AIRPORTS

SOME ELEMENTS OF DESIGN AND FUTURE DEVELOPMENT

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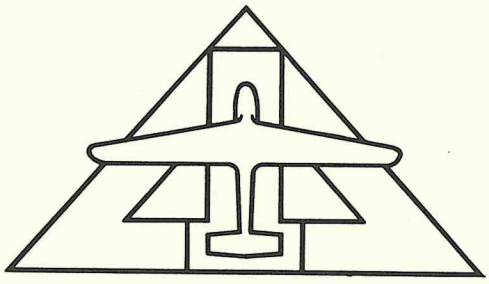

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BOSTON *lies at the western end of a fine harbor which has 40 miles of berthing space for shipping. It is the largest seaport in New England. The first recorded early exploration of Boston Harbor was made by the English navigator Captain John Smith, who mapped the locality in 1614. His early exploration was soon followed by settlements of English colonists. The citizens of Boston were the mainspring of the revolutionary movement which culminated in the War of Independence. Although the city's historical heritage has been potent, Boston has become a representative American city and is no longer the center of the New England idea. Boston is a center of educational institutions, including Harvard University and the Massachusetts Institute of Technology. Printing and publishing are the leading industries.*

Population: (1790), 18,320; (1840), 93,383; (1890), 448,447; (1930), 781,188; (1940), 769,520.

AIRPORT. The Boston Municipal Airport was built in 1922 on filled-in land in East Boston, the airport being formally dedicated September 8, 1923. Its first cost was borne partly by the state and partly by public subscription. For the first 6 years the field was leased by the Army but was open to full civilian use. During this period the Harvard Flying Club first operated off the airport. In 1928 the airport was leased by the State of Massachusetts to the City of Boston for development as a municipal airport. The first official landing in the United States of the United States Army round-the-world flight was made at the Boston Airport on September 6, 1924.

The airport has an all-way cinder-surfaced landing area. There are eight concrete strips used for warming up motors prior to take-off. Landings on these strips are prohibited. The concrete apron along the hangars has an average width of 350 feet.

The total cost of the airport to date is estimated at $5,000,000. Average annual airport operating expenses are estimated at $45,000. The number of passengers arriving at and departing from the airport during the past 5 years is estimated as follows: (1934), 50,000; (1935), 60,000; (1936), 80,000; (1937), 100,000; (1938), 120,000; (1939), 135,000.

LANDING AREA. The Boston Airport rests largely on filled-in land at the southern end of a peninsula protected from the waters of Boston Harbor by wooden bulkheads which maintain the level of the field 12 feet above mean sea level. The airport is 1 mile east of the Boston business district, from which the airport may be reached via the 1.2-mile-long vehicular tunnel beneath the harbor.

The cinder-surfaced all-way field has drainage structures varying in diameter from 12-foot concrete mains to 8-inch perforated iron drains. Daylight fogs rolling in from the harbor are usually dissipated on approaching the airport as a result, it is thought, of rising currents of air induced by heat generated by the cinder-surfaced field. Airport-controlled land totals 350 acres; landing area, 300 acres.

AIRWAY STATION. The station is a two-story brick-faced structure with a one-story wing. It is unnecessarily complicated in both plan and mass. The curious light court on the field side of the building, the garage wing and corner tower projecting at diagonally opposite corners of the structure, and the mediocre "Memorial Portico" on the roadway side of the building do not in any way add to the appearance of the station. For an airport of this importance and for a station of this size, the 42-by-24-foot main concourse is disproportionately small, it being in fact no larger than the attached four-car garage. The overall dimensions of the station are approximately 130 by 50 feet, cubic contents approximately 130,000 cubic feet. The cost was $156,000.

HANGAR. The National Guard hangar, headquarters of the 101st Observation Squadron of the Massachusetts National Guard, was designed by C. F. Springall, architect, and was built at a cost of $250,000, which includes furnishing and equipment. The building has a separation of the main departments: plane-storage space, workshops, administrative offices, quarters for officers and enlisted men, and rooms for special purposes—all grouped about three sides of the plane-storage area but with intercommunication between these various departments where necessary.

The building is a steel and masonry structure faced with brick and stone trim and is characterized by good planning, simple wall surfaces, and clean lines. It measures overall 173 feet by 228 feet, 10 inches. The plane-storage area is 111 feet wide by 166 feet long, with a single door opening 21 feet, 4 inches by 100 feet, 3 inches in the clear. The hangar door is a Fenestra counterbalanced center-pivoting overhead door, which may be opened in 27 seconds when electrically operated. Manual operation is also provided for emergency use.

