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Airports and National Defense

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AIRPORTS AND NATIONAL DEFENSE†

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My subject, "Airports and National Defense" was selected not only because of the importance being stressed in preparation of this country for any emergency, but principally because of the language of the Act which made available the $40,000,000 for the improvement of civil airports.

The ill wind blowing across Europe has brought America sudden warning that a nation's superiority of air power is her best insurance against aggression. America is heeding the warning. Determined to escape the holocaust abroad, she is forging a national defense in which a basic element is an impregnable Air Force. Already huge sums have been appropriated for the purchase of thousands of airplanes and the training of thousands of airmen.

Building an impregnable Air Force, however, entails something more than manufacturing thousands of aircraft and training thousands of pilots and mechanics.

You in this Association know well, because you have preached it for years, that our great projected air force cannot do the job of defending this country if, at some crucial hour, it is stuck in the mud!

In other words, we know that any expansion of flying material and personnel must be paced by a similar expansion of adequate airports and landing facilities. They are the very nerve centers—the operating bases for all aviation activities.

It is encouraging to note that this sudden public realization that superior air power is the keystone of national defense is linked with a belated realization that adequate airport facilities are not only essential but indispensable in the development of *all forms* of aviation.

This realization recently has been reflected in Congressional action making available $40,000,000 to the Civil Aeronautics Administration for immediate airport development. Use of this money is restricted to "construction, improvement and repair of not to exceed 250 public airports" deemed most important in the scheme of national defense. These airports are to be selected by the Admin-

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istrator of Civil Aeronautics with the approval of a Board composed of the Secretary of War, Secretary of the Navy, and Secretary of Commerce.

Since national defense is the specified reason for this appropriation, it is only reasonable to assume that the recommendations of the Army and Navy will govern largely the airports upon which it is to be expended. However, I can assure you that an attempt will be made to select airports of greatest importance to civil aviation while providing the Army's and Navy's requirements.

This appropriation, as you know, will make a modest start on the job that must be done; but it will be only a start. I am sure most of you are familiar with what we feel to be the Nation's airport needs. The Civil Aeronautics Administration believes that in the near future there should be some 4,000 airports and landing fields in the United States and its possessions; and we estimate that the cost of building them would be about $558,000,000 exclusive of the cost of any land, buildings, or engineering and administrative overhead. In short, that amount is necessary for improvement of landing areas—grading, drainage, paving, lighting, and navigation aids where necessary.

I would not attempt to estimate the cost of the additional land required by such a program. You can guess as well as I, but it would be quite an item.

As to buildings, a recent survey by the Civil Aeronautics Administration leads us to believe that about 2,900 hangars and 1,400 other buildings will be needed within the next two or three years to provide adequate housing for civil aviation. And we figure that these buildings would cost in the neighborhood of $70,000,000.

I remind you of this formidable problem because you will have to help in meeting it by making the situation clear to the people of your respective states. Some unfortunate publicity has been recently given to our long-range plan which probably has embarrassed you, as it has the Civil Aeronautics Administration. It should be said that we did not release the details of our long-range plan including a list of some 4,000 airports to be improved or developed. We merely submitted it to a Congressional committee, upon request. However, the list got out, and it has and is going to confuse a great many municipalities and uninformed people who think that in some manner about 4,000 airports are going to be provided by an appropriation of $40,000,000.

Nevertheless, this appropriation is a start. We in the Civil

Aeronautics Administration believe it is much more important, much more significant, than its size would indicate.

This importance lies in Congressional recognition for the first time, by the actual making of an appropriation, that federal responsibility for an adequate airport system should and does rest with the Federal Government's aviation *officials,* to be coordinated with their programs for airways, air navigation aids, pilots, and aircraft.

I assume it is unnecessary for me to go into any particular detail with you concerning the desperate need for every usable airport we can get. You know the airlines have nearly doubled their business in the past two years. You know the Civilian Pilot Training Program, which did not even exist two years ago, now is operating on more than seven hundred fields. The Army and Navy have, or will in the immediate future, occupy about fifty civil airports with training or combat units. And you know further phenomenal expansions for the military services already are slated.

