

PRESIDENT'S AIRPORT COMMISSION
Room 1501 - Building T-4
Washington 25, D. C.

March 7, 1952

Chairman, Airports Advisory Committee
Kansas City, Missouri

Dear Sir:

As you know, the President on February 20th appointed a temporary Airport Commission to look into matters relating to airport utilization and airport safety. As an indication of what the President had in mind, I am quoting from his directive of February 20 as follows:

".....In undertaking this survey, several major considerations should be kept in mind. On the one hand, provision must be made for the safety, welfare and peace of mind of the people living in close proximity to airports. On the other hand, recognition must be given both to the requirements of national defense and to the importance of a progressive and efficient aviation industry in our national economy.

"In addition to these general considerations, I would like the Commission to take the following specific matters into account.

1. The Federal, State and local investment in existing civil and military airports and the factors affecting the utility of airports to adjacent communities.
2. Actions by Federal, State and local authorities to lessen the hazards surrounding existing civil and military airports.
3. Assignment of newly-activated military units to existing airports, with particular regard for potential hazards to the communities involved.
4. Site selection for new civil and military airports and the factors affecting relocation of existing airports.
5. Joint civil and military use of existing or new airports.
6. Legislation and appropriations necessary to carrying out appropriate policy.

March 7, 1952

This Commission is very much aware of the fact that most of the problems with which it has been requested to deal by the President have been the subject of long and continued study by your organization. They are matters of primary concern to your membership. It would be very helpful to the work of this Commission if your group could give us the benefit of your thinking on any or all of the several points outlined by the President with which we have been asked to deal.

I would appreciate it very much if you would, during the course of your present meeting, give some consideration to the questions that have been put to us by the President and let us have the benefit of your composite thinking. Letters have already been sent to the various organizations that are interested in the airport problem, requesting them to give us the benefit of their thinking in writing at a later date, but the immediate views of your group would be invaluable in providing direction for our initial studies.

I understand that Mr. Charles F. Horne is to meet with you and I have asked him to present this letter to you for your consideration. We will all be grateful for any advice and assistance that you can give to him to be passed along directly to the Commission.

Sincerely yours,

/s/ J. H. Doolittle

J. H. Doolittle
Chairman

attach 3/7/52

TO : Members, Airports Advisory Committee
FROM : Executive Secretary, Airports Advisory Committee
SUBJECT: Status of Aircraft Development with Respect to
Runway Length Requirements.

Attached is a copy of "Status of Aircraft Development with respect to runway length requirements", which is furnished for your information and comments.

I have been directed to point out that this study has been prepared by certain aeronautical engineers within the CAA; and does not necessarily reflect the policy of the CAA.

Robert N. Cook
Robert N. Cook

This is a study prepared by certain aeronautical engineers within the CAA and does not necessarily reflect the policy of the CAA on this subject.

STATUS OF AIRCRAFT DEVELOPMENT WITH
RESPECT TO RUNWAY LENGTH REQUIREMENTS

Prepared for presentation to
CAA Airports Advisory Committee
March 1952

TSO-N6a, which defines runway strength and dimensional standards for airports utilized in air carrier operations, has among its objectives those of informing agencies concerned with airport development of the runway characteristics for which Federal funds may be applicable under the Federal Airport Act, and of indicating to aircraft manufacturers and operators the dimensional characteristics of runways eventually to be made available. The runway dimensions and the correction factors currently specified for altitude, temperature and runway gradient are based upon requirements of transport aircraft existing and foreseen at the time the TSO was introduced in 1947.

Over the past few years development of the gas turbine and its application in turbo-prop and turbo-jet powerplants has provided aircraft designers with propulsion powers far exceeding those anticipated through normal development of the conventional piston engine, and many who have witnessed the take-off and landing of aircraft specifically designed to utilize this new form of propulsion have had reason to ponder the applicability of our current runway standards to the jet transports of the future. With new concepts of aircraft design and performance made possible by the gas turbine it appeared desirable to re-assess our runway standards and an investigation of aircraft developments with respect to runway requirements accordingly was undertaken.

In the early stages of the study it became evident that it would be unwise at this time to propose specific changes to the current runway standards to accommodate turbine-powered aircraft even if the need for such changes was indicated and the study therefore was directed toward ascertaining the trend in runway requirements rather than specific runway lengths. This conclusion was based primarily upon two factors. First, the gas turbine powerplant as we know it today is in a comparatively early stage of development, and, except at flight speeds and altitudes appreciably above the present day level for economic transport operation, such powerplants cannot compete with the conventional piston engine-propeller combination. However, technological improvements which promise to alter that picture appear to be reasonably certain of attainment within the foreseeable future. Secondly, the Civil Air Regulations governing the certification and operation of jet-type transports are still in the process of formulation and it is not unreasonable to assume that the Regulations finally promulgated may differ in many respects from our current ones in regard to factors influencing runway requirements.

