The Struggle for Law in the Age of Air Power

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To Marcella who kept
house in
New Bedford with Mimi,
Terry and Brian while I
completed this project in
Cambridge.

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I. FORWARD

New Rules to Govern Man's New Ability, the Ability to Fly

The need for rules to regulate conduct has been apparent since the first primitive tribes came into contact. This contact between foreign groups was either friendly for trade, or unfriendly for conquest. In any case such contact was the result of movement, either on foot over land routes or by boat over rivers and seas. Without this movement of peoples, this march of armies, there would be no contacts. If each group lived in isolation there would be no need for international law.

Since the earliest beginnings of this law of war and peace, jurists have dealt with freedom of the high seas, ports and harbors. Nations have traded by land and seas, fought battles and built surface armies and navies for their protection, and retreated behind rivers and mountains

for their security. In peace and war, through usage and custom, treaties and common law, a framework of law was developed to deal with the problems of commerce and military action on land and sea. Always this world traffic moved along the surface of the earth.

Quite suddenly at the end of the 18th century, a new element was added. In 1783 deRozier made the first ascent in a fire balloon. It marked the dawn of the age of flight. Man was no longer compelled to journey along the earth's surface. Rivers, mountains, natural and man-made barriers – all were meaningless to the airman. Man's ability to fly through the air oblivious to the efforts of groundlings to interfere, called for a whole new theory of international law.

As man's means of flight progressed from free balloons to controllable airships and finally airplanes as we know them, the effects of flight on men and institutions grew steadily. The ability cut down the length of time, making interchange of ideas and products between peoples, cultures and economies easier than ever before.

It brought with it new industries, opened new territories in the middle of continents and in the Arctic. It has touched upon the lives of every one of us for good or evil.

Aviation had great commercial promise, and it has lived up to that promise.

But it is in the political sphere that aviation has brought about the most startling changes. By its very nature it is a natural military weapon. Just as the seas can be used for attacks on wide and unprotected coasts, the air can be used for attacks even to the heartland of a nation. Air power knows no natural boundaries, it travels in three dimensions. It moves with great speed and returns to its base to ready itself for another attack. The invention of the airplane has increased the effects of war on civilians, increased the differential between large and small states, increased the rapidity with which war spreads. Yet it has also increased the feasibility of international sanctions. While the individual and the small state have become less secure under conditions of international anarchy, the pressures for and the possibilities of in-

ternational organization for peace and security have increased. In short, in the age of flight one nation can strike out for world conquest, One World may be possible at last.

These ideas are to be found greatly developed in an article by Quincy Wright, "The International Regulation of the Air", American Economic Review, May 1945.

Man's new ability, discovered in the eighteen century and destined to have such a tremendous effect on mankind called for new rules and regulations. This new law was to be developed not by ancient kings or seers, not by long centuries of usage but by men of our own time, contemporary jurists.

Air law might have been born in 1793 when the German lawyer Putter discussed the right of his Emperor to form some regalia to deal with the new "air balls".* From this time on the discussion of aerial law grew steadily. The use of balloons in the Franco Prussian War increased the interest of writers. However, the first example of a ratified covenant treating with

air law is to be found in the first Hague Conference of 1899.

It is possible for the memory of living man to review the entire record of international air law. It is a record drawn by men who wished to foster the growth of the new transportation medium and new paths for world trade and commerce. Yet, the specter of military aircraft, capable of flying over any city and dropping deadly bomb loads stood in the way of any full and open agreement. Fear played an important part in the formulation of air law, and that increased as the capacity of the aircraft grew. Attempts were made to outlaw the air weapon, but the promise of civil aviation was too bright to destroy. International legalists are confronted with a dilemma in dealing with air power (the ability to do something in the air … deliver cargo, people, bombs, to a desired destination for a desired purpose) for it is not divisible into two parts. It isn't just a military weapon and dangerous to society; not just a civilian mode of transport and hence of value to society. It is both.

This paper purports to trace the attempts at control of Air Power, the air weapon particularly, the failures in the periods between wars and the use of air power in the conflicts. The emphasis will be on the military aspects of air law, with some attention given to the doctrine of military necessity in modern war. Civilian aviation, as it points out the dilemma will be treated toward the end of the paper.

Running as a continual thread in the background will be the growth of the destructive capacity of the air weapon which poses a mounting threat to civilian lives and property and even to civilization itself.

Can International Law meet the treat of electronic and atomic air war?

What safeguards will protect civilians and civilization if war begins again?

The Struggle for Lawin the Age of Air Power

I. Freedom or Sovereignty in the Airspace

"The lawyers in every country have been keeping busy during the last century in developing a special body of law for the railroad, the telegraph and for the telephone. They must soon address themselves to a new task of the same nature. The airship has been brought to a state of efficiency which takes it out of the field of experiment and on the transportation for hire of passengers and goods ……

Can there be one world-law for the high air as there is one world-law for the high seas?"1

A. Early Air Law

By the time Dr. Ellis had written this call to action man had been going aloft in balloons for 127 years and in airplanes for 7 years. He was not the first legalist to grapple with the special problems that appeared when man began to use the airspace as a travel medium. In 1793 the German jurist, Putter, discussed the right of the Emperor to formulate "regalia" dealing with

"air-balls".2 Ever since that time questions of air law have been posed and answered.

In 1891 Manduca, an Italian wrote on criminal acts committed in the airspace. In 1901 Rosenburg delivered a lecture on the liability of balloonists to pay damages for injuries committed by them.3 However, these were only interesting side questions. The basic questions to be answered in the first decade of the 20th century was "who owns the airspace?

B. Theories of Airspace Control

Who controls the air? Is it absolutely free for navigation? Or is it controlled by subjacent nations to a certain height and then free to the zenith? Do the underlying states have absolute sovereignty over the aerial domain? Or is this sovereignty subject to the right of innocent passage?

While it was generally agreed that all airspace over the high seas and unoccupied territory is absolutely free, the status of airspace above sovereign territory was still in doubt.

There are two freedom of the air theories. One that the air is completely free, the other that the air is partly free; the latter theory restricts the right of the subjacent state to a limited zone in the airspace, leaving the upper zone completely free. (This is somewhat analogous to the 3-mile limit concept in the freedom of the seas.)

There is another group of theories advocating sovereignty of the air. The first gives the state full rights to an indefinite height. The other restricts the right allowing innocent passage.

Fauchille in 1902 took the view that, although the air is free, states have the right to defend themselves with necessary measures not only on its own territory, but on those things that belong to no one – res nullius. A state should be able to assign the altitudes at which a plane can fly freely, also to prohibit flight above restricted areas. It reserves the right to inspect aircraft in the airspace and to prohibit foreign military aircraft.

Professor Von Liszt of the University of Berlin stated that each nation has complete sov-

ereignty over its airspace as high as humans can reach. The critics of this theory claimed that it would end all aerial navigation.4

In 1908 Meili stated: "The air altogether with the airspace is free, that is to say that the disposition of all nations under this reserve, that each territorial state can do that which is necessary for its own preservation".5 M. Nys insisted that even this right of preservation would destroy freedom of the air. Nys based his idea on the instruments of maritime law, whereby airships and planes would be considered portions of the homeland.

Fauchille's idea that a state could protect itself by claiming full sovereignty over a zone directly above the earth's surface was challenged by Westlake in 1906. He pointed out that while ships heading out to sea were less and less able to influence those on land, airships flying higher over sovereign territory were able to drop missiles that gained in velocity as the altitude increased. Clearly, a zone above the sovereign territory offered no real protection from aircraft fly-

ing high above. In 1910 Hazelton predicted that a uniform international regulation of air flight would be possible under the doctrine of full sovereignty over airspace. It would come about by contractual treaties.

> "Recognition of a state's full right of sovereignty over superjacent airspace will safeguard state's rights and interests. As states have adopted internationalism as regards sea navigation in territorial waters, international Railroad traffic on land, international wireless and admission of aliens to privileges of the state, they will also develop this new navigation along international as well as national lines."6

C. International Conference on Air Navigation, Paris, 1910.

The first International Conference on Air Navigation, held in Paris in 1910, saw both Germany and France advance the cause of freedom of the airspace, subject only to the safeguarding of the security of the state and its in-

habitants. Britain recognized that whatever rights a state held it to its superjacent airspace were restricted by freedom of passage. Britain did claim that the previous proposal did not thoroughly safeguard the security of the states; it failed to allow for discrimination in urgent circumstances or in case of war. Britain's Admiral Gamble insisted on the right to prohibit foreign aircraft over the territory of Britain. Whatever happened, Britain was still an island.7 In normal times England was perfectly willing to allow the entrance of aircraft in the same way as foreign ships were allowed in territorial waters. The conference split over the rule prohibiting discrimination, but it served to bring out the ideas on civil aviation in effect prior to World War I. No state forbid the entrance of foreign aircraft for reason other than security, such as the prevention of competition.

In 1909 the International Juridic Committee on Aviation was organized in Paris. This committee outlined a code of the air on January 16, 1910. Successive annual congresses were

held at Paris in 1911, in Geneva in 1912 and Frankfort in 1913. General theories were debated but the art of aviation had not progressed to a point forcing the formulation and adoption of any general regular convention.

D. Institute of International Law, Madrid, 1911

In 1911 the Madrid meeting of the Institute of International Law declared that the international circulation of air was free, subject to the right of the states to take measures to secure their security and that of the persons and property of their inhabitants.8

Stringent Aerial Navigation Acts were passed by Britain, France and Germany prohibiting unauthorized flights over their territory. Though the legalists might agree to freedom of the skies at Conferences, the governments put military security first.9

By 1914 nations had established wide networks of prohibited zones and left only small corridors open for flight between nations. Dur-

ing the war the air boundaries of Europe were closed and belligerents flying over neutral territory were forced to land and their crews were interned.10

E. Paris Convention 1919

The International Convention for Aerial Navigation signed at Paris in 1919 recognized complete sovereignty of airspace by the subjacent state. The first consideration was the security of the states, but the concept of protecting national airlines against foreign competition was taking shape.

The airspace over open seas was considered entirely free, deriving its status from the freedom of the seas, which in turn rests on the moral principal and common conviction that such freedom best serves the interests of the world community.

II. Attempts to control the Air Weapon

Air navigation is a greater threat from a military point of view than is sea navigation, for

it penetrates to the heart of a country, horizontally as well as vertically and practically knows no bounds. As sea navigation became a military instrument so might air navigation.

A. Brussels Conference 1874

One of the earliest international agreements on the use of aircraft in war took place in 1874. The Brussels conference of that year, while it never became a part of international law was influential in the later conventions. The reference to aerial flight had to do with the status of balloonists who acted as dispatch carriers. They were not, if captured to be treated as spies. The first Hague Conference of 1899 and the second Hague Conference of 1899 followed closely the earlier ruling.

B. First Hague Conference 1899

The first Hague Conference saw the declaration of a more important ruling on the military use of balloons. It prohibited, for five years "the discharge of projectiles and explosives from bal-

loons or by other new methods of a similar nature".

C. Second Hague Conference 1907

In 1907 at the second Hague Conference the British Delegate Lord Reay argued that this opportunity to renew the Declaration should not be missed. It was a chance to outlaw the new and terrible method of warring in and from the air. The French delegate, M. Renault, did not wish to give up the military advantages that might result from the technical progress of the airplane, and contended a distinction should be drawn as to lawful and unlawful targets for aerial attack.[11] After discussion, the original declaration was extended "until the next Hague Conference". It was not ratified by any of the great powers except Great Britain and Austria-Hungary. Even Great Britain ceased to be bound by this contract when a non-signing power joined the belligerents.

In 1907 there was no renewal of the aircraft section of the conference. Article 25 stated:

> "The attack or bombardment by whatever means, of towns, villages, dwellings or buildings which are undefended is prohibited."

This allowed the use of air power in war, limited only by the rules for other surface forces. And the maze of rules was confusing; how can one tell in the heat of battle whether an area is defended or not?

Hazelton in the year 1910 was aware of the danger of this doctrine. He said

> "owing to the peculiarly dangerous opportunity of air-vessels to attack places from above, it is really not sufficient to limit the prohibition in their case to undefended places; and we can but hope that the more general declaration of 1907 will be finally agreed to by all the Powers. But I doubt whether it will be!"[12]

But here was a special ruling to apply to naval bombardment. Since naval units could not easily occupy a town to destroy military ob-

jectives, defended or not, naval commanders were permitted to bombard targets in undefended ports, after a summons, a waiting period. The commander would not be responsible for any unavoidable damage caused by the bombardment under such circumstances. Here, the old rule concerning defended and undefended places, disappears. If the naval forces were permitted bombardment, and since there was no special ruling on air bombing, it follows that air commanders should follow that ruling which seamed most suited to their weapon.

In 1911, at the Madrid meeting of the Institute of International Law, opinion as to the legitimacy of the aircraft as a military weapon opinion was divided, but the final rule recognized the legitimacy of aerial warfare on the condition that did not expose the persons and property of the peaceful population to greater danger than that to which they were exposed through the established methods of land and naval warfare.13

Legalists at the Madrid conference were aware of the aerial danger to non-combatants. It was pointed out that aircraft could not direct their attacks accurately and solely on the armed forces or military works of the enemy. As to their efficiency as weapons, it was doubted that aircraft could carry the firepower to play an important military role; they would inflict great injury on those who were not taking an active part in military operations.

D. Situation on Eve of World War I.

International gatherings of interested jurists tried to formulate rules and regulations to control aviation. From 1889 to 1907 there were five sessions of the International Aeronautical Congress. The Institute of Law met six times between 1900 and 1911. The International Law Associates met twice and the Juridical Congress on Aviation met three times. The Hague conferences of 1899 and 1907 must also be considered failures. At the start of World War I there was no new and concise ruling on the use of the air weapon.[14] The "defense" test of a bombing ob-

ject was clearly impossible. There would most certainly be another criteria – the "military objective wherever found."[15]

III. Capacity of the Balloon and Airplane 1870 to 1914-18.

A. Franco-Prussian War 1870

While the balloon was not used as a bombing airship during the Franco-Prussian War, it was used as a means of transportation and communication with excellent results. During the siege of Paris between September 1870 and January 1871, about 5,000 air miles were flown, 102 passengers were carried, along with mail and carrier pigeons. It was the use of balloon in this war that prompted the enactment of the ruling on balloonists at the Brussels Conference of 1874.

