

CHAPTER 20

Evaluation of the Operations Manual

1.0 PURPOSE

1.0.1 This Chapter contains discussions of selected topics that FOIs should look for when evaluating an operator's OM, and which may be required by the operator's initial and final compliance reports.

2.0 REFERENCES

2.1 Regulation 9.3.1.2 of the Nigeria Civil Aviation Regulations.

2.2 CHECKLIST: [CL: O-OPS020B](#), [CL: O-OPS20C](#)

3.0 CONTENTS OF OPERATIONS MANUALS

3.1 Regulation 9.3.1.2 of the Nigeria Civil Aviation Regulations specifies topics that must be addressed in an operator's Operations Manual (OM). The operator's OM must contain the duties and responsibilities for each category of employee.

3.2 This manual must also provide sufficient policy, direction, and guidance to its employees for the safe and efficient performance of their duties.

3.3 In addition, an operator's OM must address the policies, systems, and procedures necessary to comply with the operations specifications (OpSpecs) provisions and safe operating practices.

4.0 OPERATOR MANAGEMENT STRUCTURE

4.1 When evaluating an operator's OM, Flight Operations Inspectors (FOI) must ensure that the operator's management structure is included in the OM, and that it meets the following guidelines:

4.1.1 **Management Structure.** The OM must contain a description of the operator's management structure as it pertains to flight operation activities. Organizational entities, areas of responsibility, and titles of key management positions must all be identified in the management structure. This description should contain information on how the flight operation management structure interfaces with the airworthiness management structure and the responsibilities of both. Organizational charts and diagrams may also be useful in showing the relationship between operational units within the company;

4.1.2 **Names of Management Personnel.** The names of the individuals filling required management positions must be listed in the OM. An acceptable way for the operator to meet this requirement is to include a copy of his OpSpecs in the manual. The Authority may approve management structures and titles different from those specified in Regulation 2.2.2 of Part 9 of the Nigeria Civil Aviation Regulations.

5.0 AUTHORIZED OPERATIONS

5.1 When evaluating an operator's OM, FOIs must ensure that the operator's authorized operations are included in the operator's OM, and that they meet the following guidelines:

5.1.1 Clear Descriptions of Authorized Operations

a) The OM must contain clear descriptions of the types and kinds of operations that the operator is authorized to conduct;

- b) The OM must prohibit those operations which a flight crew could possibly conduct but which the operator is specifically prohibited from conducting by the OpSpecs;
- c) The OM must contain information on the authorized areas of en-route operation in which flights may be conducted, including the types of aircraft authorized, crewmember complements, and any special en-route and instrument approach procedure authorizations or requirements. One way an operator may describe the types and kinds of authorized and prohibited operations is to include a copy of the operator's OpSpecs in the OM. Since the OpSpecs is designed to address a variety of situations and is not easily understandable as it applies to specific operational circumstances, FOIs should encourage operators to extract the applicable information and incorporate it in the OM;
- d) Clearly written direction and guidance on how to comply with authorizations and limitations should also be included;
- e) It is acceptable for operators to contract a charting and publishing service (such as Jeppesen/Sanderson) to prepare manual material concerning these authorizations and limitations. In these cases, the charting and publishing service's product is considered to be a part of the operator's OM. FOIs must review this portion of the operator's OM as well as all other portions;

5.1.2 Flight Operations Policies, Methods, and Procedures

- a) Flight operations policies, methods, and procedures may be located in either the OM, or in a section of the OM such as an aircraft operating information ;or company aircraft operating information manual (AOIM).
- b) When an operator operates a variety of aircraft, it may be preferable for the flight operations policies, methods, and procedures that is common to all aircraft to be published in the OM instead of each AOM;
- c) Crew members are required to comply with the flight operations policies, methods, and procedures, regardless of whether they are published in the OM or the AOIM. Therefore flight operations policies, methods, and procedures should be written in directive language, and provide specific operational criteria;
- d) An example of a flight operations policy statement that does not provide a clear directive or specific operational criteria is as follows: "Use caution when arriving or departing a terminal area when thunderstorms are present;" An example of a flight operations policy statement that is clearly directive and that
- e) provides specific operational criteria is as follows: "Takeoffs and landings shall not be attempted when thunderstorms are within 3 miles of the airport or the takeoff or arrival path."

6.0 MASS AND BALANCE PROCEDURES

6.1 When evaluating an operator's OM, FOIs shall ensure that an operator's mass and balance procedures are included in the operator's OM, and that they meet the following guidelines:

6.1.1 Placement of Mass and Balance Procedures.

- a) Each type of aircraft used by the operator may require a separate mass and balance procedure;
- b) In such cases, it may be appropriate for the operator to place the mass and balance procedure to be used by flight crew in the AOIM and the procedures to be used by other flight operations personnel in sections of the OM;
- c) If the operator develops a single mass and balance procedure for all aircraft operated, it may be appropriate for the operator to place the procedure to be used by flight crew and other flight operations personnel in the OM;

- d) An operators may develop his own mass and balance procedures or use the procedures furnished by aircraft manufacturers;
- e) FOIs should confirm that operators have a copy of Advisory Circular NCAA- AC- OPS006.

6.1.2 The approval of mass and balance procedures is granted in Part E of the OpSpecs.

- a) Reference to the OpSpecs may be made in the OM, however the reference shall not be used instead of a detailed description of the procedures to be used by flight operations, ground handling, and flight crew personnel;
- b) FOIs must ensure that the information and guidance in the operator's OM is consistent with that in the MCM;
- c) The mass and balance procedures described in the operator's manuals should normally address the following topics:
 - (i) Procedures for complying with mass and balance limitations for each type of aircraft;
 - (ii) For air operators procedures for ensuring that the empty mass and centre of gravity of each aircraft is determined by actually weighing the aircraft as per Part 5 of the Nigeria Civil Aviation Regulations;
 - (iii) Procedures for determining the mass of passengers, crew, cargo, and baggage;
 - (iv) Procedures for making the centre of gravity calculations including loading schedules or other approved methods, if applicable;
 - (v) Procedures for the completion and disposition of load manifests and mass and balance records;
 - (vi) Procedures for loading the aircraft.

7.0 OPERATIONAL CONTROL

7.1 When evaluating an operator's OM, FOIs must ensure that an operator's operational control procedures are included. The procedures, duties, and responsibilities of flight crew, operational control and management personnel must also be described. Furthermore, the OM must contain staffing requirements for operational control personnel during periods of time that flights are operational. When training and operational control requirements for operational control personnel are not contained in a training and qualification document, they must be listed in the OM.

7.2 The FOI must ensure that the following requirements are met:

7.2.1 **Flight Monitoring Systems** - Large Aircraft. The description of the operational control system used by air operators conducting schedule flights of more than two hours duration, ETOPS, MNPS, RVSM or RNP Type operations must be comprehensive.

- a) The OM must contain flight dispatch procedures as well as flight monitoring procedures;
- b) The interrelation of flight dispatch, crew scheduling, and airworthiness control must be outlined in detail;
- c) The communication facilities to be used for operational control purposes, procedures to be used with ATC, and methods for handling delayed flights, must all be addressed;
- d) Procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions must also be covered in the OM;

- e) The procedures to be used to operate unscheduled or charter must be outlined if the operator conducts these kinds of flights.
- f) The procedure and system to be used for aircraft tracking and location of an aeroplane in distress must be outlined in the OM.

722 Flight Following Systems. The description of the operational control system used by for air operators for scheduled or unscheduled flights of less than two hours duration must contain the flight release and flight monitoring procedures to be used by flight crew, operational control and management personnel:

- a) The interrelation of flight crews, persons authorized to release flights, and airworthiness control personnel must be outlined;
- b) The communication facilities to be used and the procedures for using these facilities must also be covered in the OM;
- c) OMs must contain procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions;
- d) The OpSpecs are required to specify the flight following system and the location of the flight following centres.

723 Small Operation. The description of the operational control system used by small operators must, as a minimum, contain a list of the names and titles of the personnel who are authorized by the operator to exercise operational control:

- a) If the operator does not establish a flight monitoring system, the OM must contain directions to flight crews for filing ATC flight plan for each flight conducted;
- b) If a flight monitoring system is established, the OM must contain an outline of the procedures which provide the operator with at least the information included in a VFR flight plan for each flight operated;
- c) The OM must also contain an outline of the procedures which provide the operator with information on the location, date, and estimated time for re- establishing radio or telephone contact if flights are conducted in areas where such communications cannot be maintained with the operator;
- d) The flight locating system must also be provided for timely notification to an ATC facility or a search and rescue facility when an aircraft is overdue or missing;
- e) The OM shall also contain a description of the procedures for retaining flight location information until a flight has been completed;
- f) If an operator uses a flight control system more sophisticated than the basic requirements of the regulation, the OM shall contain a description of the system and procedures actually used.

