



**BEA**

Bureau d'Enquêtes et d'Analyses  
pour la sécurité de l'aviation civile

# Is A Medical Standard For Fitness To Fly Necessarily Measurable? About Early Onset Of Cataract And Its Impact On Safety.

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# Introduction

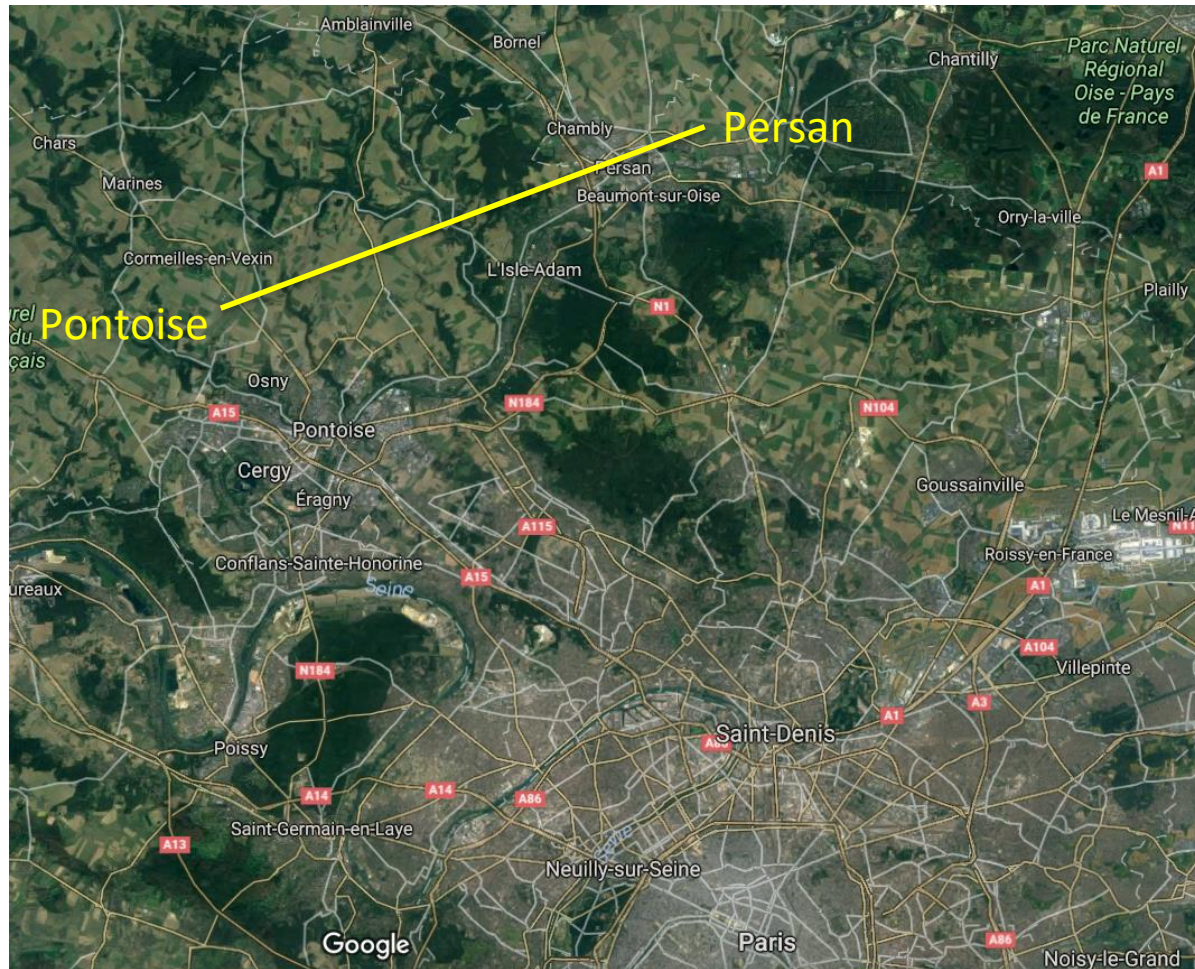
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# History Of The Flight

