

# **Comparing Airport Licensing Requirements: Alabama vs. Selected States and the FAA**

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## Contents

Table of Contents .....	iii
List of Figures.....	iv
List of Tables.....	iv
Executive Summary.....	v
1.0 Introduction.....	1
1.1 Overview.....	1
2.0 Choosing the Sites.....	2
3.0 Data Collection and Reduction.....	4
4.0 Data Comparison.....	6
4.1 Runway Specifications.....	6
4.2 Lighting.....	8
4.3 Miscellaneous.....	9
5.0 Project Findings, Conclusions and Recommendations .....	12
5.1 Findings .....	12
5.2 Conclusions.....	12
5.3 Recommendations.....	13
6.0 Technical Appendix.....	14
7.0 References.....	15
A – Comparison Tables.....	16
B – Figures.....	21
C – Contact Information.....	24

### **List of Tables**

A-1	Comparison of Criteria for General Use Airport Standards for 11 States ..	17
A-2	Critical Requirements for General use Airports .....	19
A-3	Analysis of Criteria with Numeric Values .....	20

### **List of Figures**

2-1	Map of United States of America .....	3
B-1	Typical Airport Layout Plan .....	22
B-2	Runway Protection Zone, Plan and Profile View.....	23

## **Executive Summary**

Many states in the United States of America have licensing requirements for their general use airports. The objective of this study was to determine if current Alabama's regulations for general use airports are timely and if they compare favorably with selected states. Alabama's requirements were compared with several adjacent states, other states select because of good reputations for airport administration, and with guidelines from the Federal Aviation Administration.

The results of this study are presented in this report as a discussion contrasting Alabama licensing requirements with others. A spreadsheet in the appendix provides a line item comparison of each state's airport licensing requirements.

This study revealed that Alabama ranks highest among the sampled states in airport licensing requirements, but could consider incorporating several features from other states.

# **Section 1**

## **Introduction**

### **1.1 Overview**

The phrase “Alabama is open for business” has been circulated by the current state administration nationwide. Moreover, the establishment of large industry in Alabama has captured headlines throughout the nation. As attractive as Alabama may be from certain points of view, its aviation transportation infrastructure needs immediate attention. Large industries, will ordinarily choose areas for further expansions and developments that are in the close proximity of high growth areas, striking a balance between worker availability and relatively inexpensive land and utilities. Hence, within the context of a transportation system involving different modes of transportation, it is the responsibility of the governing agency to ensure the efficient coordination and functioning of its components such as airports and highways.

Alabama has 72 general use airports overseen by the Alabama Department of Transportation (ALDOT) Bureau of Aeronautics. Two inspectors are responsible for the annual inspection and licensing of these airports. Over recent years, a gradual decline has been observed in the safety and convenience of these airports. The upswing in industrial expansion is running a collision course with the general use airport system because expanding industries look for further improved operations of these airports and they must be assured of the ability of these airports to accommodate corporate aircraft on a frequent basis.

The bureau has existing airport licensing requirements (Please see Appendix A, Table 1) based on Federal Aviation Administration specifications. As complete as these requirements may be, they have not been compared and studied to those of similar requirements of other states in a number of years. The bureau considers its airport licensing requirements to be of high priority and sought a comparison of these requirements with peer states, other prominent states throughout the United States, and the airport standards published by the FAA.

The results of this comparison study will help the bureau to assess whether it needs to alter its current licensing procedures of Alabama or update the existing system with appropriate strict standards to ensure safety as well as compatibility with other transportation modes.

This need of comparison study evolved into an internship position whereby an aviation intern would work with the bureau representatives in comparing Alabama’s licensing requirements of public use airports with the licensing requirements of other states.

## **Section 2.0**

### **States Chosen for Comparison**

Before choosing particular states for detailed comparison, the study team did a comprehensive analysis of the aviation systems as well as the codes of regulation for a number of states. The analysis involved states having a very sophisticated system to those with less complicated procedures. The criteria for selecting specific states for study were based on a variety of factors, which are listed below:

