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COMMITTEE REPORTS

REPORT OF NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS STANDING COMMITTEE ON AIRPORT RATING*

Your committee on Airport Rating respectfully reports that in approaching this question, the following points have been discussed, and the recommendations are made thereon:

- (1) Should airport rating be undertaken by the several states, or is it properly within the jurisdiction of the U. S. Department of Commerce, Bureau of Air Commerce?
- (2) If the several states are to undertake the rating of airports, should this be done for the purpose of office records and comparison between states, or for the purpose of dispensing the information to pilots, or for both those purposes?
- (3) What uniform standards should be followed, and how much detail is necessary regarding airport facilities and services?
- (4) If airport rating is for the use of pilots, what method is best suited to dispensing airport information to the pilot in order that he may be quickly informed of basic airport facts and facilities, without being confused by a mass of unessential details?

In consideration of the first question, your committee feels that the states should undertake the rating of airports. The U. S. Bureau of Air Commerce cannot, under the existing laws, require any airport to be rated unless that port is used as a regular stop on a scheduled inter-state route. The states, however, can and do require licenses for airports, and these licenses can, under most existing laws, include a specific rating.

In consideration of the second question, your committee believes that airports should be rated both for the purpose of office records, and for the purpose of dispensing essential information to pilots.

In consideration of the third question—namely, what uniform standards should be recommended—your committee first had to determine whether the purpose of rating airports was to supply extensive data of a "card-file" nature, in order to ascertain exact information on the minute details of airport facilities and operation, or whether the purpose was to furnish, in a readily-available form, information of importance to the safety and well-being of the flying public, with second thought being given to the ordinary conveniences required by that public. The committee determined that the primary purpose of airport rating is to furnish a guide to pilots, and this report is based on this premise.

A comprehensive study has been made of various airport rating schedules and airport designation systems with a view to recommending a simplified standard and a uniform code for rating airports. The standards of the U. S. Bureau of Air Commerce formed the most detailed basis for our studies, but it is felt that many of the minor items therein may be eliminated from

* Submitted to the annual convention of the National Association of State Aviation Officials, Hartford, Connecticut, September 26, 1936. The Association tabled the report pending submission to the several states, and action will be taken at an early meeting of the Board of Governors.

future rating schedules in the interest of simplicity. The airport specifications, as set forth in the Uniform State Aeronautical Regulatory Act of 1935, are accepted as the minimum requirements for the several classifications, except that, where the Uniform Act left details to be determined by the individual states, we believe that these details should be settled now, so that all states will give the same rating for identical ports.

A. Size of Effective Landing Area:

This matter is the most important from the pilot's standpoint, and we recommend that every effort be directed toward developing airports with at least three runways, each of which shall be at least 2500 feet. We recommend, however, that for the purposes of rating, the following scale be used:

(1) "Airport"—an all-way field at least 1800 feet square; or a 3 strip field on which each runway is at least 1800' x 500' crossing or converging at angles of not less than 40°; or a 2 strip field on which each runway is at least 2500' x 500' crossing or converging at an angle of not less than 80°.

(2) "Intermediate field"—an all-way field at least 1500 feet square or a 3 strip field on which each runway is at least 1500' x 300' crossing or converging at angles of not less than 40°; or a 2 strip field on which each runway is at least 1800' x 300' crossing or converging at an angle of not less than 80°.

(3) "Emergency field"—an all-way field at least 1200 feet square; or a 3 strip field on which each runway is at least 1200' x 200' crossing or converging at angles of not less than 30°; or a 2 strip field on which each runway is at least 1200' x 200' crossing or converging at an angle of not less than 60°.

(4) "Strip field"—a field which is not less than 1200' x 200', and is incapable of receiving a higher rating.

(5) All dimensions given above should be "usable area," and gliding angles over all obstructions shall be computed on a basis of 10-1.

(6) The "effective area" shall further be determined by the altitude above sea level, in accordance with charts provided in Aeronautics Bulletin No. 16, Bureau of Air Commerce.

