

SELF MANAGEMENT THE KEY TO A SAFE FLIGHT



FLIGHT
SAFETY
FOUNDATION 

Chicago, Illinois
May 10-11

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BASS 2018

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OPERATIONAL ASPECTS

- WORKLOAD
- DECISION MAKING
- HIGH COGNITIVE DEMANDS
- ERROR

HUMAN PERFORMANCE



WHERE DO I STAND?

FROM TRADITIONAL HUMAN FACTORS TO COGNITIVE
ENGINEERING



HUMAN ERROR

- Occasion in which a planned sequence of mental or physical activities fails to achieve its intended outcome, when these failures cannot be attributed to the intervention of some chance. (Reason, 1997);
- Involuntary deviation from an intended action (Helmreich, 1998);
- Inadequate behavior that leads to a reduction in the system efficiency or safety. (Wickens & Gordon, 1997).

Knowledge and Error flow from the same mental source - Only success can tell one from the other. (Ernst Mach)



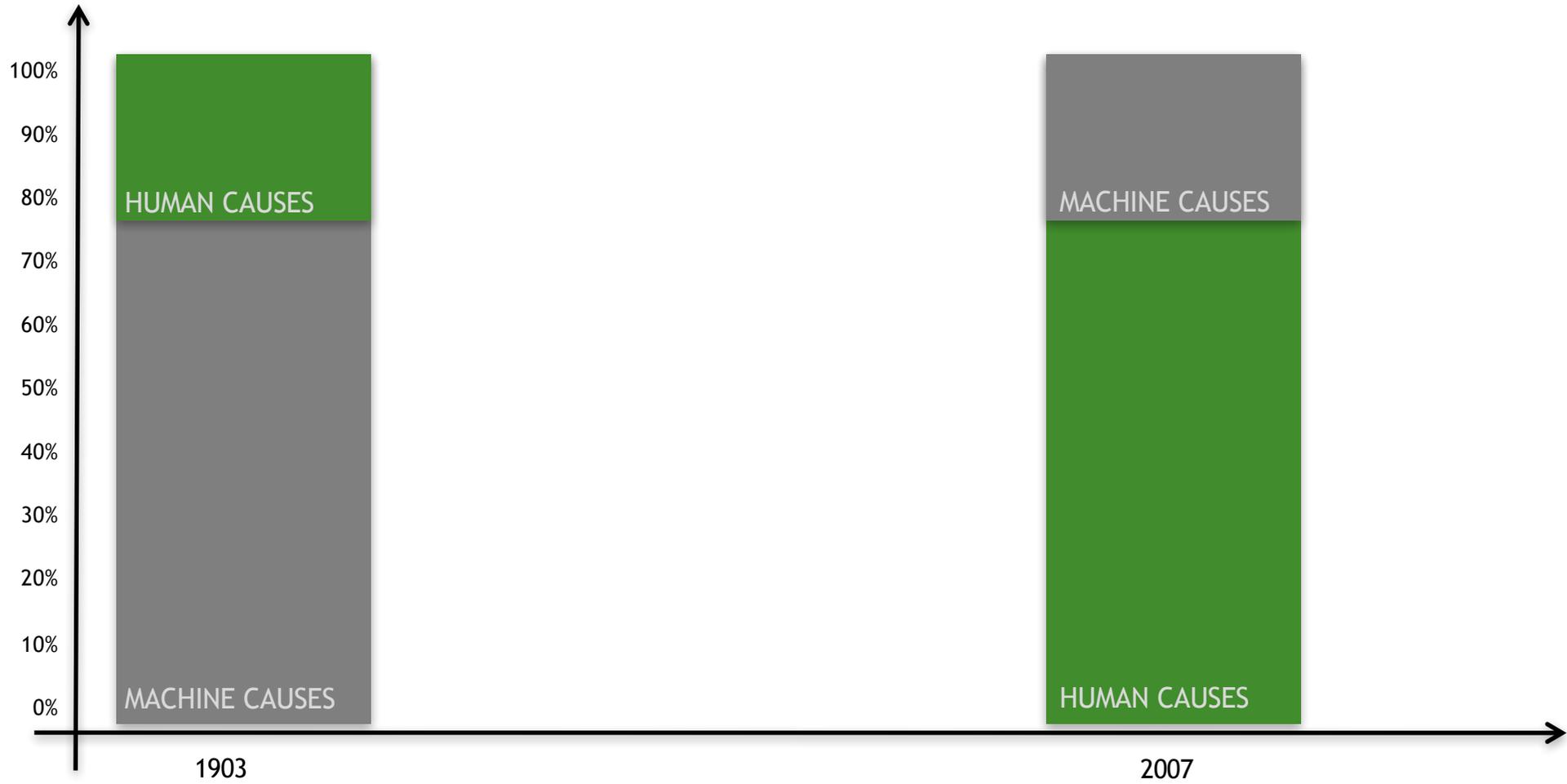
HUMAN ERROR

- Has been responsible for 75% of the accidents in aviation (Amalberti, 1996);
- Has been responsible for 44,000 - 98,000 deaths in hospital in a 10-year period in the USA (Bremann Et Al, 1991);
- Since 1950, around 25,000 summit climbs have been attempted on peaks in the Himalayas with more than 900 people dying in the attempt. (The Washington Post, 2004);
- 80% of aircraft accidents have human error as contributing factor. (Boeing, 2007).



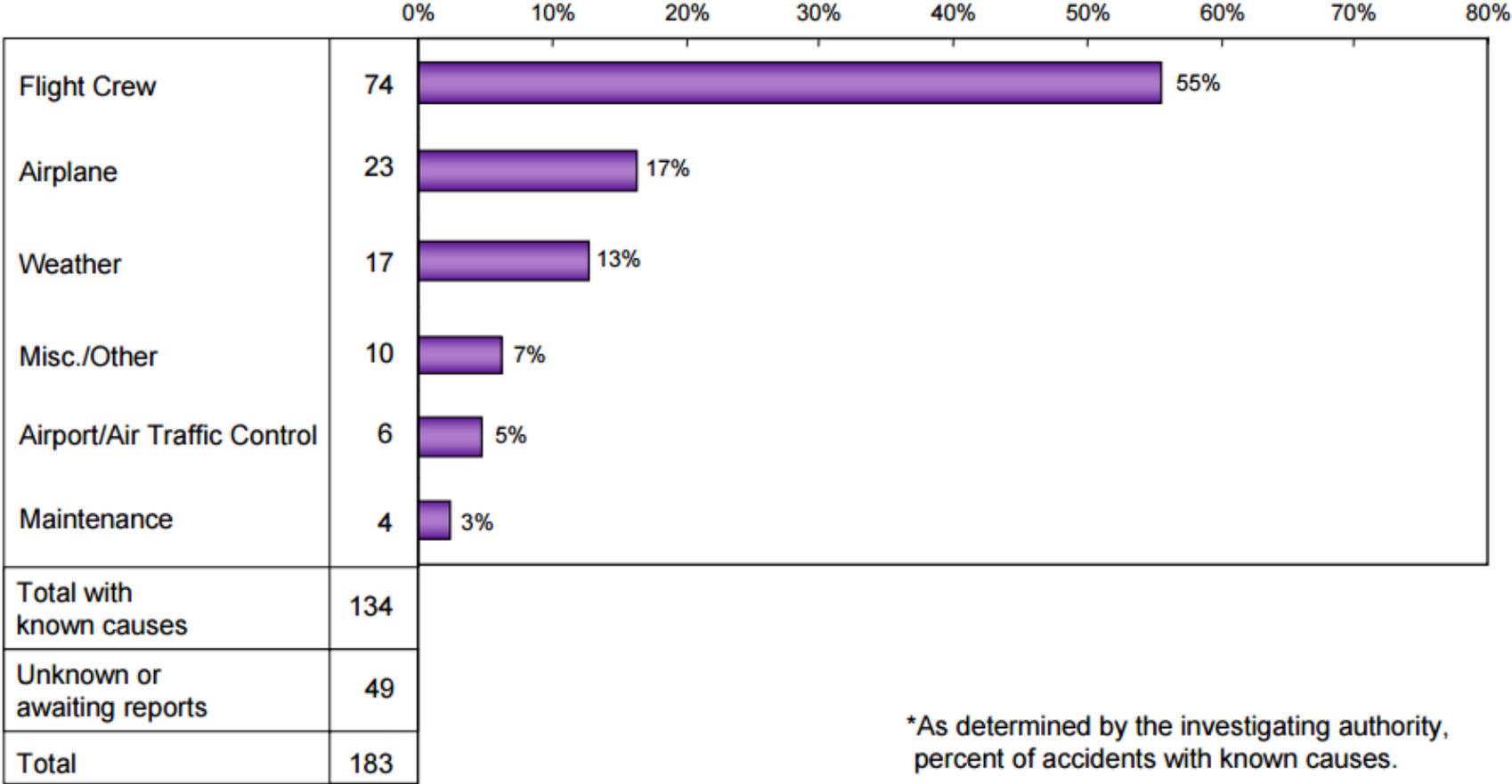
HUMAN ERROR

Source: Boeing, 2007



Source: Boeing, 2006

HUMAN ERROR



CASE STUDY

Operator: Private (Part 91)

