz" first flew in 1914. Between February 1915 and October 1917 formations of ten or more "Ilias" flew 422 sorties and dropped 2,300 bombs on German positions and marshalling yards.\(^1\) Their continued success revived German interest in four-engined bombers.

The German Giants were the first true strategic bombers to be used in the West. Original specifications called for a multi-engined bomber with long-range, heavy payload capacity, and an enclosed wireless equipped cabin. However, the crews unique ability to repair faulty engines \textit{in flight} set this 9-ton Giant apart from all other aircraft.\(^2\) Moreover, the R-bomber was a giant by any standards. Its 138-foot wing span was 35 feet longer than the World War II B-17 Flying Fortress, and one foot longer than the ultramodern American B-1 strategic bomber. Air power came of age with the Giant. Manned by a crew of seven, armed with six machine-guns, and able to cruise up to ten hours at 80 mph with a one and one-half ton payload,\(^3\) the Giant antiquated the Gotha and clearly presaged intercontinental warfare.


\(^2\)loc. cit., pp. 4-6.

Target: "Fortress London"

In August 1914 the British eagerly prepared for war. Volunteers by the thousands flocked to the colors. Not even the retreat from Mons could shake confidence back home. At the same time, however, the name of Zeppelin was a household word. Yet the dreaded Zeppelin failed to appear. Britain's sky remained inviolable for five months. The first airship raid struck Norfolk on 19 January 1915 and London was spared until 31 May. Since Mr. Robinson and Mr. Poolman have satisfactorily dealt with the Zeppelin raids, it is sufficient to note here that the Zeppelin raids were sporadic, unreliable, susceptible to the weather, and with the introduction of incendiary bullets, thoroughly defeated. Until the spring of 1918 the airships certainly caused alarm, a Zeppelin psychosis, and nights of terror when sudden death came from the sky; but it was simply a transitional weapon.

The age of strategic bombing burst suddenly into existence and caught the attention of the entire world in the summer of 1917. Living today in a nuclear age, where civilization could be struck a crippling blow within thirty minutes, we take it for granted that civilian centers will be bombarded and, if possible, totally destroyed. Prior to the summer of 1917 hardly anyone entertained such an idea. Therefore, to fully understand the inter-war period it is essential to grasp what happened to London in the First World War.

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Before the Germans attacked "Fortress London" they were compelled by bad weather to launch a preliminary raid on Folkestone in the early evening of 25 May 1917. Friday evening was the most popular shopping period for the poorer people of Folkestone. Housewives, loaded down with purchases for the Whitsun weekend, bustled from shop to shop down the crowded Totine Street. Children played in the street and elderly men stood about pondering the great questions of the day. Some people looked up into the cloudless blue sky when they heard the drone of aircraft engines around 6:20 P.M.; but none were alarmed since aircraft often passed over the town. Airplanes still aroused a tingle of curiosity and amazement. Suddenly earsplitting explosions erupted one after another for nearly ten minutes. This nightmare ended with the street in shambles. Flames licked out of gutted buildings, and men, women, and children lay dead in the glass strewn street or beneath demolished shops.¹

It was the first mass bomber raid on Britain and deadlier than any previous Zeppelin attack. The twenty-two Gothis remained undetected until they struck Folkestone and the nearby Shorncliff Camp. Even though seventy-four RFC fighters rose in pursuit, all but one Gotha returned to Belgium. Altogether the four and one-half tons of bombs killed ninety-five people and injured 195.² The coroner's inquest on 29 May labeled the attack as nothing more than "scientific


²Jones, The War in the Air, vol. V., op. cit. See Appendix I, Table B.
barbarism." One man confessed that the appalling sight of Totine Street would haunt him to his dying day.¹

In spite of the deadly effectiveness of this raid and those that followed in the summer, one British student of strategic bombing insisted as late as 1969 that the Germans never intended to use bombing as a terror weapon. In fact, he² confessed his inability to understand why the Germans bombed England at all unless they simply hoped to relieve pressure from the Front. He obviously overlooked Major Freiherr von Billow's³ postwar disclosure that the bombers were not restricted to military targets:

The main purpose of the bombing attack was the intimidation of the morale of the English people, the crippling of their will to fight and the preparation of a basis for peace. The secondary purpose of the raids was to disrupt the British war industry, disorganize the communication between coastal ports and London, attack supply dumps of coastal ports and hinder transport of war material.

All previous concepts of war vanished under this rain of bombs. They erased the clear delineation between the fighting front and the civilian rear. The limited range of artillery in past wars usually compelled attacking forces to concentrate on the walls of heavily defended fortresses. Undefended towns were rarely bombarded by an invader since he preferred to conserve precious ammunition. But in an age of "total war" the civilians—who produce guns, ammunition, optics,

¹"No Warning of Air Raid," Times (London), 30 May 1917, p. 3.
uniforms, and other essential items—are as important as the fighting men. The airplane simply extended the army's bombardment range to areas it could not possibly occupy.

The Folkestone raid understandably triggered a wave of alarm throughout eastern England. People demanded adequate warning, reliable air defense measures, and retaliation raids; but the Government ignored this outburst. Its reaction was not unlike that of RFC pilots after the solo German "tip-and-run" escapade over London in November 1916. The "sheer cheek of it" tickled their fancy, and after the exclamation, "Well I'm damned!" there followed a roar of laughter. As the editor\textsuperscript{1} of the \textit{Aeroplane} pointed out, no bombs fell near the residence of "anybody who matters." Accordingly, the people in London were totally unprepared for the arrival of eighteen Gothas.

Shortly after 11 A.M. on 13 June 1917 the Gothas crossed the Essex coastline and made their way to London. As the Germans approached the unsuspecting city at 12,000 feet, they were awed by the breathtaking expanse of London which swelled out in all directions like a vast sea of buildings. They could see the sharp outlines of the Tower Bridge, St. Paul's Dome, Liverpool Station, and the toy-like ships in the Thames.\textsuperscript{2}

To anyone who looked up into the near cloudless sky the Gothas appeared as small glittering specks of silver. Thousands of people were


in the streets when the bombs fell. Some quickly sought shelter but many more dashed into the streets or onto roof tops to witness the spectacle. A trail of wrecked buildings and a shocking total of 162 dead and 432 injured Londoners marked the Gotha's path. Clusters of bombs wrought havoc near the Royal Albert Docks. Others descended on Southwark and Dalston. Seventy-two bombs exploded within a mile radius of Liverpool Station and killed seventeen people near an incoming train. One bomb in particular aroused all of London when it became known that ten youngsters were killed and fifty others injured in a demolished schoolhouse.¹

The fact that the Gothas seemed to loiter over London with impunity and that the ninety-four interceptors were unable to bring down one single bomber further disheartened the people. After the attack a public outcry for air raid warnings developed into a hot Parliamentary debate because businessmen opposed warnings on the ground that they disrupted daily transactions. Policemen likewise opposed warnings since they brought curious people into the streets rather than encourage them to seek shelter. On the other hand, hospitals needed timely warnings in order to prepare beds, assemble staffs, and alert ambulances.²

The popular and political reaction to the raid was extremely rapid

and intense. Some writers compared it to the penetration of Dutch ships into the Medway in Charles' II reign. Prime Minister Lloyd George immediately sent for Major General Hugh Trenchard, C-in-C of RFC in France. The War Cabinet informed Trenchard that the Germans needed "one or two sharp lessons" and this required the release of two fighter squadrons from France. Unable to dissuade the politician he reluctantly complied with the order. The combat weary pilots packed their kits and enjoyed two glorious weeks of dancing and drinking with the patriotically cooperative women from nearby towns until Trenchard secured their return on 6 July.

On the following day twenty-two Gothas again struck London from a clear blue sky. Swooping in from the northeast the bombers once again surprised the people of London. While riding on a streetcar, one woman saw the fan-like formation approaching London—she quickly asked the man next to her if they were Germans. Glancing up at the apparently low-flying group Mr. MacDonagh, a Times reporter, reassured her that they were simply a comforting manifestation of London's aerial defense. A few minutes later, after he got off at his regular stop, MacDonagh was startled by the sound of anti-aircraft fire and exploding bombs. He quickly joined the crowd rushing down the Blackfire subway station stairs. Flanked by hysterically screaming women, he caught himself muttering over and over, "The raiders have London at their mercy."

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2 Michael MacDonagh, In London During the Great War (London: Eyre and Spottiswood, 1935), pp. 198-200.
As people cowered on subway platforms bombs tumbled down on Stoke
Newington, Stepney, and Finsbury. In less than fifteen minutes the
bombers killed fifty-seven people and injured 193.

According to one Times correspondent\(^1\) it was a thrilling spectacle.
The bombers were vigorously shelled by anti-aircraft fire and "pluckily
attacked by British aeroplanes at various points." The thousands of
Londoners who followed the battle were deeply impressed by the German's
confidence and their "obvious contempt" for the defense. The Air Board
members who deserted their desks at the Hotel Cecil were perhaps the
most engrossed observers in London as they silently watched the battle
three miles above.\(^2\) The futile air defense efforts were also witnessed
from the War Office windows. The War Cabinet, which assembled immedi­
ately in special session, remained in shock for several hours. One
observer\(^3\) later confided to General Haig, "One would have thought that
the world was coming to an end."

The public castigated Air Defence on an unprecedented scale.
Everyone wanted to know how enemy bombers could roam so casually over
daylight London. The people demanded retaliation raids. The press re­
echoed the conviction of many Londoners that the German Government
would surely halt the raids if it experienced a similar public outcry.

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\(^1\)"Story of the Raid," Times (London), 9 July 1917, p. 9; "Germans

\(^2\)Andrew Boyle, Trenchard: Man of Vision (London: Colins, 1962),
p. 223.

\(^3\)Sir William Robertson, Soldiers and Statesmen, vol. II (New York:
Charles Scribner's Sons, 1926), p. 17.
The War Cabinet now recognized that a serious situation had arisen. It realized that repeated raids on this scale could jeopardize the capital's existence as the political, industrial, and communication center of the Empire. Lloyd George took immediate steps to calm public anger and set into motion forces which were to sharply alter the British military structure. He again recalled a crack fighter squadron from the Front, informed Trenchard that he would not receive the promised Sopwith Camels and that a nearly completed squadron would be diverted to Home Defence.\footnote{H. A. Jones, \textit{The War in the Air}, vol. IV (London: Oxford University Press, 1934), p. 154.} He also rescinded the veto on public air raid warnings, and most important of all, asked Lt. General Jan Christian Smuts to study the situation and offer proposals for a better air organization.

Considering the immense Army/Navy rivalry over air policy and aircraft procurement, Smuts was the ideal choice. Quite new to the English political scene and untainted with party politics, this former Boer rebel could clearly offer an unbiased opinion. General David Henderson, Director-General of Military Aeronautics, not only assisted Smuts in every way, but also provided him with a memo which set forth logical arguments for an independent air force. Although the vivid memory of the 7 July raid impressed Smuts with the desirability of such an organization, he nevertheless thoroughly studied the question. Accordingly, he collected contradictory evidence from many witnesses and produced two startling memoranda within sixty days.\footnote{Boyle, \textit{Trenchard}, op. cit., p. 229.}
Before Smuts submitted his first report, he confessed that it definitely required imagination to grasp the immense change in warfare. His first memo described the deplorable state of London's air defense and his conviction that fiercer raids would be launched. Therefore, the cabinet had to appoint a senior officer with air experience to reorganize air defense. In his second report he foresaw the day, not far off, when entire industrial and populous centers could be crippled by aerial bombardment. He then concluded that the only answer to a strategic air offensive was an independent air force capable of mounting a counter-attack.¹

Among Smuts' antagonists none objected more vigorously to his proposals than Trenchard. He vehemently opposed any plan which weakened the RFC and jeopardized Haig's BEF. Though he agreed with Smuts that the airplane was an offensive weapon and that attack was the best defense, he could not agree to any debilitation of front-line strength just to launch a few desultory raids into Germany. Trenchard contended that London could best be defended by capturing the Belgian coast and Gotha airfields.²

The War Cabinet wasted no time acting on Smuts' first recommendation. On 31 July it merged all ground and air units into the London Air Defence Area (LADA). It also found in the genial, cheerful, but


forceful Major General E. B. Ashmore the ideal commander for the new organization. Upon his recall from the Ypres front he laughingly, albeit shrewdly, wrote, "The fact that I was exchanging the comparative safety of the Front for the probability of being hanged in the streets of London did not worry me." Ashmore once again proved the truth of the oft-quoted Irish proverb that if you want to put life into an Englishman you have to scare him to death. Blessed with an agile mind and the ability to get along well with civilian heads of departments, he quickly reorganized and refined England's crude air defense system.

In reaction to the Zeppelin threat England's air defense measures evolved from fifty gun positions and a mobile anti-aircraft unit to a system of Warning Control Areas—subdivided into districts—and three cordons of observers situated between London and the coast. Sound locators were developed and manned by blind people to locate night raiders by triangulating engine noise through two megaphones mounted at right angles on a revolving pole; a stethoscope-like apparatus transmitted sound to the ears and a compass provided the "bearing." The British also drained St. James' Park lake to prevent its reflection from guiding raiders to Buckingham Palace. Well-known parks were camouflaged with dummy lights, emergency airstrips were prepared


in places like Regent's Park, and all important government buildings were protected with sandbags.¹

Ashmore effected the coordination of all air defense units through his LADA Command Post. From a balcony-like structure he and his staff overlooked a huge map which subdivided southeast England into an intricate grid system of local districts. With the aid of a color code—depicting various degrees of danger—and counters moving over the map, he could follow the progress of every raid and rapidly issue clear, precise orders. Telephones soon connected the Command Post to the police departments, the fire departments, the airbases in Essex, and the Speaker's chair in Parliament.² Since it still took most interceptors twelve minutes to reach 10,000 feet, the airbases were organized to "scramble" their pilots at the sound of Klaxon horns.³ Ashmore also ordered balloon aprons, massed searchlights, and barrage fire. With the exception of radar, the entire system bore a remarkable resemblance to that of 1940.

Despite Ashmore's success in driving the Germans from Britain's daylight sky by the end of August, the Germans quickly rebounded in September with assiduous night raids. However much the Times preferred to downplay a growing fear of bombing, the efficacy of protracted raids

²Ashmore, Air Defence, op. cit., pp. 51, 95.
was clearly demonstrated by the surprise attack on the night of 4/5 September. Around 11:30 P.M. a number of interceptor pilots were enjoying themselves at the crowded Savoy when the entire building shook suddenly from nearby bomb blasts. After a moment of absolute shock, panic-stricken people fled for cover just like the thousands of other Londoners who rushed into the subway stations in all stages of apparel. "So much for Home Defence," concluded one of the pilots, "The bombers would always get through."\(^1\)

The Harvest Moon period (24 September—1 October) marked the end of the German summer offensive. Taking full advantage of the crisp, clear nights, they launched five ferocious raids in nine days. The first raid, during the late evening of 24 September, lasted more than one hour. The *Times* described it as the most resolute raid yet directed at London. Star shells were used for the first time to assist search-lights, but the bombers went undetected. Most important of all, people throughout London flocked to the subway stations with pillows, blankets, food baskets, and pets.\(^2\) The following night's raid produced identical results.

The bombers returned during the nights of 29 and 30 September and 1 October. At the first "Take Cover" notice Londoners hurriedly cleared the streets and within minutes many thoroughfares were completely deserted.\(^3\) Meanwhile, air defense unleashed an unprecedented


\(^{3}\)MacDonagh, *In London During the Great War*, op. cit., pp. 217, 220.
hurricane of anti-aircraft fire. On 29 September Sub-Command West nearly exhausted its ammunition supply. The rate of fire on the fol-
lowing night was so heavy that guns turned red-hot in spite of the constant streams of water which were poured over them. ¹ But the Giants' first appearance over London negated all these efforts. Since their engines could be heard as far as twenty miles away, gun crews mistook them for nearby GothaS and fired into an empty sky. Intercep-
tor pilots were equally confused by the size of the Giants. Accus-
tomed to firing when the Gotha filled the gun sight, they now opened fire well out of range.²

Trenchard inadvertently demonstrated the tense situation in east-
ern England on 2 October as he flew in from France at the request of the War Cabinet. An alarm sounded and sporadic firing erupted as he crossed the Kent coast. Both he and his chief of staff ³ were amazed to find London half deserted. That afternoon Trenchard again con-
fronted uneasy ministers who virtually demanded retaliatory raids. When Trenchard reiterated his refusal to rob the Front of aircraft, the War Cabinet manifested a sense of urgency by agreeing to withdraw all Yorkshire-based Handley Pages from U-boat patrol. Trenchard, in turn, agreed to send them to Ochey—the proposed bomber base near Nancy.⁴

¹Rawlinson, The Defence of London, op. cit., pp. 204, 209.
²Haddow and Grosz, The German Giants, op. cit., p. 28.
⁴Jones, The War In the Air, V, op. cit., p. 90.
Unbeknown to Londoners they had survived the worst part of the air offensive. German plans for a continuous day and night offensive never materialized. Nevertheless, the Harvest Moon Campaign is the one aspect of the air war most vividly remembered by Londoners long after the war. The survivors could never quite erase the memory of the tension, the overworked nerves, the wearisome nightly warnings, the long hours in bomb shelters, and the continuous roar of barrage fire. By October over 300,000 people fled nightly into subway stations or the suburbs never knowing if they would return to intact homes.¹

Politicians or military men never forgot the tremendous loss of production during air raid warnings. For example, during the night of 24/25 September, output at the Woolwich arsenal dropped nearly 75 percent because the men ceased working or failed to show up for work; on the following day normal output was still off by twenty percent.²

In the remaining months of 1917 the Germans launched five more raids. Because of their experimentation with faulty incendiary bombs, only thirty-two Britons were killed and 133 injured. At the same time the Germans lost twenty-two of the fifty-two attacking Gothas; six in combat and sixteen crashed on landing in Belgium. However, LADA failed to bring down a single Giant even though its existence became known sometime between 25 September and 18 December.³


The Gotha raids and the Smuts Report were undeniably instrumental in passing the Air Force Act on 29 November 1917 and the creation of the Royal Air Force (RAF) on 1 April 1918. Largely due to the efforts of General Henderson the first Air Council came into existence in January 1918, and despite the protest of General Haig, Trenchard was recalled from France to serve as the RAF's first Chief of the Air Staff (CAS). Even though the Air Council worked energetically for the next three months to organize the new service, it was plagued from the beginning by internal dissension. The inauspicious appointment of the newspaper magnate, Lord Rothermere, as Air Minister assured an eventual showdown with Trenchard who was not particularly fond of politicians or newspaper men. Besides a difference of temperament, Trenchard took a much broader view of his responsibilities and assumed that he, the expert, knew more about air power than the politician under whom he served.1

The storm finally erupted on 18 March when Trenchard resigned and only subsided on 25 April with Rothermere's resignation. Major General Frederick Sykes replaced Trenchard on 13 April, and this led immediately to Henderson's resignation on the grounds that he could not work with the new CAS. Unable to resume his position in France without demoting Major General John Salmond, Trenchard considered returning to the Army. At this crucial moment the new Air Minister, Sir William Weir, persuaded Trenchard to accept command of the new Independent Force which was slated to bomb German towns later in 1918.

