

CONCLUSIONS AND RECOMMENDATIONS

PLAN ADOPTION

- **Use of the Plan** – After completion of the public review process, the Glenn County Board of Supervisors should adopt this Airport Master Plan as the basis for future development of Orland Haigh Field.
- **Updating** – The plan should be reviewed and, as necessary, updated in about seven to ten years.

AIRPORT ACTIVITY

Present

- **Airport Role** – Orland Haigh Field is principally a personal/recreational usage facility with business related flying being an important secondary function.
- **Based Aircraft** – As of late 1988, some 55 aircraft were based at the Airport.
 - Except for several sailplanes and ultralights, all of the based aircraft are light, single-engine airplanes.
 - Only about half of Orland Haigh Field's aircraft owners reside or have businesses in Orland. Of the remainder, nearly 40% have Chico addresses.
- **Aircraft Operations** – An estimated 23,000 aircraft operations took place at the Airport in 1988.

Forecasts

- **Based Aircraft** – The Master Plan forecasts Orland Haigh Field to have some 80 based aircraft in 2008.
 - In that few new small airplanes are presently being built, this growth rate is substantially greater than projected for the nation or the state.
 - The high growth rate projected for Orland is predicated upon attracting aircraft from other airports by construction of new hangar facilities – for which a current unmet demand is

apparent – and continuation of rental rates competitive with those of nearby airports.

- **Aircraft Operations** – Annual aircraft operations are expected to reach 38,000 in 2008.
 - Itinerant operations will increase more rapidly than local and will comprise some 65% of the total in 20 years.
 - Multi-engine and small business jet activity will remain low percentages of the total, but will increase relatively more than single-engine aircraft operations.

AIRFIELD DESIGN

Existing Runway Design

- **Runway Length** – The existing runway length of 5,160 feet exceeds the requirements for all aircraft now operating at the Airport or anticipated to regularly operate there in the future.
- **Runway Width** – The 50-foot existing runway width is 10 feet less than the minimum (General Utility Stage I) standards applicable to the Airport.
- **Runway Safety Area** – The FAA requirement for 240 feet of graded safety area beyond each end of the runway is not met at either existing runway end.
 - County Road 200 comes within 50 feet of the north end of the runway.
 - There is no physical barrier preventing construction of a properly-graded safety area at the runway's south end. However, with the runway end in its current location, the required safety area extends beyond the airport property line.
- **Clear Zones** – Both clear zones are situated entirely off airport property.

Proposed Runway Design

- **Runway Length** – The runway length should be reduced to 4,500 feet by shortening the north end.
 - This length exceeds the standards for a General Utility Stage II runway, the highest classification applicable at Orland.
 - By relocating the north end of the runway, an adequate safety area can be provided and the existing displaced threshold can be eliminated.
 - The displaced threshold at the south end of the runway can also be eliminated if the County obtains adequate control over

the clear zone property as described later in this chapter and in Chapter 8.

- **Runway Width** – The runway should be widened to 60 feet.

Taxiways

- **Existing Conditions** – The parallel taxiway is deficient in several important respects.
 - It is poorly defined where it crosses the Airport's asphalt mat and the pavement of its northerly extension is damaged.
 - No access is provided to either runway end.
 - The 200-foot runway-to-taxiway separation distance is less than the current minimum standard of 225 feet.
- **Proposed Configuration** – The parallel taxiway should be relocated to the optimum (General Utility Stage II) distance of 240 feet from the runway and extended to both future runway ends. Installation of edge reflectors is recommended.

Pavement Evaluation

- **Runway** – The runway pavement is in reasonably good condition. Nonetheless, a 2-inch overlay is proposed as a means of strengthening and preserving the existing pavement, improving drainage, accomplishing the recommended widening.
- **Parallel Taxiway** – A pavement overlay on the existing asphalt mat should be constructed along the proposed parallel taxiway alignment and at defined runway exit points. Totally new construction is required to extend the taxiway to the future runway ends.
- **Asphalt Mat** – The asphalt mat on which nearly all of the airfield lies is now approximately 45 years old. It has held up well, but deterioration is occurring. The costs of maintaining the entire mat would, however, exceed the benefits.
 - Patching and application of a slurry seal are recommended for the portions of the mat other than the runway and parallel taxiway which are used by aircraft.
 - The western two-thirds of the mat should be allowed to deteriorate unless specific uses for it exist. Periodic sweeping is recommended to keep loose gravel from being tracked or blown onto aircraft operating areas.
 - The sections of the mat pavement between the runway and future parallel taxiway should be removed to facilitate drainage.

Other Airfield Design Elements

- **Runway Lighting** – Replacement of the present, barely functional, nonstandard runway lighting system is a top-priority project at the Airport. A medium-intensity system with pilot-controlled switching is recommended.
- **Instrument Approach** – The existing nonprecision, circling approach adequately serves the needs of most of the Airport's users. A straight-in approach utilizing LORAN-C navigation is a long term possibility.
- **Approach and Landing Aids** – Installation of a Visual Glide Slope Indicator (VSGI) is recommended for each end of the runway.