8.0 FLIGHT PLANNING

- 8.1** When evaluating an operator's OM, FOIs shall ensure that an operator's flight planning procedures are included.
- 8.2** The direction and guidance for flight planning must be comprehensive and address the responsibilities of both flight control and flight crew personnel.
- 8.3** The OM must contain a discussion of weather minima, special airports, and other special requirements such as drift-down, re-release, and diversion contingencies.

8.3.1 AERODROME OPERATING MINIMA

- ✓ Operating minima to be included for every airfield used regularly in respect of take-off, landing and visual manoeuvring
- ✓ Runways NOT to be used to be clearly indicated
- ✓ Conditions for commencing a flight
- ✓ Conditions for commencing/continuing an approach
- ✓ Definitions and documentation of:
 - ✓ Decision Height
 - ✓ Approach to landing
 - ✓ Circling approach procedures
 - ✓ RVR, etc.
- ✓ Minima for pilots-in-command with limited experience on type
- ✓ Take-off and landing when an RVR reported
- ✓ Take-off and landing when RVR is reported from more than one position on the runway
- ✓ Instructions concerning landing in shallow fog
- ✓ Alternate for each intended destination to be specified
- ✓ General guidance concerning selection of alternate aerodrome
- ✓ Guidance concerning selection of "return" alternate
- ✓ Instructions concerning use of return alternate — weather below landing minima
- ✓ Minima for aerodromes without approach aids
- ✓ Special minima for non-public transport flights
- ✓ Special rules for aircraft with performance category C, D or E
- ✓ Calculation of in-flight visibility for manoeuvring
- ✓ Relationship between RVR and DH
- ✓ Conversion of reported MET visibility to RVR

8.4 Some operators may elect to place the flight planning procedures in the AOM and the operational control procedures in a dispatch or flight control user manual. **Notices to Airmen (NOTAM) and Pilot Reports (PIREPs)**

8.5 When evaluating an operator's OM, FOIs shall ensure that procedures for the acquisition of NOTAMs and PIREPs and for the distribution of these NOTAMs and PIREPs to applicable personnel are included. The OM should also contain a description of the procedures for obtaining applicable NOTAMs that are only distributed to a local area.

8.5.1 PIREP

8.5.2 A Pilot Report or PIREP is a report of the actual weather conditions as encountered by an aircraft in flight. These reports are transmitted by radio to an appropriate ground station for dissemination.

8.5.3 Hazardous weather exists in many forms inclusive of turbulence, in-flight icing and thunderstorms. Pilots encountering any of these phenomena can contribute to the safety of flight for other aircraft by reporting the time, location and intensity of the encountered threat.

8.5.4 PIREPs are encouraged in virtually all airspace. In some parts of the world, air traffic facilities are required to solicit PIREPs when any of the following conditions are reported or forecast:

- a) ceilings at or below 5,000 feet
- b) visibility at or below 5 miles (surface or aloft)
- c) thunderstorms and related phenomena
- d) icing of light degree or greater
- e) turbulence of moderate degree or greater
- f) wind shear
- g) reported or forecast volcanic ash cloud

- 8.5.5 Pilots are urged to cooperate and promptly volunteer reports of these conditions and other atmospheric data such as:
- cloud bases, tops and layers
 - flight visibility
 - precipitation
 - visibility restrictions such as haze, smoke and dust
 - wind at altitude
 - temperature aloft

8.6 VOLCANIC ASH

8.6.1 Volcanic ash consists mostly of sharp-edged, hard glass particles and pulverized rock. It is very abrasive and, being largely composed of siliceous materials, has a melting temperature below the operating temperature of modern turbine engines at cruise thrust. A volcanic ash cloud may be accompanied by gaseous solutions of sulphur dioxide (which when combined with water create sulphuric acid), chlorine (which when combined with water create hydrochloric acid) and other chemicals which are corrosive to the airframe and are hazardous to health. Given these facts, it is self-evident that volcanic ash in the atmosphere may pose a serious hazard to aircraft in flight. Thus, aircraft should avoid volcanic ash encounters.

8.6.2 Volcanic ash forecasts serve to levy the probability, when performing a safety risk assessment, of the hazard of an aircraft encountering volcanic ash. The risk may be mitigated using effective in-flight procedures. This document establishes guidelines which States may recommend to aircraft operators and regulatory authorities to adopt in order to assess the safety risk of flight operations in areas forecast to be affected by volcanic ash or aerodromes contaminated with volcanic ash.

8.6.3 ASH ENCOUNTER INDICATORS

8.6.4 In day visual meteorologic al conditions (VMC) a precursor to a volcanic ash encounter will likely be a visual indication of a volcanic ash cloud or haze. If a flight crew observes a cloud or haze suspected of containing volcanic ash they should be aware that a volcanic ash encounter is imminent and they should take action to avoid the contaminated airspace.

8.6.5 Indicators that an aircraft is encountering volcanic ash are related principally to the following:

- Odour. When encountering volcanic ash, flight crews usually notice a smoky or acrid odour that can smell like electrical smoke, burnt dust or sulphur.
- Haze. Most flight crews, as well as cabin crew or passengers, see a haze develop within the aircraft cockpit and/or cabin. Dust can settle on surfaces.
- Changing engine conditions. Surging, torching from the tailpipe, and flameouts can occur. Engine temperatures can change unexpectedly, and a white glow can appear at the engine inlet.
- Airspeed. If volcanic ash fouls the pitot tube, the indicated airspeed can AUGrease or fluctuate erratically.
- Pressurization. Cabin pressure can change, including possible loss of cabin pressurization.
- Static discharges. A phenomenon similar to St. Elmo's fire or glow can occur. In these instances, blue coloured sparks can appear to flow up the outside of the windshield or a white glow can appear at the leading edges of the wings or at the front of the engine inlets.

8.6.6 Any of these indicators should suffice to alert the flight crew of an ash encounter, and appropriate

action should be taken to vacate the contaminated airspace as safely and expeditiously as possible.

9.0 RESTRICTED OR SUSPENDED OPERATIONS

- 9.0. The regulations require operators who know of conditions that preclude safe operations (including hazardous airport and runway conditions), to restrict or suspend operations until those conditions change. FOIs must evaluate an operator's OM to ensure that it contains a description of the procedures for employees to follow should they become aware of such conditions.
- 9.1 The procedure to be used in managing operations over or near conflict zones in accordance with 8.6.2.2 (b) of the Regulations must be outlined in the OM
- 9.2 That risk management (assessment and mitigations) will be conducted when intending to operate over or near conflict zones, in accordance with 8.6.2.2 (b) of the Regulations, must be stated in the OM.

10.0 INTERNATIONAL OPERATIONS

- 10.1 For an operator that conducts international operations, FOIs must evaluate the operator's OM to ensure that it includes pertinent and necessary flight control information.
- 10.2 In the OM, particular emphasis should be placed on fuel and performance requirements, communications, weather reports and forecasts, flight planning, and any specialized means of navigation.

11.0 OBSERVER'S SEATS

- 11.1** FOIs should ensure that the operator's OM includes the requirement that the operator must provide an observer's seat (jump-seat or passenger seat) to the Authority inspectors and other specified personnel.
- 11.2** Usually operators assign the authority to control the use of these forward observer's seats to a flight control department.
- 11.3** Gate agents and passenger handling personnel must also be aware of these requirements.
- 11.4** Crew members must also be aware of the procedures to be used for observer seat assignments.
- 11.5** Information to comply with Regulations 9.1.1.10 and 9.1.1.11 of the Nigeria Civil Aviation Regulations and Regulation 8.5.1.14 of the Nigeria Civil Aviation Regulations inspection and surveillance requirements must be included in the OM, such as the following:
- 11.5.1** Priorities of inspectors, crew members, manufacturer's technical representatives, and other personnel;
- 11.5.2** Methods for ensuring that no more than one person is assigned to a forward observers position at any particular time;
- 11.5.3** Procedures for disseminating forward observer position assignments to other stations.

