



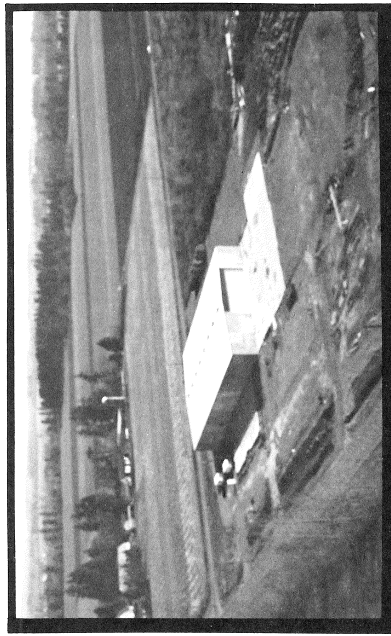
FIXED BASE FACILITIES AT NORTH END OF FIELD
SHOWING TEE HANGARS, AVIONICS SHOP AND TURF AIRCRAFT PARKING. TREES IN LOWER RIGHT ARE FAR PART 77 OBSTRUCTIONS.



FIXED BASE OPERATION AT MID-FIELD
SHOWING FBO OFFICES AND HANGAR, AIRCRAFT PARKING, AND A CHURCH GROUP CAMP IN THE TREES BEHIND.



FIXED BASE OPERATIONS AT SOUTH END OF FIELD
SHOWING CONVENTIONAL HANGAR TEMPORARILY HOUSING HELICOPTER MAINTENANCE FACILITY (LEFT), TEE HANGARS (CENTER) AND FBO OFFICE AND HANGAR (RIGHT). THE CITY OF AURORA IS IN THE UPPER RIGHT BACKGROUND.



HELICOPTER MAINTENANCE FACILITY
SHOWING THE MAINTENANCE HANGAR AND HELIPORT CURRENTLY UNDER CONSTRUCTION AT THE EXTREME NORTH END OF THE FIELD.



ASPHALT CONCRETE RUNWAY PAVEMENT
SHOWING TYPICAL LONGITUDINAL AND TRANSVERSE CRACKING (NOTE 6-INCH PEN NEAR CRACK INTERSECTION)

Economic Impact

Employees on the airport average between 100 and 125, with the majority working on maintenance for a helicopter operator. Total salaries directly generated on the airport are estimated to be about \$750,000 annually.

Facilities provided the general public include: waiting rooms, restrooms, telephone, car rental and automobile parking. Commercial aviation services to the public include aircraft rental, flight instruction, charter flying, aircraft maintenance, aviation fuel service, aircraft sales, and aircraft avionics sales and maintenance. However there has been considerable fluctuation in the level of these services.

All revenue-producing activities are located on private land, and generate no income to the airport owner other than a fuel flowage fee of \$0.03 per gallon. This is paid to the Oregon Division of Aeronautics which is currently revising its rates for flowage and ingress-egress. The ingress-egress permits are issued to the three operators by the Division of Aeronautics.

One fixed base operation is located at the south end of the airport, and another operator is located in the center of the field. The third operator, a helicopter maintenance facility, is currently moving from temporary quarters at the south end of the field to permanent facilities at the extreme northeast corner of the airport.

Off the north end of the airport is a parcel of land containing 40 tee-hangers for rent, turf aircraft parking and an aircraft avionics shop. For identification this area is labeled FBO-4 on Figure 4, page 9, although no Fixed Base Operation currently exists there.

Wind Analysis

Two years of wind data was collected between May 1968 and April 1970 at the south end of the airport. This was accomplished under the supervision of the Port of Portland. The data summary appears in the appendix and the wind rose appears on the Airport Layout Plan.

