

SCOTTSDALE AIRPARK TAXILANE STANDARDS AUGUST, 1997

Introduction

This report was prepared to evaluate the maximum size of aircraft, with respect to wing span, that can currently be accommodated on taxilanes in the Scottsdale Airpark within the following off-airport developments:

Development	Airport Access Gate	Figure
Thunderbird Industrial Airpark #3	Greenway Taxilane, Gate 1	1
Thunderbird Industrial Airpark #2 & #3	Industrial Taxilane North, Gate 2	2
Thunderbird Industrial Airpark #1	Industrial Taxilane South	2
Thunderbird Academy	Church Access, Gate 3	3
Scottsdale Industrial Airpark #6	Gate 4	4
Scottsdale Industrial Airpark #7	Taxiway Charlie	5
North Scottsdale Airpark Units 1, 2 & 3	Gate 5	6
North Scottsdale Airpark Units 1, 2 & 3	Gate 6	7

This evaluation is based on the standards contained in Federal Aviation Administration (FAA) *Advisory Circular 150/5300-13, Airport Design*.

Background

The Scottsdale Airpark has grown and evolved over time. The standards for airpark buildings, hangars and staging areas have changed over the years. Buildings and structures exist today along the airpark taxilanes, which could not be built under the present standards contained in FAA A/C 150/5300-13 and the City Zoning Ordinance.

The airpark taxilane/access road (right-of-way) was initially designed to be 100 feet wide, according to current standards this would have accommodated a maximum wingspan of 66 feet along the airpark taxilanes. The taxilane Object Free Area (OFA) width equals 1.2 times the aircraft wingspan + 20 feet, per FAA AC150/5300-13. The OFA is defined in FAA AC150/5300-13 as "An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes." However, as the airpark developed, structures and objects were placed in the right-of-way. (Utility switching cabinets and other objects.)

Any objects within the airpark taxilane right-of-way would reduce the 66' maximum aircraft wingspan previously noted. Aircraft exceeding a designated wingspan may not impact these obstacles; however, the distance from wingtip to object would be less than the FAA 150/5300-13 standard. This is undesirable as the OFA is intended to enhance safety by having the area free of objects.

In the past there have been accidents along the airpark taxilanes involving aircraft coming into contact with fixed and movable obstacles. Additionally, there are regular occurrences of aircraft going opposite directions on the one-way taxilane creating a traffic conflict. Unlike on the airport, in the airpark there is no oversight by the FAA controllers, no pull-off aprons, and no other routes of egress to control and prevent these traffic conflicts. As traffic on the taxilane increases, there will be more of these ingress and egress conflicts.

Scottsdale Airport has requested that "as-built" conditions be analyzed with respect to conformance to FAA standards. Specifically, each segment of taxilane has been studied to determine its Object Free Area (OFA) and corresponding maximum aircraft size, by wingspan.

Staging Areas

Aircraft hangars built after 1985 under the I-1 ordinance provisions are required to have a staging area outside of the taxilane right-of-way, in order to allow aircraft to be removed from the hangar and not obstruct the right-of-way. Several hangar facilities were constructed along the taxilanes prior to the enacting of the 1985 I-1 ordinance and do not have adequate staging areas.

Of the 166 lots with access to an airpark taxilane, approximately 26 lots have staging areas, which do not allow aircraft staging outside the hangar without encroaching into the right-of-way. Approximately 62 lots have adequate or partial staging area outside of the right-of-way, and approximately 78 lots are undeveloped or have been developed without accommodations for aircraft. Many of these hangars with inadequate staging areas are in close proximity to one another, and operations at these locations regularly obstruct the right-of-way and passage on the taxilanes. The locations without staging areas have been marked on Figure 8.

Evaluation

The following is an evaluation of the maximum size (wingspan) of aircraft that can be accommodated on each off-airport taxilane. Limiting objects are noted separately for each area of taxilane.

Thunderbird Industrial Airpark #3

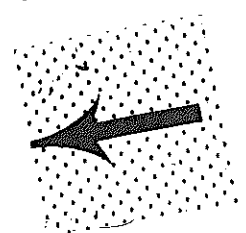
Greenway Taxilane (Figure 1)

1. Greenway Gate Entry (Item A)

Entry should be limited to aircraft with wingspans up to 63'. Gate 1, Greenway taxilane, has an opening of 96', limiting access to aircraft having wingspans up to 63'.

2. Greenway Taxilane (Main Line) (Item B)

This taxilane should be limited to aircraft with wingspans up to 52'. Greenway Taxilane has a 100' right-of-way (ROW) that could accommodate aircraft with a wingspan of up to 66 feet. However, objects within the ROW reduce this standard. Currently objects, electric switching cabinets, are located 41.5 feet from centerline on the north side of the ROW limiting the OFA to a total width of 83 feet.