The runway lengths with which we are here concerned are those appropriate to Transport Category aircraft operated in accordance with the operating rules of the Civil Air Regulations and as such are greater than the lengths required for normal day-to-day operations by amounts calculated to provide a reasonable margin of safety under emergency operating conditions. Such runway lengths for currently certificated aircraft are published in CAA Approved Airplane Flight Manuals. For aircraft other than those currently certificated, and with which we are here primarily concerned, data is available primarily from two sources, that is, the military services and the aircraft manufacturers. Although the preponderance of operational experience with jet-powered aircraft has been accumulated by the military services, a wide divergence exists between civil and military requirements with respect both to operational requirements and to aircraft characteristics which influence runway requirements. To provide a valid comparison it would be necessary to convert the performance data of military aircraft to civil standards and consideration of the factors involved in that task indicated that the assumptions and extrapolations involved were of such magnitude as to render results of questionable value.

There remained, therefore, as the primary source of information the data compiled by various aircraft manufacturers in the testing of current experimental aircraft and in connection with design studies. Such data is presented in condensed form in documents describing individual proposals for transport aircraft of advanced type. Without exception the proposed turbine-powered aircraft and the estimated performance are predicated upon the availability of powerplants possessing thrust and fuel consumption characteristics excelling those of jet engines in service today, but represent the considered opinion of design engineers of what may reasonably be achieved in the foreseeable future.

Standard sea level take-off and landing runway lengths dictated by the current Civil Air Regulations and compiled from sources described above are tabulated in Tables I, II, and III for representative piston-engined aircraft, turbo-prop and turbo-jet aircraft, respectively. The service classifications noted in the tables are those in which current aircraft actually are engaged and the service anticipated for proposed aircraft.

From examination of Table I it will be noted that the runway lengths required by currently certificated aircraft with conventional piston engine powerplants are generally commensurate with the TSO standards for the type of service for which such aircraft are used when operated

at maximum weights. However, large aircraft quite frequently are operated in a class of service involving flight distances considerably shorter than those for which the aircraft was primarily designed. In such service the operating weights generally are limited not by take-off but by landing considerations at the airport of destination and it is evident from Table I that the TSC standards are adequate for landing at the maximum permissible landing weight for the majority of the aircraft listed.

For piston engine aircraft now in the experimental or design stage, particularly those aircraft intended for trunk line service, runway requirements 300 to 580 feet greater than the TSC standards may be anticipated. Those aircraft, the Martin 404(A) and the Convair 340, are developments of the earlier models 202 and 240 in which the gross weights are to be increased to the extent that the runway requirements will exceed the TSC standards. Further, the design of those aircraft, together with the small spread between maximum permissible take-off and landing weights, will permit practical utilization of the maximum gross weight on short-haul flights appropriate to trunk line operations. The trunk line standard runway length of 4200 feet therefore will impose an economic penalty on those aircraft in the specific type of service for which they are intended.

With regard to turbine-powered aircraft, both turbo-prop and turbo-jet, the effect of such powerplants upon runway length requirements may be generalized to some extent from our present knowledge of the operating characteristics of gas turbines. In common with the piston engine the useful output of the gas turbine decreases with increasing altitude, but, unlike the supercharged piston engine in which the sea level output is maintained constant over an appreciable altitude range, it appears impracticable at this time to boost the gas turbine for altitude operation because of the vast quantities of air consumed. The output of the gas turbine thus not only drops off directly from sea level but does so at a faster rate than does the piston engine. At an operating altitude of 35 or 40 thousand feet, therefore, the output of the gas turbine is a smaller percentage of the sea level value than is normally the case for the piston engine. On the other hand, the most economic operation of gas-turbine aircraft is obtained at altitudes and flight speeds appreciably greater than is the case for piston-engined aircraft. In line with the above it appears that turbine-powered transport aircraft designed with sufficient power to realize the economies of high-altitude high-speed flight will, at sea level, under standard atmospheric conditions, inherently possess such an excess of power that take-off runway requirements should present no problem.