The main wing of the hangar is a two-story block measuring 60 feet by 173 feet containing the officers' and men's quarters and administrative offices. The officers' entrance to this wing is on the field side and opens into the officers' room, which measures 31 feet by 38 feet and is the key room of the plan; for, while it serves as an officers' lounge (wood paneled walls, wood-burning fireplace, and comfortable chairs having

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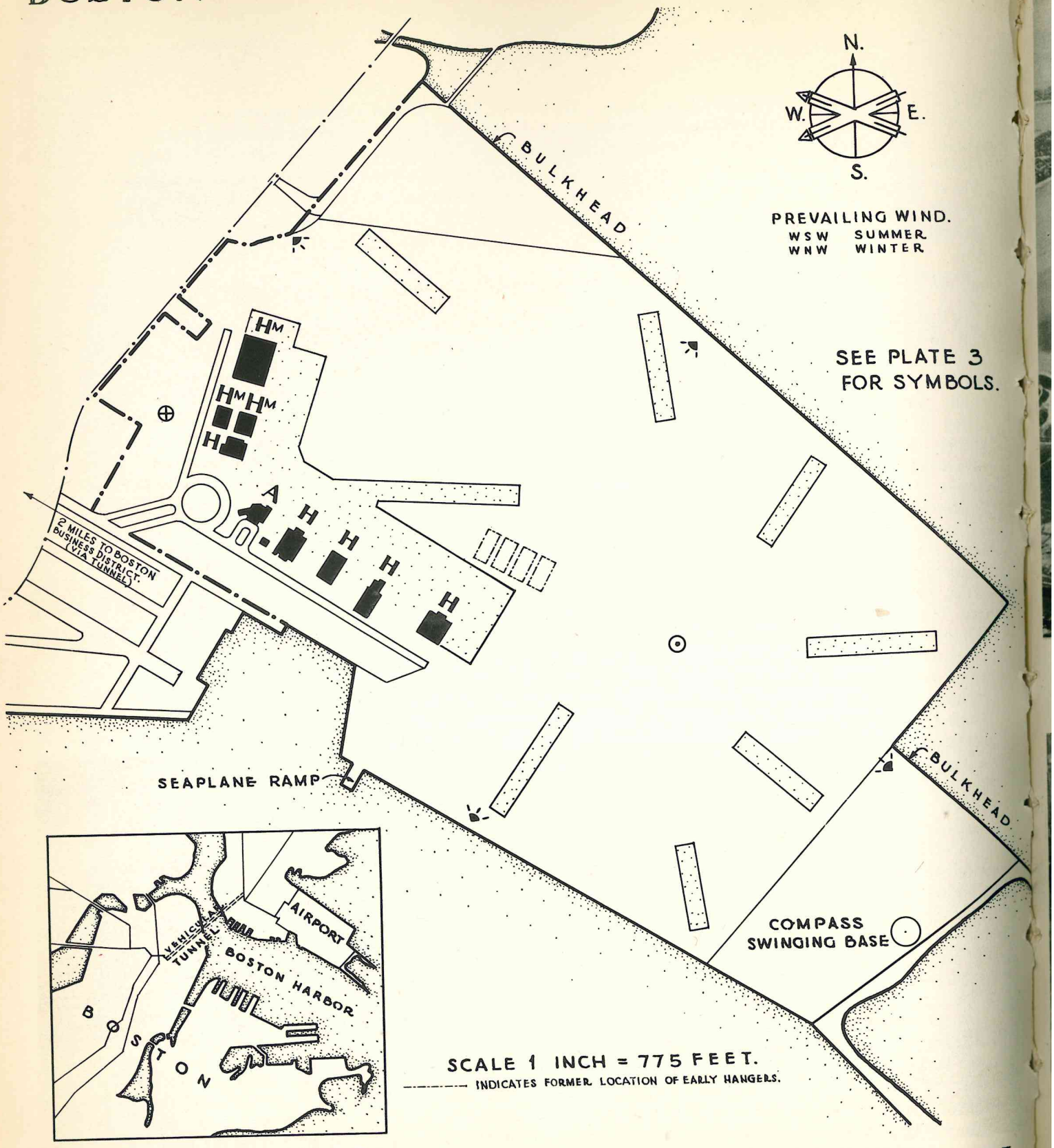
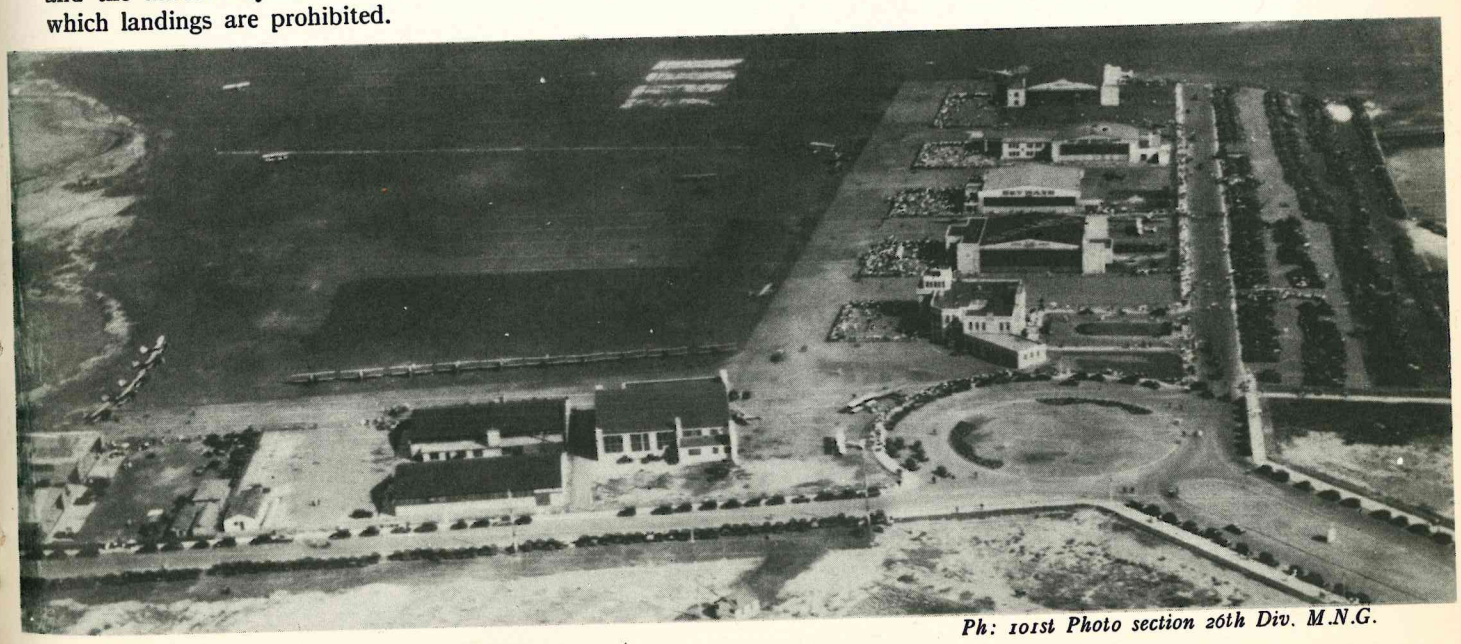