The invidious atmosphere within the Air Ministry was further compounded by six German raids in the first five months of 1918. Though few in number and conducted mostly by Giants, the raids amply illustrated the efficacy of even sporadic bombing raids. A still night and a clear sky automatically sent businessmen home early and thousands of people into subway stations whether a warning was issued or not. Moreover, an attack by a single Giant set into motion the entire LADA system and resulted in the expenditure of a vast amount of ammunition.

The last German bomber raid on England took place on the night of 19/20 May. In this all-out effort eighteen Gotas and three Giants dropped more than eleven tons of high explosives on London, Kent, and Essex. The forty-nine people killed were all Londoners as were most of the 177 injured. If many people had not been out of town for the Whitsun holiday, the casualties would certainly have been higher.

By the end of the war, 1,414 Britons were killed and 3,416 injured by Zeppelin, Gotha, and Giant raids. In their attempts to mitigate the bomber threat, the British continually reinforced LADA until it swelled, by June 1918, to 376 interceptors, 469 anti-aircraft guns, 622 searchlights, 258 altitude detectors, and 10 balloon aprons. In terms of manpower the aircraft tied up 4,614 officers and men; the Balloon Wing was manned by 3,393 personnel; the remainder tied up a further 6,136 personnel. This kept almost 15,000 men from the Front.

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It should not be overlooked that a single raid often consumed 20,000 anti-aircraft shells.\textsuperscript{1} Although the lasting psychological impact of trench warfare cannot be overlooked, these figures—though minute in comparison—loomed ominously large in the future of a world where industrialization can quickly refine the simplest machine into a vehicle of immense destruction.

The question thus arises, what was the impact of these first strategic bombing raids? General Ashmore casually dismissed the 4,830 casualties as insignificant because more people were accidentally killed or injured annually in London prior to and after the Great War. He simply failed to understand that the number of people killed and injured was not nearly as important as how they became casualties.

Never before were civilians behind the Front subject to the same combat risks as the fighting men. Men had always gone to war with the assurance that their families safety depended upon their courage and success at the Front. Now a fighting man had another burden to carry—the persistent concern for the safety of his loved ones at home. With this in mind it may be appropriate to quote a poem\textsuperscript{2} which was found in the purse of a young soldier’s fiancée who was killed on her own doorstep in the last raid on London:

My girl is dead; that’s all I know  
I came out here to take my chance  
In the uncommon lively show  
They’re running out in Northern France.


\textsuperscript{2}Morrison, \textit{War on Great Cities}, op. cit., p. 169.
I thought I left her safe behind.
What call had I to feel afraid,
I didn't even call to mind
The chances of a Zeppelin raid.

"Be careful, won't you, Bill?" she said:
And if I tried I couldn't tell
How dear she looked—and now she's dead,
And I'm out here alive and well.
I think they might have took more care
Of her, my girl, and me away,
But mine's the bitter grief to bear,
And mine's, by God, the debt to pay!

Continental Strategic Air Operations

The British assert that they inaugurated "strategic bombing" on 22 September and 8 October 1914 when Royal Navy Aircraft raided the Zeppelin sheds in Düsseldorf. However, if we define "strategic bombing" as the bombing of selected targets—vital to the war effort of a nation—whose destruction will deprive a nation with the means and will to continue the war, then these two adventures hardly deserve such a sobriquet.

The British only inaugurated independent strategic bombing operations in October 1917 after they created the 41st Wing at Ochey. Aroused by the Gotha raids the War Cabinet allocated No. 55 Squadron (D.H.4) for day bombing; No. 100 Squadron (F.E.2b) and No. 16 Naval Squadron (U-boat hunting Handley Pages) were allocated for night operations. Concentrating most of their efforts on Mannheim, Coblenz, Thionville, (Diedonhoffen), and Saarbrücken, this small force launched

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1 For example: Jones, The Origins of Strategic Bombing, op. cit., pp. 15, 23.
no fewer than fifty-seven raids into Germany between 17 October 1917 and 6 June 1918.¹

Trenchard arrived at Ochey to take command of the Independent Force on 20 May 1918; redesignated VIII Brigade since 1 February 1918 and reinforced by No. 99 Squadron. Trenchard assumed command with the assurance that additional squadrons would be forthcoming, and the realization of his extremely delicate position in France. His unit remained outside the jurisdiction of Generalissimo Foch, General Haig, and RFC Headquarters. Trenchard answered directly to the Air Ministry which already contemplated basing the Brigade in England after the Handley Page V/1500s arrived.

Germany, unlike England, did not possess a population, industrial, and communication center similar to London. Therefore, Trenchard decided to spread his attacks over as wide an area as possible in order to demoralize the greatest number of German civilians. With morale already dangerously low due to the tight blockade, this scheme stood an excellent chance of succeeding. Even so, the great chemical manufacturing area of Mannheim—Ludwigshaven received exceptional attention.

The British bombing offensive against Germany finally slipped into high gear in the spring of 1918. The forty-eight tons of bombs dropped on Germany in May 1918 exceeded the total tonnage of the previous

¹"550 Tons of Bombs: Raids on Germany Described," Times (London), 21 January 1919, pp. 7-8; Jones, The Origins of Strategic Bombing, op. cit., p. 149.
six months. In June VIII Brigade delivered at least sixty-six tons and in July it unleashed eighty-one tons on towns like Coblenz, Karlsruhe, Stuttgart, Offenburg, and Saarbrücken. Reinforced in August by four additional squadrons (three of them Handley Page 0/100s) VIII Brigade released an unprecedented one hundred tons of bombs on Rhineland towns. Furthermore, VIII Brigade's first visit to Frankfurt on 12 August resulted in several days of panic and severe criticism of the government.

September marked the climax of VIII Brigade operations over Germany; its ten squadrons disgorged 178 tons of bombs on a score of German towns. The October operations and the employment of the new Handley Page 0/400s were severely curtailed by bad weather. At the time of the Armistice, the widely dispersed German towns were just beginning to feel the full effect of an expanding strategic bombing offensive. Only a few of the 239 raids over Germany were conducted by more than a dozen aircraft and approximately 220 of the 543 tons of high explosives were aimed at German airfields. Nevertheless, 720 Germans were killed and 1,754 were injured.

1"74 Bombing Raids Into Germany," Times (London), 12 July 1918, p. 6.
2"Raids on Germany in September," Times (London), 12 October 1918, p. 5; "550 Tons of Bombs," op. cit., pp. 7-8.
5"Air Raids on Germany," Times (London), 17 March 1919, p. 10.
Postwar assessments of operations over Germany reflected fiercely divergent conclusions on the future application of strategic airpower. Many Army and Navy officers discounted the efficacy of long-range bombing operations because the final results seemed insignificant to trench warfare veterans; nor did many of them take time to evaluate the surprisingly rapid process of aircraft refinement in the last year of the war. British airmen, on the other hand, underscored the predominant accomplishments of these operations. First, every bomb that burst on German soil released the pent-up frustration of British civilians. Second, the Germans withdrew a significant proportion of their frontline aircraft to protect the Reich. Finally, Trenchard's VIII Brigade lost only 3.9 percent of all aircraft launched against Germany.

Unlike operations over England and the Rhineland the highly active and significant air war on the Italian Front remains all but forgotten. Yet some of the largest air operations of the war took place there. For example, German and Austro-Hungarian aircraft raided Venice thirty-four times between 24 May 1915 and 23 October 1918. After the first few raids most of the city's population was evacuated, but the remaining Venetians vividly recalled long after the war the large incendiary raid of 9/10 August 1916 and the vicious eight-hour long bombardment on 27/28 February 1918.\(^1\) The 27/28 February raid was clearly the most violent attack on a single Italian town during the war. Three hundred bombs destroyed twenty-six houses that night and damaged sixty others.

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but inflicted few casualties among the people ensconced in bomb shelters. These attacks, like those on England and the Rhineland, left lingering memories. Indeed, it appeared to one American correspondent, who survived his first air raid, that he had passed through a hashish dream which was crowned by a "hell's overture" of frantically probing searchlights and thunderous anti-aircraft fire.

Treviso, Padua, and Mestre—all situated on the Venetian Plain—were similarly singled out for exceptional punishment. Indeed, the seventy-five tons of bombs dropped on Treviso between April 1916 and October 1918 nearly matched the total tonnage released on London. Although the raids were labeled as barbaric attacks on the monuments and pillars of civilization "which were old and ripe when the Huns were still cannibals," astute observers realized that they were intended to weaken civilian morale. In part they succeeded. Just as Londoners automatically headed for subway stations, Italians automatically deserted their towns for the open country on moonlight nights.

Certainly the Italians didn't hesitate in launching reprisal raids. Throughout the war the Austrian naval base at Pola endured repeated raids by the three-engined Caproni bombers. The nights of 2 and 3 August were quite typical of the raids on Pola; escorted by fighters

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several flights of thirty to fifty Capronis dropped fifteen tons on the heavily defended base.\(^1\) The Capronis also ranged farther afield. In 1918 they struck the unfortified towns of Innsbruck, Cles, Messolombardo, and Bozen. Whereas many of the raids were mostly tactical in nature, these were specifically directed at Austrian civilians. Considering the extent of air operations on this front, it should surprise no one that Italy produced one of the foremost postwar air theoreticians.

The establishment of the strategic bomber base at Ochey undeniably contributed more to the development of postwar air doctrine than any other factor aside from the German raids on London. By August 1918 British, American, French, and Italian Airmen operated out of the base and spent much of their free time discussing the theories of long-range air bombardment.\(^2\) The Americans were most attentive in these discussions and most frustrated by the sudden armistice on 11 November 1918. Major William (Billy) Mitchell arrived in Paris on 10 April 1917, only four days after the American declaration of war on Imperial Germany, with orders to make preparations for the arrival of a virtually nonexistent air service. General Arnold\(^3\) later recalled that the American "air force" consisted of fifty-two officers and 1,100 men plus fifty-five aircraft; fifty-one of them obsolete, four obsolescent.

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2\ Baring, *Flying Corps Headquarters*, op. cit., p. 287.


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Nevertheless, imbued with overwhelming optimism and blind faith in Yankee ingenuity, the Aircraft Production Board appropriated $300 million for a three-year program which would train 2,500 men the first year and 5,000 the next. It also expected to produce 3,700 aircraft in 1918, 6,000 in 1919 and nearly 10,000 in 1920. American airmen understandably became intoxicated with such a promising future.

It quickly became apparent that men were more readily available than machines. Whereas aircraft were eventually supplied by the Allies, top echelon personality clashes hampered American efforts for several months. The most significant dispute was triggered by the arrival of Brigadier General Benjamin Foulois and his large, but inexperienced, "civilian" staff. Actually there was little hope of avoiding an angry clash between the dynamic "red-tape cutting" Mitchell and the studious, regulation oriented Foulois. The issue was only resolved in May 1918 with the appointment of Major General Mason M. Patrick as C-in-C of the U. S. Air Service in France. This allowed Mitchell to absorb himself in the gigantic St. Mihiel air battle and the proposed bombing raids deep into Germany.

The unexpected armistice frustrated many airmen's aspirations. Air power had finally reached the point where it could prove its worth. The Germans, for example, were just beginning to develop a Junkers all-metal, four-engined monoplane strategic bomber capable of

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carrying a 3,300 pound payload. Furthermore, in 1919 the Inter-Allied Control Commission discovered the nearly completed Poll Giant Triplane. Its report concluded that New York City easily fell within this bomber's 80-hour cruising range. Still more ominous was Anthony Fokker's revelation that the armistice had saved Britain from electronically controlled pilotless flying bombs. 

Nor were the Allies any less ambitious. A perturbed Billy Mitchell could lament with some justification, "I was sure that if the war lasted, air power would decide it." Trenchard's Independent Force, which the Americans were to heavily reinforce, was scheduled to bomb the Ruhr and especially Berlin with high explosive, incendiary, and gas bombs. The new Handley Page V/1500 giant bombers finally brought Berlin within range. Although smaller than the German version, the four-engined V/1500 could carry a six-man crew and a 3,000 pound payload up to 1,200 miles. It first flew in May 1918 and the first six reached the 27th Group at the end of October. Yet despite round-the-clock efforts, the Group could not be made operational before the armistice.

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Consequently, the airmen entered the postwar period convinced that they were robbed of their one chance to prove the efficacy of airpower.
CHAPTER II

THE PRECEPTORS

If there be a domineering, tyrant thought, it is
the conception that the problem of flight may be
solved by man. When once this idea has invaded
the brain it possesses it exclusively. It is
then a haunting thought, a walking nightmare, im­
possible to cast off. . . . Let us admit that
the problem has been solved, and let us speculate
upon the effects on society . . . all will have
to be done over again; the fortifications, the
maneuvers, the defenses of the frontiers, strategy,
all is brought to naught. . . . No more frontiers!
No more insular seclusion! No more fortresses!

Louis P. Mouillard,
L'Empire de l'Air (1881)

At the end of the First World War the leading airmen of all Western
nations felt cheated since the armistice denied them the opportunity to
demonstrate the immense possibilities of air power. Air power, like
armored warfare, was too revolutionary for many army officers to grasp.
Conventional methods had won the war and inveterate staff officers
still preferred the horse to horsepower. Colonel J. F. C. Fuller1 wrote
a few years after the war:

Their ignorance is colossal and is only excelled by
their lack of vision. On Armistice Day, 1918, a typical
adherent, without a smile on his face, said to me: "Thank
God! we can now get back to real soldiering."

Although the traditionalists labeled air power proponents as "theorists,"
they could not prevent air power from dominating postwar thinking.

1Colonel J. F. C. Fuller, The Reformation of War (London: Hutchin­
The airplane demonstrated once again that an idea is occasionally ahead of its time because adequate equipment and technological skills are unavailable. Consequently, the air power question ignited in military circles the most vehement controversy since the days when gunpowder blasted feudalism into oblivion. As young audacious doctrinaires clashed with their obdurate superiors, passion often thrust both to extremes. More than anything else the airmen needed military philosophers who could logically persuade the traditionalists to re-evaluate Clausewitz and Mahan with a twentieth century perspective.

In the two decades following the First World War, countless men and women labored diligently to advance the cause of aviation; but three men stand far above the rest and a fourth just barely joined this select circle. They were General Giulio Douhet of Italy, Brigadier General William Mitchell of the United States, Air Marshal Hugh Trenchard of Great Britain, and General Walther Wever of Germany. They were not necessarily more farsighted or more familiar with aeronautical developments than their contemporaries. Nevertheless, they hold a special position in the annals of aviation because they all expounded a tenacious conviction in the future of air power while they occupied influential military positions.

Giulio Douhet

The General Giulio Douhet gained fame in the thirties when his book, The Command of the Air, began to receive extended attention outside of Italy. Born of well-to-do parents in 1869, Douhet decided

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early on a military career.¹ Keenly interested in science and endowed with a lively imagination, Douhet entered the artillery academy and assured himself of a distinguished future by graduating first in his class. Somewhat later his superiors singled Douhet out for his brilliant performance at the Turin Polytechnic School of Warfare. While he attended the school Douhet poured many of his ideas on motorized transportation into a book which remained a standard text long after his departure. This early advocacy for motorization earned Major Douhet the command of Italy's first motorcycle battalion in 1905.

Douhet first awoke to the importance of air power in early 1909 when Wilbur Wright arrived in Rome to establish an Italian pilot training program. That he quickly grasped the implications of this new phenomenon is clearly demonstrated in his 1909 publications. Convinced that air forces were now inevitable, he² warned fellow countrymen:

> To us who have only armies and navies, it must seem strange that the sky, too, is about to become another battlefield no less important than the battlefields on land and sea. But from now on we had better get accustomed to this idea and prepare ourselves. . . .

Few other Italians got as excited over airplanes as Douhet. Then again, his publications and preoccupation with aircraft led to his

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appointment in 1912 as commander of the air battalion in Turin. There Douhet encountered his first difficulties with traditional officers and befriended the Italian aircraft designer Gianni Caproni.

Reassigned in May 1915 as chief of staff of a unit operating in the mountainous Carnatic zone, he became alarmed over the misuse of manpower and air power. Desiring to rectify what he considered a reckless course toward disaster, Douhet proposed that vital Austrian towns ought to be bombed by a force of 500 Caproni bombers. Instead he was court-martialed and sentenced to one year imprisonment for severely criticizing the conduct of operations in a 1916 memorandum. Exonerated one year later on account of his accurate prediction of the Caporetto disaster, Douhet assumed command of the Central Aeronautical Bureau in February 1918. He retired from this post in 1921 in order to give more thought to his ideas on total war. These he finally spelled out in the authorized 1921 publication of his famous book.

Douhet, like many others, searched for a means of avoiding trench deadlock in a future war. Acutely nationalistic and oriented to Italian needs, this thoughtful and deliberately logical preceptor advocated that air power was the sought-for panacea. He contended that the deadlock in France would have crumbled if either foe had lost its base of supply. Douhet realized that all major nations possessed sufficiently developed industrial bases which could keep producing armaments as long as there were men left to use them.

Douhet first stressed the need for an independent air force. He encouraged civil aviation only so long as it could benefit the air force.
Moreover, he opposed the formation of small ineffective air arms for the army and the navy. Since aircraft cost less than battleships, he urged that all resources be directed towards the creation of a large bomber force of "battle planes." In a future war, Douhet contended, this force must win command of the air just as navies once won command of the sea. But "command of the air," Douhet explained, does "not mean supremacy in the air nor a preponderance of aerial means, but that state of affairs in which we find ourselves able to fly in the face of an enemy who is unable to do likewise." Hence, the belligerent who achieves this goal will be able to cut the enemy's army and navy off from their bases while simultaneously providing immunity to his own forces. Conversely, he argued, defeat in the air means defeat in war.

In Douhet's view air power was irresistible. Therefore, he completely dismissed air defense either in the air or from the ground. The last war proved to his satisfaction that every resolute bomber attack succeeded despite elaborate defensive measures. He further contended that in an era of total war, or "War of Nations," that the bomber should not only be directed against "objectives of least physical resistance, but against those of least morale resistance as well." Douhet postulated:

1loc. cit., p. 95. Douhet's emphasis.
2loc. cit., pp. 23, 125, 256. 3loc. cit., p. 22.
The prevailing forms of social organization have given war a character of national totality—that is, the entire population and all the resources of a nation are sucked into the maw of war. . . . No longer can areas exist in which life can be lived in safety and tranquility, nor can the battlefield any longer be limited only by the boundaries of the nations at war, and all their citizens will become combatants, since all of them will be exposed to the aerial offensives of the enemy.

Douhet\(^1\) could not reconcile himself to the fact that people wept when they heard that a few women and children were killed in an air raid whereas they remained essentially unmoved by the news that thousands of soldiers perished in battle. All human lives were equally important, and in total war equally subject to risks.