12.0 LINE STATION OPERATIONS

- 12.1** Line station operations are those activities performed by the operator's personnel (or by other personnel for the operator) to originate, turn around, or terminate flights conducted by the operator.
- 12.2** For an operator that conducts line station operations, FOIs must evaluate the operator's OM to ensure that it includes the necessary information on the various topics that follow.
- 12.2.1** Line station operations should include the use of the following types of facilities and equipment:
- a) Ramp areas including markings, signs, signalling devices, lighting, and blast fences;
 - b) Ramp facilities and equipment, such as passenger and cargo deplaning and enplaning equipment (towing, refuelling, catering, and ground power equipment);
 - c) Crewmember meeting areas, facilities for crewmember flight planning (preparation for flight), and postflight activities;
 - d) Ground station personnel work areas and facilities, communications equipment, and administrative support.
- 12.2.2** Inspectors must ensure that an operator's OM contains the policies, procedures, and guidance to be used by the personnel who support the operator's flight operations at line stations:
- a) This manual material must include those situations in which the operator maintains line stations as well as situations in which the operator contracts or purchases line station support;
 - b) This type of material is usually located throughout various user manuals, such as ground station operations and maintenance manuals, passenger service manuals, facilities and equipment manuals, fuelling manuals, and other special types of manuals;

- c) An operator may format and organize this type of manual material in a manner which is most consistent and usable for the operator's kind and type of operation;
- d) Regardless of the format and organization, however, this type of manual information is considered to be OM material;

12.2.3 The following are examples of the types of information that should be addressed in manual material concerning line stations operations;

- a) **Duties and Responsibilities.** The OM or MCM, as appropriate, must contain an outline of the duties and responsibilities of line station supervisory personnel:
 - (i) The types of positions that should be addressed include: ground station operations personnel, passenger handling agents, cargo and baggage handling personnel, and aircraft servicing personnel (when not addressed in the MCM);
 - (ii) When an operator contracts for, or purchases, line station support, the OM or MCM, as appropriate, must contain outlines of the procedures to be used by the personnel providing the support.

- b) **Passenger Handling and Protection.** The OM must contain procedures and guidance for ensuring the safety of passengers during line station operations. The following are examples of passenger handling and protection subjects that must be addressed in the OM:
 - (i) Passenger enplaning and deplaning procedures;
 - (ii) Procedures for use of jet ways, passenger boarding stairs, air stairs and other types of passenger boarding equipment;
 - (iii) Procedures to ensure the safety of passengers on the ramp including restricting of ground equipment and vehicle operation on ramps; and directing passengers to and from aircraft, around equipment, and to painted pathway lines on the ramp;
 - (iv) Procedures and guidance for protecting passengers from jet intake and blast, rotating and static propellers and rotors, ice on the ramp and boarding equipment, and tripping hazards;
 - (v) Procedures for prohibiting smoking in no smoking areas;
 - (vi) Procedures for assisting and ensuring safety of handicapped persons;
 - (vii) Procedures for handling intoxicated, hostile, or unruly persons;
 - (viii) Procedures for handling and controlling carry-on baggage;
 - (ix) Procedures for exit seating;
 - (x) Procedures for identifying and handling hazardous materials.

- c) **Aircraft Servicing and Ramp Operations.** The OM and MCM must contain detailed procedures and guidance on servicing and maintaining aircraft during line station operations. These manuals should also contain instructions on the maintenance and use of ramp areas. The following are examples of procedures for aircraft servicing and ramp operations that should be addressed in the OM:
 - (i) Procedure for flight release shall commence by the engineering department providing aircraft flight release for a serviceable aircraft to the Operational Control Center (OCC) to roster for flight services
 - (i) Procedures for the safety and protection of personnel working on the ramp;
 - (ii) Procedures and/or guidance for the maintenance and catering of aircraft, with or without passengers on board;
 - (iii) Procedures for fuelling aircraft with or without passengers on board, including any requirements for crewmembers to be on board during fuelling or prohibitions against positioning fuel trucks next to open exits with passengers on board;
 - (iv) Procedures for operating ground equipment including the capabilities and limitations of the equipment and the training and qualification of persons before using the equipment;

- (v) Procedures and guidance for properly locating and stowing ground equipment;
 - (vi) Procedures for the operation of aircraft cargo doors, baggage and cargo loading, closing and checking the security of doors;
 - (vii) Procedures for foreign object damage (FOD) control and periodically inspecting ramp areas;
 - (viii) Procedures to be used during adverse weather conditions such as thunderstorms, high winds, low visibility;
 - (ix) Procedures for the inspection and removal of frost, ice, snow, or standing water.
- d) **Hot and Cold Weather Operations.** FOIs should evaluate an operator's OM to ensure that it (as well as the MCM) contains detailed procedures and guidance on hot and cold weather operations, including:
- (i) Procedures for the inspection of ramps for accumulation of frost, ice, snow, or standing water;
 - (ii) Precautions for the operation of vehicles and equipment;
 - (iii) Restrictions and cautions on aircraft movements;
 - (iv) Restrictions and cautions for the protection of passengers and ramp personnel.
- e) **De-icing Procedures.** Aircraft ground de-icing procedures should be clearly delineated by the operator. While such procedures are usually in the MCM, the operator's OM must contain the following types of information concerning de-icing for crewmembers, ground operations, and management personnel:
- (i) Assignment of responsibility for ensuring that aircraft is clear of frost, ice, and snow accumulation;
 - (ii) Conditions that require aircraft ground de-icing;
 - (iii) Procedures to ensure the effectiveness of de-icing, including the frequency of applications, proper fluid mixtures, and tactile or close visual checks of selected portions of critical surfaces;
 - (iv) Parts of the aircraft to deice, including a description of the critical surfaces of the aircraft used by the operator;
 - (v) Locations on the ramps or airports where de-icing will be conducted;
 - (vi) Engine auxiliary power unit (APU) and ground equipment operation during de-icing;
 - (vii) Passenger and ramp personnel protection during de-icing;
 - (viii) Procedures to be used by contract personnel when the operator contracts for de-icing services;
 - (ix) If applicable, a complete description of the elements of the operator's ground de-icing/anti-icing programme and the procedures required to operate under that programme;
 - (x) If applicable, a complete description of the ground de-icing/anti-icing operational procedures that the operator uses to comply with Part 8 and Part 9 of the Nigeria Civil Aviation Regulations.
- f) **Aircraft Movement in the Ramp Area.** FOIs must ensure that the operator's procedures and guidance for the movement of aircraft in the ramp area is carefully coordinated between the operator's OM and MCM (or appropriate user manuals):
- (i) The definitions of signalling devices, signs, and ramp markings (such as taxi lines, stop lines, boundary and clearance lines) must be the same and be mutually understood by both crewmembers and ground handling personnel;
 - (ii) Specific procedures for engine start, pre-taxi pushback, power back (if approved), taxi out, taxi in, and parking while in the ramp area must be provided in the OM (or in an applicable user manual);
 - (iii) Communication procedures for ground handling personnel and crewmembers must be thoroughly coordinated;

- (iv) FOIs must ensure that the interphone terminology and hand signals used by ground handling personnel and crew members have the same meaning. The need for common terminology and hand signals is also important for crew members and passenger handling agents. Illustrations of standard hand signals and their meanings should be provided in the OM and MCM (or appropriate user manuals);
 - (v) The training and qualification requirements of personnel authorized to move aircraft on the ramp or on the airport must be described in the appropriate manuals. For example, when an operator is approved to power back, the OM must contain specific procedures for those operations for each airport and gate where authorized. Power back communications and hand signals must be thoroughly coordinated between crewmembers and ground handling personnel.
- g) **Line Station Emergency Procedures.** FOIs must ensure that the operator's OM and MCM contain procedures to be used by crew members or ground personnel in case of emergency situations during line station operations:
- (i) Line station emergency procedures must contain the specific duties and actions of appropriate personnel. This type of manual material must also include notification procedures and requirements;
 - (ii) The notification procedures and requirements should contain specifications on who will be notified, who will make the notification, how the notification should be made, and when it will be made for the various types of emergency situations that could occur at line stations;
 - (iii) Usually this type of manual material should also include a quick reference telephone listing for obtaining firefighting and medical assistance, and for notifying appropriate company management, law enforcement officials, and other government investigation officials;
 - (iv) Line station emergency procedures should be published in a distinct section of the OM or MCM so that they are easily accessible;
 - (v) For large, complex operators, line station emergency procedures are usually published as a manual under separate cover to assure rapid accessibility.
- h) Operators may publish line station emergency procedures manual for each station because of the uniqueness of each line station. FOIs should encourage this as a preferred practice. The types of situations that should be covered in line station emergency procedures include the following:
- (i) Aircraft accidents and incidents: (FOIs) should encourage operators to develop guidance for ground personnel providing passenger lists to aid in handling passengers and accounting for all passengers immediately after a survivable type accident. Handling passengers includes actions such as providing suitable transportation for injured passengers to locations where medical assistance can be obtained);
 - (ii) Bomb threats, hijack procedures, and other types of security incidents;
 - (iii) Fuel spills and hazardous materials mishaps;
 - (iv) Procedures for post flight handling of passenger injury, illness, or incidents involving passenger altercations and interference with crew members;
 - (v) Employee/passenger accidents and injuries;
 - (vi) Adverse weather conditions such as hurricanes, tornadoes or other adverse conditions such as earthquakes (if such conditions are likely to occur at the operator's line stations);
 - (vii) Emergency evacuation of aircraft while parked (This should include procedures for both the flight crew and cabin crew members to activate the aircraft emergency lighting systems during an emergency evacuation, regardless of the perceived ease with which an evacuation can be accomplished; and passenger egress procedures for crew members and other operations personnel. These procedures should include the requirement that whenever passengers are on board the aircraft prior to airplane movement on the surface, that at least one floor-level exit must be usable for the egress