Calms (less than 4 mph) occur 66.5 percent of the time. When the wind exceeds 4 mph, it seldom surpasses 13 mph and generally is either northerly or southerly. Winds in excess of 13 mph normally come from the south. This occurs only about 1.5 percent of the time, and it is rare for the wind velocity to exceed 25 mph. It is not possible with available data to correlate wind conditions with ceiling and visibility to develop a reliable IFR wind rose.

Freak storms, such as the Columbus Day Storm in 1962 are a rare phenomenon with only eight other such occurrences recorded in the last 100 years. During these storms sustained winds have exceeded 50 mph with 110+ mph gusts.

The wind data and analysis used for this study was compared with wind measurements made at the OSU Agricultural Experiment Station 2 miles northeast of the airport. Both were found to be in agreement. The Aurora State Airport wind analysis indicates that the present runway orientation, north 7°8' east, (true) is excellent and provides 99.5 percent crosswind coverage for crosswind components 15 mph and under.

With this coverage Runway 17 can be used 49.4 percent of the time and Runway 35, 50.1 percent of the time. For 12 mph crosswind components, the coverage is 99.3 percent. In this case Runway 17 may be used 49.3 percent and Runway 35, 50.0 percent of the time.

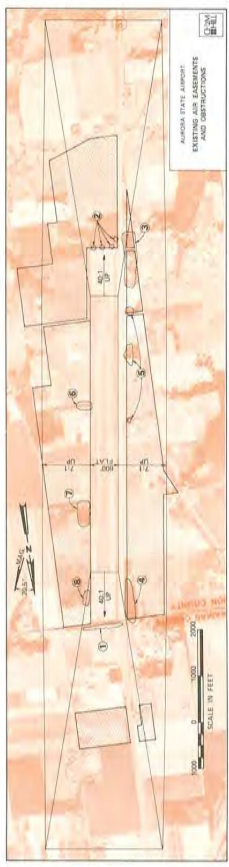
Airspace

Figure 11 shows existing airport imaginary surfaces as developed by the Division of Aeronautics in 1972. Any object which penetrates through these geometrical planes needs evaluation as to its effect on air navigation in the vicinity of the airport. The figure also indicates obstructions that should be removed. The State owns air easements, as indicated, which permit the State to remove most of the obstructions shown.

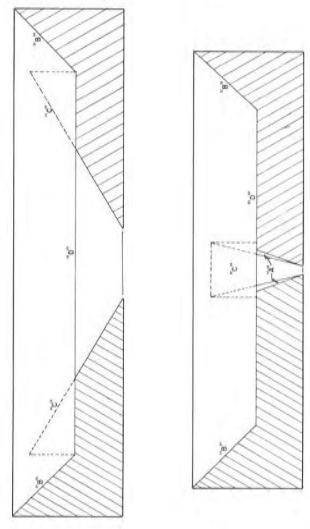
Figure 12 shows the existing airways in the vicinity of the airport. There are no electronic navigational aids located on the airport and there is no certified weather observer on site.

Use of the Aurora State Airport during instrument weather conditions (IFR) is possible with certain restrictions. The airport is served by a non-precision VOR/DME approach using the Newberg VORTAC. The approach is somewhat restricted because this VORTAC is also used for approaches to McMinnville Airport and is a key facility used by the Portland TRACON (Terminal Radar Control Facility). Minimums are 1000 feet ceiling and 1-1/4 miles visibility, which is not very adequate to insure a high rate of usage during IFR weather.