Seeing that the German Army capitulated only after the collapse of the home front, Douhet concluded that civilian morale was every nation's Achilles' Heel, and that it could be shattered by swift, terrifying blows at the very outset of war. But he stressed that the destruction and terrorization of heavily populated communication and industrial centers could only be accomplished by a combination of high explosive, incendiary, and poison gas bombs. These were to be released by bombers operating en masse for the sole purpose of destroying a target in one violent attack.

Douhet\(^2\) clearly underscored the importance of gas bombs. Buildings could be blasted apart and set afire, but the gas would prevent fire brigades from extinguishing blazing buildings while it simultaneously permeated civilian bomb shelters. "Imagine what would happen," Douhet\(^3\)

\(^1\)loc. cit., p. 195. \(^2\)loc. cit., pp. 20, 182, 187. \(^3\)loc cit., p. 58.
wrote, "among the civilian population during a single attack. First would come explosions, then fires, then deadly gases . . . then fires would spread while the poison gas paralyzed all life." The death of the first city, he deduced, would panic the surviving cities which, in turn, could induce the enemy government to sue for peace. He also recognized that aircraft made bacteriological warfare possible since they could quickly ravage widely dispersed areas.

He did not believe that these methods of warfare could be outlawed. After all, there is no such thing as a humane war since the purpose of war is to inflict the maximum carnage upon the enemy. History clearly demonstrates to any observer that whenever men are locked in a life-and-death struggle, they will consider any means of winning as legal and justifiable. Considering that air power offered the means of unimaginable destruction, Douhet reasoned that "command of the air" would be the decisive factor in a future war—but not the only factor.

With the full benefit of hindsight, we can easily criticize portions of Douhet's theory as they applied to World War II. For example, he saw no value in pursuit planes, he considered the bomber invulnerable, he lacked an aeronautical engineering background, and he did not take into account possible improvements in air defense. Neither did he foresee the development of radar, the eight-gun fighter plane, nor the combatants' refusal to use gas in World War II. Still, Douhet had a tremendous impact on aviation in the thirties—especially in France.

1loc. cit., p. 162. 2loc. cit., pp. 193, 204, 257.
In the decade following the First World War all western nations were impressed by the power of the French Air Force. Numerically it remained the strongest in the world. Postwar reorganization reduced it only from 320 to 126 squadrons. But sixty-four of these squadrons were relegated to short-range observation duty. Thus, the French Air Force appeared strong on paper, whereas in reality indifferent staff officers and politicians allowed it to drift aimlessly into stagnation.

A few intrepid officers and politicians persisted in their efforts to establish an independent air force, and in 1920 they were partially gratified by the expansion program which would increase the air force to 220 squadrons by 1925. Otherwise they were thwarted at every turn by the increasingly conservative High Command which only visualized limited air reconnaissance and tactical operations at the Front. Theoretically the only exception to this rule would occur at the outbreak of war. During the brief period of mobilization, the French High Command approved strategic air operations against the enemy's staging areas, depots, and communications. The government, likewise, contributed to the decline of French air power. As Krauskopf pointed out:

The year 1920, therefore, marked the beginning of a long period of diffused responsibility, in which the War and Navy Ministries, although retaining tactical control of their own aviation, establishing programs, choosing material, and allocating funds, had no authority over

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2 loc. cit., p. 19. 3 loc. cit., p. 5.
technical research and development, aircraft procurement, or aircraft testing, which were lumped with civil aviation and the meteorological services under a civilian ministry.

Nor did the situation improve much in the twenties. In 1923 the proposed expansion program was slashed to 208 squadrons which would not become operational until 1929. Moreover, the High Command only activated observation squadrons during this period. Ideally the creation of an Air Ministry in 1928 should have marked a step in the right direction, but the Army and Navy negated this by retaining control of all aircraft except a few outdated bombers. With their ambitions impeded for over a decade, French airmen understandably embraced Douhet's doctrine.

Douhet's ideas were first presented in France in 1930, and two years later Jean Romeyer released the first translation of his book. It immediately unleashed a controversy as airmen attacked or defended his conclusions. For example, the editor\(^1\) of \textit{L'Aeronaute} contended that Douhet's ideas were impossible to implement within existing conditions. Insofar as existing conditions in France were concerned, he may well have been right. Colonel P. Vauthier, on the other hand, wrote that, "The study of Douhet is an inexhaustible source for reflection. . . . Let us take care not to treat lightly, as a Utopian dreamer, a man who may later be regarded as a Prophet."\(^2\) In fact, Vauthier's book, \textit{La Doctrine de guerre du General Douhet} (Paris, 1935)

\(^1\)loc. cit., pp. 63, 72.

is still the best study published on Douhet. In any event, Vauthier and his comrades fully enlightened the French to the bomber menace.

Billy Mitchell

In the United States Brigadier General William Mitchell became the second of the famous preceptors. Although Mitchell attempted to emulate Trenchard, he was nonetheless—as one American pointed out—an originator, impatient of obstacles however genuine, and more keenly aware of aeronautical strides than Douhet. Trenchard apparently recognized these same traits. While discussing the flamboyant American with his chief of staff, Trenchard remarked, "He's a man after my own heart. If only he can break his habit of trying to convert opponents by killing them, he'll go far."[2]

Billy Mitchell displayed his impetuous and rebellious nature early in life. He was born on 29 December 1879 to upper-class parents who were residing in Nice, France, at the time. Mitchell returned with them three years later to Wisconsin where his father became engrossed in state and national politics. In his early life Mitchell received a broad liberal education but still found ample time to satiate his passion for sports. Then in 1898 he defied his father by dropping out of college to enlist for the Spanish-American War. Nevertheless, he expediently took advantage of his father's political influence to

1loc. cit., p. 500.

2Boyle, Trenchard, op. cit., p. 299.
secure a commission for himself and to remain in Cuba after the war.¹

In the following years he served in the Philippine insurrection, he helped chase Pancho Villa into Mexico, and—at thirty-two—he became the youngest officer on the General Staff.

Upon his arrival in France in April 1917, Mitchell plunged into an extensive study of aeronautical theory and practice. He first toured French air bases and then visited the Front for ten days during the Nivelle Offensive. This appalling blood bath not only broke the French Army, but also shattered any illusions Mitchell may still have had on warfare. Mitchell's² diary notations clearly reveal that his experience at the Front converted him to air power:

A very significant thing to me was that we could cross the lines of these contending armies in a few minutes in our airplane, whereas the armies have been locked in the struggle, immovable, powerless to advance for three years. . . .

Although Mitchell liked the French, he was much more impressed by the methodical and practical British; and so he set off for RFC Headquarters in May 1917 determined to capitalize on their experience. He arrived unannounced and demanded to see Trenchard. Trying to rid himself of the American, Trenchard growled that he had no time to chaperon him or to answer questions. But Mitchell penetrated Trenchard's reserve with a boyish grin and the profession that he was quite sure that the well organized RFC could do without Trenchard for awhile.³

²Quoted in Levine, Mitchell, op. cit., p. 92.
³Boyle, Trenchard, op. cit., 298-299.
In the following three days Mitchell developed a deep respect for Trenchard and a lifelong friendship. At the same time, Trenchard introduced Mitchell to the concept of strategic air operations.

Trenchard, in all probability, had the greatest influence on developing Mitchell's incipient views on air power. The gruff British general impressed him with the importance of an all-out air offensive and the possibilities of expanding air operations over the length and breadth of Germany. Not long after his departure from RFC Headquarters, Mitchell noted, "The bombardment people are sure that if they are given enough planes and explosives, there would be nothing left of Germany in a short while." The idea of bombing the industrial Ruhr and eventually Berlin itself excited his imagination. Even so, he adroitly stayed within bounds at American Expeditionary Force Headquarters which frowned on the idea of long-range bombing. But all of Mitchell's ideas and expectations came to an abrupt halt in November 1918.

Before Mitchell returned to the United States in February 1919, he stopped off in London to see Trenchard and to study all facets of the independent RAF. This convinced him that the United States needed its own independent air force. Once back in America, Mitchell was disappointed not to receive command of the U. S. Army Air Service, which went, instead, to Major General Charles C. Menoher—a non-flying officer. Nevertheless, Mitchell retained a remarkable degree of influence within the air service.

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1 Levine, Mitchell, op. cit., p. 91; Arnold, Global Mission, op. cit., p. 46.
In order to prevent the rapid demobilization from emasculating American air power, Mitchell decided to capture the public imagination with his ideas and with spectacular aerial feats. He wrote and spoke on air power at every opportunity. As one writer noted, he could be shocking, satirical, or irreverent; and he was definitely the "gadfly" of the General Staff. In short, Mitchell was polemical, impetuous, and flamboyant—but not yet insubordinate.

Mitchell flung himself into the national arena in order to alert politicians and citizens that the world stood on the threshold of an aeronautical era in which air power would be the most powerful weapon in the world. Since air power had come to stay, he insisted that Americans must discard isolation and accept the new conditions that existed in the world. His most recent biographer explained:

Mitchell [was] one of the few Americans who understood that the "Great War" had not solved the basic problems affecting world peace. Also, he was the first American to warn his countrymen so resoundingly of the impact aviation would have on future conflicts or to show them how widespread was the idea of strategic bombardment among the airmen of the western world.

Above all, Billy Mitchell stressed the importance of air power and its equality with the older services. According to Mitchell, the

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next war would begin in the air; and the results of this contest would probably determine the outcome of the war since ground and naval forces could not operate under an enemy controlled sky. "Consequently," wrote Mitchell,¹ "the only defense against an air force is another air force." He contended that this required the establishment of a Department of Aeronautics which must be equal to the War and Navy Departments within a Department of Defense. Since he made no distinction between land and sea based aircraft, except their landing fields, he also advocated placing all military aviation under this new department.²

Unlike his Italian counterpart, Mitchell³ called for a balanced air force of 600 aircraft—sixty percent pursuit, twenty percent attack, and twenty percent bombardment. Whereas Mitchell relegated Attack Aviation to close support and interdiction operation, he underscored the need for Pursuit (fighter) Aviation. He reasoned that nothing could resist properly handled Pursuit Aviation. Not even in his most zealous moments did he ever recommend unescorted bombing attacks. "A large lumbering airplane," wrote Mitchell⁴ in 1921, "or a collection of airplanes, no matter how well armed, cannot resist the surrounding attack of Pursuit Aviation;" and he⁵ reiterated in 1924

⁴Mitchell, loc. cit., p. 46.
⁵Flugel, United States Air Power Doctrine, op. cit., p. 148.
that against fighters, "the bombardment planes haven't any chance."
But he clearly asserted that with command of the air and with full
fighter escort, the bombers would always reach their targets.

Keenly aware of American sentiments, Mitchell elucidated the
bomber's offensive role in carefully phrased terms of "defense."
Mitchell predicted that immediately after a declaration of war that
"the enemy" would strike at industrial, communication, and population
centers with high explosives and gas. He anticipated that such at­
tacks would compel the evacuation of major cities and cause the ces­
sation of industrial output. He even inferred that bombers may not
have to hazard a city's defense. Instead, they could "stand off for
many miles and hit a target" with "aerial torpedoes." As the years
sped by, Mitchell became increasingly outspoken on the bomber menace
until he finally postulated in 1931:

When nations look with apprehension at each other,
it is not the hostile navy or the hostile army they
think of first, but the hostile airplane bomber. The
airplane bomber has enough offensive strength to destroy
the largest city . . . . Bombers need not actually fly
over a city to hit it, but can launch winged projectiles
loaded with gas or explosives miles away, at five or six
miles altitude. Nothing on earth . . . can stop them.

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1Mitchell, Winged Defense, op. cit., pp. xvii, 5, 126. Facing p. 208 is a picture of an airplane spreading a smoke blanket over New York; the caption reads, "Whole areas can be inundated with gas in this man­ner."

2loc. cit., pp. 204-205.

Even today people are amazed by Mitchell's numerous accurate predictions. It should be pointed out, though, that Mitchell kept track of the latest technical advances, and during his tour of duty in Washington, D. C., he was known to dine often with foreign air attaches. Besides this, he secured copies of all reports sent to military intelligence in Washington by attaches abroad, he received personal letters from leading air-oriented people in Europe, and he counted Trenchard, Paul de Lavigne, Colonel A. Guidoni, Caproni, and L. E. O. Charlton among his friends.\(^1\) Most interesting of all, according to one historian,\(^2\) Mitchell met Douhet early in 1922 and had a number of lengthy discussions with him.

Hugh Trenchard

None of the preceptors were able to shape their nation's air policy like Great Britain's Hugh Trenchard. Few British airmen read Douhet's book prior to World War II, but his ideas were too universal not to take root elsewhere. Indeed, Trenchard's ideas were much closer to Douhet's than to Mitchell's. In the ten years that he served as CAS, Trenchard's name clearly became synonymous with the concept of strategic bombing.

\(^1\)Hurley, *Billy Mitchell*, p. 54.

\(^2\)loc. cit., p. 75. Hurley pointed out that it took Mitchell ten years to admit that he met Douhet on his trip to Europe. It is also possible that he became familiar with Douhet's book at this time. Furthermore, after again visiting Trenchard, it must have dawned on him how widespread the bomber doctrine was among airmen. Flugel, on the other hand, infers that Mitchell kept this meeting secret because he "lifted" the Italians' ideas for his own use; see Flugel, *United States Air Power Doctrine*, op. cit., 115-16.
Air Marshal Sir Hugh M. Trenchard was born on a stormy February day in 1873. No one in the orderly Victorian home dreamed that this boy would someday embark on an equally stormy career. His father, a former infantry captain, decided early on a military career for him. Despite private tutoring, Trenchard proved to be as poor a student as he was an outstanding sportsman and athlete.\(^1\) Not surprisingly, he failed the army entrance examinations. Undaunted, his father placed him in a "crammer school" where Trenchard displayed a deeply-rooted stubbornness and an inclination to bend rules.

Trenchard finally secured a commission in the Royal Scots Fusiliers. He first served a tour of duty in India but somehow always missed the rotation for the limited campaigns on the northern frontier. Because his ambitions for combat were continually frustrated in India, Trenchard volunteered for the Boer War; ironically he was severely wounded in his first engagement. After two years convalescence and a brief tour of garrison duty, Trenchard served five adventurous years in the jungle of Nigeria. He returned to England in 1910 but soon became disenchanted with the insipid garrison life. In a desperate search for excitement, Trenchard volunteered for the RFC in August 1912. After a number of successful "crash landings" he received his flying certificate and accepted a position at the Central Flying School. After that his career accelerated at a remarkable pace. In November 1914 he took command of the First Wing and in August 1915 he replaced Henderson as commander of the RFC in France.

In light of Trenchard's energetic opposition to the creation of a strategic air force, many observers were surprised that he accepted command of Britain's first independent bombing force in 1918. Actually Trenchard never really changed his mind. As early as June 1916 he asked for "a certain number of machines" for the Front and for raids into Germany. But he always considered the latter a luxury as long as the Front lacked sufficient aircraft.\(^1\) Since production fell short of expectation and training plunged to deplorable depths, Trenchard refused to take Henderson's proposals for an independent force seriously. Nevertheless, he\(^2\) admitted years later that, "Henderson had twice the insight and understanding that I had . . . . and it is doubtful whether the R.A.F. or Britain realizes its debt to him, which is at least as great as its debt to Smuts."

Trenchard never authored a book and wrote very little, but his ideas were firmly laid down for his successors. Douglas\(^3\) recalled that, "Trenchard was inarticulate, and, at times, bumbling in his ways; but he was a fearsome man in an argument." Trenchard excelled in his well-rehearsed arguments with representatives of the other services before various governmental committees. In these sessions, as well as in discussions with subordinates, Trenchard expounded his unfolding air doctrine. "We had to feel our way towards a doctrine


\(^2\)Boyle, loc. cit., p. 233.

of air warfare," recalled Air Marshal Sir John Slessor, \(^1\) "and under Trenchard's inspiration there evolved the theory of air warfare, based on the supremacy of the offensive."

The air offensive was all important to Trenchard. Ever since the Battles of Verdun and the Somme he asserted that the airplane was the most offensive weapon that had ever been invented, and that the only feasible defense was a vigorous offense. Time and time again Trenchard reiterated that the RAF could not stand on the defensive. Success in an air war depended on maintaining the offensive whatever the odds or the cost. It was simply a choice of destroying or being destroyed on the ground. \(^2\) Consequently, he considered the bomber offensive the heart and soul of British air defense.

Trenchard maintained that intense air fighting would commence at the outbreak of the next war. This aerial dual would not necessarily take the form of a series of air battles but would more than likely develop into a series of reciprocal bomber offensives through which the weaker belligerent would be thrown on the defensive. \(^3\) Once the RAF achieved this "command of the air," its bombers would strike at any target that contributed to the enemy's means and will to continue the war. Hence, the enemy's industrial, communication, and transportation centers would be paralyzed at the outset of war. \(^4\)


\(^2\) Boyle, *Trenchard*, op. cit., p. 156.  \(^3\) loc. cit., p. 576.

Moreover, a study of the German raids on London led Trenchard to deduce that the morale effect of a bomber attack outweighed by far any material destruction that could be achieved.\(^1\) In short, Trenchard believed that an extension of the horrors of the battlefield to civilian communities would result in the morale collapse of industrial and public service workers, and that the ensuing chaos would probably compel the enemy government to sue for peace.

Trenchard apparently did not see anything immoral in the extension of "frightfulness" to civilians. First of all, he recognized no difference between aerial and artillery bombardment of a town. Second, it seemed more logical to destroy a tank or airplane factory than to destroy their end products piecemeal at the Front. Finally, Trenchard was convinced that in a future war the enemy would attack British towns; therefore, it was best to strike first.\(^2\) Obviously, Trenchard completely agreed with Douhet and Mitchell that it was unnecessary for an air force to defeat the enemy's military forces in order to defeat the enemy nation.

However much Trenchard's detractors may criticize the "Trenchard Legacy," he was undeniably admired by many who came to know him personally. Billy Mitchell wrote that he had never known a man he more greatly respected or in whose judgement he had more confidence.\(^3\)

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\(^1\)Webster and Frankland, *The Strategic Air Offensive*, I, op. cit., p. 63.


Slessor\textsuperscript{1} recalled that Trenchard was not a great soldier, airman, or statesman; but he was a great man: self-confident without a trace of arrogance; possessed of a contemptuous yet not intolerant disregard for anything mean or petty; and was endowed with the capacity to shuffle aside the nonessentials and put an unerring finger on the real core of a problem or the true quality of a man. In a like manner, Douglas\textsuperscript{2} wrote, "I have never had anything but the warmest admiration for our first great Air Commander. He was unquestionably a great man. . . . he made a great and lasting impression upon me."

Walther Wever

After the First World War the Germans found themselves in a unique but unhappy position. The Treaty of Versailles limited their armed forces to 100,000 men and prohibited them from acquiring either tanks or military aircraft. Although the treaty clipped Germany of her wings, it could not remove the will to fly; and so the Germans employed various covert methods in order to keep pace with technological developments in the West. By the time Adolf Hitler became Chancellor, they were able to combine excellent officers with a well-developed aircraft industry. This allowed them to construct a modern air force in half a decade. Moreover, the Germans were fortunate to find the ideal man to organize their new Luftwaffe (air force).