- of passengers through normal or emergency means);
- (viii) Aircraft rescue and firefighting (ARFF) emergency notification procedures while parked: (FOIs) shall encourage their assigned operators to develop explicit ARFF emergency notification procedures for crew members and other operations personnel to employ in the event of an emergency occurrence on their aircraft while they are parked);

NOTE: ARFF notification procedures apply to situations where ARFF equipment is located both on and off airports. These procedures should include information concerning: (1) whom to notify (such as airport fire department, airport control tower, alternate facility if control tower is closed) (2) The means of notification to be used (such as jet-way telephone, including ARFF telephone numbers; and aircraft radio communication system, including ARFF radio frequencies); and (3) The persons by job title whom the operator determines shall implement notification procedures in the event of an emergency occurrence on the operator's aircraft

- (ix) For passenger-carrying operations, if the operator's ARFF procedures require its crewmembers to implement these procedures, then the following guidance should be included in the event of an aircraft fire or other emergency scenario involving aircraft evacuation, the first actions of crewmembers and/or other personnel qualified in accordance with Part 8 and Part 9 of the Nigeria Civil Aviation Regulations should be to initiate the evacuation of the aircraft occupants. Once the crew has determined that all aircraft occupants have been evacuated, then the crewmember(s) designated by the operator should initiate the ARFF emergency notification procedures.
- i) **Contract Services.** FOIs must ensure that the OM and MCM, as appropriate, contain policy and guidance concerning the interrelationship between the operator's personnel and the personnel of organizations who provide contract services at line stations:
 - (i) Contractor personnel are required to be trained on operator specific procedures;
 - (ii) The appropriate manual must contain the specifications for: the types of training to be given to contractor personnel; who is responsible for providing the training; and who is responsible for keeping records of the training;
 - (iii) Although the contractor may be delegated this responsibility, the operator has final responsibility.
- j) **Flight Preparation (Journey) Records.** FOIs must ensure that the operator's OM contains policies, procedures, and guidance concerning the preparation and disposition of journey records at line stations:
 - (i) Journey records include documents such as dispatch and flight releases, flight plans, weather NOTAMs, oceanic plotting charts, load manifests, and mass and balance documents;
 - (ii) The manual material must specify who is responsible for preparing the journey records, the coordination activities that must be accomplished during the journey record preparation process, and the intermediate and final disposition of the journey records;
 - (iii) The FOI must ensure that the policies, procedures, and guidance in this manual material consistently contain accurate information for crew members and flight operational control personnel.
- k) **Local Conditions at Line Stations.** Personnel at line stations have immediate access to and knowledge of various conditions and activities that could affect flight operations at those line stations:
 - (i) Examples of local conditions and activities include the following: weather conditions, runway and taxiway conditions, airport construction activities, and new obstacles observed in the airport takeoff flight paths;
 - (ii) As such, inspectors must ensure that an operator's OM contains instructions and procedures so that line station personnel can provide the operator with local condition reports;
 - (iii) This manual material must contain clear instructions about the circumstances in which line

station personnel are authorized to suspend or delay flight operations.

13.0 PASSENGER BRIEFING PROCEDURES

- 13.1** FOIs must ensure that the operator's OM or flight manual, as appropriate, specifies the procedures to be used for pre takeoff, en-route, and post landing briefings of passengers.
- 13.2** Operators who use Cabin Crew Members may publish Cabin Crew user manuals as sections in their OMs. The OM or Cabin Crew user manual must contain the briefings to be given.
- 13.3** Passenger briefing cards must be used to supplement the oral briefings. These passenger briefing cards must depict the required items that are addressed during the oral briefings.

14.0 EXIT SEATING PROGRAM

- 14.1** Regulation 8.9.2.11 of the Nigeria Civil Aviation Regulations requirements regulates exit seating in aircraft operated by air operators. These Regulations prescribe requirements relating to the seating of airline passengers near emergency exits.
- 14.2** FOIs must ensure that air operators' manuals, as appropriate, contain the applicable portions of the operators' approved exit seating program.

15.0 USE OF PORTABLE ELECTRONIC DEVICES

- 15.1** FOIs shall review the provisions contained Advisory Circular NCAA-AC-005, "Use of Portable Electronic Devices aboard Aircraft," with assigned operators.
- 15.2** FOIs shall ensure that operators have adequate procedures in place to determine whether or not portable electronic devices are acceptable for passenger use on board their aircraft.
- 15.3** FOIs shall ensure that their operators specify in their operations manuals those portable electronic devices that may not be operated on board their aircraft.
- 15.4** FOIs should encourage their assigned operators to include information regarding the operation of portable electronic devices in their operators' pre takeoff passenger safety briefings. These briefings should include any specific restrictions that apply to passenger use of portable electronic devices. An example briefing might be the following: "Some portable electronic
- 15.5** devices may interfere with the aircraft's communications and navigation systems. Please refrain from using any electronic device other than portable voice recorders, hearing aids, and [the operator should add to this list of portable electronic devices, the generic identification of any device that it determines will not cause interference]. For your safety and the safety of others, please stow all carry-on portable electronic devices during taxi, takeoff, and landing."

16.0 ACAS - EQUIPPED AIRCRAFT

- 16.1** The objective of ACAS is to provide advice to pilots for the purpose of avoiding potential collisions. This is achieved through resolution advisories (RAs), which recommend actions (including manoeuvres), and through traffic advisories (TAs), which are intended to prompt visual acquisition and to act as a precursor to RAs.
- 16.2** ACAS has been designed to provide a back-up collision avoidance service for the existing conventional air traffic control system while minimizing unwanted alarms in encounters for which the collision risk does not warrant escape manoeuvres. The operation of ACAS is not dependent upon any ground-based systems.

- 16.3** ACAS equipment in the aircraft interrogates mode A/C and Mode S transponders on aircraft in its vicinity and listens for their replies. By processing these replies, ACAS determines which aircraft represent potential collision threats and provides appropriate display indications (or advisories) to the flight crew to avoid collision.
- 16.4** The Nigerian Civil Aviation Authority has the responsibility of publishing regulations and ensures compliance therewith. This has been done through Nig. CARs 7.7.1.7. The following regulations also apply: 8.5.1.1(d), 8.8.1.13(a)(3), 8.14.9.4(b).
- 16.5** The operator shall document in its Operations Manual its own responsibilities which include:
1. Compliance with all appropriate ACAS legislation;
 2. Ensure aircraft are properly equipped with ACAS and that the equipment is properly maintained;
 3. Ensure approved pilot and maintenance training programmes are implemented for initial and recurrent training;
 4. Ensure procedures are in place for pilots and maintenance personnel to report problems with ACAS performance; and
 5. Ensure procedures are in place to analyse any reported problems and then provide feedback to the Authority and other involved parties.
- 16.6 ACAS OR ACAS II Training**
- 16.6.1** An ACAS training programme shall ensure that the pilot is able to demonstrate proficiency in the following:
- a) knowledge of ACAS II concepts, systems and procedures; and
 - b) cognitive, procedural and motor skills necessary to properly respond to ACAS advisories.
- 16.6.2** There are no formal ACAS evaluation requirements for flight testing and examination. An ACAS instructor shall accomplish evaluation of ACAS objectives during training.
- 16.6.3** A pilot shall complete ACAS initial training in respect of each aircraft type for which he or she is rated in which ACAS equipment is carried.
- 16.6.4** ACAS initial training may be provided as a stand-alone module of ground and flight training or may be integrated with other initial, difference or upgrade ground and flight training programmes.
- 16.6.5** An operator shall certify in the pilot's file that the ACAS training and checking has been accomplished to a satisfactory standard.
- 16.6.6** ACAS renewal training shall be integrated with recurrent flight training during proficiency training or line-oriented flight training. Ground training shall be provided as a stand-alone module and should address any significant issues identified by line operating experience, system changes, procedural changes or unique characteristics such as the introduction of new display systems or operations in airspace where high numbers of traffic advisories (TA) and resolution advisories (RA) have been reported.
- 16.6.7** ACAS Training Programme Requirements
- a) Each ACAS curriculum shall ensure the equipment manufacturer's recommended training and testing requirements are carried out in the manner prescribed by such manufacturer.

