

Airside Infrastructure

Aircraft aprons, including their associated support network of taxiways and taxi-lanes, should be designed so that their layout does not impede the free flow of aircraft and ground service equipment.

SITUATION

Aircraft delayed on the ground, either on stand or while manoeuvring between stand and runway, can cause severe disruption to airlines' schedules with resultant cost penalties and unnecessary inconvenience for passengers.

Recurring delays over time will influence airlines' route viability decisions and passengers' willingness to patronize the airport in question again, particularly when transferring between flights

IATA POSITION

Aprons should be considered as part of the passenger terminal complex, with the layout closely tied to the supporting taxiway / taxi-lane system.

The capacity of the airside infrastructure system must be closely related to and stay one step ahead of peak seasonal demand, as all aircraft must have unrestricted access to their allotted parking position.

A high percentage of contact stands is required when an airline's strategy specifies short turn round times, good quality of service, short and reliable Minimum Connecting Times (MCTs) and when dealing with frequent adverse weather conditions. Designers should keep in mind that an airport is part of the airline network and, therefore, is linked to commercial objectives.

PLANNING GUIDELINES

Airside infrastructure systems comprise the following elements:

Aircraft aprons (parking stands)

- Aircraft parking positions adjacent to piers or satellites should be designed to accommodate a passenger boarding bridge, even if the boarding bridge is not initially installed. Air-bridge rotundas should be flexibly connected to the main building to allow for differing aircraft types in the future, and also to enable controlled passenger access to the apron, for remote apron bus transfers or to allow access on foot to aircraft stairs. Emergency exit regulations should also be accommodated
- Remote stands should be configured to allow aircraft to self manoeuvre, preferably straight through without the need to backtrack, but only where land availability permits, and assuming that remote positions will not become pier-served later in the life of the Master Plan
- Apron layouts should be determined with due consideration for the impact of jet blast, particularly in relation to ramp staff work areas and ground service equipment movement and storage

- Apron layouts should be configured to provide maximum flexibility in terms of the size and number of aircraft that can be accommodated, e.g. Multiple Aircraft Ramp System (MARS)
- Provision should be made for hydrant refuelling (should uplift volumes justify) and for fixed ground power and pre-conditioned air if it is economically justified
- Sufficient space should be reserved for cargo staging areas and for parking ground service equipment

Taxiways and taxi-lanes

- Taxiway to taxiway/taxilane and taxi-lane to object separation distances should conform to ICAO recommendations

Apron service roads

Access to the non-public airside road network must be restricted to service vehicles directly linked with aircraft handling activities

There are two possible locations for the service road, i.e. behind the aircraft or between the front of the aircraft stand and the terminal building. Each location has its advantages and disadvantages. Since a lot of operational activity tends to occur around the forward portion of the aircraft, a frontal service road is preferred.

Though not a recommended solution by IATA, it may in certain instances be more advantageous to locate the service road to the rear of the aircraft stands. In this case the service road should be very clearly marked and must not be allowed to infringe on apron taxiway operations. Proper clearances, as defined in ICAO Annex 14, between aircraft, service roads and taxiway / taxi-lane centerlines must be respected. Rear service roads will involve traffic coming off the service road past the aircraft wings and engines when approaching the front of the aircraft. Movement around aircraft wings, etc. must be undertaken with extreme caution.

The following should also be taken into account:

- Adequate room must be provided for push-back tractors to manoeuvre, i.e. the tractor must not encroach onto the service road
- Parking should not be permitted on service roads

RELATED ICAO DOCUMENTATION

Annex 14, Vol. 1, Aerodrome Design and Operations