



# Roger Woods

[roger.woods@agustawestland.com](mailto:roger.woods@agustawestland.com)

3050 Red Lion Road

Philadelphia, Pennsylvania 19114

215-281-1400

## **TOTAL FLIGHT TIME: 7500 Hours**

UK Army A2 QFI / QHI

Instructor Hours – 2000+

Night Vision Goggles Qualified

CRM & MCC

FAA ATP CFI/II,

EASA ATPL A/H IR Performance: A, C & E

EASA AW189MP/SP, 139MP/SP, 119 & SW4 Type rated

EASA TRI AW189, 139 & 119

## **Production Test/Chief Flight Instructor,**

**AgustaWestland, Philadelphia PA, 2012-Present**

AW189, 139, A109C/E/S&SP, 119KE/X and SW4: Production, Test & Training. (AW169 Mar16).



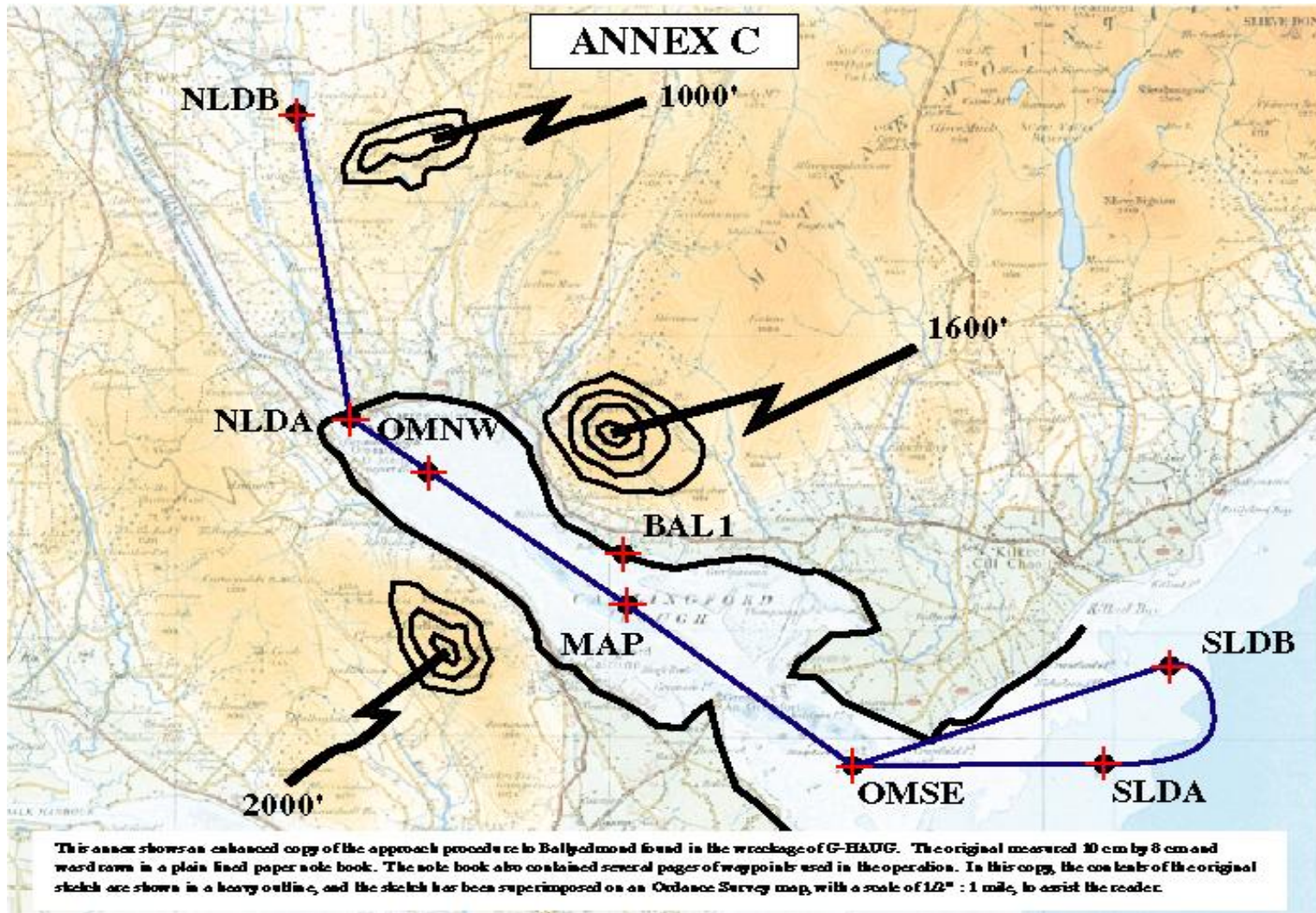
# AGUSTAWESTLAND TRAINING ACADEMY

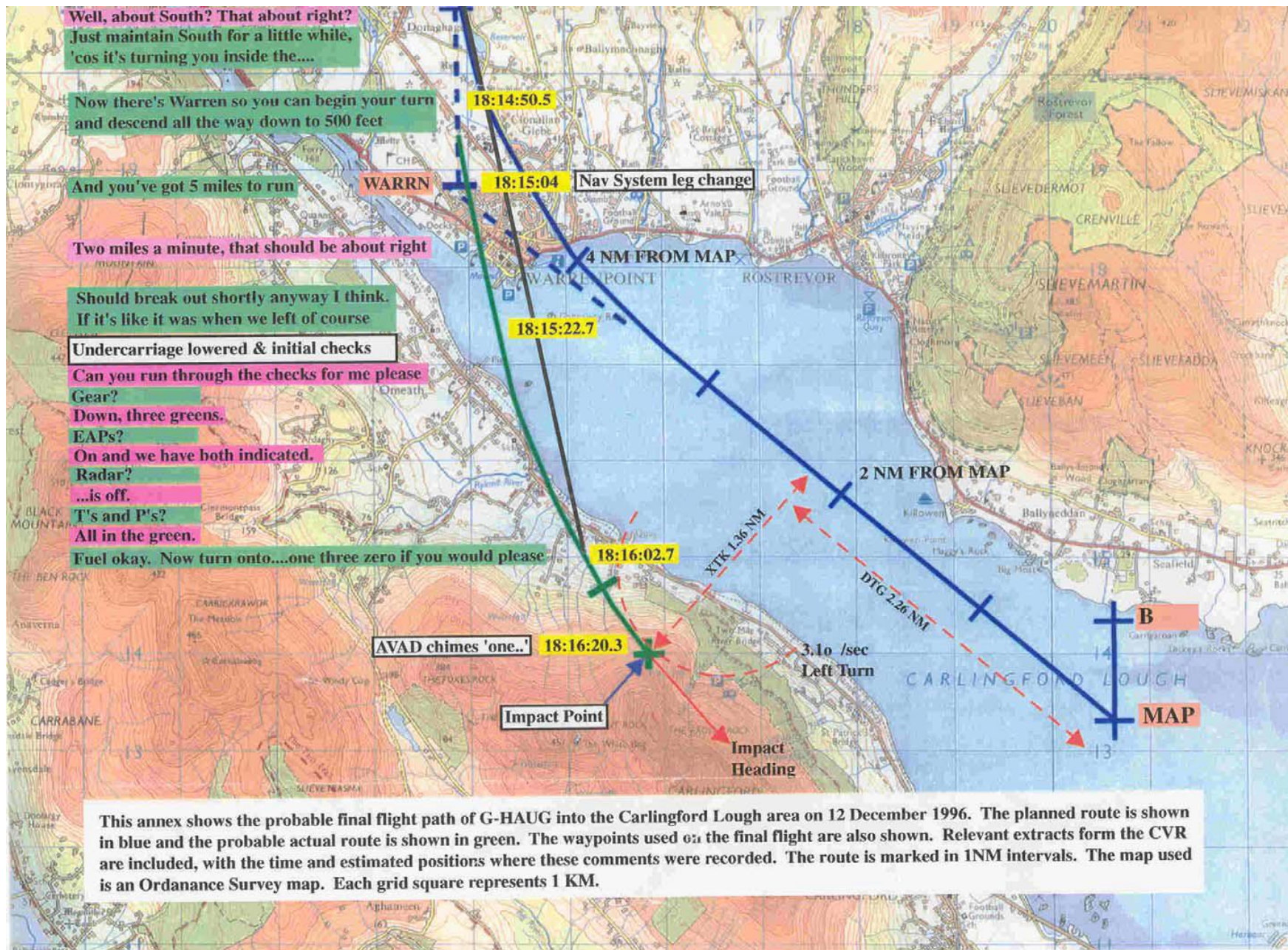
Can new technology improve safety?