Balloons were used by the British, French and Italians in most of the colonial wars after 1884.16

What was the capacity of the airplane? From 1899, when the balloon was the bombing

platform, until 1911 when the threat of aerial bombing was acknowledged, the weapon had made great strides. The Lebaudy airship was found suitable for military operations in 1905. By 1909, France had started to build a military air force and Britain had appropriated half a million dollars for aeronautics. Berliot flew the channel and Wright set an endurance record. One hour, thirty-five minutes, forty-seven seconds. By 1911 dirigibles were flying from France to London and Zeppelin started his airship passenger service. By 1914 just before the war, a Curtiss flying boat was being readied for transatlantic flight.17

B. Italo-Turkish War 1911-1912

Nine years after the Wright Brothers successfully piloted the first heavier-than-air craft at Kitty Hawk the airplane was used as a bomb carrier against enemy troops in wartime. Italian pilots dropped crude bombs on Turkish troop concentrations in Tripoli. Loaded bombs were not carried into the air during these early missions because of the danger of crack-up in take-

off. In flight, pilots held empty bomb cases between their knees and screw caps between their teeth, loaded them armed them and dropped them over the side.18

C. World War I

The first air raid occurred on August 25, 1914, when German zeppelin dropped several bombs on the City of Antwerp. St. Elizabeth's Hospital was partly destroyed, as were several private dwellings. Eight persons were killed. [19] There is no doubt that open and undefended towns were bombed; bombs were dropped on churches, private homes, historical monuments and hospitals in both defended and undefended places.

The development of bombing technique grew rapidly in World War I. Special bombs replaced cast-off artillery shells. Bomb racks and bob sights were in use by 1915. Among the specially designed planes, the German Gotha with its 850 lb. bomb load was perhaps the most effective.

On December 4, 1914, French aircraft raided Freiburg-im-Breisgau to hit aircraft factories in the undefended town.[20] The Germans protested the action as illegal, and it may be said the subsequent raids of the war were in the nature of reprisals, as well as military operations. Gotha attacks on Northern French cities, including Calais resulted in the destruction of churches and hospitals, while Austrian attacks on Italian cities brought protests from the Pope, because of the danger to and destruction of historical and sacred buildings.[21]

The British practice during World War I was to confine their bombing attacks to "points of military importance" and "to take every precaution to avoid damage unnecessary to the object view." The British reports of air raids upon German towns always named the target—munitions or chemical plant, barracks, marshalling yard. No attention was given to the open or undefended concept in these attacks, and no attempt was made to limit the theater of bombing operations to the "combat area".

The German practice at the start of the war was to limit the attacks to important military places in the actual theater of war. However the German Theater included London and other centers of production.

There was some doubt as what constituted a military target, there was a woeful lack of precision and there was, in some cases, a spirit of reprisal motivating the raids. (Reprisals are generally considered effective measures when they bring to a stop certain enemy actions detrimental to your military effort; or when they serve to restore morale on your home front, after civilian and military morale has suffered as a result of some enemy action.)

During the First World War, aviation leaped ahead, with new and sensational developments which added to the speed, bomb load, firepower and dependability of the airplane and the airship.

The first airplanes had been unsuited for bombing attacks on London; their range was only 175 miles and their capacity only 500

pounds of bombs. The airships carried out raids well into 1916 but superior anti-aircraft fire forced them to fly too high for effective bombing, in some cases to such an altitude that the engines froze and the airships drifted helplessly back to the French coast. The powerful Gotha bombing plane was the German answer. It was a twin engine biplane manned by a crew of three; its capacity was 850 pounds and its range took it easily to the heart of London. In one raid, 20 Gothas killed 162 persons and wounded 600.[22]

In 1918 fast pursuit planes made it impractical to bomb in daylight attacks and there began a development of long-range heavy load allied bombers, for the purpose of area bombing. The stages of British strategic bombing techniques are surprisingly similar to the two world wars. Whole districts such as the Rhineland were designated as target areas. [23]

During the World War German airship raids on Great Britain numbered 68, with 557 killed and 1,350 wounded. Airplane raids,

mostly by Gotha bombers numbered 73, killing 767 and wounding 1,650. Total bombing missions of Allied aircraft numbered 600; mostly small but persistent. [24]

The daring exploits of these early airmen wrote an exciting chapter in military history, but the over-all effect of air power on the First World War were negligible. Sir Arthur Harris states: "The bomber was in no way an important weapon of the 1914-18 war. Aircraft were then tied to the long and bloody siege war in France, and though we had just got aircraft ready for an independent attack on Berlin when the war ended, it can hardly be said that there was any real use of air power during this period." [25]

The techniques and capabilities of bombing planes were as yet not sufficiently developed to exercise a decisive effect on the conflict, yet the strategic bombing concept, aimed at the destruction of enemy productive capacity was formed in the last years of the war. Among the men of vision who foresaw importance of this method of offensive warfare were Lord Trench-

ard, General Groves and General Smuts. In a report to the war cabinet, Smuts said:

> "The air arm can be used as an independent means of war operations. As far as the present can be foreseen there is absolutely no limit to the scale of its future independent war use. And the day may not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centers on a vast scale may become the principal operation of war, to which the older forms of military and naval operations may become secondary and subordinate."[26]

IV. Further Attempts at Control

A. The Peace Conference and the Paris Convention 1919

The armistice at the end of 1918 saw a huge military air fleet amassed in Europe. From a force of 700 planes, the Allies had grown to thirty-six thousand aircraft. Germany had twenty-one thousand, with the industrial poten-

tial and technical skill to produce more, if given the opportunity. The Allies were faced with the problem of preventing the rebirth of the German air force and preventing the rebirth of such an effective force for aggression. At the same time each allied nation was reluctant to surrender its own right to develop air power in every aspect of air power.

John C. Cooper starts his discussion of Versailles treaties with this note:

> "The intent to disarm Germany in the air was plain; the result, a complete and tragic failure. The method used – an attempted separation of the military and civil uses of air power, prohibiting one and not interfering with the other nor with the soon-resumed German control and sovereignty of its airspace – was artificial and unrealistic. It failed and will fail again."[27]

President Wilson and Secretary Lansing, when faced with the problem of eliminating completely and suppressing German commercial aviation or allowing its postwar recovery as an

economic aid and to enable Germany to take its place among the peaceful nations of the world, decided on the latter course.

At the Paris Peace Conference the air terms which were later to be incorporated into the Treaty of Peace, called for the complete delivery into Allied hands of all military aircraft, armament, munitions, and the destruction of airfields and dirigible sheds. Secretary Lansing questioned whether some of these facilities were not suitable for commercial purposes, and a commission was set up to inquire into the question of the commercial aviation to be allowed to Germany. It was also to draft a convention on general postwar international aviation.

While Lansing favored the re-establishment of German civil aviation, Brigadier General Groves, of the British Army, had this to say:

> "All aircraft (are) inherently an instrument of war. In the future .... All machines, commercial or otherwise, would be capable of being converted very quickly into

> machines suitable for military purposes. It would, therefore, be difficult to prevent Germany setting up a large potential military air service under the guise of commercial enterprise."[28]

A proposal to prohibit German manufacture or importations of aircraft for an undefined period after the signing of the peace treaty was blocked personally and single-handedly by President Wilson. German commercial aviation was to have the green light. The Aero-nautical Commission discussed at length this War Council decision and filed another report, recommending the prohibition of the manufacture and use of all aviation during such period as might be necessary to make certain of the peaceful sentiments of the enemy states. No action was taken on this report.

The Aeronautical Commission recommended to the Peace Conference definite provisions giving Allied aircraft the right to fly into German territory without reciprocity. Lansing personally limited this provision, giving Germany

complete control of her own airspace as of January 1, 1923.

Germany's right to fly outside its own territory was dependent upon its becoming a member of the League or a party to the Air Navigation convention.

In the months following the signing of the Treaty, disputes arose as to what constituted civil or military material. Germany was not required to surrender the former. In 1921, the Aeronautical Advisory Commission submitted a set of regulations known as "The Nine Rules". These prevented the growth of military air power but also stunted the development of civil aviation. Attempts to enforce the Nine Rules were quickly abandoned, for they penalized civil aviation too heavily.

By organizing aircraft industries in foreign states and entering into reciprocal commercial air agreements with former neutrals, and by capitalizing on its natural geographical position, Germany's civil air transport was flying more air miles than any other European state in 1925.

After 1926, Germany was left to place itself, subject to inspection of the League. The League never exercised its powers of control over German military aircraft, and eventually the German Air Force was publicly acknowledged.

While legalists had favored the doctrine of freedom of the airspace prior to World War I, governments had not.

The experience with military air bombardment had strengthened this desire for security. When the question of airspace sovereignty came up before the Supreme Council of the Peace Conference the theory of international freedom of flight was definitely repudiated.

"Convention relating to the Regulation of Aerial Navigation dated 13 October 1919" usually referred to sovereignty. The wording is as follows:

> "The High Contracting Parties recognize that every Power has complete and exclusive sovereignty over the airspace above its territory."

The search for security had changed the sentiments of nations, who gave up freedom of flight. It was not revived until 1944.

B. Washington Conference of 1921-1922

While the Washington Conference was concerned primarily with naval disarmament, it did appoint a subcommittee to investigate the possibilities for limiting the number, character and use of aircraft as part of this disarmament plan. The Committee reported that it would be possible but not practical to limit military aviation in time of peace. A portion of aviation – commercial aviation – would simply be converted to military use in time of war.

Secretary of State Hughes suggested that the questions of limitation of air weapon reduced itself not to "limitation of armament but to limitation of civil progress." [29]

This treaty signed at Washington on February 6, 1922 was to become effective when ratified by the United States, Great Britain, Japan,

Italy and France. France never ratified it, and legally, it is not binding on any nation.

J.F.C. Fuller states that in 1939 the rulings laid down by the Washington conference, of 1922, on the Limitation of Armaments was in effect. Article 22 read:

> "Aerial Bombardment for the purpose of terrorizing the civilian population or destroying or damaging private property not of a military character, or injuring non-combatants is prohibited".[30]

C. Commission of Jurists, The Hague 1922-1923

A code of air warfare was prepared by a commission of Jurists at The Hague in the winter of 1922-23. The five nations which participated in the Washington conference – United States, Great Britain, France, Italy and Japan – met with Holland to study a new interpretation of the rules of warfare. They were not ratified and are not binding on any nation. Article 24 read:[31]

"1. Aerial bombardment is legitimate only when directed at a military objective, that is to say, an object of which the destruction or injury would constitute a distinct military disadvantage to the belligerent.

Such bombardment is legitimate only when directed exclusively at the following objectives: military forces; military works; military establishments or depots; factories constituting well-known and important centers engaged in the manufacture of arms, ammunition, communication or transportation used for military purposes.

The bombardment of cities, towns, villages, dwellings or buildings not in the immediate neighborhood of the operation of the land forces. In the cases where the objective are so situated that they cannot be bombarded without the indiscriminate bombing of the civilian population the aircraft must abstain from bombing.

> In the immediate neighborhood of the operations of land forces, the bombardment of cities, towns, villages, dwelling or buildings is legitimate provided there exists a reasonable presumption that the military concentration is sufficiently important to justify such bombardment, having regard to the danger thus caused to the civilian population.
>
> A belligerent state is liable to pay compensation for injuries to a person or to property caused by the violation by any of its officers or forces of the provisions of this article."

There still existed a question as to what constituted a military target. The jurists were being unduly strict in their interpretation of the previous rulings. They applied, for instance, the more severe rules for land warfare to aerial bombardment, rather than the more appropriate naval bombardment regulation. Rulings such as these were considered unrealistic by the British authority, J. M. Spaight, who said:

> "The only rules which long survive that breaking strain are those the violation of which is felt to be also a violation of the great fundamental laws of justice and humanity." [32]

D. Geneva Gas Protocol 1925

At the Hague in 1899 and again in 1907 the contracting powers agreed not to employ poison or poison arms. The Geneva Protocol prohibited the use of asphyxiatizing, poisonous and other gases, and all analogous liquids, materials or devices, and of all bacteriological methods or warfare. It was ratified by Great Britain, France, Germany, Italy and the Soviet Union.

This Protocol would prohibit gas attacks by air, the most feared of the air menaces.

E. Preparatory Commissions Recommendation 1927

In 1927 the Preparatory Commission for the Disarmament Conference recommended that

all governments separate the administration of military and civilian aviation. The League of Nations urged this reform in the same year. None of the members followed it.[33]

F. Judicial Rulings 1927-1930

International law has developed slowly, drawing on the usages and customs of nations as one source, yet being influenced by the decisions handed down by international tribunals. In the study of the rules of air war, it appears that the decisions dealing with aerial bombardment were unrealistic and arbitrary. The authorities for the decisions are not accepted covenants, or ratified pacts, dealing especially with aircraft, but rules of land warfare. These decisions indicate the sentiments of the jurists, but they have had little effect in strengthening the rules governing air bombardment. Very few legal writers in the 1930's would agree with the jurists as to Germany's guilt. None in the 40's.

In the case of Coenca Brothers v. Germany decided by the German Mixed Tribunal, Decem-

ber 1, 1927, Germany was held liable for bomb damages of claimant's property. The court held that the aerial bombardment was contrary to international law, but granted its decision on rules regulating land bombardment.

In 1930, in Koriadolri V. the German State. Germany was held liable for the death of a civilian during an air raid on Bucharest. The raid violated rules of warfare because it was effected without warning and had damaged civilian life and property.[34]

G. Disarmament Conference 1932-34

The League of Nations Disarmament Conference, held in Geneva in 1932-34 has been referred to as "prolonged, labyrinthine, and frequently inconclusive discussions of the problem of civil and military aviation".[35]

J. M. Spaight insists that one great political obstacle stood in the way of any agreement: Germany was determined to have an air force; France was determined she should not have one. To this end France proposed the internationali-

zation of civil aviation and the establishment of a special international police force. All bombing planes were to be prohibited and the air police were to be outfitted with special fighter craft. The French plan did not stand a chance of gaining general approval. British proposals to limit and restrict bombing may have had some chance of acceptance, but for the fact that another proposal suggested that an enquiry be made into the practicability of abolishing military aircraft altogether.