Operations under "hot-day" conditions, however, will be much more critical with turbine powerplants than with piston engines. For the current types of jet engines the drop off in output with rising atmospheric temperature is approximately three times the rate experienced with piston engines, and with the higher turbine operating temperatures sought as a means of improving thrust and fuel consumption characteristics, the effects of atmospheric temperature will be even more pronounced. Although it does not appear at this time that the takeoff performance will be the determining factor in regard to standard sea level runway requirements it is evident that the runway correction factors currently specified for altitude and temperature will require re-assessment for turbine-powered transport aircraft.

There is no reason to believe that the effects of runway gradient upon the take-off performance of a turbine-powered aircraft will differ from that of an equivalent piston-engined aircraft. However, inasmuch as this effect is primarily influenced by take-off speed and initial climb, occasional re-assessment to assure that the specified gradient correction factor adequately provides for the most modern aircraft would appear to be in order.

Examination of the probable landing requirements of turbine-powered aircraft leads only to the conclusion, in view of the take-off considerations discussed above, that the landing performance will be the determining factor. With solution of the powerplant control problem currently plaguing the turbo-prop, it is reasonable to assume that landing distances will be comparable to those of equivalent piston-engined aircraft, but landing distances of somewhat greater length can be anticipated for the turbo-jet because of the absence of propellers to aid in deceleration.

The turbo-prop aircraft listed in Table II are basically current airframes with turbo-prop installations and it will be noted that the most pessimistic of the estimated take-off runway length requirements, that quoted for the Convair 340(T), is but 120 feet greater than the corresponding TSC standard. The estimated landing runway requirements also are within the TSC standards except for the Convair 340(T) for which a distance of 5980 feet, or 1780 feet in excess of the standard, is quoted. For each of the aircraft listed the landing runway length is greater than the runway length required for take-off.

The jet aircraft listed in Table III are proposed designs advanced by aircraft manufacturers as the result of extensive design studies. From an examination of Table III it is evident that the estimated take-off runway lengths for future jet transport aircraft foreseen at this time are well within the TSC standards whereas the landing runway lengths in all probability will exceed those standards by some small margin.

If, as indicated from general considerations and tentatively confirmed by Tables II and III, the landing distance becomes the determining factor in runway length requirements for turbine-powered aircraft, major repercussions in the airport program may be anticipated when such aircraft are placed in widespread service. Landing runway lengths required for current piston-engined aircraft generally are shorter than the take-off runway lengths. As previously noted the operating weights of aircraft when utilized in short-haul operations, generally are limited not by take-off but by landing requirements. With the comparatively small fuel burn-off appropriate to such flights the operational take-off weight is only slightly greater than the maximum permissible landing weight and the take-off runway requirements are correspondingly low. It is therefore possible to conduct short-haul operations, without encountering weight penalties, from runways considerably shorter than the maximum length specified for the airplane, and one of the most potent arguments for enlarging runways to that maximum length is thereby invalidated. Since it is evident that current transport aircraft have been designed to permit operation at maximum weights from runways generally conforming to the TSO standards, and there are indications that the standards will play a similar role in the design of future aircraft, should the landing runway requirement become the determining factor it is highly probable that every airport of destination which is unable to accommodate the aircraft at maximum permissible landing weight will automatically impose a penalty upon the operating weight and payload of the flight. It is extremely doubtful that under such conditions runway lengths shorter than the appropriate standard will be tolerated and acceleration of the airport program to bring all air carrier airports into compliance with the TSO standards therefore may be anticipated. Fortunately, however, means for improving the ground deceleration characteristics of aircraft are available or foreseen and it is reasonable to assume that such devices will be applied to the fullest extent permitted by operating considerations or by the Civil Air Regulations should landing runway requirements actually become critical. Such deceleration aids include anti-skid devices which permit optimum braking, parachute drogues and reverse thrust from propellers or from jet engines.

The discussion to this point has been confined to the effect of aircraft developments upon runway length, but it should be recognized that the establishment of fixed runway standards has a corollary effect upon aircraft design and development. In a number of respects aircraft design features conducive to economy of operation in flight contrast with those necessitated by take-off and landing considerations. If continued rise in airplane operating efficiency is to be encouraged it is essential that established runway standards impose no undue

restriction or limitation upon the gains to be realized through technological advancements. Although the current TSO standards are based upon runway lengths required by conventional aircraft at a stage of development now considerably exceeded, those standards have in fact become accepted design criteria for aircraft incorporating new concepts of aerodynamics and propulsion. It is therefore not surprising that the runway lengths indicated for such now aircraft are in general conformity with the TSO standards, but such conformity provides no assurance that aircraft designed to those standards are realizing their full potentialities. In the ideal case aircraft design should be integrated with the economics of airline operation and airport construction such that for each class of service an economic balance is achieved between airplane operating efficiency and required runway length. This ideal is almost impossible of attainment because of the many variables involved, but in view of the radical developments now in the offing an approach to the determination of runway standards through such considerations conceivably could result in significant contributions to our air transport structure.

