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Maple Lake, Minnesota

MAY 2021

FLIGHT ADVISOR BRIEFING

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PIPER ARCHER III

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EAA

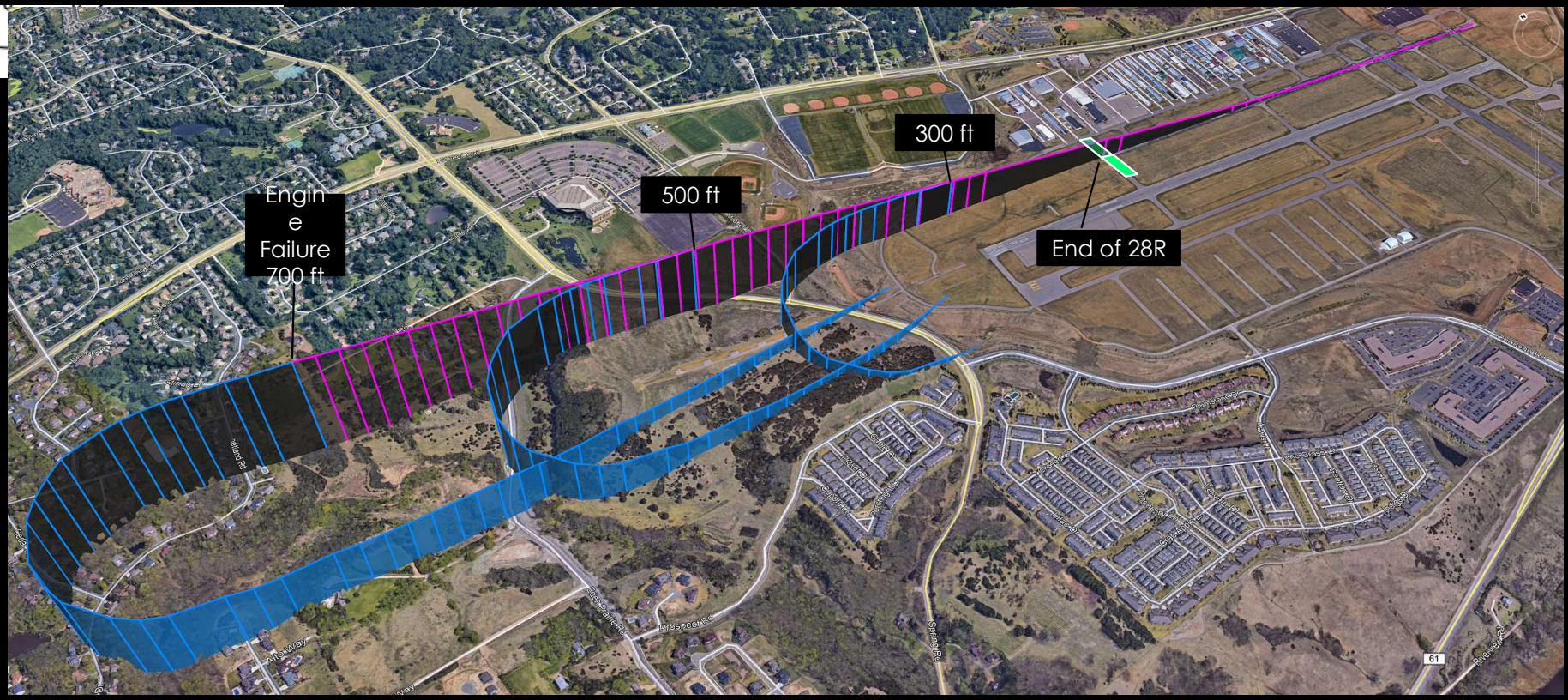
ENGINE FAILURE ON TAKEOFF TURNBACK PROJECT

