

Lesson 507

Electrical Fire

Overview

This lesson will cover the causes of electrical fires and the procedures to follow if an electrical fire occurs.

Briefing

An electrical fire can occur when a short circuit or exposed wire produces a spark that ignites nearby flammable material. Electrical fires are most likely to occur behind the flight displays, although they may occur wherever there is electrical current flowing through wires.

Circuit breakers constitute a safeguard against potential electrical fires. When the voltage and/or the temperature within a circuit become too high, the circuit breaker pops out and disables the flow of current through the circuit. This prevents the excessive voltage and temperature from igniting a fire somewhere along the circuit, but it will also disable whatever component that circuit was powering. For example, if the landing light circuit breaker pops, there will be no electrical flow to the landing lights and they will be inoperative.

If a circuit breaker pops in flight, it may be reset once. If it pops out again, do not reset it. Do not reset any circuit breakers after an electrical fire has been detected.

An electrical fire can be detected by the presence of smoke and/or a burning smell. A popped circuit breaker does not guarantee an electrical fire, but it may indicate which component triggered the fire if a fire is detected.

Immediately after an electrical fire is detected, complete the Electrical/Cabin Fire flow as follows:

Action	Reason
STBY BATT SWITCH.....OFF	Disables electrical current from the standby battery to its components
MASTER SWITCH.....OFF	Disables electrical current from the main battery to its components
CABIN HEAT/AIR VENTS.....OFF	Prevents air from circulating and feeding the fire
FIRE EXTINGUISHER...ACTIVATED	If necessary, extinguish the fire with the fire extinguisher Ventilate the cabin immediately afterwards

After completing this checklist, immediately land the aircraft since the fire may continue to burn undetected. An emergency descent and off-airport landing may be necessary if the fire is uncontrollable and an immediate hazard to safe flight.

If the fire is extinguished, land at the nearest available airport. Because the aircraft is landing without electrical power, radios or a transponder, try to land at a nearby non towered, less-busy airport to prevent traffic conflicts.

If electrical power is necessary for safe flight, turn off all electrical components before turning the batteries and avionics back on. If this causes the fire to restart or intensify, turn the batteries and avionics off and land as soon as possible. Do not turn on any nonessential electrical components as they may be the source of the fire.

Without electrical power, the only operating flight instruments will be the standby airspeed indicator and the altimeter. Reference those while maneuvering the aircraft for landing.

You will be forced to execute a no-flap landing since electrical power is required to extend the flaps. Reference Lesson 501 for review on no-flap landings.

On this flight, an electrical fire will occur as the aircraft enters the busy New York class Bravo airspace. Complete the electrical fire procedures and land the aircraft safely.

End of Briefing
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