- b) In any case a pilot's ability to demonstrate system and procedural concepts shall be included in the initial, recurrent and where applicable, the regaining competency testing.

17.0 CONTROLLED FLIGHT INTO TERRAIN (CFIT)

17.1 This is a subject that mostly affect General Aviation (GA) operations in single pilot aircraft. In multi crewed cockpits, the second pilot may make the difference between a safe flight and a CFIT accident. Conversely, a second pilot can also be a distraction in certain circumstances unless the crew has been trained to work well together and is following good Crew Resource Management (CRM) techniques. As a general rule of thumb, whether an air carrier type aircraft or a GA aircraft, the multi crewed aircraft is generally better equipped with more safety equipment, such as an autopilot, radar altimeter, or Ground Proximity Warning System (GPWS) aboard, than a typical single-pilot General Aviation (GA) aircraft.

17.2 Definition

17.2.1 Controlled Flight into Terrain (CPIT) occurs when an air worthy aircraft is flown, under the control of a qualified pilot, into terrain (water or obstacles) with inadequate awareness on the part of the pilot of the impending collision.

17.3 OPERATOR'S RESPONSIBILITY

17.3.1 The operator shall document in its operations manual, steps taken to find a solution. The first part in finding a solution to CFIT accident prevention seems to be a comprehensive plan of proper aircrew training in the following:

1. The use and coordination of avionics systems that help prevent CFIT accidents.
2. Integrating CFIT scenarios into CRM in the initial and recurrent training of aircrew.
3. Encourage open communication between flight crew when pilots check each other in critical phases flight such as approach and landing.
4. Perform approach briefings to increase situational awareness in the cockpit.

17.3.2 Proper use of altitude warning systems is the key to accident prevention.

17.4 ATC CLEARANCES

The operator shall document in its operations manual, instructions on the clarification and acceptance of Air Traffic Control (ATC) clearances, particularly where terrain clearance is involved.

17.5 GPWS POLICY

17.5.1 The operator shall develop and document a policy in accordance with Nig. CARs 9.3.2(e) on the use of Ground Proximity Warning System (GPWS).

17.5.2 GPWS is mandatory equipment on large transport aircraft (Nig. CARs 7.7.1.5) and have been instrumental in preventing some CFIT accidents.

17.5.3 GPWS uses radar altimeter to assist in calculating terrain closure rates. The system is further improved with the addition of a Global Positioning System (GPS) terrain database which is now known as an Enhanced Ground Proximity Warning System (EGPWS).

17.6 UPSET RECOVERY TRAINING (UPRT)

17.6.1 Aeroplane Upset Defined

17.6.2 The term “aeroplane upset” is defined in the glossary as an in-flight condition by which unintentionally an aeroplane exceeds the parameters normally experienced in normal line operations or training. An upset is generally recognized as a condition of flight during which the pitch of the aeroplane unintentionally exceeds either 25 degrees nose up or 10 degrees nose down; or a bank angle exceeding 45 degrees; or flight within the aforementioned parameters but at inappropriate airspeeds.

17.6.3 For the purposes of continuity, “aeroplane upset” will be the term used throughout this manual recognizing that there are several other terms in use within the aviation industry referring to this particular type of occurrence. When reading this manual it is important to be clear on two points about aeroplane upsets. First is the notion of unintentional. In other words, the aeroplane is not doing what it was intended to do by the flight crew and is approaching unsafe parameters. Second is the fact that a pilot must not wait until the aeroplane is in a fully developed upset before taking recovery action to return to stabilized flight path parameters. The term “loss of control in-flight” (LOC-I) is a categorization of an accident or incident resulting from a deviation from the intended flight path.

17.6.4 Finally, it is important to understand that there is a relationship to the definitions of ‘stall’ and ‘upset’. Although not all aeroplane upset occurrences involve an aerodynamic stall, an unintentional stall is indeed a form of upset even though it may not meet the pitch and bank attitude upset parameters. This is because during a stall the aeroplane meets the upset criteria of being at an inappropriate airspeed for the conditions. In all instances of an aeroplane upset involving a stall, it is stressed in this manual that the aeroplane must first be recovered from the stall condition before any other upset recovery action can become effective. Therefore, since upset and stall events are closely related, it is highly desirable to ensure that any comprehensive training programme for the prevention and recovery from a stall be closely linked with training for the prevention and recovery of aeroplane upsets.

17.6.5 Upset Prevention and Recovery Training —Genesis

17.6.6 The number of fatalities resulting from LOC-I events involving commercial air transport aeroplanes has led to an examination by several organisations regarding current training practices.

17.6.7 Some existing practices were found to be not only ineffective but were also considered a contributory factor in inappropriate responses by some flight crews. For example, in certain cases, the methodologies being applied in training and checking a recovery from an approach-to-stall condition of flight were based on the pilot being able to achieve recovery with a minimal loss of altitude. This resulted in training practices emphasizing the importance of a rapid application of power with the least amount of reduction in angle of attack (AOA) to minimize the loss of altitude rather than appreciating the importance of reducing the angle of attack to effectively restore the ability of the wing to generate lift. Action has now been taken by both regulators and training providers to amend such procedures with new training and testing standards emphasizing that effective recovery from an approach-to-stall requires, foremost, an immediate and deliberate reduction in the angle of attack. Crews must also be made aware that this required reduction in AOA, whenever the aeroplane is encountering low energy states while operating at high altitudes, might even necessitate a substantial loss in altitude to ensure that an effective recovery from an impending or actual aerodynamic stall condition is achieved.

17.6.8 Analysis of LOC-I accident data indicated that contributory factors can be categorized as being either: aeroplane systems induced; environmentally induced; pilot/human induced; or any combination of these three factors. Of the three, pilot-induced accidents represented the most

frequently identified cause of the event, principally resulting from one or more of the following reasons:

- a) application of improper procedures, including inappropriate flight control inputs;
- b) one or more flight crew members becoming spatially disoriented;
- c) poor aeroplane energy management;
- d) one or more flight crew members being distracted; or
- e) improper training.

17.6.9 Training Programme Requirements

17.6.10 Approach and Components of UPRT Design

Effective UPRT programme development and supporting regulatory frameworks require an integrated comprehensive approach to ensure standardization in the levels of knowledge and skill sets within the pilot community. This integration effort should comprise the following UPRT components:

- a) **Academic Training** — designed to equip pilots with the knowledge and awareness needed to understand the threats to safe flight and the employment of mitigating strategies; and
- b) **Practical Training** — designed to equip pilots with the required skill sets to effectively employ upset avoidance strategies and, when necessary, effectively recover the aeroplane to the originally intended flight path. The practical training component is further broken down into two distinct sub-components involving:
 - 1) **On-Aeroplane Training** — during CPL(A) or MPL training in suitably capable light aeroplanes to be conducted by appropriately qualified instructors to develop the knowledge, awareness and experience of aeroplane upsets and unusual attitudes, and how to effectively analyse the event and then apply correct recovery techniques; and
 - 2) **FSTD Training** — on specific or generic aeroplane types to build on knowledge and experience, and apply these to the multi-crew CRM environment, at all stages of flight, and in representative conditions, with appropriate aeroplane and system performance, functionality and response. Once again, this instruction should only be provided by appropriately qualified instructors.

17.6.11 Training Elements of UPRT

17.6.12 The two major components of UPRT programmes have been previously identified in paragraph 17.6.10 as being the 'academic' and the 'practical' components, with the latter being broken down into two sub-components. Those two sub-components of 'practical' training involve the utilization of either an aeroplane or an FSTD as the primary training platform.

17.6.13 Table 1 provides a comprehensive UPRT programme 'blueprint' by dividing all the recommended training elements under eleven separate subject areas and then indicating under what UPRT component each training element needs to be addressed. For instance, in column 1 of the table the subjects and their associated training elements are depicted, while columns 2, 3, 4 and 5 indicate the training component and platforms most appropriate for effective learning.