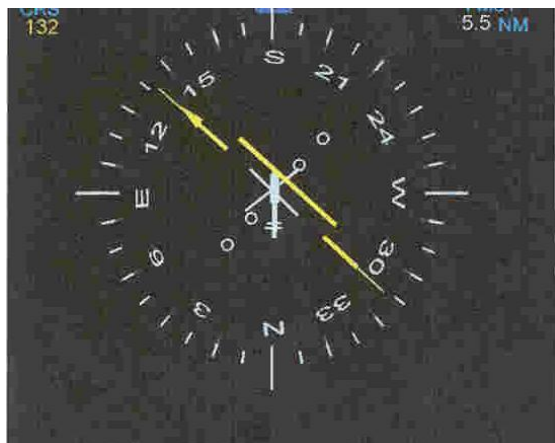


# Dec-1996 (S76B)





This annex shows the probable final flight path of G-HAUG into the Carlingford Lough area on 12 December 1996. The planned route is shown in blue and the probable actual route is shown in green. The waypoints used on the final flight are also shown. Relevant extracts from the CVR are included, with the time and estimated positions where these comments were recorded. The route is marked in 1NM intervals. The map used is an Ordnance Survey map. Each grid square represents 1 KM.



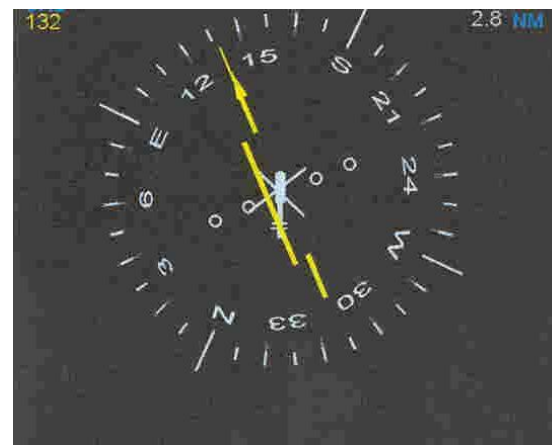
At the GPS predictive turn point



At WARRN

## 3 Fatalities

At the point they turned 180° to 130°



**1.36 NM right of track!!!**



## Sometimes you can get 'lucky'

The flight departs, but with the overcast, they fly up a valley to stay VFR, on their way to the high desert