Occupants: 4

Aircraft: Phenom 300 (505-0040)

Fatal: 4

Date: July 31st, 2015



THE CREW

- Single Pilot Operation
- Qualified as PIC in the Phenom 300;
- Last recurrent training in June, 2015;
- Qualified in the Cessna 560XLS e A320;
- Employed by the operator since 2011;
- Held an ATPL certificate;
- CFI and check airman;
- Took two weeks annual leave and returned to duty the day before the accident;
- Had operated at Blackbushe 15 other times.





Aprox. -10°



Picture taken by Geoff Pierce





Altitude 1.900ft
Gear Down
Flap Up
Started descent

R/D 2.000 ft/min

Start of left turn

Altitude 1.164 ft
Flap 1
Descent Arrested
TLAs in TOGA
Climbing Attitude

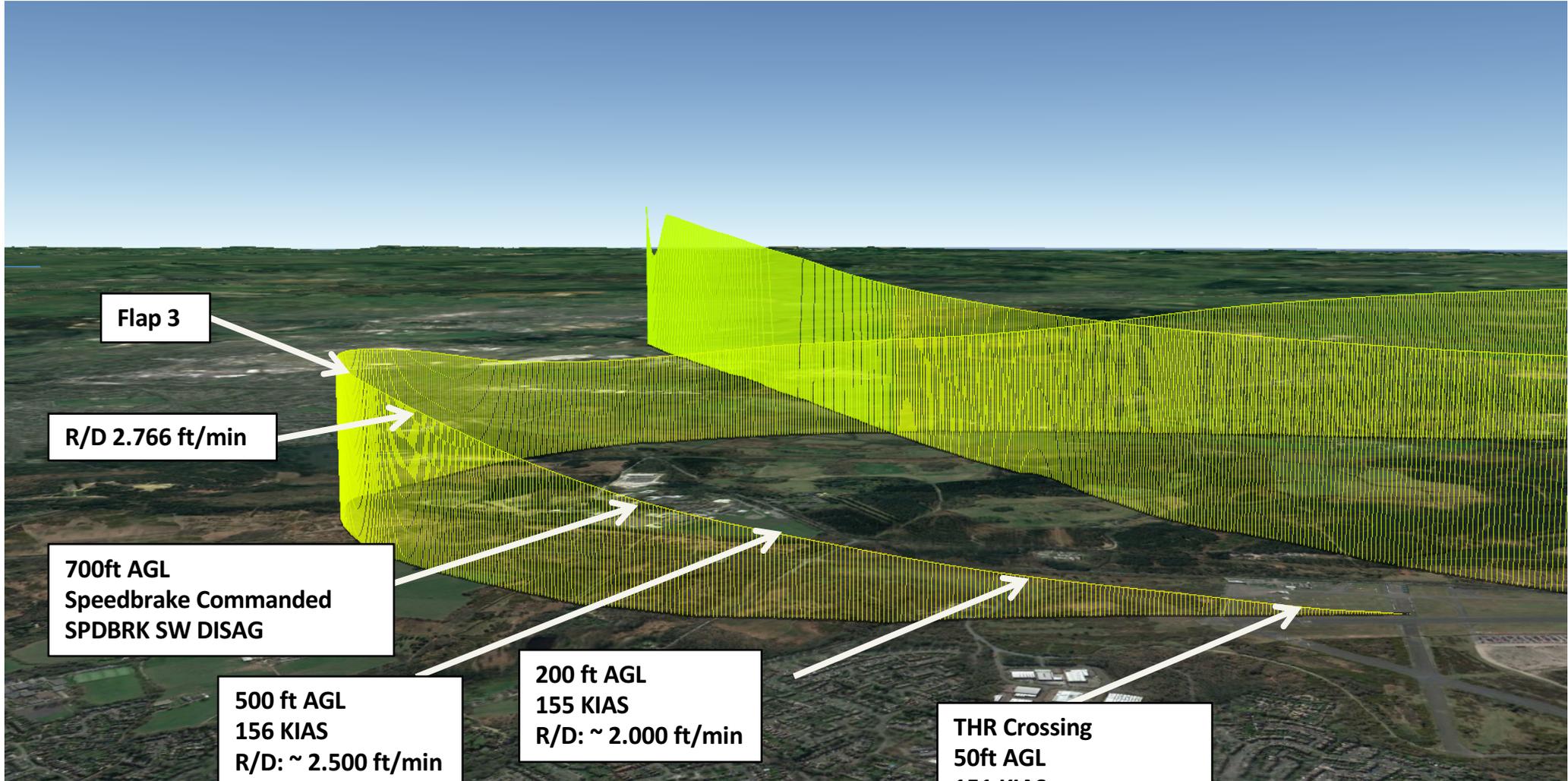
Flap 2

R/C 1.900 ft/min

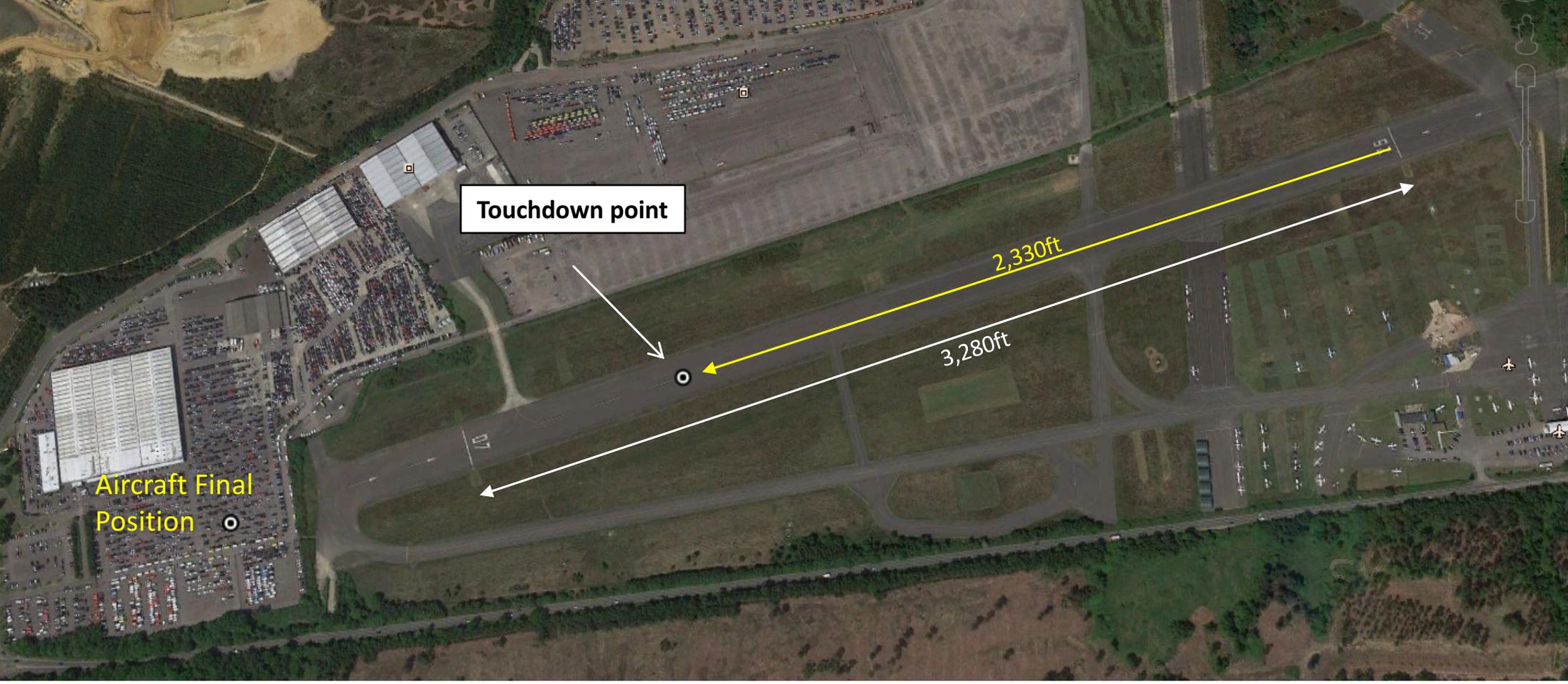
TLAs in Idle

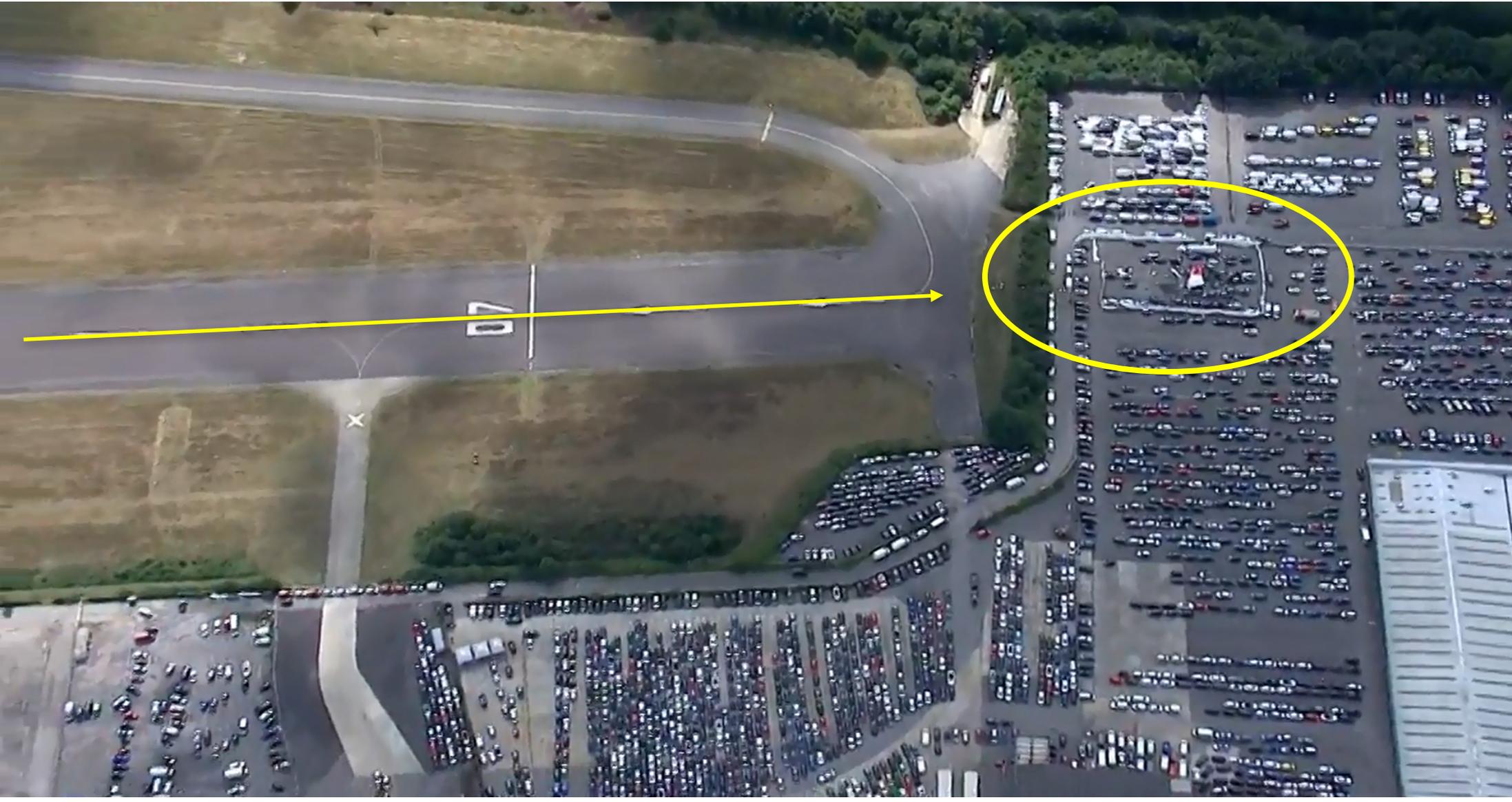
Altitude 1.643 ft
Climb Arrested
Kept left turn
1,4NM (2.600m) from THR
Start of Descent
FPA 8°

