

A320 Alerting Issues – Hydraulics failure (Single system)

1. Initiating Condition: Complete fluid loss for the single most critical hydraulic system (Green System) in cruise flight

Type	Alert or cue	Threshold for alert or cue to be presented	Confusion regarding alert or cue	Other issues with regard to alert or cue	When alert is inhibited/suppressed or when cue is masked	How alert or cue is terminated
Visual Alerts	ECAM: <u>HYD</u> G RSVR LO LVL amber caution with associated procedural information	Reservoir fluid quantity < 3.5L		ECAM amber caution alerts from secondary events (e.g., low hydraulic pressure, PTU failure) are also presented as they occur, but these are clearly delineated as secondary by being indented and underneath the alert for the primary reservoir quantity situation.	Inhibited during takeoff from 80 kt through 1,500 feet and during landing from 800 feet through 80 knots	
	Master caution light	Driven by loss of hydraulic pressure, and subsequently again by associated PTU failure				Canceled by pressing the light
	HYD page appears on ECAM System/Status Display, with amber green system reservoir quantity and amber "LO" engine pump pressure indication, amber "GREEN" system label and amber/low system pressure reading	Driven by ECAM				
	Amber ENG1HYD fault light on overhead panel	Green system reservoir quality/pressure low				

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1. Initiating Condition: Complete fluid loss for the single most critical hydraulic system (Green System) in cruise flight – Cont.

Type	Alert or cue	Threshold for alert or cue to be presented	Confusion regarding alert or cue	Other issues with regard to alert or cue	When alert is inhibited/suppressed or when cue is masked	How alert or cue is terminated
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Visual Alerts	Amber PTU fault light on overhead panel	PTU not able to provide pressure (secondary to green system quantity loss)				
Aural Alerts	Single chime	Driven by ECAM				
Tactile Alerts	None					
Visual Cues	None					
Aural Cues	None					
Tactile/Somatic Cues	None					

Expected Pilot Response(s)

- Perform G RSVR LO LVL procedure prompted by ECAM.
- Use ECAM status to review follow-on requirements (increased landing distance; gravity landing gear extension; inoperative nosewheel steering on some models; degraded approach capability; inoperative autobrakes, inoperative ENG1 thrust reverser).
- Implement follow-on requirements at the appropriate phase of flight as prompted by ECAM.
- As prompted by ECAM status, recognize operational implications of failures including inability to retract landing gear.

Possible sources of confusion with regard to pilot response(s)

- Some operational implications are not fully described by the ECAM and require pilot recall of system/operational considerations and application of judgment (e.g., loss of autobraking, gear retraction, single reverser, nosewheel steering on older aircraft).

How does pilot know condition is resolved/recovered?

- Completion of procedures results in stable situation but abnormal condition for landing (e.g., longer landing distance); system cannot be recovered to normal operation.