17.6.14 For detailed information on academic syllabi, column 6 of the aforementioned table provides reference to the Airplane Upset Recovery Training Aid (AURTA), Revision 2, which has specific details on each associated topic that could be very helpful during the development of a UPRT programme. However, it is important to realize that the AURTA generally was developed to deal with topics pertaining to swept-wing aeroplanes with more than 100 passenger seats. Nonetheless, it still contains valuable guidance which often applies to smaller propeller-driven and turbojet-powered aeroplanes. Electronic copies of the AURTA can be obtained free-of-charge at the following website address: <http://flightsafety.org/archives-and-resources/airplane-upset-recovery-training-aid>. An effort, led by ICAO and industry, is aiming at updating the AURTA to include a reformatting, as well as information on turbo propeller and smaller swept-wing aeroplanes.

Note 1.— For UPRT to be effective, it is important to recognize that the subject areas and their associated training elements described in Table 1 are simply a means to develop the appropriate proficiencies and assist in developing training programmes and should not lead to a “tick box” approach to completing a training syllabus.

Note 2. — Some of the training elements of Table 1 are linked to specific equipment and are only to be trained if the aeroplane type carries that equipment (e.g. stick pusher, fly-by-wire controls). However, the academic training for such element should be covered during the CPL(A), MPL and bridge training.

G	Recognition 1) Type-specific examples of instrumentation during developing and developed upset 2) Pitch/power/roll/yaw 3) Effective scanning (effective monitoring) 4) Stall Protection systems &	.	.	.	.	Section 2.5.5.
		
		:	-	:	:	
		
H.	Upset prevention and recovery techniques 1) Timely and appropriate intervention 2) Nose high/wings-level recovery 3) Nose low/ wings-level-	.	.	.	.	Section
		:	:	:	:	
		.	.	.	.	Sections 2.6.3.2 - 2.6.3
I.	System malfunction 1) Flight control anomalies 2) Power failure (partial or full) 3) Instrument failures 4) Automation failures 5) Fly-by-wire protection degradations	.	.	.	.	Section 2.4.2
		
		
		
		
J.	Specialized training elements 1) Spiral dive (graveyard spiral) 2) Slow flight 3) Steep turns 4) Recovery f from approach-to-stall 5) Recovery from stall, including uncoordinated stalls (aggravating yaw) 6) Recovery from stick pusher activation (as applicable) 7) Nose high/high speed recovery 8) Nose high/low speed recovery	.	.	.	.	2.6.3.2 - 2.6.3.5 Section 3
		.	.	.	.	Section
		-
		
		
		
		
		

K.	Human Factors					Section 2.5.5.11.1 n
	1) Situation awareness					
	i) human information processing	•	•	•	•	
	ii) inattention, fixation, distraction	•	•	•	•	
	iii) perceptual illusions (visual or physiological) and spatial disorientation	•	•	•	•	
	iv) instrument Interpretation	•	•	•	•	
	2) Startle and stress response	•	•	•	•	
	i) physiological, psychological, and cognitive effects	•	•	•	•	
	ii) management strategies	•	•	•	•	
	4) Threat and error					

Table 1

17.6.15 Training

17.6.16 Overview

17.6.17 UPRT is collated into an integrated approach which identifies the training resources – academic, on-aeroplane, and FSTD-based – and the associated elements of training required to provide pilots with the necessary knowledge, skills and attitudes to reduce the probability of an upset encounter and to maximize their ability to recover from such an event. This results in a comprehensive application of UPRT through the full spectrum of flight training during a professional pilot's career in order to equip them with the ability to maintain and, if necessary, regain aeroplane flight path control in all normal and abnormal (recoverable) situations.

17.6.18 FSTD Training

17.6.19 Overview

17.6.20 The use of FSTDs for the delivery of UPRT during type-rating training and commercial air transport flight crew training complements the application of knowledge and techniques introduced through on-aeroplane UPRT at the CPL(A) or MPL licensing level, as applicable. FSTD capabilities permit training in operational areas that are otherwise unsafe or impractical in actual aeroplanes (such as low altitude or very high altitude upset encounters or flight during rapidly deteriorating situations involving adverse weather or icing conditions). Additionally, FSTDs can allow for practical skill development in upset prevention and recovery in a crew environment and with aeroplane-specific systems, instrument indications, control response and procedures.

17.6.21 Of major concern in the delivery of UPRT in FSTDs is adherence to the valid training envelope (VTE) for a particular device. While various levels of training devices may be appropriate for the illustration and practice of a variety of elements of UPRT, they should always be qualified appropriately for the delivery of UPRT-specific training. Use of FSTDs in regions of the flight envelope beyond the FSTD's ability to provide accurate fidelity has the potential to introduce misleading concepts or inappropriate understanding of techniques which can result in a 'negative' training experience.

17.6.22 FSTD UPRT programme design recommendations are based upon the understanding that:

- a) simulation training will be conducted using the highest level of FSTD fidelity available utilizing flight test data for the design of the simulation model whenever possible;
- b) when flight test data simulation modelling is not available, other appropriate engineering data may be used provided the simulation is then validated using appropriately qualified personnel which may include test pilots; and
- c) validation of simulation modelling must be completed in context of the training curriculum for which the device is being used.

18.0 PILOT QUALIFICATION TO OPERATE IN EITHER PILOT'S SEAT

18.1 Flight crew members who may be assigned to operate in either pilot's seat shall complete appropriate training and checking as specified in the operations manual. This training is applicable to PIC only. The additional training shall be accomplished from the SIC crew position and include at least two landings during completion of the following:

- an engine failure during take-off;
- one engine inoperative approach and go-around;
- one engine inoperative landing;
- category II or category III operations, if applicable; and
- operation of the normal and emergency checklist as pilot-not-flying.

18.2 The training required above shall be completed upon initial assignment and every 12 months thereafter.

18.3 The check may be accomplished during a normal pilot proficiency check.

18.4 A record of the training completed and/or operational means of qualifying to act from either flight crew station shall be maintained in the pilot's training file.

19.0 FLIGHT DATA ANALYSIS PROGRAM (FDAP)

19.1 Flight Data Analysis Program shall be applicable for aircraft of a maximum certificated take-off mass in excess of 27,000KG. **Ref. to Chapter 40.**

20.0 COCKPIT VOICE RECORDER (CVR)

20.1 To preserve flight recorder records, flight recorders shall be deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with the accident/incident regulations of the State.

20.2 The operator/owner of the aircraft, or in the case where it is leased, the lessee, shall ensure to the extent possible, in the event the aircraft becomes involved in an accident or incident, the preservation of all related flight recorder records and, if necessary, the associated flight recorders, and their retention in safe custody pending their disposition as determined by the Accident Investigation Bureau.

20.3 The PIC may not permit a flight data recorder or cockpit voice recorder to be disabled, switched off or erased during flight, unless necessary to preserve the data for an accident or incident investigation and in event of an accident or incident, the PIC shall act to preserve the recorded data for subsequent investigation upon completion of flight respectively.

21.0 PASSENGER HEALTH AND SAFETY

21.1 Policy and Procedures

An air operator must establish passenger health and safety procedures in their OM which must:

- (a) Comply with the 8.5.1.29 of the Nigeria Civil Aviation Regulations.
- (b) make available to passengers, sufficiently in advance of departure, information concerning the vaccination requirements of the countries of destination.
- (c) establish procedures to ensure the pilot-in-command of an aircraft shall ensure that a suspected communicable disease is reported promptly to air traffic control, in order to facilitate provision for the presence of any special medical personnel and equipment necessary for the management of public health risks on arrival;
- (d) establish procedures for the crew to evaluate a traveler with a suspected communicable disease, based on the presence of a fever and certain signs or symptoms
- (e) procedures to include the transmission, as required, of a General Declaration form to the appropriate public health authorities.

21.2 Guidelines on Procedure for notification of suspected communicable diseases on board an aircraft or other public health risk:

- (a) The flight crew of an en-route aircraft shall, upon identifying a suspected case(s) of communicable disease, or other public health risk, on board the aircraft, promptly notify the ATS.
- (b) An air operator's procedure must require that the pilot-in-command of an aircraft shall ensure the following information is reported promptly to air traffic control, in order to facilitate provision for the presence of any special medical personnel and equipment necessary for the management of public health risks on arrival:
 - i) aircraft identification;
 - ii) departure aerodrome;
 - iii) destination aerodrome;
 - iv) estimated time of arrival;
 - v) number of persons on board;
 - vi) number of suspected case(s) on board; and
 - vii) nature of the public health risk, if known.

21.3 The same information shall be provided to the departure aerodrome to prevent the potential spread of communicable disease, or other public health risk, through other aircraft departing from the same aerodrome.

21.4 The same information shall be provided to the operator's Operations Control Center (OCC) for proper coordination with appropriate Authorities.