In 1932 British proposals provided for the complete prohibition of the bomber except "for police purposes in certain outlying areas". The reasons behind this exception are most interesting. The British had found the aerial bomb an effective way of stopping revolts of semi-savage tribes in India and Afghanistan. It was cheap and painless to all except the unfortunates who happened to be in the palace courtyard when one of these peace restorers was delivered to an unruly sheik. While they were reluctant to part with this weapon, it was understood that it

would be given up if there was any chance of a successful conference.

In July of 1932 the Conference had agreed to the Benes Resolution prohibiting air attacks on civil populations. This resolution provided that the High Contracting Parties agree to abolish all air bombardment subject to agreement with regard to means of making this rule effective.

Both the proposals to abolish air forces and the proposal to abolish bombing depended on preventing the misuse of civil aviation. No nation would allow international control of its civil aviation. So the Disarmament Conferences failed to control the air weapon. At this time Hitler became Chancellor of Germany and he was prepared to enter into certain agreements limiting bombing. How effective Hitler's agreements would have been is problematical, but there seems to be a certain amount of solid reasoning in his desires to limit bombing to the Real Battle zone. In the Nazi concept of blitzkrieg, the armor-air team was capable of win-

ning victory without employing what is now considered strategic bombing. The smaller nations could not agree to such limitation, since they envisioned the total area of their native lands being classified as real battle areas in event of a German attack. If such an agreement had been entered into, it would have been broken in a week, under the strain of actual war.

H. League of Nations Pact 1938

The British delegate submitted a resolution limiting aerial bombing which met with general agreement. The following resolution was adopted:

> "The Assembly... recognizes the following principals as a necessary basis for any subsequent regulations:
>
> **1.** The intentional bombing of civilian population is illegal;
>
> **2.** Objectives aimed at from the air must be legitimate mili-

> tary objectives and must be identifiable;
>
> **3.** Any attack on legitimate military objectives must be carried out in such a way that the civilian populations in the neighborhood are not bombed through negligence."[36]

Germany and Japan were not present at this Assembly. In time of war such adapted resolutions no longer are in effect if one of the major belligerents is not a party to the contract. This was the situation on the eve of World War II.

The period between the two world wars, and especially the period after 1930, could be described as the years of the air menace.

I. Situation on Eve of World War II

Air power had been in its infancy during World War I, yet the few bombs that fell on

Europe's capitals made a lasting impression. Immediate attempts were made to limit bombing, to safeguard civilians and even to outlaw war. Every attempt failed and three times prior to World War II bombs fell on city streets and killed non-combatants. Those who believed that rules of war have a validity deplored that fact that no specific regulations on air war were ratified. The dumdum bullet, the poison gas bomb, the naval gun – all were regulated by an accepted code. The air weapon had defied attempts at limitation, and everyone who thought about another war, thought about the horrors of air bombardment.

Since no accepted conventions regulated the use of the air weapon as distinct from land and sea force it was to be used in accordance with rules of warfare which applied to other arms. The distinction between defended and undefended, fortified and unfortified places tended to disappear. The military importance of the target was the criteria. What constituted a military target in time of Modern war, in which

the entire nation contributes to the war effort, was a matter of debate. Some said that industrial and transport workers were "Soldiers of production" and their homes were their billets. In a complete investigation of the various opinions held by writers Lester Nurick arrives at this conclusion: "no purpose would be served by the further examination of the views of the writers. There is dispute on practically every question which has been raised concerning the legality of various aspects of aerial bombardment". [37]

In view of the obscure situation prior to the Second World War, J. M. Spaight exclaimed:

> "Of all the arms and services, the air force alone went into battle without a stitch of regulations to its back"![38]

v. The Air Menace Years and the Growing Capacity of the Air Weapon

What was causing this increasing preoccupation with the "Air Menace"? It was a combination of factors, including the publicity given to the Bouhet theory, the use of air power in

Ethiopia, Spain and China, and the rapid advances in technical progress in the aviation industry.

Douhet's "Warfare of the Air" certainly had as much influence in this field as any other publication. Douhet described the next war as a short and simple affair. Germany and France were again at war. The German Air Force immediately destroyed the enemy's cities. It was a devastating air blow, and the war ended in a few days. Writers continually referred to the sudden paralyzing attack with chlorine, phosgene or other disabling gasses.[39]

In 1935 the Italian Air Force played an important part in the Ethiopian campaign. The lumbering bombers were effective enough against the few sizable cities to attract the interest of the newsmen covering the war and the use of mustard gas against the bare-skinned native was too tempting for Mussolini's airmen to miss. The element of reprisals was completely lacking as the Ethiopians had no air force.

The ruthless bombardments of the Spanish cities of Durango and Guernica in 1937 was also grist for the air menace mill. The German bombers of that year were the most efficient committed to battle to date. One correspondent had this to say:

> "Assuming German mastery of the air, the destruction of Guernica with 10,000 inhabitants by a series of forty planes in relays would correspond to the destruction of a borough of 200,000 inhabitants by the size of a fleet which Germany might send against Great Britain. The blotting out of Hull, for instance, with a fair number of bombs left over to polish off the shipping."[40]

In 1937 the Chinese cities of Hankow, Nanking and Canton were heavily bombed and the vivid motion pictures of the aftermath of aerial bombardment shocked the civilized world.

What had been happening to the bombing plane since the end of the first World War?

What had been going on in aircraft design and construction since 1918? Just a few days before the 11th of November 1918, the British had ready two super Hadley Page four-engine bombers ready for a raid on Berlin. A squadron of these powerful planes was planned to be built each powered by four 375 h.p. Rolls-Royce engines. A Vicker's Vimy night bomber and the D.H. 10A daylight bomber were in production but had not seen action. The French had the Farman "Goliath" and the Viosin four-engined plane in construction while the Germans had put a four-engined Licenz night bomber into service shortly before. Range and dependability were increasing. Alcock and Brown flew non-stop across the Atlantic in 1919. In 1924 two Army Douglas planes completed an around-the-world flight. In 1927 Lindberg's solo flight from New York to Paris made history and during that year 2,000 mile non-stop flight from Africa to South America was made by Costs and LeBrix in a Breguet biplane. In 1929 flights from Maine to Santanda, Spain, lasting over thirty hours, were completed. In 1931 the U. S. Army Air Corps

flew in full strength, 650 planes, over Chicago, Washington, New York and Boston without an accident. The German DoX with 12 motors, three decks, and a capacity of 100 passengers was a nightmare plane in 1935.

American manufactures had turned out thousands of the DeHaviland DH4 bombers during the last years of the first World War, and in decade the Martin MB-2 showed an improvement in everything but speed. Range was increased to 400 miles, bomb load to a thousand pounds, and cost up from $11,000 to $35,000. By 1932 the Martin B-10 was accepted. With a range of 600 miles, speed increased to a fast 185 miles per hour and bomb load to 2,200 lbs. Costs had almost doubled. A year later the Army Air Forces initiated Project A which resulted in 1935 in the Boeing prototype of the famous B-17.[41] In 1937 when the B-17 was first flown new records for range and speed were continually being set.

1935 saw the unveiling of two of the most important planes in civilian and military aviation

history. Boeing produced Model 299, the first four-engined Flying Fortress and Douglas brought out the first of the famous DC-3's.

The air threat to civilian population was thoroughly understood and indeed over-estimated by popular writers in the mid-thirties. Elvira Fradkin in his book "The Air Menace and the Answer" made many predictions and estimates as to the degree of security individuals could expect from the existing conventions and agreements. He decided that this security against air bombardment would be nil.

His answer to the challenge of rearmament, and growing capacity of airpower, was moral disarmament. He delivered a message meant to rally millions of ordinary individuals to the call for a world organization to bring about lasting disarmament and a national police force to control commercial aviation.

> "International control over commercial aviation, the abolition of aggressive types of weapons, international aerial police force, a universal world state, spiritual re-

> birth which is indicated in the phrase – moral disarmament – together all these deeply needed factors can cope with the air menace. They are the attainable answer to this menace."[42]

He set his sights high, and called for world-wide support. He wrote the book in 1934. Five years later World War II broke out.

VI. Evolution of Strategic Bombing

A. Ethiopia, Spain, China

In the interim between World Wars, the use of air power in China, Ethiopia and Spain served to demonstrate the horrors of air attacks but were of very little value in developing the concept of strategic bombing. Ethiopia offered no city targets of decisive importance. Chinese morale had been broken centuries before and had "set"; thus the attempts of the Japanese to bring about anything more than local panic were fruitless. The bombardments in Spain were used as an incident to ground operations, and the air force necessary to carry out a plan of in-

dependent air operations did not exist. The fact that it was a civil war eliminated the possibility of an all-out strategic bombing mission.[43]

B. Growth of Royal Air Force Strategic Air Force

In the year 1936 British experts came up with "Specification B.12/36" the plan for a long range weight carrying bomber.[44] The Lancaster was the final product of this early plan, and it remained the finest plane of its type to seek action in the air war against Germany.

After 1936 each expansion of the Royal Air Force saw more and more emphasis being placed on long range bombers as the principal means of meeting a threatened attack. The number of bombers was to be double the number of fighter squadrons.

In 1938 Marshal Ellington of the R.A.F. said:

> "The counter attack will be largely launched from the home aerodromes of

the bombers and in the future may be entirely launched from them."[45]

C. Growth of United States Army Air Force Strategic Air Arm.

In America, air power exponents who followed the thinking of Billy Mitchell welcomed the development of the Flying Fortress bomber. It permitted the organization of a strategic air force and a new concept in air warfare.[46] There was a bomber with the range and capacity for successful strategic missions, plus the armor and firepower to protect it at least partially from enemy pursuit.

From the time Mitchell sank the derelict warship USS VIRGINIA off Hampton Roads there was a segment of the Army who stubbornly advocated the precision daylight mission as the true mission of air power. An offensive mission able to play a prominent role in any future conflict, the mounting of high caliber machine guns on the bombers, the development of the fabulous Norden and Sperry bombsights and the commis-

sion of bombardiers were all part of the strategic plan adopted by the small but growing Army Air Force. The efforts of this small group of strategic air exponents had met with strong opposition from the other Services. In 1925 the Morrow committee heard this statement from a member of the General Staff,

> "There is no separate responsibility, separate mission or separate theater of operations that can be assigned to such a separate force."

General Summerall testified,

> "As far as we are concerned, in war the only object is the enemy's armed force. If that falls everything falls. A bombing expedition must therefore be made as something connected with the enemy's armed force."[47]

By the opening of World War II, Britain had a thoroughly developed strategic bombing plan. By the time America entered the conflict, the USAAF had its plan ready for operation.

Changes and techniques were necessary, of course, but the principals of strategic bombing were not varied. The idea that the air above the battlefield could be used as a third medium of transport and offense, that the enemy's armed strength could be over-stepped and his industrial and military production destroyed, his moral shattered and his desire to continue in a state of war extinguished. Only the most enthusiastic of the air power exponents believed that bombing alone could bring victory, but many believed that independent strategic bombing could hasten the final end.

It was ready for trial in the Second World War.

D. Situation on Eve of World War II

It was apparent that this would involve the bombing of undefended towns deep within enemy homeland, and the bombing of non-combatants and the destruction of non-military buildings, such as hospitals, churches, historical and sacred monuments.

The hard core of airpower enthusiasts in Britain and the United States had watched with interest the development of bombing techniques in Ethiopia, Spain, and China. The methods were faulty, the means inadequate and the results often discouraging from the point of view of military achievement. While the public watched and wondered about the air menace and death from the skies, the airmen tried to find some indication that air bombing could be decisive in modern war. They could find no proof in the record of these three wars. These three wars for different reasons proved nothing.

The British experience in 1940 was discouraging.

The German air attacks on Britain in 1940 proved only that strategic bombing cannot succeed without the right planes and the control of the skies above the target. During the Battle of Britain, Alexander deSeversky and a famous American air officer were watching the flights of lightly armed bombers being shot down by RAF fighters. The officer muttered “Those damn fools

have set air power back twenty years!"[48] It was obvious to a trained observer that air superiority would have to be won before the strategic bombing plan could start to work. Either the enemy sky would be swept clear of fighters or the bombers would have to carry the armament to protect themselves in air combat.

The British lacked fighters and armed bombers to carry out the plan. They turned to night bombing, and slowly but surely put their air plan into action.

The British believed that the German economy was stretched almost to its limit, that any substantial destruction of plant capacity would slow down the war effort with disastrous results for the German Army. Also they believed civilian morale could not stand up under heavy bombing. Workers would quit and demands for peace would force the government to end the war.

To this end they began the heavy pounding of German industrial towns.

The United States Strategic Bomber Command was built around the B-17, a heavy armed, daylight precision bomber. It was the air weapon capable of hitting the very heart and vitals of the enemy industrial power, the industry, transportation, communications and even administration centers. It could break the enemy's will to resist by the nullification of his means.

The critical moment came on January 21, 1943. On that date the combined Chiefs of Staff, at Casablanca, issued a directive which called for

> "the destruction and dislocation of the German industrial and economic system and the undermining of German, the morale of the German people, to the point where their capacity for armed resistance is fatally weakened."[49]

The two methods of strategic bombing were to be carried out.

VII. Air Power in World War II

A. Strategic Air Power – Fulfillment of a Concept.

Early attempts of the RAF to carry out precision raids were disastrous. Lack of air superiority, armor, armament, bomb load and most essentials of effective day bomber operation forced them to resort to night attacks. Lack of adequate navigation and bomb-aiming equipment then brought about target-area bombing, the destruction of entire industrial cities to knock out production.

