GPS

and

FLARM

GPS

Including navigation/glide computers databases/software etc

USE AND DANGERS

and

FLARM

GPS is now universally used by cross country pilots for navigation - so

1. Why is it so useful ?
2. What can we use it for ?
3. How do we use it ?
4. What are the pitfalls ?
5. Advice

Why is it so useful ?

- Navigation is highly accurate
- Following a ‘route’ is easy
- You can more easily avoid airspace infringements
- Turn point id/turning is made simple
- Navigation to alternate airfields for landouts is easy
- You know exactly where to call your crew to when you landout in field!

What can we use it for ?

- As above
- plus Tasks and
- Final glides

How do we use it ?

- This is the difficult one !
- Various equipment configurations
  - Display, computer and GPS ‘engine’ may be separate
- No two different models/setups work the same way
- You need to FULLY understand how to work **your** equipment while you are still on the ground
- Most have a simulator mode.
- This IS the lifetime habit breaking situation
  - READ THE MANUAL !!
  - Even if no one else knows how it works, discussion with others may clarify a few things

How do we use it ?

- Play with it in simulator mode until you are confident you know how it works
- You may need to ‘revise’ how to use it at the start of each new season
- Ensure everything is switched on, set up for your flight and working correctly before take-off
    - Achieving this after t/o can be dangerous
    - Worth doing it well before t/o in case of problems

What are the pitfalls ?

- Distraction while flying
  - especially if you are not sufficiently familiar with the kit
- Poor reception/loss of signal
- Loss of power supply
- Misinterpretation of the display
- Over-reliance on the correctness and accuracy of databases maps etc.
- Decay of backup map reading skills
- Heading is NOT the same as track

Advice

1. Make sure you FULLY understand how it all works and have practised using it (?simulator mode) on the ground before ever flying with it.
2. If it is a portable device fly dual with a safety pilot while learning to use it.
3. If it is built in to your aircraft go to 1. above and be cautious on your first flight.
    i. After take-off ignore it if you find it distracts you from lookout or handling.
    ii. But you will have learnt how much you DON'T know about how to use it. GOTO 1. above and start again!

Advice

4. Be circumspect about the accuracy of databases and maps especially where airspace is concerned (even if you have updated it this year)
5. DO NOT fly up close to indicated airspace boundaries when you are zoomed right in. (Seems like a good idea but really isn't)
6. Revise using it before the first x/c of the season

    Don't assume because you knew how to use it last season you will remember this.

Advice

7. Do not rely completely on the GPS kit. IT MAY FAIL. (Loss of battery power, loss of gps signal, software crash…)
8. Keep a continuous update of your position on the map and always be prepared to revert to map navigation
9. Always cross check information from the gps-map with common sense by relating it to what you can see on the ground, on the paper map and with the compass. Do not blindly believe the gps-map
    - It has been known for W long. to be confused with E long. especially in the UK!

Advice

10. Do not fiddle with the kit controls in the air unless you are totally familiar with it – familiarity is acquired on the ground!
11. KEEP A GOOD LOOKOUT

FLARM

- The PRIMARY method of collision avoidance for glider pilots is:-
- LOOKOUT
- Flarm is an AID to lookout
- NOT a substitute for it