The data and discussion of the foregoing may be summarized in the following conclusions:

1. Standard sea level runway requirements of transport aircraft envisioned at this time are generally commensurate with the TSO standards, except for proposed piston-engined aircraft intended for trunk-line service.
2. Upward revision of current runway correction factors for altitude and temperature may be anticipated for turbine-engined aircraft. Gradient correction factors apply more equally to all types of aircraft, but since the magnitude of this factor is influenced by take-off speed and initial climb, occasional re-assessment is recommended.
3. Runway requirements for landing rather than for take-off may become the determining factor for future transport aircraft. Acceleration of the airport program to bring all air carrier airports into compliance with the TSO standards may be anticipated as a result.
4. With future transport aircraft embodying new concepts of aerodynamics and propulsion, determination of runway standards through comprehensive analysis of all factors involved appears to be in order.

TABLE I
PISTON ENGINE AIRCRAFT

CURRENT AIRCRAFT

Airplane	Convair 240	Martin 202A	Martin 404	Douglas DC-4	Douglas DC-6	Douglas DC-6B	Lockheed 749A	Lockheed 1049	Boeing 377
Status 1/	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.
Service 2/	2	2 2	2	2 - 3	3 - 5	3 - 5	3 - 5	3 - 5	3 - 6
No. Engines	2	2	2	4	4	4	4	4	4
Max. T.O. Wt. (lbs)	41,200	43,000	43,650	73,000	97,200	100,000	107,000	120,000	145,800
Max. Land Wt. (lbs)	39,800	41,000	43,000	63,500	80,000	85,000	89,500	98,500	121,700
CAR T.O. Runway	4170'	4100'	4000'	5050'	5320'	5470'	5400'	6150'	7075'
CAR Land. Runway	3925'	3900'	3920'	4620'	5360'	5000'	4825'	5560'	6425'
TSC-N6a Standard	4200'	4200'	4200'	4200' 5000'	5000' 7000'	5000' 7000'	5000' 7000'	5000' 7000'	5000' 8400'

FUTURE AIRCRAFT

Airplane	Convair 340	Martin 404(A)	Douglas DC-7	Lockheed 1049 B
Status 1/	Exp.	Proposed	Proposed	Exp.
Service 2/	2	2	4 - 5	4 - 6
No. Engines	2	2	4	4
Max. T.O. Weight	47,000	44,900	116,400	130,000
Max. Land. Weight	46,500	43,000	95,000	110,000
CAR T.O. Runway	4750'	4500'	6100'	5700'
CAR Land. Runway	4780'	3920'	5800'	5900'
TSC-N6a Standard	4200'	4200'	5900' 7000'	5900' 8400'

TABLE II
TURBO-PROP AIRCRAFT

Airplane	Martin 404(T)	Convair 340(T)	Lockheed 1249 B
Status <u>1</u> /	Proposed	Proposed	Proposed
Service <u>2</u> /	2	2	4 - 6
No. Engines	2	2	4
Max. T.O. Wt. (lbs)	45,000	53,000	150,000
Max. Land. Wt. (lbs)	43,000	50,670	110,000
CAR T.O. Runway	3600'	4320'	4450'
CAR Land. Runway	4000'	5980'	5900'
TSO-N6a Standard	4200'	4200'	5900' 3400'

TABLE III
TURBO-JET AIRCRAFT

Lockheed 193	Boeing 473
Proposed	Proposed
4	4
4	4
148,000	135,000
113,000	112,000
5050'	2850'
?	6150'
5900'	5900'

1/ Cert. - Certificated
Exp. - Experimental

2/ 1 - Feeder
2 - Trunk Line
3 - Express
4 - Continental
5 - Intercontinental
6 - Intercontinental Express

[attach. 3/7/1952]

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
REGION FIVE
Kansas City 6, Missouri

November 29, 1949

TO: All Personnel, Airports Division

FROM: Chief, Airports Division

SUBJECT: Policy Covering Number of Runways - Federal-aid Airport Projects

Supplementing my memorandum of November 22, 1949, there is quoted below the text of a memorandum from the Administrator, dated November 25, 1949, with further information on the subject of the policy concerning the number of runways:

"It is essential that our program for improving navigational aids and terminal facilities increase the acceptance rate of present and new airports. Therefore, it is my aim to construct traffic-bearing runways to provide for the maximum degree of utilization. To attain this objective the policy has been established which will govern CAA participation under the Federal Airport Act.