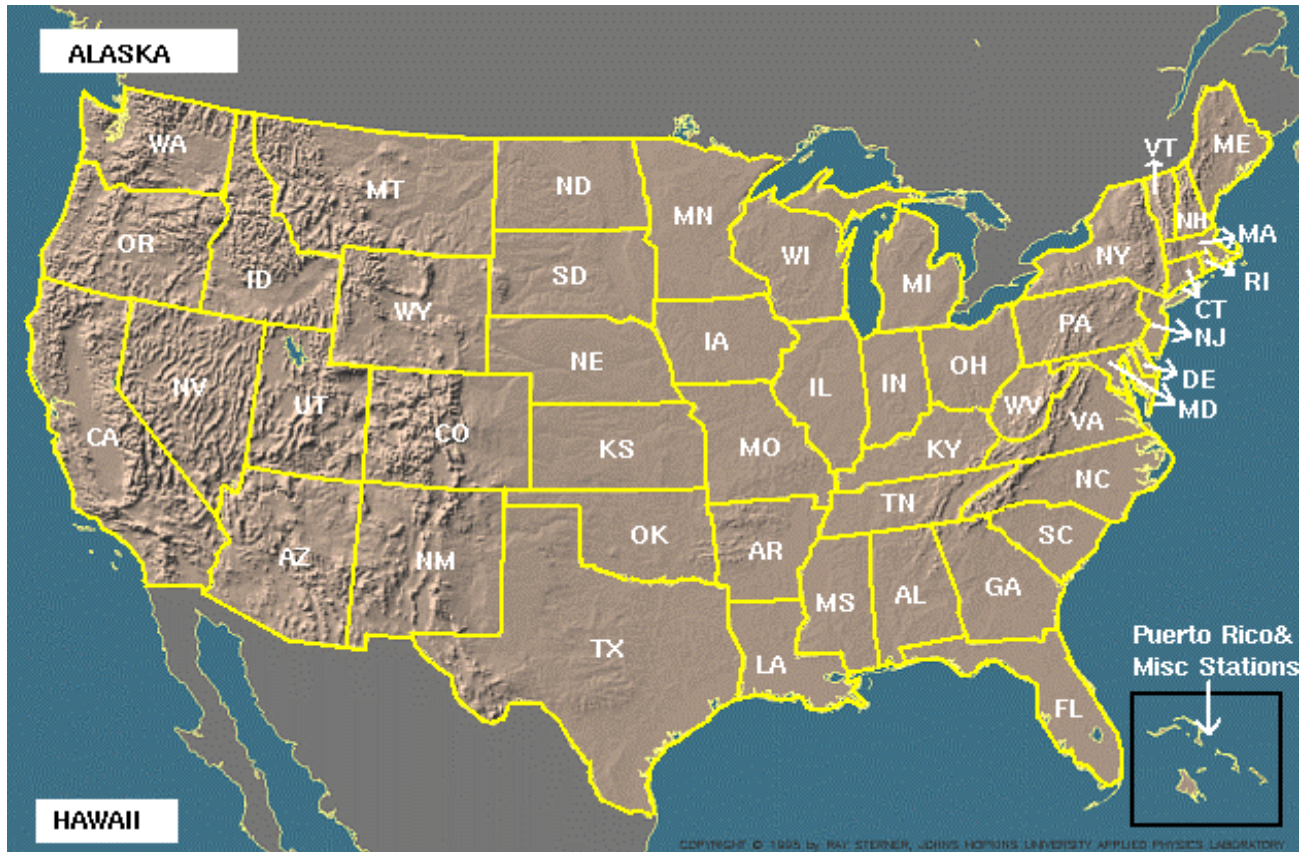
- Close proximity to Alabama
- Geographical location
- Similar topographical features as Alabama
- General quality of general use airports
- Comparable air traffic volume as Alabama
- Recommendations of Bureau officials.

Regular meetings with Bureau officials resulted in a list of southeastern states and several other eastern states that could be compared with Alabama. The states chosen for study are listed below:

- Florida (FL)
- Georgia (GA)
- Kentucky (KY)
- Mississippi (MS)
- Michigan (MI)
- North Carolina (NC)
- South Carolina (SC)
- Tennessee (TN)
- Virginia (VA)
- Wisconsin (WI)

The locations of these states may be found on Figure 2-1 on the next page.





**Figure 2-1: Map of United States of America**

The southeastern states (FL, GA, KY, MS, NC, SC, TN) were chosen mainly because of their proximity to the State of Alabama and having similar geographical features. Virginia (VA) and Michigan (MI) were chosen because of their wide reputation of quality general use airports. Wisconsin was a random state whose data were obtained during the collection process. Apart from the above mentioned ten states, others such as Utah were also examined but found to have very low requirements and were not included in the study.

## **Section 3.0**

### **Data Collection and Reduction**

Licensing requirements in several states were reviewed to identify specific topic areas that would provide uniformity in comparing various criteria. The most important criteria used for comparison are listed below:

#### Standard Airport Design Dimensions

- Runway length
- Usable width
- Approach path slope
- Runway threshold
- Runway protection zone dimensions
- Runway safety area dimensions
- Turf runway standards

#### Lighting Standards

- Runway identifier lights
- Runway edge lights
- Lighted beacon

#### General Dimensions for Airport Markings

- Runway centerline to taxiway centerline
- Runway centerline to airport buildings
- Runway centerline to apron

#### Safety and Convenience Facilities

- Service facilities including telephone
- Fire extinguishers
- Parking facilities
- Grounding cables for fueling

Three potential methods were devised for data collection: (1) retrieving the required data from official web sites of the state departments of transportations; (2) contacting the officials via telephones, and (3) meeting the concerned officials in their offices.

All required standards for comparison were retrieved via the Internet and through personal phone calls to the states' aviation departments, which are subsidiaries of departments of transportation. A list of contacts for each state can be found in Appendix C. The process of collecting the standards for each state was a major portion of the work and was conducted throughout the project.

Collected data was analyzed to determine if similarities existed with other states and whether certain states had unique requirements of value compared to Alabama. A majority of the examined states have statutes for licensing of public use airports. For the states with no statutes, the FAA standards for airport operations were specified as the “default” regulations.

## **Section 4**

### **Data Comparison**

Collected data was tabulated on a spreadsheet (Table A-1, Appendix A) to simplify the comparison with other states. Alabama licensing requirements were also entered in the spreadsheet whether or not they had direct comparison to any other state. This spreadsheet was considered the most efficient means of visual comparison of licensing requirements as discussed in the following paragraphs. The different standards used for comparison and the technical definitions as stated by the FAA are given below. The results of the comparison are also stated along with the definitions.

FAA standards are separate from state licensing requirements and are usually more comprehensive and detailed. For any particular airport, FAA guidelines apply to a “critical design aircraft” that the airport designer or owner selects. In effect, the airport is designed to serve one particular aircraft (and all those aircraft with lesser operational requirements than the design aircraft.) Some state’s criteria are simply “FAA.” No quantifiable design criteria could be identified for them in this report, since the design aircraft type changed from airport to airport.

