



**OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION  
TECHNICAL CENTRE, OPP SAFDURJUNG AIRPORT, NEW DELHI.**

**CIVIL AVIATION REQUIREMENTS  
SECTION -7: FLIGHT CREW STANDARDS  
TRAINING & LICENCING  
SERIES 'M' PART II,  
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**EFFECTIVE: .....**

**File NO. AV 22024/08/2017-FSD**

**Sub: Flight Dispatcher Training and Approval**

**1. Introduction:**

Flight Dispatchers (Flight Operations Officers) are involved in operational control in accordance with the operator's approved method of control and supervision of flight operations. These personnel are required to be trained and qualified in accordance with ICAO Annex 1 and their duties and responsibilities are specified in ICAO Annex 6. This CAR is issued under the Rule 29 C and 133 A of the Aircraft Rules 1937 to set out the requirements to impart necessary training and qualification of flight dispatchers and their approval.

**2. Requirements of Issue of Approval Flight Dispatchers:**

**2.1 General**

No operator shall use any person nor shall any person serve as a flight dispatcher unless that person has been approved by the DGCA to act as Flight Dispatcher for the type of aircraft for the operator.

**2.2 Educational Qualification**

The applicant for Flight Dispatcher shall have passed class 10+2 or an equivalent examination with Physics and Mathematics from a recognized Board/University.

### 2.3 Age

The applicant shall be not less than 21 years of age.

### 2.4 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight dispatcher approval, in at least the following subjects:

#### **Air law**

- a) Rules and regulations relevant to the holder of a flight dispatcher approval; appropriate air traffic services practices and procedures;

#### **Aircraft general knowledge**

- b) Principles of operation of aeroplane engines, systems and instruments;
- c) Operating limitations of aeroplanes and engines
- d) Minimum equipment list;

Flight performance calculation, planning procedures and loading

- e) Effects of loading and mass distribution on aircraft performance and Flight characteristics; mass and balance calculations;

Operational flight planning; fuel consumption and endurance calculations; alternate aerodrome selection procedures; en-route cruise control; extended range operation;

- f) Preparation and filing of air traffic services flight plans;
- g) Basic principles of computer-assisted planning systems;

#### **Human performance**

- h) Human performance relevant to dispatch duties, including principles of threat and error management;

Note — Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).

### **Meteorology**

- i) Aeronautical meteorology; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;
- j) Interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information;

### **Navigation**

- k) Principles of air navigation with particular reference to instrument flight; operational procedures
- l) Use of aeronautical documentation;
- m) Operational procedures for the carriage of freight and dangerous goods;
- n) Procedures relating to aircraft accidents and incidents; emergency flight procedures;
- o) Procedures relating to unlawful interference and sabotage of aircraft;

### **Principles of flight**

- p) Principles of flight relating to the appropriate category of aircraft; and

### **Radio communication**

- q) Procedures for communicating with aircraft and relevant ground stations.

## **2.5 Experience**

The applicant shall have gained the following experience:

- a) A total of two years of service in any one or in any combination of the capacities specified in 1) to 3) inclusive, provided that in any combination of experience the period serviced in any capacity shall be at least one year:
  - 1) A flight crew member in air transportation;  
or
  - 2) A meteorologist in an organization dispatching aircraft in air transportation;  
or

- 3) an air traffic controller; or a technical supervisor of flight operations officer or air transportation flight operation systems; or
- 4) **Pilot holding a valid CPL/ATPL or pilot whose CPL/ATPL has not expired for more than three years on the date of application for approval as Dispatcher, shall only be required to qualify in Technical Specific Examination (including Performance) conducted by DGCA (CEO) / DGCA Approved ATO on the Aircraft Type the candidate desires to obtain Flight Dispatcher's Approval; or**

b) have satisfactorily completed a course of approved training.

The applicant shall have served under the supervision of a flight dispatcher at least 90 working days within the six months immediately preceding the application.

## 2.6 Skill

The applicant shall have demonstrated the ability to:

- a) Make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighbourhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;
- b) Determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans;
- c) Provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions, as appropriate to the duties of the holder of a flight dispatcher approval; and
- d) Recognize and manage threats and errors.