\textsuperscript{1}Slessor, \textit{The Central Blue}, op. cit., p. 45.

\textsuperscript{2}Douglas, \textit{Combat and Command}, op. cit., p. 143.
General Walther Wever was one of forty General Staff Officers arbitrarily switched to the Luftwaffe after the creation of the Reich Air Ministry on 10 May 1933. Wever was born in 1887 of middle-class parents in the province of Posen. He distinguished himself in the First World War, and in 1917 he joined Ludendorff's hand-picked staff where he played a key role in foiling Nivelle's Offensive. During the twenties his organizational talents impressed both General von Seeckt and General von Blomberg.

Originally the choice of the first Luftwaffe Chief of Staff lay between two of the most outstanding Colonels in the German Army—Manstein and Wever. But Manstein was considered a bit old-fashioned and Wever was highly recommended by Colonel Hans-Jürgen Stumpff who had known him since the first World War. Erhard Milch (State Secretary of Aviation), who was never easily impressed by staff officers, quickly recognized Wever's talents and asked the army to release him. Although Blomberg approved Wever's transfer, he nonetheless muttered that the Luftwaffe had stolen his best officer and a future commander-in-chief of the Army.

It is very doubtful if any other officer except Wever could have created a strategical and tactical air force in a Third Reich permeated

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2loc. cit., pp. 2-3.


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with plots, jealousies, rivalries, and general mistrust in the upper military and political echelons. He was one of the very few staff officers who impressed Hitler and won his full confidence. Milch admired his professional zeal, organizational abilities, and never hindered Wever in any way. In fact, Milch told Suchenwirth\(^1\) nine years after World War II that Wever "was the only General Staff Chief since the end of World War I who came close to Moltke." Finally, and equally as important, Goring considered Wever indispensable and simply "tremendous."\(^2\)

Likewise, Wever had no difficulty in infecting his officers and men with his own enthusiasm and in converting them to his way of thinking. Wever was a fatherly supervisor who often tested his men's capabilities without ever injuring their pride or personal feelings. He was never petty and often encouraged his men to express their ideas freely. He came to know his people personally through frequent field inspection trips and often turned a serious moment into a lively and humorous one with his renowned smile.\(^3\) Indeed he had one of those rare dynamic personalities which inspired trust and confidence in all quarters.

Once Wever assumed his new post he had little difficulty in determining what kind of an air force he desired. Two books and his army background supplied the answer. By thumbing through Hitler's

\(^1\)Suchenwirth, *Command and Leadership in the GAF*, op. cit., p. 4.


\(^3\)Suchenwirth, *Command and Leadership in the GAF*, op. cit., p. 9.
Mein Kampf, Wever deduced that a war with Russia was virtually inevitable. Not only was Communist ideology diametrically opposed to Nazism, but Russia offered Germany its only avenue for expansion.¹ Douhet's book offered the one effective way of dealing with the Soviets even beyond the Ural Mountains. When Colonel Wimmer introduced Wever to the designs of the four-engined Junkers Ju-89 and the Dornier Do-19, he immediately recognized that the standard bomber of the future would have to be a long-range machine—a true "Ural Bomber."² But he also vividly recalled the plight of World War I infantrymen and that of the undefended Rhineland towns. Hence, he decided to depart from Douhet's doctrine by developing a strategical, tactical, and Home Defense air force.

Unfortunately, Wever remains an enigma to this day since his efforts are overlooked in most postwar accounts of the Luftwaffe. Yet enough information exists to sketch his basic doctrine. According to General Nielsen³ he wished to create an air force capable of meeting Douhet's requirements and therefore, deliberately emphasized long-range, four-engined bombers. He clearly emphasized his ideas before the Air Warfare Academy on 1 November 1935. "Never forget," Wever⁴ stressed, "that the bomber is the decisive factor in aerial warfare," and that

¹loc. cit., p. 5.
³ibid.
"the object of any war is to destroy the morale of the enemy." According to his timetable the first of the 1,000 four-engined Do-19s and Ju-89s were to become operational by 1939.

Few nations were as fortunate as Germany in the early thirties. It not only possessed the services of an exceptional officer, but also recognized him for what he was. For that reason, the Luftwaffe suffered a severe blow when he accidentally died on 3 June 1936. Wever was quickly succeeded by Generals Kesselring, Stumpff, and Jeschonnek. The first two were unable to cope with Milch's and Göring's insidious ways. Furthermore, they lacked Wever's urge to create a long-range bomber force. Nor did they possess his dynamic personality. General Jeschonnek once again restored Hitler's faith in the Luftwaffe but failed to mitigate Hitler's basic mistrust of General Staff Officers. Even more damaging, in the long run, was Jeschonnek's faith in Ernst Udet's dive bomber and his complete trust in the two-engined Ju-88.

By 1938 the four-engined bomber was only a memory. Consequently, General Nielsen contended many years after the war:

> With the loss of its first Chief of Staff, the Luftwaffe lost the first, and perhaps most decisive, battle of World War II.

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2 *loc. cit.*, p. 29.
CHAPTER III

THE WARRIORS

We are in face of a new force of almost limitless potentialities. Properly trained and directed, it is capable of transforming the whole face of war almost beyond recognition . . . . The revolution has begun. The day of the contentions of great armies, those huge mastodons of modern war, those saurians of human combat, is passing away before our eyes.

James M. Spaight, Air Power and War Rights (1924)

As it became increasingly evident that there could be no agreement between the visionaries and the blind, a handful of air oriented men rallied to support the preceptors' air power crusade. Like the preceptors, these men understood that the bomber denoted ominous implications for the future of civilization. They became dedicated warriors—albeit some were indeed reluctant warriors—who continually sought to enlighten their fellow countrymen to the bomber menace.

Since most of them believed that the bomber threatened their very existence, they sought public support for the development and maintenance of strong air forces. The remainder were devoted pacifists who called attention to the bomber menace in hopes of mitigating it. Nevertheless, militarist and pacifist alike agreed with Major Karl Bratt1 of Sweden, who contended that the bombing of civilians in World

War I was the most important development of the war for it introduced a new epoch in war and the science of warfare.

All the warriors emphasized the rapid aeronautical strides in the First World War and what this augured for the future. They were prolific writers, and often lectured before political organizations and university gatherings. They were generally well informed, intelligent, and commanded various degrees of influence. Above all, though, they wanted to influence their governments by arousing the political power of the common citizen. Therefore, in the following presentation of their principal themes it will be advantageous to keep in mind the salient features of the preceptors' theories.

The Bolt from the Blue

The warriors encountered little difficulty in determining how the next war would begin. They simply combined the capability and potentiality of modern technology with the well established characteristics of man. If it came down to a struggle for existence, the warriors concluded, all combatants would attempt to gain the upper hand by any means available. With this in mind, they emphasized that a modern air force offered aggressors an opportunity to launch a pre-emptive aerial strike at the heart of the enemy nation on a scale so devastating that it would shock pre-World War I adherents of "Copenhagening."

1In the Napoleonic Wars Lord Nelson sailed his fleet into Copenhagen harbor and sank the Danish fleet without the benefit of a declaration of war. Thereafter, the term "Copenhagening" signified a crippling surprise attack at or before the outset of war.
All air power proponents assumed that the next war would begin in the air. In fact, many\(^1\) believed that it would be an all air war in which armies and navies would only play a secondary role at best. This conviction led Bratt to conclude that air supremacy would decide the next European war. He read both Douhet's and Mitchell's publications and completely agreed with them that the development of air power must be studied with the future in mind and not the past. Hence, Bratt postulated that mobilization in the future would no longer be a question of days but rather one of hours or minutes. It would be, as he\(^2\) said, a "push button" war in which responsible military officers would argue that a single hour's delay could lose the war.

Informed people on both sides of the Atlantic accepted the fact that the next war would begin with highly destructive aerial attacks. In the United States, for instance, Gulick\(^3\) expressed a grave concern that major American manufacturing, communication, and transportation centers could be terrorized, paralyzed, and destroyed by bomber attacks. General Patrick\(^4\) echoed these same fears but added that aircraft carrier launched bombers would not necessarily be limited to coastal

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\(^2\)Bratt, That Next War?, op. cit., pp. 46, 48.


cities but could also carry death and destruction far inland. Joerg
Joergensen, a Danish professor, voiced virtually the same sentiments.
He wrote and lectured that war psychosis would spur the belligerents
to immediately unleash the most barbaric aerial attacks upon each
other. "All moral principles," he added, "all education and disci­
pline will be forgotten." But of all nationalities, the British
were probably most sensitive to the "Bolt from the Blue." During the
inter-war period the British often expressed their fear of surprise
attack. For example, Morrison wrote:

It is the generally accepted view of competent
observers in all countries that one of the first acts
of a belligerent Power will be an attempt to strike
a paralyzing blow at the most vulnerable point of the
opposing war machine—the administrative heart of the
enemy.

Nor did Liddell Hart refrain from joining this foreboding chorus:

In wars of the future the initial hostile attacks
will be directed against the great nerve and commu­
cation centers of the enemy's territory, against it's
large cities . . . . against every life artery of the
country . . . . Entire regions inhabited by peaceful
populations will be continually threatened with extinction.

P. R. C. Groves was undoubtedly Great Britain's most prolific
and influential writer. It is now impossible to say if this former

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1Goss, Civilian Morale Under Aerial Bombardment, op. cit., p. 58.

2Morrison, War On Great Cities, op. cit., p. 8. Similarly, an­
other account warned, "A nation with a strong air force can with prac­
tically no warning strike at the heart of the enemy country and bombard
its inhabitants irrespective of age or sex." See H. Montgomery Hyde
and George R. F. Nuttall, Air Defence and the Civil Population, rev.

3B. H. Liddell Hart, Paris or the Future of War (London: Kegan
p. 41.
RAF Brigadier General inaugurated or simply echoed public awareness of the bomber menace. At any rate, he authored a number of serious articles and books which noted the increased range and carrying capacity of aircraft. This, he asserted, altered the character of war from one of "fronts" to one of "areas." Groves also assured the reading public that huge fleets of enemy bombers would strike immediately at Britain's nerve centers with high explosives and gas bombs.

Nor were the French and Germans immune to this effusion of foreboding. Captain Rene Fonck, the foremost surviving French air ace of World War I, predicted that quick mobilization of air power would be the vital factor in the next war. It would then require only two or three weeks to annihilate a city the size of Paris. Another Frenchman asserted in Les Ailes (Wings) that massive sneak air attacks would surely precede a declaration of war because the enemy would wish to attain all the advantages of such a tactic. "This," he concluded, "is the menace which, despite what one says or pretends, hangs over France." Furthermore, the enemy who would presumably launch this


attack gave no indication that such methods would not be employed. General von Metzsch asserted that, "No legal consideration will stand when the vital interests of a nation are at stake. War will immediately be carried into the enemy country by means of massed aerial raids." Bratt obviously spoke for all the warriors when he presumed that fear of the bomber would be the decisive factor in launching unimaginably destructive pre-emptive aerial strikes at the outset of the next war.

The Age of Ruin?

The first chapter clearly illustrated that once cities were bombed the people were at first confused, then dismayed, and finally outraged at becoming part of the "front." After the war the public realized that cities would probably again be bombed in the next war. And by the time of the Spanish Civil War, in the late thirties, people automatically expected to be bombarded from the air. This change was primarily due to sensational journalism as well as the sober accounts of the warriors.

Americans and Europeans were already being bombarded with dire predictions of destruction from the air just one year after "The War to End War." Not only would the bombers be launched at the outset of war, but they would be directed primarily at the enemy cities. Realizing

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2Bratt, That Next War?, op. cit., p. 68.
this, one member of Parliament\(^1\) wrote, "the threat from the air is the greatest danger this country has ever had to face since it became an independent nation." Elaborating on this theme, another Briton\(^2\) argued that there would be no place of safety. All would perish: the old with the young, the pacifist with the militarist, even kings and presidents.

Fuller devoted considerable space in his 1923 publication to the menace from the air. He revived the reader's memory of World War I bombing operations and pointed out the remarkable strides in aviation. He then described in graphic detail how the next war would be won in forty-eight hours. Fuller\(^3\) also assumed that the civilians would be the first to suffer:

> Whatever the civilian may desire or squeak for, to put it vulgarly, in the next great war he is going to be "in the soup," and what kind of soup will it be? A pretty hot one!

On the whole Liddell Hart agreed with Fuller. He, too, foresaw enemy bombers winging unhindered over the fleet towards Britain's governmental and industrial centers. If the bombers struck swiftly and powerfully, Liddell Hart\(^4\) saw no reason why the war would last more than a few hours—at the most a few days. Moreover, he was convinced that such a war could very well destroy civilization.

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During a visit to the United States Squadron Leader Walser aided Mitchell's crusade by warning Americans that New York could soon be destroyed by an air armada flying at the unbelievable altitude of 30,000 feet.\(^1\) In spite of such periodic foreign portents of doom, the United States had its own, albeit small, army of warriors. Howard Mingos,\(^2\) for one, asserted that the bomber was rapidly becoming the dominant factor in world affairs. He assumed, like his British cousins, that in a future war American and European civilians would find themselves in the front line. One New York editor\(^3\) not only concurred with these views, but went on to paint an even grimmer picture: he postulated that further increases in speed and range would make it comparatively easy for bombers to annihilate entire cities even before adequate alarms could be sounded.

Most informed observers were obviously convinced that a future war would be brief and devastating. But for some reason, post-World War II accounts of this period completely overlook the one indispensable factor which compelled many people to accept the preceptors' and warriors' conclusions. Quite simply, the statesmen of the inter-war period confronted a triad of horrible weaponry much like that confronting us


today. Whereas we expect to be bombarded by nuclear, bacteriological, and chemical warheads, they likewise expected a rain of high explosive, incendiary, and poison gas bombs. Indeed, the persistent fear of gas bombs in the twenties and thirties cannot be overstated.

This contemporary disregard for the fear of gas during those years is even more astonishing in light of some of the similarities between the two postwar periods. Both gas and nuclear weapons first caught the attention of the world after they were employed in war. Both emerged from war as crude weapons which were progressively refined along with their delivery systems in the postwar period. Moreover, all segments of the population became aware of the danger these weapons posed to the survival of their nation. Furthermore, it soon became obvious that every significant nation could acquire these weapons and this fostered the dual dilemma of proliferation and arms limitation.

Many informed people were convinced that the Armistice had saved Europe from the horror of aerial gas attacks. This was especially true of the British who had planned to deluge Berlin with gas bombs late in 1918. Since the British crossed the gas bomb threshold themselves, they apparently assumed that other nations would also resort to this type of gas warfare. Frankly, it is amazing how often this theme appeared in print prior to the Second World War. Unfortunately, only a few examples can be cited.

Groves\(^1\) asserted that millions of people could be gassed by

\(^1\)P. R. C. Groves, "Air Power and Disarmament," *Times* (London), 18 September 1922, p. 11.
bombers in a single night, and that the subsequent obliteration of governmental centers could imperil civilization itself. Kenworthy also believed that in a future war poison gas and even bacteriological agents would be dropped from aircraft on defenseless cities. "In the process," he vowed, "such devastation, terror and agony will be experienced by men, women and children that the whole social fabric of what we call civilization will crumble and dissolve."

Commander Burney foresaw the slaughter progressing in a logical sequence. First, high explosive bombs would burst open thousands of buildings. Then, thermite bombs would set them afire. Finally, the civil population would be gassed. He feared that so much of civilization would be destroyed in the process that society would probably return to something resembling the "Dark Ages." Meanwhile, Morrison highlighted another critical problem:

"It is a fairly safe prediction that, in the event of London being suddenly subject to a gas war, not more than 10 percent of the population will be found voluntarily to have equipped themselves with the necessary apparatus. The remaining 90 percent will be potential casualties.

Moreover, concerned observers across the channel fully shared these fears. In Germany General von Deimling echoed the universal

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2"Airplanes, and General Slaughter, in the Next War," Literary Digest, LXXIX (17 November 1923), p. 60. For a similar appraisal see, Hyde and Nuttall, Air Defence and the Civil Population, op. cit., p. 78.

3Morrison, War On Great Cities, op. cit., p. 204.
dread that gas would be used in the next war on a scale unknown in World War I. He emphasized that it required no imagination to depict what would happen in such a war; quite simply, gas, fire, and high explosives would reduce European culture and civilization to ruin.¹

Dr. Woker, a Swiss scientist, concurred completely with this analysis because he believed that war mania knew but one aim—the complete and unscrupulous destruction of the enemy.² In France General Debeney³ predicted that poison gas, liquid fire, and a hurricane of explosives would revive for many the horrors of Sodom and Gomorrah. In fact, the only defense he foresaw against the bomber was the limitation of its fuel tanks and fully stocked underground shelters from which new life could blossom.

Furthermore, the warriors encountered little difficulty in imagining what would transpire in major metropolitan centers during and after a bomb and gas attack. As Bratt⁴ pointed out, "The industrial centers are inhabited ... by that part of the population which is psychologically most sensitive—the working class." Groves⁵ simply stated that it would be impossible to estimate the casualties of a

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¹"Airplanes, and General Slaughter," op. cit., p. 64.
²Goss, Civilian Morale Under Aerial Bombardment, op. cit., p. 61.
⁴Bratt, That Next War?, op. cit., p. 69.
⁵Groves, Behind the Smoke Screen, op. cit., p. 151.
concentrated twenty-four hour bomber attack. As a matter of fact, the fear of gas plagued Groves ever since 1922 when he first learned that the Germans possessed a new horrible gas which penetrated the most modern masks. This led him\(^1\) to conclude that there could be no escape from death since the gas would filter into basements and subway stations.

Liddell Hart\(^2\) envisioned simultaneous attacks on a dozen cities like London, Manchester, and Birmingham. With industry, Fleet Street, and Whitehall in ruins, he deduced that the working class would be driven to madness and marauding. Charlton,\(^3\) too, asserted that un-disciplined flight from London and the disintegration of public facilities would throw the population into a state of lawlessness and semi-starvation; and that nothing could prevent this from occurring because "One cannot fly from flying."

Nor did the warriors fail to inform their fellow citizens on the ultimate aim of this mass slaughter. Professor Reeves,\(^4\) of the University of Michigan, testified:

One of the most important factors in war is morale. One of the most effective ways of breaking morale is by the use of airplanes. If Germany failed in the last war to break morale by bombing London and shelling Paris, it was because she didn't do enough of it.


\(^2\)Liddell Hart, *Paris or the Future of War*, op. cit., pp. 41-42.

\(^3\)Charlton, *War From the Air*, op. cit., pp. 172-73.

Fuller\textsuperscript{1} amply illustrated that such negligence would not reoccur in the next war:

Picture, if you can, what the result will be: London for several days will be one vast raving Bedlam, the hospitals will be stormed, traffic will cease, the homeless will shriek for help, the city will be in pandemonium. What of the government at Westminster? It will be swept away by an avalanche of terror. Then will the enemy dictate his terms, which will be grasped at like a straw by a drowning man.