#### **4.1 Runway Specifications**

Runway specifications are subdivided into sections for *paved surfaces* and *turf surfaces*. Runway lengths, widths, and primary surfaces were the only specifications that stressed different dimensions between the two types of surfaces. Table A-3 in Appendix A provides data analysis and statistical information for the following criteria.

##### ***Runway Length***

Runway length is the length of the rectangular paved or turf surface that is prepared or available for the safe landing and takeoff of aircraft. The FAA uses a “critical aircraft” to calculate the runway length which serves as a general guide for state agencies. Figure B-1 in Appendix B illustrates runway length. Out of the eleven states surveyed, five states use a runway length of 2,000 feet. Michigan has the least runway length requirement of 1,800 feet, while Kentucky has the greatest at 2,500 feet. See Analysis of Data in Table A-3, in Appendix A.

##### ***Runway Width or Usable Width***

The usable width is the width of paved or turf surface suitable for safe landing and take off for aircraft with sufficient gradient (See Figure B-1 in Appendix B). The runway widths have a range of 35 to 60 feet among the states studied, with the majority being 60 feet. Alabama requires a usable width of 60 feet.

### ***Primary Surface***

The primary surface is the width of surface that must be clear from all obstructions and runs along the length of the runway. This includes runway shoulder and provides sufficient wing tip clearance and drainage gradient (Figure B-1 in Appendix B). Primary surface requirements range from 130 feet to 250 feet. The wider the primary surface, the safer the runway area will be in the event of an undershot, overshoot or excursion from the runway. Alabama requires a primary surface of 250 feet, which is the highest standard.

### ***Approach Path Slope***

The approach path slope is the vertical angle of the runway below which no obstructions can be present. A 20:1 slope is representative of most of the states examined in this study (Figure B-2, Appendix B). The minimum is a 15:1 slope used in Virginia.

### ***Approach Path Length***

The approach path length is the required length for the approach to a runway (Figure B-1, Appendix B). The approach path length for Alabama is 1,000 feet, which is on the low end of the range seen in this study. Tennessee, Wisconsin, Kentucky, and Michigan have the highest requirement of 5,000 feet. A longer approach path yields a larger runway protection zone.

### ***Runway Protection Zone***

A runway protection zone (RPZ) is a trapezoidal area beginning at the end of the primary surface and flaring outward until the end of the *Approach Path Length*, which is centered about the extended runway centerline. Its function is to enhance the protection of people and property on the ground (Figure B-2, Appendix B). The majority of state runway protection zone regulations require an inner width equal to the width of primary surface and diversion ratio of 10:1 or 16.1 acres. The acreage required per state for RPZs were calculated and compared in Table A-3 in Appendix A. Alabama requires a RPZ of 16.1 acres. The states with the largest area requirements are Wisconsin and Kentucky, with 172.2 acres. Georgia had the smallest area at 14.9 acres.

### ***Runway Safety Area***

Runway safety area (RSA) is the well-defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an excursion from the runway. It is centered on the runway centerline and extends along the runway length (Figure B-1, Appendix B depicts RSA). The runway safety area has a wide variation among the states. Alabama's RSA extends 200 feet from the end of the runway and 120 feet off the centerline. Florida has the highest standard with 200 feet from the end of the runway and 250 feet off the centerline.

### ***Runway Threshold***

The distance from the end of the runway to the recommended landing zone is the runway threshold (Figure B-1, Appendix B). A requirement for runway threshold was not specified for majority of states. Alabama and Florida require a threshold of 200 feet while Georgia requires only 100 feet. See Analysis of Data in Table A-3, Appendix A.

## **4.2 Lighting**

A lighting system at an airport defines the lateral and longitudinal limits of the usable landing area during night operations or during reduced visibility due to bad weather conditions such as snow or fog. Airport lighting was subdivided into four separate categories, and different categories are addressed by a different color of light such as white, yellow, blue, red and green lights. Not all states studied addressed these categories uniformly.

The report, *Prototype General Use Airports for the State of Alabama* in the Technical Appendix (UTCA Report 01111-A), provides additional information on airport lighting systems and their design, specifically Appendix A, Figure 7 of the report. The majority of states surveyed stress requirements following the FAA guidelines.

### **Runway Edge Light Configuration**

Runway-edge-light configuration is the lighting that outlines the edge of the lateral and longitudinal limits of the usable landing area. Two straight lines of lights, which are parallel to and equidistant from the runway centerline, define the lateral limits. Alabama requirements for edge lighting are governed by FAA guidelines.

### ***Runway End Identifier Lights***

The longitudinal limits of the usable landing area are defined at each end of the area by straight lines of lights called runway end identifier lights or threshold lights which are perpendicular to the lines of runway edge lights. Alabama requires that FAA regulations pertaining to end lighting be the standard for all public use airports intended for night operations.

### ***Lighted Beacon***

A lighted beacon is a rotating light that helps pilots identify the airport during darkness or during low visibility condition. Alabama regulations require a lighted beacon at all general use airports.

### ***Lighted Windsock***

A lighted windsock is an illuminated wind indicator visible at night or during reduced visibility from the approaching aircraft. All Alabama public-use airports are required to have a lighted windsock if they operate at night.

