AIR POWER

AN ESTIMATE OF AMERICAN AVIATION

AND A RECOMMENDATION FOR

A POLICY OF AMERICAN AIR POWER

1945
AERONAUTICAL CHAMBER OF COMMERCE OF AMERICA, INC.,

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RESOLUTION ADOPTED BY THE BOARD OF GOVERNORS OF THE AERONAUTICAL CHAMBER OF COMMERCE OF AMERICA, LOS ANGELES, APRIL 26, 1944

The Board of Governors of the Aeronautical Chamber of Commerce of America, in order to "provide for the common defense, promote the general welfare and secure the blessings of Liberty to ourselves and our posterity," and in order to ensure that the airplane which America created shall be used to maintain peace and secure the blessings of peace to mankind, does unanimously recommend the early formulation of an American Air Power Policy under the following guiding principles:

The United States should maintain an AIR POWER sufficient (in conjunction with other forces) not only to win this war but also to keep the peace:

I. By maintaining adequate AIR FORCES at such strength and in such state of readiness as to preclude a successful assault upon our country or its possessions.

II. By acquiring and maintaining AIR BASES essential to our security and that of overseas trade.

III. By facilitating the orderly and economic expansion of domestic and international AIR TRANSPORT and of private flying.

IV. By preserving a strong AIRCRAFT MANUFACTURING INDUSTRY.
Let us quickly review the past as the first step toward an estimate of the future. No matter how well known the record may be to some of us, it is worth while to restate it here.

We recall that upon the outbreak of World War I, the United States was wholly unprepared. This was particularly true in aviation, for whereas Europeans had looked upon the airplane as an instrument of war, we Americans saw it as a new vehicle of peace. Thus, we entered the war with no military airplane designs and no military engines of our own. We sought to overcome this disadvantage by adapting foreign designs to automotive mass production, and belatedly trying to create new ones of our own. And though a valiant effort was made, the brief nineteen months of our participation was not enough to bring American designed aircraft into combat.

The sudden unexpected armistice of November 11, 1918, found us as unprepared for peace as April 6, 1917, had found us unprepared for war. We had neither adequate policy, program or organization for terminating war con-
tracts or for the custody, storage or disposal of surplus goods or plants. As a result, there was vacillation, confusion and hardship. "War profits" proved illusory. Companies without adequate reserves or surplus failed. Automotive companies went back to automobiles. What little remained of the aircraft industry floundered in the doldrums. Some even thought the Army and Navy should design and build their own aircraft.

COOLIDGE
APPOINTS
MORROW
BOARD

The Army, the Navy and the Congress took some cognizance of this situation. A number of committees and boards made recommendations. But nothing came of them. Then, in 1925, in response to outspoken charges by Brig. Gen. William E. Mitchell, and to an aroused public opinion, President Coolidge appointed the "Morrow Board."

AT ARMY
AND NAVY
REQUEST

This Board was requested by the Secretaries of War and Navy. These requests were in turn the result of representations by the Aircraft Industry whose importance to the Army and Navy was pointed out.

BOARD'S
COMPOSITION
EXCELLENT

The Morrow Board consisted of nine members appointed by the President of the United States. Their number included a retired general, a retired admiral, two outstanding engineers qualified in aeronautics, a member of the
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Senate Committee on Military Affairs, a member of the House Committee on Naval Affairs (the Hon. Carl Vinson), the Chairman of the House Committee on Interstate and Foreign Commerce, a Judge of the Circuit Court of Appeals, and a prominent lawyer and banker, Dwight Morrow.

The Board was non-partisan and non-political, and no member was directly interested in Commercial or Military Aviation. The character and integrity of its members were such as to assure public confidence in their findings.

It heard nearly one hundred witnesses and many conflicting opinions. At that time, the state of the Aeronautical Art was such that little could be drawn from experience, yet the public had strong confidence in the future of aviation. After a short but active inquiry, the Board submitted a unanimous report.