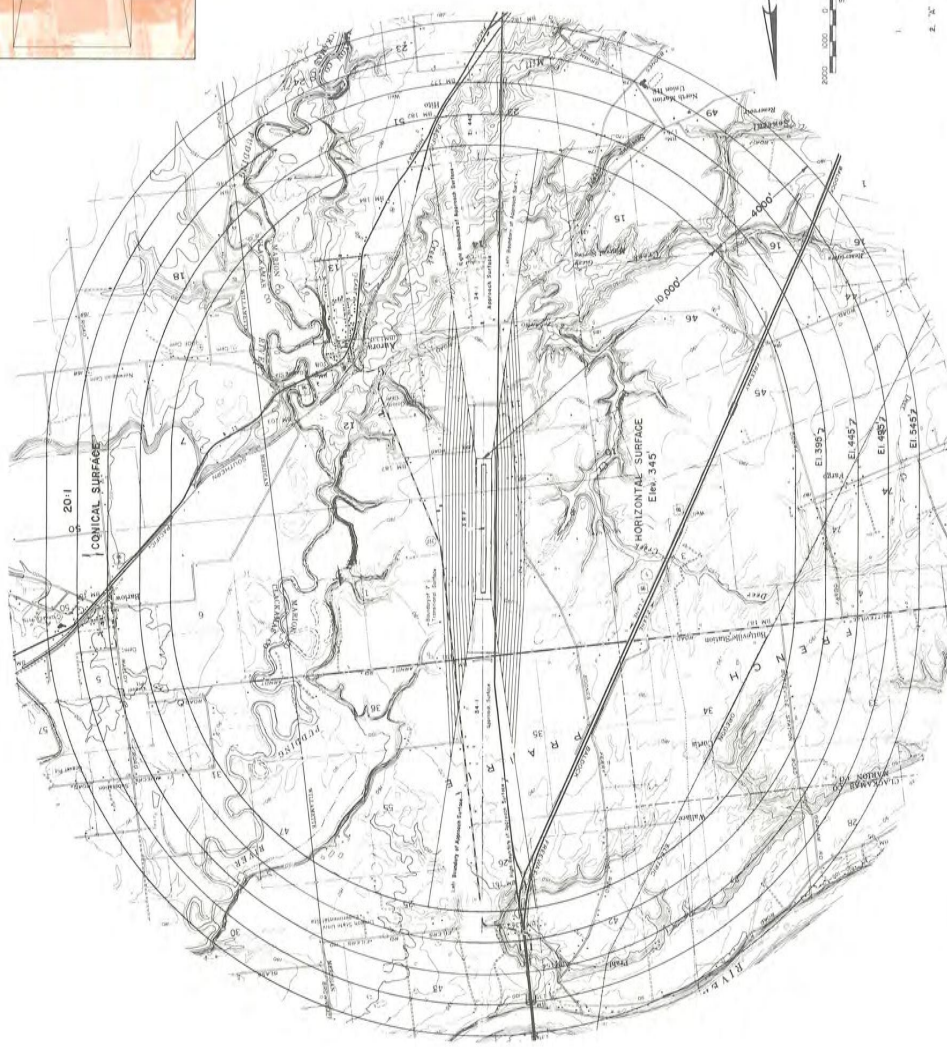
Because Aurora State Airport lies in the Portland Terminal Airspace, some assistance in reaching the airport during conditions of low ceiling with good visibility below the ceiling is possible through the radar coverage of the Portland radar (ASR). However, just over the airport, Portland Approach Control is not able to vector aircraft lower than 3400 feet MSL. North of the airport, minimum vectoring altitude is 2500 feet. In this area, neither terrain nor tall structures pose obstruction problems. Limitations occur only due to incomplete radar coverage.