## **4.3 Miscellaneous**

### ***Segmented Traffic Circle***

A segmented traffic circle is a circle drawn around the windsock indicating the preferred landing pattern for the runway. It also outlines the windsock for easier location by approaching aircraft. Florida, Georgia, Michigan, and Kentucky require a segmented traffic circle at airports.

### ***Runway Centerline to Taxiway Centerline***

This is the minimum distance that should be provided between the runway centerline and the taxiway centerline so that there will be sufficient wing tip clearance between an aircraft on the runway and a taxiing aircraft. Georgia is the only state in this study to have a minimum requirement (100 feet) for this spacing.

### ***Runway Centerline to Buildings***

The runway centerline distance to buildings is the distance from the center of the runway to the nearest building. A Building Restriction Line (BRL) should be placed on an airport layout plan for identifying the suitable building locations on airports, and BRL should encompass the RPZs and Object Free Areas. Georgia specifies a distance of 150 feet and is the only state in the group to have this requirement.

### ***Runway Centerline to Tie-Down Area***

The purpose of a tie down layout is to park the maximum number of airplanes while satisfying taxi lane object free area width criteria. The minimum distance that should be provided from the center of the runway to the area where aircraft can be tied-down for storage is defined as the distance of runway centerline to tie-down area. Georgia requires a length of 125 feet between the runway centerline to the tie down area and is the only state to do so.

### ***Windsock***

A windsock is a conical sleeve that orients itself according to the wind direction and is colored for high visibility. All airports require a windsock or tetrahedron wind indicator.

### ***Runway Markings***

Runway markings are painted markings on the runway that help pilots locate the airport and runway from the air. Marking requirements vary among states studied, but all require some form of runway marking. The *Pilot Guide to Airport Signs and Markings* found in the Technical Appendix (UTCA Report 01111-A), provides more details on markings. All states use standard FAA markings for precision and non-precision runways.

### ***Signage***

Signage includes signs that indicate waypoints such as intersections, taxiways, and runway identification to taxiing aircraft. The *Pilot Guide to Airport Signs and Markings* found in Technical Appendix (UTCA Report 01111-A) provides more details about signage. In addition, Figure 6, Appendix A from *Prototype General Use Airport for the State of Alabama* in the Technical Appendix (UTCA Report 01111-A) provides an example layout of airport signage. All states adhere to FAA standards for signage.

### ***Service Facility***

This is defined as a facility for aircraft maintenance. Florida is the only state that requires a service facility for aircraft at all airports. While this is a noble goal, this requirement is probably not met by many rural airports.

### ***Runway Grading***

Runway grading is the percent slope (or grade) that is permitted on the runway for drainage and safety purposes. Tennessee specifies a 2% grade on runway pavement. The grading ensures the timely drainage of water from the surface of the runway. A minimum percent grade is engineered into all runways if constructed according to FAA guidelines, but Tennessee is the only state having a written requirement.

### ***Ownership of Approach Zones***

Airports may own the key portion of the land in their approach zones. Alabama has specified that by year 2005 all airports must own their approach zones. No other state studied has this requirement.

### ***Fire Extinguishers***

Several states require fire extinguishers on site, capable of extinguishing various types of fires such as gasoline, jet fuel, and electrical. FAA recommends rescue and firefighting access roads normally needed to provide two-way access to potential accident areas. Approximately half of the states studied require a fire extinguisher to be available in case of emergencies. Florida requires that two fire extinguishers be onsite.

### ***Grounding Cables***

Grounding cables are used in fueling areas (or on fuel trucks) to prevent fuel tank ignitions from static electricity. These are considered mandatory during refueling operations. Alabama and Michigan are the only states that have written requirements for grounding cables in the fuel area.



### ***Defect-Free “Healthy” Fuel Hoses***

Any hose without cracks or other physical distress is defined as a defect free “healthy” fuel hose. Alabama is the only state that requires defect-free fuel hoses.

### ***Tie Downs***

Tie downs are a means of securing an aircraft to the ground by three anchors with ropes, straps, or chains. Florida and Michigan require general use airports to provide an area where aircraft can be secured to the ground.

### ***Enclosed Public Parking***

An enclosed public parking is a safe enclosed area for the public to park vehicles while using the airport. Florida requires its licensed airports to provide the public with a secure location for vehicle parking. This location can be a parking deck or a fenced area.

### ***Statutory Regulation for Licensing Law***

Statutory regulation provides a state with the legal ability to license airports. The states surveyed that have licensing laws also have the highest standards for their public use airports.

### ***Telephone***

A public use telephone (for filing and closing flight plans, receiving weather briefings and calling public transportation) must be available 24 hours per day at airports in those states having this requirement. Florida requires that general use airports provide a telephone on site.

### ***Licensed Airport Manager***

A licensed airport manager is an authorized official who has passed training requirements to manage airports. Michigan is the only state requiring each general use airport to have a licensed manager. Licensed personnel in charge of an airport should enhance its safety and general state of upkeep.

## **Section 5.0**

### **Project Findings, Conclusions and Recommendations**

#### **5.1 Findings:**

Airport licensing requirements for several states and the FAA were compared to those for the State of Alabama. When comparing the various states' licensing requirements, it became apparent that some states have more stringent standards than others. The following observations were drawn from analysis of standards.