Against the background of charge and countercharge incident to the Mitchell controversy, the Board’s findings were unexciting. Yet they were so sound in principle that the Report (now out of print), deserves reading and re-reading today even by those familiar with it. Congress accepted its recommendations and embodied them in the
Air Corps Act of 1926. It created the office of Assistant Secretary for Air in the Departments of War, Navy and Commerce.

The Board held, in effect, that a strong Air Force is vital to National Security, that the backbone of this Air Force must be a strong, private industry, and that a long term, continuing program of procurement is essential to the creation of adequate engineering staffs and the acceleration of the new technology. Thus, the Board fixed responsibility for American Air Power jointly upon Government and private industry.

We take pride in the fact that the Aircraft industry has fully discharged its responsibilities, even though at times the people's desire for peace caused them to falter in support of the Morrow Board's policy. Whereas, in World War I, we borrowed aircraft from our Allies, in World War II, we supplied them.

The Board realized the vital strategic importance of advanced engineering. It recognized the handicaps inherent in Government design and appreciated the need of private competition for the development of creative design staffs. It also stressed the impracticability of maintaining a peace-
time industry adequate to the requirements of war. It emphasized the need for rapid expansion in emergency and visualized it taking place around a small but potent aircraft industry. This forced aircraft designers to conceive an entirely new theory of quantity production, one that relieved it of the need for freezing designs, and permitted it to expand phenomenally while introducing new and better models.

As contemplated by the Morrow Board, the Post Office initiated the development of Air Transport through contract air mail under private operation. Regulation and airways development were centered in the Department of Commerce. Technical improvements were encouraged by keen, constructive performance competition. Destructive rate competition was avoided.

Simultaneously, technological development was encouraged through healthy rivalry between the armed services—a great force for progress. Inter-company competition has continued in war, though aircraft manufacturers have shared their experience freely through their War Production Councils. They have cooperated in this crisis as effectively as they once competed in normal times.
The benefits of competition were also shared between the armed services and the air transport operators to the overall advancement of both. Aircraft was able to achieve its present dominance because, in the years before the war, this development was permitted by a long range program evolved by the Morrow Board in 1925.

Men have long realized the vital importance to peace and prosperity of free communication by land, but it was not until 1889 that the decisive character of overwater communication became apparent. Then, Captain A. T. Mahan, in his classic treatise, "The Influence of Sea Power Upon History," proved conclusively that since the dawn of marine transport, victory in war and prosperity in peace have rested with the nation which exercised control of communication by sea.

During the nineteenth century, the world enjoyed unexampled prosperity coupled with spiritual and material progress never before experienced. The combined British and American Sea Power swept piracy from the high seas and guaranteed the right of innocent passage to all who proceeded on their lawful occasions. With this power in the hands of a free people, the play of natural competitive forces accelerated the development of the arts and sciences.
In the twentieth century, this freedom of the seas has been challenged twice in the lifetime of the pioneers of the Aircraft Industry. In World War I, the Germans challenged with the submarine. The Japanese at first found it expedient to ally themselves with us to obtain German and other Pacific bases. Then, when the Germans tried again with the submarine (their Air Force being Military), the Japanese challenged with Naval Air Power. Thus, twice in the first half of this century, the beneficent Sea Power of free people has been challenged by autocratic powers seeking to dominate and enslave.

We have met this latest challenge by a rapid expansion of land, sea and air power. Today, our Air Power is supreme: The combined Military and Naval Air forces of the United States now constitute the world's largest Air Force. Our aircraft manufacturing establishment is recognized as "the world's No. 1 industrial giant." As to Air Transport, our private domestic and international systems, already the world's largest and best before the war, have expanded by leaps and bounds.

At strategic points along the airlanes of the world, we have built a powerful network of air bases. They are as vital to Air Power as are Naval bases to Sea Power. With these stepping stones, the Army and Navy Air Transport Com-
mands have rushed men and materials to distant points in support of far-flung operations. Key men, on the spot, and face to face, have made decisions that insured success in complex operations which would otherwise have failed. The delivery of critical materials at the right place at the right time produced results that would otherwise have been denied. We simply could not have fought this war successfully without Air Transport.