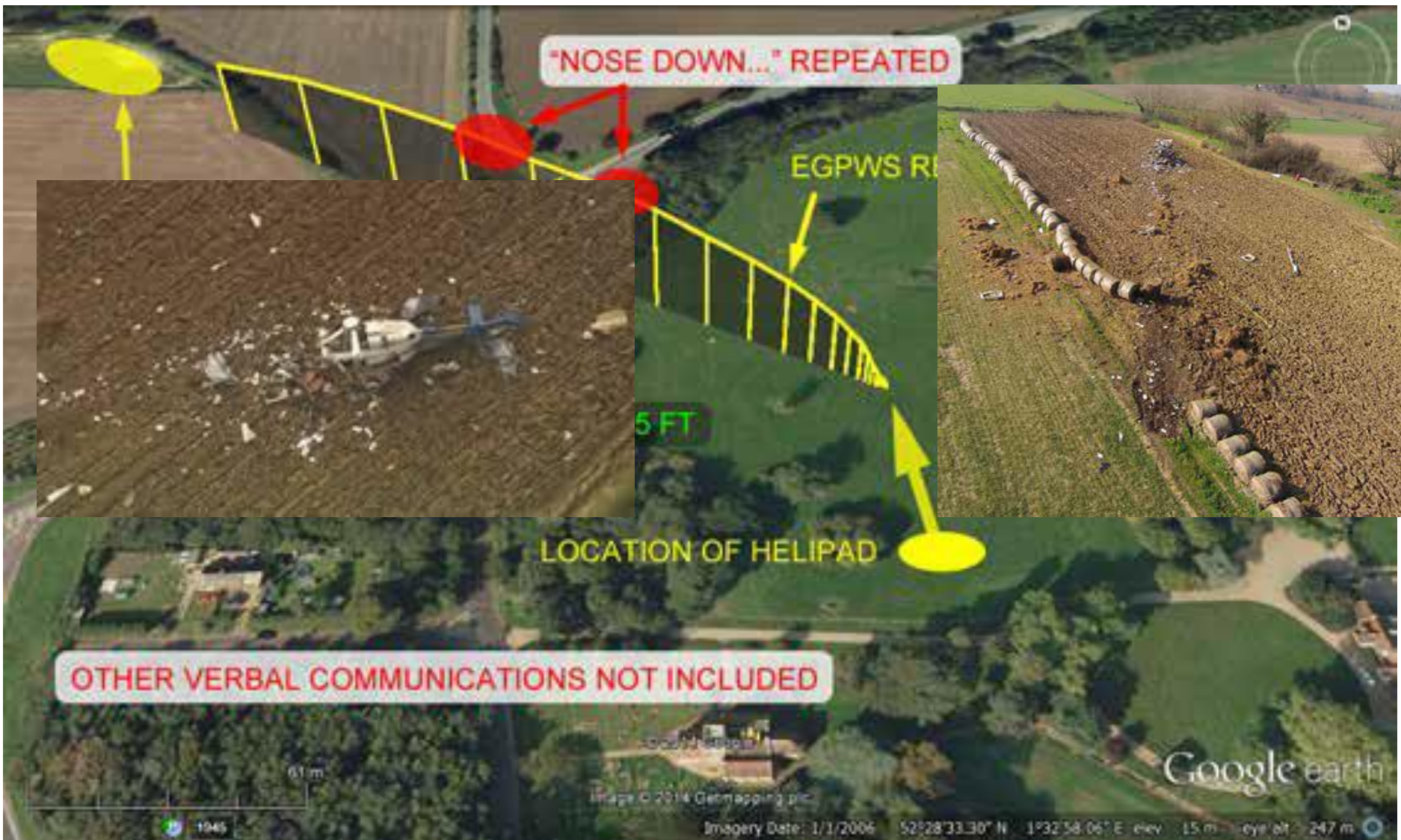
# Mar-2014 (AW139)



**The commander briefed the co-pilot:** *“right all I’m going to do, take it over to the center of the field, and then just pull the power, we’ll go vertically up, I’ll go for the strobe and just make sure the heading bug is central for us if you can”. !!!*



