

How 'fly-by-wire' systems work

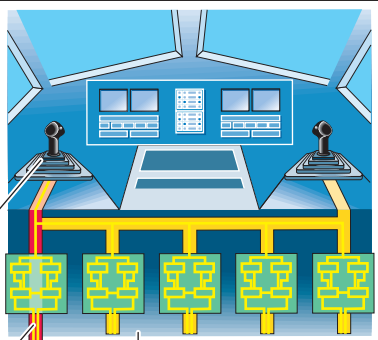
The Airbus A320 is the first airliner to use 'fly-by-wire' control

1. Pilot uses side-stick to command plane to turn, climb or dive

2. Pilot's commands are passed through one of five computers which control flight surfaces

3. Computer signals activate hydraulic jacks to operate flaps

Ground proximity alarm in cockpit warns pilot if plane is flying too close to ground



Two primary and three back-up computers minimise risk of complete computer failure

Two different teams at Aerospatiale developed two different computer systems to reduce risk of replicating hardware and software errors

If computers fail totally only rudder and stabilisers can be operated manually. This should enable aircraft to make an emergency landing

Rudder

Stabilisers

Flaps

Traditional controls

Mechanical connections between flight deck and wings