We have extended air lanes in all directions. Though we look at these now as outward flowing streams, we must not forget that they are channels leading to the very heart of the country. Mahan, discussing the decisive influence of Sea Power upon our Civil War, and referring to the tightening of the Northern Blockade, said, "The stream that carried the wealth and supported the trade of the Southern states turned against them and admitted their enemies to their hearts."

This Sea Power comprised five basic elements: the Merchant Marine; strategic bases; the Navy; the shipbuilding industry; and a seafaring tradition. The cost of the Navy was accepted as a proper charge against the cost of water transport—yes, even as an investment in world prosperity.
Similarly, we see Air Power comprising the same elements: an expanding commercial Air Transport; strategic air bases; military and naval Air Forces; a sound aircraft manufacturing industry; and an air-minded public.

The precise influence upon history of Air Power is now in the process of determination, but Air Power's influence upon land and sea communications has been made abundantly clear. Fundamentally, the isolation once enjoyed behind land or sea frontiers is forever gone.

The aircraft manufacturing industry operates today on a high plateau, having passed successively through three crises. The first crisis involved a shortage of machine tools, the second, a shortage of materials, and the third, a shortage of manpower. Within the latter there is an element of grave danger. Competent management and competent engineering are items whose importance cannot be over-stressed. We have brought in management of proven competence from other industries through licensing and
subcontracting. We have trained new production management from our own ranks. We have cooperated through the War Production Councils to increase the efficiency of our own management.

LEADERSHIP AND ENGINEERING VITAL

But the ability, even the willingness to take responsibility for management is a rare and precious quality. In a highly specialized engineering art like aviation, even men of real aptitude or competence, must acquire experience before they are useful. Even then a special quality is necessary for men who must conceive and create new art.

MUST AVOID SURPRISE

Ours is the responsibility to provide combat crews with aircraft of advanced design. We must take care that no adversary surprises us with some secret weapon. A technological advantage once lost is not likely to be recovered.

HAZARDS OF IMPAIRING ENGINEERING AND MANAGEMENT

Aviation is a young industry. Most of its personnel is young. Thus, we are certain that the public interest requires the maintenance of the integrity of management and engineering in the aircraft industry. Removal of young engineers from private industry or interruption of a steady flow of them into it is fraught with grave dangers. A design staff once lost is not likely to be restored.
Turning now to production schedules, it is apparent that the very magnitude of the expansion of the aircraft industry makes it especially vulnerable to changes and cutbacks. Since renegotiation of contracts precludes the accumulation of reserves adequate to any contract termination that is not orderly and swift, the Government must accept its responsibilities in termination for all costs, including separation wages, lest important elements of the industry fail to survive. Until the completion of the cycle “war profits” are wholly illusory.

Our situation differs markedly from that of the automobile industry. Every day that passes, more automobiles wear out and the demand for new cars increases. Similarly, every day that passes, automobile companies contribute to the surplus of aircraft and aircraft parts. At termination, automotive companies can reconvert, while aircraft companies must cut back to whatever remains.

While the airplane and automobile both date from the beginning of this century, and while 40 odd years later the automotive and aircraft industries are collaborating in the production of aircraft industry designs for the war effort, the two industries are fundamentally different. The automobile has had wide private use. The airplane on the other hand has been used principally in public service. The
industry is almost wholly dependent upon government policy.