# 4 Fatalities





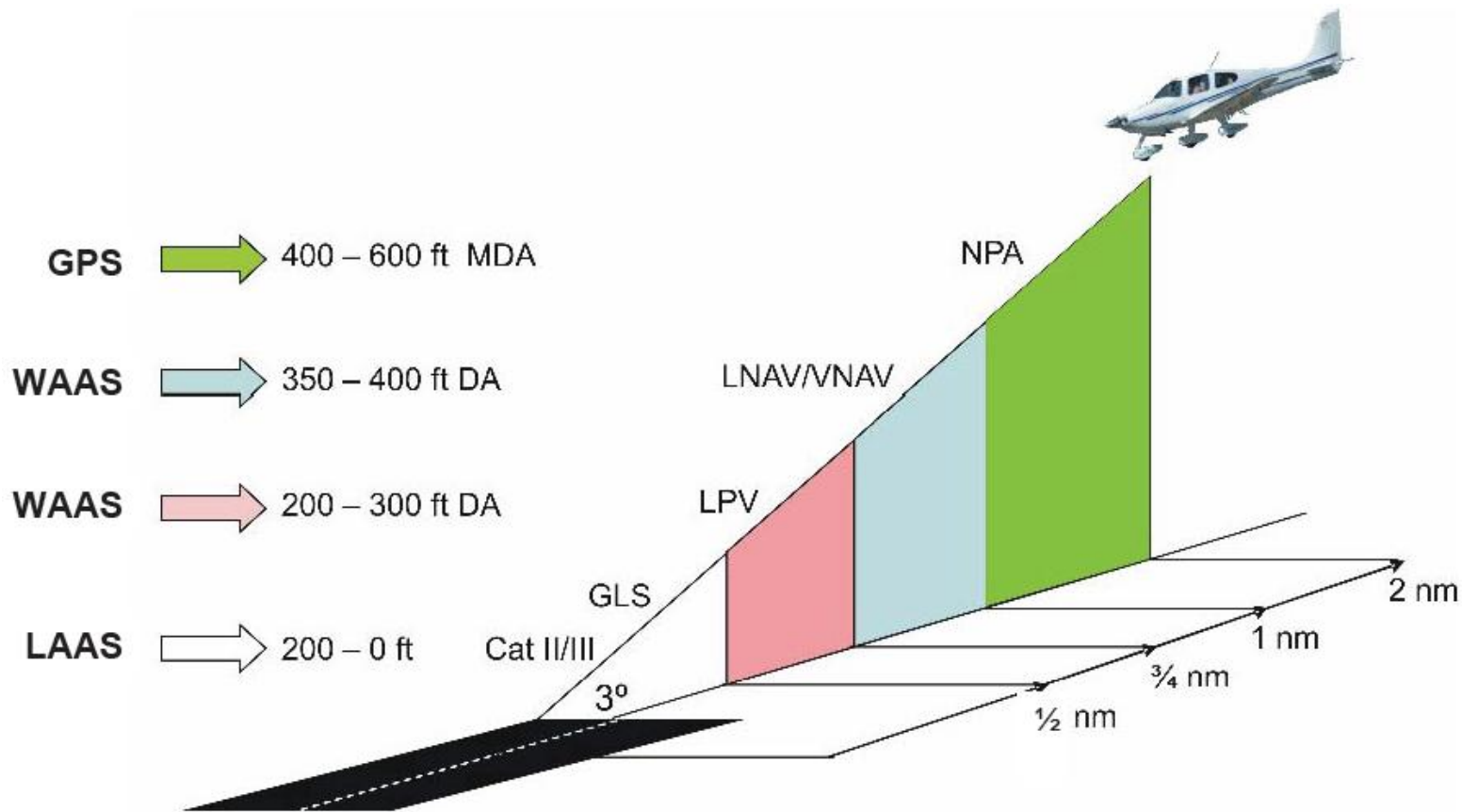


# GPS



# GPS

G  
B  
A  
S





# LPV





# LPV Approaches on AW139 (189/169)

- ❑ Localiser Performance Vertical Guidance (LPV)
- ❑ Augmented GPS giving ILS like integrity
- ❑ Fully Flexible in defining flightpath
  - ❑ Up to 9° Slopes tested with AW139
  - ❑ Curved Approaches
- ❑ Automatic GA Flight Path Guidance
- ❑ Approaches in Database – higher integrity
- ❑ Customisable, and
- ❑ Easy to Use – gives confidence for IFR/IMC operations