Nor should Marshal Foch's\textsuperscript{2} oft quoted statement be overlooked:

The potentialities of aircraft attack on a large scale are incalculable, but it is clear that such attack, owing to its crushing morale effect on a nation may impress public opinion to the point of disarming the Government and thus become decisive.

In the end Spaight\textsuperscript{3} simply stated, "The attacks on the towns will be the war. Their success will mean victory."

The Survival Margin

All of the warrior's prognostications were obviously based on two fundamental assumptions. It was taken for granted that the bombers would always reach their targets and that they would wreak destruction and havoc on a scale unimagined in World War I. Charlton\textsuperscript{4} asserted that the Gotha raids were but a foretaste, the merest nibble of what Britons could expect in the future. The American Assistant Secretary

\begin{itemize}
\item[1] Fuller, \textit{The Reformation of War}, op. cit., p. 150.
\end{itemize}

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of the Navy for Aviation\(^1\) advised, "The late European war offered but a foretaste of what may come when things that were the imaginings of fictionists a decade and a half ago are realized in grim truth . . ." The editor\(^2\) of the *Times* cautioned Londoners not to expect a repetition of the Gotha's sporadic attacks which were just strong enough to stimulate the inventiveness of British air defense.

In fact, the immense British air defense effort in World War I did much to establish the idea of an irresistible bomber offensive. Charlton,\(^3\) for example, expounded that on the whole the Gothas encountered little resistance, and that their success was out of all proportion to their losses. He further maintained that on those rare occasions when the Germans lost a Gotha, it was usually a straggler. Therefore, he asked, what chance would air defense have against the overwhelming fire power of a tight modern bomber formation? The editor\(^4\) of the *Times*, among others, echoed this same theme. After reminding the readers that the intricate LADA system had failed to stop a mere

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\(^3\)Charlton, *War From the Air*, op. cit., pp. 143-44.

handful of bombers, he asked them to consider what the effects of a modern raid would be.

After the warriors accepted the idea that bombers could not be stopped once they were launched, they logically championed a tactic we often consider unique to the nuclear age. In short, they viewed the bomber as a two-edged weapon. Reflecting one of Trenchard's salient themes, both Kenworthy and Groves\(^1\) insisted that an all bomber war could only be forestalled by the threat of retaliation.

The threat of such a dreadful exchange of bomber offensives led many to believe that total war could perhaps be averted. Colonel Lockwood wrote in the *Manchester Guardian* that a war of bomber offensives would deteriorate into a battle of national attrition by bombs, fire, and gas; and that virtually every soul would perish in the belligerent's major cities.\(^2\) In other words, it would be Falkenhayn's and Haig's tactics at Verdun and the Somme graduated to a national scale.

On the other hand, Bratt\(^3\) argued that civilized people could not long resist continuous attacks from the air. Therefore, professor Mayer asserted in France that the people had to decide whether they would unleash this madness upon themselves and thereby, commit

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\(^3\)Bratt, *The Next War?*, op. cit., p. 68.
suicide. According to Mingos, it was simply a question of survival or mutual extermination. Similarly, Lord Allenby conceded that "the next war will mean the complete end of civilization as we know it." After taking all this into consideration, Spaight finally lamented that war had been "sadly vulgarized." Nevertheless, this very vulgarization of war offered mankind his one sliver of hope. After studying the question of bomber attacks, General Frederick Maurice wrote in 1925:

Such an attack if not immediately and completely successful would bring retaliation and expose the civil population of the assailant to the same dangers. It is unlikely, therefore, to be adopted deliberately unless there seems to be a good prospect of ending the war at once by this means or unless it is employed as a last desperate measure when all else has failed, or seems likely to fail.

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1 Goss, Civilian Morale Under Aerial Bombardment, op. cit., p. 58.
4 Spaight, Air Power and War Rights, op. cit., p. 103.
CHAPTER IV
THE LOTUS YEARS

One does not throw away an umbrella just because it isn't raining.

Sir Alec Douglas-Home

The ten-year period that followed the First World War has been called "The Golden Age of Aviation." During those years men and women flew continuously higher, farther, and faster. The British established commercial air routes throughout their empire and two Britons astounded the world by winging their way across the Atlantic. The world was further captivated by the daring aerial explorers who unlocked the mysteries of the north and south poles. Meanwhile, a group of intrepid American military aviators successfully circumvented the earth while another group of Americans established unprecedented endurance records by first employing in-air refueling. Perhaps even more astounding, insofar as it caught the public's imagination, was Lindberg's memorable exploit in the "Spirit of St. Louis."

But much to the airmen's chagrin, military aviation did not enjoy a similar golden age. The airmen were fortified with theories but not with governmental appropriations. Their enthusiasm for air power as well as their hopes and fears of the future were frustrated time and time again by budget oriented politicians who desperately wanted to believe that they had indeed fought the war to end war. The airmen were further hobbled by intransigent Army and Navy traditionalists who
fought tenaciously for every penny of the limited appropriations.
They ostensibly justified this on the ground that the next war would be, like the last, won on the high seas and in the mud—certainly not in the air.

The postwar years in Britain and in the United States were clearly a period of mental and physical retrenchment. The air services still needed time to mature and to consolidate their gains. The airmen were only consoled by the knowledge that the tide would surely and slowly flow in their favor. Even so, the airmen of these two exceptionally air oriented nations had to wage fierce battles for survival.

The Gods Hate Britain

The necessities of war compelled the Cabinet to merge the RFC with the Royal Naval Air Service into an independent air force. But the RAF faced its fiercest battle after the exigencies of war had passed. Shortly after the Armistice the Government had to find answers to three key questions: Should the RAF be split up again into its original components? Should the Air Ministry itself continue to exist? What should the relationship be between civil and military aviation?

But Lloyd George's first decision—the Ten-Year Rule—actually impaired the process of resolving these questions. The Ten-Year Rule firmly stated that the British Government would base its foreign and domestic policies on the assumption that there would not be another major European war during the next decade. However meritorious or credible this decision may have been, there is no questioning the fact it left a legacy of procrastination and illusion.
After the Armistice the RAF needed, above all, strong, resolute leadership and *esprit de corps*. Unfortunately, Sykes (CAS) lacked the resilience and force of character to save the RAF. There is no disputing his administrative abilities, but he was clearly out of touch with the political situation. In a way the man cannot be blamed for this oversight. Sykes was a dedicated airman who only sought to create a British Imperial Air Force second to none in the world.

However, the unbelievably rapid demobilization of British air power stunned Sykes as well as most other airmen. The aggregate strength of the RAF at the end of the war included 291,175 officers and men, 22,171 aircraft, and approximately 700 airfields. But by 8 March 1920 the Government had demobilized 261,445 officers and men and over 10,000 aircraft. Furthermore, the remaining squadrons encountered difficulties in securing acceptable machines and sufficient spare parts.

The first phase of this emasculation of British air power struck Sykes to the quick. It doomed his ambitious scheme of replacing British sea power with a world-wide network of strategic air bases. Altogether he envisioned 117 British squadrons as well as thirty-seven Australian, Canadian, and South African squadrons. He further planned to standardize equipment within this Strike Force and to maintain it

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2Laffin, *Swifter than Eagles*, op. cit., p. 150.
on a war readiness basis. He estimated the force would cost approximately £21,000,000 annually.

But the British Government, confronted with a wide array of problems, expressed no intention of endorsing such an elaborate scheme. Terror flared up again in Ireland, trouble seethed in India and the Middle East, and British troops were still participating in the Russian intervention. In fact, there were still 420,000 British troops in France and the Rhineland, 96,000 in Egypt and Palestine, 21,000 in Mesopotamia, and nearly 45,000 in Russia. After almost five years of war, the people cried for peace, but there was no peace. Because of the promised "return to normalcy" the Government found it necessary to slash the military budget and even considered eliminating the RAF.

Air Minister Weir, who saw the storm clouds gathering in Whitehall, encouraged his successor—Winston Churchill—to replace Sykes with Trenchard since "he can make do with little and won't have to be carried." Churchill accepted Weir's advice and arranged a meeting with Trenchard in January 1919. The meeting quickly deteriorated into a verbal donnybrook when both of these bullheaded men vented their opinions; but the exchange cleared the air of any possible misunderstandings, and the two men departed in an atmosphere of mutual respect and trust. A week later Trenchard again became CAS and held the post until December 1929.

1Sykes, From Many Angles, op. cit., p. 154.
3Boyle, Trenchard, op. cit., p. 328.
Two days after Trenchard took command of the RAF he informed Major General Salmond that the Government would only tolerate small wars in the near future.\(^1\) He had, in effect, prepared himself for Lloyd George's Ten-Year Rule. It now remained Trenchard's task to devise the smallest feasible budget which would maintain the largest possible force. He intended to accomplish this by building the RAF from the ground up; that is, he sought to develop an "air force" spirit by creating excellent schools and facilities. In fact, he allocated so much of the budget for bricks and mortar that some newspapers dubbed the RAF the "Royal Ground Force."\(^2\)

Although Trenchard agreed out of political necessity to limit the RAF to twenty-five and one-half squadrons (nineteen of which were stationed overseas), he did not merit the vindictive attacks that Groves unleashed in 1934 when it was again in vogue to seek out scapegoats. Groves\(^3\) asserted that Trenchard had displayed no conception of future warfare or what air power really meant. Indeed, he went so far as to state that it was entirely Trenchard's fault that the RAF had plunged from the world's strongest air force in 1918 to the fifth strongest by 1930. At the same time, though, Groves conveniently forgot his own defense of RAF eleven years earlier when he\(^4\) wrote:

\(^1\)loc. cit., p. 333.  \(^2\)loc. cit., p. 352.
\(^3\)S. R. C. Groves, *Behind the Smoke Screen*, op. cit., pp. 92, 257.
. . . [since] financial considerations dominate the entire issue, we are obliged to cut our cost according to our cloth, and it is therefore imperative . . . that we can make the most of such air forces as we may be able to raise.

Trenchard harbored no doubts that the RAF had to justify its existence in economic terms. Deeds, more than words, were needed to convert the politicians and the public to the value of air power. Above all, only visible accomplishments could keep the RAF in the public's mind. Therefore, the frontier wars between 1919 and 1925 provided the RAF with the means to justify its existence.

The first opportunity came in May-June 1919 during the Third Afghan War. Although the army bore the brunt of the fighting, the RAF did provide effective ground support operations on a number of occasions. Moreover, the bombing of the Afghan capital, Kabul, and the city of Jalalabad seemed to have a significant effect on the Afghan zest for war.¹ The operation convinced Salmond that against primitives the RAF possessed advantages over the army in economy, speed, and fewer casualties.²

This the RAF proved again in the spring of 1919 when the Somali bandit, "Mad Mullah," began to terrorize the Somaliland colony. It was estimated that it would require two army divisions, the construction of a railroad, a prohibitive drain on the Treasury, and at least one year to apprehend him. But Trenchard assured the Colonial Office that the RAF could do it alone. The financially desperate Colonial


²Laffin, Swifter than Eagles, op. cit., p. 153.
Office took him at his word and gave the RAF its chance. Accordingly, a bomber squadron left Cairo in January 1920, bombed the bandit's forts, pursued them across country, and forced them to surrender to a Camel Corps. Britain's cheapest war in history took only three weeks and cost a mere £77,000.¹

Lloyd George's budget oriented government did not overlook this inexpensive way of dealing with frontier wars. Moreover, the Somali Campaign was directly responsible for the convening of the Cairo Conference in March 1920 where Churchill assigned the RAF the primary task of dealing with frontier disturbances—especially in Iraq.

It can be said that the French invasion of the Ruhr triggered off the most serious crisis in postwar Iraq. This French initiative not only strained already poor Anglo-French relations, but it also encouraged the Turks to make new demands for the Mosul region. Although the British had recently survived the Chanak Crisis, the Turks apparently did not misinterpret British sentiments. For example, Bonar Law vowed, "We cannot act alone as the policeman of the world."²

At any rate, when the Lausanne talks broke down, Bonar Law clearly expressed his intention not to fight for Mosul. At this point, Salmond—on his own initiative—attacked the Turks in the


²Martin Gilbert, The Roots of Appeasement (New York: Plume Books, 1966), p. 92. He made this statement on 7 October 1922 during the behind the scene moves to oust Lloyd George; on 23 October Bonar Law succeeded him as Prime Minister.
Kurdistan redoubt of Rowanduz Gorge. Only Trenchard's vigorous sup-
port prevented a shocked Cabinet from immediately recalling Salmond.
Meanwhile, many people in London watched and waited. This was espe-
cially true of the two committees (one studying Iraq and the Salis-
bury Committee studying the future of the RAF) which could not con-
clude their investigations until Salmond either succeeded or failed.
As one writer\(^1\) noted, "Everybody in London was intent, apprehensive,
or both."

When Salmond took command of the four RAF squadrons and the 10,000
man native levy in Iraq, he sensed the prevailing restlessness in the
country. He also immediately recognized that if the Turks could hold
the Rowanduz Gorge bottleneck, that Mosul would slip into their hands.
Nor did he doubt, after an aerial inspection, the truth of an old Arab
proverb that said: "When Allah had made Hell he found it was not bad
enough, so he made Iraq—and added flies."\(^2\) Without doubt this wild,
rugged, and mountainous region of stark and lonely gorges was an in-
fantryman's nightmare. Hence, Salmond used aircraft for virtually
everything: bombing, close support, re-supply, and medical air evacu-
ation. His campaign was so successful that the Turks renounced Mosul
and signed the Lausanne Treaty on 6 August 1923.\(^3\)

In the opinion of C. J. Edmonds, a British official in Mosul,

\(^1\)Laffin, *Swifter than Eagles*, op. cit., pp. 175, 179.
\(^2\)loc. cit., p. 168.  \(^3\)loc. cit., p. 186.
Salmond's appointment came just in time to save Iraq.\(^1\) The British Commissioner in Iraq agreed completely with this assessment. He wrote a friend that only aircraft had saved the British position in Baghdad.\(^2\) Yet despite this praise and the immediate impact Salmond's air and ground campaign had on Salisbury's Committee, the campaign also illustrated how difficult it was to bury old prejudices. When one author of British military campaigns was asked why he hardly mentioned the Iraq campaign, he replied, "An RAF man was in command. It doesn't qualify as a military campaign."\(^3\) Whereas the Iraq Campaign enabled the RAF to prove its worth in combat, the Ruhr Crisis once again revived British fears of bomber attacks on London. As tension heightened observers on both sides of the Atlantic were keenly aware of French air supremacy. It was bluntly pointed out in *Aviation* that the French Air Force was larger than the combined strength of the United States, Great Britain, and Italy.\(^4\) And on a one-to-one basis, the French were four times as strong as the British.

Indeed, it is often overlooked today how seriously the world viewed the Ruhr Crisis. For instance, the Milwaukee *Sentinel* wondered if the situation would parallel Anglo-German relations in the fifteen

\(^1\)Scovill, "The RAF, the Middle East, and Disarmament," p. 144.

\(^2\)loc. cit., p. 137.

\(^3\)Laffin, *Swifter than Eagles*, op. cit., p. 192.

years prior to World War I. Meanwhile, the Brooklyn Eagle emphasized the tense climate by noting that there were half a million more men under arms in 1923 than in 1913 despite the compulsory disarmament of Germany. But since Germany was disarmed the Philadelphia Record asked why France maintained the largest air force in the world and against whom would it be used.

The crisis not only triggered a wave of outrage in Britain but it also offered the RAF a golden opportunity to expand during a period of economic difficulties. Liddell Hart recorded, as only an Englishman could, that Britons "felt a strong sense of personal discomfort" when they realized that most of the French Air Force was assembled within reach of London. While the Air Staff reached the conclusion that casualties affected the French more than the British and that the French would "squeal" long before the British could be struck a mortal blow, the Air Minister—Sir Samuel Hoare—reassured Britons over the BBC that there was no need for panic, even though a hostile power could drop more bombs on London in one day than the Germans had dropped during the entire war.

Meanwhile, Time reported that the British public—fully aware

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that a rapid and overwhelming air attack could decide the next war—
supported Prime Minister Baldwin's plan to expand the RAF by thirty-
four squadrons. This would give British Home Defence fifty-two squad-
rons (seventeen fighter and thirty-five bomber). The Temps responded
to this announcement by asking against whom the British expected to
use this air force and ended by advocating negotiations rather than
confrontation. ¹Ironically, the financial burden of the Ruhr occupa-
tion sounded the Swan Song of French air power, whereas the political
crisis was instrumental in rejuvenating the RAF.

Actually, the fears of a military clash between these former al-
lies were virtually unfounded. "It seems highly improbable," wrote
Groves,² "that either Britain or France would actually have resorted
to arms. What was decisive was the knowledge common to both that we
were powerless to do so." Hoare completely concurred with this view
in his evaluation of the twenties. He³ argued that the British gov-
ernment could not hope to achieve its goals when other governments be-
gan to question Britain's influence in the world. But in this episode
the question of war or peace was not nearly as important as the re-
kindled fear of the strategic bomber.

Although the frontier wars and the Ruhr Crisis did much for the
RAF's public image, it still had to fight bitter political battles in

²Groves, Behind the Smoke Screen, op. cit., p. 21.
³Sir Samuel J. Q. Hoare [Lord Templewood], Nine Troubled Years
the inner sanctums of Whitehall in order to maintain its independence. The contest demanded of Trenchard all the energy, determination, and lucid arguments he could muster. Even so, Sir Eric Geddes' economic committee frightened Trenchard as the Navy never could. He feared that the "Geddes axe," which audited all phases of government between December 1921 and March 1922, could destroy everything he had accomplished since 1919. Trenchard, therefore, ordered that every penny spent by the RAF since the Armistice must be accounted for, and that nothing must be kept from Geddes. He also considered it necessary to tactfully "educate" Geddes on the importance of air power.¹

Needless to say, Geddes was completely surprised by this spirit of cooperation. Thus, when the Army suggested that the Air Ministry could well afford the largest budget cuts, Geddes welcomed Trenchard's rebuttal that the Army open all of its books as the RAF had done.² Even though £5,000,000 were slashed from the RAF budget, the committee was persuaded to rescind its suggestion to scrap eight squadrons and it compromised more often than anyone had expected.

But in his long struggle with the Navy, Trenchard met an equally stubborn and determined opponent. The First Sea Lord, Admiral David Beatty, logically wanted both administrative and operational control of all naval aircraft. To the RAF, however, this augured a dangerous precedent; for if it gave in to the Navy, then the Army might claim control of all tactical aircraft. Trenchard superbly fended off every

¹Boyle, Trenchard, op. cit., pp. 402-03.
²ibid.
attack until the final showdown in 1923 when Bonar Law ordered Lord Salisbury's Committee for Imperial Defence to finally determine if an independent and equal air force should indeed exist.

Throughout the spring of 1923 Beatty used numerous Parliamentary lobbying tricks to sway the Committee, but Salisbury guaranteed Trenchard a fair hearing. In Trenchard's view it was plainly a life-and-death struggle for the RAF. In the ensuing battle both resorted to political backstabbing, innuendo, shouting barrages, and before it ended, both Beatty and Trenchard threatened to resign. In the end Trenchard's forceful interpretation of the issue won the day.

