

APPENDIX G

Heliport Design

As described in Table 2-1 “Heliports in Alameda County”, one public- and several private-use airports operate to support private, business, and medical uses. Proposals to enhance, modify, or deactivate these facilities is subject to ALUC review.

FAA Advisory Circular (AC) 150/5390-2B, “Heliport Design,” provides recommendations for heliport design and describes the federal requirements associated with heliport development. The AC applies to any proposal to construct, activate, or deactivate a heliport. Although the AC only constitutes a regulation when Federal funds are used, Alameda County encourages those with heliport proposals to implement the guidance set forth in the AC to the greatest extent practicable.

FAA AC 150/5390-2B provides detailed data concerning heliport and helipad design, such as:

- Physical, technical, and public interest matters that should be considered in the planning and establishment of a heliport;
- Descriptions pertaining to appropriate or optimum locations for heliports;
- Terminology and pertinent terms associated with heliports;
- Design standards relevant to developing heliport facilities that support general aviation, transport, and hospitals, including diagrams;
- Gradient and pavement design; and
- Dimensional data, markings, etc.

FAA recommends that the standards presented in the AC should be used in planning and designing improvements to existing facilities or whenever a significant expansion or reconstruction project is undertaken. The complete AC is available at www.faa.gov in several files that can be downloaded upon request. The cover memorandum describing the AC and the Table of Contents are reproduced here for convenience, as the AC comprises more than 200 pages and is likely to be revised during the lifetime of this Airport Land Use Compatibility Plan. The most recent version of the AC is available from the FAA website at: www.faa.gov.

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U.S. Department
of Transportation

Federal Aviation
Administration

Advisory Circular

Subject: HELIPORT DESIGN

Date: 09/30/04
Initiated by: AAS-100

AC No: 150/5390-2B
Change:

1. **PURPOSE.** This advisory circular (AC) provides recommendations for heliport design and describes acceptable requirements to develop a heliport. This AC applies to anyone who is proposing to construct, activate or deactivate a heliport.

2. **APPLICABILITY:** This AC is not mandatory and does not constitute a regulation except when Federal funds are specifically dedicated for heliport construction.

3. **EFFECTIVE DATE:**

4. **CANCELLATION.** AC 150/5390-2A, *Heliport Design*, dated January 20, 1994, is canceled.

5. **EXECUTIVE SUMMARY.** The modern helicopter is one of the most versatile transportation vehicles known to man. Typically, a heliport is substantially smaller than an airport providing comparable services. The helicopter has the capability of providing a wide variety of important services to any community that integrates this aircraft into its local transportation system.

a. **Service.** In addition to their service in the transportation of people, helicopters have proven to be useful to their communities in the following ways:

(1). **Disaster Relief.** Natural disasters often result in the breakdown of ground transportation systems. Helicopters are able both to bring in response teams and supplies and to evacuate injured people during the critical period before ground transportation is restored.

(2). **Air Ambulance Services.** For an injured or critically ill person, time is life. Helicopters can provide high-speed, point-to-point transportation without being constrained by the limitations of the ground infrastructure.

(3). **Police Services.** Many municipalities consider their police services helicopters vital force multipliers in carrying out search and rescue, chase, and surveillance.

(4). **Moving High-Value Assets.** High-value or time-sensitive cargo, such as canceled checks, and people, including the President of the United States, frequently travel on helicopters because this mode of transportation is fast and flexible. Companies use helicopters as an invaluable part of an in-house transportation system to connect the office with various plants, job sites, and the local airport. Utility companies use helicopters to construct and inspect high-voltage electrical lines and to monitor underground gas transmission lines. The petroleum industry uses helicopters to support exploration and production operations. Newspapers and radio/TV stations use helicopters for onsite news gathering, taking photos, and airborne reporting of rush hour traffic conditions.

b. **Facilities.** The most effective way for a community to realize the benefits of helicopter services is by developing or permitting the development of places where helicopters can land and take off. While heliports can be large and elaborate, most are not. The basic elements of a heliport are clear approach/ departure paths, a clear area

for ground maneuvers, and a windsock. This minimal facility may be adequate as a private use heliport, and may even suffice as the initial phase in the development of a public use heliport capable of serving the general aviation segment of the helicopter community.