Note. — Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

### 3. Flight Dispatcher Training Programme

- 3.1 The training programme for Flight Dispatchers will be documented in Operations Manual Part D and approved by FSD, DGCA and shall comprise of the following curriculum. The maximum training hours per day shall be **8** hours.
- a) Initial training
    - 1. Basic Knowledge
    - 2. Applied Practical Training
  - b) Type training
  - c) Transition training
  - d) Recurrent training
  - e) Refresher training
  - f) Differences training

Note: For assessment purposes, the pass percentage for all training shall be 70%.

- 3.2 Each training curriculum shall include practical demonstration as applicable.
- 3.3 Each training curriculum shall cover the differences between aircraft of the same type operated by the airline/operator to ensure that the Flight Dispatchers are adequately trained to perform their assigned duties on different aircraft being operated.

### 4. Initial Training

Initial training shall consist of basic knowledge training and applied practical training. Initial training is required for the persons who have not been previously approved/carried out flight dispatch duties during the preceding **5 years**. The goal of initial training is to ensure that each trainee acquires the competencies, knowledge and skills required to perform the duties and responsibilities related to a flight dispatcher. The training shall be conducted as per Appendix 1. Flight dispatchers holding current approval from an ICAO Contracting State with verification of training, approval and experience from the Contracting State may be given credit of OJT for up to 8 weeks (Phase Two of Appendix 1) depending on the training undergone in the Contracting State.

### 5. Type training

**Type training is required to gain qualification on the aircraft model and its variants that the flight dispatcher will be assigned on. However, for addition of aircraft type to the flight dispatcher approval, as a minimum, Module 7 and 9 of “Initial Training Basic Knowledge” (Appendix 1) will be conducted.**

**6. Transition training**

Training for flight dispatchers who are qualified on the aircraft type, but from a different operator. This will consist of operator indoctrination course with minimum duration 32 hours covering the operations manual and human factors (DRM/CRM). Additionally, applicable recurrent training as per Para 7 below shall be carried out prior to application for flight dispatcher approval with the new operator.

**7. Recurrent / Refresher Training**

- 7.1 Recurrent training is conducted annually to ensure the maintenance of competencies, knowledge and skills through a series of theoretical training, hands-on exercises, simulated exercises, written exam, etc. relevant to each aircraft type on which the flight dispatcher will be assigned duties. This shall be documented in Operations Manual Part D.
- 7.2 Recurrent training validity is 12 months. If carried out in 3 months preceding the expiry, the subsequent validity will be 12 months from the original expiry. The minimum duration of recurrent training shall be 24 hours.
- 7.3 An operator shall ensure that each flight dispatcher who has not carried out any flight dispatch duties from 3 up to 60 months completes extended recurrent training and minimum number of days of on-job-training (OJT) under an approved flight dispatcher followed by observation flights prior to exercising privileges of the approval as per the table below:

Gap period	Extended Recurrent Training	OJT	Observation Flight (aeroplane/simulator)
03-06 months	16 hours	01 day	NA
06-12 months	24 hours	02 day	NA
12-24 months	36 hours	3 days	One sector
24-36 months	48 hours	7 days	Two sectors
36-60 months	72 hours	30 days	Four sectors
More than 60 months	Complete Flight Dispatcher Training		

**7.4 For re-qualification of a dispatcher on a type of aircraft after gap of Five years, if Flight dispatcher having multiple approvals on different type of Aircraft but current on a specific type of Aircraft, would require to do type training only on aircraft having gap and no other practical training required.**

**8. Differences training**

The duration of differences training shall depend upon degree of differences between the different variants of aircraft of the same type used by the operator. Differences training for variants of a particular type of aircraft may be included in initial, transition, and recurrent training for the aircraft.

**9. Flight Dispatcher**

A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

- a) Satisfactorily completed an operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations
- b) Carried out within the preceding 12 months, at least a one- way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

Note — For the purpose of the qualification flight, the flight operations officer/flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.