BUILDING AREA DEVELOPMENT

Hangars

- **Demand** – Construction of additional hangar buildings is a top-priority need at Orlando Haigh Field.
 - Some spaces adequate to accommodate twin-engine aircraft should be provided. However, to keep construction and rental costs down, most of the spaces should continue to be in the size range suitable primarily for single-engine planes.
- **Location** – There are cost advantages and functional (especially drainage) disadvantages to placement of hangar buildings directly on the asphalt mat. Adequate space is available on the mat to accommodate nearly all of the anticipated hangar demand.
 - It is important that the mat not be so fully taken up with hangars in the near term so as to be unable to meet long-term demand for based and transient aircraft tiedowns.
 - The most efficient use of the asphalt mat for additional hangars requires near-term removal of the existing six-unit, diagonal T-hangar building and later, as demand warrants, the long, 14-unit building south of the airport office.
- **Ownership** – The layout of the building area is not dependent upon whether new hangar buildings are publicly or privately constructed. At least for the near term, however, it is anticipated that any new hangars will be developed with private funds.

Tiedowns

- **Based Aircraft** – Assuming that the hangar demand is met, only about 10 tiedowns will be needed for based aircraft at the end of the 20-year planning period. All tiedowns can be taxi-through positions.
- **Transient Aircraft** – The normal peak demand for transient

aircraft parking will be approximately 10 tiedowns at the end of the planning period. Taxi-through spaces are recommended.

- Although the present lack of distinction between based and transient tiedown places has not posed a problem, designation of specific spaces for transient aircraft is recommended as a convenience for transient flyers as well as to eliminate any potential future conflict.

Other Aviation-Related Facilities

- **Terminal Building** – The existing airport office and pilots' lounge is capable of adequately serving the Airport's needs for at least another decade. Before the end of the end of the 20-year Master Plan time frame, however, the need for a larger, more functional, more attractive building is expected to arise.
 - The terminal building should be centrally located on the Airport. It should be adjacent to transient aircraft parking and close to aircraft fueling facilities. Convenient public road access and automobile parking is also essential.
- **Fixed Base Operations Facilities** – Although there is no immediate demand for FBO facility expansion, this possibility must be accommodated by the airport plan.
 - A specialized FBO providing a single service is the most likely form of expansion to occur.
 - It is recommended that most future FBO development, especially any new buildings (except T-hangars), occur off the existing asphalt mat.
- **Fuel Facilities** – The Airport currently has no storage tanks for aircraft fuel sold to the public; all fuel is supplied by a County-owned and operated refueler truck. This arrangement is satisfactory for the present.
 - In the long term, though, it is anticipated that underground fuel storage and a fuel island may be more functional.
 - A need for these fuel facilities could be triggered by factors such as increased demand, changes in the availability of fuel, or increased cost of operating the present fuel truck.
- **Automobile Access** – Access roads onto the Airport need to be rebuilt.
 - The existing east and, especially, north roads are in poor condition and bring automobiles directly onto the aircraft apron.
 - An unofficial access road from the west crosses the runway and should be closed off to prevent its use.
 - New access roads should be constructed on the east side of

the Airport to serve the aviation facilities as well as potential future nonaviation development.

- **Automobile Parking** – Improved automobile parking is a high-priority requirement at Orland Haigh Field.
 - An automobile parking lot should be established next to the existing airport office/pilots' lounge. The lot should be designed so as also to function with a future terminal building.
 - Automobile facilities should be separated from aircraft operations areas. Temporary barriers, such as old telephone poles, can be utilized for the near term.
- **Fencing** – Orland Haigh Field has no existing fencing except around one FBO. Unauthorized vehicles frequently are driven onto the runway and taxiway either deliberately or inadvertently. These circumstances pose a hazard as well as a liability risk to the County.
 - Installation of a field fence around the perimeter of the aircraft-operating areas should be accomplished as soon as practical.
 - Controlled-access gates should be provided in the building area separating aircraft apron and hangars from areas requiring public access (e.g. auto parking lots).

Excess Airport Property

- **Availability** – Even allowing for substantial growth in aviation activity beyond the 20-year time frame of the Airport Master Plan, a large portion of the Airport's 390 acres will not be needed for aviation-related development.
 - The areas deemed excess to aviation needs include the western two-thirds of the asphalt mat and the frontage property along County Roads P and 200. This land should be made available for nonaviation commercial development.
- **Use** – It is not the purpose of the Airport Master Plan to recommend specific uses of the excess airport property. Several limitations on its use are important to note, however.
 - The land uses must be compatible with the noise and safety impacts of airport activity.
 - Water supply and wastewater treatment facilities are lacking.
 - Access road improvements, constructed at least partially at the developer's expense, will be required.
 - It is recommended that the County lease rather than sell the property.
 - The lease revenue must be used for airport operational or capital improvement purposes.