First of all, none of the financially oriented politicians questioned the RAF's efficacy in frontier wars. Moreover, Trenchard succinctly refuted Beatty's charge that he was merely a dreamer by emphasizing, "An air force can't be built on dreams, but it can't live without them either, and mine will be realized sooner than you think." Trenchard also predicted that governments may yet hold cabinet meetings in bomb shelters and added that in the entire course of World War I, the Germans dropped only 242 tons of bombs on Britain; but, by 1925, France could drop 325 tons in one day, whereas Britain would be lucky to return 67 tons. Such arguments, plus the Ruhr Crisis, persuaded the committee to vote in favor of an independent RAF.

The RAF also received energetic support from the warriors and the Press during its long struggle for independence. As early as 1919 the

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1 loc. cit., p. 368. 2 loc. cit., p. 469.
flamboyant Admiral Lord Fisher asserted that future wars would be fought in the air and under the sea. He argued that aviation spelled salvation. Since the battleship admirals were out of touch with reality, he simply suggested, "Sack the lot." The Times periodically carried the theme that Britain needed an air defense that could cripple the enemy before he strikes London. And Groves' articles in the Times spurred most other British newspapers to support air power. These included: the Pall Mall Gazette, "Our Lost Air Defence," (9 June 1922); the Evening News, "Wake Up to Flying," (17 June 1922); and the Daily Express, "Our Lost Air Supremacy," (12 June 1922).

It cannot be over emphasized how much Englishmen dreaded the possibility of air attacks from the Continent. This was especially true in the case of Samuel Hoare who secured a copy of Paris or the Future of War shortly after he became Secretary for Air in Baldwin's Cabinet. This book and subsequent meetings with Liddell Hart only reinforced Hoare's conviction that the next war would be fought over Britain's great cities. At various gatherings like the Guildhall Banquet, Hoare reiterated the theme that civilians would be the primary victims of

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3 Groves, Our Future in the Air, op. cit., pp. 81-84.


gas and bomb warfare. Hoare\(^1\) later recalled:

The need as I saw it was to prevent the lightning defeat of a peaceful country by a sudden and overwhelming attack from the air. . . . To eliminate or at least to lessen the risk, therefore, the first and most urgent step . . . was the reduction in the number and size of bombers [through international agreement].

The renowned pacifist, Lord Cecil, agreed that threatened retaliation might save London; but, he too, warned that civilization was probably doomed without arms limitations and a strong League of Nations.\(^2\)

Unfortunately, the RAF's final victory over the Navy came at a most inopportune time. Six long years after the Treaty of Versailles, Europe finally frolicked in the euphoria of peace. At last the entire continent was free of war. German, British, and French representatives met at the Swiss resort town of Locarno in 1924 and apparently settled the west European frontier question. Germany joined the League and France never seemed more secure. But the French remained conscious of Germany's capacity to rearm, and most statesmen realized that Germany would never reconcile itself to its eastern frontier. Yet despite these nagging doubts, most Europeans took the Locarno euphoria quite seriously.

The British were probably the happiest victims of this illusion of perpetual peace since Locarno allowed them to relax their preoccupation with Europe. To Baldwin—who founded his second government on

\(^1\)Hoare, *Nine Troubled Years*, op. cit., p. 117.

the theme of peace, stability, and isolation—this illusion proved especially useful in 1926—the year of the General Strike. This strike marked the watershed in the relations between the Government and the trade unions. Moreover, its effects lingered into 1927 when falling unemployment and a surplus budget once again ushered in a period of stability. Meanwhile, with no enemy in sight the military services were allowed to stagnate, and even Churchill chose to jump aboard the bandwagon by annually extending the Ten-Year Rule. In fact, only half of the thirty-four squadrons that Baldwin had authorized in 1923 were actually activated by 1927. But only a few people really protested this apathy towards national defense.

Yet it is surprising how many political figures did not forget the bomber menace during these halcyon days. Between 1926 and 1930 the Times printed one or more articles nearly every month on the deplorable condition of air defense or the horrors of fire and gas that people must expect in the next war. Lloyd George, for example, argued that bombers must first be limited by international agreement and that air warfare must finally be outlawed if civilization hoped to survive.¹ Lord Halsbury likewise asserted, during his numerous visits to the semi-religious gatherings of the pacifistic League of Nations Union, that any attempt to annihilate London with gas would result in the subsequent obliteration of the aggressor's cities. Only such a

threat, he averred, could protect civilization from an all-out bomber war.¹

Lord Thomson (Secretary for Air, 1929-1930) was even more outspoken. In a number of publications, he² reminded people that air warfare required no mobilization period, and that bombers could appear over London—loaded with gas, incendiaries, and high explosive bombs—even before a declaration of war. Thus, in a few short moments a once prosperous city would become a smoking charnel house and the war would surely be decided in a matter of days. He³ also pointed out, "that if the heart of the Empire were to stop beating, the limbs would soon decay." Because the bomber was a shield as well as a sword, Thomson⁴ pessimistically concluded:

It will be a life-and-death struggle, directed on both sides by men who, however humane they may be personally, will be out to win. And the way to win will be by the ruthless bombing of localities, which in many cases will be densely populated. For every combatant killed in action, ten civilians will quite probably be slaughtered in their work shops or their homes.

Thomson, moreover, was a close friend of Prime Minister J. Ramsey MacDonald. The Prime Minister's own weakness in military matters often


³Thomson, _Air Facts and Problems_, op. cit., p. 152.

⁴loc. cit., p. 25.
made him turn to Thomson for advice. Therefore, it is not surprising that MacDonald concluded:

The next war will be worse than ever . . .
There will be air raids, with poison gasses, which will simply devastate whole towns and countrysides.

Unfortunately, with Arthur Henderson firmly situated in the Foreign Office and a Cabinet generally opposed to military expenditure, MacDonald could not rescind the Ten-Year Rule.

And who will ever forget former Prime Minister Stanley Baldwin declaring in Parliament that the man in the street must realize that no power on earth could protect him from being bombed; and that:

The only defence is in offense, which means that you have got to kill more women and children more quickly than the enemy if you want to save yourselves. I mention that so that people may realize what is waiting for them when the next war comes.

Moreover, his phrase, "the bomber will always get through," appeared in nearly every English speaking newspaper.

The RAF's struggle with the Navy and the long air power debates of the twenties undeniably made successive governments aware of the

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1Liddell Hart, Memoirs, op. cit., p. 148.


3Hoare, Nine Troubled Years, op. cit., p. 113. This is somewhat surprising since Henderson remarked, "the next war will not be like the last . . . in the last war we were killing by retail but next time we shall do it wholesale . . . [since it will be fought] by aircraft using poison gas;" see "Disarmament Policy," Times (London), 10 February 1931, p. 16.

bomber menace. But not even Trenchard's fierce arguments could unlock the Exchequer's purse. The RAF's procurement budget could not keep pace with such developments as all-metal construction, retractable landing gear, variable pitch propellers, and the necessary expansion of facilities to handle the newer aircraft. Without proper aircraft, Slessor\textsuperscript{1} recalled, the RAF's belief in the bomber was intuitive—a matter of faith. The RAF had its strategic principles and tactical doctrine, but it lacked the means to put them into effect. Nevertheless, Slessor\textsuperscript{2} was convinced that without Trenchard the RAF would have suffered the fate of the British tank corps which entered World War II with only 146 battle tanks.

The World's Last Citadel

The Postwar situation in the United States was remarkably similar to that of Great Britain. But two significant differences produced somewhat diverse problems for each nation's air arm. Britain emerged from the war with an independent air force and with the realization that the Channel would not protect it from bomber attacks. On the other hand, the American air arm did not achieve independence and Americans felt quite safe behind their two ocean moats.

It must be recalled that the United States Army Air Service (USAAS) began well-nigh from the ground up in 1917. It lacked equipment, experience, and personnel. Moreover, by the time of the Armistice

\begin{itemize}
  \item Slessor, \textit{The Central Blue}, op. cit., p. 204.
  \item loc. cit., p. 46.
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American airmen had only sensed the potential of air power. American airmen were generally youthful, enthusiastic, and thoroughly dedicated to the air power doctrine. They returned from the war as the most colorful group of heroes. But in the view of traditional officers, they were the most undisciplined mob of young men that had ever donned an American uniform. Above all, though, returning American airmen were truly dismayed to find only a handful of men who actually understood air power.

The members of the Bolling Mission were among the few Americans who really grasped the air power doctrine. Late in 1917 General Squier instructed Captain Raynal Bolling, Lt. Colonel Edgar Gorrell, Colonel S. D. Waldon, and Captain Fiorello La Guardia to study aeronautical developments in Europe, and to make suggestions on how the United States could meet its aerial obligations at the Front. Since the group would be more than 3,000 miles from home, the general ordered Bolling to anticipate developments so that American aircraft would not be obsolete when they reached the Front.¹

Bolling's group first met the same people in France and Britain that had influenced Mitchell. But the group undoubtedly profited most from its Italian sojourn. While in Italy the Americans met Caproni, and he obviously impressed them even though he clearly wanted to negotiate a deal for his bombers. During frequent dinners and long

¹Foulois, From the Wright Brothers to the Astronauts, op. cit., pp. 148-49.
discussions, he introduced the group to Douhet's ideas. Furthermore, Caproni just happened to have an English translation of a book entitled *Let Us Kill War*, which was allegedly written by a friend of his. The book emphasized the destruction of the enemy's vital centers by strategic bombing. The Bolling Mission—inspired by Caproni, the book, and Italian air operations—enthusiastically embraced the idea of strategic bombing. Gorrell, in fact, asked for another dozen copies of the book which he planned to spread among his friends in Washington.

The Crowell Mission became the second significant group to inspect European aeronautical developments and its final report exposed the crux of the American air power debate. Secretary of War, Newton D. Baker, ordered his assistant, Benedict C. Crowell, to organize a group for the purpose of investigating Allied aeronautical principles and to decide if any of them could prove useful to the United States. In approximately ten weeks the Crowell Mission toured England, France, and Italy. The Americans interviewed aircraft industry executives, governmental officials, and ranking air officers. But its final report on 19 July 1919 shocked Baker. It recommended the establishment of an independent air force and endorsed the idea of long-range bombing.

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2loc. cit., p. 146. This explains where Gorrell got the ideas for his Air Corps Tactical School manual which stressed the importance of strategic bombing; see Greer, *The Development of Air Doctrine*, op. cit., p. 11.

3loc. cit., p. 21.
But the idea of bombing civilians nauseated Baker. He truly wished that the clock could be turned back to the nineteenth century. Therefore, he suppressed the report and created a second investigative group composed entirely of non-flying officers and wholeheartedly endorsed its conclusion not to create an independent air force. The Crowell report only surfaced in December 1919 when Congressman La Guardia’s Sub-Committee on Aviation called Crowell as its first witness.

American airmen quickly realized that the war had not altered the General Staff’s doctrine that the ultimate objective of all military operations was the destruction of the enemy’s armed forces. The Times’ correspondent in Washington, who sensed the Army’s mood and the gist of Crowell’s report, concluded that the Army would probably eliminate the USAAS. After watching the air service dwindle from 20,000 officers and men on 11 November 1918 to barely 200 by December 1919, Mitchell and his most zealous disciples—especially Milling, Brereton, and Hartney—reached the same conclusion. But Mitchell did not launch into his air power crusade until he was sure that Representative Curry’s efforts to win Congressional support for an independent air force had also failed.

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1 Ibid.
2 Levine, Mitchell, op. cit., p. 178.
4 Hurley, Billy Mitchell, op. cit., p. 41.
From the time of the spectacular sinking of the Ostfriesland until his famous court-martial, it certainly seemed that Billy Mitchell was a "one man show" for air power. In order to capture the public's imagination, he increasingly overstepped traditional military bounds and often defied the "old-fashioned" generals. Yet there is no denying that he made Americans air conscious.

General Arnold\(^1\) recalled that he noticed a distinct change in Mitchell when they again met in 1919. He appeared sharper, more alert than ever, and he displayed an angry impatience with—what he considered—the well-organized enemies of air power. He primarily blamed entrenched Admirals, like Benson, who could not conceive any possible use for aircraft, and who stated flatly: "the Navy doesn't need aeroplanes." Mitchell promised Arnold\(^2\) that he would show everyone the value of aircraft by conducting transcontinental flights, flights to Alaska, and "above all, to sink those damned battleships!"

When Arnold\(^3\) suggested that the Navy might not cooperate, Mitchell adamantly responded, "We're going to get them and we're going to sink them." Not only did Mitchell get his ships, but he stunned the Navy with a series of preliminary tests. His pilots first sank a captured German U-boat. Then, on 13 July 1921, they sank the German destroyer G-102 with alarming ease and, just as easily, sank the Frankfurt in eleven minutes on 18 July. This quickly led to the famous

\[^1\]Arnold, *Global Mission*, op. cit., p. 79.

\[^2\]ibid.

\[^3\]ibid.
demonstration on 22 July 1921. Determined to sink the Ostfriesland in as spectacular a fashion as possible, Mitchell disregarded test guidelines and ordered his pilots to attack with 2,000 pound bombs.¹ Nearby military and civilian observers first saw six bombs explode around "unsinkable" Ostfriesland; they were then shocked to see the ship sink in twenty-one minutes.

Charlton² believed that the eye-witnesses would never forget that dramatically intense moment; and he certainly never forgot the expression of blank incredulity on the faces of senior American naval officers. While foreign air attachés wired the sensational news to Europe, Senator Poindexter remarked that the test demonstrated the need for more American aircraft and that the Congress might revise its decision not to build aircraft carriers.³ Needless to say, the tough, resolute, but soft-spoken Admiral William A. Moffett welcomed this news.

"Billy" Moffett, often called the Father of Naval Aviation, appreciated the benefits Naval fliers reaped from Mitchell's exploits, but he vigorously denounced Mitchell's plan to unite all air arms into one air force. He rightly believed that Army airmen could not comprehend the intricacies of carrier operations on the high seas. Admiral Sims, the first American all-big-gun ship advocate, completely supported Moffett's view. He declared that the Ostfriesland sinking demonstrated

¹Hurley, Billy Mitchell, op. cit., p. 67.
²Charlton, War From the Air, op. cit., p. 77
the obsolescence of battleships. Much like Lord Fisher, Sims vowed: "It is the airplane, the submarine and the use of gasses which will play the leading parts in the warfare of the future."  

Nevertheless, the results of the test only accentuated, rather than ended, the controversy between air and naval experts. Once the Navy recovered from its initial shock it dismissed the test on the ground that it was not a realistic one. Naval officers argued that the demonstration was conducted in ideal weather, that the ship was motionless, and that it was unmanned.

True to his word, Mitchell now sketched a repertoire of spectacular aerial feats. He contemplated cross-country flights, round-the-world flights, and night flying demonstrations. In his efforts to make Americans believe that anything could be done in the air, he called for bigger aircraft, larger payloads, and longer flights. But he did not reckon on General Patrick replacing the easily manipulated Menoher as Chief of the Air Staff. Since Patrick understood Mitchell's idiosyncrasies, he immediately ordered the flamboyant officer to present himself and unequivocally informed him as to who would command the air service. When Mitchell protested, Patrick gave him but three choices: he could continue as Patrick's principal assistant, he could transfer, or he could resign.

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3Patrick, The United States in the Air, op. cit., p. 86.
According to one historian, Patrick symbolized the progressive spirit of the USAAS. He was General Pershing's classmate at West Point, and he was specifically chosen by Pershing to restore order in the air service in France. To better understand the problems of his pilots, Patrick learned to fly at sixty years of age, and he also quickly absorbed the airman's outlook. Moreover, his moderation, judgement, and honesty won him the respect of his military and political opponents. Unlike Mitchell, Patrick possessed both vision and practicality. But like Mitchell, he appeared before numerous Congressional committees and developed a strong dislike for the self-appointed "experts" on fact finding committees.

Patrick was one of the Americans who remained in Europe after the war to participate in the drafting of the military clauses at Versailles. He came to appreciate the potential of aircraft during the long questioning and debating sessions, and he also came to realize that "in the near future" the United States could come within range of European aircraft. Hence, Patrick desired an independent air force within a Department of National Defense in order to coordinate American defense against such an eventuality.

Patrick began his quiet six-year battle for aviation before the Lassiter Board. He testified that the air service was practically

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1 Greer, The Development of Air Doctrine, op. cit., p. 25.
3 loc. cit., p. 190.
demobilized and urged the adoption of a ten-year expansion program. He further suggested that air units should be more centralized and capable of operating more or less independently.  

Although the Board agreed with him in principle, President Coolidge's rigid economic program prevented it from being implemented.

Furthermore, Patrick never tired in his attempts to enlighten fellow Army officers on the importance of air power. For example, he asserted that the 1921 and 1923 bombing experiments against battleships "proved conclusively that sea craft were in great danger from an air attack," but added "the conclusions by some of the air enthusiasts that surface naval vessels could no longer be employed may be somewhat overdrawn."

But he saved his best performance for an Army War College audience on 9 November 1925. He first held up a copy of Lidell Hart's "little book," Paris or the Future of War, and declared that he accepted its underlying assumptions regarding the aim of war. He then asked his audience of ranking officers to imagine what would happen in an enemy industrial town after it was bombed and gassed. He concluded by asking how long Germany could have fought in the last war if strategic bombers had destroyed the Krupp works? Moreover, he tacitly based his entire address on the idea that only an air force can defeat another air force.

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1 Foulois, From the Wright Brothers to the Astronauts, op. cit., p. 199.


General Patrick's last significant effort to win more independence for the USAAS came before the hostile Morrow Board. Patrick advocated establishing an air department within the Army similar in status to that of the Marine Corps. All but one Second Lieutenant among the fifty to sixty airmen who testified supported Patrick in advocating a separate military air service. In the end, the Morrow Board concluded that the United States was too secure behind its oceans to justify the cost of another service or to further complicate the military establishment. However, the Board did agree to transform the air service into the United States Army Air Corps (USAAC). In the following year the Congress passed the Air Corps Act which also authorized an expanded budget for aircraft procurement.

Needless to say, Patrick's moderation and diplomatic ways depressed Billy Mitchell. Despite the successful round-the-world flight in 1924, which focused attention on military aviation as no other event since the Ostfriesland episode; and despite all his writing, flying, and audacious speeches, Mitchell still saw no progress for air power. He became increasingly zealous and irritated Patrick by stepping out of bounds once too often. As a result, Patrick fired Mitchell and transferred him to San Antonio, Texas.

For some inexplicable reason two events apparently spurred Mitchell on to his court-martial. First, on 1 September 1925,


3Arnold, Global Mission, op. cit., p. 93.
Commander Rodgers and his crew of four vanished on their flight from San Francisco to Honolulu. Then, on September, the airship Shenandoah exploded accidentally and killed nearly everyone aboard. Finally, on 5 September, Mitchell released to the Press a 6,000 word memo charging the War and Navy Departments with incompetency, criminal negligence, and almost treasonable administration of the National Defense. When the inevitable court-martial was about to convene, one editor sympathetically, but realistically, noted:

Like Ajax he has defied the lighting; he has asked for trouble, and presumably he will get it. . . . There is more than an even chance that Colonel Mitchell will overplay his part and lose his audience. The public sympathizes with a victim of official tyranny, but it quickly tires of the individual who keeps on shouting that he alone is right and that everyone else is wrong.