"Class I (personal) airports: CAA will participate in the construction or improvement of only one runway or landing strip on new or existing airports of this class. Exceptions will be made only where it can be demonstrated conclusively that traffic volume requires more than one runway or landing strip. (Where so demonstrated and approved, any additional runway or landing strip must be so located as to provide maximum traffic utility.)

"Class II and larger airports: CAA will participate in the construction of an additional new runway or runways provided that such runway or runways are necessary to expedite traffic and so located as to provide simultaneous use.

"For airport planning purposes CAA will participate in the acquisition of land in excess of that required to comply with the basic policy set forth above when determined necessary for normal expected expansion.

"Exceptions to the above policy will be considered by the Washington Office when justified as necessary by the Regional Administrator.

"For the purpose of clarification and guidance it is desired to emphasize that this policy does not, because of contractual commitments, affect already approved projects.

"The limitations imposed directly by this policy are confined to the construction of new or additional runways except on Class I (personal) airports. Therefore, any improvements to existing runways do not constitute deviations from the policy and will not require Washington approval. However, compliance with the spirit of the policy indicates the need for a thorough study of those improvements where expensive

construction is involved. The basis of this policy is that additional runways which provide only wind coverage or minor conveniences without increasing traffic capacity, do not have sufficient value to justify the cost of construction. The operational advantages of these existing runways may be sufficient to justify the cost of some additional improvements.

"Additional land to be purchased to provide for expected expansion will be based upon the application of this policy to the traffic demands as of a later date. It is not contemplated that we will participate in the purchase of land for additional runways merely to provide wind coverage.

"The approval of a master plan or the programming of a project does not constitute approval. However, where either oral or written approval has been given to detailed plans for a specific programmed project, we will carry out our commitments if the sponsor so desires.

"The policy does not state or infer that the usage of more than one runway on an airport has insufficient value to justify the cost of maintenance. Therefore, it does not authorize in any way the relief of our agreements with the sponsors for maintenance of runways. It does, however, leave open to consideration changes in the master plans of existing airports which may lead to the abandonment of certain runways or their modification to other usages such as taxiways, aprons or parking areas. The policy statement must be used as a guide to our thinking in the evaluation of airport projects. It does not relieve the personnel of the CAA from the responsibility of applying constructive study and analysis in the planning and design of airport projects."

Herbert H. Howell

Herbert H. Howell, 5-510

[attach 5/7/58]
Reo Schudt Repair

On the basis of economics, it is believed that the federal government is justified in its position known as "the single runway policy" but this position has been misinterpreted with respect to recommendations concerning alignment and land acquisition. As the Committee understands the position, there is no objection to the provision of runways on two or more alignments so as to provide further wind coverage although the federal attitude is still predicated on traffic needs. If communities feel that more runways are required for local conditions, other than those demanded by traffic, it becomes apparent that they must normally provide the funds therefor. Federal funds must necessarily be limited to primary runway construction at the greatest possible number of sites. However, in the case of land acquisition, the federal government should encourage and participate in the purchase of sufficient lands for multiple runways even though the government may not anticipate assisting in the cost of added runways. Since the federal government is limiting its participation to primary runways, it is believed that more recognition should be given the problem of ever-increasing gross weights of aircraft to avoid the costs and dangers of maintenance and reconstruction.

GAA POLICY AND REGULATIONS FOR ADMINISTERING THE FEDERAL-AID AIRPORT PROGRAM

Since the overall revision of Part 550 of the Regulations in 1949, there have been 15 amendments to this Part of the Regulations. The majority of these amendments resulted from the enactment of several amendments to the Federal Airport Act. The first amendment was pursuant to Public Law 183, 81st Congress. This amendment provided that a Grant Agreement could be increased by not more than 10%. As a matter of policy, the funds from any amendment under Public Law 183 must be for an unforeseen contingency.

Public Law 227, 81st Congress, provided that the Federal share of costs for the installation of high intensity lighting on designated instrument landing runways by 75% of the cost. The purpose of this amendment was to provide high-intensity lighting on more airports than otherwise would have been at 50% of the Federal share of costs. Regional Administrator designates the Instrument runway or runways.

An important amendment to the Regulations was added, whereby semi-final payments were permitted in cases where land acquisition is delayed or suspended, as well as when construction work is delayed or suspended for any appreciable length of time. This permits the payment for all costs of land and construction work up to the point of the semi-final audit.