TURNBACK AT 700 FT

CHEROKEE PA 28-140

Conditions

Density Altitude	673 ft
Winds	0 kts
Weight	87% MGW
Startle	4.0 sec
Climb	Vy



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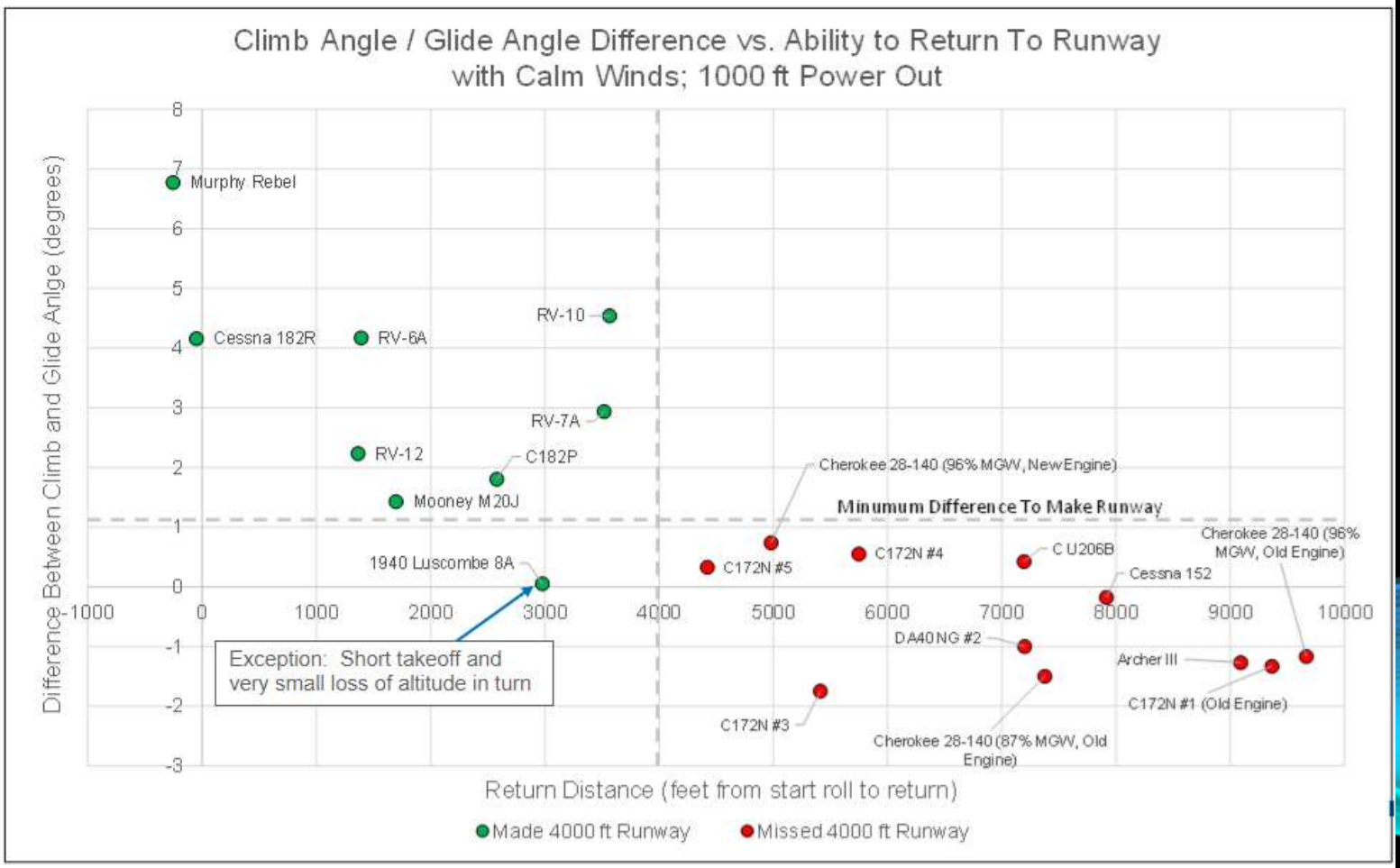
PERFORMANCE



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Some interesting Archer cockpit features:

- G-1000 avionics
- No key
- Mags and master power on overhead


NO SMOKING
START
BATT MASTER
FUEL PUMP
FADEC TEST
ALTR
FORCE
ONLY ECU B
AUTO
LANDG LIGHT
NAV LIGHT
STROBE LIGHTS OFF T/R STROBE
NIGHT
DAY
AVION MASTER
Piper
Piper