(7) The maximum gradient shall be not more than 2½%, the mean gradient being not more than 2%.

(8) If a runway field has the effective area for a given rating, but does not meet the requirements of angular convergence of the runways, gliding angle over the obstructions, or gradient requirements, it shall be given the next lower rating than that for which its area qualifies it.

(9) It is further recommended that designation be made on airways maps, to show the location of available landing areas which have not been improved for regular aviation operation, but which have been found by the director to be suitable for some types of operation within the preceding year. The designation of such areas by means of a cross on airways maps, would aid materially in forced or emergency landings, even though the area might be limited in its usefulness.

B. Airport Service Facilities.

The item of airport service facilities is, in the pilot's mind, second only to the size of the landing area. It will be difficult to maintain a constantly

accurate chart of available service facilities, due to their changeable nature. But reasonable accuracy can be assured by diligent and frequent re-checking on the part of the various state aviation departments.

(1) It is recommended that only the following facilities be recorded: availability of aviation fuel and oil, on port; hangar accommodations; availability of mechanic; complete radio equipment, including transmitter and receiver; (if both are not available, no recognition of radio facilities should be given).

(2) It is not deemed necessary or advisable to attempt to record transportation, communication, fire and first aid equipment, snow removal equipment, waiting rooms, etc. These items should only be considered by the Bureau of Air Commerce in regard to a transport rating.

(3) To receive a rating as an "airport," the first three items, mentioned in Section 1, should be available, namely, aviation fuel and oil, hangar, and aircraft mechanic service. If all are not available the port should be given the next lower rating. Radio facilities should be noted, but should not affect the rating. The ratings of "intermediate field," "emergency field," and "strip field" should be available on the basis of area, regardless of the supplementary facilities. The facilities should, however, be noted for pilot reference.

(4) Availability of seaplane ramps and anchorages should also be noted for pilot reference, but should not affect the rating.

C. Airport Lighting Facilities.

(1) In order to receive a rating of "airport," the port should provide adequate beacon, boundary, obstruction, and flood lights, following the specifications of the Bureau of Air Commerce. If all are not available, the field should be given the next lower rating.

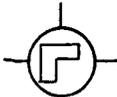
(2) The ratings of "intermediate field," "emergency field," or "strip field" should not require lighting equipment, but available lights should be recorded for pilot reference.

D. Information Service.

The foregoing has itemized the points to be considered in rating any airport, and has explained the application of the rating. This, however, does not answer the problem of dissemination of the information to pilots.

It is recommended, in this regard, that the "Florida Plan" of map-designation be adopted as standard practice among the several states, and that the Bureau of Air Commerce, and other map-publishing agencies be prevailed upon to accept the information gathered by the states, and to include this on all official airways maps in a style similar to that of the Florida plan.

The following is a table of symbols recommended for uniform adoption:

	Commercial or municipal airport—showing shape of landing area.
	Bureau of Air Commerce intermediate airport—showing shape of area.
	Army, navy, or marine corps airport—showing shape of area.



Possible landing area found suitable for limited operations.



Seaplane port, with ramp and handling facilities.



Seaplane anchorage, with facilities for refueling and for loading and discharging passengers.

Airport Facilities Code

30-22 etc. = Length of 2 longest runways in hundreds of feet.

(Width of strip fields shall be indicated, as : 25-5.)

G = Aviation gas and oil available on field.

H = Hangar available for transient planes.

M = Licensed mechanic available.

S = Seaplane Ramp.

Airport Lighting Code

L = Beacon and obstruction lights.

B = Boundary lights.

F = Flood lights.

Radio Code

R = Radio Transmitter and receiver.

If an airport provides all facilities listed, it is recommended that, on the maps, a large "A" be printed, rather than having a long list of all the facilities.

E. Airport Rating Committee.

We recommend further that an officer or a committee of the National Association of State Aviation Officials be appointed annually, to coordinate (and tabulate) the airport rating information of the several states, and to make this information available at all times to the several states, the Bureau of Air Commerce, and all other airways map-publishing agencies.

