

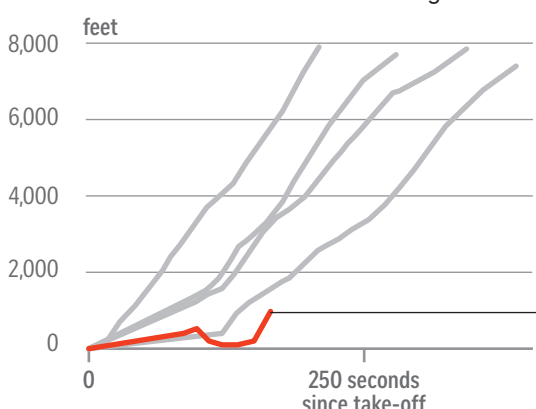
# Ethiopian Airlines crash

A Reuters analysis of the speed and altitude data from the flight, released by the Sweden-based service Flightradar24, indicates that the pilots struggled to get the plane to climb. Addis Ababa is a hot and high-altitude airport whose thinner air requires extra effort from an aircraft's engines.

## GROUND ALTITUDE

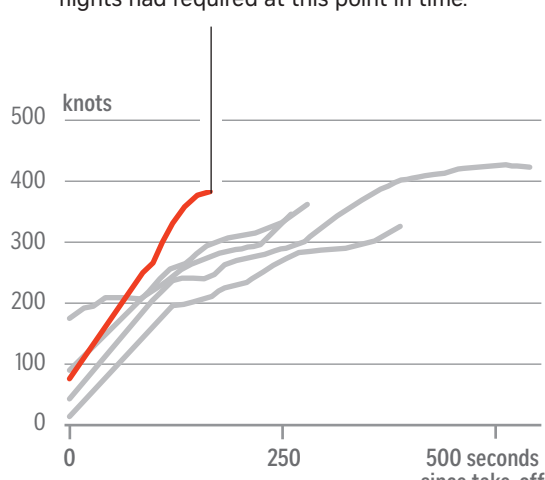
From Addis Ababa's altitude of 7,625 feet

Where other aircraft kept on climbing, Flight ET 302 struggled and lost altitude before recovering. It never reported reaching more than 1,000 feet above ground level.



## SPEED

The pilots of Flight ET 302 increased the aeroplane's speed as it failed to gain altitude to levels greater than what past flights had required at this point in time.

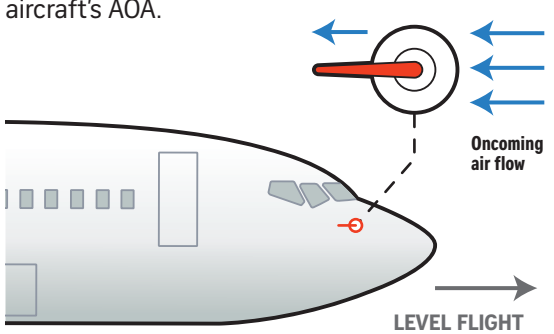


Note: Ground speeds do not necessarily start at 0, depending on the take-off speed and the frequency of data reporting.

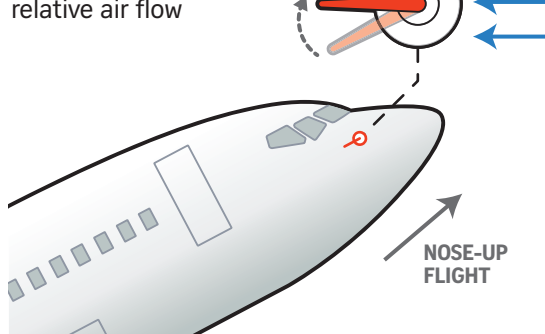
## HOW THE NEW MAX FLIGHT-CONTROL SYSTEM PREVENTS A STALL

### Angle of attack (AOA) sensor

Acts like a windvane, measuring the direction of air to determine the aircraft's AOA.

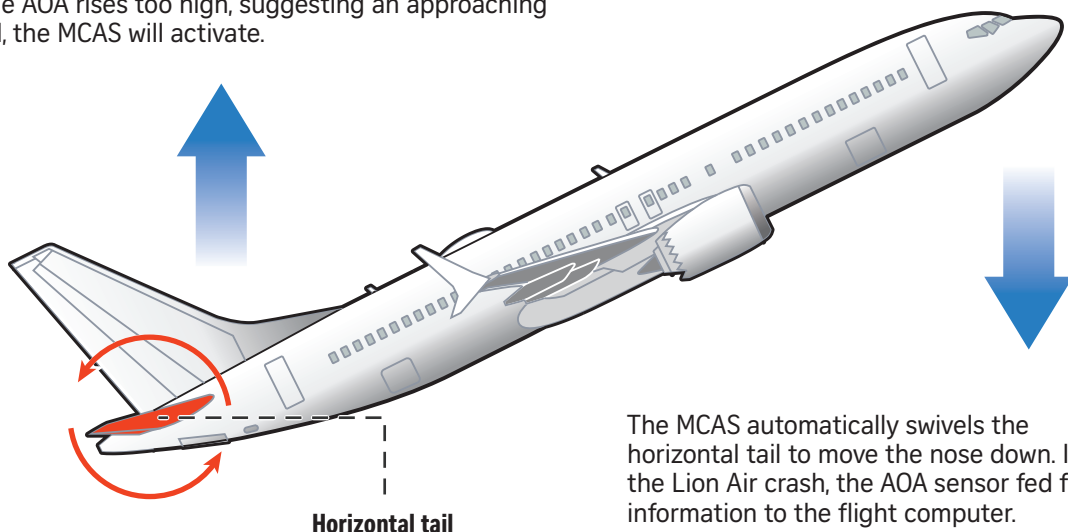


AOA sensor aligns itself with the relative air flow



### Manoeuvring Characteristics Augmentation System (MCAS)

If the AOA rises too high, suggesting an approaching stall, the MCAS will activate.



The MCAS automatically swivels the horizontal tail to move the nose down. In the Lion Air crash, the AOA sensor fed false information to the flight computer.

## FLIGHT DESTINATIONS AFFECTED BY GROUNDING OF SILK AIR'S BOEING 737 MAX 8 PLANES



## BOEING 737 MAX 8

### Strengthening

Wings, fuselage and main landing gear strengthened at strategic locations to carry heavier engines.

### Boeing Sky Interior

Boasts modern-sculptured interiors with LED lighting.

### Propulsion installation

New strut, fairing, nacelle, fan and primary duct chevrons.

### Nose landing gear

Raised to make allowance for bigger engines at wings.

### Flight deck with larger and latest display technology.

### Tail cone

Streamlined for better air flow.

### Quieter

Has a 40 per cent smaller noise footprint.

### Winglets

Dual-feather winglet design reduces fuel consumption by up to 1.8 per cent.

### New engines

Larger CFM LEAP-1B engines improve fuel efficiency by 10 per cent to 12 per cent.

Blended winglet of the earlier 737 NG (right)



### 737 Max 8

### 737-800NG

LEAP-1B	<b>Engine</b>	CFM-56
6,150km	<b>Range</b>	5,440km
210	<b>Max no. of seats</b>	189
39.52m	<b>Length</b>	39.5m
35.9m	<b>Wingspan</b>	35.8m