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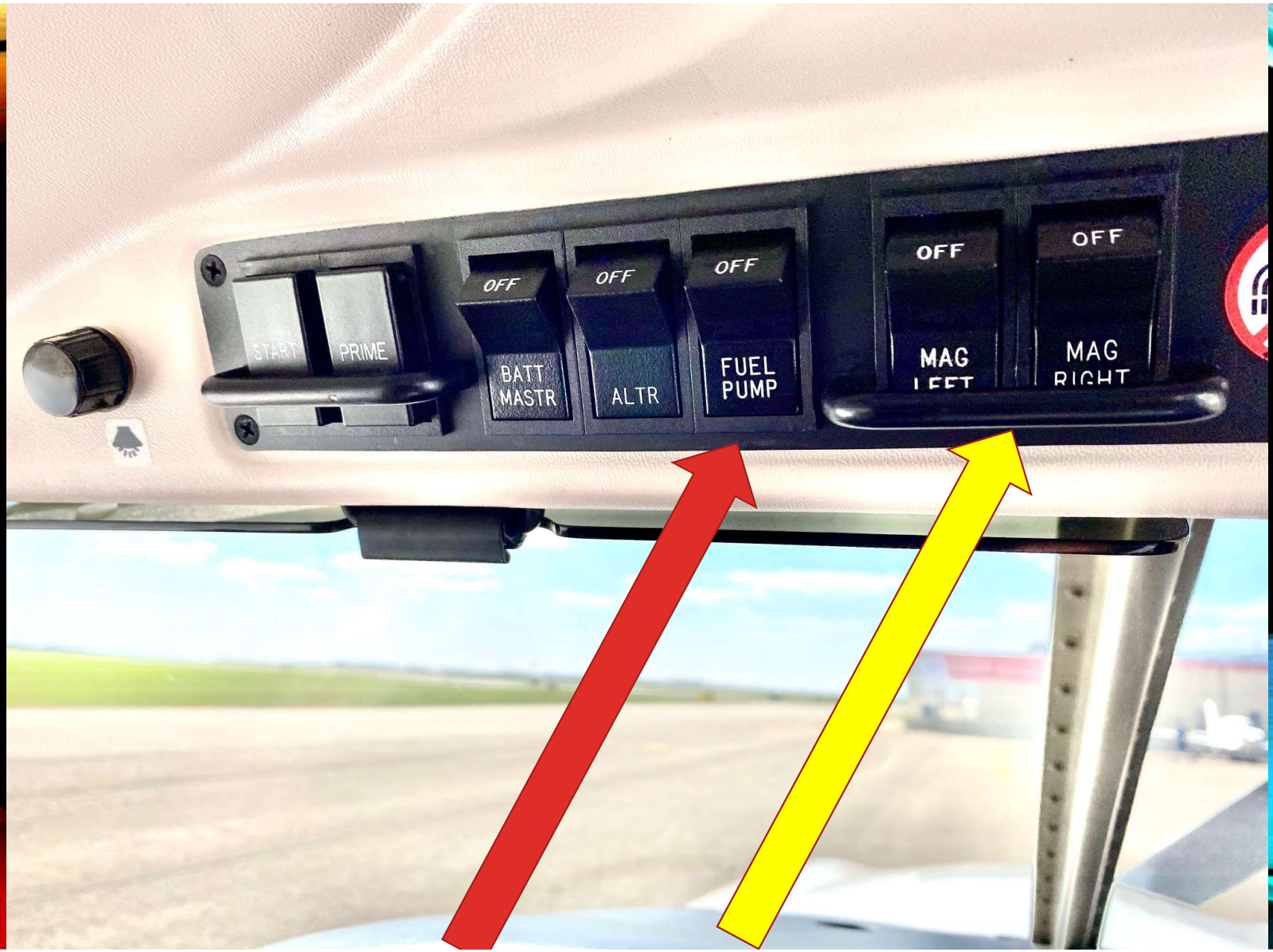

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APRIL 22, 2021 1400L

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Flight on April 22, 2021
Winds 260-280 10 Gust 21