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# Intended Route



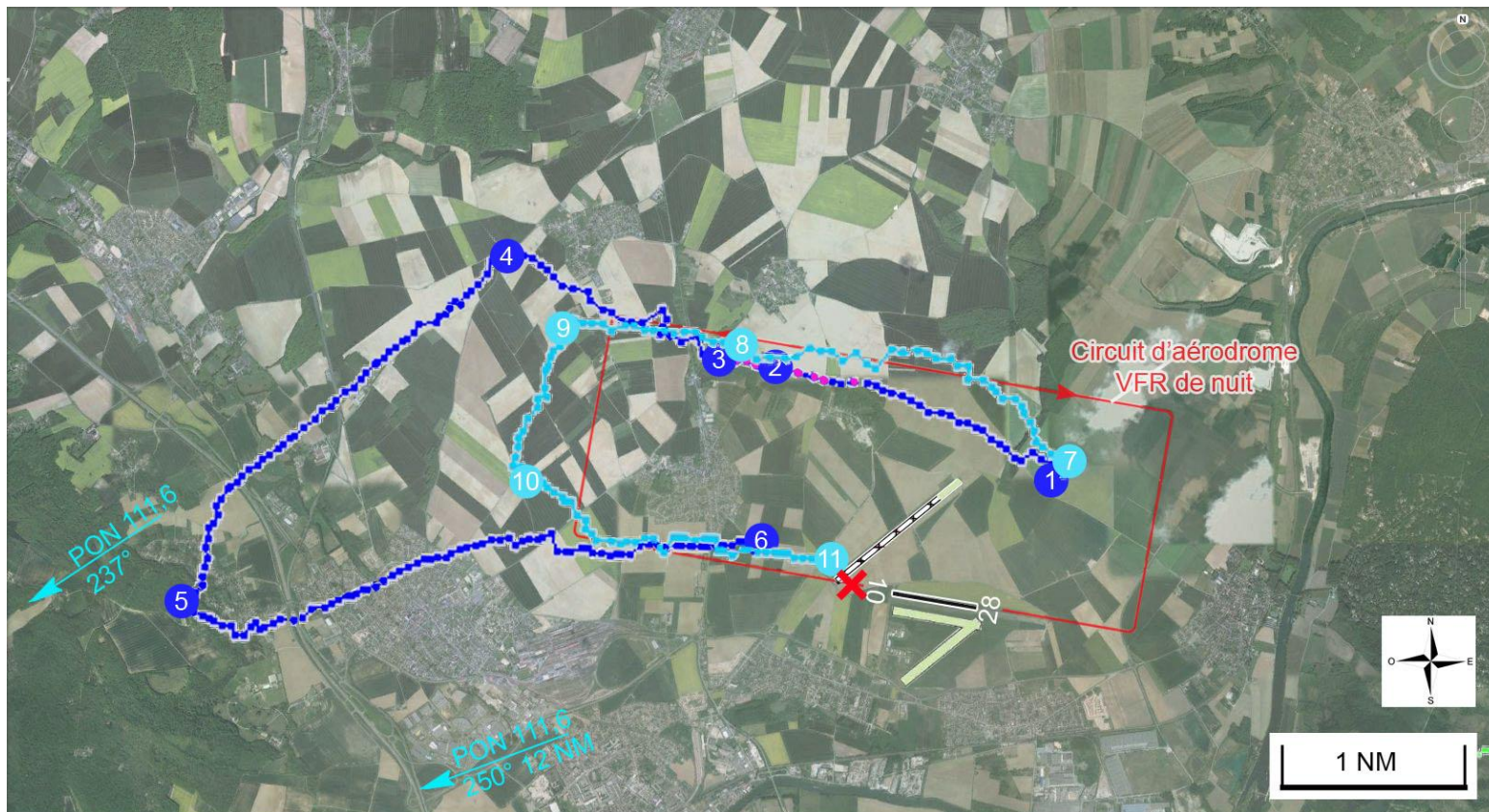
# Site Information 1





# Site information 2





Origine du fond de carte : Google Earth



Position épave F-GHPN

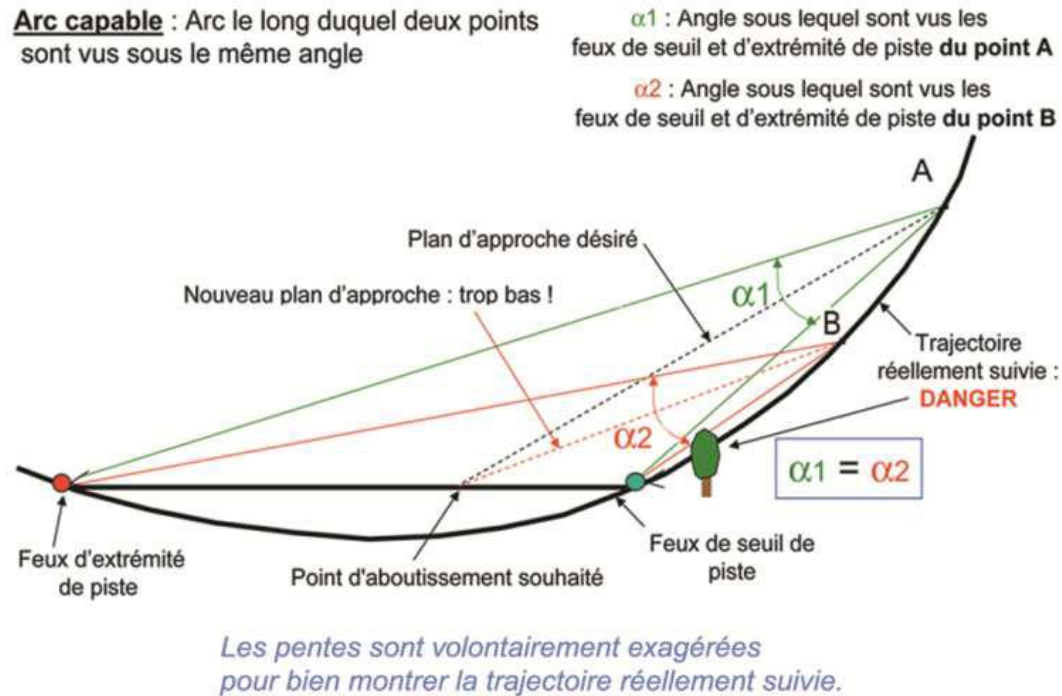


# Analysis

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# « Black Hole Illusion » (Kraft, 1978)



- THE INTERNATIONAL JOURNAL OF AVIATION PSYCHOLOGY, 20(1), 59–73
- Excerpt from the aeroplane pilot manual, Cépaduès edition

- An autopsy of the pilot showed in particular:
  - Dilatation of the cardiac cavities (irregular heartbeat, fatigue)
  - Clouded crystalline lens / **cataract** (visual impairment / extreme luminance)

- Cataract implies:
  - Clouded, blurred or dim vision
  - Increasing difficulty with vision at night
  - Sensitivity to light and glare
  - Seeing « halos » around lights.
- Vision impaired / combination of factors
- Situation worsened / combination with stress effects
- Impact on safety under-estimated

- Check conducted under former French regulation:
  - Decree of 2 December 1988
  - « normal adaptation to low and high luminance »
  - No guidance
- European regulation:
  - Regulation (EU) No. 1178/2011
  - AMC2 MED.B.070
  - Adaptation to extreme luminance not included.





# Recommandations

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- The BEA recommends that EASA consider ways to educate physicians about the risks associated with the presence of a cataract and in particular its symptoms.
  