22.0 FATIGUE MANAGEMENT

22.1 FATIGUE MANAGEMENT

For the purpose of managing fatigue related safety risks the operator shall establish flight time, flight duty period, duty period limitations and rest period requirements that are within the prescriptive fatigue management of **Nig. CARs 8.12**.

22.2 DUTY AND REST PERIODS

1. The operator shall publish duty rosters sufficiently in advance to provide the opportunity for crew members to plan adequate rest;
2. Does the operator have procedures to ensure that flight duty periods are planned in a way that enables crew members to remain sufficiently free from fatigue so that they can operate to a satisfactory level of safety under all circumstances.
3. Does the operator have procedures specify reporting times that allow sufficient time for ground duties.?
4. Does the operator have procedures that take into account the relationship between the frequency and pattern of flight duty periods and rest periods and give consideration to the cumulative effects of undertaking long duty hours combined with minimum rest periods.?
5. Does operator allocate duty patterns which avoid practices that cause a serious disruption of an established sleep/work pattern, such as alternating day/night duties
6. The operator shall comply with the provisions concerning disruptive schedules in accordance with **Nig. CARs 8.11.1.3**
7. The operator shall have procedures that provide rest periods of sufficient time to enable crew members to overcome the effects of the previous duties and to be rested by the start of the following flight duty period.
8. The operator shall plan recurrent extended recovery rest periods and notify crew members sufficiently in advance.
9. The operator shall have procedures for planning flight duties in order to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the sector and turnaround times
10. The operator shall have procedures to change a schedule and/or crew arrangements if the actual operation exceeds the maximum flight duty period on more than 33 % of the flight duties in that schedule during a scheduled seasonal period.
11. The operator shall have procedures to assign a home base to each crew member.
12. The operator shall establish procedures specifying how the commander shall, in case of special circumstances which could lead to severe fatigue, and after consultation with the crew members concerned, reduce the actual flight duty period (FDP) and/or increase the rest period in order to eliminate any detrimental effect on flight safety.
13. The operator shall establish procedures to ensure that whenever cabin crew requires more time than the flight crew for their pre-flight briefing for the same sector or series of sectors, the FDP of the cabin crew may be extended by the difference in reporting time between the cabin and the flight crew.
14. The operator will ensure that the difference shall not exceed 1 hour. The maximum daily FDP for cabin crew shall be based on the time at which the flight crew report for their FDP, but the FDP shall start at the reporting time of the cabin crew.

15. The operator shall establish procedures that the maximum daily FDP may be extended by up to 1 hour not more than twice in any 7 consecutive days. In that case the minimum pre-flight and post-flight rest periods shall be increased by 2 hours; or the post-flight rest period shall be increased by 4 hours.
16. The operator shall ensure that person concerns with the operations of aircraft are trained and educated regarding dangers of fatigue, the causes of sleepless and importance of sleep and proper sleep habits.
17. Does the operator have procedures to ensure that flight and cabin crew members shall not operate a flight if he/she knows or suspects that he or she is fatigued or feels unfit to the extent that the safety of flight may be adversely affected.
18. The operator shall ensure that flight and cabin crew members shall make best use of facilities and opportunities that are provided for rest and for the consumption of meal, and shall plan and use rest periods to ensure that they are fully rested.
19. The operator shall establish a procedure to ensure that no person shall cause or permit a crew member to fly in commercial air transport if that person knows or suspects that the crew member is suffering from such fatigue as may endanger the safety of the flight.
20. Does the operator have procedures to ensure that if it requires a flight crew /cabin crew to engage in deadhead transportation for more than 4 hours, one half of that time shall be treated as duty time, unless they are given 10 hours of rest on the ground before being assigned to flight duty.
21. The operator shall establish flight time specification schemes specify the conditions for extensions of the maximum basic daily FDP with in-flight rest in accordance with the certification specifications applicable to the type of operation, taking into account:
 - i. the number of sectors flown;
 - ii. the minimum in-flight rest allocated to each crew member
 - iii. the type of in-flight rest facilities;
 - iv. the augmentation of the basic flight crew.
22. Does the operator have procedures on the conditions to modify the limits on flight duty, duty and rest periods by the commander in the case of unforeseen circumstances in flight operations, which start at or after the reporting time, shall comply with the following:
 - a) the maximum daily FDP may not be increased by more than 2 hours unless the flight crew has been augmented, in which case the maximum flight duty period may be increased by not more than 3 hours;
 - b) if on the final sector within an FDP the allowed increase is exceeded because of unforeseen circumstances after take-off, the flight may continue to the planned destination or alternate aerodrome; and
 - c) the rest period following the FDP may be reduced but can never be less than 10 hours.
23. Where the increase of an FDP or reduction of a rest period exceeds 1 hour, a copy of the

report, to which the operator shall add its comments, shall be sent by the operator to the authority not later than 28 days after the event

22.3 Flight Times Duty and Rest Period Records

- a) The operator shall have procedure to maintain records for each flight, cabin crew members and FOO/ flight dispatcher of flight time, flight duty periods, duty periods and rest periods including reports on extended flight duty periods and reduced rest periods, for a period of 24 months.
- b) The operator shall establish procedures to ensure that the required records for tracking flight and duty times and rest periods are maintained in a manner so that an updated record is available before crew members begin their duty day or their first flight of the day.
- c) The operator shall establish procedure to ensure that no person may be schedule any crew member and no person may accept an assignment for duty which a total schedule duty periods to which a crew member may be assigned shall not exceed:
 - I. 1800 duty hours in any 12 consecutive months
 - II. 190 duty hours in any 28 consecutive days, spread as evenly as practicable throughout that period.
 - III. 55 duty hours in any 7 consecutive days.

22.4 Cumulative duty periods

The total flight time of the sectors on which an individual crew member is assigned as an operating crew member shall not exceed:

- 100 hours of flight time in any 28 consecutive days
- 900 hours of flight time in any calendar year;
- 1,000 hours of flight time in any 12 consecutive calendar months.

22.5 Records of Home Base, Flight Times, Duty and Rest Periods

An operator shall maintain, for a period of 24 months:

Individual records for each crew member including:

- i. flight times;
- ii. start, duration and end of each duty period and FDP;
- iii. rest periods and days free of all duties;
- iv. assigned home base;

22.6 Rest Periods

1. The minimum rest period provided before undertaking an FDP starting at home base shall be at least as long as the preceding duty period, or 12 hours, whichever is greater.
2. The minimum rest period provided before undertaking an FDP starting away from home base shall be at least as long as the preceding duty period, or 10 hours, whichever is greater.

3. This period shall include an 8-hour sleep opportunity in addition to the time for travelling and physiological needs.
4. reports on extended flight duty periods and reduced rest periods.

22.7 Fatigue Management Training

The operator shall provide initial and recurrent fatigue management training to crew members, personnel responsible for preparation and maintenance of crew rosters and management personnel concerned.

22.8 Reserve

If an operator assigns crew members to reserve, the following requirements shall apply in accordance with the certification specifications applicable to the type of operation:

22.9 Reserve shall be in the roster;

flight time specification schemes shall specify the following elements:

1. the maximum duration of any single reserve period;
2. the number of consecutive reserve days that may be assigned to a crew member.

23.0 FLIGHT CREW COMPARTMENT

23.1 ACCESS TO FLIGHT CREW COMPARTMENT

No person other than a flight crew member who is duly assigned to the flight, shall be admitted to, or carried in, the Flight Crew Compartment unless that person is:

- A. an operating crew member of the flight;
- B. a person authorized by Director General of Civil Aviation to perform State's Safety Oversight duties or functions; or
- C. permitted by the Accountable Manager of the operator and carried in accordance with the regulations and instructions / procedures contained in the approved Operations Manual of the Operator.

23.2 RESPONSIBILITIES OF OPERATORS AND THEIR STAFF

1. Operator's Responsibility

A. The Operator shall ensure that no person other than a person stated at paragraph 23.1 above is admitted to or carried in a Flight Crew Compartment of any aircraft operated by the operator under any circumstance.

B. Operator shall ensure that the procedures involving admission of person to Flight Crew Compartment or carriage of such personnel in the Flight Crew Compartment is fully documented and included in the Operator's Operations Manual after receiving approval for same from the Director General of Civil Aviation.