Public Law 912, 81st Congress, provided that the United States' share of land acquisition costs be the same as all other project costs, except those of installing high-intensity lighting. (50-50 for land)

Regulation 550.3(a)(5) provided that no project will be approved for the acquisition of land which has been or will be donated to the Sponsor, where the Sponsor is requesting a grant on the basis of the value of such land, unless, (1) subsequent to the enactment of the Act the Sponsor has accomplished

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other items of airport development or has entered into a Grant Agreement therefor, or the construction or alteration of hangars at an expense to the Sponsor equalling or exceeding the United States' share of the value of the donated land; (2) the project also includes other items of airport development, the estimated cost of which would require a Sponsor's contribution equalling or exceeding the United States' share of the estimated value of the donated land; or (3) the sponsor agrees, as part of the Grant Agreement for such project, to accomplish other items of airport development or the construction or alteration of hangars, the expense to the sponsor equalling or exceeding the United States' share of the estimated value of the donated land. This Regulation was designed to prevent the approval of any future projects involving donations of land which might result in so-called "cash dividends."

In addition, we have included two additional classes of projects which are not eligible for grant payments: (1) the purchase price or value of any land sold or donated to the sponsor by another public agency; (2) that portion of the purchase price or value of land sold or donated to the sponsor by any agency or person, public or private, which represents the value of airport improvements made with the funds of any public agency.

The Department of Labor has recently issued new Regulations which will require that the CAA revise and amend all of its labor regulations now contained in Part 550. The major additions will provide that the sponsor and the CAA may withhold funds or suspend all payments, if the contractor fails to pay wages required by the contract. The CAA and the sponsor will supervise this phase of the work by examinations of the reports made by the sponsor, and by discussions with representatives of the sponsor. CAA personnel shall make investigations of the labor conditions and practices as they may consider advisable in the circumstances. In all cases there shall be discussions with the resident

representatives of the contractor and with representatives of the employees of the contractor as may be necessary to ascertain that they are sufficiently familiar with the labor provisions of the contractor. Supervision and inspection regarding labor provisions of the contracts shall be made during the visits for construction inspection purposes and at such other times as may be considered advisable or necessary.

We know that many cities would like to construct office or other space in excess of that required for normal airport operations with a view to making the additional space available for non-airport uses. In that event, the CAA may approve a project for the construction of the entire facility provided, however, that the Federal participation in the cost of such construction will be limited to the United States' share of the allowable project cost of that portion of the building needed for airport purposes. We do this by including a special provision in the Grant Agreement.

The present Regulations provide, among other things, that the following items of airport development are eligible for Federal aid: construction, alteration and repair of administration, terminal and service buildings; airport control tower structures; shops for repair and maintenance of airport equipment, plant and structures; seaplane ramp and dock; and other buildings and structures necessary for the proper use, operation, management and maintenance of an airport as a public facility, other than hangars and living quarters.

However, after a letter from the Bureau of the Budget dated September 8, 1950, our policy is to make grants for airport construction projects for runways, taxiways, aprons, and lighting at terminal type airports of the highest priority from the standpoint of traffic density and anticipated national defense needs, and grants for smaller airports be deferred unless justified by special circumstances, and further, grants for construction of buildings be deferred

where existing structures can furnish the minimum service required. In view of the limited funds available for airport development, any suggestions you may offer as to the most effective utilization of these funds will be gratefully received.

Since the Office of Airports was set up some 12 years ago within the Civil Aeronautics Administration we have been requested by many owning agencies of airports to make recommendations to them on rates and charges, reliable operators, engineering firms to employ for the preparation of plans and specifications, etc. We have consistently refrained from discussing rates and charges except National averages, etc., but it has also been our firm policy not to recommend any specific engineering firm or architect for the preparation of plans or specifications, or any one operator or any particular concessionaire. When we receive such requests it has been our policy to furnish the names of at least three or more reliable and reputable firms from which the sponsors might select the one which they desire to do business with. The same has been true regarding any other operation in connection with the airport. In regard to the preparation of plans and specifications, we prepare and keep current standard specifications for grading, paving, lighting, etc., which are furnished to the sponsors as mere guides, except lighting specifications which must be standard in all states. These specifications can be used as written or they may be changed to fit local conditions. Our specifications are available to any firm, individual, or community. As to concessions and concessionaires, we have available the names of firms who are engaged in certain concessions which we make available to any airport owner upon request. However, in no case do we recommend any particular outfit. Many airport owners disagree with the CAA policy when we will not recommend particular firms for an activity or rates and charges. This disagreement is occasion for bad relations, etc. The Office of

Airports has taken the position that these are matters which should be handled by the airport owners. I would like to ask this Committee if they think this is a wise policy or if this policy should be changed.

