

03 WARNING SYSTEMS, COMMUNICATIONS, ICE AND RAIN PROTECTION



MALEV VIRTUAL BOEING 737 NEXT GENERATION **737**

Course overview

- Airplane General
- Air Systems
- Warning Systems, Communications, Ice & Rain Protection
- Electrical
- Engines, APU, Fuel System
- Hydraulics, Flight Controls, Landing Gear, Brakes
- Flight Instruments & Displays
- Automatic Flight
- Flight Management, Navigation
- Normal Operations

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Topics

Warning systems

- Overview
- Controls & indicators
- Master caution system
- Altitude alert
- GPWS
- TCAS

Communications

- Controls & indicators
- VHF communications
- Interphone system
- PA and call system
- Cockpit voice recorder

Ice and rain protection

- System components
- Controls & Indicators
- Flight deck window heat
- Engine anti-ice system
- Wing anti-ice system

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Warning systems

Overview

Feladata a pilótákat tájékoztatni a repülőgép állapotáról, repülési konfigurációjáról, a körzetben levő forgalomról, valamint a földközelségről.

Components

- Master fire warning lights
- Master caution lights
- System annunciator lights
- Mach/airspeed warning system
- Stall warning system
- Configuration warning
- Ground proximity warning system
- Traffic alert and collision avoidance system

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Warning systems

Controls & indicators

Fire warning and master caution system

1 Master fire warning light

2 Master caution lights

3 System annunciator panel

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Warning systems

Controls & indicators

Mach/airspeed warning, stall warning test switches

1 MACH AIRSPEED WARNING TEST

2 STALL WARNING TEST

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Warning systems
Controls & indicators
Ground proximity warning system

- 1 Below G/S light
- 2 Inoperative light
- 3 GPWS SYS TEST
- 4 GPWS FLAP INHIBIT
- 5 GPWS GEAR INHIBIT
- 6 GPWS TERR INHIBIT

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Warning systems
Controls & indicators
TCAS

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Warning systems
Altitude alert

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Warning systems
Ground Proximity Warning System

Alerts for

- ... excessive descent rate
- ... excessive terrain closure rate
- ... altitude loss after takeoff or go-around
- ... unsafe terrain clearance with gear or flaps
- ... deviation below G/S
- ... bank and altitude advisories
- ... windshear

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Warning systems
Traffic alert and collision avoidance system (TCAS)

Traffic advisory (TA)

- Caution level alert
- Aircraft will reach closest point of approach in approx. 45 sec

Resolution advisory (RA)

- Warning level alert
- Aircraft will reach closest point of approach in approx. 25 sec

Proximate traffic

- Another a/c not classified as TA or RA
- < 6 NM and < 1200 feet vertically, or
- < 6 NM and not providing altitude information

Other traffic

- Another aircraft not classified as TA, RA or proximate
- > 6 nm or > 1200 feet vertically

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Warning systems
GPWS predictive windshear alert

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Communications
Controls & indicators
Radio tuning panel

- 1 Frequency transfer switch
- 2 Frequency indicator
- 3 Radio tuning switch
- 4 Radio tuning panel off sw
- 5 HF sensitivity control
- 6 Radio tuning light
- 7 Offside tuning light
- 8 Frequency selector
- 9 Communication test switch
- 10 AM light
- 11 AM switch

(aft electronic panel)

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Communications
Controls & indicators
Audio control panel

- 1 Transmitter selector
- 2 Receiver switches
- 3 PTT switch
- 4 Mask-Boom switch
- 5 Speaker switch
- 6 Alternate-Normal switch
- 7 Filter switch

(aft electronic panel)

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Ice and rain protection
System components

ELEVATOR PITOT PROBES (2 PLACES)

FLIGHT DECK WINDOWS WINDOW HEAT WINDSHIELD WIPERS

TEMPERATURE PROBE

PITOT PROBES (3 PLACES)

ALPHA VANES (2 PLACES)

ENGINE COWL LIP

LEADING EDGE SLATS

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Ice and rain protection
Controls & indicators
Window heat panel

- 1 Window overheat light
- 2 Window heat ON light
- 3 Window heat switches
- 4 Window heat test switch

(aft electronic panel)

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Ice and rain protection
Controls & indicators
Windshield wiper selector panel

- 1 Windshield wiper selectors

(aft electronic panel)

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Ice and rain protection
Controls & indicators
Probe heat panel

- 1 Probe heat lights
- 2 Probe heat switches

(aft electronic panel)

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Ice and rain protection
Controls & indicators
 Engine anti-ice panel
 Cowl TAI indication

1 Cowl anti-ice lights
 2 Cowl valve open lights
 3 Engine anti-ice switches

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Ice and rain protection
Controls & indicators
 Wing anti-ice panel

1 Wing anti-ice valve open lights
 2 Wing anti-ice switch

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Ice and rain protection
Flight deck window heat
 Schematic

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Ice and rain protection
Engine anti-ice
 Schematic

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Ice and rain protection
Wing anti-ice
 Schematic

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Köszönöm a figyelmet!

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