2. Accountable Manager's Responsibility

A. Accountable Manager shall ensure that he would not permit any person other than a person stated at paragraph 23.1.A and 23.1.B, is admitted to, or carried in, the Flight Crew Compartment of any aircraft of the operator unless;

a) that person is duly authorized by him having being satisfied personally that the presence of the person in the Flight Crew Compartment would not pose a safety or security threat to the flight, crew members, passengers or person or property on ground or cause hindrance to safe operation of the flight;

b) that the person is not a fare paying passenger and carriage of the person is absolutely necessary under the given circumstances for the discharge of the operator's duties, functions or obligations;

c) that the person is made fully aware of the requirements to be complied whilst entering or remaining in the Flight Crew Compartment; and

d) that the person's entry to the Flight Crew Compartment is informed to the Pilot-in Command of the flight in advance and his consent is obtained for such entry.

B. Accountable Manager is responsible for the effective and consistent implementation of relevant instructions/ procedures relating to this matter which is specified in the Operations Manual. In this context, the Accountable Manager shall ensure that the persons authorized by him are precisely defined and the procedures involving carriage of such authorized personnel are clearly laid down and disseminated amongst operational personnel for information.

C. In authorizing personnel to enter or be carried in the Flight Crew Compartment, the Accountable Manager shall take into account;

a) the possible impact of the presence of the person in the Flight Crew Compartment on safety of flight, flight crew, cabin crew and passengers;

b) the necessity of the operator for the person concerned to be carried in the Flight Crew Compartment during flight;

c) Rules applicable to the subject matter in other States where aircraft are operated from / to;

d) capability of the person to be authorized to react during an emergency situations; and e) physical and mental status of the person.

D. In the event the Accountable Manager is unable to accept the responsibility for grant of access to Flight Crew Compartment as in Para 23.1.C, access shall be confined only for persons mentioned in 23.1.A and 23.1.B of the above.

E. The authority granted to the Accountable Manager under this paragraph for allowing persons to be carried in the Flight Crew Compartment shall not be delegated.

3. Responsibility of the Pilot-in-Command

A. The Pilot in Command shall ensure that:

a) no person other than persons listed under paragraph 23.1 above is admitted or carried in the Flight Crew Compartment.

b) in the interests of safety, admission of the person authorized to the Flight Crew Compartment does not cause distraction and/or interference with the operation of the flight,

c) any person carried on the Flight Crew Compartment is made familiar with the use of relevant safety and emergency equipment without assistance from the flight crew, if need arises.

Note :The final decision regarding the admission to the Flight Crew Compartment shall be the responsibility of the Pilot in Command and he may even refuse acceptance of personnel approved under 23.1., if he is in the opinion that the safety of the flight is compromised by such admission.

d) In the event the PIC refuses access to Flight Crew Compartment for the personnel stated under 23.1.B, he shall give reasons in writing to the Director General of Civil Aviation for such refusal soon after the flight.

B. It is the sole responsibility of the Pilot-in-Command of the flight to ensure the presence of at least one competent flight crew member and another fit and proper crew member acceptable to him in the Flight Crew Compartment at all times during flight. Unless the PIC is personally satisfied, mere presence of a person authorized under paragraph 2 in the Flight Crew Compartment will not satisfy the above requirement.

4. Responsibility of flight crew members

No flight crew member shall leave the Flight Crew Compartment for any reason unless there is a competent flight crew member and another fit and proper crewmember, in the Flight Crew Compartment.

5. Responsibility of Cabin Crew members

Cabin Crew Members entering the Flight Crew Compartment shall ensure that they strictly follow the procedures of the operator specified in the Operations Manual. It is the duty of the Cabin Crew members to constantly monitor the Flight Crew Compartment door area and bring forthwith to the notice of the PIC if a suspected event is taking place or likely to take place.

23.3 FLIGHT CREW COMPARTMENT DOOR IN FLIGHT

1. Flight Crew Compartment Door at the commencement of a flight The Flight Crew Compartment door shall be closed prior to the closure of the passenger doors for flight and the personnel permitted to travel in the Flight Crew Compartment shall be seated inside the Flight Crew Compartment at that time.

2. Opening of Flight Crew Compartment Door in flight

A. Opening of Flight Crew Compartment Door in flight shall be limited to the minimum and the procedures involved in opening and closing of the Door need to be specified by the operator in the Operations Manual considering the security aspect..

B. Notwithstanding the foregoing, it is the duty of a crewmember inside the Flight Crew Compartment to open the door in response to a call of another flight crewmember who happened to go out of the Flight Crew Compartment for operational or physiological reasons, as and when required, upon verification of identity.

3. Occasions requiring opening of the Flight Crew Compartment Door

When an overriding safety of flight consideration warrants opening of the Flight Crew Compartment door, the considerations of the PIC may include but not limited to the following and he may take appropriate actions accordingly:

- a) The need for visual inspections to confirm such things as a potential fuel leak, smoke Flight Crew Compartment, and engine condition, visual gear/flap configuration, inspection of contaminated surfaces;
- b) Handling of safety/emergency procedures, such as pilot incapacitation or firefighting;
- c) Abnormal or emergency landings where safety procedures requires that the door be open for landing; and
- d) The need to communicate essential information where there is no appropriate alternative under the circumstances.

23.4 CONTENTS OF THE OPERATIONS MANUAL

The Operations Manual shall contain the following to fulfill the requirements stipulated in this Implementing Standard,

- a) Procedures for controlling access to the Flight Crew Compartment;
- b) Procedures for opening, closing and locking the Flight Crew Compartment door;
- c) Procedures to enable a cabin crew member to enter the Flight Crew Compartment if a flight crew member becomes incapacitated or for meal service to flight crew;
- d) Procedures to verify the identity of a person authorized to access the Flight Crew Compartment;
- e) Procedures to constantly ascertain the working atmosphere in the Flight Crew Compartment including the wellbeing of the flight crew; and
- f) Procedures to control access to a crew rest facility from the passenger compartment, if the aeroplane is equipped with a crew rest facility that can be accessed from the Flight Crew Compartment and from the passenger compartment.

23.5 SCOPE OF PROCEDURES

Following matters shall be taken, but not limited to, as guidance for the development of procedures that shall be included in the Operations Manual. However, procedures shall be developed with an aim to minimizing the need to opening the Flight Crew Compartment door during flight;

- a) The means and methods by which the crew members will communicate between the Flight Crew Compartment and the cabin;



- b) Minimum Equipment List (MEL) relief for the public address (PA) system shall not be exercised when communication procedures during normal or emergency situations require the use of this system;
- c) The methods by which the flight crew determine the security of the area near the Flight Crew Compartment door and the identity of a person requesting access whenever there is a requirement to open the door (e.g. the use of peep holes, code words, interphone, etc.);
- d) Procedures shall consider pilot incapacitation for the following situations:
 - i. Both pilots are in the Flight Crew Compartment and one pilot becomes incapacitated; and
 - ii. One pilot is out of the Flight Crew Compartment and the pilot remaining at the controls becomes incapacitated.
- e) For aircraft not equipped with a means to access the Flight Crew Compartment from the passenger compartment, such as a keypad, a procedure shall include bringing a third crew member into the Flight Crew Compartment prior to any pilot leaving the Flight Crew Compartment in order to protect access to the Flight Crew Compartment;
- f) Primary and secondary methods of communicating with the Flight Crew Compartment;
- g) Methods of communication to advise the Flight Crew Compartment when access is required (e.g. chimes, knocks, interphone, etc.);
- h) Security enhanced crew briefings to include a review of normal and emergency procedures to be used for Flight Crew Compartment access;
- i) Positive identification of those entering Flight Crew Compartment (e.g. use of peep holes, code words, etc);
- j) Limiting access to the area in the immediate vicinity of Flight Crew Compartment;
- k) Emphasize use of the Flight Crew Compartment/cabin interphone as the primary method of communication;
- l) Promote the use of seat belts during flight to help monitor passenger activity and to keep aisles clear;
- m) Promote an increase in cabin supervision as a means to observe suspicious passenger behavior;
- n) Passenger management to minimize congestion at lavatories located near the Flight Crew Compartment;
- o) Provide a clear area around the Flight Crew Compartment entrance when pilots leave or enter the Flight Crew Compartment;
- p) Maximize cabin crew view of the Flight Crew Compartment area;
- q) Promote the use of the forward lavatory by the flight crew whenever it is practicable;
- r) Minimize passenger's view of the Flight Crew Compartment entrance area by use of curtains; and
- s) Methods of serving refreshments/ meals to Flight Crew Compartment crew.



23.6 MISCELLANEOUS

A. Every operators shall comply with the requirements by means of updating the company manuals and obtain the approval from Director General of Civil Aviation prior to the implementation.

B. Every Operator shall ensure that all personnel concerned are trained on the laid down procedures and given recurrent training and relevant records shall be maintained as per the approved procedures.