- c) Demonstrated to the operator a knowledge of:
  - 1) the contents of the operations manual
  - 2) the radio equipment in the aeroplanes used; and
  - 3) the navigation equipment in the aeroplanes used;
- d) Demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:
  - 1) the seasonal meteorological conditions and the sources of meteorological information;
  - 2) the effects of meteorological conditions on radio reception in the aeroplanes used;
  - 3) the peculiarities and limitations of each navigation system which is used by the operation; and
  - 4) the aeroplane loading instructions;

- e) Demonstrated to the operator knowledge and skills related to human performance relevant to dispatch duties; and
- f) Demonstrated to the operator the ability to perform the duties.

## **10. Training facilities**

### **10.1 Facilities and equipment for classroom-based training**

#### **10.1.1 General.**

Whenever the operator utilizes training facilities an approval from the DGCA shall be obtained for the facility and equipment utilized for training/ maintenance before commencing the training. Training may include the use of, video presentations; computer based training, e-learning and other types of training.

#### **10.1.2 Classroom facilities**

The space for each adult in a classroom will be from 1.4m<sup>2</sup> to 6.7m<sup>2</sup>. Each trainee's workspace should include space to house trainee's work surface, any additional equipment, the chair, space for chair pushback and maneuverability.

#### **10.1.3 The learning environment.**

It will be ensured that temperature should be comfortable, ventilation should be adequate, lighting should be adequate and training equipment should be adequate.

#### **10.1.4 Use of instructional aids.**

Instructional aids may include the use of computer-based-training (CBT), e-learning in which case, this should be supported by instructors.

### **10.2 Trainee to instructor ratio**

The trainee to instructor ratio shall be limited to 25:1.

### **10.3 Instructional personnel**

Modules and topics concerning aircraft technical and performance shall be conducted by approved ground instructors. Human factors (CRM/DRM) shall be conducted by facilitators authorized by the post-holder training. Topics concerning meteorology, legislation, ATM may be conducted by subject matter experts (SMEs) authorized by the post-holder training. Flight dispatch functions shall be instructed by approved Flight Dispatch Trainers. OJT may be conducted under an approved flight dispatcher authorized by the post-holder training.



## 10.4 Flight Dispatch Trainers

Flight dispatchers with experience of 3 years with an Indian operator or a person who has held flight dispatch instructor approval with another Indian operator, may be approved as flight dispatch trainers to impart training on flight dispatch functions provided they have completed type/transition training and other training as per Appendix 2. Approval shall be issued for 5 years by the Post Holder Training.

## 11. Competency Check For Flight Dispatchers

To demonstrate his competency, a Flight Dispatcher should undergo following tests/examinations:

### 11.1 Written test/Examination

Each Flight Dispatcher trainee after having undergone the prescribed initial training (basic knowledge) shall appear in a written examination conducted by DGCA (Central Examination Organization) / **DGCA Approved ATO**. The examination shall consist of:

- a) General subjects,
- b) Specific on type of aircraft.

**Note : General subject test are exempted for a pilot holding a valid CPL/ATPL or pilot's whose CPL/ATPL has not expired for more than three years on the date of application for approval as Dispatcher, shall only be required to qualify in Technical Specific Examination (including Performance) conducted by DGCA (CEO) / DGCA Approved ATO on the Aircraft Type the candidate desires to obtain Flight Dispatcher's Approval**

### 11.2 Oral and Practical Test:

The applicant after successfully undergoing the basic knowledge training and DGCA Flight Dispatcher examination shall carry out applied practical training within six months immediately preceding the application for oral test. The practical training should commence within 12 months from the date of the declaration of result of the written examination.