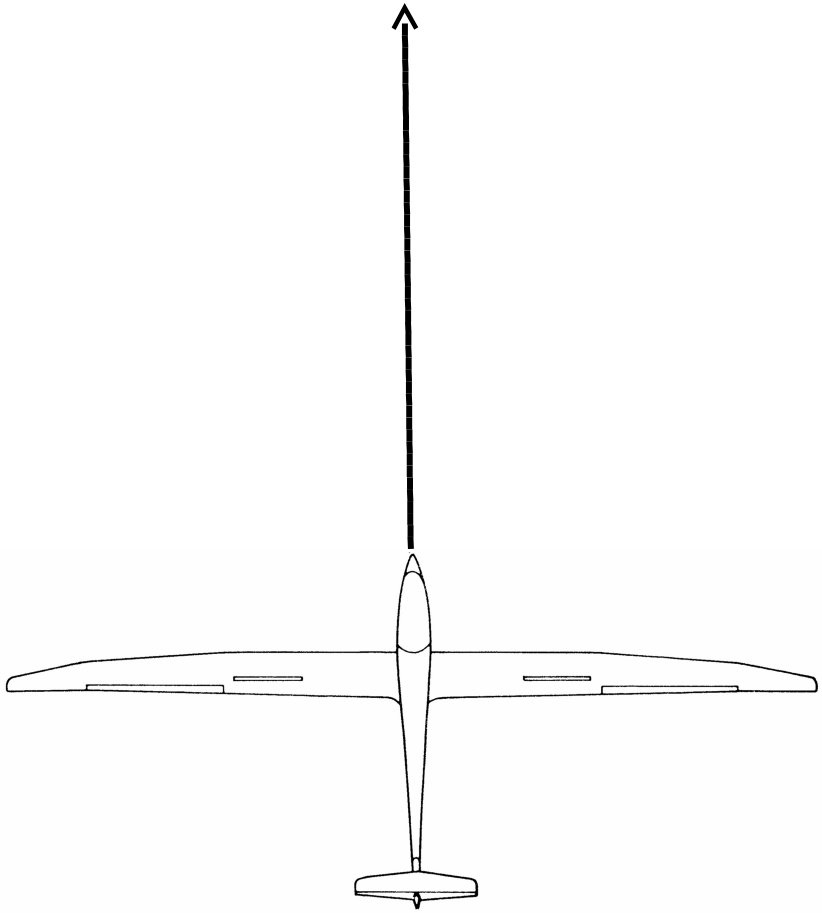
USE OF FLARM

- Flarm is increasingly being fitted in gliders in the UK
- and is very common/mandatory in regions overseas
- HOWEVER NOT ALL GLIDERS are fitted
- Gliders not fitted (or fitted but switched off) will not be indicated as threats by your Flarm
- So KEEP A GOOD LOOKOUT