We have another policy which at times gives us concern. This policy is that we permit owners of airports developed with Federal funds to operate those airports under regulations which are in some instances restrictive and which prevent use to individuals or agencies unless certain conditions are met, such as, in some cases the requirements for two-way radio, no training, minimum financial investment for fixed-base operation, and others. At times, complaints are received in the Office of Airports against this policy. We would like for you to advise whether you think this policy should be changed and if so, how?

A new policy has been established for the programming of our funds for the Fiscal Year 1953; that is, no new airports are to be undertaken regardless of the size or conditions. This policy was established by the Secretary of Commerce.

We are required by the Federal Airport Act to prepare a National Airport Plan and revise it annually. It has been our policy in the preparation of this Plan to carry out the intent of Congress to the best of our ability with the limited funds and personnel for this type of work. It was the intent of Congress when the Federal Airport Act was passed to plan for airports to take care of the needs of all types of aviation; that is, commercial and private flying. Our 1951 National Airport Plan included approximately 4900 landing fields and airports which we, in the Office of Airports, believe that will be needed to complete a National system of airports for the continental United States. Recently we have been criticised (Not by Congress but by others within the executive branch of the Federal Government) and questioned about the inclusion of a lot of small airports and landing fields in our Plan. The National Airport Plan will not be

submitted to Congress and given out to the public in the future, as it has been in the past, in view of the fact that it has been misunderstood by many communities as they have jumped to the conclusion that funds had been set up for the construction of such facilities for their communities. I would like to pose this problem to the Committee - "Should our National Airport Plan include all of the large and small type airports which we feel are needed for a nationwide system of airports to take care of all types of flying, that is, airplanes from Cubs to DC-6's, in accordance with the intent of Congress" or "Should the Plan be revised to include only the large Terminal type airports with a few smaller airports which are required for the immediate future". As the law is presently written, the Plan shall take into account the needs of all types of flying, both commercial and general aviation usages. (Read intent of Congress)

I would like to pose one more question to the Committee in regard to the preparation of the National Airport Plan - "Should the Office of Airports continue to prepare the Plan in accordance with the law and take into consideration the needs of all types of aviation, that is, studies conducted by state aeronautics officials, local planning commissions, studies by our own Planning engineers, recommendations from the Civil Aeronautics Board and the military" or "Should we endeavor to establish a criteria whereby Airports to be included in the Plan if there are a certain number of people in the community with a certain number of airplanes and aviation activity".

POLICY RELATIVE TO MILITARY USAGE OF CIVIL AIRPORTS

After the advent of the Korean incident, the CAA and the Air Force immediately got together and established certain policies and procedures governing the utilization of civil airports by the military. Major policies established at that time included a policy that the military departments would only utilize civil airports where existing civil activities would be the least disrupted, and the military departments would consult with CAA and obtain the use of airports having facilities not being used by civil aviation.

These procedures were disrupted by the President's declaration of emergency in December 1950. By that declaration, the Government acquired the right to use civil airports under the terms of AP-4 Agreements and Surplus Property Disposal Agreements. This right granted the Government either the exclusive or non-exclusive control and possession of such facilities. Expanded programs of the Air Force and Navy Departments called for the use of many civil airports, some on an exclusive basis, others on a limited civil basis, and, finally, some with no limitation on civil aviation.

It has been the policy of the CAA that civil facilities should be used jointly by the military and civil aviation. However, in exceptional cases, this policy could be waived. While this policy is shared by the Department of Defense, in carrying it out certain segments of the Defense Department feel that exclusive use, control and possession of facilities are necessary to fulfill a mission. This has created uncertainties in the airport field. In order to coordinate civil and military activities at civil airports, the Airport Use Panel is representing the civil and military interests. In all cases, to date, this Panel has been able to solve difficult and controversial cases involving use of civil airports. In carrying out the functions of the Administrator of

Civil Aeronautics, this Administration is initially and directly responsible for the development of civil aeronautics in the United States and abroad. As a result of the various airport development programs authorized by the Congress and administered by this Administration, sizeable Federal and local funds have been expended primarily in the interest of civil aviation. It is the opinion of this Administration that civil airports are capable of handling all types of air traffic. As you know, civil aviation has become and is essential to the national economy, both in peace and war, and now is an integral part of our national defense. It is incumbent upon CAA, therefore, to perform its responsibilities in a manner which will permit the growth and development of civil aviation to the greatest extent possible. Such development cannot be obtained without civil airports. While certain conflicts exist between the civil and military interests in various airports, they can be reduced to a minimum by thorough and advanced planning and understanding.