Knowing of these expansions, and in anticipation of some sort of an appropriation, the Civil Aeronautics Administration, the Army and the Navy rolled up their sleeves some time ago to clear the way for action. Naturally, you gentlemen who are responsible for aviation and airport development in your respective states will be interested in knowing what these conferences have developed, and just how the new airport program will be administered.

As the first step in setting up streamlined administrative machinery, Major L. D. Clay, Corps of Engineers, has been assigned to duty in the office of the Administrator of Civil Aeronautics. He will serve as Secretary to the Army-Navy-Commerce Board which will determine the priority of airports and landing fields to be developed, and as liaison officer between the Administrator and the various federal agencies.

The Airport Section of the Civil Aeronautics Administration which hitherto has been concerned with much research work, in addition to its routine duties of planning and directing airport development throughout the United States and its possessions, will be removed from the Technical Development Division and placed directly under the Administrator. This move is calculated to increase the speed of processing and clearing projects within the Administration. One unit of the Section will remain in the Technical Development Division to carry on development and experimental work connected with airport facilities, such as lighting, paving and marking.

With national defense the primary objective of the program,

it already has been decided at conferences of Army, Navy, and Commerce officials that three classes of airports will receive consideration for immediate development. They are:

1. Those located in the strategic areas where a large number of squadrons, groups, and other units of the air force might be based in any given military situation.

2. Civil airports that are now or will be occupied by training or combat units of either the Army or Navy air forces; and new airports necessary to relieve traffic congestion at these ports by separating military and civil activities.

3. A limited number of airports along the existing civil airways and proposed military air routes connecting the various strategical areas and the east-west coasts.

At the conferences which I have mentioned, considerable thought and study has been given to coordinating the development of both civil and military aviation, with a minimum of interference to each. As a result, several matters of policy have been agreed upon tentatively which will have a direct bearing on the future development and operation of civil airports. They are:

1. That no new airport should be developed within six miles, center to center, of any existing airport; or on, or within two miles of the let-down legs of a radio range or instrument landing beam, if within ten miles of the radio range station.

2. That municipal or civil airports occupied by *flight training* units of the Army or the Navy will not be regularly used by civilian aviation.

3. That municipal or civil airports occupied by the *combat or tactical* units of the Air Corps may be used jointly by the scheduled air carriers inasmuch as all combat aircraft are now equipped with two-way radio and are, therefore, subject to radio airport traffic control.

It is clear that carrying out these tentatively adopted policies will force civil aviation activities, particularly flight training, off many existing fields.

This may not be such cheerful news to some fixed-base operators and private flyers. It will probably result in some loss of income to them as well as many inconveniences. But I trust that the operators and pilots thus affected will consider:

First, that this inconvenience is part of their contribution to the national defense; and second, that they will find some ground

for optimism in the fact that the pattern of a national airport program is beginning to crystalize, even in the public press.

The occupation of civil airports by service squadrons and groups immediately provides the Administrator with two important jobs. The civil airports occupied or taken over by the military, together with all others that might be used in an emergency, must be expanded where necessary and many of them improved in such a manner as will permit continuous operations twenty-four hours a day regardless of weather or visibility. The second job necessitated by these agreed-upon procedures, will be development of new fields for displaced civil aviation activities. Federal authorities should, in my opinion, and I feel certain will, do everything possible to avoid more than temporary interference with local civilian flying.

Certainly any fair-minded person in civil aviation ought to realize by this time that Washington, particularly the CAA, has the welfare and the development of both the airlines and of private flying very much at heart.

You may be interested in what the Assistant Secretary of Commerce, Robert H. Hinckley, had to say just the other day to his new Aeronautical Advisory Council when it held its first meeting. He said:

"Our *first* obligation is to make the greatest possible contribution toward meeting this national emergency. That we are doing—and all civil aviation is doing.