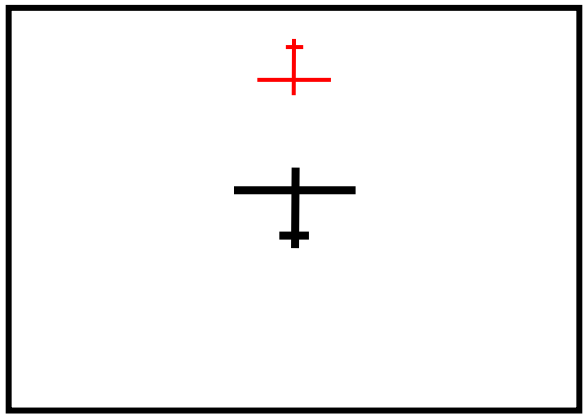
FLARM - advice

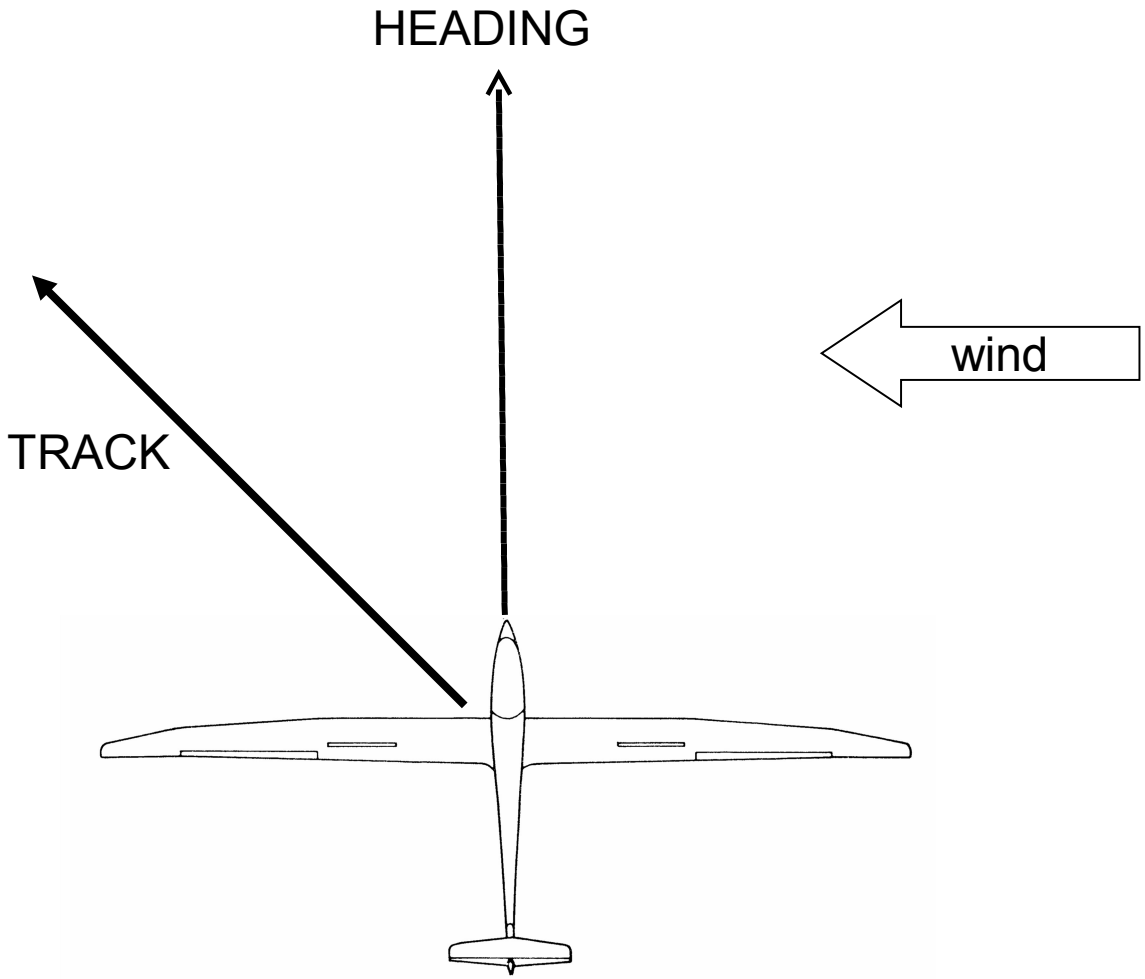
- Do not let Flarm distract you from keeping a good lookout
- TRACK is NOT the same as HEADING
- Flarm indicates the relative position of a threat in relation to TRACK, not heading

HEADING



FLARM DISPLAY





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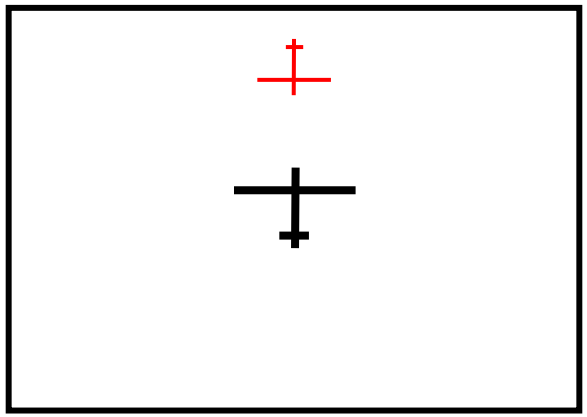