From August 1940 to May of 1941 the RAF dropped on 20,000 tons of bombs on Germany with an almost negligible effect on the war effort. 1943 saw an increase in the scale of bombing but only by 1943 did the offensive reach the weight of the air attack on England in 1940. In 1944 and 1945, 100,000 tons per month were dropped, or fifty times as much as in 1941.[50]

Sixty-one cities of 100,000 inhabitants or more were bombed. One-third of a million killed, two-thirds of a million were injured. One and one-third million tons of bombs were dropped on Germany. The loss in annual Reich production due to area bombing was 2.5 per cent in 9142 and 17 per cent in 1945. From January to April of 1945, it was 6.5 per cent. However, total war production, based on a figure of 100 for 1940 rose steadily to 285 by 1944. By adding to the labor supply, increasing shifts, and diverting material and labor from peace non-combatant consumers, the Germans managed to increase total war production despite devastation caused by RAF bombing. The complete role of the bomber offensive in the destruction of industrial cities and the later attacks on oil and transportation is explained in Harris' book "Bomber Offensive" and Tedder's "Air Power in War".

American bombing policy was based on precision attacks by heavily-armed aircraft designed for daylight missions. Attacks on cities

were generally undertaken only when “point” targets were obscured by bad weather. Until the Schweinfurt raid of October 14, 1943, the Fortresses went mainly unescorted and in close formation flying on the defensive power of their guns. Losses on this raid were prohibitive: out of 228 bombers, 62 were lost and 138 damaged.[51]

By December the long-range escort, the Mustang (P-51) enabled the 8th Air Force to penetrated deep into Germany again. In February came Big Week, when during five days of near perfect weather the production facilities of the German Air force were dealt a smashing blow. From the early 1944 to the end of the war, the major part of the American air effort and a considerable part of the British effort were directed to transportation targets, railways, marshalling yards. Later air offenses against oil, chemicals, coal transport were led by the American bombers, with the RAF Bomber Command taking a more active part in the destruction of specific targets through the use of superior navi-

gation aids and bombing techniques. Also, the weakening of the German air force, partly through losses incurred in combat with American bombers, and fighters, and partly through the decline in training hours due to lack of aviation gas, made these more accurate missions possible. The complete history of the USAAF in action during the later stages of the war is an amazing story of declining production of vital war material in Germany. The United States Strategic Bombing Survey, Over-all Report reveals these figures.

When oil and transport targets were under attack by both the RAF and the USSAF, it may be said that a type precision bombing by day and night was in effect. When it was strategically or tactically necessary to erase a small town, the latest techniques enabled the Bomber command to complete the task in one mission. Specific targets required at least two raids. The new precision finally developed by Bomber Command was, in fact, quite different from the type of accuracy associated with daylight mis-

sions of the 8th and 15th air forces. The British attacks were directed at demolishing the objective and the necessary number of planes and weight of bombs was available to do the job. The objective was not to avoid unnecessary destruction or bloodshed.

The American strategy was to make every possible bomb count by placing it on the objective. Daylight precision missions were capable of destroying an oil refinery, a marshalling yard, without burning a city, if the necessary air superiority, or air control, had been won.

Since the mission of bomber command was, in part, to disorganize and destroy the morale of the German worker, to incite revolt and force an end to hostilities, figures gathered together by the Strategic Bombing Survey seem to prove conclusively that the real collapse of the German economy came about as a result of the loss of vital links of the economic chain. Also, these few targets were not severely attacked until the last six months of the war, and the precision bombing of the USAAF must be given the

edge in effectiveness of destruction. American bombers dropped the most in total weight of bombs dropped on land transport, airfields, and airdromes, aircraft factories, and miscellaneous manufacturing. On oil chemicals and rubber, the bomb tonnage of the two air forces was about equal.

It is interesting to note that the first and the last directives to Bomber command were identical. On the 13th of May 1940, the directive specified "Oil installations in the Ruhr had marshalling yards" as the priority targets. On the 5th day of May, 1945 priority targets were "oil and lines of communication". The five-year full circle of RAF bombing policy involved the fight for air superiority, technical advances, the interrelation between the bomber offensive and the ground assaults and campaigns, and finally the victorious assault on Germany itself. If any generalizations can be made about the area bombing policies of the RAF, the following are perhaps the fairest and safest: Original attempts at precision bombing failed through lack of bombing ca-

pacity, air superiority. Results achieved did not warrant the extremely high combat losses. Area bombing by night served to hold over a million persons in air defense. A force of over 1200 night fighter planes was kept in action in 1944. Also, between 40 and 60 per cent of the German air force was kept from the Eastern Front, where the appearance of the additional planes may have been decisive. By 1944, it was possible to deliver a heavy bomb load with precision, through the use of electronic navigation aids and new bombsights. Later, it was possible to place a heavier concentration on a precise target by non-visual than by visual means. Thus the policy of area bombing was on the way to discard toward the end of the war.

However, the bombing of Dresden was a return to target area bombardment, perhaps as a result of the continuance of the line of thought and action which motivated the RAF commanders to five years of total war. In any future combat, such decisions must be guarded against for

the building of the peace that follows victory is as important as victory itself.

B. Russian Air Power

While the American and British bombers were bringing about the collapse of the German war machine, the Russian Air Force was concentrating on its own method of air war strategy. The Red Air Force fought for localized air superiority and specialized in close air to ground combat support.

They believed the air arm should be "rigorously coordinated with the other arms of the service".[52]

The failure of German 1000 plane attacks on Stalingrad and Leningrad convinced the Russians that heavy bombing could not bring victory. When the German air arm was dispersed along the massive front and used for tactical support, it suffered tremendous losses. Forty-thousand airmen and twenty-thousand planes were the figures released by the Russians.

The Soviets were able, by 1943, to rebuild their air force with the aid of certain vital industrial material from the United States. The new Red Air Force was predominately fighters and fighter bombers. The Reds did not perfect the heavy bomber, nor did they use strategic bombing techniques against targets far from the front lines. In retrospect, it appears that the Soviets were eager for loot. They preferred to capture enemy towns intact, if possible. Their huge manpower, and adequate armor-air coordination enabled them to succeed, especially after the opening of the second front.

The most publicized Red Air Force planes were the Yak fighter, a light, speedy craft and the heavily-armed Stormovik attack bomber

The hundreds of American planes, the Bell "King Cobra" and B-25 Mitchell Bombers were now publicized in official Russian releases.

C. Comments of Military and Economic Leaders

Albert Speer, capable Minister of Armaments and War Production made this comment when interrogated in 1945:

> "Planned assaults on synthetic oil caused greatest anxiety for the future conduct of the war. This type of attack was most decisive in hastening the end of the war. The attacks on synthetic oil would have sufficed without the impact of purely military events to render Germany helpless".[53]

After the dispersal of German factories Speer said:

> "Production was hindered by the destruction of transport and communications facilities, consequently it can be said in conclusion that the bomb load is more effective if it is dropped on economic targets than if it

> is expended on cities and towns."[54]

Panzer General Linnaz

said:

> "You might have won the war through strategic bombing alone."[55]

Van Rundstedt said:

> "Air Power was the first decisive factor in Germany's defeat. Lack of petrol and oil was second, destruction of railways, third"[56]

Max Karant, editor of the

magazine FLYING, said in

October, 1945:

> "A high RAF officer told me that if he had it to do all over again, he would use the fighter protected daylight bomber."

Civilian Reaction to Target Area Bombing

Moral and Ethical Aspects

The RAF policy of target-area bombing was strongly opposed by a certain segment of the British and foreign populace. Letters to the editor of the foremost British newspapers and periodicals deplored the savagery of the attacks. It was doubted by many that such destruction of life and snuffing out of lives was morally justified. A society was formed in London to protest against the continuance of area attacks. Bishops of the Church of England took sides in the argument. The Bishop of York stated it would shorten the war and thus save many lives. Harold Nicholson in the Spectator discussed four arguments in favor of the RAF area bombing program. His article was prompted

by the remarks of the Socialist member of Commons, Mr. Stokes, who labeled indiscriminate bombing of civilian centers both morally wrong and strategic lunacy. Nicholson felt that among the reasons why such a policy should be continued were these:

> The British and world morale was strengthened by the beating being administer to Germany from air;
>
> That the death of German laborers was certain to slow down production;
>
> That it was sound strategy and could shorten the war and, finally,

> That it was having a noticeable and growing effect on German morale.

He noted that German soldiers from the Ruhr were not permitted to spend their leave at home. However, if none of these were convincing arguments, there was the final reason. The German populace was at last getting a taste of total war. The Terrorangriffen, or area raids, were felt to be a form of revenge, best described by the German word "rache", not merely revenge, but justice. From these air attacks, Germany and hence any aggressor nation would learn that war does not pay. It is no longer the plaything of the military, but must necessarily strike back at the homes and families deep within the nation. Such a

view was and is held by many. The view that the very horror of total aerial warfare is sufficient in itself to deter aggressive war. The following year in February of 1944, Nicholson again comments on the military necessity of RAF bombing. Here he is confronted with the threat of destruction of architectural and artistic masterpieces. Nicholson expresses his own deep convictions in these words "The irreplaceable is more important than the replaceable; the loss of even the most valued human life is ultimately less disastrous than the loss of something which in no circumstances can ever be created again".

In March, 1944, Cyril Falls raised further questions about the moral and strategic soundness of the

Bomber Offensive. In the widely read Illustrated London News, he contrasted the role of the night bomber and the daylight precision bomber. Falls admitted that when Britain stood alone night bombing was the only feasible method of air attack. Yet he raises the question of whether such emphasis should have been placed on the campaign in the air. It was not inexpensive, for the labor spent on heavy bombers equaled that spent for all army production in the preceding year. It was not without its cost in manpower also, for the airmen lost in combat were the cream of the nation's manhood. (44,000 men were killed of the command's total of 125,000). Falls shows concern over the destruction of the German economy and

the dangers which such a policy will bring. He visualizes "bitter reaction after the war, especially by the prospect that this reaction might come so soon as to affect our power to put the world on its legs against a process which also involves doing the same thing for ourselves".

This bitter reaction which Falls foretold was an inevitable consequence of the RAF bombing program. It is most clearly brought out in an investigation of the aftermath of the Destruction of Dresden. Dresden was the product of the thinking which motivated the British Air Staff throughout the trying years of the war, when the attempts to crush morale were considered good. In the closing days of the

> conflict, when the peace which was to follow should have been of primary consideration there still existed that desire to strike a telling blow, to bring the entire Reich tumbling down like a house of cards.

Strategic Soundness

Among the military men who opposed that RAF strategy was J.F.C. Fuller who saw the airplane's primary role as a means of transporting fighting men and equipment in battle, thus aiding in the defeat of the enemy's armed forces.[57] His concern for future peace after the obliteration bombing was shared by many. Admiral Dickens felt that the air arm should have been tactically employed until pinpoint bombing was possible.[58]

The capacity of airpower during World War can only be sketched here. There were hundreds of experimental and operational models developed in the period from 1939 to 1945, along with an amazing array of electronic navigation and fire control equipment.

Perhaps the most important planes were the fighters which cleared the skies over Britain in 1940, the Hurricane and Spitfire, the long-range escort fighters, the P-51, 47 and 38, the opposing Luftwaffe fighters, the ME 1109 and FW 190 and the heavy bombers which finally brought about the economic collapse of German. The Boeing B-17, or Flying Fortress had a capacity of about 6,000 pounds of bombs and a range of about 2,500 miles.

The performance figures on the B-24 Liberator were approximately the same, with slightly longer range and a slightly lower combat ceiling. Both bombers flew at attitudes of 18,500 to 22,000 feet and made no attempts to fly above flack or anti-aircraft range. The airspeed of these planes in combat was generally 165 to 175 miles per hour.

The British bombers were capable of carrying a much greater bomb load, at the sacrifice of armor and armament. The Lancaster successfully transported the massive 22,000 lb. Grand Slam, along with the complicated electronic radar equipment which made night-time bombing possible.

The B-29, with a range of 3,500 miles and a capacity of 10,000 pounds of bombs, was able to defend itself against interceptor attack by means of electronic fire controls. To thoroughly test the B-29's range, the "Pacusan Dreamboat" was flown from Hawaii to Cairo, Egypt, almost 10,000 miles on the Great Circle route over the North Pole.[59]

It was this line-up of heavy bombers, sided by the mediums, Mosquito, B-25 and B026, that made the air menace nightmares of the 30;'s come true. All except for gas attacks.

At the start of the war, the British Ambassador to Germany presented a note inquiring whether Germany would observe the Geneva Gas

Protocol of 1925. The answer was in the affirmative.

Throughout the war there were rumors of gas warfare and several times the British Government warned the Germans that any use of gas against any of the allied would bring British bombers laden with gas bombs to German cities, in retaliation. There were reports that Hitler ordered the last gas bombing of London and the destruction of Paris in a final outburst before the end of the Third Reich. The gas was a new type, a nerve gas called "Bromeisen gas" which affected the tissues of the spinal-cord and brought death within thirty hours. It is said that the Generals refused to carry out Hitler's orders. Earlier in the war, it was apparent

that the store of gas bombs on one side kept those on the other side in storage. Both sides had ample stocks ready for use.[60]

The German Air Force, backed by some of the world's finest inventive genius, produced some exceptional air weapons, but because of faulty High Command decisions, these weapons came too little and too late. The earlier planes, the Stuka dive bomber and the Ju 88 medium bomber were effective against third rate opposition in Poland, Norway, and the Low countries but failed to win control of the air over Britain and proved no match for the faster more maneuverable British Spitfires and Hurricanes. The Germans had no heavy bomber worthy of the name, even the FW 200, four-engined long-

range bomber lacked arm firepower and capacity for combat. It proved effective in ocean patrols and attacks on merchant craft. A handful of these planes accounted for the rather surprising number of Allied ships.

The surprise aircraft which saw service towards the end of the war were the jet fighters, rocket interceptors, V-1 and V-2 rockets.

The principle of successful jet air flight was developed by Whittle of Great Britain as early as 1936. German adaptations of his plans resulted in the BMW jet fighters and twin jet bombers which would have threatened Allied air mastery of the skies. Because too few of them were put into action too late,

they failed to prolong the World War. However, jet engine factories and airframe assembly plants were taken intact by the Red Army, along with hundreds of engineering experts, giving the Red Air Force a substantial start in the race for jet power. These factories never ceased production and the present day Soviet production of jet fighters has been estimated at 22,000 planes per year.

