

# Complex / Multi-Engine Aircraft Emergency Quick Guide

For Simulators like X-Plane 12 or Real-World Reference (Baron 58 and similar aircraft)

## 1. Engine Failure (Complete or Partial)

Effect: Asymmetric thrust, yaw, loss of performance

IMMEDIATE ACTIONS:

- Maintain control: Pitch for Vyse (Blue Line)
- Identify: Dead foot = dead engine
- Verify: Retard throttle on suspected engine
- Feather propeller if confirmed
- Mixture: Cut off for failed engine
- Secure engine: Fuel, Mags, Alternator OFF

## 2. Propeller Overspeed (Runaway Prop)

Effect: Severe vibration, possible loss of control

IMMEDIATE ACTIONS:

- Reduce throttle on affected engine
- Prop lever: Full decrease RPM
- Mixture: Lean or cut off if no control
- Feather if condition persists

## 3. Alternator Failure (Single or Dual)

Effect: Electrical failure, loss of avionics

IMMEDIATE ACTIONS:

- Identify failed alternator
- Reset breaker once only
- Load shed non-essential systems
- Monitor voltage and land ASAP

## 4. Fuel Imbalance

Effect: Yaw instability, fuel starvation risk

IMMEDIATE ACTIONS:

- Monitor fuel gauges frequently
- Use crossfeed if available
- Manually balance tanks when needed

## 5. Fuel Pump Failure (Engine or Auxiliary)

Effect: Engine roughness or failure

IMMEDIATE ACTIONS:

- Use electric pump if mechanical fails
- Monitor fuel pressure and engine performance

## 6. Gear Extension/Retraction Failure

Effect: Unsafe landing gear condition

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## IMMEDIATE ACTIONS:

- Use manual gear extension handle
- Confirm 3 green or visual check
- Prepare for gear-up landing if needed

## 7. Flap System Malfunction

Effect: Roll/yaw instability due to asymmetry

## IMMEDIATE ACTIONS:

- Stop flap movement immediately
- Retract flaps if controllable
- Increase airspeed for control authority

## 8. Vacuum System Failure

Effect: Loss of gyroscopic instruments (IFR hazard)

## IMMEDIATE ACTIONS:

- Use backup electric instruments
- Avoid IMC or divert

## 9. Fire (Engine or Electrical)

Effect: Immediate danger, damage to aircraft

## ENGINE FIRE:

- Mixture: Cut off
- Fuel: OFF
- Mags: OFF
- Prop: Feather
- Cabin heat/air: OFF

## ELECTRICAL FIRE:

- Master switch: OFF
- Vents: Open
- Extinguish and land immediately

## 10. Pitot-Static System Blockage

Effect: Unreliable airspeed or altitude readings

## IMMEDIATE ACTIONS:

- Turn pitot heat ON
- Use alternate static source if equipped
- Cross-check GPS/backup instruments

## 11. Brake or Nosewheel Steering Failure

Effect: Poor ground control, possible runway excursion

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## **IMMEDIATE ACTIONS:**

- Plan long, straight landing
- Use rudder and differential power
- Prepare for emergency braking or rollout