UNIT 8 – AERODROMES

AIRPORT CATEGORIES

Airports are categorised by type of aerodrome reference code, approach category and rescue and firefighting services category (RFFS). These are useful to both the operator and the airfield when establishing or evaluating operations.

AERODROME REFERENCE CODE (ICAO)

The Aerodrome Reference Code (ICAO) consists of a number and letter code. The first number is the between 1 and 4 which denotes the runway length - commercial operations are all category 4 (greater than 1800m). The second letter is (A to F) determines the maximum allowable wing span in metres. An example for a Boeing 777 series would be "4E".

Below is a table showing the first and second elements for determining the ICAO Aerodrome Reference Code.

First Element			
Code (number)	**Aeroplane reference field length**		**Typical aircraft type**
1	< 800 m		Piper PA-44, DHC-6 Twin Otter
2	800 m to <1200 m		Dash-8, ATR-72
3	1200 m to <1800 m		Canadair Regional Jet
4	>1800 m		Airbus A321, Boeing 747
Second Element			
Code (letter)	**Wingspan**	**Outer main gear wheel span**	**Typical aircraft type**
A	< 15 m	< 4.5 m	Piper PA-31, Cessna 206
B	15 m to < 26 m	4.5 m to < 6 m	CRJ-200, DHC-6 Twin Otter
C	24 m to < 36 m	6 m to < 9 m	Boeing 737, Airbus A320 series
D	36 m to < 52 m	9 m to < 14 m	Airbus A300, Boeing 767
E	52 m to < 65 m	9 m to < 14 m	Boeing 777, Airbus A330
F	65 m to < 80 m	14 m to < 16 m	Airbus A380, Boeing 747

Table 5 – Aerodrome Reference Code table.

APPROACH CATEGORY

The approach category is a grouping of aircraft based on reference landing speed (VREF), if specified, or if VREF is not specified, then 1.3 VSO (the stalling speed or minimum steady flight speed in the landing configuration) at the maximum certificated landing weight. The table below indicates the specified range of handling speeds (IAS in Knots) for each category of aircraft to perform the manoeuvres specified as stipulated by ICAO.

VREF (Reference Landing Speed) is means the speed of the aeroplane, in a specified landing configuration, at the point where it descends through the landing screen height in the determination of the landing distance for manual landings.

Screen height is 35 feet for class A airplanes and 50 feet for class B airplanes and is defined as the height above ground of an imaginary screen that the aircraft would clear when taking off or landing, in an unbanked attitude and with the landing gear extended.

Aircraft Category	V_{AT}*	Range of speeds (Initial approach and reversal or racetrack procedures)	Range of final approach speeds	Maximum speeds for circling	Maximum speeds for intermediate missed approach segments	Maximum speeds for final missed approach segments	Typical Aircraft in the specified category
A	<91	90 - 150 (110**)	70 - 100	100	100	110	Small Single Eng.
B	91 – 120	120 - 180 (140**)	85 - 130	135	130	150	Small Multi Eng.
C	121 - 140	160 - 240	115 - 160	180	160	240	Airliners
D	141 - 165	185 - 250	130 - 185	205	185	265	Large jet/Military
E* **	166 - 210	185 - 250	155 - 230	240	230	235	Special Military
H	N/A	70 - 120	60 - 90	N/A	70-90	70 - 90	Helicopters

*V_{AT} — Speed at threshold based on 1.3 times stall speed in the landing configuration at maximum certificated landing mass.
* Maximum speed for reversal and racetrack procedures.
*** Category E contains only certain Military Aircraft and is usually not included on commercial aeronautical charts.

Table 6 – Approach Category (ICAO)

RESCUE AND FIRE FIGHTING SERVICES

Rescue and fire fighting services refer to the services that are provided at an aerodrome in terms of rescue and fire fighting capabilities. This category refers to the incident response readiness, risk mitigation and rescue and evacuation of passengers and crew involved in an incident or accident either on or off airfield.

ICAO has prepared guidance for implementing the necessary requirements to ensure uniformity across all member states. Annex 14 stipulates the requirements for member states in as far as equipment, response time, training and capability based on the size of the aircraft (and passenger numbers). The number of movements also affect the index upgrading or downgrading of a code. At any time there is a downgrade, a NOTAM is issued on a temporary basis.

Aerodrome Category Index (ICAO)	Minimum number of rescue and firefighting vehicles	Airplane Length (m)	Maximum Fuselage Width (m)
1	1	0 < L < 9	< 2
2	1	9 ≤ L < 12	< 2
3	1	12 ≤ L < 18	< 3
4	1	18 ≤ L < 24	< 4
5	1	24 ≤ L < 28	< 4
6	2	28 ≤ L < 39	< 5
7	2	39 ≤ L < 49	< 5
8	3	49 ≤ L < 61	< 7
9	3	61 ≤ L < 76	< 7
10	3	76 ≤ L < 90	< 8

Table 7– Aerodrome Rescue and Firefighting Services index (ICAO)