11.3 In case of failure in Test as per 11.1 Written Test/Examination the candidate can reappear for the same after a period of minimum 30 days

## 12. Duties and Responsibilities of Flight Dispatcher

The Flight Operations Officer/Flight Dispatcher(s) on duty shall, one hour before the scheduled departure of a flight:

- a) Collect the latest meteorological data from the concerned agencies and thoroughly analyse the possible effects of the weather on the route to be flown in the light of meteorological reports and forecasts for the destination and alternate aerodromes; recent weather reports and forecasts for the route and areas adjacent to it; and current weather maps;
- b) Collect the latest available data on standard instrument departures, en-route facilities, noise abatement operational procedures, navigation aids, aerodrome facilities, ATC and communication procedures, NOTAM, runway conditions, search and rescue facilities and other information and regulations likely to affect the flight and brief the flight crew as required.
- c) Prepare an operational flight plan consistent with standard instrument departures, noise abatement operational procedures, ATC regulations and the regulations of all the States to be overflown for the consideration of the pilot-in-command;
- d) If empowered to do so by the operator, to delay or cancel the flight or otherwise decide on a possible route or alternative routes which may be flown safely and in accordance with company procedures and standards, taking into account likely weather conditions at the destination and alternate aerodromes; en-route weather; and the maximum fuel load possible.
- e) Provide the meteorological briefing to the flight crew.
- f) Brief the crew on the route analysis and the operational flight plan bringing to his notice the factors that have influenced the choice of route;
- g) Furnish the pilot-in-command with all latest available information on the Route to be flown;
- h) Obtain the Pilot-in-command's signed concurrence with the operational flight plan;
- i) Prepare and file the ATC flight plan.
- j) Any other functions deemed necessary for the safe operation of the flight.
- k) Other duties enlisted in the Company's Operation Manual.

**13. In the event of an emergency, a Flight Dispatcher shall:**

- a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
- b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight

**14. Flight Dispatch by Approved Agencies**

- 14.1 Scheduled operators engaged in international public operations may engage the services of approved agencies/ organisations/ airlines outside India provided such agencies/ organisations/ airlines have the approval from the local Civil Aviation Authority. The Flight Dispatchers engaged by those agencies shall meet the qualification and experience requirements as contained in ICAO Annex 1. The Director of Operations of the Airline shall ensure that the services provided by these agencies are fully satisfactory for their operations.
- 14.2 DGCA may inspect such flight dispatch facility to confirm that they have and continue to maintain the operational capability and manpower to provide flight dispatchservices.

**15. General Requirements:**

- 15.1 No airline/operator may use any person nor may any person serve as a flight dispatcher unless that person has been approved by the DGCA to act as Flight Dispatcher for the type of aircraft.
- 15.2 The airline/operator should ensure that all flight dispatcher undergo periodic refresher and other training courses as stipulated in the CAR.
- 15.3 DGCA may monitor the training programme and the performance of the Flight Dispatchers from time to time.
- 15.4 The detailed syllabus for Flight Dispatchers' Course given at Annexure 'A' to the CAR, should be followed for training of Flight Dispatchers.
- 15.5 Notwithstanding the above, DGCA may specify any additional requirements or waive off any requirement if considered necessary.

**16. Issue, Withdrawal and Renewal of Flight Dispatcher Approval**

On successful completion of requirements as laid down in this CAR, FSD, DGCA may issue flight dispatcher approval for a period of 5 years. DGCA may withdraw this approval if the requirements are no longer met or the flight dispatcher fails to meet standards on the basis of which approval was issued. The operator shall ensure that certificate by post-holder training indicating satisfactory performance of the flight dispatcher for the previous 5 years along with recurrent training records for the last 2 years are submitted to FSD at least 3 months prior to expiry of approval following which renewal of approval may be issued by

DGCA. Fees for initial approval shall be Rs 5000 and for renewal of flight dispatcher approval shall be Rs 2500.