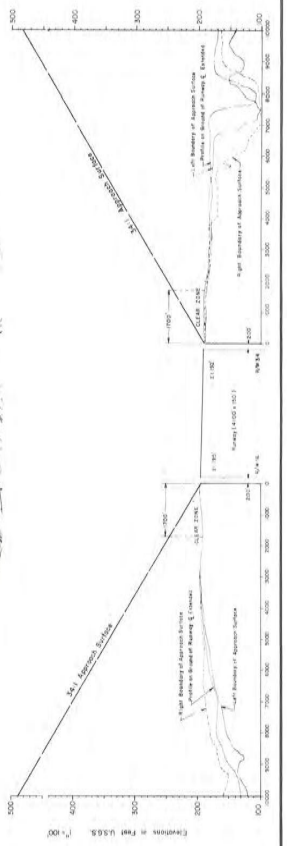
- OBSTRUCTION REMOVAL REQUIREMENTS TO MEET FAR PART 77 CRITERIA**
- 1 TREES - EXISTING AND ULTIMATE APPROACH SURFACE OBSTRUCTIONS TO BE REMOVED
 - 2 TREES - ULTIMATE APPROACH SURFACE OBSTRUCTIONS TO BE REMOVED
 - 3 TREES - EXISTING AND ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED
 - 4 TREES - EXISTING AND ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED
 - 5 TREES - EXISTING AND ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED
 - 6 TREES - EXISTING AND ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED
 - 7 TREES - EXISTING AND ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED
 - 8 TREES - ULTIMATE TRANSITION SURFACE OBSTRUCTIONS TO BE REMOVED



AURORA STATE AIRPORT
EXISTING AIRPORT IMAGINARY
SURFACES AND OBSTRUCTIONS
FIGURE 11



- DEFINITIONS**
1. **PRIMARY SURFACE** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 2. **"S"** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 3. **"T"** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 4. **"U"** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 5. **"V"** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 6. **"W"** - The surface, including any obstructions, extending from the runway end elevation and extending 200 feet beyond each end of a runway, measured at the beginning of the runway's taper profile approach surface.
 7. **APPROACH ELEVATION** - The highest point on the visible landing area, which is used to determine the elevation of the horizontal surface.



No.	Revised	By	Appr.	Date

Prepared by
AURORA STATE AIRPORT
AURORA, OREGON

Checked by
OREGON STATE BOARD OF AERONAUTICS
SALEM, OREGON

Drawn by
Scale in Sheet
Sheet of

Designed by
Date
Drawn by
Date
Checked by
Date
Reviewed by
Date
Approved by
Date

Project No.
Drawing No.

Submitted by		Approved by	
OREGON STATE BOARD OF AERONAUTICS	Salem, Oregon	Approved	Block
Airport Engineer			