3. Greenway Taxilane (South Extension) (Item C)

Greenway Taxilanes, southern extensions should have a maximum aircraft wingspan of 41'. The ROW is restricted at the turning radius due to its 90-degree alignment and not accounting for the radius of the taxilane. The centerline radius is striped at 75 feet, limiting aircraft to those having wingspans of 41 feet or less. By changing the centerline radius to 50 feet, aircraft having a maximum wingspan of 60 feet could utilize these (south extension) taxilanes.

Thunderbird Industrial Airpark #2 & #3 (Figure 2)

Industrial Taxilanes, Gate #2

1. Industrial Taxilane North (Item D)

This taxilane will accept aircraft having a wingspan of up to 62 feet due to the 98' OFA width of the gate opening at the intersection of A1 and Industrial Taxilane.

(Item D-1)

This taxilane OFA will accept aircraft having a wing span of up to 58' due to an electrical cabinet located 40' from centerline of taxilane.

(Item E)

A wall located at the intersection of East/West - North/South taxilane ROWs limits access to a maximum aircraft wingspan of 55 feet for traffic turning South to West.

(Item F)

This secondary taxilane accommodates a maximum aircraft wingspan of 38', due to electrical switching cabinets.

2. Industrial Taxilane South (Item G)

This taxilane accommodates a maximum aircraft wingspan of 50 feet given its 80 feet maximum OFA. The airport perimeter fence to the south at the turning radius obstructs the safety easement.

NOTE: Open hangar doors create additional obstructions within the taxilane OFA.

Thunderbird Academy (Figure 3)

Church Access, Gate #3

1. Item H-2

This taxilane is located at the southeast corner of the airport at gate 3. The OFA for this taxilane is unobstructed up to the point it enters the church property. This allows a maximum aircraft wingspan of 63'.

Item H

However, A tree located approximately 32' from centerline of taxilane extending branches to approximately 14' from centerline obstructs the entrance to the church property prohibiting any use by aircraft, per FAA AC 150/5300-13. Removal of the tree would allow unobstructed access by aircraft with wingspan of 63'.

Scottsdale Industrial Airpark #6 (Figure 4)

1. Gate 4 (Item I)

The gate at this taxilane has an opening of 97', limiting the maximum aircraft wingspan up to 64'. This taxilane is located on the East Side of the airport south of the air traffic control tower. At this time, there are no apparent obstructions on this taxilane.

Item I-2

The staging area for the tenants on this taxilane is oriented in such a manner that an aircraft positioned outside a hangar may obstruct the entire access to the taxilane.

Taxiway C "Charlie" (Figure 5) (Item J)

The maximum aircraft wingspan of this taxiway is 63 feet, due to the fence that parallels the taxilane, 48 feet from centerline.

Item J-2

The Automated Weather Observation System (AWOS), located at the south end of Taxiway Charlie creates an area that will not accommodate aircraft, per FAA AC 150/5300-13.

North Scottsdale Airpark Units 1, 2 & 3 (Figure 6)

1. Gate 5 (Item K)

Gate 5 has a maximum opening width of 98' limiting the maximum aircraft wingspan to 65'. This taxilane area has four separate designations. The main taxilane will include that portion aligned east and west from gate #5 to its termination west of Taxilane C. The remaining north/south taxilanes shall be assigned alphabetic designations increasing from east to west.

2. Main Taxilane (Item L)

The Main taxilane has a 100' ROW that could accommodate aircraft having wingspans up to 63'. However, due to several objects within the ROW, the maximum aircraft wingspan is 40', west of taxilane "B". The objects consist of electric cabinets and a fence surrounding the Non-Directional Beacon (NDB) located between taxilanes B and C, the critical obstruction is the fence located 36' from centerline of main taxilane. Note: electric cabinets are located 37' from centerline on both sides of the taxilane.

Note: NDB fence cannot be relocated without potentially making NDB unserviceable due to underground counterpoise.

Taxilane "A"(Item M)

The obstructions on this taxilane limit maximum aircraft having wingspans up to 53', due to electrical switching cabinets located on the west side 44' from centerline.

Taxilane "B"(Item N & N1)

The maximum aircraft wingspan for the first 200' is 48' due to an electrical switching cabinet (see N1). The remaining portion of said taxilane is limited to a maximum aircraft wingspan of 33'. The taxilane is obstructed at two locations. The first being an electrical cabinet approximately 200' north of the Main Taxilane intersection, restricting the maximum aircraft wingspan to 48'. The critical object is an electrical switching cabinet located on the East Side of the taxilane at the interior of the curve creating a limited maximum aircraft wingspan of 33'.

Taxilane "C"(Item O)

According to FAA (Federal Aviation Administration) Advisory Circular 150/5300-13 this taxilane cannot safely accommodate any aircraft listed per attachment (Aircraft Size by Wingspan) with the barricade in the present location. A vehicle barricade (cable and post) on the West Side, 21' from taxilane centerline, obstructs this taxilane.

3. Gate 6 Taxilane (Figure 7)

Item P

The 98' opening of this gate will accommodate a maximum aircraft wingspan of 65'.

Item Q

However, the electrical cabinets located on both sides of centerline limit aircraft to those having wingspans up to 48'.