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<th>MUST CONTROL WAR SURPLUS</th>
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<td>The problem of surplus war products is thus of peculiar concern to Aircraft Manufacturers. We note with satisfaction the steps being taken to provide necessary legislation to permit terminating contracts speedily and disposing of war surpluses in an orderly manner. We are impressed with the magnitude of this task and the need for courageous administration and control.</td>
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<th>OBsolescence A Factor</th>
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<td>The factor of obsolescence is vitally important in aviation. Equipment is frequently made obsolete by technical improvement long before it has worn out in use. This factor should be given full consideration in controlling production. The flow of material must not run too far ahead of requirements, lest the latest service changes and improvements be not incorporated in combat aircraft.</td>
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<th>AVOID ACCUMULATION OF SURPLUS</th>
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<td>Thus, the conduct of the war and plans for the future combine to dictate the first step in surplus control. To the fullest extent consistent with meeting every need of the armed services, the tightest rein should be held on current production to avoid unnecessary accumulation of inventories in the hands of suppliers and of finished products and spares in reserve.</td>
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Surplus aircraft material should not be viewed as excess inventory to be liquidated like commercial products, but rather in the nature of a reserve. It is public property. It should be administered with broad regard for the public interest. The public interest demands the maintenance of a reasonable level of employment. Dumping surpluses could so unbalance the aircraft industry and the whole national economy that the cost of unemployment compensation, or relief, could quickly exceed any recovery through sale of surplus. War surplus must be considered in the light of other goods expended in the war effort. Good business judgment demands "no dumping."

Surplus aircraft will fall into two categories, those restricted to war purposes and those capable of conversion to commercial uses. The most modern surplus military aircraft should be stored in reserve. This will help employ available excess facilities. Convertible types should be used to promote air transport and private flying.

The rapid rate of obsolescence of aircraft makes timing the key to a sound disposal policy. The sooner surplus planes are made available for commercial purposes the more completely will desirable objectives be achieved. The immediate use commercially of surplus equipment before new
improved models are generally available will aid in creating demand for improved equipment.

The vital principle here is that surplus aircraft must not be permitted to destroy the aircraft manufacturing industry. On the contrary, they must be so utilized as to nourish it. The public interest requires that the aircraft manufacturing industry operate at the rate necessary to promote the creation of new designs and to facilitate rapid expansion in emergency. This must be accomplished through a continuing, orderly program of competitive procurement for the Army and Navy Air Forces as well as expanding private purchases for domestic and foreign transport. The whole should be supported by direct expenditures with the industry for research and experimental development.

In the matter of Government-owned facilities, we are gratified by the steps being taken. Here, too, the controlling principle is the public interest. It must always be kept in mind that until the industry can develop a private market, the Government is directly or indirectly its chief customer. It is axiomatic that no seller can compete successfully with his customer and that the private aircraft industry could not survive Government competition.
SUMMARY

RELATIONSHIP OF GOVERNMENT AND AIRCRAFT INDUSTRY A SOUND PATTERN

The record to date clearly shows the wisdom of having depended entirely upon private industry for aircraft production. Industry has met every requirement as to quantity and quality. The stimulus of private competition has produced great benefits. Technology has advanced. Costs have been dramatically reduced. The whole management of aircraft production in this war under the principles enunciated in the Morrow Report has been so successful as to clearly indicate the wisdom of continuing these policies. In fact, the whole relationship of Government and industry in the aircraft program sets a sound pattern for other lines for the future.

AN ESTIMATE OF THE FUTURE

SURVIVAL OF AIRCRAFT INDUSTRY IN PUBLIC INTEREST

When the time comes for major cutbacks, the aircraft industry will face problems at least as difficult if not more difficult, than those incident to expansion. There has been no opportunity to develop other new products. It would seem that the "Minute Men" of this War, who have served
the nation best technically and productionwise, should survive. Today, aircraft production represents a substantial proportion of the national economy, and every opportunity should be afforded the Industry to maintain itself at a reasonable level.

Continued manufacture of unneeded war goods would serve no useful purpose. We would simply be borrowing from future demand. This emphasizes the point made in the reports of the Vinson and Truman committees, that Government departments should begin planning now for long-term needs. Military and naval plans could approximate future requirements for several reasonable assumptions, and knowledge of these would assist private companies in their planning.