Throughout the court-martial, Mitchell's fellow officers almost unanimously supported his goals. Whereas they often disagreed with him on details, and often confessed that he tended to exaggerate; they, nevertheless, conceded that his audaciousness and exaggerations were necessary to awaken the American people. Mitchell's fellow airmen were truly trapped between Scylla and Charybdis. They could sympathize with Mitchell's course of action and perhaps even endorse it, but they did not dare to throw off their own mantle of military discipline. In the end, too, Mitchell and his supporters' enthusiasm could not overcome their opponents' rank.

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1 Ibid.

The Morrow Board and Mitchell's court-martial clearly mark the end of one period in American military aviation. During this period the air power debate was mainly confined to military circles. It was primarily a "family affair." Only occasionally, due to Mitchell's efforts, did the Press or Congress become involved. Unlike the British, few Americans harbored fears of a "knock out blow." They presupposed that the Atlantic and Pacific ramparts would always shelter their North American island citadel.

Therefore, the eight-year period following 1925 still stands out as one of the most interesting phases in the annals of American military aviation. Whereas aircraft design and performance remained virtually static prior to 1925, both obviously responded to the air staff's demands in the late twenties and early thirties. This was primarily due to the Air Corps Act of 1926 which also authorized a five-year expansion program. This, in turn, led to the development of the speedy twin-engined B-9 and B-10 bombers. Since they easily outpaced all existing interceptors, they inadvertently revolutionized United States air doctrine. Moreover, such obvious technological innovations slowly awoke an increasing number of Americans to the bomber menace.

It is necessary, during this period, to distinguish between authorized doctrine and the airmen's own views. Although the Air Corps Tactical School manual of 1926 parroted the General Staff's doctrine, that the enemy's army must remain the main objective, it, nevertheless, added that bomber forces might aid the infantry by destroying communication and military industrial centers beyond the range
of artillery. In other words, the Air Staff had tacitly separated tactical from strategical operations. Only with the advent of the B-9 and B-10 in the early thirties—and later the B-17—did the Air Staff openly advocate a policy of offensive air doctrine.2

Differences of opinion flourished only briefly at the Tactical School. Bomber advocates soon ostracized "renegades" like General Chennault who insisted that the development of fighter planes must keep pace with that of the bombers.3 General Foulois4 recalled that Mitchell's, Douhet's, and Trenchard's ideas were studied at great length at the Tactical School and, within a few short years, the "bomber men" declared that nothing could stop a high-flying, tightly formed bomber formation. But once the Air Corps accepted the idea of high-flying, self-defending bomber formations, it quickly discarded the doctrine of a balanced air force, escort fighters, and air superiority as prerequisites for effective bombing operations.

Meanwhile, some Americans began to voice their fears of the future. For diametrically opposite reasons, militarists and pacifists pointed out with equal vigor the horrors of the next war. For example, General Fechet resigned as CAS in 1932 for the expressed purpose

2loc. cit., p. 55. 3loc. cit., p. 58.
4Foulois, From the Wright Brothers to the Astronauts, op. cit., p. 225.
of "awakening" Americans from their "fools paradise." Major Sherman, one of Mitchell's cortège, had already asserted:

The bomber now stands forth as the supreme air arm of destruction, with vastly enhanced power. When nations of today look with apprehension on the air policy of a neighbor, it is the bomber they dread.

One dedicated pacifist not only agreed with this but added that the bomber and poison gas had come to stay. Moreover, Senator Wadsworth, Chairman of the Senate Military Affairs Committee, warned Americans that international treaties would probably not prevent the use of gas in war. "I wonder," he asked, "whether a nation, if backed to the wall, would not tear up its treaties and grasp any weapons available." Admittedly the ranks of concerned Americans remained small in the early thirties, but they slowly and continually swelled as another world war loomed on the horizon. This was particularly true of the pacifists who painted perhaps even more horrible pictures of the "next war" than the militarists.

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CHAPTER V

REHEARSAL FOR DOOMSDAY

There is at least one good thing to be said about the next war: it will not keep us long on edge. The whole business will be over in a couple of hours.

Stuart Chase, "The Two-Hour War" (1929)

Between 1928 and 1933 six of the world's major powers conducted unprecedented aerial war games above their own major cities. These spectacular simulated aerial battles between "aggressor" and "defense" forces undeniably stand out as the most remarkable, if not unique, aspect of this period. War games, in one form or another, date back to the origins of standing armies. They were usually designed to test new weapons, new tactical theories, or to simply maintain combat efficiency. But never before, nor since, have such eye-catching aerial demonstrations abounded over so many metropolitan centers.

These aerial war games lasted anywhere from one or two days to a week. They often involved between one hundred to seven hundred aircraft, and they ranged between amazingly realistic demonstrations of air power to colorful aerial parades. The air staffs conducted these war games for two obvious reasons: they wanted to test the bombers' ability to penetrate their air defense systems, and, through these demonstrations, to secure larger appropriations.

But the reasons for conducting these aerial games were not as important as the demonstrations themselves. Time and time again they
called attention to the bomber menace. People in cities like New York, London, Rome, and Leningrad witnessed these mock battles overhead. Governments followed them with an apprehensive eye and the Press faithfully reported their progress and the foreboding conclusions. In each major nation the games visually reinforced all that had been written and said about the strategic bomber in the past decade. Therefore, it is surprising that historians have completely overlooked these spectacular war games and their overall effect on governments, military men, and concerned observers.

Death Is No Dream

The air oriented Soviet Union apparently inaugurated the era of mock air raids in June 1928. Soviet air exercises were not as elaborate or as large as those in the West, but they were extremely realistic. In fact, the dictatorial governments seemed to have a penchant for realism. The Russians clearly demonstrated this on 2 June when an "interventionist" force approached Leningrad. Sirens and horns wailed, people headed for cellars, and interceptors rose to destroy the bombers. Nevertheless, the bombers got through and dropped quite a few harmless, though distinctly odorous, gas bombs.¹ That following September Kiev experienced a similar mock gas attack during Red Army maneuvers. At the approach of the "enemy" the city was entirely blacked out and only men wearing gas masks were allowed to dash through the

streets once dummy bombs began bursting on impact.\textsuperscript{1}

The elaborate British war games in August 1928 surprised much of the world despite the lack of realistic detail. These simulated air raids, larger than any Gotha raid in World War I, began on 13 August when seven tight bomber formations crisscrossed London within an hour. Thousands of Londoners were amazed to see flight after flight of interceptors winging towards the bombers. Within minutes tenacious aerial battles filled the sky. Even though the RAF did not simulate actual bombing, it did its best to mimic real war conditions. By the end of the first day, the umpires concluded that 151 bombers and 139 interceptors had been destroyed, and that twenty-three tons of bombs had hit the capital.\textsuperscript{2}

The mock attacks continued around-the-clock for the next seventy-two hours, and resorting to a bit of realism, the night raiders flashed bright lamps in lieu of dropping bombs. The first shock came on the night of 14 August when fourteen separate bomber attacks eluded the defense and hypothetically destroyed the Air Ministry and several other government centers.\textsuperscript{3} The second shock came on the following night when an entire group of Fairy Foxes reached London, "bombed" the city and escaped unnoticed by the defense.\textsuperscript{4} In their final analysis

\textsuperscript{1}"Red Army Manoeuvres," \textit{Times} (London), 17 September 1928, p. 11.


\textsuperscript{4}"Air Attacks Renewed," \textit{Times} (London), 16 August 1928, p. 10.
of the four-day exercise, the umpires claimed that fifty percent of the bombers had been intercepted and destroyed. However, the Press quickly deduced that the remaining bombers must have reached their targets and released their cargoes of bombs and gas. Had it been a real war, therefore, few observers doubted that London would have suffered severe casualties.

About a month later the French also staged aerial war games as part of the French Army's fall maneuvers. One reporter described the 14-15 September games as the most elaborate aerial demonstration ever carried out on the Continent. Since nearly 400 aircraft "attacked" Paris for several hours, "destroyed" the entire Defense Staff, and jeopardized the safety of visiting dignitaries such as Samuel Hoare, the reporter was probably correct. French planes also used bright lights to simulate the dropping of bombs and special reporters at the "Front" kept Parisians well informed on the progress of the "war." Meanwhile, civil defense units and fire brigades performed their duties with admirable realism. When the show finally ended few people questioned the fact that the bombers repeatedly penetrated the defense and hypothetically inflicted great damage on the city.

Even though London's veterans of the Gotha raids enjoyed the


splendid aerial games, they hardly considered them a demonstration of war. After all, no real bombs fell on the city and the umpires had to guess at the amount of destruction. But skeptics were quickly silenced by a number of grim appraisals of the exercise. The aeronautical correspondent for the Times contended that the air games proved that not even the most modern defensive measures could save London's ten million inhabitants from a bomb and gas attack. Lloyd George simply stated that the aerial games illustrated that the next war will completely devastate the belligerent's nations; consequently, if the nations do not disarm in the air, "It is bound to end, sooner or later, in a smash."  

A surprising number of Americans were even more concerned with the significance of these aerial games despite the fact that they had never been bombed. For instance, the editor of a small mid-western town wrote, "We can remember what the last war was like. All indications are that the next war . . . will be inestimably more horrible in every way." Another concerned American wrote:


4 "Aerial Navies," World's Work, LVII (December 1928), p. 120.
Both the British and the French air forces have recently been conducting manoeuvres to determine how easy it would be to defend their capitals from an assault by hostile airplanes. In each instance it was demonstrated . . . that the enemy could break through and inflict enormous damage. Much of London was theoretically bombed and gassed.

Moreover, American pacifists could not agree on how to interpret the war games. Some denounced the demonstrations as warlike and contrary to the Kellogg-Briand Pact, but others¹ argued that the games had actually demonstrated the need for peace because they "brought home to everybody that if there is another European war on a grand scale, European civilization is doomed."

Meanwhile, other writers contemplated the grim implications of these rehearsals for doomsday. Chase,² for one, believed that Liverpool, Manchester, and Birmingham would also have been gassed and bombed if it had been a real war instead of a mimic attack. In that event, he added, not even a rat or a roach would have survived. After witnessing the games another American³ contemplated that in a future war a ten-year-old girl—choking to death on gas—might possibly gasp in a hospital, "Tell father I helped to defend London." He caustically

¹Sisley Huddleston, "Air Maneuvers Seen As Aid to Cause of Peace," Christian Science Monitor, 18 September 1928, p. 3; corresponding closely to this view, A. Corbett-Smith wrote, "if anything were still needed to drive into the minds of people the utter futility of war, the Royal Air Force of Great Britain has given it to the world," "London Helpless Against Air War," New York Times, 2 September 1928, sec. VIII, p. 12.


concluded, "It's too bad we can't have a sample war just to be certain of what it would be like instead of having to rely on the umpires. . . ."

The United States had its own small but audacious aerial demonstration in 1929 when General Foulois ordered one twin-engined Keystone bomber to "attack" New York City. With the aid of two in-air refuelings, Foulois expected the bomber to fly the 800 miles from Fairfield, Ohio, to New York and back without landing. But a large storm front over New York and Pennsylvania foiled this part of the plan. Nevertheless, the pilot decided to trust his instruments and to continue his mission by flying "blind." The bomber finally arrived around 9:30 P.M. on 21 May 1929 and the crew released an aerial flare over Governor's Island. When the flare exploded in mid-air, it illuminated the entire bay area and hundreds of people called the Press for an explanation.2

The pilot of the bomber and the Press quickly supplied the answers. The jubilant pilot3 announced:

We have demonstrated that with proper equipment, trained personnel, and adequate navigation and radio facilities, raiding bombardment squadrons can go anywhere, at anytime, under any weather conditions.

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Although various interpretations of the demonstration were expressed, most agreed that it symbolized the horrors of future war. After all, everyone knew when the bomber was supposed to arrive over New York, and the city's defense still failed to locate it. Consequently, a New York editor asked his readers to consider what could have transpired if ten enemy bombers had reached the city that night.

Americans on the East and West Coasts witnessed much larger demonstrations of air power in 1930. These, by and large, took the form of aerial reviews over San Francisco and New York. In the first phase 195 aircraft winged westward from bases in Virginia, Michigan, and Texas for the purpose of repelling an "invasion." After the Air Corps "destroyed" Crissy Field near San Francisco and the military facilities at San Jose, it concluded the two weeks maneuver with an astounding bombing demonstration above San Francisco's financial district.

Then, in May, Army and Navy fliers excited people from Boston to Washington with massed aerial fly-bys and mock bomb and gas attacks on mid-town New York. This demonstration stopped traffic for miles and drew thousands of people on to rooftops and to windows. Although Admiral Moffett emphasized the value of the American aircraft carriers

1"War In the Air," New York Times, 23 May 1929, p. 28.
which launched the "attack" on New York, he also tacitly conceded that an enemy force could do the same thing.

Later that summer the French and Russians again conducted remarkably realistic air warfare exercises. The people of Lyons were given a loud and well prepared demonstration in July. When the bombers finally reached the blacked-out city, they were met with an incessant barrage of blank anti-aircraft fire. A few minutes later fire departments fought simulated fires and the police practiced mob control.\(^1\) The authorities only complained that too many people remained outside in order to watch the exercise.

But when Moscow's air raid sirens screamed their horrible warning on 21 August 1930, the obedient citizens donned their gas masks as they dashed for shelter. This time the Soviets actually detonated explosives on the ground where bombs would have fallen. Meanwhile, anti-aircraft guns let loose a long, fierce barrage and fire engines dashed through thick clouds of smoke that represented poison gas.\(^2\)

In the year before the great disarmament conference at Geneva, the world witnessed the most significant, elaborate, and thought-provoking aerial war games. Moreover, they indisputably affected the public, the Press, and governmental authorities. Besides accentuating the world's desire for peace, the war games also cast additional emphasis on the uneasy international situation.


 Appropriately enough the most expensive and elaborate aerial demonstration took place in the United States. But even as the 672 green-bodied and yellow-winged bombers and fighters assembled at airfields around New York, pacifists in Connecticut, New York, and Philadelphia protested to the President that the war games were "a menace to peace," a desecration of the Sabbath, and an outrage to Christian People. Notwithstanding this grumbling the aerial games began on 23 May 1931 in a heady atmosphere.

General Foulois' ambitious demonstration began at 5:45 P.M. when the vanguard of bombers roared over Yonkers on its way to mid-town New York. Millions of amazed New Yorkers watched the exhibition from tenement house rooftops, the upper levels of skyscrapers, and countless other vantage points. In fact, more than 50,000 people stormed Governor's Island in order to witness the twenty mile long line of aircraft which passed overhead for nearly half an hour. Meanwhile, a radio announcer graphically described the "greatest mimic air battle in history" to the listeners of more than 150 stations around the country.


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The next day the "air armada" winged up the coast to Boston where several hundred thousand people awaited its arrival. Much like the New Yorkers, the people of Boston were amazed at the number of aircraft they saw overhead and the lively mock air battle that the Air Corps staged.¹ On the following day, the "air armada" returned to New York via Vermont, New Hampshire, Albany, and the Hudson Valley. This time Foulois gave New Yorkers a lively eight minute mock air battle and once again millions of people were left speechless by what they saw.²

In the wake of this second "attack" on New York the Air Corps turned south, fought off hypothetical bombers—that were launched from aircraft carriers—over New Jersey, and then winged en masse over Philadelphia, Baltimore, and Annapolis. The USAAC staged its finale over Washington, D. C., on Memorial Day with "hair raising dives and climbs."³ Altogether the "air armada" flew over 2,000,000 air miles without mishap and impressed millions of Americans in the process.

Two months later, while the representatives of seven European nations met in London to discuss peace in Europe, the RAF attempted to

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surpass its 1928 aerial demonstration. Unfortunately, bad weather hampered the first day of "war." As one reporter observed, the ten bomber squadrons could not find their targets and the interceptors could not locate the bombers. Britain's famous weather obviously won the first round. But the situation changed quickly on the second day. Over 300 RAF aircraft battled over London on 21 July and all umpires agreed that at least fifty percent of the bombers succeeded in reaching their targets. In fact, one group managed to destroy the Duke of York's headquarters. Nor did the pattern change during the next seventy-two hours of round-the-clock attacks. Once again the results were anything but reassuring. The umpires estimated that the "aggressor" dumped fifty-four tons of bombs and gas on London despite a more efficient air defense effort.

The French also resumed their aerial exercises that summer, but on a much smaller scale. Moreover, it seems that the nearer the French air games came to the German border, the more seriously they were viewed by the local population. For example, the 27 August air maneuvers over Nancy were quite realistic. Alarms sounded, guns roared, the town was blacked-out and civilian "casualties" were rushed to fully staffed

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aid stations.¹ But the "attack" on a port city in the Gulf of Lions on 30 April caused little excitement even though the umpires agreed that the facilities were probably destroyed.²

The Italians, on the other hand, actually seemed to be rehearsing for war. They not only employed a record number of aircraft, but also resorted to psychological tactics. In fact, the Air Staff used over 890 aircraft for the specific purpose of testing Douhet's theory of massed aerial attack.³ The Italian Air Force launched its mock war with a vigorous attack on Spezia during the early morning hours of 27 August. Even though the defense knew exactly where and when the "aggressor" would strike, the bombers nevertheless crushed all resistance by eight o'clock. At this point they roamed at will over the town and released thousands of leaflets⁴ which announced:

Italians: In case of war enemy aircraft will not drop coloured paper on your towns and homes but powerful explosives and incendiary bombs. The enemy airmen will fire real bullets, and will drench the streets of towns, not with the vapour of the air manoeuvres, but with a deadly rain of poison.

On the following day Caproni bombers attacked Genoa and Florence. On this occasion Italian fliers released large quantities of firecrackers in lieu of bombs which released a pungent sulphurous odor

when they exploded. The third day opened with a ninety minute "bombardment" of Milan and Bologna and more than 300 bombers returned that afternoon for the coup de grace. But this time the anti-aircraft batteries were surprised by the simultaneous appearance of dive bombers who simulated a gas attack by smothering the towns with a dense cloud of smoke. Since most of Italy's northern cities were "destroyed" and declared uninhabitable, the defense acknowledged defeat and asked for an "armistice" on 31 August.

The 1931 aerial demonstrations also generated familiar portends. One mid-western editor wrote, "the present aerial games should have a deep significance for anyone who is equipped with normal powers of imagination." Gesner, who apparently believed that American isolationists lacked imagination, insisted in his grim account of a future war that, "there is no defense against an air attack by a power willing to pay the price in airplane carriers, planes, and men." Meanwhile, a British reporter assured Londoners that the RAF had conclusively proved that nothing can stop the bomber.

Although aerial war games were staged in 1932, they never again matched those of the previous year. Nevertheless, the French and

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2"Italian Air War," Times (London), 31 August 1931, p. 10.
Italians compensated for this lack of quantity with realistic quality. In pursuit of such realism the entire eastern section of France, from Rheims to Metz, briefly relived wartime memories as three separate bomber groups swept across the Ardennes, the Marne, and the Moselle districts. Towns were blacked-out, train schedules were retarded, and most of the people participated in one form or another.  

