



Airfield Engineering and Maintenance

Course: Pavement PCR, Ground Lighting, FOD and Rubber Removal



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Introduction:

Airfield engineering and maintenance, covering pavement PCR, ground lighting, FOD and rubber removal, is a 1-week course for airfield civil and electrical maintenance staff, airside inspection teams and aerodrome compliance staff, ending with an Airfield Maintenance and Inspection Plan for a case aerodrome. Aerodromes lose runway availability and certification standing when pavement strength reports drift from reality, rubber builds up in touchdown zones, lighting circuits fail unseen and debris goes unrecorded. Nominees already inspect or maintain runways, taxiways, aprons or lighting and learn through inspection walkthroughs of defect records and circuit data. CoreConcept Training Center delivers this airfield engineering and maintenance course.

Course Objectives:

- Inspect runway, taxiway and apron pavements, rate distress and report pavement strength using the ACR-PCR codes
- Plan friction measurement runs and schedule rubber removal from friction trends and runway condition codes
- Maintain AGL series circuits, isolation transformers and constant current regulators to keep lighting serviceable
- Run FOD prevention and wildlife hazard programmes with sweeping, FOD walks, detection systems and habitat control
- Control works in progress on the movement area with airside safety plans, closures and handback checks
- Assemble maintenance records into aerodrome certification evidence and an Airfield Maintenance and Inspection Plan

Target Audience:

- Staff responsible for inspecting and repairing runway, taxiway and apron pavements
 - Electrical staff responsible for airfield ground lighting circuits, regulators and light fittings
 - Airside inspection teams responsible for daily runway checks, friction runs and FOD reporting
 - Staff responsible for wildlife hazard control and bird activity records on the aerodrome
 - Aerodrome compliance staff responsible for maintenance records used as certification evidence
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Course Outline:

Day 1: Airfield Asset Baseline and Aerodrome Maintenance Context

- Movement Area Asset Register by Runway, Taxiway and Apron
- ICAO Annex 14 Physical Characteristics Relevant to Maintenance Work
- Daily Runway Inspection Routine and Defect Reporting Sheet
- Aerodrome Certification Evidence Map for Maintenance Records
- Current-State Review Using Inspection Logs and Defect Backlog

Day 2: Pavement Strength Rating, Friction Reporting and AGL Architecture

- ACR-PCR Reporting Codes for Pavement Type and Subgrade
- Tyre Pressure Category and Evaluation Method in PCR Reports
- Global Reporting Format Runway Condition Codes and Assessment Matrix
- AGL Series Circuits With Isolation Transformers and Regulators
- Approach, Edge, Centreline and Stop Bar Lighting Configurations

Day 3: Pavement Inspection, Friction Testing and Lighting Maintenance Routines

- Airfield Pavement Condition Index Survey and Distress Rating
- Continuous Friction Measuring Equipment Runs and Trend Logging
- Rubber Deposit Removal by High-Pressure Water and Texture Checks
- Constant Current Regulator Output Checks and Insulation Resistance Testing
- Light Fitting Photometric Checks, Cleaning and Lamp Replacement Cycles

Day 4: FOD, Wildlife Hazards, Airside Works Safety and Failure Cases

- FOD Prevention Programme With Sweepers, FOD Walks and Tool Control
- FOD Detection Systems Using Radar and Electro-Optical Sensors
- Wildlife Hazard Management Plan and Habitat Control Measures
- Works-in-Progress Airside Safety Plans and Runway Closure Markings
- Pavement Failure Cases From Joint Spalling to Slab Cracking

Day 5: Inspection Walkthrough and Airfield Maintenance and Inspection Plan Build

- Case Aerodrome Brief With Pavement, Friction and AGL Records
 - Case Walkthrough Ranking Pavement and Lighting Defects by Risk
 - Case Friction and Rubber Removal Schedule Against Movement Volumes
 - Case FOD, Wildlife and Works Safety Controls Review
 - Airfield Maintenance and Inspection Plan Completion and Peer Challenge
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Skills You Will Gain:

- Airfield Pavement Distress Rating
- Pavement Strength Reporting
- Runway Friction Trend Analysis
- Rubber Removal Scheduling
- AGL Circuit Fault Finding
- FOD Programme Management
- Wildlife Hazard Control
- Airside Works Safety Planning

Why Attend This Course:

- Deliver an Airfield Maintenance and Inspection Plan to the head of airfield engineering and the aerodrome compliance manager for approval
- Decide when to schedule rubber removal, restrict a pavement or isolate a lighting circuit using measured friction, PCR and insulation data
- Avoid unplanned runway closures, unreported lighting outages, debris damage to aircraft and certification findings on maintenance records
- Coach inspection, electrical and sweeping crews with the daily inspection sheet, friction log and FOD walk checklist

Conclusion:

Back at work, the participant presents the Airfield Maintenance and Inspection Plan to the head of airfield engineering and the aerodrome compliance manager. They use it to set inspection frequencies, agree friction and rubber removal triggers, allocate lighting circuit checks and confirm which records support aerodrome certification. After the first quarter under the plan, the unit should compare friction readings, lighting outages, FOD finds and pavement defects with the plan targets and adjust frequencies or triggers where results fall short.

Frequently Asked Questions FAQ:

What should participants know before an airfield engineering and maintenance course?

Participants should already inspect or maintain runways, taxiways, aprons or airfield lighting and be able to read a defect log or circuit record. Bringing anonymised inspection sheets, friction readings or lighting fault records from their own aerodrome helps during the walkthrough day.

How does airfield engineering and maintenance differ from an airport operations or road maintenance course?

This course keeps the movement area serviceable: pavement strength and condition, friction and rubber removal, ground lighting circuits, FOD and wildlife control. Airport operations courses manage stands, turnarounds and passengers, while road maintenance courses manage highway networks without aircraft loading or lighting systems.

Why does airfield maintenance remove rubber from runway touchdown zones?

Tyre rubber fills the surface texture and grooves where aircraft land, lowering braking friction, especially when wet. Removing it with high-pressure water or similar methods restores texture and drainage, and friction measurements before and after confirm the result.

What do participants take back from the airfield engineering and maintenance course?

Participants take back an Airfield Maintenance and Inspection Plan with a defect ranking, a friction and rubber removal schedule, lighting circuit check routines, FOD and wildlife controls and a certification evidence map they can adapt to their own aerodrome.
