CORE CONCEPT

Flight Operations Engineering Course: Aircraft Performance, EDTO and Fuel Efficiency

21 December 2026 – 1 January 2027
London - Central London four-star

Flight Operations Engineering Course: Aircraft Performance, EDTO and Fuel Efficiency

Ref: 2118_30688 **Date:** 21 December 2026 – 1 January 2027 **Location:** London - Central London four-star **Fees:** 41400 SAR

Introduction:

Flight operations engineering for aircraft performance, EDTO and fuel efficiency is a 2-week course for airline performance engineering, flight operations support and fuel efficiency units, ending with a Performance and Fuel Efficiency Plan for a case airline. Airlines lose payload and waste fuel when runway weight tables are outdated, EDTO alternates lack critical fuel checks and cost index or tankering choices rest on habit. Nominees already produce performance data or manage fuel figures at work and practise through a modelling build of runway tables, route studies and fuel models. CoreConcept Training Center delivers this flight operations engineering course.

Course Objectives:

- Calculate take-off and landing limits from aircraft flight manual data, including field length, climb gradient, obstacle clearance and contaminated runway corrections
- Build runway weight tables and engine-out departure procedures that protect payload while keeping the net flight path clear of surveyed obstacles
- Analyse en-route terrain clearance, drift-down and depressurisation profiles and prepare EDTO route studies with alternates, critical fuel and area of operation
- Control performance data quality through validated software databases, change control and independent cross-checks of every calculation
- Model cost index, single-engine taxi, APU use and fuel tankering decisions to quantify fuel and time trade-offs for a route network
- Run a fuel efficiency initiative register with KPIs, flight data measurement and benchmarking, and present a Performance and Fuel Efficiency Plan

Target Audience:

- Performance engineering units responsible for take-off, landing and en-route performance data for an airline fleet
- Flight operations support units responsible for engine-out procedures, aerodrome analyses and performance manuals
- Fuel efficiency units responsible for fuel saving initiatives, fuel policy proposals and savings measurement
- EDTO planning units responsible for route studies, alternate aerodrome lists and critical fuel data
- Flight operations technical units responsible for electronic flight bag performance tools and flight planning databases

Course Outline:

Day 1: Flight Operations Engineering Role and Performance Data Foundations

- Flight Operations Engineering Function Within the Airline Technical Organisation
- Aircraft Flight Manual Performance Chapters and Certified Limitations
- Standard Atmosphere, Pressure Altitude and Density Effects on Performance
- Take-Off Speeds V1, VR and V2 Relationships
- Performance Engineering Baseline Review Using Current Airline Manuals

Day 2: ICAO Annex 6 Performance Requirements and EDTO Principles

- ICAO Annex 6 Part I Aeroplane Performance Operating Limitations
- Accelerate-Stop and Accelerate-Go Distances for Take-Off Field Length
- Second-Segment Climb Gradient and Net Take-Off Flight Path
- Landing Distance Required and Factored Dispatch Landing Distance
- EDTO Concepts of Threshold Time and Maximum Diversion Time

Day 3: Take-Off and Landing Performance Analysis

- Runway Weight Table Construction per Runway and Intersection
- Obstacle Survey Data Entry and Net Flight Path Clearance
- Engine-Out Standard Instrument Departure Design and Turn Procedures
- Contaminated and Wet Runway Performance Corrections and Limits
- Reduced Thrust and Derated Take-Off Policy With Margin Checks

Day 4: Performance Software, Flight Planning Databases and Fuel Records

- Electronic Flight Bag Performance Application Database Validation
- Computerised Flight Plan Performance Factors and Aircraft Database Updates
- Fuel Uplift, Burn and Remaining Fuel Record Reconciliation
- Flight Data Parameters Feeding Fuel and Performance Analytics
- Performance Degradation Monitoring From Cruise Fuel Flow Trends

Day 5: Week-One Case Study on Runway and Take-Off Performance

- Case Airline Route Network and Fleet Performance Data Pack
- Case Runway Weight Table Build for a Hot Aerodrome
- Case Engine-Out Departure Review Against Terrain Survey Data
- Case Wet Runway Landing Weight Restriction Assessment
- Week-One Findings Log Feeding the Final Plan

Day 6: En-Route Performance, Drift-Down and EDTO Route Studies

- En-Route Net Flight Path and Terrain Clearance Analysis
- Drift-Down Profile and Escape Route Planning Over High Terrain
- Cabin Depressurisation Oxygen Profile and Emergency Descent Routing
- EDTO Adequate and En-Route Alternate Aerodrome Selection Criteria
- EDTO Critical Fuel Scenario Calculation and Area of Operation Mapping