We also believe that the key lies in the field of Air Transport. Our domestic air lines are carrying a heavy war load with greatly reduced equipment. It seems unrealistic that at a time when other war activities have greatly expanded their plants, the air lines have been contracted. It would seem in the public interest to step up their operations to a maximum, thus relieving the over-burdened surface transport and speeding the conduct of war business.
The vital importance of international commercial Air Transport emphasizes the need for its expansion. This should be taken in hand now as an immediate contribution to the war effort and a wise provision for future needs. Expansion of air mail offers a profitable method.

The successful creation of the Air Forces under the War and Navy Departments suggests the need for lodging responsibility for commercial Air Transport in an executive department. This department, in collaboration with the State, War and Navy Departments, should operate under the American Air Power Policy and in support of it. The Office of Assistant Secretary for Air in the Department of Commerce should be reestablished.

As in the case of the Air Forces, the key to progress in commercial Air Transport is technological development. Competition is essential in order that economic factors may direct technical progress along sound lines. A prerequisite to the progress of the war effort and to the future of American Air Transport is the continued development of transport aircraft.
Today, American transport planes embody technical developments which grew out of air line competition and competitive purchases by the Army and Navy from private manufacturers. These manufacturers reinvested their earnings in improved technology and low cost manufacturing, so that prior to the war, both American commercial and military aircraft dominated foreign markets because of low cost and superior performances.

It is a noteworthy fact that at a time when certain established American industries needed a protective tariff, the self-reliant young American Aircraft Industry, maintaining a high level of wages and salaries, was able to undersell all foreign competition even though some of this was subsidized.

Our experience leads us to certain conclusions as to the elementary economics of Air Power. Our people have long been persuaded that expenditures in preparation for war are an out-of-pocket expense, and a burden tending to depress the standards of living. A free people seldom understands that an investment in protection against war may prove far more economical in the long run. Beyond this, money intelligently invested in an Air Power, adequate to keep the land, air and sea lanes open to commerce, will
pay dividends through increased trade and the creation of new wealth. This is the history of each new form of transport.

DOMESTIC AIR TRANSPORT POINTS THE WAY

One example is our own domestic Air Transport. It has been able to establish itself in direct competition with highly developed forms of surface transport by selling faster travel at competitive rates. It has furnished fast mail at premium rates high enough to return to the Post Office Department substantially more than the amount paid for transporting the mail. Thus, the Post Office has fostered a valuable public service with a profit to itself.

EXPANDED AIR TRANSPORT OFFERS JOBS FOR DISCHARGED SERVICE TECHNICIANS

From the economic point of view, we could credit the air mail profit back against the cost of military and naval aircraft. We might also credit income from export sales. But a strict accounting isn't necessary to prove that providing for the common security is not necessarily a burden upon the people. Done through private industry, it can be an investment. The benefits of judicious purchases to further new technology are obvious. They create new opportunities for private investment, new enterprises and new employment. Expanded Air Transport offers jobs for trained aviation technicians discharged from the Air Forces.
Another example of the profound influence of new forms of transport is the rapid expansion of transcontinental railways after the Civil War. This expansion took place under strong support from the Government, and while some evils attended it, the overall result was the opening up of vast new resources. No evils have attended the development of American Air Transport to date. The possibilities of the future development can scarcely be estimated.

The public character of aviation imposes upon it a dual role. Commercial companies, to advance their private interests and stimulate technical progress, must compete in the realm of operations. At the same time, they must collaborate in the realm of policy to promote the public interest. If any law or interpretation precludes such collaboration, it should be revoked.

International, domestic and private AIR TRANSPORT offer a source of new wealth and employment. Rapid development is dependent upon improved technology.
stemming from a strong competitive private MANUFACTURING INDUSTRY. A dominant military and naval AIR FORCE supported by Air Bases is a prerequisite of free communication by land, sea and air. Only an air-minded people can provide that controlling Air Power which, in the hands of free men, is the hope of lasting peace and prosperity.

Ours is the dominant Air Power. Ours, too, the responsibility for a sound policy, courageously administered. The American Air Power Policy derives directly from our own experience.