LOCATION MAP
SCALE 1 INCH = 8000 FEET.

PLATE 8.

Ph: Courtesy Boston Airport.

1. Looking southeast over the airport, which rests on filled-in land, showing a portion of East Boston in foreground, and the harbor beyond. The cinder-surfaced field has 8 concrete strips used for warming up plane motors but on which landings are prohibited.



Ph: 101st Photo section 26th Div. M.N.G.

2. The airport buildings, showing the irregular shape of the airway station (shown beyond traffic circle) and the light-court cutting into it. Note concrete foundations of former hangars, shown as white rectangles well out on the field.

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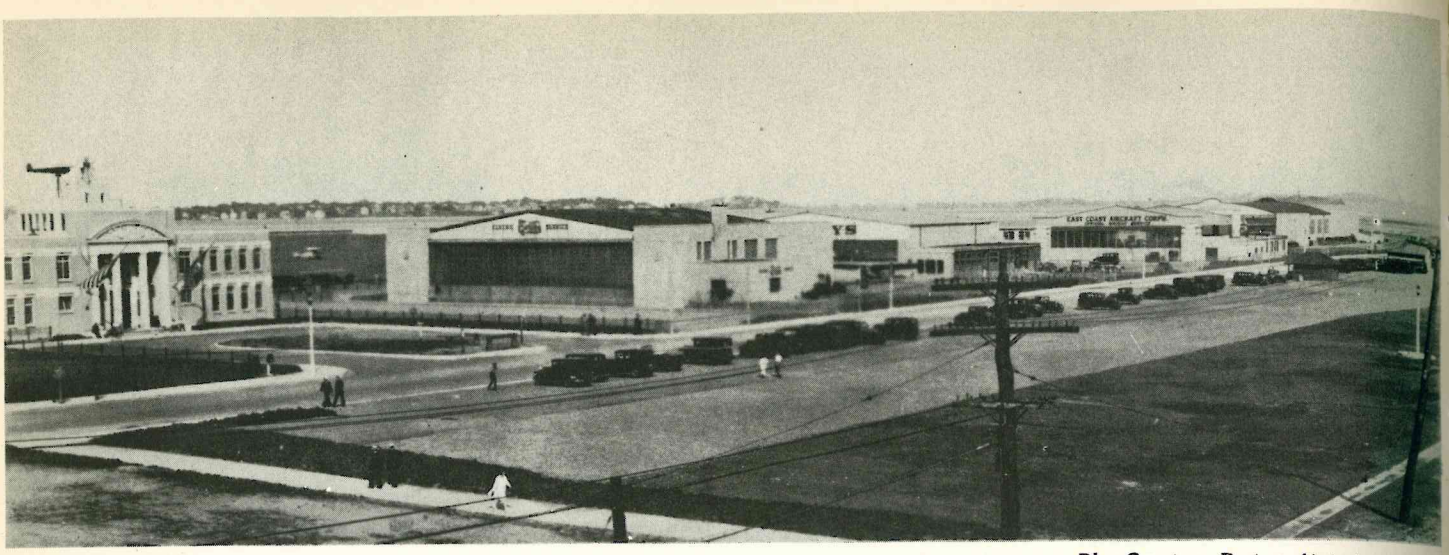
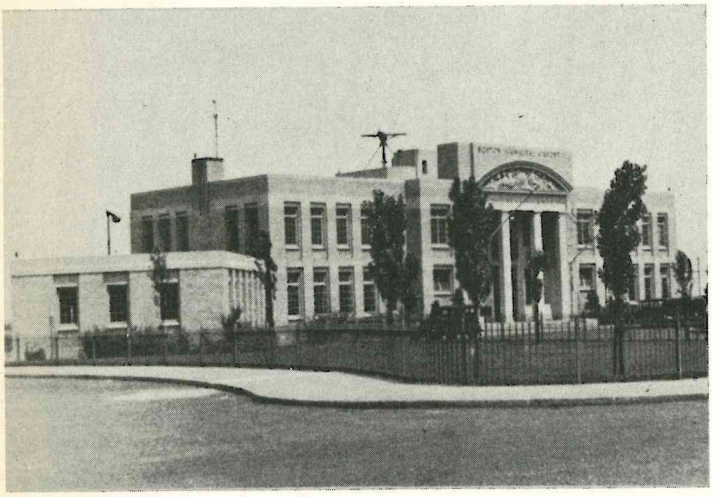


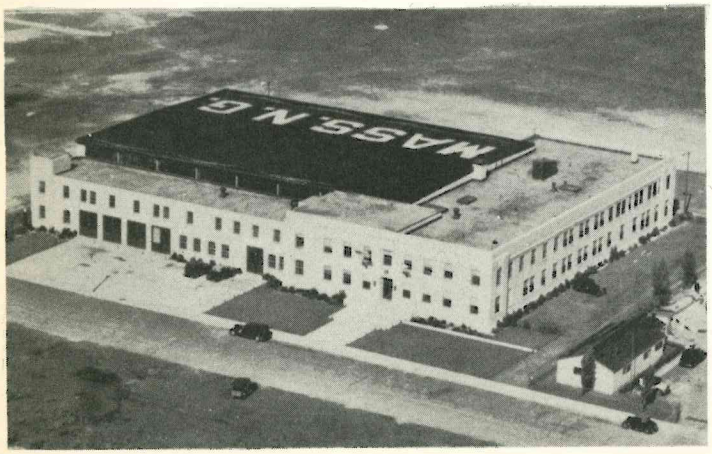
Ph: Courtesy Boston Airport.