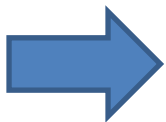


# Low Level IFR Routes



## Background

- ❑ No pressurisation ⇒ Maximum altitude: FL100 ( $\approx$  3000 m)
- ❑ Most helicopters have no de-icing capability
  - Risk of encountering icing conditions increases with altitude
- ❑ Health of on-board patients during medical flights
  - Recommended altitude for patients in critical condition: 3000 ft max.
- ❑ Safety and environment
  - Visual flight at low height (500 ft or sometimes less) to stay below clouds in marginal weather conditions is frequent accident cause and may impact environment (noise footprint )



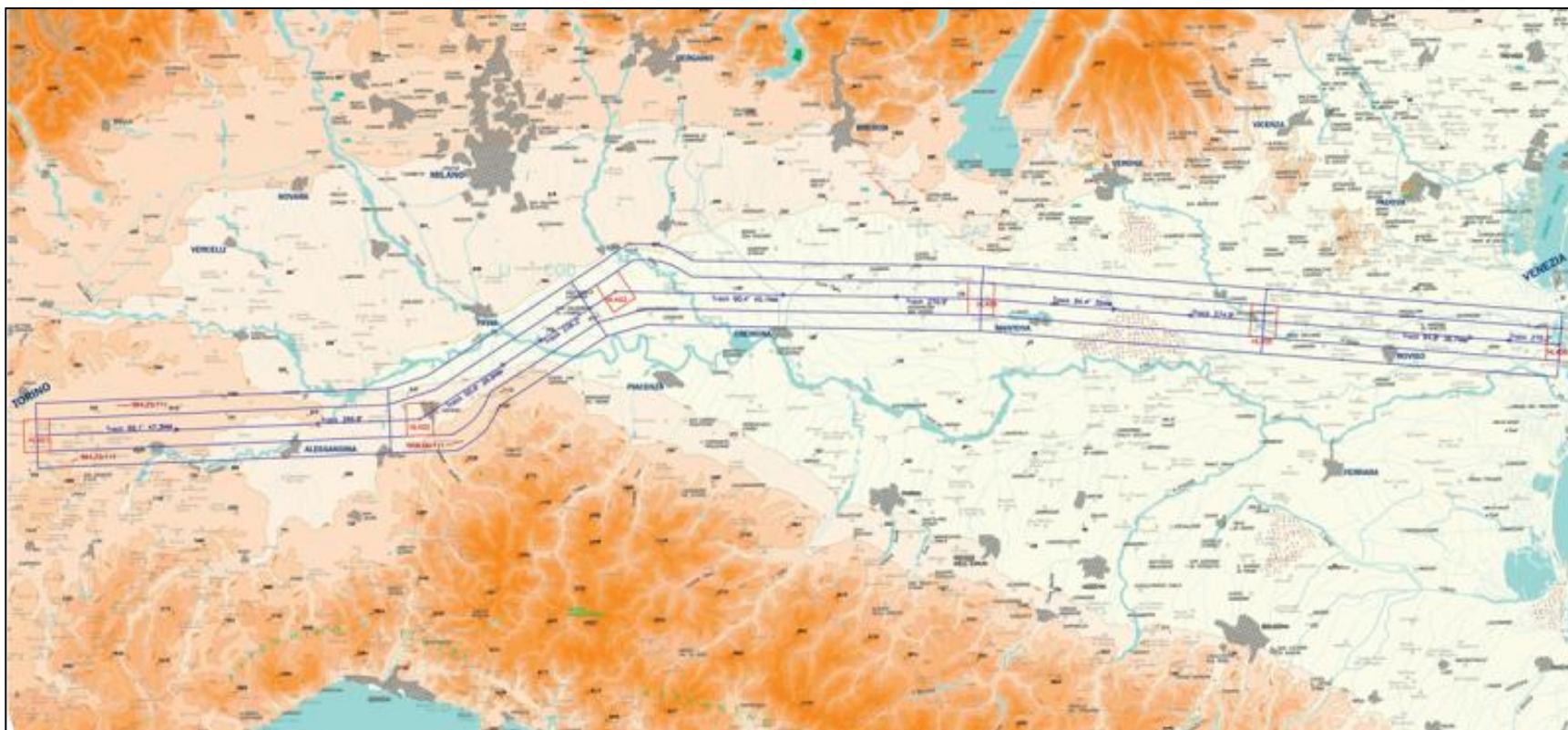
Flying IFR is safer = Need for helicopter Low Level IFR routes to ensure safe and efficient navigation in adverse weather