1. Of all eleven states studied, three states (Mississippi, North Carolina and South Carolina) indicated that all of their standards are FAA specifications.
2. Kentucky requires the longest paved runway length (2500 ft) and greatest runway width (60 ft), while Michigan has the smallest length (1800 ft) and width (35 ft). Alabama's standards fall between these two states. (See Table A-3, Appendix A)
3. For paved runways, Alabama possesses the highest standards or is among the states that have the highest standards for licensing requirements. On the contrary when comparing approach path length, the state has the lowest requirement at 1000 feet. Michigan, Wisconsin and Kentucky require the greatest approach/departure path length (5000 ft) (See Table A-1 Appendix A)
4. Alabama and Georgia are the only states that have the same runway length, usable width and primary surface dimensions for both paved as well as turf runway. (See Table A-1 Appendix A)
5. Alabama and Michigan adhere to FAA specifications about runway-end-identifier lightings, while the state of Georgia requires six lights for identifying the runway end.
6. Alabama has the weakest statute for the runway protection zone among the states for which the RPZ area could be calculated.

#### **5.2 Conclusion:**

In general, Alabama airport licensing requirements are among the most stringent and comprehensive of the 11 states studied (See Table A-2 Appendix A). Therefore, immediate amendments or revisions do not seem necessary at this time.

### **5.3 Recommendations**

Alabama may wish to consider adopting several requirements identified in other states. The following statutes are areas the authors feel could benefit from an in-depth study:

1. Approach Path Length
2. Runway Protection Zone (RPZ).

A more detailed study is encouraged for the areas in which Alabama's statutes are less than other states to ensure that Alabama airports stay among the safest and most modern airports in the nation.

## **Section 6.0**

### **Technical Appendix**

Due to the volume of information and data collected, a technical appendix has been compiled to accompany the written report. The technical appendix has been published as UTCA final report 01111-A, and contains the following information:

- *Prototype General Use Airport design for the State of Alabama*
- FAA Signage and Markings Guideline
- Individual State Airport Licensing Requirements of the States Studied.

The *Prototype General Use Airport for the State of Alabama* report was not requested by ALDOT, but was used to meet requirements for the Airport Design Class (CE 455/555) at the University of Alabama, Tuscaloosa. It was included in the Technical Appendix since it was cited as a good example of a design of a general use public airport meeting the FAA specifications and Alabama state licensing standards.

## **Section 7.0**

### **References**

1. Federal Aviation Administration Advisory Circular AC 150/5300-13: *Airport Design*
2. Federal Aviation Administration Advisory Circular AC 150/5345-44F: *Specifications for Taxiway and Runway Signs*
3. Federal Aviation Administration Advisory Circular AC 150/5320-6D: *Airport Pavement Design and Evaluation*
4. Federal Aviation Administration Advisory Circular AC 150/5340-1H: *Standards for Airport markings*
5. Federal Aviation Administration Advisory Circular AC 150/5100-13A: *Development of State Standards for Non-Primary Airport*
6. ALDOT Aviation Bureau: *State of Alabama Airport Licensing Requirements*

## **Appendix A**

### **Comparison Tables**

**Table A-1: Comparison of Criteria for General Use Airport Standards for 11 States (Left Half of Table)**

	AL	GA	FL	MS	TN	Virginia
Runway Length	2000 ft	2000 ft	2000 ft		2000 ft	2000 ft
Usable Width	60 ft	50 ft	60 ft		40 ft	50 ft
Primary Surface	250 ft	200 ft	250 ft		150 ft	130 ft
Approach Path Slope	20:1	20:1	20:1	All Items	20:1	15:1
Runway Protection Zone (RPZ)	250 inner x 10:1	200 inner x 10:1	250 inner x 10:1	per FAA	150 x 1250	130 x 5:1
Approach/Departure Path Length	1000 ft	1000 ft	3000 ft	Standards	5000 ft	n/a
Runway Safety Area	200 ft (L) x 120 ft(w)	100 ft(L) x 100 ft(w)	200 ft (L) x 250 ft(w)		100 ft(L) x 150 ft(w)	100 ft(L) x 200 ft(w)
Runway Threshold	200 ft	100 ft	200 ft		100 ft	n/a
<u>TURF RUNWAYS</u>						
Effective Runway Length	2000	2000 ft	2000 ft		n/a	n/a
Usable Width	60	75 ft	60 ft		n/a	n/a
Primary Surface	250	n/a	250 ft		n/a	n/a
<u>LIGHTING</u>						
Runway End Identifier	per FAA	6 lights	n/a		n/a	n/a
Edge Lights	per FAA	Required	n/a		n/a	n/a
Lighted Beacon	Required	n/a	n/a		n/a	n/a
Lighted Windsock	Required	Required	n/a		n/a	n/a
<u>MISCELLANEOUS</u>						
Segmented Circle for Traffic Patterns per FAA	n/a	Required	Required		n/a	n/a
Runway Centerline to Taxiway Centerline	n/a	100 ft	n/a		n/a	n/a
Runway Centerline to Buildings	n/a	150 ft	n/a		n/a	n/a
Runway Centerline to Tie Down or Apron Area	n/a	125 ft	n/a		n/a	n/a
Windsock	Required	Required	Required		Required	n/a
Runway Markings	Required	per FAA	Required		Required	n/a
Service Facilities	n/a	n/a	Required		n/a	n/a
Runway Grading	n/a	n/a	n/a		2%	n/a
Approach Zones Owned by Airport	by 2005	n/a	NO		n/a	n/a
Fire Extinguisher	Required	n/a	2 Required		Required	n/a
Grounding Cables for Fuel Area	Required	n/a	n/a		n/a	n/a
Defect-Free "Healthy" Fuel Hoses	Required	n/a	n/a		n/a	n/a
Tie Downs	n/a	n/a	Required		n/a	n/a
Enclosed Public Parking	n/a	n/a	Required		n/a	n/a
Signage						
Statutory Regulation for Licensing Law	Yes	Yes	Yes	No	Yes	Yes
Telephone	n/a		Required		n/a	n/a
Licensed Airport Manager	n/a	n/a	n/a		n/a	n/a