Day 7: EDTO Approval Evidence, Performance Data Governance and Quality Assurance

- EDTO Significant System Time Limits and Maximum Diversion Approval File
- EDTO Alternate Weather Minima and Rescue and Firefighting Category Checks
- Performance Data Change Control and Manual Amendment Procedure
- Performance Calculation Error Barriers and Independent Cross-Check Routine
- Safety Risk Assessment for Performance and EDTO Changes

Day 8: Fuel Efficiency Levers and Stakeholder Engagement

- Cost Index Selection From Time-Related and Fuel Cost Ratios
- Single-Engine Taxi and APU Usage Policy Design
- Fuel Tankering Breakeven Model With Extra Burn Penalty
- Discretionary Fuel Uplift Analysis and Pilot Fuel Policy Dialogue
- Pilot, Dispatch and Maintenance Engagement Plan for Fuel Savings

Day 9: Fuel Efficiency KPIs, Benchmarking and Continuous Improvement

- Fuel Efficiency KPI Set per Block Hour and Payload
- Fuel Saving Initiative Register With Verified Savings Method
- Flight Data Measurement of Taxi, Climb and Descent Practices
- Airframe Drag and Onboard Weight Reduction Initiative Tracking
- Fleet Benchmarking Dashboard and Periodic Fuel Review Cycle

Day 10: Modelling Build of the Performance and Fuel Efficiency Plan

- Capstone Brief With Case Airline Fleet and Network Data
- Runway and EDTO Analysis Package Assembly for the Case Fleet
- Cost Index, Tankering and Taxi Policy Model for Case Network
- Fuel Efficiency KPI Dashboard and Savings Target Setting
- Performance and Fuel Efficiency Plan Completion and Panel Defence

Skills You Will Gain:

- Take-Off Performance Analysis
- Runway Weight Table Production
- Obstacle Clearance Assessment
- Drift-Down Route Analysis
- EDTO Critical Fuel Planning
- Cost Index Optimisation
- Fuel Tankering Economics
- Fuel Savings Verification

Why Attend This Course:

- Present a Performance and Fuel Efficiency Plan for a case airline to the director of flight operations and the head of fuel efficiency
- Decide which runway restrictions, EDTO alternates, cost index values and tankering sectors the airline should adopt from modelled evidence
- Avoid payload penalties, unprotected engine-out departures and unverified fuel savings caused by outdated or unchecked performance data
- Equip engineering and fuel colleagues with the runway table model, critical fuel worksheet and fuel initiative register built during the course

Conclusion:

Back at work, the participant hands the director of flight operations and the head of fuel efficiency a Performance and Fuel Efficiency Plan that sets runway table updates, engine-out procedure reviews, EDTO route and alternate choices, cost index and taxi policies, tankering rules and fuel KPIs. Flight operations uses it to approve performance changes and the fuel efficiency unit to prioritise savings initiatives. After the first quarter, the unit should compare measured fuel burn, payload restrictions and verified savings against the plan and revise its targets.

Frequently Asked Questions FAQ:

What should participants know before a flight operations engineering course on aircraft performance, EDTO and fuel efficiency?

Participants should already prepare performance data, flight planning inputs or fuel reports for at least one aircraft type. Basic aerodynamics and spreadsheet skills are enough. Bringing an anonymised runway table, route study or fuel report helps them apply the modelling exercises to their own fleet.

How does flight operations engineering differ from a flight dispatch or flight data monitoring course?

It produces the engineering inputs behind daily operations: runway tables, engine-out procedures, EDTO route studies and fuel policies. Dispatch courses apply those inputs to release individual flights, and flight data monitoring courses run safety event programmes rather than performance and fuel engineering.

Why does cost index matter in flight operations engineering and fuel efficiency?

Cost index balances time-related cost against fuel cost and sets the economic speed the flight management system flies. A low value saves fuel, a high value saves time. Choosing it by route and schedule pressure is one of the largest fuel levers an airline controls.

What do participants take back from the flight operations engineering course on aircraft performance, EDTO and fuel efficiency?

Participants take back a Performance and Fuel Efficiency Plan for a case airline, with a runway weight table model, an EDTO critical fuel worksheet, cost index and tankering models and a fuel KPI dashboard they can adapt to their own fleet and network.