**(BS Bhullar)  
Director General of Civil Aviation**

**Appendix 1**

**INITIAL TRAINING**

**Phase One – Basic Knowledge**

Module	Subject Matter	Trainees <b>without</b> Previous Aviation Experience (duration in hours)	Trainees <b>with</b> Previous Aviation Experience (duration in hours)
1.	Civil air law and regulation	30	18
2.	Aviation indoctrination	12	6
3.	Aircraft mass (weight) and performance	<b>16</b>	<b>6</b>
4.	Navigation	24	12
5.	Air traffic management	39	21
6.	Meteorology	42	21
7.	Mass (weight) and balance control	<b>16</b>	<b>6</b>
8.	Transport of dangerous goods by air	8	8
9.	Flight planning	18	9
10.	Flight monitoring	16	16
11.	Communication – Radio	18	6
12.	Human factors	15	15
13.	Security (emergencies and abnormal situations)	8	6

**Note: Current Experience as Flight Dispatcher**

**Phase Two – Applied Practical Training**

Module	Subject Matter	Duration
1	Applied practical flight operations	<b>1 Day</b>
2.	Route familiarization ( <b>Actual Aircraft</b> )	<b>25 hours</b>
3.	Flight dispatch functions (OJT)	<b>90 Working Days</b>
4.	Simulator LOFT observation.	4 hours

**Note: In case of NSOP, Loft (Module 4) may be conducted on Aircraft itself, in the absence of Simulator.**

Note: Refer ICAO Doc 7192 Training Manual Flight Operations Officer/Flight Dispatchers Part D3

**FLIGHT DISPATCH TRAINER**

**Topics**

<b>Flight Dispatch Trainer</b>	The person shall go through a Train The Trainer course (duration 40 hours). This is not applicable for a person already holding a valid flight dispatcher instructor approval as on date of issue of this CAR, however recurrent train the trainer course will be carried out every 2 years for all FD trainers
	Oral examination on the aircraft type to be conducted by Post Holder training/operations
	If satisfactory, then an approval shall be accorded for the period of 5 years. For existing FD Instructors under CAR, Section 7, Series M, Part II, Post Holder training may issue an approval under this CAR with the validity of approval 5 years from date of issue of this CAR without additional requirements, followed by renewal process as per eligibility requirements of this CAR
	If the performance is unsatisfactory, the trainer shall be assessed again after 1 month
	In case of repeated failure, the trainer may be assessed after 3 months. The operator shall maintain the record of all the classes (including its performance)
	For renewal of approval, a viva by Post Holder Training/operations will be conducted and on successful evaluation
	The approval shall be renewed for 5 years from the date of previous validity.

**SYLLABUS FOR FLIGHT DISPATCHER'S COURSE**

**A. INITIAL TRAINING**

1	<b>NAVIGATION GENERAL</b>
1.1	<b>Shape of the Earth</b>
	Axis and Poles
	Small circle, Great circle and Rhumb line
	Equator and Parallels of Latitudes
	Prime Meridian and Meridians
	Position in terms of Latitude and Longitude
	Position in terms of bearing and distance
	Motions of the Earth and their effects
1.2	<b>Measurement of Direction</b>
	Variation and Deviation
	True, Magnetic and Compass direction
	Conversion from one to other
1.3	<b>Measurement of Distance</b>
	Nautical Mile, Statute Mile and Kilometre
	Conversion from one to other
1.4	<b>Measurement of Speed</b>
	Indicated Air Speed,
	Calibrated Air Speed,
	Equivalent Air Speed,
	True Air Speed
	Mach Number
	Conversion from one to other
1.5	<b>Triangle of Velocities</b>
	Heading and True Air Speed
	Track and Ground Speed
	Wind direction and speed
	Drift and track error
1.6	<b>Measurement of Time</b>
	Local, Zone and Standard Time
	Universal Coordinated Time (UTC)
	Relationship between Time and Longitude
	International Date Line
	Conversion from one to other
1.7	<b>Sun Rise, Sun Set and twilight Calculations</b>