takeoff-at-faribault-airport

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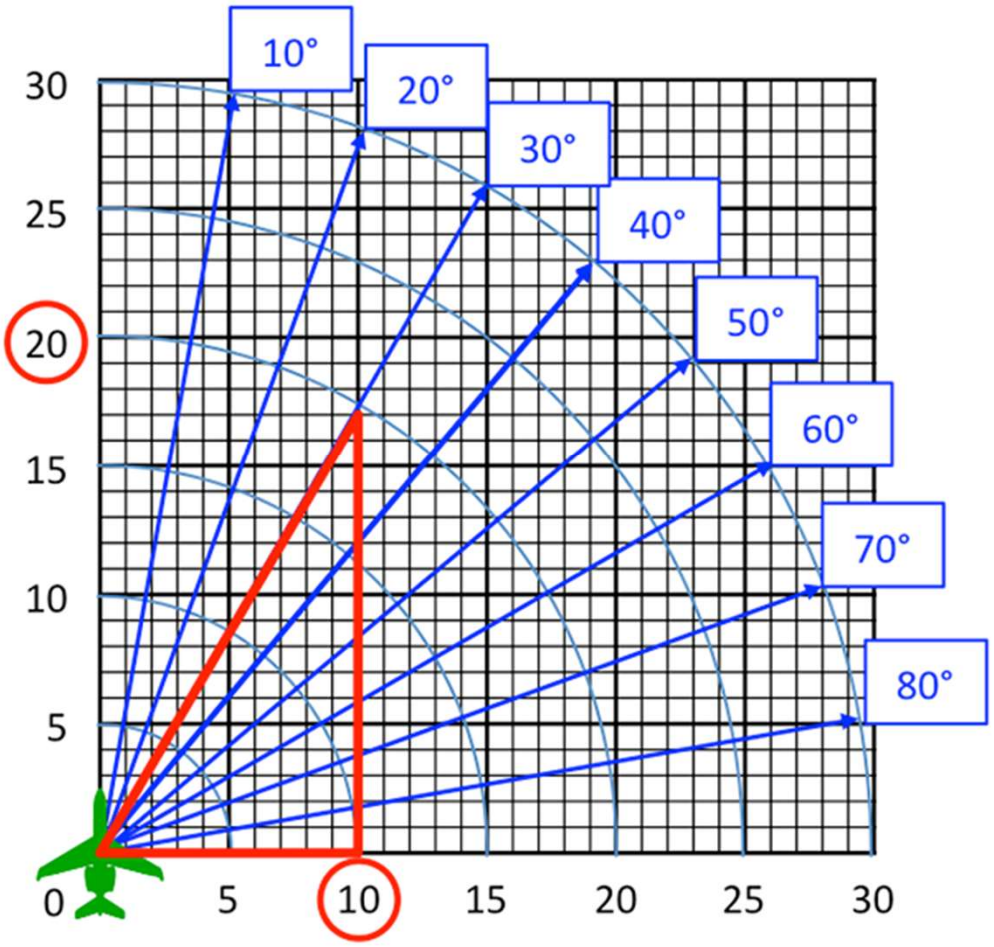
CROSSWIND COMPONENT



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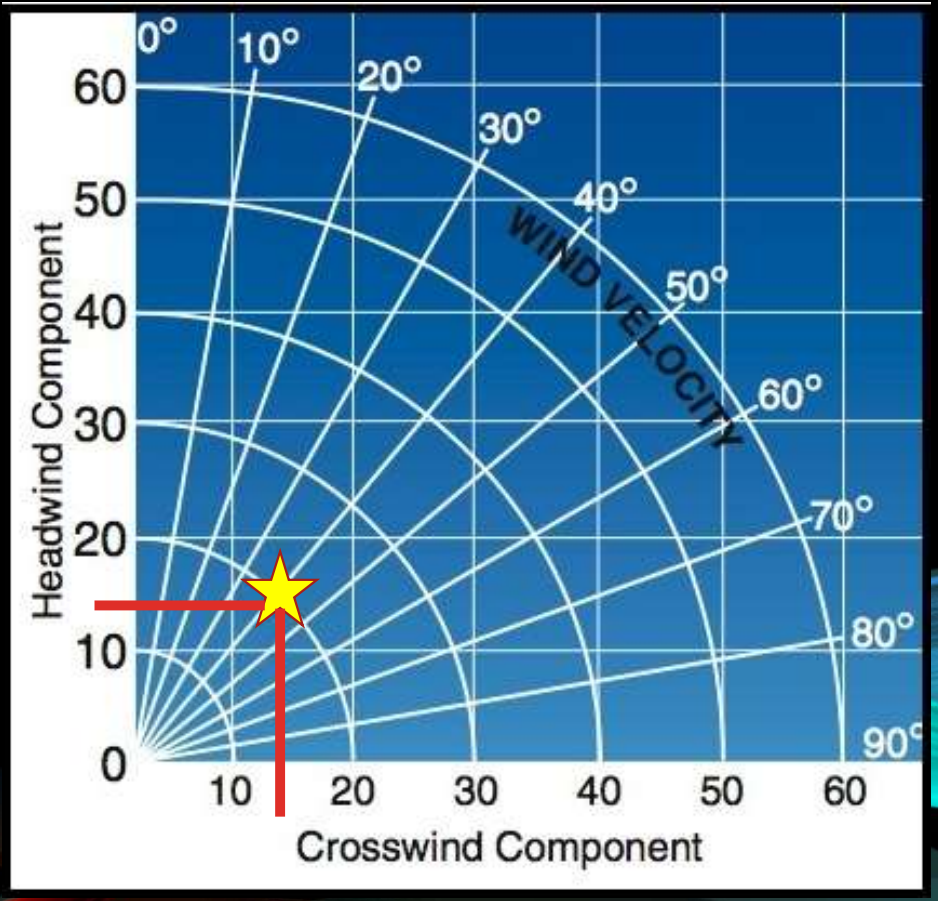