Consequently, it is the policy of the CAA to consult with and advise the public agencies owning airports of their rights and obligations under the Surplus Property Disposal Instruments and AP-4 Agreements and also of the importance of maintaining civil airports and civil facilities adequate for civil aviation. It is our policy, and will continue to be our policy, to advise and consult with the military departments concerned. In carrying out this policy, the safety factor, of course, is of primary concern. Where it is shown that a question of safety is involved, an airport may be withdrawn from civil use for a limited period of time. In executing this policy, the CAA will:

1. Upon request and through official channels of liaison, furnish to the military agencies the benefit of our technical advice and all information and data available to this Administration, both in the Regions and in Washington, necessary in the initial planning and selection of those civil airports

required for military use.

2. Make available all pertinent data regarding the present and anticipated volume of traffic in the foreseeable future; data concerning the physical aspects of the airports and their adaptability to military use; and any other service or information required in this connection.
3. Assist the representatives designated by the military to inspect those civil airports being considered for military use, provided, notice is given sufficiently in advance to arrange for appropriate CAA representation.
4. Upon the final selection of a civil airport for military use, furnish competent consultation to the military representatives responsible for the preparation of the directives for the acquisition of these facilities, if such consultation is desired, and will support the military to whatever extent necessary in effecting those recommendations made by authorized CAA personnel.

It is believed that many conflicts between civil and military interests can be prevented if personnel of this administration are afforded an opportunity to consult with the military representatives responsible for the preparation of the directives relative to the military acquisition of civil airports. It is hoped that arrangements can be worked out with all of the military departments concerned, assuring CAA participation and arrangements whereby copies of such directives will be furnished to appropriate CAA officials at the same time they are forwarded to the agency representing the military. We can then benefit by having a knowledge of the contents of such directives in the final negotiations with the owning agency and the military.

Using the above principles as a guide, it is the opinion of this Administration that, in most cases, both the military and civil aviation interests can be protected, without undue interference with each other, by the public agency entering into an airport use agreement with the military for as long a term as mutually desired, provided, the public agency retains control and management of the landing area and those other areas not required exclusively for military purposes. The owner should reserve at least the minimum ground space required for the civil activities to be accommodated on the airport during the period of military use, and should be responsible for the maintenance of these and all other areas under its jurisdiction and management. The owner should operate the landing area as a public landing area and, to that end, provide the military the same services as those furnished other users. With the exception of maintenance charges, the matter of fees and charges for military use of civil airports should be left to the airport owner and the military agency involved. With respect to maintenance charges, it is the policy of the CAA to furnish all desired assistance to the military agency and to advise the airport owner as may be necessary to preserve the utility of the airport for civil use.

In this connection, the CAA has prepared a list stating in four categories which airports, in our opinion, should be used for the purposes stated.

A form of airport use agreement has been drafted by a working group of the Airport Use Panel. This agreement was transmitted to you prior to the meeting. Although you will note that the agreement was drafted in conjunction with representatives of the CAA, the CAA position relative to such agreement has not been established. I won't go into detail about the provisions of the agreement since I am sure you have studied them thoroughly. The Administrator wishes the Committee to make recommendations with respect to the use agreement and its provisions in order that the CAA position may be established. In line with the recommendations of the Committee, the CAA would then be in a better position

to discuss the entire agreement with the military departments. Although I will not discuss which provisions the Office of Airports is concerned about, it is well to bear in mind that this document is not in any way, shape or form a document of the CAA. It also should be understood that the Administrator is requesting the comments of the Committee, not as a member of the Airport Use Panel, but as the Administrator of Civil Aeronautics. It is our firm conviction that if a standard form of agreement could be devised which would be satisfactory to the military as well as to the civil agencies, many, if not most, of our problems will be resolved. If a standard form of agreement is accepted by the parties concerned, it will have the full support of the CAA, and instructions will be issued to our field personnel to that effect.

It is believed that in relatively few cases involving military use of airports circumstances will arise which would require this Administration to object to such use, notwithstanding the provisions of the agreements entered into by the Government and the owning agency. Conceivably, they would apply to airports at which the additional military traffic would cause saturation of air or ground space under existing or foreseeable future conditions, or when circumstances are such that civil activities, essential to the national defense and economy, would be displaced.

If the Committee has any additional suggestions or recommendations on this subject, it is our wish that you let us have the benefit of them.