This Systems guide is an essential tool for all ATR flight crews and engineers to learn or review ATR systems operation. To make learning process easier, systems are introduced in a user-friendly and efficient training method, including diagrams and schematics and displays as appropriate.

This guide is a comprehensive document that efficiently complements FCOM 1st part – Systems description. Systems are organized as per FCOM chapters, including their ATA classification along with cockpit location. Cockpit panels familiarisation is presented with each relevant system description in a separate annex.

This new guide release is intended for training on ATR 42-500 and 72-212A New Avionics Suite (42-600 and 72-600). It presents a generic aircraft not customized to your own aircraft systems. Should you find any discrepancy between Systems guide and your customized ATR operational documentation (AFM, FCOM & QRH), the latter takes precedence.

NB: This Systems guide is also available for ATR 42-300, 72-200 not PEC, 42-500 and 72-212A.

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A. Aircraft general

FCOM 1.00
1. Doors location

- Cargo door
- Emergency exit type III
- Service door / emergency exit type I
- Pilot emergency hatch
- Pilot communication hatch
- Rear entry door / emergency exit type I
- Aft avionics compartment door
- Forward avionics access hatch
A. Aircraft general

2. Cargo door panel

**ARMED light**
- Selector armed green light is ON, when actuator selection switch working conditions are met:
  - cover panel opened
  - door unlocked by operating handle: all hooks are disengaged and FWD latchlock is unfastened

**LCHD light**
blue light is ON when all door hooks and latch locks are fully engaged

**GND HDL light**
Ground handling bus ON BAT red light is ON when ground handling bus is directly supplied by HOT main bat bus:
- The refueling panel is open
- The cargo door control panel is open
- The passenger door is open and alert, that the battery is discharging before leaving the aircraft

**Actuator selection switch**
is used to operate the door (OPEN or CLOSE: when the CARGO DOOR ARMED green light is on

**Panel cover switch**
connects the ground handling bus online when the panel cover is opened and allows operation of cargo door. During the opening, a self test of the MFC 1A and 2A is performed to initiate the control system of the cargo door.

**CARGO LIGHT switch**
allows activation of the cargo bay light from outside

3. Doors panel

**CAB OK and SVCE OK**
Light on when SW TEST depressed and check microswitches operation

**SW TEST**
Tests continuity of microswitch system (on ground, doors opened)

**UNLK**
At least 1 micro switch is opened
I. Fire protection

FCOM 1.08
The fire protection system provides detection, warning and extinguishing for each engine, cabin and lavatory.

1. Schematic

**FIRE DETECTION**

**FIRE EXTINGUISHING SYSTEM**

2. Avionics FWD and AFT smoke detection
I. Fire protection

3. Fire handle

**AGENT 1**
- DISCH: Bottle depressurized. Opposite agent DISCH light will also illuminate on other fire panel. Bottle located in the wing fairing of the associated side.

**SQUIB TEST**
- Electrical test of the squibs

**LOOP**
- FAULT: change in resistance, inhibits fire signal until turned off. LOOP 1A (1B, 2A, 2B) on FWS (DC emer)

**AGENT 2**
- Bottle located on the opposite side

**ENGINE FIRE HANDLE**
- Pulled on the respective engine:
  - PROP: feather
  - FUEL: LP valve closed
  - AIR: BLEED and HP valve closed
  - DEICING: deice and shutoff valve closed
  - ELEC: DC and AOW gen. disconnected
  - SQUIBS armed Its illumination + Hydraulic to prop brake closed on engine 2

**FAULT TEST**
- MC + SC + LOOP on FWS Fault lights in A/B loop pb

**OFF**
- Takes respective loop out of parallel circuit. Allows other loop to activate fire signal alone.

4. EWD (Engine and Warning Display)

**Engine Fire**
- Detected by two loops. (Not detected if one loop fault. Detection recovered when the faulty loop is selected OFF)

**LOOP**
- Engine fire loop FAULT. When a loop FAULT. No detection of Engine Fire (Detection recovered when the faulty loop is selected OFF)

**NAC OVHT**
- RH Nacelle Overheat >170°C

5. Condition levers fuel light

**FUEL SO**
- Illuminates red in case of fire signal from associated engine. Extinguishes after CL is set at fuel shut off position or if fire detection signal stops
ANTISKID
Operative if speed >10 kts.
Activates when speed >23 kts + 50% diff between wheels (locked wheel protection).
Braking action inhibited at touchdown as long as wheel spin up speed <35 kts or 5 sec. (touchdown protection).
CAUTION: THE TEST INHIBITS BRAKES

OFF
Pb released, system deactivated

UNLOCK
Gear not locked in handle selected position (on ground, up lock box not open)
GreenLt gear downlock engaged

NORM
AUTO mode selection
MAN
digital controller out of operation. No more digits in landing elevation display
FAULT
digital controller failure. FWS

TEST pb
(inhibited if speed >17 kts) = MC + SC EWD 4 amber F on EWD.
Test duration: 3 sec. in flight and 6 sec. on ground

Gear handle red Lt
Any gear not sensed down and locked with the further conditions:
a) Any gear not down and locked + flaps normal landing configuration + Zra <500 ft + PL at low power (impossible to cancel)
b) Any gear not down and locked +1 PL at low power + Zra <500 ft.
NOTE: Any gear not down must be sensed by each MFCs

AUTO PRESS (DC BUS 1)
+550 ft/mn up to FL 200
+620 ft/mn above FL 200
Memorizes departure field elev up to 3500 ft

ELV SET
Select switch to set landing elevation
FAST
descent rate increased from –400 to –500 ft/mn
To be used if VS>–1500 ft/mn
TEST
displays alternatively 18800 and –8800, FAULT appears on MAN pb
(Test inhibited in FLT)
DUMP
ON (guarded)
both outflow valves fully open in AUTO mode only

CABIN RATE KNOB
NORM
AUTO MODE position. When used in MAN mode, cabin rate selection +2500/–1500 ft/mn
Dear Customer,

This is an extract of the ATR Systems -600, 2012 edition, available in paper or electronic copy. Should you need any further information, please contact the ATR Training Center atc@atr.fr

Yours faithfully,

Your ATR Training & Flight Operations support team