Air Traffic Activity

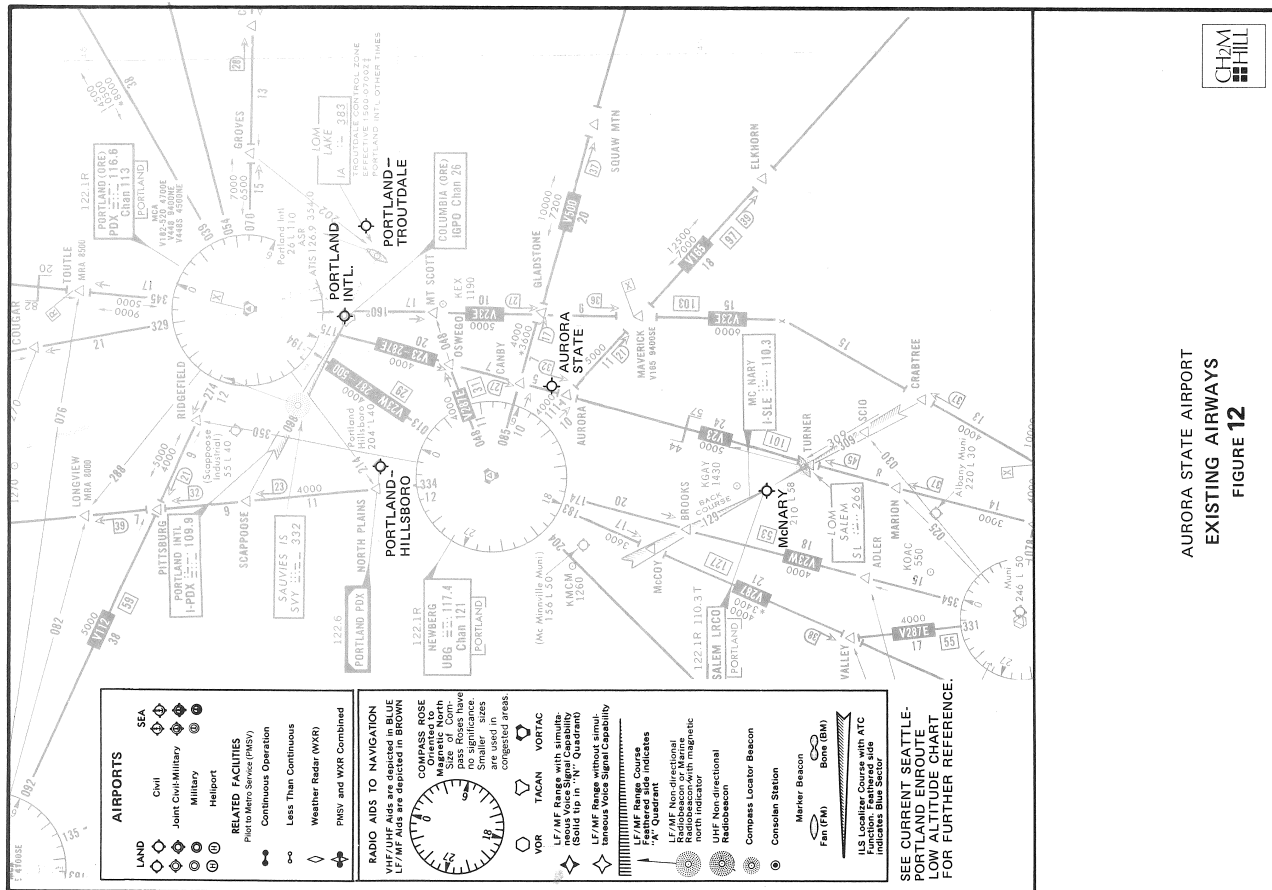
For this study, air traffic activity has been compiled from FAA, State, and Port of Portland sources. Insofar as possible, data for this section was obtained from the original source. Also, data collected was correlated with this study's field surveys and was compared with information presented in other recent publications.

Air traffic activity for the Aurora State Airport has been measured in terms of numbers of aircraft based at the airport, and in terms of operations performed by these based aircraft and by itinerant aircraft at the airport. (An operation is either a landing or a takeoff.) Table 4 shows the number and types of aircraft based at the airport.

Aircraft Type	Count
TOTAL	127
MULTI-ENGINE	8
SINGLE ENGINE, RETRACTABLE	35
SINGLE ENGINE, FIXED GEAR 4 PLACE AND LARGER	45
SINGLE ENGINE, FIXED GEAR UNDER 4 PLACE	35
HELICOPTER	4
TURBOJET	0

The number of aircraft based at the Aurora Airport fluctuates greatly throughout the year, as it does at other Portland area airports. This is because of fluctuations in the inventory of aircraft for sale and due to the seasonal nature of the flying weather. Although the number of based aircraft may fluctuate to as high as 150, the 1974 count from the Port of Portland field survey indicated 126 based aircraft.

At this time, no turbine powered aircraft or gliders are based at Aurora. In recent months, it is estimated that there have been about ten to twelve transient aircraft parked on the airport at any given time. Turbojet aircraft now use the airport intermittently.



Little information is available concerning the purpose for which the aircraft are flown. Approximately 35 to 40 percent of the aircraft surveyed are owned by businesses. These range from the fixed base operator's charter service to a Portland radio station's traffic watch. It has not been possible to determine the actual hours or percentage of business flying.

The number of operations flown at the airport determines the level of traffic activity at the airport. Since there is no air traffic control tower on the Aurora State Airport, it was necessary to gather operations information from other sources. Four sources are: The Oregon Aviation System Plan, the FAA Master Record (Form 5010), the Portland-Clackamas Airport Study, and air traffic surveys made by the FAA. Apparently, the first three mentioned sources have utilized some of the same basic data, which conflict with actual counts.