The rocket interceptor, the Me 163, was also captured by the advancing Russians, and today many refined versions of this plane may be an important defense against heavy bombers. This inexpensive single-seated interceptor can climb 50,000 feet in 3 minutes. The buzz bomb was a simple rocket propelled tube,

carrying a one-thousand pound explosive head. It was comparatively inexpensive, controlled by gyroscopes and electric timing devices. Its speed was between 300 and 400 miles per hour, and it was not vulnerable until electronically aimed and fired anti-aircraft batteries met the V-1 threat and in the final days of their use destroyed 95% short of the target.

V-2 was a more serious weapon, especially as applied to long range strategic thinking. It was a monster rocket, capable of rising 60 miles into the stratosphere, and carrying a ton of explosives to a target two hundred miles away. It descended at 3000 miles an hour and there was and is no defense against it. It was a guided missile only in

a limited sense. Its course was directed during a brief period after take-off and thereafter flew in a free trajectory.

Because these projectiles could not be aimed accurately at vital targets, and because they did not contribute to regaining air command, they hindered rather than helped the German war effort. By expending men and materials on V-weapons, the German command weakened the jet aircraft development, and it was the jet fighter that could have wrested away from the Allied air forces mastery of the skies. Another school of thought insists that had these missiles been available in quantity six months earlier, our invasion of Normandy would have been held up indefinitely. (See Article

in Atlantic Monthly)[61] The use of air bombardment, both area and precision bombing, was one of the main factors contributing to the German defeat and surrender on the eighth day of May 1945.

The air weapon which was prepared for the Japanese cities of Hiroshima and Nagasaki was even more sensational. The atomic bomb, bringing death by blast, heat and radiation, reached a new level in air destruction. The single-B-29 released one bomb on Hiroshima, and it crushed the flimsy houses of the city like a giant flyswatter. An area two miles in diameter blazed up and burned out. 80,000 persons died as a result of burns, suffocation, falling debris and the incredible blast and heat of the bomb burst.

The single plane did the work of 220 bombers loaded with conventional bombs. In Nagasaki the death toll ran to 40,000 and the justification of these attacks came suddenly in the form of Japanese surrender. It is true that the Nipponese were actually defeated some time before Hiroshima, but their leaders had no way to bring about a surrender while saving face. It is not imposable that attempts to storm the island would have met with fanatical resistance, especially from the thousands of jerry-built Kamikaze fighters piloted by suicide volunteers. The atomic blasts were fantastic weapons, new and terrible, and there was no defense against further attacks. The Japanese leaders had their ex-

cuse for ending the war. Former Secretary of War Stimson said:

> "All the evidence I have seen indicates that the controlling factor in the final Japanese decision to accept our terms of surrender was the atomic bomb…..But the atomic bomb was more than a weapon of terrible destruction; it was a psychological weapon."

In July of 1946 a Strategic Bombing Survey of the Japanese Homeland showed that bombing had reduced industrial capacity from as high as 83% in oil refineries to 10% in chemicals. Certain other targets would have been especially vulnerable to air attack, if intelligence had been available.

Summary – International Law, Military Necessity and the Noncombatant in World War II.

Centuries of custom and usage in time of war have sought to make a distinction between combatants and non-combatants, to refrain from destroying non-military property in the interests of humanity and a quick return to normal and peaceful existence.

The distinction between civilian population and combatants has been so whittled down by modern military necessity that it has become more apparent than real.

Historically, until the Middle Ages all inhabitants of the states at war were enemies and subject to slaughter. Influence of Grotius and Rouseau and the development of organization and discipline made the distinction more pronounced.

In General Order #100, issued by the U. S. War Department, on April 24, 1853, contained these lines:

> "as civilization has advanced during the last centuries, so has steadily advanced, especially in war on land, the distinction between the private individual belonging to a hostile country and the country itself, with its men in arms . . . The principle has been more and more acknowledged that the unarmed citizen is to be spared in person, property and honor as much as the exigencies of war will permit."

Those laws of war governing the distinction between non-combatants and combatants were suitable in the 19th century, but started to break down during World War I. Legalists were aware more than

ever that there might be no such distinction during the next war.

Aerial bombardment has brought the war into the backyard of millions of civilians. When it has been profitable to do so, belligerents have not generally refrained from bombing because of vague doubts as to legality.

At first bombing was confined to the actual theater of operations, then extended to military objectives in the rear of the enemy lines with some regard for the civilian population. Finally it extended to the bombing of enemy cities to destroy civilian morale. No one regarded this bombing as legal; all denied that it was done intentionally except for certain reprisal actions.

The right to bomb military objectives seems to be recognized even if it endangers non-combatants. Royce said,

> "In general one principal seems to have been followed in the war, that military ob-

> jectives could be bombed wherever found, regardless of their location, and it seems regardless of their location, and it seems regardless of the injury to non-combatants and private property."[62]

While the Commission of Jurists at the Hague forbid attacks on military targets which could not be bombed without the "discriminate bombardment" of civilians, Royce asserted that

> "military objective will be attacked and incidental harm that may fall upon civilians is an unavoidable incident of war."[63]

As to air bombardment directed against civilian morale and against the economy of a nation, it was considered from a humanitarian point of view to be forbidden. From a legal view there was difference of opinion, and even those who considered it illegal foresaw that air bombing would be in the future directed at the civil population and economic life of belligerents.

In the periodical Air Law Review Garner said that aircraft are "virtually free to drop bombs upon any place or thing either within the area of military operations on land or outside that area, save only as they may be restricted by laws of humanity."[64]

J. M. Spaight said before World War II that there was no intermediate class between combatants and non-combatants, armament workers, and that the international law should accept the fact and so declare in its conventions.[65] To prevent rage and reprisals the public must realize that the old rule stands, but there is now an exception – armament workers.

In point of fact, armament workers were not the only non-combatants to suffer during World War II.

Did the doctrine of military necessity legalize the British Bomber Command raids?

An interesting definition of the doctrine of military necessity is given in Farrow's Military Encyclopedia published at the end of the nineteenth century:

"Military necessity as understood by modern civilized nations consists in the necessity of those measures which are indispensable for securing the ends of war, and which are lawful according to the modern law and usages of war.

It admits of all direct destruction of life and limb of armed forces, and of other persons whose destruction is incidentally unavoidable in the armed contest of the war. It allows for all destruction of property, the obstruction of ways and channels of traffic travel and communications, and of all withholding of sustenance or means of life from the enemy; of the appropriation of whatever an enemy country affords necessary to the subsistence and safety of the Army, of such deception as does not involve the breaking of good faith, whether positively pledged, regarding agreements entered into during the war, or supposed by modern law of war to exist. Men, who take up arms against one another in pub-

> lic war, do not cease on this account to be moral beings, responsible to one another and to God.
>
> Military necessity does not admit to cruelty, the infliction of suffering for the sake of suffering, of revenge, nor for maiming or wounding except in fight, nor of torture to extort confessions. It does not admit of the use of poison in any way nor of the wanton destruction of a district. In general, military necessity does not include any act of hostility which makes the return to peace unnecessarily difficult.

This rather idealistic definition of military necessity would be generally accepted by military men of all civilized nations.

The language and the tone seemed outmoded today, yet even when applying this definition of military necessity a strong case can be made for the bombing policy adopted by Great Britain. From her insular position, without sufficient military strength to invade the Continent,

Britain was faced with the prospect of air bombing or idleness. To aid her Russian ally, to liven morale both at home and abroad, to fight back at aggression, Britain initiated the bombing offensive. It was a means indispensable for securing the ends of war. If Germany had been victorious on the Eastern Front Britain's collapse was almost certain. The bomber offensive was one way to relieve pressure on the Red Army. Because Britain's war preparations were inadequate, defeats came in Norway, Greece, North Africa; still the bomber offensive, weak though it was, continued. As the war progressed, the Allies held the German advance and the Bomber offensive increased, the justifications for the operation did not diminish. In 1944 Lord Cranbrook in the House of Lords said:

> "It may well be, and I personally do not blink the fact, that these great German war industries can only be paralyzed by bringing the whole life of the cities in which they are situated to a standstill, making it quite impossible for the work-

men to carry on their work. That is a fact we may have to face and I do face it. It is, I suggest, a full justification for our present bombing campaign.[66]

J. M. Spaight continues:

"Was it a full justification in international law? That question will long be debated and opinions may be divided, but to the present writer the answer that should be returned seems to be simple. If in no other way than by target-area bombing can a belligerent destroy his enemy's armament centres and interrupt his enemy's process of munitionment, then target-area bombing cannot be considered to offend against the principles of the international law of war. To hold that it does offend against them is to subject bombardment from the air to a stricter test than has been applied in the past to bombardment from land or sea. Military effectiveness has been the test, and by that test target-area bombing passes muster. It should be

> condemned only if it involved acts repugnant to humanity. It was approved, however, by public opinion, generally, in Britain and America. There was no such widespread doubt about it as there was about the subsequent resort to atomic bombing, which did gravely disturb the public conscience."[67]

Post-War International Air Planning

During World War II the free nations of the world dropped their barriers in the airspace. Air transport flight covered the globe, flying where foreign planes had never flown before. Could a set of flight rules be universally applied to continue this freedom of the skies? Any international agreement would have to consider the need for national security against air attack, and the need for preventive measures to guard against rate wars and subsidy races, the bitter commercials rivalries which could lead to air aggression.

Chicago Convention

The United States government invited United Nations members and neutrals to Chicago in 1944 to discuss the future of international civil aviation. The British Government proposed an International Air Authority to fix rates and otherwise control international air transportation. The British desire for order in the air was influenced by their deficiency in transport planes and the overwhelming number of planes and facilities controlled by the United States. Freedom of flight had been urged by the British delegates in 1919 and 1929, but now they were willing to accept a limitation of future British air flight in exchange for a fair share. The new decision stated:

"Some form of international collaboration will be essential if the air is to be developed in the interests of mankind as a whole, trade served, international understandings fostered and some measure of international security gained."[68]

The United States took the view that while the proposed organization should have power in technical matters, the political situation did not warrant any powers in the economic and commercial field. There were no principles of law as yet devised to answer such questions as who would be granted, or denied carrier routes, how should traffic be divided, should old lines be protected or newcomers fostered?

With experience and time would come wisdom. Then the United States

would be ready to consider added powers for the organization.

The Chicago Conference gave the new body, International Civil Aviation Organization, only advisory functions. The provisions affecting a nation's right to fly are little different from those already in effect. Article 1, recognizes the complete and exclusive sovereignty of every nation over its territory.

Two agreements which were prepared by the Chicago Conference were considered to be the basis for world-wide economic understanding. The International Air Services Transit Agreement gave certain privileges of flight over and landing for refueling in the territory of accepting nations. The nation flown

over could designate routes and airports to be used, and to require the airline to land and give commercial service. The Transit Agreement has been accepted by United States, Great Britain and twenty-five other nations, but such vital states as France, Ireland, Brazil, Egypt and Portugal have not joined in this agreement.

The International Air Transport Agreement covers the so-called "five freedoms";

to operate nonstop through the airspace of the second nation;

to stop for non-traffic purposes;

to discharge cargo from the first nation to the second;

to pick up cargo in the second destined for the first, and,

to pick up or discharge in the second nation cargo destined to or coming from a third nation.

Despite limitations which tend to tighten controls of the nation flown over, this agreement meant relinquishing too many economic controls and consequently it was signed by very few nations and later renounced by the United States, an original signee.

The Chicago Convention set up the nucleus of a real world organi-

zation for civil aviation, it made possible uniform safety standards and practices, and it provided a forum for the airing of views on the development of air commerce. Every flying nation except the Soviet Union has accepted the flight safety and operations standards and practices.

Bermuda Agreement

While the multilateral agreement failed to provide a basis for international civil aviation, certain bilateral agreements have been of great importance in this respect. The Bermuda Agreement concluded between the United States and Great Britain in 1946 was greeted by a special statement issued by President Truman, expressing satisfac-

tion. Both British houses of Parliament did likewise, labeling the agreement the most important civil aviation agreement Britain has entered into. Briefly, the Bermuda plan resembles the "Five Freedoms" with much more definite details as to routes, airports, and the control of traffic. More important perhaps it marks the first time United States has granted fixed routes across its territory to foreign carriers. Rates are fixed by an agreement between the contracting powers.

The ICAO is to act in an advisory capacity to review the actions of the parties during the course of the agreement, as the success of the pact depends in some measure on "good faith", especially as regards the number and frequency of flights.

The United States and Britain are both willing to negotiate further bilateral agreements along the lines of the Bermuda Agreement.

Today, the international organization to control and govern civil aviation is as far away as ever before. The multilateral treaties concerned with aviation have dealt with the technical aspects of flight safety, and standardizing procedures and paper work in flight plans. An example of how little has been accomplished along the lines of freedom of air travel is to be round in an article by KLM president Dr. Albert Plesman. He deplores the economic basis for red tape and inconveniences and hopes for beneficial change in the future.

> "A solution can only be found if today's problem is viewed in the light of world significance and if people have enough courage and faith to strive for a multilateral agreement which will mean freedom in the air. World transport is not primarily a national or legal problem. It is an ideal and philosophical desideratum, it is also indispensable to world peace."[69]

It is clearly not in the direction of international control of air power that the civilian can look for security.

Disarmament 1946

In 1946 a Disarmament Resolution was adopted by the General Assembly of the United Nations. The Security Council was to formulate new measures for the regulation and reduction of armaments and armed forces. It urged the prohibition

and elimination from national armaments of "atomic and all other major weapons adaptable now and in the future to mass destruction"; called for the adoption of an inspection system "to protect complying states against the hazards of violations and invasions"; recommended that the Security Council expedite the organization of the international military force provided by Article 43 of the international military force provided by members of the United Nations to render every possible assistance to the Security Council and the Atomic Energy Commission in order to promote the establishment and maintenance of international peace and security with the least diversion for armaments of the world's human and economic resources.