We believe that this officer, or committee, should be empowered to remove from the files obsolete or obsolescent reports of airports, and that those states failing to return adequate periodic reports on airport conditions, shall be thus removed from the records.

Respectfully submitted,

N.A.S.A.O. Standing Committee on Airport Rating,

CHARLES L. MORRIS, Commissioner of Aeronautics,
Connecticut, *Chairman*.

CHARLES S. DION, Technical Advisor, New York.

FRED L. SMITH, Director of Aeronautics, Ohio.

CLARK M. KEE, Airways Engineer, New York.

**REPORT OF NATIONAL ASSOCIATION OF STATE AVIATION
OFFICIALS STANDING COMMITTEE ON
COMPULSORY WHEEL BRAKES***

The Committee on Compulsory Wheel Brakes respectfully reports the following:

We have been unable to check the background of this Committee or the reason for its creation, although we believe that from the name itself, we have been able to determine its ultimate objective. It is, of course, well known that an aircraft, while in the element for which it is created and intended to operate, has no need for wheel brakes or tail skids. It is when the aircraft is on the ground that the question of wheel brakes and tail wheel or no wheel brakes and tail skid become important. It may also safely be agreed that all aircraft should have wheel brakes as a general proposition.

In the interest of safety, particularly in the matter of taxiing, an aircraft without brakes may be a dangerous machine, especially where other aircraft are operating nearby or where there are crowds of people; also, where it must from necessity maneuver close to obstructions. Tail wheels add to the ease of moving aircraft when not under power and less man power is required to move the aircraft so equipped than one having a tail skid.

The Committee has found that the operation of aircraft without brakes and with tail skids on an airport has presented quite a problem to the management. In the maintenance of the landing area of an airport, it must be agreed that tail skids ruin the surface and in many cases create a dust nuisance. It is conceivable also that the tail skid, depending upon its design and condition, can be very harmful to bituminous surfaces.

A check of aircraft specifications for the year 1935 reveals that 84% of the aircraft produced were equipped with brakes and 16% had no brakes at all. The 1936 specifications reveal that 91% of the new aircraft were equipped with brakes, 2% were optional, and 7% came out with no brakes at all. This would indicate an approximate increase of 7% in the number of aircraft with brakes and a decrease of 9% in the case of aircraft equipped with no brakes, and a decided indication of brakes being optional in the case of low priced light aircraft. This check would indicate that aircraft manufacturers are tending to produce more aircraft each year equipped with brakes. With the lighter type of aircraft, brakes are quite a problem because of additional cost and due to the slow landing speed they are not an absolute necessity. However, they would be of much value in taxiing, particularly when taxiing in a cross wind, as the average light plane is almost helpless under this condition. There has been some tendency, on the part of instructors, to disconnect brakes on student aircraft, due to the possibility of crack-ups caused by improper use of brakes by students. Insofar as recommendations of this Committee are concerned, this tendency will be found in such small numbers as to be negligible.

There is nothing this Committee can recommend in regard to the older types of aircraft now in use without brakes and having tail skids. This problem is definitely an airport manager's problem. A flat spoon type tail skid shoe would eliminate some of the objection to tail skids on this type of aircraft.

We recommend that the N.A.S.A.O. take this subject up with the Bureau of Air Commerce and work with it toward the end that in the near future all aircraft manufactured shall be equipped with wheel brakes and tail wheels.

Respectfully submitted,

N.A.S.A.O. Standing Committee on Compulsory Wheel Brakes

GEORGE P. KANE, Deputy Commissioner of Aeronautics, State of Connecticut, *Chairman*.

ALFRED MACDONALD, Director, Parks, Forestry, Airports, Wichita, Kansas.

COL. RUBY GARRETT, Missouri.

* Submitted to the annual convention of the National Association of State Aviation Officials, Hartford, Connecticut, September 26, 1936.