**King Schools Online**
**Internet Learning Programs**

# ICING OPERATIONS

## Flight Crew Certification Course

## SYLLABUS

**King Schools, Inc.**
**3840 Calle Fortunada**
**San Diego, CA 92123**

**800-854-1001 (USA) ● 858-541-2200 (Worldwide)**
**www.kingschools.com**

# ICING OPERATIONS
## *Flight Crew Training Syllabus*

**INTRODUCTION**
The King Schools Icing Operations Flight Crew Certification Course helps satisfy the pilot training requirements for Part 91K and Part 135 operations in ground and in-flight icing conditions. This course:

- Provides general training for when icing conditions are present
    - Provides the required training specified in Advisory Circular 135-16, Ground Deicing and Anti-icing Training and Checking
    - Provides the required training for flight with icing conditions present
- Must be supplemented with aircraft and company-specific training
- May be used for both initial and recurrent training in Part 91K and Part 135 operations
- Is offered only through individual Internet study
- Is efficient and practical

**COURSE ELEMENTS AND STRUCTURE**
The King Schools Icing Operations Flight Crew Certification Course contains four major subject areas (Labs) with two or more distinct Lessons per Lab. Following each lesson's study materials, the pilot sees a quiz containing multiple-choice and/or True/False questions. There are approximately 75 questions in the course. Most pilots will require at least two hours to complete this course.

**COMPLETION STANDARDS**
Pilots complete the course when all the Labs are checked off with a completion date on the course main menu. An individual Lab is finished after completing all of the Lessons contained in that Lab. Lesson completion requires accessing each lesson page of study materials and correctly answering all questions in the quiz associated with that Lesson.

**CERTIFICATE OF COMPLETION**
A Completion Certificate individualized for the pilot enrolled in the course and a logbook endorsement may be accessed at the "Print Course Completion Certificate and Logbook Endorsement" icon on the main menu only after the entire course has been completed. Pilots clicking the "Print Course Completion Certificate" icon before the course has been completed receive a message saying that the certificate will be available after the entire course is completed.

## ENROLLMENT PROCEDURES

A pilot may individually order and enroll in the course, or flight departments may order multiple courses and receive a “key” for each course ordered. The flight department then assigns a key to each pilot requiring training. Each pilot registers individually at *https://ilearn.kingschools.com* for the course.

## COURSE STUDY

The pilot first enrolls in the course, and then logs in to access the course Labs and Lessons. If the pilot has insufficient time to complete the course in one session, the pilot may log out. The program records all Lesson and Lab completions and every question answered. When returning to the course, the pilot may resume at the last point of progress.

# LAB 1

## INTRODUCTION TO OPERATIONS IN ICING CONDITIONS

**LESSONS**

### 1 What This Course Does For You

Lesson Objective: To learn training requirements in the FARs and how the course is organized.

### 2 Aircraft-Specific Training Requirements

Lesson Objective: To understand what aircraft and company-specific training requirements are required in addition to the information covered in this course.

# LAB 2

## Rules and the Basics about Icing Conditions

**LESSONS**

### 1 The Clean Aircraft Concept

Lesson Objective: To learn what the clean aircraft concept means and when it applies.

### 2 Deicing Rules on the Ground

Lesson Objective: To learn the basic deicing rules and requirements for Part 91K and Part 135 operators when icing conditions are present during ground operations.

### 3 Anti-Icing Rules on the Ground

Lesson Objective: To learn the basic anti-icing rules and requirements for Part 91K and Part 135 operators when icing conditions are present during ground operations.

### 4 Conditions Conducive to Icing

Lesson Objective: To learn the weather elements necessary for icing to occur on the ground or in the air.

### 5 Types of In-Flight Icing and When They Occur

Lesson Objective: To learn in-flight icing types, when they occur and what they mean.

### 6 Icing Intensities

Lesson Objective: To learn the levels of in-flight icing intensities used in icing forecasts and in-flight reporting.

# LAB 3

## Preflight Planning

**LESSONS**

### 1 Knowing Your Operational Limitations

Lesson Objective: To learn the sources of guidance about, and criteria for, known icing and the basic limitations they establish.

### 2 Forecasts Regarding In-Flight Icing Conditions

Lesson Objective: To understand the limitations of icing forecasts and learn about the tools available to predict potential icing conditions.

# LAB 4

## Ground Operations

**LESSONS**

### 1 Preflight Inspections

Lesson Objective: To learn the special considerations for normal and expanded preflight inspections in cold weather and icing conditions and what items are "special interest".

### 2 Deicing Methods

Lesson Objective: To learn the different methods to remove contaminates from aircraft surfaces.

### 3 Hidden Hazards in Deicing operations

Lesson Objective: To learn problem areas associated with deicing operations.

### 4 Anti-Icing Fluids

Lesson Objective: To learn what anti-icing fluids are and how they work. You will also learn why different aircraft require different anti-icing fluids.

### 5 Types and Characteristics of Deicing/Anti-Icing Fluids

Lesson Objective: To learn what is available to deice or anti-ice aircraft, and their possible effects on aircraft performance.

### 6 Aircraft Deicing/Anti-Icing Procedures

Lesson Objective: To learn how deicing and anti-icing fluids are applied, and what alternate procedures are acceptable.

### 7 Coordinating with ATC and Your Ground Crew

Lesson Objective: To learn what communications are required between the PIC and the ground crew, and how to maximize anti-icing effectiveness through coordination with ATC.

## 8 Pre-Takeoff Contamination Check

Lesson Objective: To learn what a pre-takeoff contamination check is, when it is required, and how to tell if the anti-icing fluid has lost effectiveness.

## 9 Using Holdover Timetables

Lesson Objective: To learn what information is contained in holdover timetables, and how to use them.

## 10 The Decision to Fly or Cancel

Lesson Objective: To understand the value of clear company operating procedures regarding the decision to make, or to cancel, a flight in icing conditions. You will also learn a decision tree regarding procedures to decide whether to cancel a flight due to icing conditions.

# LAB 5

## FLIGHT OPERATIONS WITH ICING CONDITIONS

**LESSONS**

### 1 Aircraft Protection from Icing

Lesson Objective: To learn about different types of anti-icing and deicing equipment, and how aircraft are protected from icing conditions in flight.

### 2 Avoiding In-Flight Icing Conditions

Lesson Objective: To learn how to avoid in-flight icing conditions.

### 3 Icing Exit Strategies

Lesson Objective: To learn techniques to quickly exit icing conditions when they are encountered in flight.

### 4 Aerodynamic Effects of Icing

Lesson Objective: To learn the aerodynamic penalties and dangers of in-flight icing.