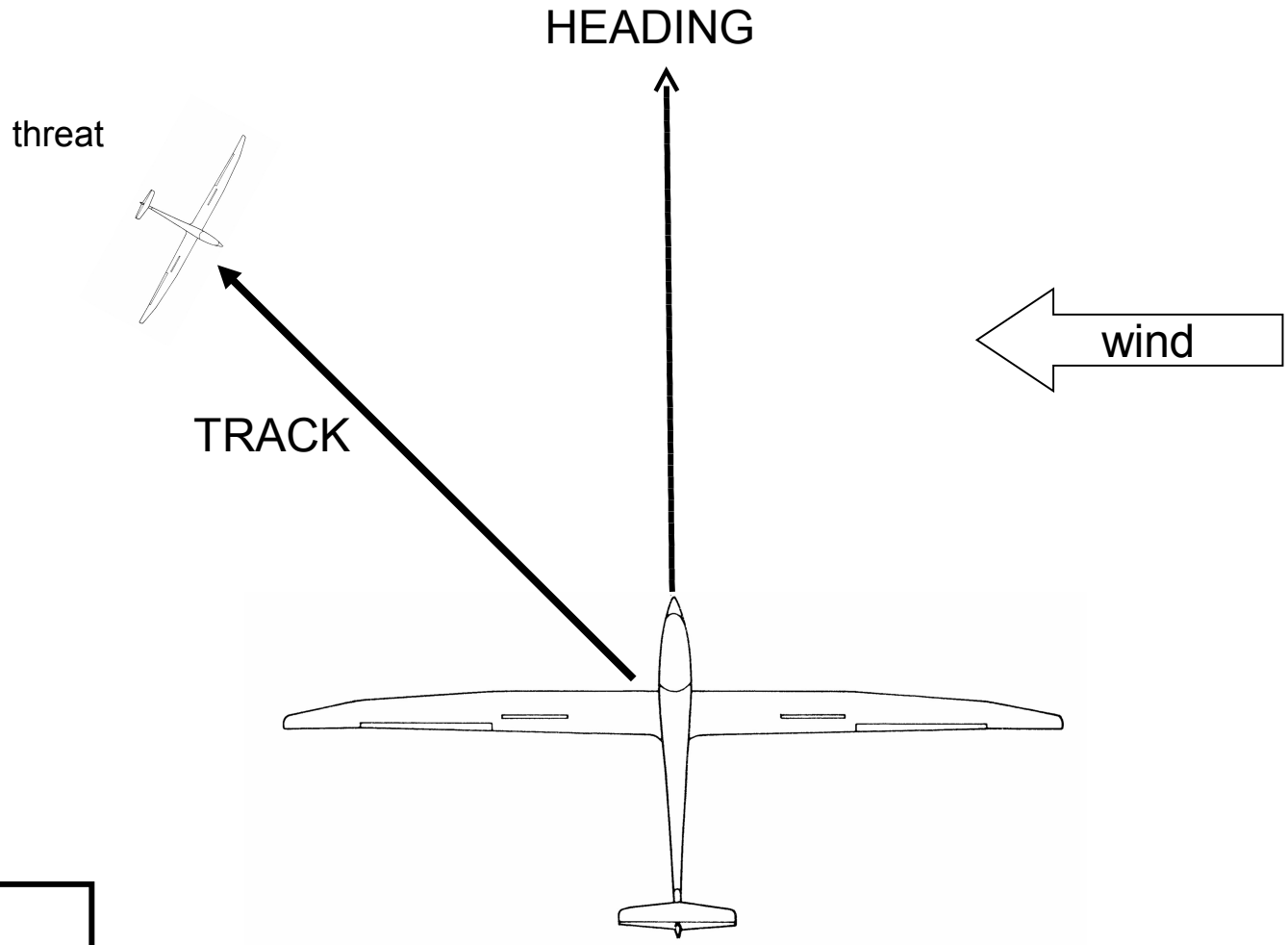

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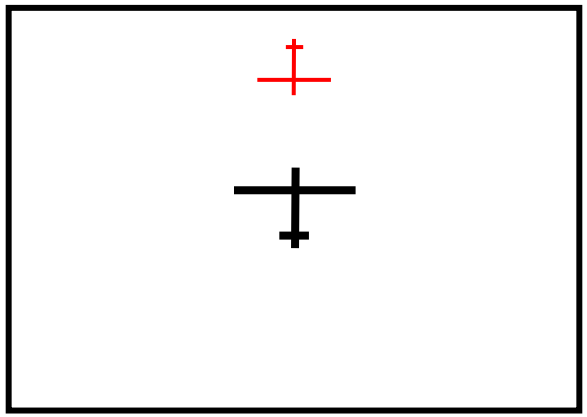
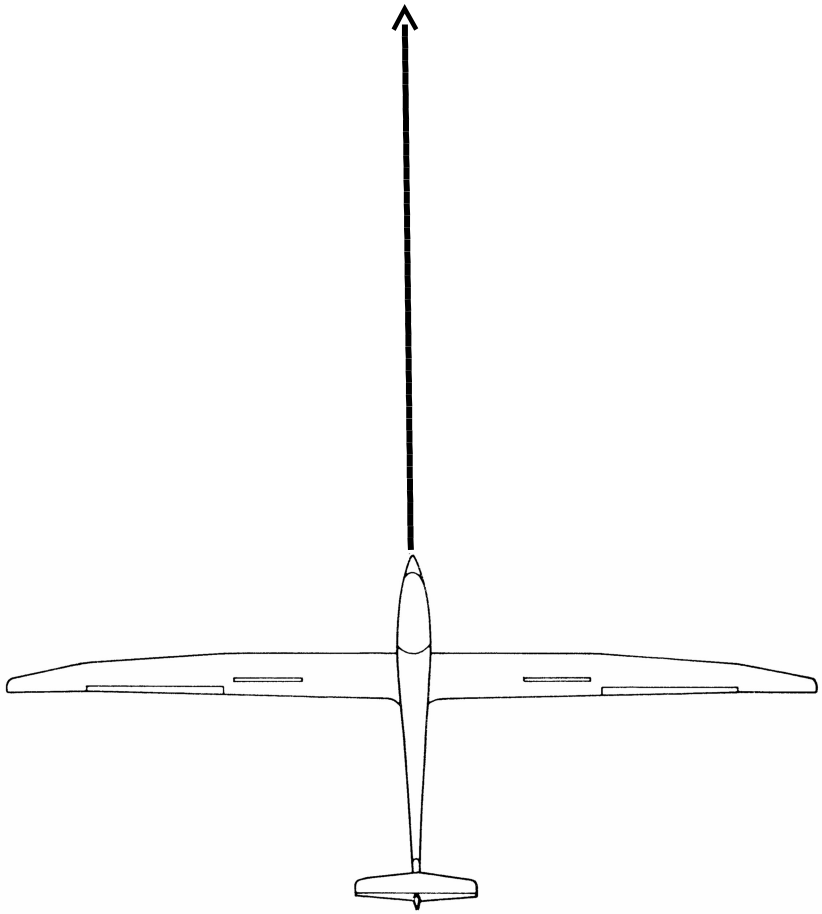


It’s no good looking ahead. The threat isn’t there!

It’s in your half past ten

HEADING



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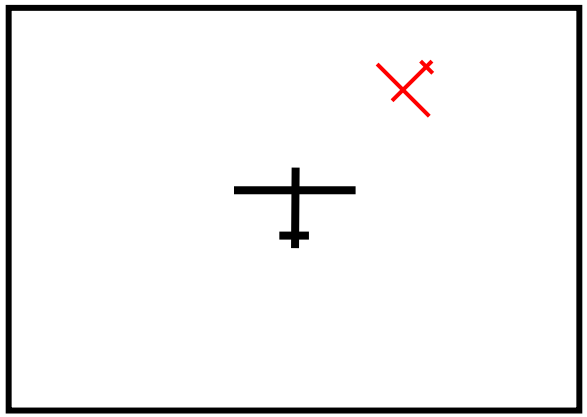