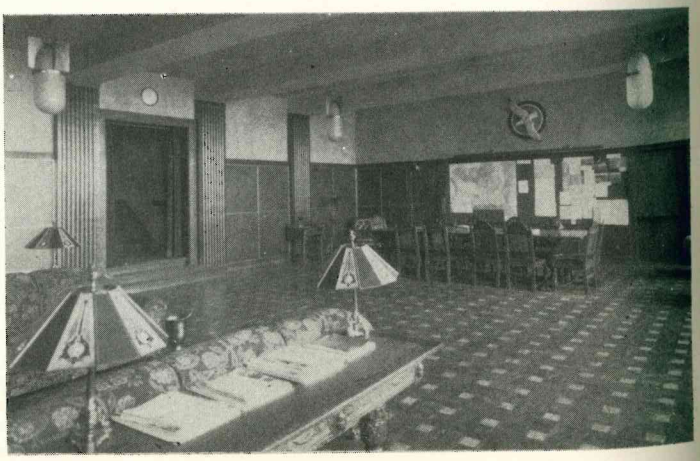
3. The airport buildings, showing the airway station at left, the line of commercial hangars at right, and automobile parking area.



Photos: J.W.W.

4 and 5. (Left) The station as seen from the road, attached garage at left, Memorial Portico at right. (Right) The station control tower, and the passenger enclosure.





Photos: 101st Photo section 26th Div. M.N.G.

6 and 7. (Left) The hangar, administrative offices, and headquarters of a unit of the Massachusetts National Guard, C. F. Springall, architect. (Right) The officers' lounge, which overlooks the field.

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been provided), from this room a view of the entire field may be obtained. Grouped about it, on three sides, are the operations office, a small conference room, classroom, an officers' entrance to the hangar with adjacent alcove for officers' flying clothes, and access to the second floor and to the interior corridor running the length of this wing. Off this main corridor on one side are grouped the officers' locker room, squadron headquarters, medical section, and examination room; on the hangar side there is a supply room and an instruction room, and access is provided to the plane-storage area of the hangar. The main corridor leads, in the rear of this wing, to an entrance for enlisted men and to a public lobby and reception room. The second floor of this wing, with stairs from the first floor at front and rear, comprises men's locker room, bedrooms, and assembly rooms, and a well-appointed photographic section with rooms for developing, printing, and enlarging.

The one-story wing on the field side, measuring 21 feet by 157 feet, includes the operations office, bureau of supply, engineer's office, equipment room, supply room, engine shop, and oil room—all with access to the plane-storage area where necessary.

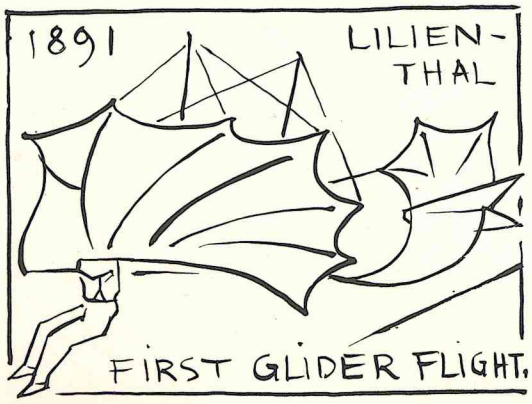
The remaining two-story wing measures 30 feet by 157 feet. It includes a roomy garage and repair shop, supply room, and tow target room. On the second floor space has been provided for the armament section, machine-gun range, parachute room and tower, and a gymnasium measuring 35 by 48 feet.

* * *

The growth of the Boston Airport down to the present time has been irregular and haphazard, no airport expansion plan looking to future needs having been followed. It was found necessary, for example, to raze the four United States Army hangars situated in the right angle of the early T-shaped runways when the field was extended to its present dimensions. (See accompanying plan and air view.) After the removal of the four early hangars the present airport buildings were placed on the field without sufficient regard to the flight requirements of transport planes. The airway station and one commercial hangar have been built at the western corner of the field, thus blocking any possible flightway between the airport buildings for the longest take-off into the prevailing winds. A further lack of sound planning is shown by the double-entrance roadway, which bears no logical relation to airway station, hangars, or the town planning of East Boston. No adequate provision has been made in the layout of the airport for future expansion or for a co-ordination of land-plane and seaplane traffic.

Access to the airport from Boston was originally through congested city streets and by a very slow ferry, or by a long and circuitous route around an arm of the harbor. The present route is by a 1.2-mile-long vehicular tunnel which passes beneath inner Boston Harbor, by which the airport is only 2 miles by road from the Boston business district. The proximity of high city buildings, only 1 mile southwest of the airport, constitutes a hazard for transport-plane operation with conditions of poor visibility.

The report of the Committee of the Boston District on Airport Traffic Control, made under the auspices of the old Bureau of Air Commerce of the United States Department of Commerce, portions of which appeared in the *Bureau of Air Commerce Bulletin* of February 15, 1933, contains an interesting analysis of airport traffic problems. The Chairman of this Committee was Captain A. L. Edson, manager of the airport.



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* See Appendix 22, page 346.