

The Airport Operations Manual



Norman Ashford, H.P. Martin Stanton, Clifton A.
Moore, Airport Operations, pp446-466, 1997



Outline

- The Function of the Airport Operations Manual
- A Format for the Airport Operations Manual
- Distribution of the Manual
- U.S. Example: FAA Recommendations on the Airport Certification Manual
- United Kingdom Example: CAA Recommendations on Aerodrome Manual





The Function of the Airport Operations Manual

- **Operations Manual can provide such a variable tool for management**
- **In most countries the primacy of safety is recognized by a requirement that airports must be licensed before they can be used for air transport.**
- **As part of licensing process, airport might be required to produce and maintain an airport manual**



A Format for the Airport Operations Manual

1. Introduction

2. Technical administration

3. Airport characteristics

4. Operational procedures



A Format for the Airport Operations Manual (cont.)

1. Introduction

- Purpose and Scope of Manual
- Format and Table of Contents
- Licensing Bodies
- Type of License, Terms, and Conditions of Operation



Scope of Manual

- **Rescue and fire-fighting services (RFFS)**
- **Airport security plan**
- **Airport lighting**
- **Meteorological Services**
- **Air Traffic Control Services**
- **Communications and nav aids**
- **Signals and marking**
- **Access provision**
- **Passenger terminal**
- **Cargo handling facilities**
- **General Aviation**
- **Typical appendices**





2. Technical administration

(1) Status

- Legal identification, addresses of airport, and licensee.
- Operating hours.
- Latitude and longitude of airport, grid reference, location of airport reference point, elevations of aprons and runway thresholds, airport reference temperature.
- Runway lengths, orientation.
- Description of aprons and taxiways.
- Level of rescue and fire-fighting service protection.
- Level of air traffic control.
- Level of airport radio and nav aids.
- System of aeronautical information service available.
- Organizational structure of airport administration: names and addresses of key personnel.
- Airport movement statistics — passengers, operations, airlines served, based aircraft, aircraft type served.
- Airport statistics — staff numbers, visitors, physical areas of facilities by type.



2. Technical administration (cont.)

(2) Administrative procedures

- Procedures for complying with requirements relating to accidents and incidents.
- Procedures for promulgation of operational status of facilities.
- Procedures for recording aircraft movements.
- Procedures for control of construction affecting safety of aircraft.
- Procedures for control of access to airport and control of vehicles while on airport operational areas.
- Procedures for control of apron activities.
- Procedures for reception, storage, quality, control, and delivery of aviation fuel.
- Procedures for the removal of disabled aircraft.





3. Airport characteristics

- Plans showing the general layout of the airport, preferably at some scale in the region of 1:2500. Elements to be shown include the airport reference point; layout of runways, taxiways and apron; airport lighting including VASIs and obstruction lighting; location of navigational aids within the runway strips; location of terminal facilities and fire-fighting rescue facilities.
- Data necessary for INS equipped aircraft, i.e., INS coordinates for each gate position.
- Description, height, and location of obstacles that infringe on the protected surfaces.
- Survey data necessary for the production of the ICAO Type A chart, which provides an aircraft operator with the necessary data to permit compliance with performance limitations within the runway, runway strip, clearway, stopway, and takeoff areas.



3. Airport characteristics (cont.)

- Data for and method of calculation of each of the airport runway cleared distances (TORA, EDA, TODA, and LDA) with elevations at the beginning and end of each distance. Where reduced declared distances are accepted due to temporary objects infringing on the runway strip, transitional approach or takeoff surfaces, the method of calculating the distances should be indicated.
- Details of the bearing strengths and surface conditions of runways, taxiways, and aprons.
- Temporary markings of displaced thresholds.



4. Operational procedures

- Ground movement control procedures — rules of access, right-of-way, and vehicle obstruction marking. Structure of control and duties
- Responsibility and procedures for routine operations on apron, including marshaling, docking stand allocation, aircraft servicing
- Routine inspection procedures of movement areas, including runway strips, runways, aprons, taxiways, grassed areas, and drainage.
- Procedures for measurement and notification of runway surface condition — responsibility for reporting, measurement of runway braking action, depth and density of snow and slush, frequency of reporting.