c. Planning. While the heliport itself may be simple, the planning and organization required to properly put one into place can be intimidating. To help make the process easier, the Federal Aviation Administration (FAA) has published this AC. This document describes physical, technical, and public interest matters that should be considered in the planning and establishment of a heliport. While this AC is a technical document intended to help engineers, architects, and city planners' design, locate, and build the most effective heliport, it can be used by anyone considering the construction of a heliport.

d. Location. The optimum location for a heliport is in close proximity to the desired origination and/or destination of the potential users. Industrial, commercial, and business operations in urban locations are demand generators for helicopter services, even though they often compete for the limited ground space available. A site permitting the shared aeronautical and commercial usage is a viable alternative to non-aeronautical use alone. Heliport sites may be adjacent to a river or a lake, a railroad, a freeway, or a highway, all of which offer the potential for multi-functional land usage. These locations also have the advantage of relatively unobstructed airspace, which can be further protected from unwanted encroachment by properly enacted zoning. As vertical flight transportation becomes more prevalent, requirements for scheduled "airline type" passenger services will necessitate the development of an instrument procedure to permit "all-weather" service.

e. AC Organization. This AC is structured to provide communities and persons intending to develop a heliport, or become involved in regulating helicopter facilities, with general guidance on heliport requirements. The AC is organized with separate chapters covering general aviation heliports, transport heliports, and hospital heliports based on the functional role of the heliport.

(1). A heliport proponent should be familiar with the terminology used in this specialized field. Chapter 1 defines pertinent terms used in the industry and identifies actions common to developing a heliport.

(2). General aviation heliports are normally privately owned although they can be publicly owned. Design standards relevant to developing a general aviation heliport are found in Chapter 2.

(3). Transport heliports are developed to provide the community with a full range of vertical flight services including scheduled service by air carriers (airlines) using helicopters. When the heliport serves any scheduled or unscheduled passenger operation of an air carrier that is conducted with an aircraft having a seating capacity of more than 30 passengers, the heliport is required to be certificated by the FAA in accordance with 14 Code of Federal Regulations (CFR) Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers. In any event, a transport heliport would also accommodate corporate users and local air taxi operators. This broad spectrum of activities frequently requires a more extensive airside and landside infrastructure with the potential capability to operate in instrument meteorological conditions. Notwithstanding these requirements, a community's investment in a heliport may be substantially less than the investment required for an airport providing comparable services. Design standards relevant to developing a transport heliport are found in Chapter 3.

(4). Hospital heliports are treated as special cases of general aviation facilities providing a unique public service. They are normally located in close proximity to the hospital emergency room or a medical facility. Design recommendations relevant to developing a hospital heliport are found in Chapter 4.

(5). When there are a significant number of helicopter operations on an airport, it may be prudent to consider developing separate facilities specifically for helicopter use. Chapter 5 addresses helicopter facilities on airports.

(6). With the introduction of the global positioning system (GPS), it is now practical for heliports to have instrument approaches. Good planning suggests that heliport proponents should plan for the eventual development of instrument approaches to their heliports. Chapters 6 and 7 contain recommendations to be considered in contemplating future instrument operations at a heliport. It is wise to consider these issues during site selection and design.

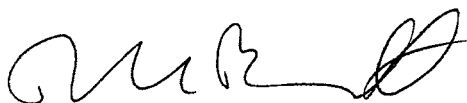
(7). Chapter 8 addresses heliport gradients and pavement design issues.

(8). The appendices provide helicopter dimensional data, addresses of aviation organizations, form and proportions of certain heliport markings, and acronyms.

6. APPLICATION. The recommendations and standards in this AC are for planning and designing civil heliports. To the extent that it is feasible and practical to do so, the standards in this AC should be used in planning and designing improvements to an existing facility when significant expansion or reconstruction is undertaken. Conformity with these standards is a prerequisite to Federal grant-in-aid assistance. Modification to a heliport design standard related to new construction, expansion, reconstruction, or upgrade on a heliport that received Federal aid requires FAA approval. The request for modification should show that the modification will provide an acceptable level of safety, economy, durability, and workmanship. The recommendations and standards in this AC are not intended to be sufficient to design an instrument approach procedure.

NOTE: *If tiltrotor operations are contemplated, criteria in AC 150/5390-3, Vertiport Design are applicable.*

7. METRIC UNITS. To promote an orderly transition to metric units, this AC includes both English and metric dimensions. The metric conversions may not be exact equivalents, and until there is an official changeover to the metric system, the English dimensions will govern.



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