777X Airport Compatibility Brochure

Specific airport compatibility questions concerning Boeing commercial aircraft should be forwarded to:

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Introduction

The 777X information in this brochure is intended solely for airport planning purposes. All information for the 777X models is preliminary and subject to change during development and testing.

The 777-9X is a derivative of the 777-300ER with a new composite wing. Since the larger wingspan places the 777X into ICAO Aerodrome Reference Code F, all 777X models include folding wing tips, allowing the 777X to operate in airport taxiway and apron/gate system as a Code E aircraft with wingtips folded.

The 777-8X is a shortened-body derivative of the 777-9X, retaining the same wingspan and folding wing tip. A freighter version is being considered using the -8X airframe and may be available 18-24 months after the -8X enters service.

The 777-9X is planned to be delivered in 2020, with the 777-8X to be delivered several years later.
777-9X general arrangement

The folded wing has the same wingspan as the 777-300ER

Dimensions shown are preliminary and may change during configuration development

* Estimate maximum tail height under normal loading conditions
777-8X general arrangement

The folded wing has the same wingspan as the 777-300ER

777-200LR (black) compared to the 777-9X

* Estimate maximum tail height under normal loading conditions
Dimensions shown are preliminary and may change during configuration development

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777-9X compared to the 777-300ER

- Compared to the 777-300ER, the 777-9X
  - Overall length is 2.9 m (9.4 ft) longer
  - Folded wingspan same, unfolded wingspan is 7 m (22.8 ft) wider
  - Horizontal stabilizer is 3.0 m (9.9 ft) wider
  - Wheelbase is 1.1 m (3.6 ft) longer
  - Distance from the nose to the nose landing gear remains the same
  - Engine to fuselage centerline is 1.0 m (3.3 ft) further outboard
  - Vertical tail max. height is < 1.0 m (< 3.0 ft) higher
  - Main landing gear width is 0.2 m (6 in) narrower
### 777X general characteristics

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>UNITS</th>
<th>777-9X</th>
<th>777-8X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Design Taxi Weight</td>
<td>LB</td>
<td>777,000</td>
<td>777,000</td>
</tr>
<tr>
<td></td>
<td>KG</td>
<td>352,441</td>
<td>352,441</td>
</tr>
<tr>
<td>Max Design Takeoff Weight</td>
<td>LB</td>
<td>775,000</td>
<td>775,000</td>
</tr>
<tr>
<td></td>
<td>KG</td>
<td>351,534</td>
<td>351,534</td>
</tr>
</tbody>
</table>

Dimensions shown are preliminary and may change during configuration development.
## 777X at today’s airports

<table>
<thead>
<tr>
<th></th>
<th>777-300ER (FT/M)</th>
<th>777-9X (FT/M)</th>
<th>777-8X (FT/M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wing Span, Wing Tips Extended</strong></td>
<td>N/A</td>
<td>235.4 / 71.8</td>
<td>235.4 / 71.8</td>
</tr>
<tr>
<td><strong>ICAO Code Letter</strong></td>
<td></td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td><strong>FAA Design Group</strong></td>
<td></td>
<td>VI</td>
<td>VI</td>
</tr>
<tr>
<td><strong>Wing Span, Wing Tips Folded</strong></td>
<td>212.8 / 64.8</td>
<td>212.8 / 64.8</td>
<td>212.8 / 64.8</td>
</tr>
<tr>
<td><strong>ICAO Code Letter</strong></td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td><strong>FAA Design Group</strong></td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td><strong>Overall Length</strong></td>
<td>242.3 / 73.9</td>
<td>251.8 / 76.7</td>
<td>229.0 / 69.8</td>
</tr>
<tr>
<td><strong>RFF Category (ICAO)</strong></td>
<td>9</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td><strong>ARFF Index (FAA)</strong></td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>

Dimensions shown are preliminary and may change during configuration development
777-9X parking at a 777-300ER gate