This study's evaluations determined the actual activity levels to be somewhat lower than some of the above source data indicated. This study's base data was determined by adjusting actual traffic counts to correlate with known counts at other local airports with air traffic control towers. Statistics were developed as shown in Table 5. Figure 14 compares activity at Aurora State Airport with other principal regional Oregon airports.

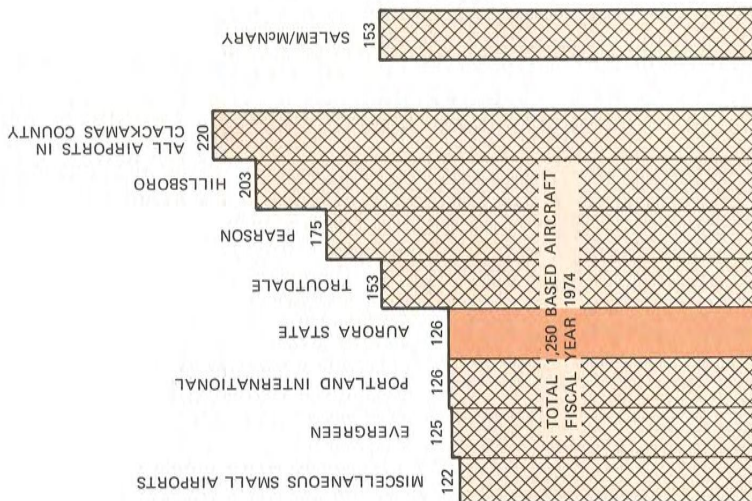


FIGURE 13
DISTRIBUTION OF GENERAL AVIATION
BASED AIRCRAFT IN PORTLAND SMSA
AND AT SALEM/McNARY

SOURCE: PORTLAND - CLACKAMAS AIRPORT STUDY

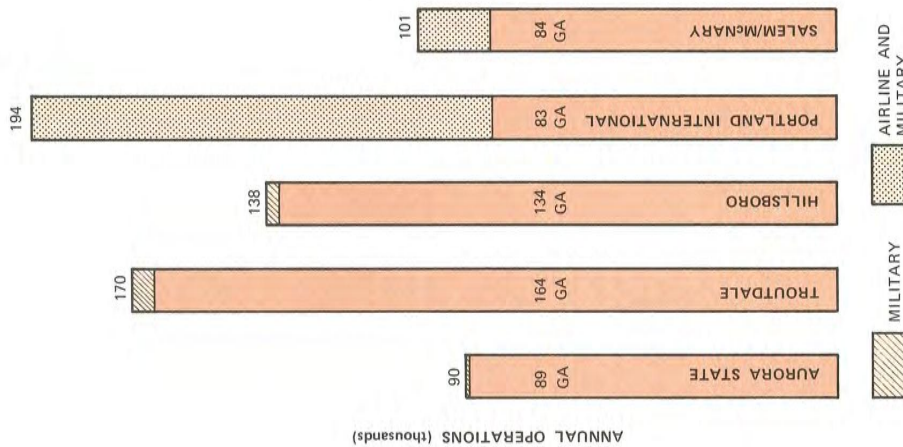


FIGURE 14
AIR TRAFFIC ACTIVITY AT
AREA MAIN AIRPORTS 1975

SOURCE: FAA

OPERATIONS	Value
TOTAL ANNUAL	90,000
LOCAL ANNUAL	52,000
ITINERANT ANNUAL	38,000
IFR ANNUAL	500*
PEAK MONTH	11,000
BUSY DAY	400
BASED AIRCRAFT	127
OPERATIONS PER BASED AIRCRAFT	709
MILES FLOWN	2.8 million*
PASSENGER MILES INCLUDING PILOT	6.5 million*

*Approximate