4.Operational procedures (cont.)

- Details of the airport snow plan, including categories of snow warnings: preliminary and final with duration and intensity forecasts; organization and chain of responsibility; standing instructions for procedures in snow conditions; equipment including maintenance and care; training of personnel; procedure or clearing runways, taxiways, aprons, airport roads, and domestic areas; hiring additional equipment.
- Procedures for the general cleaning and sweeping of runways, taxiways, and aprons.
- Details of bird hazard control plan including methods of control: technical measures, killing, and environment modification. Treatment of runways, taxiways and aprons, grassland, built-up areas and special areas, such as garbage dumps. Control of hazard outside airport boundaries
- Procedures for determining the availability of grass runways after heavy rains or flooding.





Distribution of the Manual

- Airport director
- Deputy director
- Assistant director operations
- Assistant director engineering
- Assistant director administration
- Chief fire officer
- Chief air traffic control officer
- Airline station managers of based airlines





U.S. Example: FAA Recommendations on the Airport Certification Manual

■ Suggested airport certification manual—FAA format

1. Introduction

- (1) Name and location airport
- (2) Mailing address of airport manager or operator

2. Personnel

- (1) List of key personnel and job titles
- (2) Brief description of functions
- (3) Organizational chart showing operational lines of succession

3. Airport familiarization

- (1) Brief description of airport and primary activities (e.g., named carriers/equipment)
- (2) Maps and charts showing such things as general layout of the airport terrain features and runway and taxiway system





Suggested airport certification manual — FAA format

4. Pavement areas

- (1) Movement areas available for air carriers with their safety areas; use of a map or diagram is recommended
- (2) Describe the procedures for maintaining the paved and safety areas

5. Marking and lighting

- (1) Describe runway and taxiway systems of identification
- (2) Indicate which types of operable lighting systems are installed on surfaces used by air carrier aircraft.
- (3) Describe the markings systems in use at the airport (e.g., runway markings, taxiway centerline and edge markings)
- (4) Indicate the location of each obstruction required to be lighted or marked within the airport's area of authority
- (5) Describe and list the procedures for maintaining the marking and lighting systems





Suggested airport certification manual – FAA format

6. Snow and ice control

- (1) Describe equipment available for snow and ice removal and indicate whether an airport or external municipality/contractor
- (2) Specify the selection and application of approved materials for snow and ice control to avoid possible engine ingestion
- (3) Provide details of the snow and ice control plan

7. Aircraft rescue and fire fighting

- (1) Specify the airport's fire-fighting index and name the largest applicable aircraft
- (2) Provide a list with descriptions of the fire-fighting and rescue equipment and agents to be used to meet the certification requirements, including the results of the response time as determined by test runs.
- (3) Describe methods of alerting RFF crews to an emergency





Suggested airport certification manual – FAA format

- (4) Show on a grid map the location of the fire station(s) on the airport and primary traffic routes for the fastest response to all air operations areas; also show the designated emergency access roads
- (5) Specify the operational requirements relating relating to on-airport and off-airport responses to emergencies
- (6) Name personnel authorized to dispatch (off airport), reduce and recall
ARFF resources
- (7) Procedures for notifying air carriers of any changes to normal complement of ARFF unit
- (8) List the channels of communication available to the ARFF unit
- (9) List the describe RFF training programs





Suggested airport certification manual – FAA format

8. Handling and storing of hazardous substances and materials

- (1) Identify the location of personnel designated to receive and handle hazardous articles and materials (in those cases where the airport operator acts as a cargo handling agent)
- (2) Describe the controls and procedures in use to assure that the cargo shipped can be handled and stored safely, including any special handling procedures required for safety.
- (3) Indicate the location of the special areas on the airport for the storage of flammable liquids and solids, corrosive liquids, compressed gases, and magnetized or radioactive materials.
- (4) List the procedures and devices used for safely storing, dispensing, and otherwise handling fuel, lubricants, and oxygen on the airport (other than articles and materials that are, or are intended to be, aircraft cargo) including:





Suggested airport certification manual – FAA format

9. Traffic and wind direction indicators

- (1) Indicate the location(s) of wind direction indicators on the airport,
- (2) Arrangements for displaying and maintaining signals and markings, both permanent and temporary

10. Airport emergency plan

- (1) The Airport Certification Manual must include a comprehensive emergency plan

11. Self inspection program

- (1) Details of self inspection program, including frequency, personnel training, information dissemination, and corrective action procedures for unsafe conditions
- (2) Appropriate checklists for: continuous surveillance, periodic condition evaluation, special inspection





Suggested airport certification manual – FAA format

12. Ground vehicles

- (1) Indicate on a map of the airport the limits of access to movement areas and safety areas
- (2) Designate those ground vehicles approved to have access to the movement area and safety areas, and the procedures necessary for their safe and orderly operation
- (3) Detail the arrangements made for communications with and control of ground vehicles operating in movement areas and safety areas





Suggested airport certification manual – FAA format

13. Obstructions

- (1) Identify each object within the area of authority that is identified in Federal Regulations, Part 77
- (2) Describe the marking and lighting of each of the obstructions
- (3) Provide an airport layout plan locating all lighted obstructions that fall within the airport authority, keyed to a narrative description that also identifies any parties, in addition to the airport authority, responsible for their maintenance.

14. Protection of nav aids

- (1) Designate the airport department responsible for surveillance of all proposed construction of facilities on the airport to avoid any possible derogation of a nav aid
- (2) Describe procedures to be used to provide protection or assistance to the owner (if another person) for the protection of nav aids located on the airport
- (3) Procedures and assignments for security patrols, fence maintenance, etc. (where this is judged to be necessary due to the placement of nav aids)





Suggested airport certification manual – FAA format

15. Public protection

- (1) Detail the procedures, devices or obstacles used to prevent inadvertent entry of persons or vehicles into any area containing hazards for the unwary trespasser
- (2) Provide an airport layout plan indicating the type and location of fencing and fence gates also showing those areas restricted from use by the general public



16. Wildlife hazard management

- (1) Indicate the nature of the existing conditions on the airport and the control techniques to be employed if a wildlife hazard exists, or show why there is no wildlife hazard problem
- (2) If a problem exists, include a wildlife hazard management plan





Suggested airport certification manual – FAA format

17. Airport condition reporting

- (1) Describe the procedures used for identifying, assessing, and disseminating information to air carrier users of the airport
- (2) Describe the various internal means of communication that may be available for urgent dissemination of information
- (3) Document any system of information flow agreed with airline tenant(s)
- (4) Describe the conditions and procedures for issuing NOTAMS

18. Identifying, marking, and reporting construction and other unserviceable areas

- (1) Describe how construction areas and unserviceable pavement and safety areas are marked and lighted
- (2) Describe the provisions made for identifying and marking any areas on the airport adjacent to navaids that, if transversed, could cause emission of false signals or failure of the navaid





Suggested airport certification manual – FAA format

- (1) Describe how construction equipment and construction roadways on the airport are to be marked and lighted when on or adjacent to aircraft maneuvering areas
- (2) Describe procedures for the routing and control of equipment, personnel, and vehicular traffic during periods of construction on the aircraft maneuvering areas of the airport.

19. Non-complying conditions

- (1) Conditions under which air carrier operations will be halted
- (2) Designate the airport department to be informed if someone discovers an uncorrected, unsafe condition on the airport





United Kingdom: CAA Recommendations on Aerodrome Manual

- **Suggested aerodrome manual – CAA format**
 - ➔ **Technical administration**
 - ➔ **Aerodrome characteristics**
 - ➔ **Operational procedures**
 - ➔ **Rescue and fire-fighting services (RFFS)**
 - ➔ **Medical**
 - ➔ **Lighting**
 - ➔ **Signals and markings**
 - ➔ **Air traffic services**
 - ➔ **Communications and nav aids**