LAND USE AND ENVIRONMENTAL ISSUES

Impacts of Airport Operations

- **Noise and Overflights** – The projected growth of airport activity will result in more aircraft overflights of surrounding lands with the potential for conflicts.
 - Measured in terms of Community Noise Equivalent Level (CNEL), the impacts will be negligible.
 - Nevertheless, annoyance at aircraft overflights can occur elsewhere in the airport vicinity, particularly if aircraft routinely overfly residences at low altitudes.
- **Safety** – The most critical areas with regard to safety, both for aircraft and for uses on the ground, are the runway approach and departure zones, especially the portions closest to the runway ends. In these areas, it is essential that control be exercised over both the height of objects and the types of land uses.

Runway Clear Zone and Approach Protection

- **Runway 15** – Even with the proposed relocation of the approach end of Runway 15, nearly half of the clear zone will remain on private property north of County Road 200. To protect this land and adjacent portions of the runway approach corridor from possible incompatible development, acquisition of conservation easements on approximately 40 acres of property is recommended.
 - The purpose of the conservation easements is to assure that the land remains in agricultural or other compatible use and that no new residential or other incompatible structures are built. In essence, the County would be buying the development rights to this property.
 - The conservation easements should include standard aviation easement rights (overflight, height restrictions, etc.).
- **Runway 33** – Fee title acquisition is recommended for the Runway 33 clear zone and adjacent property encompassing approximately 40 acres between the present southerly airport property line and County Road 24.

OPERATIONAL AND FINANCIAL ISSUES

Operational Policy Issues

- **Airport Rules and Regulations** – The County should adopt formal rules and regulations specifying the responsibilities of airport users.

- As a minimum, the rules and regulations should address safety, security, fire protection, airfield access, reporting, financial responsibility, commercial operations, flight patterns and procedures, ground operating procedures, and enforcement and penalties.
- **Minimum Standards** – The County is strongly encouraged to adopt a set of minimum standards for commercial enterprises doing business at the Airport.
 - Such standards serve to set guidelines for quality and levels of service, to specify minimum equipment and capital investment requirements, and to exclude marginal or irresponsible competitive operations.
- **Hangar Lease Policies** – Policies should be developed regarding minimum development standards, waiting list procedures, and use and occupancy requirements for the Airport's hangars. Some of these policies would apply to both County and privately owned hangars, others only to those belonging to the County.
- **Unauthorized Commercial Activity** – Free-lance commercial activity (aircraft maintenance, flight instruction, etc.) occurs at the Airport to the financial detriment and potential liability of the County.
 - Rather than attempting to totally eliminate these "limited commercial" activities, the County should establish essential controls and requirements under which they must operate (e.g., qualifications, activities permitted, insurance requirements, County fees, etc.).
- **Use of Automobile Gasoline in Aircraft** – For a variety of reasons, the use of auto gas in aircraft has increased nationwide and is likely to continue to do so. As a measure of its safety responsibilities, it is recommended that the County monitor the use and dispensing of auto gas at the Airport.

Capital Improvement Program

- **Cost** – Construction of the facilities identified in the Master Plan will cost nearly \$3.0 million (in 1988 dollars) over the next 20 years. About \$1.2 million of this total, most of it for runway and taxiway improvements, is scheduled for the initial five-year period.
- **Funding Sources** – The proposed capital improvements would be funded from a combination of federal, state, County, and private sources.
 - Approximately \$1.3 million of the total cost is eligible for Federal Aviation Administration and California Division of Aeronautics grants.
 - County investment is estimated at nearly \$0.9 million, the majority of which is for construction of a new administration building/pilots' lounge during the latter part of the 20-year planning period.

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- The remaining approximately \$0.8 million of the total is expected to be private investment, principally in construction of T-hangars.

Operating Revenues and Expenses

- **Revenue Generation** – Airport operational revenues have traditionally originated from five principal sources: hangar rent, tie-down fees, concession fees, land and house rentals, and fuel sales. These fees are established and adjusted from time to time by the Glenn County Board of Supervisors. Additional airport revenues could be obtained through:
 - Enforced assessment of fees for limited commercial-service operations.
 - Adjustment of rates and fees to more adequately account for the effects of inflation and the cost of providing services and facilities.
 - Continued use and promotion of the County-operated fuel service.
 - Redirection of taxes generated at the Airport for use in the airport enterprise fund.
- **Expenses** – Orland Haigh Field's financial potential can be enhanced by minimizing the expenses of airport operation. Significant success has already been achieved in this regard. Additional areas of potential expense reduction include: energy conservation, joint purchasing and use programs, and contract services.
- **Financial Projection** – If the County's proposed airport rates and charges schedule adjustment is implemented as planned in 1989, Orland Haigh Field will generate a modest, consistent net income throughout the ten-year financial planning period. It is suggested that the bulk of the net income be applied toward capital improvement projects that directly benefit the Airport.