# Low Level IFR Routes

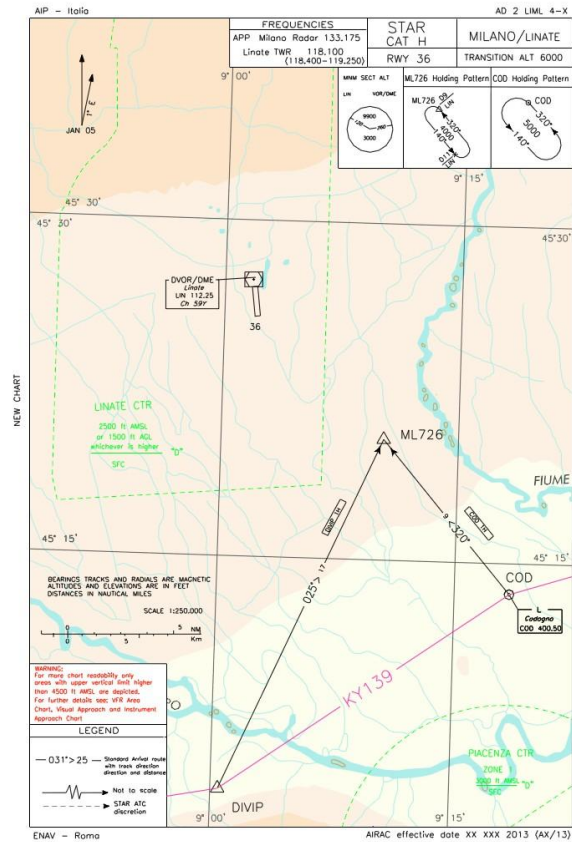
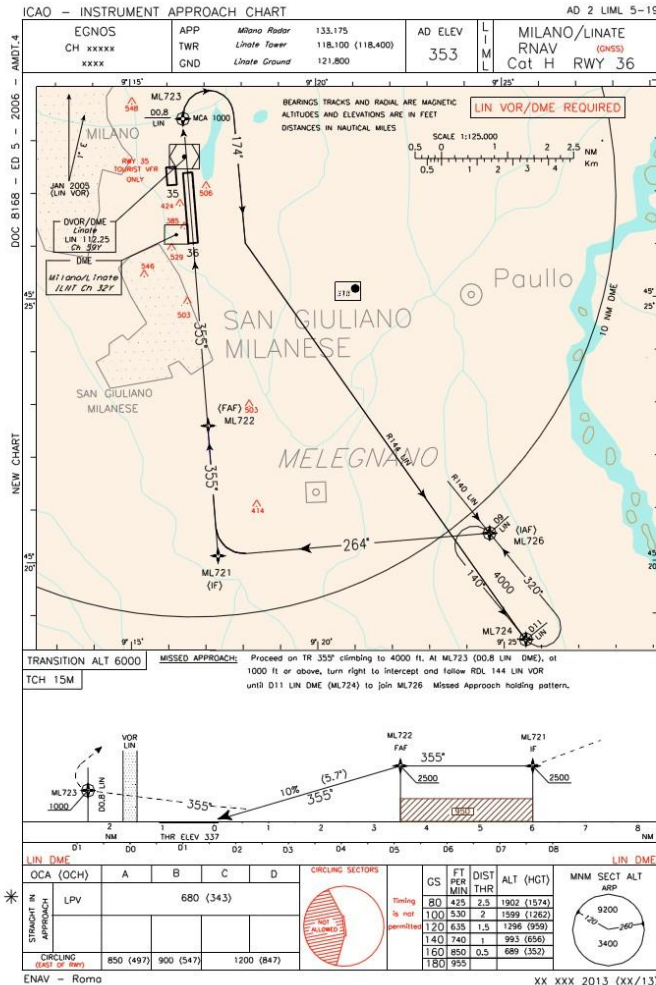
## Inter-city IFR route