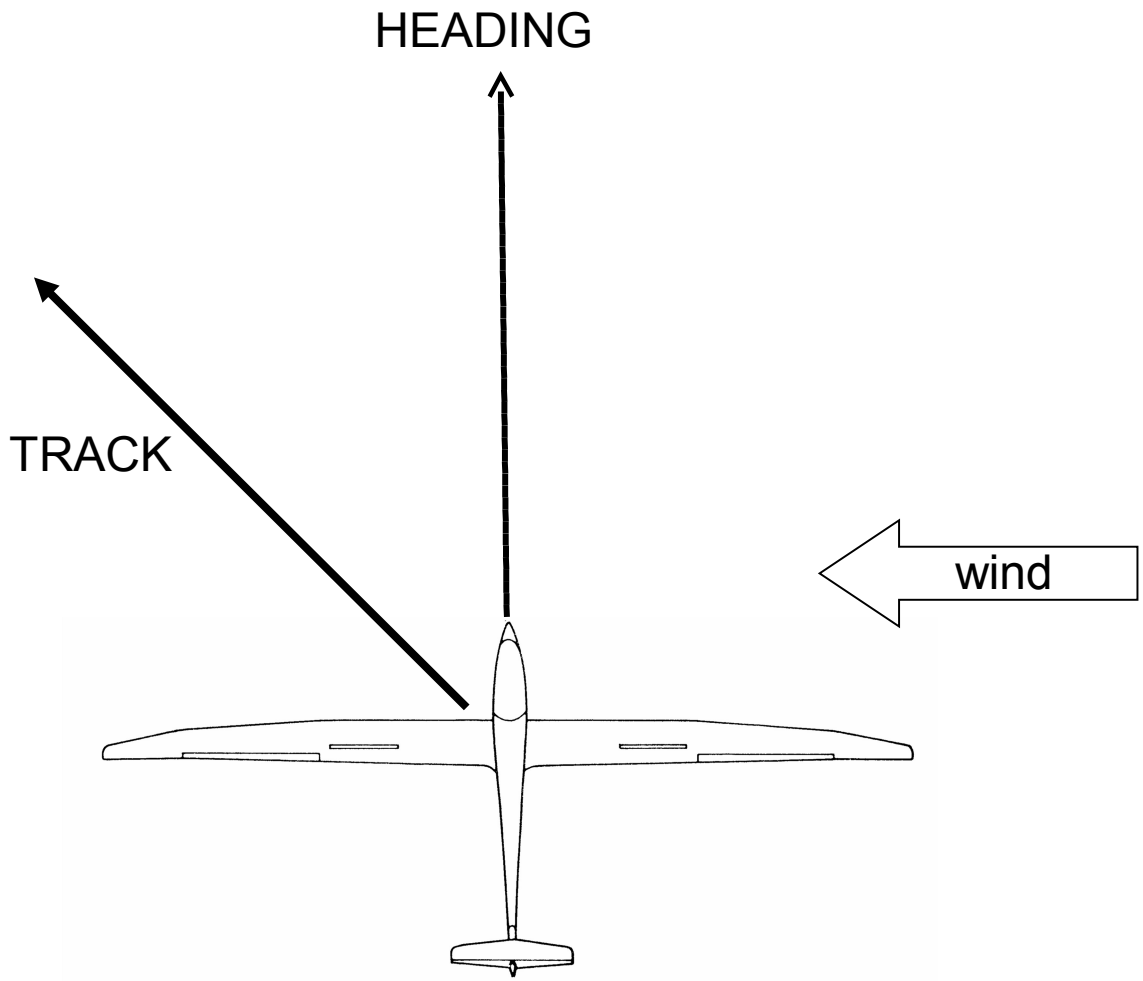

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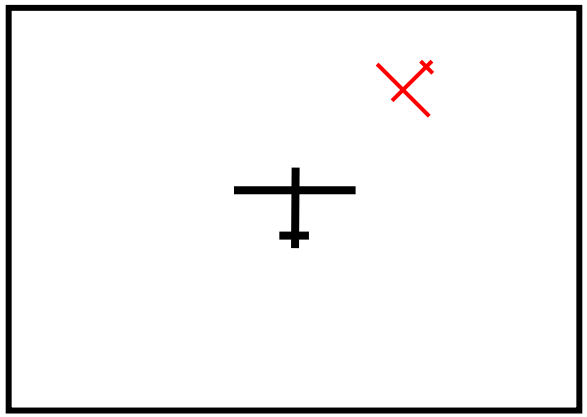