"But we have a further duty to look beyond this emergency and plan the peace-time uses to which this new air strength will be devoted when sanity returns to the world.

"We must not waste this impetus. These factories and airports and skilled workmen must not fall into disuse. We must be ready with new work for them to do.

"For this is the aviation industry's first great opportunity to become the nation's new industrial frontier."

To me there is a very interesting phase of a long-time airport program about which little has been said or printed publicly. I refer to underground hangars. It is ironic that the airplane which freed man from the shackles confining his travels to the surface of the earth should, in turn, drive him underground for the protection of his life and property!

Information available in this country on the design of underground and bombproof structures is limited to relatively few engineers and architects. In view of this, an educational campaign on

the subject, including the lessons being learned daily in Europe, would seem appropriate.

As an illustration, in one small section captured and occupied by German forces in the first few days of the Battle of France, there were over sixty airports. These were all put out of commission during the first day of attack. No doubt many of the airplanes based on these ports were destroyed at the same time. Dispersion of aircraft alone is only partial protection against aerial bombs and chemicals.

Demolition and destruction of both property and life by bombing aircraft during the present war in Europe leaves no question as to the desirability of constructing bomb-proof structures. These should be fashioned to house not only airport activities, one of the first major objectives of a hostile air force, but they should be designed to shelter personnel, essential industrial activities, and supplies as well.

It is my conviction that far too little attention has been devoted in this country to the design and construction of such underground structures. The rolling and uneven terrain extending over large parts of the United States makes construction and camouflage of underground hangars possible near many existing or potential landing areas.

The time to build bomb-proof structures is before attack is anticipated. No commander is likely to waste many bombs on bomb-proof structures, and it is reasonable to believe that underground airports built in strategic areas now might tend to discourage future attacks. It is obvious, too, that aircraft could be repaired or serviced more efficiently by personnel protected from hostile air forces. Opposite these benefits looms the knotty question of cost.

Construction of underground hangars for airplanes with wing spreads up to 100 feet is not a serious problem. Dealing with new transport and military planes with wing spreads ranging up to 200 feet, and other proportionate dimensions, is more difficult. Many engineers insist that the cost of building underground storage facilities for them would be prohibitive.

Here's my own thought on that subject. It requires considerable time to build modern military aircraft, particularly our newest and largest bombers, the cost of which ranges from $300,000 to $500,000 each. To me the cost of underground hangars which prevented destruction of aircraft on the ground would seem justified, particularly in consideration of the time required to replace them

in an emergency, if the cost of the hangar did not far exceed the original cost of the planes.

The possible necessity for underground hangars and other shelters and the camouflaging of both shelters and landing areas should be kept in mind in selecting new sites and in preparing plans for the extension or improvement of existing airports.

To expedite the task of expending the present appropriation on those airports of greatest national defense value we are sharing our labors with others. The Civil Aeronautics Administration is receiving the most gratifying cooperation in this work from other Federal agencies such as the Forest Service, the Public Roads Administration, Work Projects Administration, the CCC, National Youth Administrations and others. No one can even estimate how far this help will "stretch" the $40,000,000 appropriation made available by Congress for the initial step of what we hope to be a long-range airport program.

And now a word direct to you State Aviation Officials. Many of you may soon be called into active service by the Army or the Navy. Others doubtless will be called upon to fill responsible positions in the Government or private industry. May I suggest that it is important that you leave in the hands of your successors a well prepared plan of airport and aviation development for your respective states? And where possible, train some one to fill your shoes if, and when, you leave.

Mutual assistance and close cooperation always have marked the relationship between the Civil Aeronautics Administration and the National Association of State Aviation Officials. It is more important and necessary now than ever before so that our civil aviation and military air forces may be provided with a system of airports, along with men and machines, that will assure America supremacy of the air. And I mean air supremacy not only for purposes of defense, but in the period after this emergency when civil aviation will reach heights of development that not even its best friends yet realize.