 <b>A330</b> SIMULATOR FLIGHT CREW OPERATING MANUAL	<b>HYDRAULIC</b>  <b>DESCRIPTION</b>	1.29.10	P 1
		SEQ 001	REV 05

## GENERAL

The aircraft has three independent continuously operating systems GREEN, BLUE, and YELLOW. Each system is supplied from its own hydraulic reservoir. Normal system operating pressure is 3000 psi (2500 psi for RAT). There is no possibility to transfer hydraulic fluid from one system to another.

The system is monitored by a Hydraulic System Monitoring Unit (HSMU).

## GENERATION

### GREEN SYSTEM PUMPS

Two pumps respectively driven by each engine pressurize the green system.

- R In addition, an electric pump which can be manually or automatically controlled can also
- R pressurize the green system.
- R The electric pump runs automatically in flight for 25 seconds in the event of failure of one engine, when landing gear lever is selected up (to ensure gear retraction in a proper time). A pump driven by a ram air turbine (RAT) pressurizes the green system in an emergency.
- R When the RAT pressurizes the green system, the aileron, elevator and spoiler servo control operating speeds are reduced.

### BLUE SYSTEM PUMPS

- R A pump driven by engine 1 pressurizes the blue system.
- R A manually controlled electric pump can also pressurize the system.

### YELLOW SYSTEM PUMPS


- R A pump driven by engine 2 pressurizes the yellow system.
- R In addition, an electric pump which can be manually or automatically controlled can also
- R pressurize the yellow system. This enables ground operations when the engines are stopped.

The electric pump runs automatically :

- in flight, in the event of engine 2 failure, if the FLAPS lever is not at 0 (to ensure flap retraction in a proper time at takeoff).

- R Note : In the event of engine 2 failure at takeoff, yellow electric pump is automatically controlled on if the green electric pump is not running for landing gear retraction.

- on the ground during cargo door operation.

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## GENERAL

- R The fly-by-wire system was designed and certified to render the new generation of aircraft even more safe, cost effective, and pleasant to fly.

## BASIC PRINCIPLE

The flight control surfaces are all :

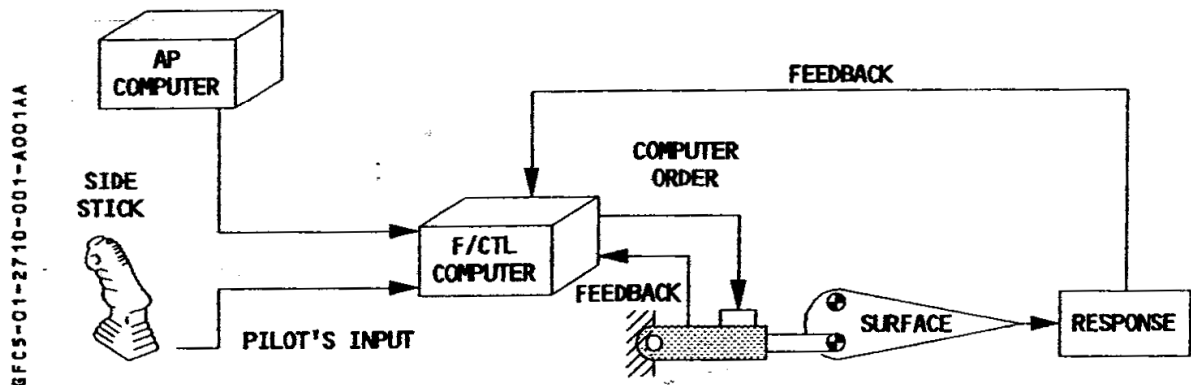
- Electrically-controlled, and
- Hydraulically-activated

The stabilizer and rudder can be mechanically-controlled.

Pilots use sidesticks to fly the aircraft in pitch and roll (and in yaw indirectly, through turn coordination).

Computers interpret pilot input and move the flight control surfaces, as necessary, to follow their orders.

- R However, when in normal law, regardless of the pilot's input, the computers will prevent excessive maneuvers and exceedance of the safe envelope in pitch and roll axis.
- R However, as on conventional aircraft, the rudder has no such protection.



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## HYDRAULIC GENERATION

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