- ❑ Trans-Pianura Padana route (Torino ↔ Venezia)
- ❑ Altitude 3000 ft min. (standard IFR routes require altitudes higher than FL 90 in this area)



# Rotorcraft LPV Approach Procedures

## LIML – R/C LPV





# What else?

- HTAWS
- EGPWS Improvements
- SVS
- HITS



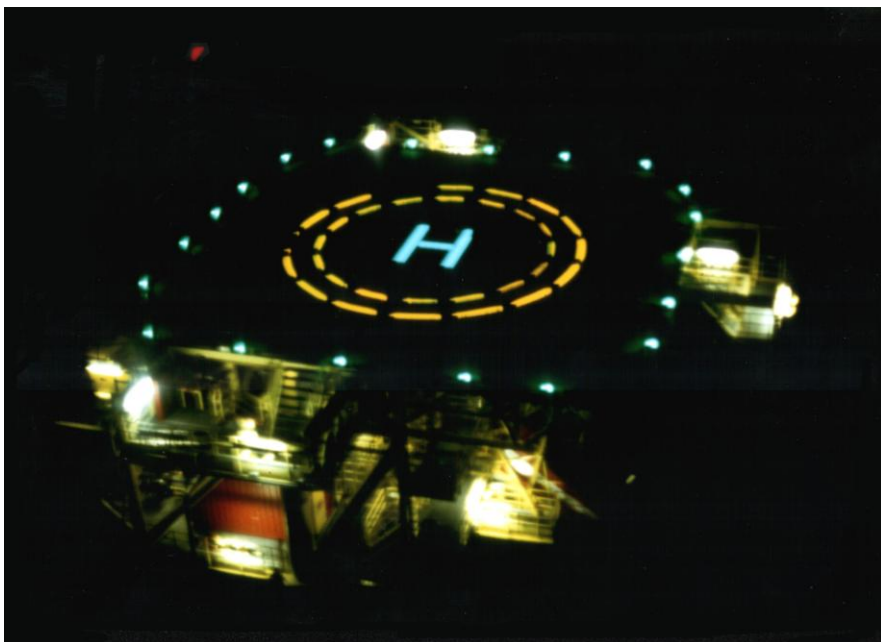
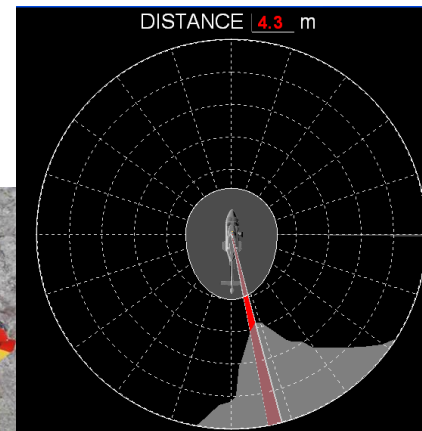






# And Lastly

- ❑ Helipad lighting
- ❑ TCAS II
- ❑ Fly-Up Mode (HTML)
- ❑ OPLS





# Obstacle Proximity Lidar System

by  
 AgustaWestland





# Technology – Help or Hindrance?

- Good Technology – YES**
- Bad Technology or incorrect use of – NO**
- Tendency to focus on the benefits without taking into account possible problems**
- Cost!**



**Roger Woods**  
**Chief Flight Instructor AWPC**