- No requirement to down-size adjacent gate
- At many gates increased length of the 777X can be accommodated by moving aircraft forward towards the terminal (additional space available in the front of aircraft nose)

Dimensions shown are preliminary and may change during configuration development
777-9X parking at a 777-300ER gate

- No requirement to down-size adjacent gate with FWT
- Expected ICAO wingtip separation standard change (in 2016) provides relief at gates that do not have service road aft of the parking limit line

Taxiway to Object Code E Separation (m)

Existing ICAO Code E Taxiway
Centerline to Object Separation
Wingtip Clearance - 15m

Proposed ICAO Code E Taxiway
Centerline to Object Separation
Wingtip Clearance - 11m*

* EASA adopted same separations
1/29/15 ED Decision 2015/001/R

Dimensions shown are preliminary and may change during configuration development
777-9X fuel connectors comparison with 777-300ER

Note: Dimensions shown are for outboard fuel connector. Only outboard fuel connector shown for illustration purpose.
777-9X door location comparison with 777-300ER

777-9X Parks at a 777-300ER Gate
Gate access – door 1 and 2 center

Door distance is measured from the nose tip to the centerline of the door

Dimensions shown are preliminary and may change during configuration development
777-9X servicing arrangement

Compatible with today’s 777 GSE (ground servicing equipment)

- Hydrant fuel truck
- Galley truck (fwd position)
- Lower lobe loader
- Electrical power*
- Tow tractor
- Passenger bridges
- Galley truck door 2
- Utility tug and pallet trailers
- Air conditioning truck*
- Air start truck
- Potable water truck
- Galley truck (aft position)
- Bulk cargo loader
- Utility tug and LD-3 trailers
- Utility tug and bulk trailers
- Cabin cleaning truck
- Lavatory service truck
- • AC
- • AS
- • AC

* Potable water, conditioned air, or ground power may be supplied from the passenger bridge. Ground power not required if APU is available.

Dimensions shown are preliminary and may change during configuration development

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777-8X servicing arrangement
Compatible with today’s 777 GSE (ground servicing equipment)

Dimensions shown are preliminary and may change during configuration development

* Potable water, conditioned air, or ground power may be supplied from the passenger bridge. Ground power not required if APU is available.
777-9X 180° turn capability

- U-turn width can be reduced by using differential braking and/or asymmetrical thrust
- Minimum widths are calculated based on data from available airport planning manuals – values may vary during operations

<table>
<thead>
<tr>
<th>ICAO Airplane Design Code</th>
<th>747-400</th>
<th>787-10 ¹</th>
<th>747-8</th>
<th>777-300ER</th>
<th>777-9X ¹</th>
<th>A340-600</th>
<th>A380-800 ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>180 turn width (m) max steering angle ³</td>
<td>51m</td>
<td>51</td>
<td>52 m</td>
<td>57 m</td>
<td>59 m</td>
<td>57 m</td>
<td>57 m</td>
</tr>
</tbody>
</table>

1. Preliminary
2. Boeing calculation using no differential braking, asymmetric thrust – current Airbus A380 planning manual value (50.91) includes differential braking and asymmetric thrust
3. Minimum widths do not take into account tire-edge clearance of 15 ft (4.5m) at both pavement edges, nor differential braking or asymmetrical thrust
4. 777-8X turn width will be less than the 777-300ER

Dimensions shown are preliminary and may change during configuration development
777-9X fillet requirement is similar to 777-300ER

Judgmental Oversteering permits adequate tire edge clearance on most existing fillets

Turn Center R=40m / 131ft

Less Critical

<table>
<thead>
<tr>
<th>Model</th>
<th>ICAO design code</th>
<th>Tire edge to turn center (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A340-600</td>
<td>E</td>
<td>38.4</td>
</tr>
<tr>
<td>A350-1000*</td>
<td>E</td>
<td>38.7</td>
</tr>
<tr>
<td>A380</td>
<td>F</td>
<td>39.0</td>
</tr>
<tr>
<td>777-9X*</td>
<td>E**</td>
<td>39.0</td>
</tr>
<tr>
<td>777-300ER</td>
<td>E</td>
<td>39.3</td>
</tr>
<tr>
<td>747-8</td>
<td>F</td>
<td>39.9</td>
</tr>
<tr>
<td>787-10*</td>
<td>E</td>
<td>40.8</td>
</tr>
<tr>
<td>747-400</td>
<td>E</td>
<td>41.8</td>
</tr>
</tbody>
</table>