The resolution is aimed primarily at prompt and effective elimination of the atomic bomb as a means of mass destruction. It is assumed that for the bomb and other similar devices to be dangerous they must be transported by outside means to the chosen targets.

The only practical method of control involves confiscation of planes flying illegally even in a sovereign nation's own airspace. It also means if necessary armed attack by the U. N. enforcement agency.

The questions that presented themselves in 1946 were: Must every aircraft capable of transporting the A-Bomb be subject to disarmament regulations? Shall the nations of the earth voluntarily surrender part

of their right to fly over their own airspace and over the high seas to assist in a reduction of air armaments? These questions were vital in 1946. They concerned the same dilemma that wrecked air disarmament conferences in the days before World War I, and again in the 1920's.

It is possible then they would have doomed the 1946 attempt at disarmament if the entire state of post-war political affairs had not done so. Without going into the facts concerning the widening breach between the East and West, it appears to a student of air law that the problems of designating a "military aircraft" would have effectively stalemated total air disarmament.

> The nations of the world are not yet ready to come to common agreement in the United Nations, much less form a World Federation. International control of aviation, both civil and military, must wait for the political agreement. It will not come first.

Post-War Air Capacity and a Look at the Future

Today the accounts of new weapons reads like a fantastic fairytale. While most of the advances were conceived and tested during World War II, the refinements and improvements of the last five years have added to the effectiveness and to the horror of these modern death-dealers.

The most important single development is the science of electronics for air, now called avionics. Boxes of vacuum tubes, resistors and capacitors may mean the difference between defeat and victory for today's air force. Here's why.

The engines and airframes of combat planes are close to equal in performance, and in the nip-and-tuck race for superiority, the plane with the best fire control will win out. Avionics can give this extra-needed boost through a computing gun sight that takes almost all of the guesswork out of jet fighter gunnery. Now, all the pilot has to do is keep the enemy plane in his gun sight and the computer does the firing.

Hitting a ground target with an atom bomb is harder now, than ever, because of fighter opposition, and anti-aircraft fire. But, new avionic equipment may be the answer here. Super-bombers may soon depend on electronic tracking devices, tracking two or more stars and then computing the bomber's position in space with extreme accuracy.

Bombers may use air to air missiles, electronically controlled as defense against attacking interceptors. But interceptors will be completely electronically controlled, with radar picking up the enemy bomber, feeding information to an automatic pilot which does the maneuvering.

On the ground, radar nets are to be equipped with computers to feed their information directly to interceptor bases, without the need of human radiomen. Anti-aircraft guns are capable of tracking hitting high-altitude supersonic planes. Each shell contains a miniature radar set, able to explode within a fixed distance from the target. This increases the effectiveness of anti-aircraft batteries five times.[70]

Guided missiles, too, are exciting weapons of the future. The Germans designed the A-10, a two-step rocket, with booster and warhead, to travel 3,000 miles. The speed of the A-9 when it left the A-10 booster rocket was calculated to be no less than 5,860 miles per hour. Given a free hand, the Germans might have launched this transoceanic rocket in a year after 1945. Dr. von Braun, brilliant master-mind of the German rocket program, envisions a chain of satellite rockets revolving above the earth, able to observe activities on the surface of the globe and able to act at once to stop aggressive action.[71]

Radar and avionic equipment in the nose of trans-oceanic rockets could be made to "home" on various radio signals, or on great heat (as from Pittsburgh). Armed with atomic war-heads these rockets would be a threat to every nation on earth.[72]

The newest advances in bombing planes are the B-52 and B-60, huge jet-propelled inter-continental bombers, able to fly over 400 miles per hour and to carry a bomb load of from 10,000 pounds (atomic bomb) to 84,000 pounds (presumably conventional bombs).

The B-60 is the jet version of the famous B-36 which, powered by turbo-props, had a range of over ten-thousand miles and a speed of over 300 miles per hour. The B-52 has a swept-back wing, 8 turbo-jet engines, providing the equivalent of 80,000 horsepower and complete avionic equipment. It will fly ten miles high at speeds up to 550 miles per hour.[73]

The Red Air Force is skilled in the use of modern wonder weapons, especially rockets. Small boost rockets which are powered by nitric

acid and jet engine fuel were developed to a high degree during World War II. They have the atom bomb and the planes to fly it across the ocean or across the pole. Right now their plane is the Russian copy of our B-29 [74] but the Red answer to the B-36 is designed and may be in production. It's the TuG-75, about the size of our B-36 with axial flow engines and BMW Jets. In any discussion of the weapons of the future, the Red scientists and their German "prizes" cannot be discounted. Many of the finest German brains were picked up by the Americans in the rush for talent after the war, but some sought to join the Soviets. This factor, plus the captured industrial equipment, plans and models makes the Soviet a hot competitor with the free nations for scientific advancement. When the Soviet method of directing a whole continent's effort into a chosen industry is added to the balance, it might slip a little to their side.

However, there is a bright spot in the overall picture. The Russian weakness may be the vacuum tube, the heart of avionics. The

Russian radio industry was kept purposely small; it may fail in the vital program of putting more and better electronic tubes. To bolster their electronic industry, the Soviets have put thousands of skilled Germans to work in Russian radar factories.

The combination of supersonic speeds, atomic and hydrogen bombs and avionic controls could mean that push button war is almost here. But, while some of these factors are present today, the right combination for long-range guided missile war-fare is not. It may be ten years in the future, or it may become a reality sooner than even the most optimistic realize.

What will prevent the horrors of an electronic war? When the air weapon was untried and inefficient, millions of persons demanded the security which they believed could only come from firm agreements to outlaw war. The devastation of air bombardment was driven home to the average man in the Sunday supplement of his newspaper, the motion pictures (Things to Come, by H. G. Wells), lecturers and evangelists.

Knowledge and fear were not even to prevent the bombing of the great cities of Europe during World War II. What will happen in World War III? This is cynical – yet undeniably true. The League of Nations attempt to outlaw war has failed. The bright promise of the United Nations has not prevented a world political split between the communist and non-communist nations. Nor has it prevented war in Korea.

Rules and regulations governing the use of the air weapon did not prevent the abuses of power in World War II. There are no stronger rules or more iron-clad agreements in effect now between opposing powers than there were then. As far as the strict letter of the law goes, either power is free to blast the other to eternity.

Summary and Conclusions.

Are rules of warfare worthwhile?

Most rules of warfare have so far been violated in every major conflict. In the period before World War II, there were some who took the view that the final and complete action was to

rule out war altogether, "to limit its scope, to prevent its worst atrocities, in short to civilize it and bring it up to date --- helps to perpetuate an international crime."[75]

The failure to outlaw war has not weakened the case for rules to govern war. It has strengthened it. The state of world politics today and in the immediate future makes the outbreak of world war possible, even probable. The war now going on in Korea is no doubt following the pattern of past wars. Rules and regulations, such as the Geneva Convention, are being observed.

John Bassett Moore took the position that rules of war have a humanitarian purpose, and the men who wage wars realize the value of such rules. They are first to suffer under brutal and savage warfare and they believe a controlled force is a more efficient fighting force.

For this reason, commanders find it worthwhile, in all but isolated instances, to observe the international law. It is true that laws are broken, but so are municipal laws and no

one would seriously suggest that there is no reason for the existence of municipal law. War crimes will exist but the laws of war will also exist.

The alternative to laws of war is the outlaw of war. Outlawing war has been tried and failed. It is more advantageous to humanity to go into war with an accepted code and humane rules, rather than to be swept into an illegal war without even the slightest regulation.

Specific regulations dealing with specific weapons or missiles have not been violated in major wars. Dum dum bullets, poison gas and bacteriological warfare are examples. In dealing with the air weapon international law was unable to make a specific ruling that would apply in all cases and be acceptable to all combatants. The area of operations and the target could not be limited, but the type of missile was limited. Gas and bacteria were not dropped.

The non-combatant is thus protected from two kinds of attack. Yet there is a more frightful

missile that is the major threat to life and property today.

The atom bomb has tremendous pressure for some international organizations to insure peace for all nations and for all time. Harold Urey, whose scientific knowledge contributed to the development of the bomb sail: "Atom wars will destroy our civilization. Either the United States secures an adequate international control which will prevent all countries from producing atomic weapons, and which may lead to a complete control of war, or else the United States begins preparations for the Third World War, in which atom bombs will be used. There is no solution to this problem except the abolition of war. We must replace world anarchy by law and government.[76]

As international law exists today, it appears that Urey is correct. There is no legal safeguard for the civilian under atomic attack by air.

What are the chances of such safeguards being accepted by the leading nations of the world?

The chances of international covenants prohibiting the use of atomic bombs in war clearly is a possibility. Such and agreement would be based on the wording of the Geneva Gas Protocol of 1925. signees agreed to refrain from the use of poisonous gas and bacteria. They did not promise to refrain from the manufacture, storage or preparation for the use of this form of warfare.

It may very well have been the immense stores of gas in the possession of each nation tat prevented its use in World War II.

Such a situation may develop out of the chaos that now exists in the atomic control situation.

In the age of long-range bombers and atomic rockets, it seems strange to talk of limiting the destructive effects of war. Yet there are certain considerations, certain lessons learned in the last great war that cast a different light on

the situation. It is true that the atom bomb is a terrifying weapon. It has been called the ultimate weapon. Yet, it may have seen its last military action.

The use of the atom bomb in August of 1945 was based on certain suppositions. The Japanese fanaticism threatened to take a frightful toll of American soldiers during any invasion of the homeland. The Japanese character did not allow for surrender except under extreme consequences. The atom bomb made the invasion unnecessary and allowed the Japanese leaders to surrender without excessive loss of face.

The chances of the same situation recurring are slight. Our bombing techniques in Germany taught us some vital facts. One: that wholesale destruction of enemy cities was not the best way to disarm the nation.

The virtual destruction of the leading German industrial cities did not bring about a collapse in production or morale; the industrial base was too broad and the totalitarian police

system too strong. Two: The concentrated attack on vital objective is most effective in bringing about the disorganization and destruction of the enemy military machine. Transportation, oil, electricity, chemicals, one of these is without doubt vital to the nation's whole economic system. General Arnold is quoted as saying:

> "Indiscriminately widespread destruction of enemy industry is simply a waste of effort. Examination of any national economy will disclose several specific industries or other national activities without which the nation cannot carry on modern warfare. It is conceivable that there will always be one industry, such as the oil industry in Germany, so necessary to phases of the national war-making activity that its destruction would be fatal to the nation".[77]

Strategic bombing in the next war will follow the American plan, rather than the British. An article in the Royal Air Force Quarterly admitted that

> "the fundamental error in the selection of 'area' bombing in the role for our strategic bombers is undeniable."[78]

Whitworth states that accuracy within 150 to 500 years is necessary for profitable bombing. Such accuracy may be possible with the use of the new avionic devices. The atom bomb, if used, will be directed at the same vital targets as conventional bombs and requires the same accuracy.

There is every indication that the actual use of atom bombs in strategic bombing will be severely restricted. The trend will be toward smaller bombs which will serve to put a vital target completely out of operation, yet not to devastate the surrounding area.

Air Force leaders have not changed another theory held by their predecessors for years past:

> "Strategic bombing is precision bombing. Criticism here hand abroad of strategic bombing as mass slaughter of non-

> combatants is rejected by top Air Force officers.
>
> USAF does not believe in bombing of cities to break down enemy morale. It will bomb only the parts of cities where industries are concentrated."[79]

War became "Total" in 1940. Its destructive pattern became clear when the British bombers, for the reasons already mentioned, began area bombing. The combination of unlimited means to continue these attacks (which were available by 1944) and the doctrine of "Unconditional surrender" brought about the awful conditions that plagued occupational forces during the rebuilding of Germany.

Did this destruction help or hinder our post-war policy? The answer seems clear enough even without documentation.

History has shown that often the enemy in one war is the ally in the next. It should be a policy to look ahead to the aftermath of war, to salvage what can be salvaged from the ruins of

war, to rebuild the ex-enemy into a friend and ally.

Today, the potential enemy of the Western democracies is the stronghold of world communism, Soviet Russia. From Russian airfields and Russian rocket launchers will come the atomic bombs, if they come.

Surely the democracies will not fire the first rocket, or send the first bomber toward Moscow. These air attacks will be surprise blows calculated to knock out the entire Western military machine, especially its means of reprisal. Such a wholesale victory is impossible.

The Russians will hesitate to risk atom war if they feel that their communistic "Monuments", housing developments, power stations, irrigation projects, will be destroyed by Allied reprisal attacks.

Their method of expansion is clear. They advance by the peculiar form of camouflaged aggression, by secret overthrow of governments, by alliances and coups. There is no method now

know to stop this form of aggression. Atom bombs are clearly not the answer.

The Communists advance by minor wars, by satellite actions. Again, no place for the big air force bombardment.

The Russians have an atomic bomber in the planning or possibly the production stage, but their emphasis is on fighter planes, thousands of them, jet-propelled and dangerous. They may be sitting out the intercontinental bomber stage of warfare, awaiting the day when they can capture Europe intact and destroy the American enemy by guided missile. If so, there will be guided missile push-button warfare, but that is only possible in the distant future.

During the period of cold war, the western policies of containment and reconstruction may break the deadlock which exists between the two opposing ideologies. Until the cold war breaks out in a hot conflict there is hope that international tensions will fade away. Until either of these possibilities come about, the free peoples of the world can prepare for war while working

for peace. They can do little else for the communists hold possession of the timetable of world political developments.

For the present and the immediate future there is hope for civilians and civilization outside of a world federation, without an international of all air transport, without agreements to outlaw the manufacture of atomic weapons.

That hope rests partly on the continued efforts to formulate international Law (to agree to refrain from using the atom bomb in war), but more solidly on the humanitarian and practical reasons which forbid the meaningless and outrageous sacrifice of lives and property.