1.8	<b>Projections</b>
	Ideal Requirements
	Relief
	Scale, Scale error
	Appearance, Properties,
	Uses and Limitations of Mercators
	Lamberts and Polar Stereographic projections
2	<b>FLIGHT PLANNING</b>
2.1	<b>Circular Slide Rules</b>
	Conversions:
	Nautical Mile/Statute Mile / Kilometre
	Calibrated Air Speed/True Air Speed/Mach Number
	Pressure Altitude/Density Altitude
	Feet/Meter
	Gallons/ Litres, Lbs/Kgs
	Computations :
	Time/Distance/Speed/Fuel Consumption
	Solution of Triangle of Velocities
2.2	Object and Methods of flight planning
	Detailed format of a flight plan
2.3	Flight Planning exercises using Performance Data, Tables, range Tables & graphs
2.4	Concept and calculations of 'Critical Point' and 'Point of No Return'
2.5	Route Flight Planning
	Requirements
	Step Climb
	Speed constraints
	Minimum Time Track/Path
	Fixed Time flight plans
2.6	Computerised Flight Planning
	Advantages and Procedures
	Forward and Backward Pass Flight Planning
3	<b>RADIO AIDS AND INSTRUMENTS</b>
3.1	<b>Properties of Electromagnetic Waves</b>
	Frequency and Wave length
	Frequency Spectrum
	Types of Radio Transmission
	Ionosphere and its effect on propagation of Radio Waves
3.2	<b>General Principles</b>
	use and limitations of :



	Automatic Direction Finding (ADF)
	VHF Omnidirectional Range (VOR)
	Distance-Measuring equipment (DME)
	OMEGA
	Global Positioning System (GPS)
	Instrument Landing System (ILS)
	Radio Altimeter
3.3	<b>Principles of Operation of Radar</b>
	Use and Limitations of :
	Weather Radar
	Airport surveillance Radar (ASR)
	Precision - Approach Radar (PAR)
3.4	<b>General Principles</b>
	Use and limitations of :
	Inertial Navigation System (INS)
	Flight Management System (FMS)
	Transponders
	Traffic Collision avoidance system (TCAS)
3.5	<b>General principles</b>
	Use and errors of :
	Pressure Altimeter
	Vertical Speed Indicator (VSI)
	Air Speed Indicator (ASI)
	Machmeter
	QFE, QNH, QNE
3.6	Properties and application of Gyroscope in Flight Instruments
3.7	Basic Principles and error of Direct and Remote Indicating Compass
4	<b>METEOROLOGY</b>
4.1	<b>Atmosphere</b>
4.1.1	Description of atmosphere, troposphere, Tropopause and Stratosphere
4.1.2	Weather elements
	Pressure, Temperature,
	Humidity, Visibility, Wind and Clouds
	ISOBARS, ISOTHERMS, ISOTACHS
	CONTOURS.
4.1.3	International Standard Atmosphere
	Standard Pressure Levels
4.1.4	Causes of Weather phenomena
	Lapse Rate

	Environmental Lapse Rate (ELR)
	Dry Adiabatic Lapse Rate (DALR)
	Saturated Adiabatic Lapse Rate (SALR)
	Stability and Instability Criteria
4.2	<b>Weather</b>
4.2.1	Pressure Systems :
	Low, High, Trough, Ridge
	Variation of Pressure
4.2.2	Surface Winds
	Pressure gradients
	Coriolis force
	Geostrophic & Cyclostrophic Winds
	Gradient Winds
	Thermal Winds
	Buys Ballots Law
	Land and Sea Breezes
	Katabatic/Anabatic Wind
	Fohn wind
	Gust, squall and gale
	Mountain waves
	Convergence, Divergence & Subsidence
4.2.3	Clouds :
	Types by appearance and level
	Process of formation
	TCU and CB development and hazard
4.2.4	Precipitation - drizzle, rain, snow and hail
4.2.5	Obscurity
	Mist, Fog, Smog and Haze
	Types of Fog
	Favourable conditions and impact of radiation,
	Advection and frontal fog
4.2.6	Turbulence :
	Types & occurrence,
	Clear Air Turbulence (CAT)
	Recognition and Avoidance
	Wind Shear, Micro-Burst
4.2.7	Jet Streams :
	Types, occurrence and seasonal variations
	Impact on route planning