**Table A-1: Comparison of Criteria for General Use Airport Standards for 11 States (Right Half of Table)**

	MI	WI	KY	NC	SC	FAA
Runway Length	1800 ft	n/a	2500			per Critical Aircraft
Usable Width	35	n/a	60			per Critical Aircraft
Primary Surface	250	250	250			
Approach Path Slope	20:1	20:1	20:1	All Items	All Items	
Runway Protection Zone (RPZ)	250 x 20:1	250 x 1250	250 x 1250	per FAA	per FAA	
Approach/Departure Path Length	5000 ft	5000 ft	5000 ft	Standards	Standards	
Runway Safety Area	250 ft(L) x 100 ft (w)	n/a	n/a			
Runway Threshold	n/a	n/a	n/a			
<u>TURF RUNWAYS</u>						
Effective Runway Length	n/a	n/a	n/a			
Usable Width	50 ft	n/a	n/a			
Primary Surface	100 ft	n/a	n/a			
<u>LIGHTING</u>						
Runway End Identifier	per FAA	n/a	n/a			
Edge Lights	per FAA	n/a	n/a			
Lighted Beacon	per FAA	n/a	n/a			
Lighted Windssock	Required	n/a	n/a			
<u>MISCELLANEOUS</u>						
Segmented Circle for Traffic Patterns per FAA	Required	n/a	Required			
Runway Centerline to Taxiway Centerline	n/a	n/a	n/a			
Runway Centerline to Buildings	n/a	n/a	n/a			
Runway Centerline to Tie Down or Apron Area	n/a	n/a	n/a			
Windssock	Required	n/a	Required			
Runway Markings	Required	n/a	Required			
Service Facilities	Required	n/a	n/a			
Runway Grading	n/a	n/a	n/a			
Approach Zones Owned by Airport	n/a	n/a	n/a			
Fire Extinguisher	n/a	n/a	Required			
Grounding Cables for Fuel Area	Required	n/a	n/a			
Defect Free "Healthy" Fuel Hoses	n/a	n/a	n/a			
Tie Downs	Required	n/a	n/a			
Enclosed Public Parking	n/a	n/a	n/a			
Signage						
Statutory Regulation for Licensing Law	Yes	Yes	YES	NO	NO	
Telephone	Required	n/a	Required			
Licensed Airport Manager	Required	n/a	n/a			