In 1934 Elvira Fradkin stated:

> "the technical development of aerial bombing during the war period (1914-18) was such that indiscriminate bombing was inevitable."[80]

With the increase in range load capacity and altitude there came an increase in the power of aircraft to destroy lives and property far from

the battle-line. Attempts to regulate air bombing in the period between wars failed. International law governing air operations allowed varied interpretations of what constituted a legitimate target. At the outbreak of the Second World War the German Air Force was used tactically in connection with the Blitzkrieg type of warfare and was unprepared to fulfill the concept of strategic bombing against England. For many complicated military and economic reasons the combined air forces of the United States and Britain were able to fulfill this concept. The method used, especially by the RAF Bomber Command and later by the 20th Air Force atom attacks aroused a certain amount of indignation and doubt as to the long term effectiveness of total bombing. The arguments concerning the correct mission of air power continue to this day.

In any future war, the victory will not be won through the use of weapons, tactic and strategy of World War II. But certain valuable lessons can be learned from it. Marshal Tedder suggests that we should not look back on World

War II, but rather forward from that conflict. Among the lessons to be learned are the following:

That air superiority is essential to victory command of the air has a five-fold importance:

Intelligence is received from the enemy;

One's production, civilian life and transport continue without serious interference;

It must exist for victory in land and sea battles;

It makes possible the destruction of the enemy's source of strength, and safeguards one's own.

Makes possible the use, if necessary, of devastating weapons to end the war, while denying the enemy comparable use of such weapons.[81]

Air superiority depends on production, technical advances, training and morale.

It is not possible to enter another war in a state of unpreparedness.

In regard to the use of strategic bombing, best results are obtained by knocking out completely; if possible, certain vital cogs in the in-

dustrial and economic machine of the enemy. This can best be accomplished by the accurate precise bombing, continuous and in strength, of specific targets. The severance of lines of transport and communications is perhaps the most important primary role of bombing, both strategic and tactical. Other targets, such as will bring normal life to a standstill, should be located and destroyed.

Intelligence of enemy economic targets is essential to this form of bombing.

If no such intelligence exists bombing may be wasteful, and overly destructive.

If such area bombing is necessary, certain consequences must follow:

1.) The enemy economy and rice bowl will be destroyed, making the rehabilitation of the nation afterwards doubly difficult;

2.) The destruction of vast cities and millions of persons may provide a shaky foundation for the building of a lasting peace;

3.) The winning of the enemy populace to the victor's way of life to a degree is considered a necessity for lasting peace;

4.) Democratic nations must consider public opinion. It will be adversely affected if the methods of war seem immoral or unethical. To

the extent that this feeling can be prevented, it should be prevented.

The propaganda value of obliteration attacks in the hands of anti-democratic forces cannot be underestimated. Vast peoples of the world may fear and hate an over-destructive victor.

1.) Emergence of air power, the ability to fly, has made the world smaller. It becomes possible to bring together cultures and ways of life for greater understanding and world-wide peace and friendship. Air transport can make all men neighbors.

2.) The inaccessible areas of the world, the interiors of continents, the Arctic and

Antarctic, are now opened for economic development.

3.) While the speed and range of aircraft can cement peaceful relations and mutually profitable commerce, these same characteristics make all nations, especially small nations, insecure in conditions of political anarchy.

4.) Political chaos prevents the logical and necessary international control and operation of air transport.

5.) Since air weapons have proved decisive in war, today a rapid build-up of the air arm of the two world power combinations is taking place.

6.) The need for international agreements to govern the use of air power in war has been recognized as vital since the earliest days of its development. However, there has been a reluctance to adopt measures which would lessen the effectiveness of the air weapon. During the two World Wars, the air weapon was often used ruthlessly, without regard for the distinction between combatant and non-combatant.

7.) Total air war is not prohibited by any international convention. Military necessity and the spirit of humanity, together, govern the use of air power in war.

8.) The spirit of humanity is one of the keystones on which to base all hopes for the avoidance of total catastrophe in air war. For military men recognize only those rules of war which are in keeping with fundamental humanitarian instincts. Moreover, the results of the mass destruction of men and property in World War II give eloquent additional reasons for limiting the use of the air weapon. Since ruins are a shaky foundation for future peace, and since the end object of any one side to preserve the economic and even the cultural life of the other. It is

almost a maxim of modern war that the enemies' former wars become the allies of the future.

9.) The primary use of the intercontinental bomber in the United Nations air force is as a posed threat. While such a bomber threatens the economic and engineering 'monuments' of the Soviet Union, there may be no total war. The guided missile, however, is in the process of development, when it come into the possession of the Soviet Union in quantity, intercontinental war may have arrived.

10.) That time may be a decade hence. During the period of cold war, the United Nations policy of containment and reconstruction may bring about a let-up in world political tension. The freed peoples having lost possession of the timetable can do little more than arm themselves and wait.

11.) The last war teaches two lessons”

a. The air weapon is necessary to victory;

b. The air weapon should be used with discretion and wisdom.

The rules of war, while confused and shadowy on the legal prohibitions to its use, are quite plain as to the humanitarian reasons. Those reasons, plus the desire to rebuild a peaceful world after the conflict, should control the use of United Nations air power.

CASE STUDY

I. Press Accounts of the Dresden Air Raid

East Germany Press Propaganda, February 13, 1949

OPERATION DRESDEN

Berlin 13 February 1949

In February 1945 the end of the war was in sight. The artillery of the victorious Soviet Army was virtually at the gates of Berlin, ready to bring a final end to hostilities. To the south the Soviet troops were soon to march into Dresden. It was at this time that the British and American air commanders chose to destroy the city with a rain of incendiary bombs. It would have perhaps been understandable if the attack had been directed at rail junctions, military strong points and industrial sites, but instead the bombs were concentrated on the residential and commercial sections of the city.

The Anglo-American fir raids of the 13th, 14th and 15th of February destroyed twelve square kilometers in the center of Dresden. In the blazing inferno of fire and explosives 32,000 women, children and old people met death. Fires leveled

90,000 homes and damaged 80,000 more. Churches, hospitals, schools and hundreds of buildings of great architectural and historic value were reduced to rubble and ashes.

The loss which took place cannot be figured in millions of dollars, or hundreds of millions, or even billions. It is impossible to reckon the material worth of the treasures that were destroyed in the fire storms that swept through Dresden during those terrible days and nights.

The English and American airmen were guilty of terror bombing of the most inhumane kind, yet it was not unprecedented for the Nazi air force had brought death and ruin to Coventry, Rotterdam and scores of other cities. The Soviet government alone refrained from the sadistic bombing of cities.

Dresden remains the most frightful monument to the evils of war; a reminder of the destruction caused by imperialist conflict. In these days of atom bomb politics, the 32,000 Dresden dead remind us of the horrors which lie in the path of those who follow the lead of imperialist warmongers.

Each hammer blow in the rebuilding of Dresden, the new Dresden of free men, is a blow against the war criminals and profiteers. All the democratic and anti-imperialist peoples of the world will gather to-

gether under the guidance and leadership of the Soviet Union to achieve true peace and freedom. That is the most important lesson of February 13th, 1945.

This is German Communist propaganda of the most effective kind. It appeared two years ago in the East Berlin newspaper "New Germany". A half-page was devoted to the Dresden bombing, consisting of one shocking eye witness account of the raid, a short poem or elegy to the dead and some photographs which appeared to have been altered. Every year, on the anniversary of the attack, East German newspapers, magazines and radio stations repeat the story of the destruction of Dresden. It is considered a top Communist weapon in the war of ideas against the West, for it plays on the fears and hatreds of all Germans

who have suffered under Allied air bombardment.

Is this account of the Dresden air raid based on fact? How did we come to drop such a propaganda plum into the hands of the Russians?

London Times

There is no doubt that the February raids on Dresden were devastating. The following account was published in the London Times on the 15th:

"British and American bombers have struck one of their most powerful blows at Dresden, now a vital center for controlling the German defense against Marshal Konev's Ukrainian Army advancing from the East. In two attacks on Tuesday night the RAF sent 800 bombers of a force of Bomber Command aircraft to Dresden, on

which they showered 650,000 incendiaries, together with 8,000 lb. high explosive bombs and hundreds of 4,000 lb. bombs. The assault was followed by daylight attacks in which 1,350 American heavy bombers and 500 fighters took part. 450 bombers were sent to Dresden where, at 12:30 PM, bomb aimers saw the fires started by the RAF still burning. The RAF made two night attacks on Dresden. There was only a small amount of Flak and crews were able to make careful and straight runs over the target. In the second wave, the master bomber watched the bombing throughout and as soon as one part of the industrial area was well alight switched the attack to another.

'There were fires everywhere, with a terrific concentration in the center of the city', a Pathfinder pilot said.

Crews reported smoke rising 15,000 feet. On the following day the Times noted that

"Dresden was the principal target to 1,100 8th Air Force bombers".

New York Times

American readers learned of the effect of the attacks when the New York Times carried this release on the 15th of February:

"As a result of the Dresden raids the Germans have pulled out all stops on the sympathy propaganda 'Dresden has been turned into a heap of ruins ... irreplaceable art treasures have been transformed into smoking, pulverized ruins'. The Stockholm Tidningen said , 'Never before in this war has any town been turned into such ruins as Dresden in 24 hours."

The Times showed concern for the cultural monuments of the doomed city in its release of the 15th:

"Dresden received its fourth raid in less than 24 hours, jeopardizing the

> architectural, if not the artistic treasures, that made it the 'Florence of Germany'."

Dresden Background

Why is the memory of Dresden so poignant? Why, of all the cities damaged and destroyed during World War II is Dresden so lamented?

It is difficult to give a complete answer. The thousands of Europeans and Americans who adopted this cosmopolitan town as their own would try to express the "spirit" of Dresden. It was gay and light-hearted but not frivolous, for the deep appreciation of culture and art was part of Dresden's heritage. The romantic strains of Richard Straus operettas were first heard in the grand Opera House, to be echoed in the Weinhous on the Grosse Garten. The Grosse Garten was a spacious park and pleasure-ground where the summer theater, the Reitschel Museum and the zoological gardens were popular attractions. The fine old town on the winding

Elbe was crowded with the architectural glories of three centuries; the Hof-Kirche, on whose high parapets stood the statues of fifty-nine saints, The Frauenkirche, the foremost Protestant Church, dating from 1726; The Japanese Palace, which was constructed by Augustus the Strong in 1715, and contained a priceless collection of Oriental porcelain and gems; The Zwinger and adjoining galleries, which held art collections famous the world over, twenty-five hundred painting of the Italian, Dutch and Flemish schools, including Sistine Madonna.

The beauty and charm of Dresden, the gaiety and graciousness of her people were almost unique in Germany. The stern militarism of Prussia and the fanaticism of the Nazis failed to impress the folk of Saxony, the last stronghold of German Romanticism.

The Military Situation

Dresden seemed destined to escape the horrors of total war. In the late winter of 1945 the Third Reich was disintegrating fast. Hundreds of thousands of refugees flocked to the

comparative safety of this un-bombed city, to endure the monotony of hopeless day-to-day existence, to endure the privations of a war-torn economy and wait for peace. Surely, this center of art and culture would not be obliterated by air bombardment.

As the Red Army approached from the east and the battle-line reached the Neusse River, some fifty miles away, the citizens of Dresden began to fear the worst. They placed their hopes more and more on the weather; stormy and threatening days were their safeguards; bright and clear days meant danger of precision attack.

The 13th of February was a stormy day, with clouds hanging low over the city. Here, at last, was another night of safety.

At 7:30 in the evening, those who knew the pattern of RAF Bomber Command attacks were horrified to see the Pathfinders appear over the city and neatly lay out the signal fires, marking out a carpet for the dreaded surface bombardment.

Two hours later the first wave of Lancaster bombers swept in over the city that had been "the Reich's most secure air raid shelter".

To understand the fury of a mass incendiary attack it is necessary to live through it. Even an eyewitness account can only partially tell the story. This is the attack on Dresden as described by a Swiss citizen who viewed the scene from a hilltop in a nearby suburb.

Eyewitness Account

In the words of the eyewitness, "Hell had broken loose!"

> "With the first rain of bombs came the rising of a flaming sea which within a few minutes inundated the entire city in one huge glowing wave. From Loebtau to Blasewitz the entire town was in flames. Huge red and yellow tongues of fire were roaring toward the sky, streaming, trembling madly on rushing cloud, dark brown, grayish yellow, red and white masses of smoke, which the storm whipped past the

burning town, only to have them replaced by new ones, intermingling with brilliant white, red and yellow explosions, out of which the big bombers seemed to rise like flocks of giant birds on their flight from Hell!

The most agonizing nightmare could not approach the ghastly, paralyzing scene or whip the mind to a frenzy like this tremendously fascinating and horrifying spectacle of Dresden's eclipse.

Here was no particular target, no selected quarters. This time the raid was aimed at the destruction, the blotting out, of an entire city … the entire Manhattan district of New York going up in flames within minutes.\

To the 650,000 inhabitants of Dresden had been added half a million refugees from the East. There were no air raid shelters and between the first and second attacks some twenty to thirty thousand peo-

ple had fled to the Grosse Garten. At least 10,000 of them perished, burned to death by the million and a half incendiary sticks thrown down on the park. Victims, screaming with pain, were trying to draw these burning sticks from their bodies. They measured only one or two spans in length and an inch and a half in diameter. They were true death torches that burned 200,000 persons to death.

The overwhelming mass of incendiaries started a fire storm in the Altstadt section of the city. A survivor tells how he threw himself to the ground to be at least partially covered and grabbed the iron grating of the street drain beside the sidewalk with both hands. He needed all his strength and will-power to do so, because the fire suction which came from all the burning streets was so powerful that people were draw to the fire like dried leaves. Clothes were torn from bodies, which then rolled and slid from distances up to three

hundred feet into the flames, as if drawn by magnets. The heat was so terrific that lips sprang open; the hair was carbonized. Those not crushed by falling walls, or roasted or suffocated in the cellars, perished in these fire storms. After the second attack almost no one escaped from the inner town.