4.3	<b>Synoptic Meteorology</b>
4.3.1	Air Mass and its types, sources and movements of each Frontal system, types, occurrence, movements, and associated weather
4.3.2	Inter Tropical Convergence Zone Occurrence, associated weather and seasonal variations
4.3.3	Western Disturbance Occurrence, movements and associated weather
4.3.4	Tropical revolving storms, cyclones, Typhoons Origin development and tracks Associated weather hazards
4.4	<b>Climatology</b>
4.4.1	World climatology, climatological zone Route climatology of major air routes of the world
4.4.2	Indian Climatology Monsoon, Various seasons, months associated weather conditions Upper air wind, temperature of each seasons Air Route climatology of major routes over Indian and neighbouring countries.
4.5	<b>Meteorological Services</b>
4.5.1	Met organisations and their functions India Meteorological Department (IMD) World Meteorological Organisation (WMO) Aeronautical Met Services Legal aspects of Aviation Met. Services Exchange of Met Data
4.5.2	Met Observations Surface weather observations Upper air observations, Balloon and radio sonde Weather Radar Meteorological Satellite and Satellite cloud imageries Synoptic charts, legends, symbology in use Analysis and interpretation
4.5.3	Format, abbreviations and interpretation of each METAR, SPECI, SPECIAL REPORT, SIGMET VOLMET, AIREP
4.5.4	Forecasting Product, Format abbreviations and interpretation of Terminal Area Forecast (TAF) Route Forecast (ROFOR) and Met Folder Forecast upper wind and temperature for Aviation (WITEM) Short, Medium and Long range forecast

5.	<b>GENERAL PERFORMANCE</b>
5.1	Theory of Flight and General Performance
5.1.1	Elementary Principles of aerodynamics
	Angle of incidence and Angle of Attack
	Center of gravity and Center of Pressure
	Lift/Drag ratio
5.1.2	Basic parts of an airplane and their contribution
	Flaps and Slats
	Spoilers and Speed brakes
	Aileron, elevators and rudder
	Trim Tabs
5.1.3	Power Plants
	Turbo-prop - Basic elements
	Shaft Horse Power (SHP)
	Water Methanol
5.1.4	Power Plants
	Jet engines
	Basic elements and concept of
	RAM Jets,
	Turbo jets
	Fan jets
	Efficiency and limitations of jet engines
	Thrust measurements
5.1.5	Understanding of mandatory, recommendatory and operational performance requirements
5.1.6	Gross and Net Performance
5.1.7	Definitions :
	Take-off Run - Available/Required
	Take-off Distance - Available/Required
	Acceleration Stop distance - Available/Required
	Landing Distance - Available/Required
	Balanced Field Length
	Effect of Slope and Wind
5.1.8	Definition and understanding of speeds :
	Vmca, Vmcg
	V1,VR, V2, V3,
	Green dot,
	Vref, VAPP
5.1.9	Take Off flight Path segments
5.1.10	Take-off and landing Weight Limits :
	Structural, Field, Climb, brake energy,
	Tyre Speed and Obstacle Limits
5.1.11	Aircraft Weight Terminology :
	Tare, Basic. OWE, ZFW, Max ZFW, BRW, Payload

5.1.12	Concept of optimum altitude
	Max range
	`G' Limit altitude
	Wing altitude Trade
	Max endurance speeds
	Step climbs
	Cost Index cruise speeds
6	<b>SPECIFIC AIRCRAFT PERFORMANCE</b>
6.1	Dimensions and Configuration
6.2	Certified Wt. Limitations
6.3	General understanding of aircraft systems
6.4	Navigation and emergency equipment
6.5	Flight Planning
	Climb, Cruise and descent speed schedules and data
	Fuel Requirements
	Payload calculations
6.6	Take-off Performance
	Normal and Special operations
6.7	Enroute Performance
	One engine inoperative data to restrict Max Take off weight due to obstacle enroute
6.8	Landing Performance :
	LDR in dry and Wet runway conditions
	Contaminated runways
	Anti-skid in-operative operations
	Calculations of Max Landing Weight
6.9	Practical use of performance graphs.
	Tables and manuals
6.10	Minimum Equipment List
	Configuration Deviation List and DDPG
	Implications for dispatch
	Dispatch Deviation and procedure Guide
6.11	Extended range operations (ETOPS)
	Requirements and performance considerations
7	<b>REGULATIONS</b>
7.1	Duties & responsibilities of Flt Dispatchers
7.2	A.I.P.
7.3	Indian Aircraft Rules
	Study and application of sections relevant to dispatch
7.4	Civil Aviation Requirements (CAR)
	Study of applicable regulations with emphasis on safety, fuel and oil requirements
7.5	Responsibility and authority of Pilot-in-Command (PIC)
7.6	Regulations and procedures in event of accident/incident