**Table 2: Critical Requirements for General Use Airports**

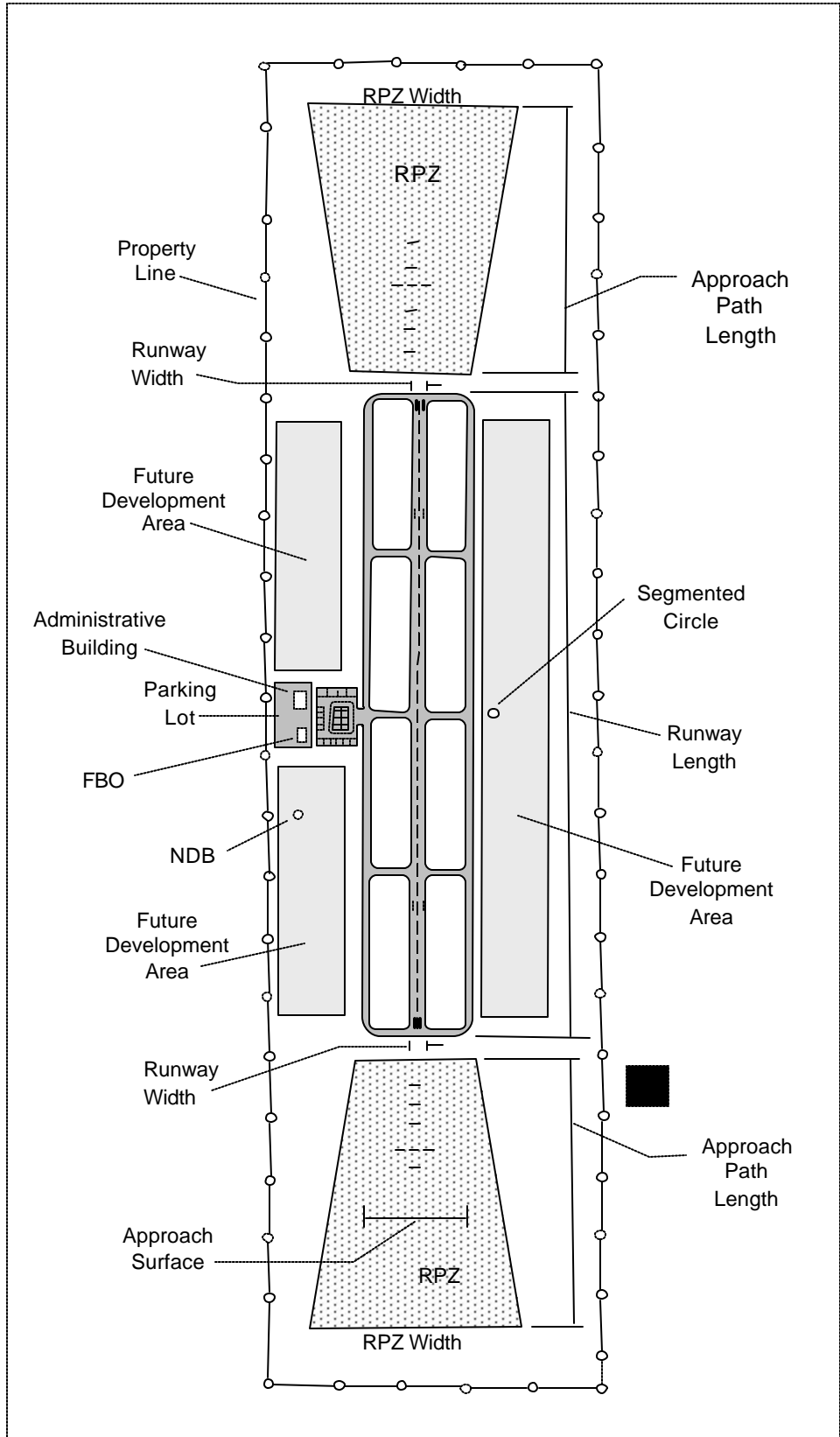
<b>Item</b>	<b>Critical Specification</b>	<b>State</b>
Runway Length	2500 ft	n/a
Usable Width	60 ft	n/a
Primary Surface	250 ft	250
Approach Path Slope	20:1	20:1
Runway Protection Zone (RPZ)	250 x 20:1	250 x 1250
Approach/Departure Path Length	5000 ft	5000 ft
Runway Safety Area	250 ft(L) x 200 ft (w)	n/a
Runway Threshold	200 ft	n/a
<u><b>TURF RUNWAYS</b></u>		
Effective Runway Length	2000 ft	n/a
Usable Width	75 ft	n/a
Primary Surface	250 ft	n/a
<u><b>LIGHTING</b></u>		
Runway End Identifier	per FAA	n/a
Edge Lights	per FAA	n/a
Lighted Beacon	per FAA	n/a
Lighted Windsock	Required	n/a
<u><b>MISCELLANEOUS</b></u>		
Segmented Circle for Traffic Patterns per FAA	Required	n/a
Runway Centerline to Taxiway Centerline	100 ft	n/a
Runway Centerline to Buildings	100 ft	n/a
Runway Centerline to Tie Down or Apron Area	125 ft	n/a
Windsock	Required	n/a
Runway Markings	Required	n/a
Service Facilities	Required	n/a
Runway Grading	2%	n/a
Approach Zones Owned by Airport	By 2005	n/a
Fire Extinguisher	2	n/a
Grounding Cables for Fuel Area	Required	n/a
Defect Free "Healthy" Fuel Hoses	Required	n/a
Tie Downs	Required	n/a
Enclosed Public Parking	Required	n/a
Signage	Required	
Statutory Regulation for Licensing Law	Yes	Yes
Telephone	Required	n/a
Licensed Airport Manager	Required	n/a