How right Hitler was, for he had foreseen just such holocaust and had tried to prevent it through war. This opinion deserves to be treated seriously, for it bears in itself the excuse for everything Germany has done. The saga of 1919, the saga of the undefeated German Army, was the germ of World War KK. Not only materially, but also morally, World War II has crushed the German people. Though there was, towards the last, little danger that, living, Hitler might win the war, the danger is great that the dead Fuhrer may still win it. Many of the witnesses of the disaster Germany brought over Europe are silent,

being dead, but the witnesses of the sufferings which Germany undergoes, remain."[82]

Stars and Stripes Report

The following is taken from the May 15th, 1945 issue of the Vienna Stars and Stripes;

"Nine British Prisoners of War were working in Dresden during the raid and said the horror and devastation was beyond human comprehension unless one could see for himself. One British sergeant said 'Reports from Dresden police that 300,000 died as a result to the bombing did not include deaths among the 1,000,000 evacuees from the Breslau area trying to escape from the Russians. There were no records on them. After seeing the results of the bombing, I believe their figures are correct. They had to pitchfork shriveled bodies onto trucks and wagons and cart them to shallow graves on the outskirts of the city. But after two weeks of work, the job became too much to cope with and they

> found other means to gather up the dead. They burned bodies in great heaps in the center of the city, but the most effective way, for sanitary reasons, was to take flame throwers and burn the dead as thy lay in the ruins.'"

Status of International Law

It would be natural to suppose that such an air raid was in violation of some international agreement coving the bombing of non-combatants in defenseless cities. Actually, the attack on Dresden was not a violation of the rules of warfare. No International Law was broken. Attempts were made in 1923 to outlaw serial bombardment. The rules were drafted by a Commission of Jurists at the Hague but they were never embodied in a Convention. The League of Nations adopted a proposal in 1938 which declared that three principles must be recognized in aerial bombing: Intentional bombing of civilians is illegal. Only identifiable military targets are legitimate, attacks on such targets must not negligently involve bombing civil-

ian populations. This proposal did not carry the authority of a Convention and it is said that "the air arm, alone among the arms of war, went into action without a stitch of regulations to its back."[83]

By the time of the Dresden raid, the question of who started the bombing of cities was no longer important. Both the RAF and Luftwaff Commands sent their air fleets against virtually undefended cities, and the Baedeker raids of the Luftwaff stand out as examples of such attacks. All that was left was a question of military necessity. If the strategic situation at that time called for such a bombardment, the Dresden raid was warranted.

Military Necessity

In February of 1945 the 1st Ukrainian Army, under the command of Marshal Konev, had reached the Neusse River, had surrounded the bastion of Breslau and was meeting stiff resistance in the sector immediately to the east of Dresden. The

1st White Russian Army under Marshal Zhukov was poised at Frankfort, 100 miles to the north, ready to drive to Berlin. American forces under General Patton were moving eastward from the main Seigfreid Line but they were still west of the Rhine. There was the probability of German troops being moved eastward to bolster the East front and Dresden was an important rail, highway and communication center. Successful air attacks on these targets would seriously disrupt transportation and communication leading to the front.

Did Russia Request Operation Dresden?

The prevailing opinion in Britain and the United States was, and perhaps still is, that we bombed Dresden because the Russians asked us to.

The Yalts meeting, which was concluded on the 11th of February, discussed military as

well as long-range political questions. It was implied that this meeting of military commanders arrived at a definite understanding as to targets for air bombardment. Dresden was supposedly included in the plans. Communiqués from Allied headquarters repeatedly mentioned Marshal Konev's drive on Dresden. But a more thorough investigation of the military decisions leading to the bombardment reveals a different story.

The first thorough investigation of the background to the bombing of Dresden was initiated by Bruce Campbell Hooper, of the Harvard University faculty. During World War II Hopper came in close contact with the Allied Air Force leaders in the capacity of Historian for the United States Strategic Air Forces. He was an intimate friend of General Carl Spaatz, and played an important part in the interrogation of Marshal Herrman Goenhing after the war. When he returned to the States he collected a number of official copies of cables, minutes of the Combined Chiefs meetings, excerpts from

diaries, letters and other pertinent data. Some of this material is classified, some is personal. A total of twenty-four pages of documented notes covering the period from December 10, 1944 to April 25,1945, reveal that the air attack on Dresden was planned and executed for the purpose of disrupting transportation and communication to the Eastern Front. There is some doubt as to whether all American air commanders were aware of the planned operation or would have approved of it. There are no official records to prove that this particular target was suggested by the Soviet Army. (Conference minutes dated the fourth of February show that "Russians staff officers would like to see air attacks on Berlin and Leipzig"). However, the request could have been an oral one. A thorough check of the records shows that the decision was not in violation of any prior agreement with the Reds but was not a direct request from the Red Army. In placing the degree of responsibility on either command, written records would point to the RAF and the USSAF command. However, there still exists the possibility that the Russians

asked for this attack, and their request was never written down in any form.

British Reaction

The debate in Britain over the Dresden bombing assumed larger proportions among the civilians and reached the floor of Commons, partially as a result of newspaper articles by Howard Cowan stating that the USSAF had begun a program of terror bombing against civilians. Early in March Commander R. A. Brabner, Under Secretary of State for Air, felt it necessary to state on the floor of Commons that the RAF had not resorted to the wanton destruction of non-military targets. He denied "that there are a lot of Marshals or pilots sitting in a room trying to think how many German women and children they can kill". He affirmed that the RAF was "concentrating on war targets and intended to keep concentrating on them until Germany gives up".[84]

To penetrate deeper into the background of the bombing of Dresden it would be necessary to know the innermost thoughts of Portal, Bot-

tomley and Spaatz from the last of January to the day of the attack. Perhaps there was an oral request by the Red commanders, one that never appeared in the official records. When top United States commanders were questioned later about the mission, they were unable to recall clearly the circumstances surrounding the raid. At the time, Dresden was considered another important target for aerial bombardment from a point of view of demoralizing the German populace, as well as severing important communications lines. Perhaps even higher commands were responsible. Certainly it is useless to question the motives of those in lower commands. Sir Arthur Harris in his book Bomber Offensive describes the attack on Dresden quite frankly.

> "In February of 1945, with the Russian army threatening the heart of Saxony, I was called upon to attack Dresden; this was considered a target of the first importance for the offensive on the Eastern front. Dresden had by this time become the main centre of communications for the

defense of Germany on the southern half of the Eastern front and it was considered that a heavy air attack would disorganize these communications and also make Dresden useless as a controlling centre for the defense. It was also by far the largest city in Germany – the pre-war population was 630,000 – which had been left intact; it had never been bombed before. (Not true: Eighth Air Force attacked it on 16 January 1945). As a large centre of war industry it was also of the highest importance. An attack on the night of February 13th – 14th by just over 800 aircraft (dispatched; 758 bombed), bombing in two sections in order to get the night fighters dispersed and grounded before the second attack, was almost as over-whelming in its effect as the Battle of Hamburg, though the area of devastation – 1600 acres – was considerable less; there was, it appears, a fire-typhoon, and the effect on German morale, not only in Dresden but in far distant parts of the country, was extremely

> serious .... I know that the destruction of so large and splendid a city at this last stage of the war was considered unnecessary even by a good many people who admit that our earlier attacks were as fully justified as any other operation of war. Here I will only say that the attack on Dresden was at the time considered a military necessity by much more important people than myself, and that if their judgment was right the same arguments must apply that I have set out in an earlier chapter in which I said what I think about the ethics of bombing as a whole."[85]

If the records tell the complete story, if the revealed reasons are the only reasons why Dresden was not spared, then the question arises: were they adequate reasons for destroying Dresden? If there were underlying purposes in the attack, purposes which had to do with the political and economic aftermath of the war, then the same question can be asked.

Lehwes Littneu's Report in the East Berlin Monthly "Aufbau", February 1950.

Strangely, or perhaps not so strangely, other possible Allied reasons for the bombing of Dresden are revealed quite clearly in another neat bit of East German propaganda. On the fifth anniversary of the Dresden bombing there appeared in the East Berlin monthly "Aufbau" an article entitled "Operation Dresden". It was written by Col. Lehwes Littneu, formerly of the German army. In a very calm and analytical manner this ex-officer states the "Party Line" on the real background to the bombing on Dresden.

Littneu assumes that Allied bombing strategy was calculated to promote desperation among the citizens and thus encourage the rise of anti-Hitler forces. If so, it should have become clear that any effort to overthrow the Nazi government was doomed to failure after July 1944. The effects of the "Terror-angriffen" after that merely convinced the German populace that they alone were marked for destruction, and not the armed forces. It also convinced them that

the Allies wanted the complete devastation of Germany. This tended to strengthen the morale of the German people. For this reason, precision bombing was increased with the hope of knocking out certain vital cogs in the economy of the nation, such as oil, transportation and chemicals. Such strategy was more successful than area bombing, but the attack on Dresden is a departure from that later technique. There is no doubt that this was a maximum effort, and could not have been directed by any but the highest commands. It could have been planned either to complete the destruction of all important German cities, or to make the Red Army occupation of Saxony more difficult. It is a fact, says Littneu, that the highly valuable Skoda plant in Pilsen was reduced to rubble by Anglo-British bombers just before it fell into Russian hands.

To suggest that the Red Army requested the attack is ridiculous. The Soviet government did not believe in area bombing, preferring to capture cities with as little destruction as possi-

ble. Also, the Red Army did not exploit the attack, for the military strong points, such as barracks and supply dumps were not hit. It was two months before the Dresden area was overrun. When the Soviet and American forces joined at Torgau and when Berlin fell to the victorious Red Army, Dresden was still not occupied.

The Anglo-American forces may have wished to slow down the Russian advance westward. Although the Yalts agreement had been concluded, the Allies might have planned to gain political control over unauthorized territory by prior occupation. It was to the advantage of the Allies to cut the bridges over the Elbe and thus slow the Soviet march. The Dresden raid did sever the bridges over the Elbe, but the Soviet forces turned northward toward Berlin to take part in the capture of the Nazi capital.

Such an attempt to double-cross the American wartime ally would now be considered wise strategy by most Americans. Therefore, American commanders can use these same rea-

sons in replying to criticism of the Dresden attack.

Littneu ends his article with these words: “Mass destruction, conceived in cold blood, without military necessity but with political aims of imperialist design, aims which could not be realized: that is the significance of Operation Dresden, the effects of which were not less fearful for the unfortunate city than an atom bomb.”

Was Dresden a Mistake?

It is inconceivable that our air command had such ulterior motives when they included Dresden in the list of communication targets. Yet, six years later, just such motives are attributed to us by the press and radio of East Germany.

It is apparent, now, that the mass incendiary bombing of Dresden was a grievous misuse of air power. This is not to say that the strategic bombing of communications and transport centers leading to the East Front at that time was unwarranted. There were numerous targets in

the general area; Cottbuss and Chemnitz were heavily bombed. They were legitimate military targets, and their destruction could not have had such world-wide repercussions.

Dresden, and Dresden alone, deserved to be spared.

Major General J. F. C. Fuller, in "The Second World War" admits that the rail network of Dresden was a legitimate target. He deplores the total destruction of the city and insists that the rail traffic could have been interrupted by a rain of bombs on the exits of the city. The combined bomber forces of the 8th Air Force and the RAF were sufficiently large at this time to carry out this plan of rail traffic interruption. It would have required fewer bombers, more missions and more accuracy. It may be that the RAF should have refrained from the Dresden attack entirely. Since they lacked the capabilities for daylight precision bombing, the job should have been left to the Flying Fortresses.

It is interesting to note that the first raid on Dresden was carried out by the 8th Air Force

in a daylight mission on January 16th. The Fredrichstadt marshalling yards were hit with a limited effect, but the bombing was accurate and there was no widespread cry of “Barbarism” afterward. Such strategic bombing attacks would have served the same purpose as the blanketing of the city, without the extreme consequences.

It is true that the Dresden incident was but one example of horrors of total war. Other great cities were devastated; Munich, Nuremberg, Frankfurt; but none so late in the war and none with so little purpose. Munich was a Jekyll and Hyde city, with scores of important industrial targets, in addition to its picture galleries and fine buildings. Most German cities had dual characters, but Dresden compared with Kyoto, the fabulous city of religion and art on the Island of Honshu in Japan. Kyoto was the fourth largest Japanese city, yet it was untouched by bombs. The rewards of our forbearance are being reaped in Japan today. The consequences of our lack of foresight are being felt in Germany.

From any point of view, the bombing of Dresden failed to achieve valuable results. Cyril Falls historian and writer, reviewed the Dresden incident two years afterward and stated, in the Illustrated London News, that the attack "exercised not the slightest effect on the course of the war". J.F.C. Fuller had had just such mass raids as the Dresden mission in mind when he said,

> "The armies on the First and Second Fronts were advancing to win the war, the Third Front (air bombardment) was engaged upon blowing the bottom out of the peace which was to follow its winning."

Even if the attack was executed in hopes of slowing down the Soviet Army advance, acquiring more territory or denying the industry of Dresden to the Communists, it is clear that all of these designs have backfired. The propaganda value of Dresden far outweighs any inconvenience the Reds might have suffered from our actions.

In theses days of scientific advancement, when the destructive power of weapons is so highly developed, it becomes more and more necessary to consider the purposes and aims of war. Is the object of war to be victory or peace? Should a nation at war strive for the utter desolation of the enemy homeland, or should the years of reconstruction which follow conflict be as carefully planned as the course of battle? If the object of war is victory alone, among the means of achieving that victory is the destruction of the enemy's economy, his industry and his rice bowl. The rubble heap that remains will not be a solid foundation for a lasting peace.

If the object of war is peace, then the strategy of war must be shaped accordingly. If the enemy's economic unity is to be preserved in the interests of future peace, perhaps for the future of civilization then military efficiency must be sacrificed.

In the event of future war, our leaders must consider the lessons of this conflict. When a time for decision is reached they will look

ahead to the problems of the war's aftermath and act accordingly. It may be that the course of strategy in total war may not rest with the nations of the free world. The war we fight may be dictated entirely by the aggressor. Perhaps the great cities of the world will become Dresdens, laid waste by the blasts of super-bombs. The course of future events cannot now be foreseen, but the effects of past actions are growing constantly clearer.

The spark that ignited the fire storm in Dresden was but one more, struck, as countless others were, in the long and bitter conflict. Perhaps it was too much to expect that a sudden change could come over the hearts and minds of men who were bent on victory.

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