But the Italians placed even more emphasis on realism. In May 1932 they constructed a large mock city and then destroyed it with real bombs and gas. Then, in September, Rome received a foretaste of war. When the first of several bomber waves approached Rome, the sirens wailed, the searchlights probed for the invisible invaders, and anti-aircraft guns let loose a barrage of blank shells. Within five minutes all of Rome, including the Vatican, was blacked-out and all thoroughfares were deserted. The latter point was especially important since the bombers released small smoke-filled bombs. This particularly realistic aerial demonstration provoked a great deal of thought in Italy and—taking into consideration the wide press coverage—it could not have been overlooked by the Geneva Disarmament Conference.

The five years of war games clearly accentuated the widespread fear of aero-chemical warfare. Many nurses in France began to receive special training in the treatment of chemical warfare victims and an


increasing number of citizens were encouraged by their governments to take precautions on their own. In response to such encouragements gas masks were sold as Christmas presents in the eastern provinces of France. "Buy a gas mask," one advertisement announced, "It will prove the best investment you ever have made. Do not wait until it is too late." Furthermore, the Danish Government manifested the prevailing mood in Europe when it made arrangements to distribute gas masks to the public since it would be "criminal negligence not to prepare for the possibility of chemical warfare." 

However, underground shelters were considered even more efficient than gas masks and apparently no one surpassed the Russians in this area. The bomber menace obviously influenced Soviet architecture since Moscow's new communal dwellings included spacious and well-equipped underground shelters. But the Swiss were not far behind the Russians. According to one Swiss professor only deep underground shelters equipped with electricity, air filters, and ample reserves of food and water could protect mankind in the next war. He added that some Swiss towns had already begun to build such special bomb shelters. Eventually even the British Home Office released a special Air Raid Precaution pamphlet

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2"Denmark To Distribute Gas Masks To Civilians," New York Times, 28 September 1933, p. 6.


4Quoted in Bratt, That Next War?, op. cit., p. 81.
that explained how an average basement could be made gas-proof.\(^1\) In any event, all the aforementioned factors encouraged many Americans and Europeans to pursue the vision of international disarmament with even more enthusiasm.

So Bright The Vision

Assuming that entire nations would become a battlefield in a future war and haunted with the belief that the bomber stood supreme among the available weapon systems, many governments attempted to limit or abolish air power. It is often overlooked today that these and later attempts to limit arms are but a chapter in a long sequence of attempts to limit new weapons. Indeed, as early as 1139 A.D. the Lateran Council attempted to outlaw the crossbow after it began to take a heavy toll of the armored nobility. This effort met with no more success than the attempt to outlaw the musket. Wellington, likewise, failed in his attempts to ban the breechloading rifle even though it threatened to transform the infantry into long-range assassins.

Moreover, the 1868 St. Petersburg Agreement demonstrated once and for all that useful weapons will not be banned. At that time, the seven major European powers banned incendiary and explosive bullets because they foresaw no use for them. But when it became clear in 1915 that Zeppelins were especially vulnerable to incendiary bullets, the British quickly disregarded the St. Petersburg Agreement. Finally,

\(^1\)Hyde and Nuttall, *Air Defence and the Civil Population*, op. cit., p. 112.
in 1923, this highly advantageous ammunition was again legalized. Because of military utility, the 1907 Hague Conference failed to renew the five-year prohibition on the use of balloons. The French and Germans simply refused to surrender their potentially useful airships.

The period between the world wars once again demonstrated that however much nations may desire peace and disarmament, they will not agree to abolish potentially useful weapons. This quickly manifested itself during the 1922 Washington Naval Conference. Although the five major powers agreed to limit the rather expensive battleships which—by the way—Mitchell had already sunk, a special sub-committee found itself unable to reach an agreement on the limitation of bombers. Nor did this escape the attention of the Press. The Louisville Courier-Journal noted that the conference "did nothing regarding the limitation of air forces, even tho the world was convinced that the next war would be fought in the air." The editor of the New York Times said much the same thing:

The conference, after restricting capital ship strength, forbidding submarine warfare upon merchant vessels and placing poison gasses on the blacklist, admits its helplessness to curtail the sinister energies of the most dangerous and destructive instrument of modern war, the bombing airplane.

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In fact, this initial failure established an agonizing pattern of hope and frustration. After the grim experience of the First World War, the world desperately searched for peace, but not even the most pacifistic diplomat could resolve the bomber question. After a few futile attempts the diplomats realized that bombers, unlike battleships, could not be limited by tonnage, numbers, or characteristics because it was impossible for them to distinguish between military and commercial aircraft. Quite simply, the first ultimate weapon—the bomber and the gas bomb—offered the world numerous peaceful benefits as well as the promise of horrible destruction in war. Furthermore, since both aircraft and gas were manufactured for commercial and military uses, both could easily be secretly produced.

Nor were subsequent attempts to limit or abolish the bomber menace in the twenties any more successful. Both the Hague Conference of 1923 and the committee of air experts, which assembled at Brussels in 1927, found it impossible to define or limit military air power. Even though the World hailed the 1928 Kellogg-Briand Pact, and one writer even went so far as to call it "One of the greatest events since the birth of Christ," Bratt observed that this attempt to outlaw war could not be "expected to function at the very moment it was designed to function—on the eve of the outbreak of war and under the pressure of war-psychosis." Obviously, the weapons themselves had to be outlawed; and, therefore, the representatives of sixty nations

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2 Bratt, That Next War?, op. cit., p. 199.
assembled at Geneva on 2 February 1932 in one last effort to limit offensive weapons—especially the strategic bomber.

The Geneva Disarmament Conference opened with neither pomp nor ceremony in, what Hoare¹ called, one of the most "dismal buildings in Europe." It lacked proper ventilation and acoustics. Moreover, the representatives were continually scrutinized from the gallery by "an army of savage looking women" who represented various American pacifist groups. Nevertheless, as Henry L. Stimson noted, the disarmament conference was "the result of some twelve years of development and it [carried] with it in a very large measure the hopes of the peace-loving peoples of the entire world."²

By the time the first few months had passed, it became clear that national interest still outweighed the longing for disarmament. The French called for an international police force and for the internationalization of civil aviation. The United States and Great Britain disagreed with this plan and called instead for the elimination of aerochemical, bacteriological, and submarine warfare. Italy and Japan added capital ships and aircraft carriers to the list. Meanwhile, the Soviets wanted to abolish bombers, tanks, and artillery. In other words, the French wanted to keep the Germans disarmed and they wanted to neutralize German civil aviation; the Americans and the British sought to redeem their isolation; the Italians hoped to neutralize

¹ Hoare, Nine Troubled Years, op. cit., p. 124.
French power; the Japanese wanted security from the Americans and the British; and the Russians wanted to diminish the mechanization of land warfare. Nevertheless, each nation expressed its fear of the bomber.

 Appropriately enough, the British fired the first volley at the strategic bomber. Sir John Simon, the Foreign Secretary, denounced the promiscuous character of destruction which modern war threatened and then called for the abolition of the most modern methods of warfare; that is, those which threatened the existence of civilians.\(^1\) The American representative was more explicit. He announced, "All bombing 'planes should be abolished'," and added that all forms of aerial bombardment must be outlawed.\(^2\) Yet, despite these pleas, the delegates made little progress by the time they adjourned for the summer recess. They had only agreed in principle that the bombing of civilians should be outlawed, that all aerial bombardment should be abolished, and that civilian aircraft should be limited by size and weight.\(^3\)

 This is not to suggest, however, that the delegates were not plagued with other problems. Indeed, they sought to reach an agreement on the size of standing armies, reserves, and stockpiles. Furthermore, tanks and artillery received their share of attention. The

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1 Hyde and Nuttall, *Air Defence and the Civil Population*, op. cit., p. 41.


delegates were also deadlocked on the vital question of disarmament supervision and subsequent inspection procedures. But Simon exposed the most outstanding problem confronting the disarmament conference in his address to the returning delegates:

"There is no aspect of international disarmament more vitally urgent than adoption without delay of the most effective measures to preserve the civilian population from the fearful horrors of bombardment from the air.

The British finally announced their willingness to go to any lengths to disarm in the air. They suggested that all disarm to Britain's level—fifth in the world—and that they agree to accept the lowest possible unladen weight for civilian aircraft. This, as it turned out, became the most fearsome stumbling block. Almost everyone believed that passenger and cargo aircraft could readily be converted into bombers. Therefore, if bombers must be outlawed, then large civilian aircraft must likewise be abolished. As it was, the delegates spent weeks, running into months, trying to define the specifications of a bomber. They focused in on three key characteristics; namely, weight, engine horsepower, and the ratio of horsepower to wing area. But the delegates could not agree on even one of these points.

In order to circumvent this hurdle, the French—who readily confessed their fear of sudden aerial attack and chemical warfare—\(^1\)


\(^2\)"Initiative Seized By France," Times (London), 8 February 1932, p. 12.
proposed on several occasions that all civilian aircraft must be placed under the control of the League of Nations. The Italians, who possessed some of the world's largest bombers, displayed little interest in the French plan or in the weight-limitation scheme. The Italians finally announced that they would only consent to a weight-limitation scheme if all nations agreed to set the minimum weight for aircraft at 1,430 pounds.\(^1\) Anything less, they reasoned, would eliminate Italy's strike force but not the other nations' lighter bomber forces.

Yet both these ideas would have curtailed or doomed the development of commercial aviation. In the end the United States killed both plans when it announced that American commercial aviation must be exempt from any control because of America's "special geographical and meteorological conditions."\(^2\) Moreover, the British demand that the RAF must maintain and, if necessary, use bombers against " primitives" in frontier areas all but eliminated any chance of outlawing the bomber or aerial bombardment.

Luckily for all concerned the Germans walked out of the disarmament negotiations on 14 October 1933. The Germans, it should be recalled, had demanded Gleichberechtigung (equality of rights) from the beginning. Officially they were willing to agree to any level of disarmament. After all, they were already disarmed under the clauses of

\(^1\)"Italy For Plane Limit To End Bombardment," *New York Times*, 22 August 1932, p. 7.

\(^2\)"Disarmament In the Air," *Times* (London), 17 February 1933, p. 12.
the Versailles Treaty. But at Geneva the Germans demanded the right to increase their forces to whatever level the others disarmed to. Although the British could understand this reasoning, the French could not. The French argued that the disarmament conference could not allow Germany to rearm. On the other hand, Germany would no longer accept the position of a second-class power. Thus, while everyone blamed Germany for the failure of the disarmament conference, Churchill\(^1\) shrewdly pointed out:

> The nations had been nagging each other to disarm, while all the time their hatreds, jealousies, and dangers had been quite unrelieved. Of course they would not disarm. Not one of them was thinking of doing so, except, perhaps Great Britain. On the contrary, during the last seven or eight years those nations have increased their armaments, especially the United States, whence came the most beautiful speeches of all.

Actually the Geneva Disarmament Conference never had a chance of succeeding. Not only were military men unwilling to part with the bomber, the aircraft carrier, or the tank, but the antics of restless dictators compelled other governments to examine their defenses instead of the question of disarmament. A quick glance at the political scene amply illustrates this.

After the economic crash of 1929, the world seemed restless and filled with portents of momentous changes. In Europe a sense of foreboding replaced the "Spirit of Locarno" and most of the major powers confronted serious social and economical problems. In the Middle East

\(^1\)"Germany's Neighbors," *Times* (London), 15 November 1933, p. 16. According to various official sources Churchill was quite correct. In 1932 the U. S. appropriated $109,066,000 on aviation, the British spent $98,500,000, and the French spent $83,600,000; Fradkin, *The Air Menace and the Answer*, op. cit., p. 138.
both Syria and Palestine seethed with unrest while the Orient stirred with signs of a coming storm. Africa had not found solutions for its numerous political and economic problems and South America was unable to cope with its economic unrest or the bloody war on the Chaco plateau. Hence, Fuller\(^1\) ruefully observed: "Never in the whole course of modern history . . . has peace been more desirable than today; and yet never during this tremendous period has the word 'War' been so constantly upon our lips. Wherever we turn we hear the whisper of war."

As it was the Japanese did not even bother to whisper in China. When the Mukden Incident exploded into open warfare in October 1931, the Japanese not only bombed Chinchow,\(^2\) but they also circumvented the Kellogg-Briand Pact by not declaring war. In fact, a shocked world watched its first "brush fire" war. Every claim was contested in the League and every statement of fact was denied. Collective security and world opinion had not deterred an aggressor—the League had clearly failed. Moreover, the League's staunchest defenders rebuked such criticism with the surprisingly familiar argument, "... could anyone tell how much worse things would have been in Manchuria if it had not been for the restraining influence of the League?"\(^3\) This, of course,


side-stepped the fact that the war existed and people were being bombed despite the Covenant.

And then, a mere four days before the opening session of the disarmament conference, the Japanese attacked Shanghai. For the next two months the New York Times carried daily front page accounts of the war in China while the disarmament conference often slipped from the front page. Americans and Europeans read of the bombing of Chapei and how thousands perished in the ensuing conflagration. Even though the Japanese Ambassador assured the League that "notwithstanding the unfortunate situation in the Far East," Japan was still eager to disarm, the war in China dragged on into 1933. Moreover, during this last phase the Japanese used gas bombs against China's military and civilian personnel. The warnings of the past decade were apparently all coming true in the Orient.

Meanwhile, the League alternately pleaded with Bolivia and Paraguay to cease their war in the Chaco wilderness and threatened them with various consequences if they did not. Nevertheless, these two insignificant nations defied the League as easily as Japan. By the time the war ended in 1935, it had claimed about 250,000 casualties. But


4Goss, Civilian Morale Under Aerial Bombardment, op. cit., p. 77.
it cannot be determined how many of them were victims of the brutal, though limited, air operations. Nevertheless, the Chaco War, the conflict in China, the continued fighting on India's northwest frontier, and the strife in Kurdistan all contributed additional signs and portents of things that awaited the civilized world should it again embark on a major war.

By 1933 a great many government officials, military men, and influential citizens were unmistakably concerned with the bomber menace. Whenever war was mentioned, these men immediately visualized a sky blackened by bombers. Moreover, they were unable to devise a feasible method of mitigating this threat to civilization. Accordingly, one American\(^1\) spoke for millions of people when he sadly commented:

> To the man-in-the-street the shadow of the bomber is the sharp expression of what another war must mean. Its shadow falls across his home, across the office and factory and field where he works, across his schools threatening his liberty and his existence.

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RUMINATION

If there is to be another war, we know only one thing about it—that is, how it will be begun. No one can tell what will happen after it gets started, nor how much of civilization will be left at the close, but the one sure fact is that it will begin in the air.

James T. Shotwell (1934)

The question that most urgently needs answering is why has virtually every historical study since World War II overlooked this fear of the strategic bomber? Why do historians like Higham declare that singular bloody incidents during the bombing of London "were used in the following years by statistically unsophisticated air force planners to create a horrible spectre of the power of the bomb," and that their fears of the future were "largely out of touch with reality?" And why would a student of World War I bombing operations write as late as 1973 that the preceptor's and warrior's forecasts were merely "exaggerated claims" for air power?

Interestingly enough Maitland provided the answer some 150 years ago when he observed that it is too easily forgotten that the past was once the future. Obviously, this general disregard of the bomber menace is based on the knowledge that the major powers did not use gas bombs against each other in World War II. Since gas was considered

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an indispensable part of the bomber's repertoire of weaponry, it is ludicrous to assume that inter-war fears of strategic bombing were groundless just because they failed to materialize in the last war. Despite all the accounts of how well Europeans endured the heavy bombing in World War II, it is always interesting to ask the survivors how long they would have remained in their basements if they had learned that gas bombs were mixed in with the high explosives and incendiaries.

It goes without saying that today we possess an ultimate weapon for more deadly than the strategic bomber of pre-World War II days. But this is simply stating that the ultimate weapon has been refined to more destructive levels. Few people in the thirties foresaw the power of the atom. Nevertheless, they could picture as clearly as we can today the potentiality of their ultimate weapon. The bomber was just as real to them as today's ICBM is to us, and they had to face the bomber just as we must confront the nuclear missile.

Above all, it cannot be over emphasized that air power received the Lion's share of attention whenever war was discussed during the inter-war period, and that aerochemical warfare was considered a threat to civilization. Liddell Hart¹ clearly pointed this out in his 1937 publication:

To anyone who analyses the comparatively slight material results of air raids in 1914-1918, it is remarkable to find what a profound psychological impression they made, and have left. . . . The effects have not disappeared with the cessation of the cause.

¹Liddell Hart, Europe In Arms, op. cit., p. 12.

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Even the official British history\(^1\) of World War II bombing operations pointed out that the Gotha raids were "often recalled in later years" and "the fact that two squadrons of fighters had to be withdrawn from France at a critical moment was never forgotten. After a decade of speeches and writing, many people were inoculated with the idea that the "Front" no longer existed and that civilians were doomed to perish in their own homes or workshops. Although some people probably viewed the preceptors and warriors as fanatics, many other people listened to them and conjured up pictures of a gassed and dying world.

However, it is also true that the bomber menace was a matter of speculation and academic discussion. But this was part of the outgrowth of the many attempts to cope with the ultimate weapon. Informed observers only disagreed on the severity of the next war. Otherwise most agreed that the bomber could destroy cities with high explosives, incendiary, and gas bombs. It was also accepted that this could destroy civilization itself since society could not survive without governmental authority, public services, and industry. This, in turn, created problems for air staff planners. For example, should the bulk of the bombers be launched at the cities or at enemy military installations. After all, every bomber squadron that was aimed at a civilian center would not only leave enemy bases intact, but also their "second strike capability." This finally led most observers to conclude that only the threat of retaliation and mutual destruction could deter a major

\(^1\)Webster and Frankland, The Strategic Air Offensive, op. cit., pp. 44-45.
war. Consequently, each side had to guess the others' intention and
the hesitancy this created manifested itself in 1939 and 1940. But
Jonathan Griffin,\textsuperscript{1} among others, astutely observed in 1936 the insta­
\phantom{}bility of a situation where enemy bombers continually confronted each
other:

\begin{quote}
       It would be a balance of terrors—for that is
what the balance of power, loaded with bombs, should
truly be called. In the end one group must strike.
\end{quote}

Nevertheless, the publications, speeches, speculations, and the
aerial war games all clearly illustrated how well aware the world was
of the bomber menace. Furthermore, it required little imagination to
combine a decade of progress with the effects of such limited engage­
\phantom{}ments as the China episode, the Chaco War, and later the Ethiopian War
and the Spanish Civil War. Charlton\textsuperscript{2} probably had all this in mind
when he lamented:

\begin{quote}
       How tragic that the brain-child, born in the early
years of this century, should have become a Frankenstein
in its early thirties.
\end{quote}

\begin{footnotes}
\item[1] Quoted in Quester, \textit{Deterrence Before Hiroshima}, op. cit., p. 89.
\end{footnotes}
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