**Table 3: Analysis of Criteria with Numeric Values**

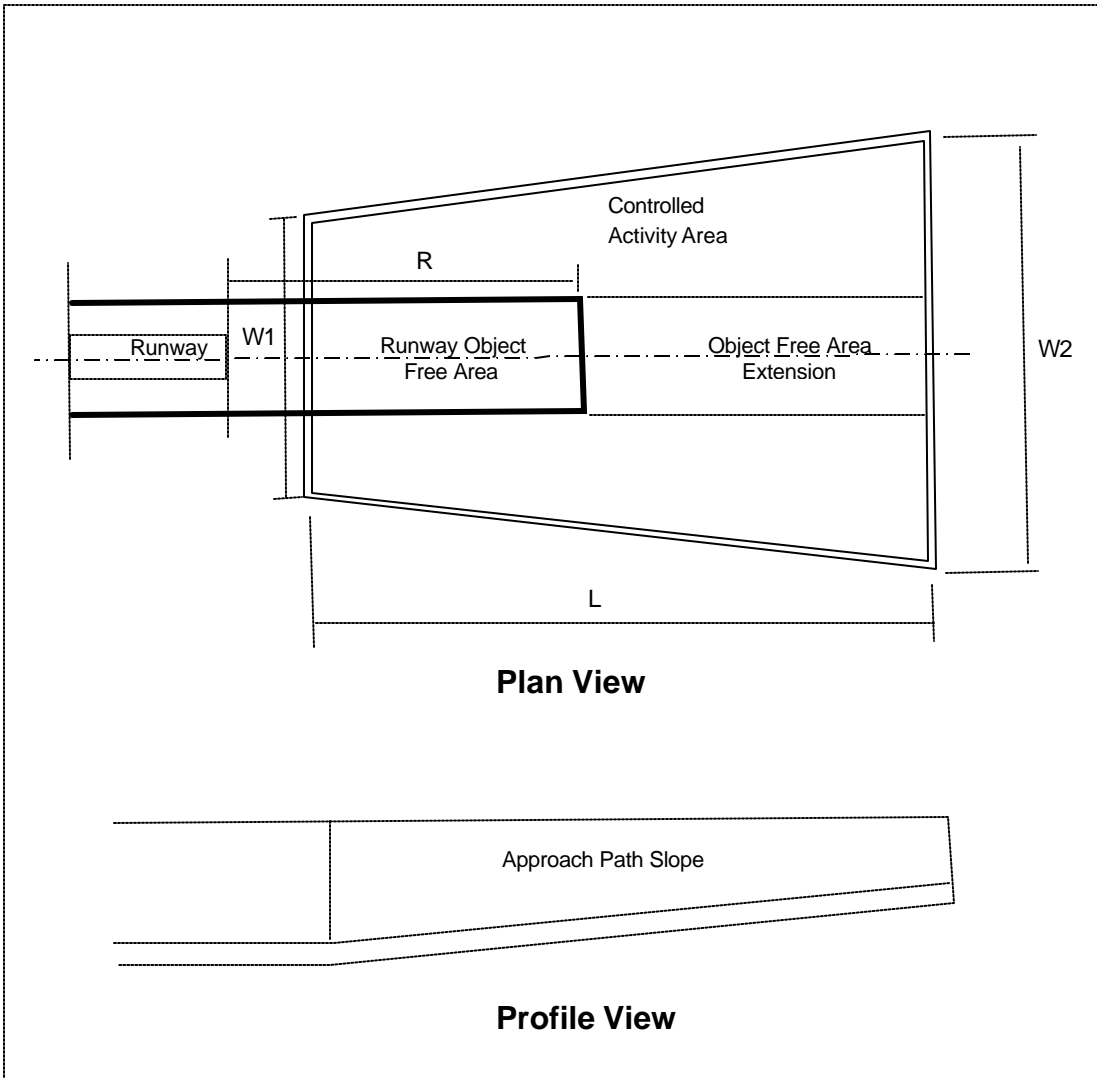
Topic	Alabama Criteria	Number Respondents w/ Numeric Criteria	Mean Value	Standard Deviation	Median Value	Max	Min	How Alabama Compares
Runway Length	2000 ft	7	2043	215	2000	2500	1800	mid range
Usable Width	60 ft	7	51	10	50	60	35	Max
Primary Surface	250 ft	8	216	50	250	250	130	Max
Approach Path Slope	20:1	8	19:1	2:1	20:1	20:1	15:1	Max
Approach Path Length	1000 ft	7	3571	1902	5000	5000	1000	Min
Runway Threshold	200 ft	4	150	58	150	200	100	Max
Runway Safety Area (length x width)	200 ft x 120 ft	6	157 x 153	66 x 61	150 x 135			Above Average
RPZ	250 ft x 10:1	8	216	50	250	250	130	
<u>Turf Runways</u>								
Runway Length	2000 ft	3	2000	0	2000	2000	n/a	Max
Usable Width	60 ft	4	61.25	10	60	75	50	Mid Range
Primary Surface	250 ft	3	200	87	250	250	100	Max

## **Appendix B**

### **Figures**



**Figure B1: Typical Airport Layout Plan**



**Figure B-2: Runway Protection Zone, Plan and Profile View**

**Appendix C**  
**List of Contacts**

## State Contact Information

1. Alabama  
Aeronautics Bureau of Department of Transportation  
1409 Coliseum Blvd  
Montgomery, Alabama 36130  
Phone: (334) 242-6820  
Fax: (334) 353-6540  
[eagerton@dot.state.al.us](mailto:eagerton@dot.state.al.us)
2. Florida  
Aviation Office  
Florida Department of Transportation  
605 Suwannee Street, MS 46  
Tallahassee, Florida 32399-0450  
Phone (580) 414-4500  
Fax (850) 922-4942  
[aviation.fdot@dot.state.fl.us](mailto:aviation.fdot@dot.state.fl.us)  
<http://www11.myflorida.com/aviation/laws.htm>
3. Georgia  
Carol Comer  
Office of Intermodal Programs  
276 Memorial Drive, SW  
Atlanta, GA 30303  
(404) 651-5207
4. Kentucky  
Scott Mitchell  
Kentucky Transportation Cabinet  
Division of Aeronautics  
125 Holmes Street  
Frankfort, KY 40622  
(502) 564-4480  
<http://www.kytc.state.ky.us/Aeronautics/home.htm>  
<http://www.lrc.state.ky.us/kar/602/020/030.htm>  
<http://www.lrc.state.ky.us/kar/602/020/120.htm>
5. Michigan  
Mark Noel  
Bureau of Aeronautics  
2700 East Airport Service Drive  
Lansing, Michigan 48906-2160  
(517) 335-9283  
<http://www.mdot.state.mi.us/aero/resources/aerocode.htm>
6. Mississippi  
Elton Jay  
Mississippi Department of Transportation  
401 North West Street  
Jackson, MS 39201  
(601) 359-7850

7. North Carolina

Marshal Sanderson  
1560 Mail Service Center  
Raleigh, NC 27699-1560  
Phone: (919) 840-0112  
Fax: (919) 840-9267  
msanderson@dot.state.nc.us

8. South Carolina

Bud Coward  
PO Box 280068  
Columbia, South Carolina 29228-0068  
(803) 896-6260  
<http://www.callsouthcarolina.com/Aeronautics/>

9. Tennessee

Tom Burgess  
Department of Transportation – Aeronautics Division  
P.O. Box 17326  
Nashville, TN 37217  
(615) 532-5872

10. Virginia

Mike Swain  
Virginia Department of Aviation  
(800) 236-3624 ext 114  
<http://leg1.state.va.us/000/reg/TOC24005.HTM>

11. Wisconsin

Bureau of Aeronautics  
P.O. BOX 7914  
4802 Sheboygan Ave.  
Madison, WI 53707-7914  
Phone: (608) 266-3351  
Fax: (608) 267-6748  
<http://www.dot.state.wi.us/dtid/boa/index.htm>