7.7	Air Traffic Control
	Terminology and procedures,
	General rules of the air,
	IFR, VFR requirements,
	Airspace
	Classification, separation standards
7.8	ICAO Flight Plan
	Contents
	Filing
	Validity
7.9	NOTAMS
	Distribution, classes, compilation and maintenance
7.10	Crew
	Licence Requirements
	Competency Regulations
	Flight and Duty Time regulations
	Rotering.
8	<b>AERONAUTICAL INFORMATION / ROUTE MANUAL</b>
8.1	Detailed study of
	Enroute charts, Terminal charts, SID, STARS,
	Airport Directory, LCN/PCN tables, chart
	NOTAMS
8.2	Organisation of manuals
	Sections, page numbering, tailoring
8.3	Revision Procedures Checklist
9	<b>AERODROME OPERATING MINIMA</b>
9.1	Elements, Units and Interpretation
9.2	Take off Minima, landing minima, ETOPS minima
9.3	Un-serviceability of Ground facilities and its effect on Wx. Minima.
10	<b>CREW BRIEFING TECHNIQUES</b>
10.1	Pre-flight documentation
10.2	Counter dispatch
	Preparation, presentation, sequence,
	emphasis on special items,
	Use of NOTAM Bulletins weather bulletins.
	Selection of alternate Airport due to Forecast weather and Minima Requirements.
10.3	Through Dispatch
	Preparation, dropping flight plans,
	sending flight plan release message

10.4	Remote Dispatch
	Preparation, dropping flight plans, Sending flight release message.
11	<b>ADVISORY INFORMATION TO AIRCRAFT IN FLIGHT</b>
11.1	Changes in the availability of Airport facilities Approach Aids and weather etc.
11.2	Supplementary information from MEL regarding System malfunction/failures
11.3	Company policy on flight watch, use of light status system for monitoring flights, movement messages
11.4	Accident/incident reporting procedures
12	<b>COMMUNICATIONS</b>
12.1	Ground to Ground
	AFTN, SITA, ARINC Systems, Priority codes, Formats, Limitations
12.2	In-House Comm. System
12.3	Ground-Air-Ground
	Use of VHF, HF in ATC and Company Communication, Limitations
12.4	Future Systems
	SATCOM, AIRCOM, ACARS, ADS
13	<b>CREW ADMINISTRATION</b>
13.1	Company requirements for minimum complement of crew
13.2	Company rules for crew FDTL and crew rest
13.3	Crew Scheduling considerations
14.	<b>HANDS ON TRAINING</b>
14.1	Demonstration of Flight Dispatch activities in real time
14.2	Test
14.3	Review
15	<b>HUMAN PERFORMANCE TRAINING CURRICULUM</b>
15.1	Introduction to Human Factors in Aviation and the Human Element (Aviation Physiology)
15.2	Interpersonal Relations
	Factors influencing verbal and non-verbal communication between & with - Flight Crew - Cabin Crew - Maintenance Personnel - Company Management/Flight Operations Control - Air Traffic Services Passengers

**B. TRANSITION AND/OR CONVERSION TRAINING**

For each additional type of aircraft,4 the syllabus mentioned in paras 6.1 to 6.11 shall be applicable

**RECURRENT/REFRESHER TRAINING**

1. Workshop on communications systems, MET & NOTAM access procedures, Jeppesen Manuals, computerised flight planning
2. Review of accident/incident reporting procedures weather minima interpretation
3. Exercises on take-off performance, one for each type/ version of aircraft
4. Exercises in flight planning, using simplified graphs, FCOM tables, range tables
5. Test
6. Review of test