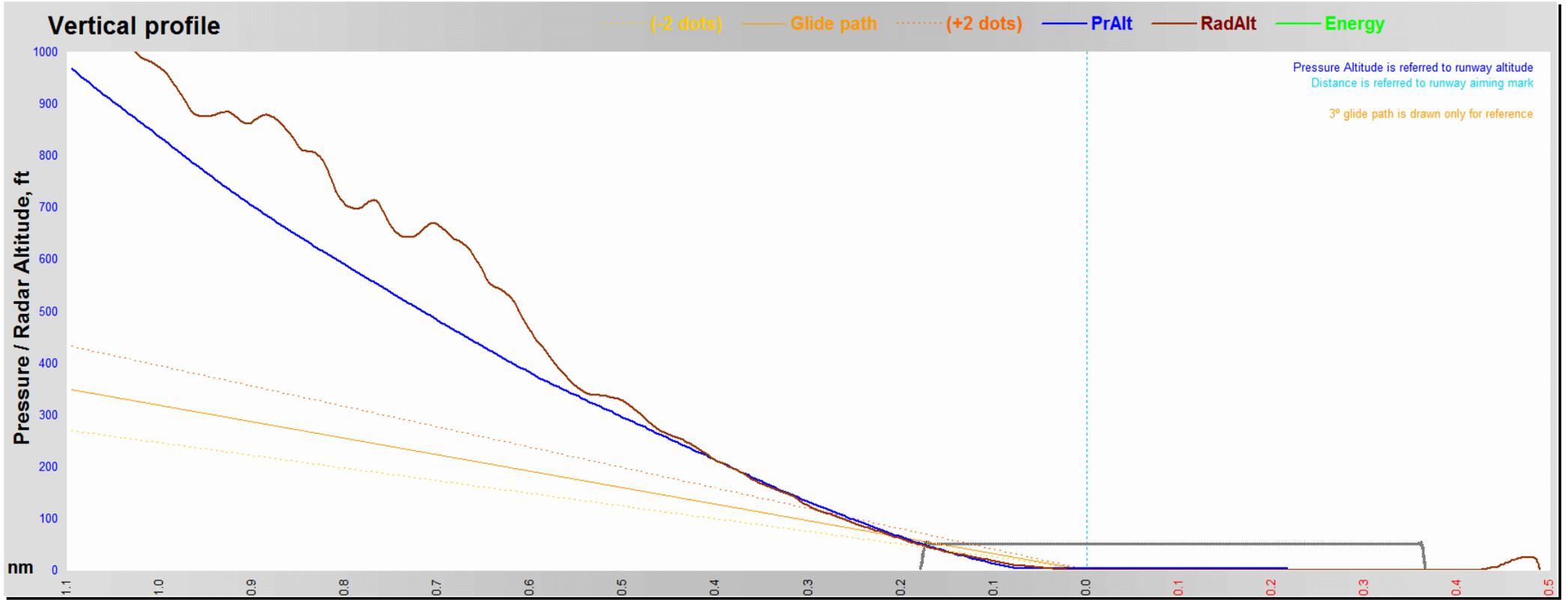




Blackbushe Airport (EGLK);
GA aircraft operation.







**A NUMBER OF FACTORS CAME TOGETHER TO CREATE A
VERY HIGH WORKLOAD ENVIRONMENT, TO THE EXTENT
THAT THE CREW'S MENTAL CAPACITY COULD HAVE
BECOME SATURATED.**



- Data from previous 46 flights of the accident aircraft and 55 flights of the operator's other Phenom 300 aircraft was reviewed and compared to the operator's stabilized approach criteria;
- 20 of the examined flights were flown by the pilot of the accident flight;
- On 18 April 2015 he had flown to Jeddah Airport. There were a number of similarities between this approach and that of the accident flight, with a high rate of descent, TAWS warnings and a speed of about 150 KIAS over the THR. During this landing the flaps were still extending as the aircraft touched down.

**Knowledge and Error flow from the same mental source -
Only success can tell one from the other.**



SELF MANAGEMENT

MEANS TAKING RESPONSIBILITY FOR YOUR OWN ACTIONS AND DOING THINGS AS WELL AS YOU CAN. IT IS ABOUT BEING THE BOSS OF YOU, UNDERSTANDING YOUR PERSONAL LIMITS AND IDENTIFYING YOUR PROXIMITY TO THEM.



**HOLD YOURSELF ACCOUNTABLE FOR
THE WORK YOU DO**



THANK YOU

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