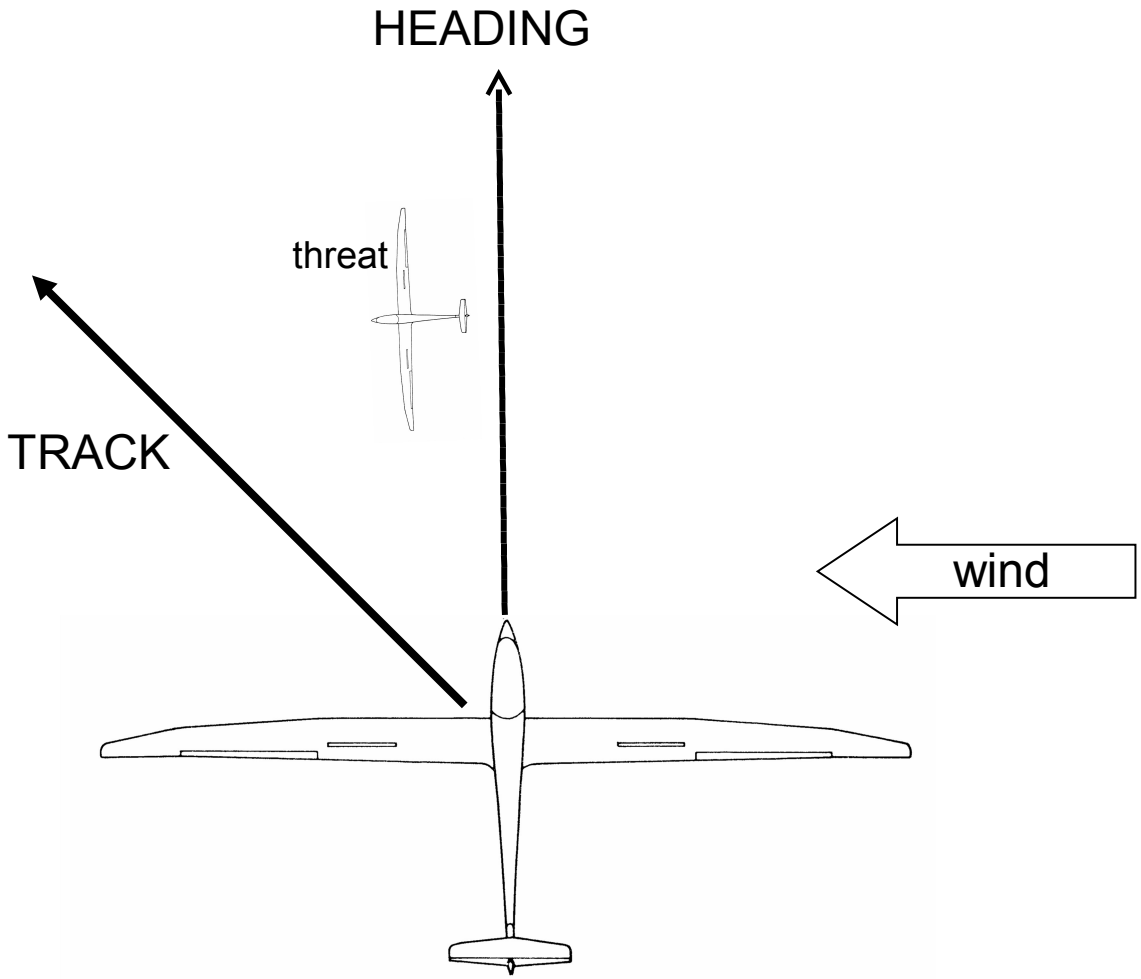

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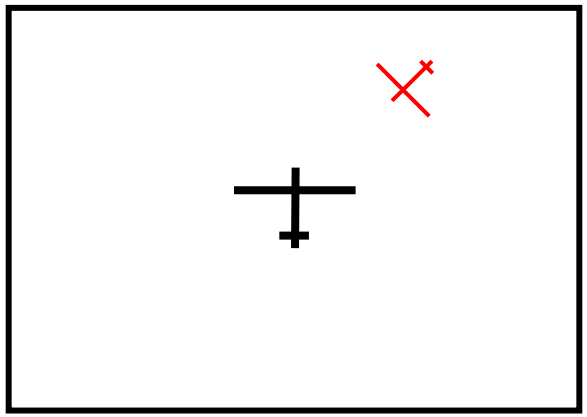

Threat is to your left not right!

ALARMS

- Flarm can be configured to produce an audible alarm when it calculates there is an imminent threat
- Alarms can be unnerving
    - be mentally prepared for them