* Preliminary
** Code E after exiting the runway
777-8X fillet requirement will be greater than the 777-300ER
### 777X landing gear footprint

Dimensions shown are preliminary and may change during configuration development.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>UNITS</th>
<th>777-9X</th>
<th>777-8X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Design Taxi Weight</td>
<td>LB / KG</td>
<td>777,000 / 352,441</td>
<td></td>
</tr>
<tr>
<td>Nose Gear Tire Size</td>
<td>IN</td>
<td>43 x 17.5 R17 (32PR)</td>
<td></td>
</tr>
<tr>
<td>Nose Gear Tire Pressure</td>
<td>PSI / KG/CM²</td>
<td>215 / 15.1</td>
<td></td>
</tr>
<tr>
<td>Main Gear Tire Size</td>
<td>IN</td>
<td>52 x 21 R22 (38PR)</td>
<td></td>
</tr>
<tr>
<td>Main Gear Tire Pressure</td>
<td>PSI / KG/CM²</td>
<td>229 / 16.21</td>
<td></td>
</tr>
<tr>
<td>Wheelbase (A)</td>
<td>FT-IN / M</td>
<td>106-1 / 32.3</td>
<td>93-10 / 28.6</td>
</tr>
<tr>
<td>MLG Truck Width (B)</td>
<td>IN / mm</td>
<td>55 / 140</td>
<td></td>
</tr>
<tr>
<td>MLG Truck Length (C)</td>
<td>IN / mm</td>
<td>57.2 / 145</td>
<td></td>
</tr>
<tr>
<td>MLG Track Length (D)</td>
<td>IN / mm</td>
<td>58.0 / 148</td>
<td></td>
</tr>
<tr>
<td>MLG Maximum Width (E)</td>
<td>FT-IN / M</td>
<td>35-7 / 10.9</td>
<td></td>
</tr>
<tr>
<td>MLG Maximum Tire Edge to Tire Edge width</td>
<td>FT-IN / M</td>
<td>41-10 / 12.8</td>
<td></td>
</tr>
</tbody>
</table>
Expected change to ICAO wingtip separation*

ICAO wingtip separation standard change from 15m to 11m (in 2016)
Supports 777X with FWT failure taxiing on Code E parallel taxiways

* ICAO change expected 2016. EASA adopted same separations 1/29/15 ED Decision 2015/001/R

Dimensions shown are preliminary and may change during configuration development
Expected change to ICAO wingtip separation*

ICAO wingtip separation standard change from 15m to 11m (in 2016) will allow 777X to extend wings with a Code E aircraft on adjacent dual taxiway runway entrance built to current separation criteria.

* ICAO change expected 2016. EASA adopted same separations 1/29/15 ED Decision 2015/001/R

Dimensions shown are preliminary and may change during configuration development.
777X Airport Compatibility Summary

- Airports and their regulators are delighted that Boeing is designing the 777X with airport compatibility in mind
- Airports appreciate that the folded wing will fit in today’s 777-300ER gates
- Expected reductions in ICAO taxilane/taxiway to object separations (2016) will provide relief for the additional -9X length; expected reductions in taxiway-taxiway separations aid in accommodating a rare FWT failure *
- Boeing will address airport procedures for FWT failure to fold procedures
- Boeing will work with airports as needed on: ground servicing, de-icing, dual runway end taxiway entrances, higher RFF category, alternates and ETOPS airports, Jet Bridge and Fuel Pit Connectivity, etc.

* EASA adopted these separations 1/29/15 ED Decision 2015/001/R