- EASA responds :
  - The Agency has taken action / awareness of M. S.
  - The M. S. were advised to communicate / AeMCs and AME
    - Slit lamp
    - Simulating luminance by shining ophthalmoscope

- Reco 2
  - The BEA recommends that EASA modifies AMC2 MED.B.070 to help identify pilots at risk by conducting a qualitative assessment of vision in extreme luminance conditions in order to inform pilots of the risk of deterioration in their visual performance in some circumstances and advise them of further examination by an ophthalmologist (eg. in order detect the presence of a veil cristallinien or signs of a cataract). This qualitative assessment can be made by checking the medical history and by the presence of clinical indications (e.g., visual acuity problems, result of a luminance test).



# Lessons Learned

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- Threat through a combination of factors
- Under-representation of human sciences
- Sudden and unexpected decrement of performance
- Intrinsic seriousness / effective impact on safety
- Low intrinsic seriousness / difficulty to assess risk



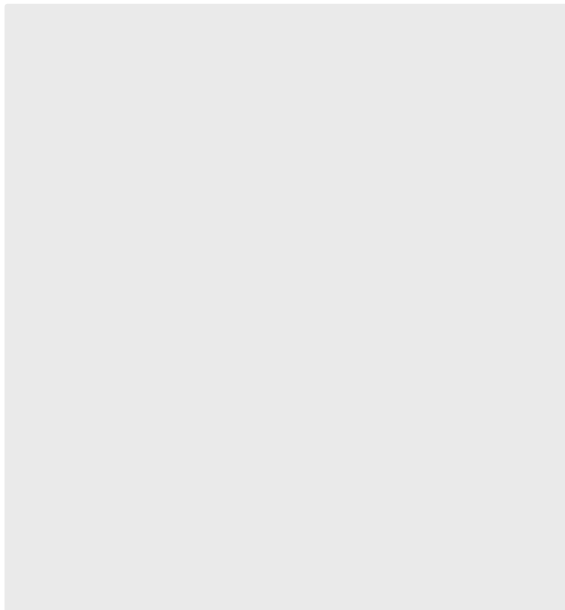
# Conclusion

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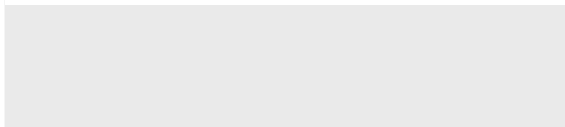


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Thanks for your attention