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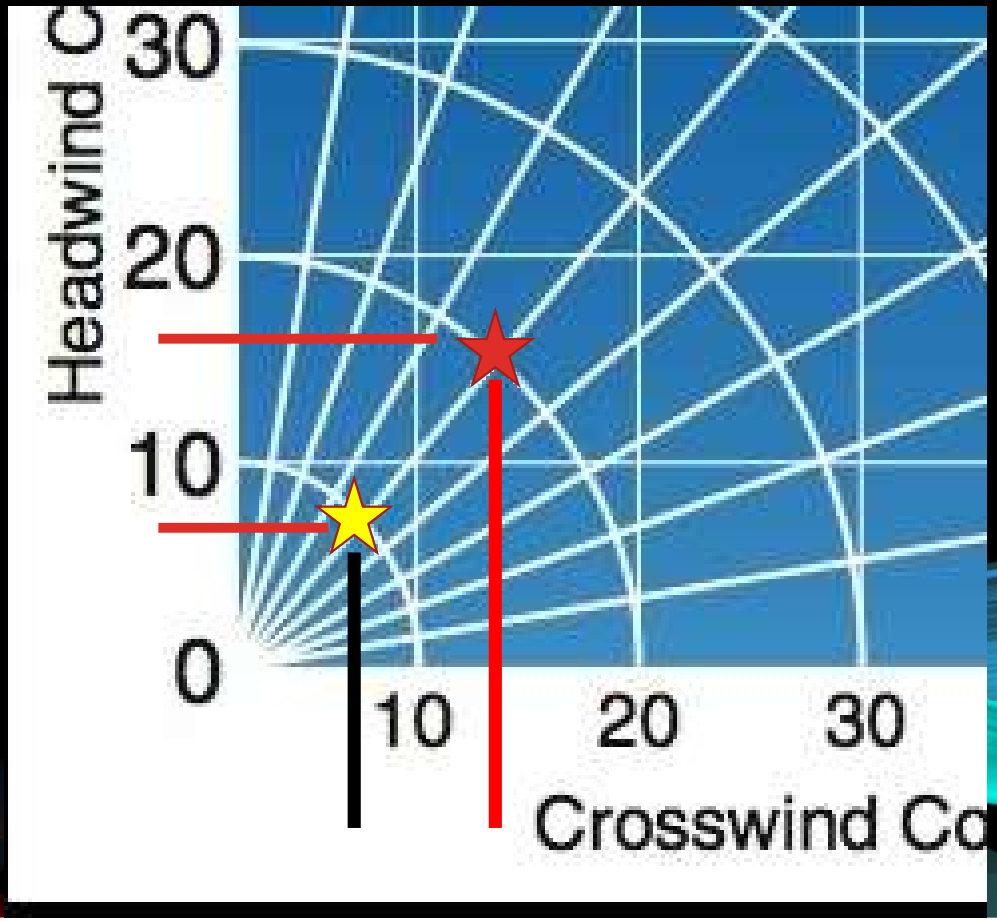

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CROSSWIND LANDING

Video 2 Crosswind Landing

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CROSSWIND LANDING PLANNING

If you know your approach speed in knots,
and the crosswind component in knots,

the angle required is the Arc Tangent of these two values

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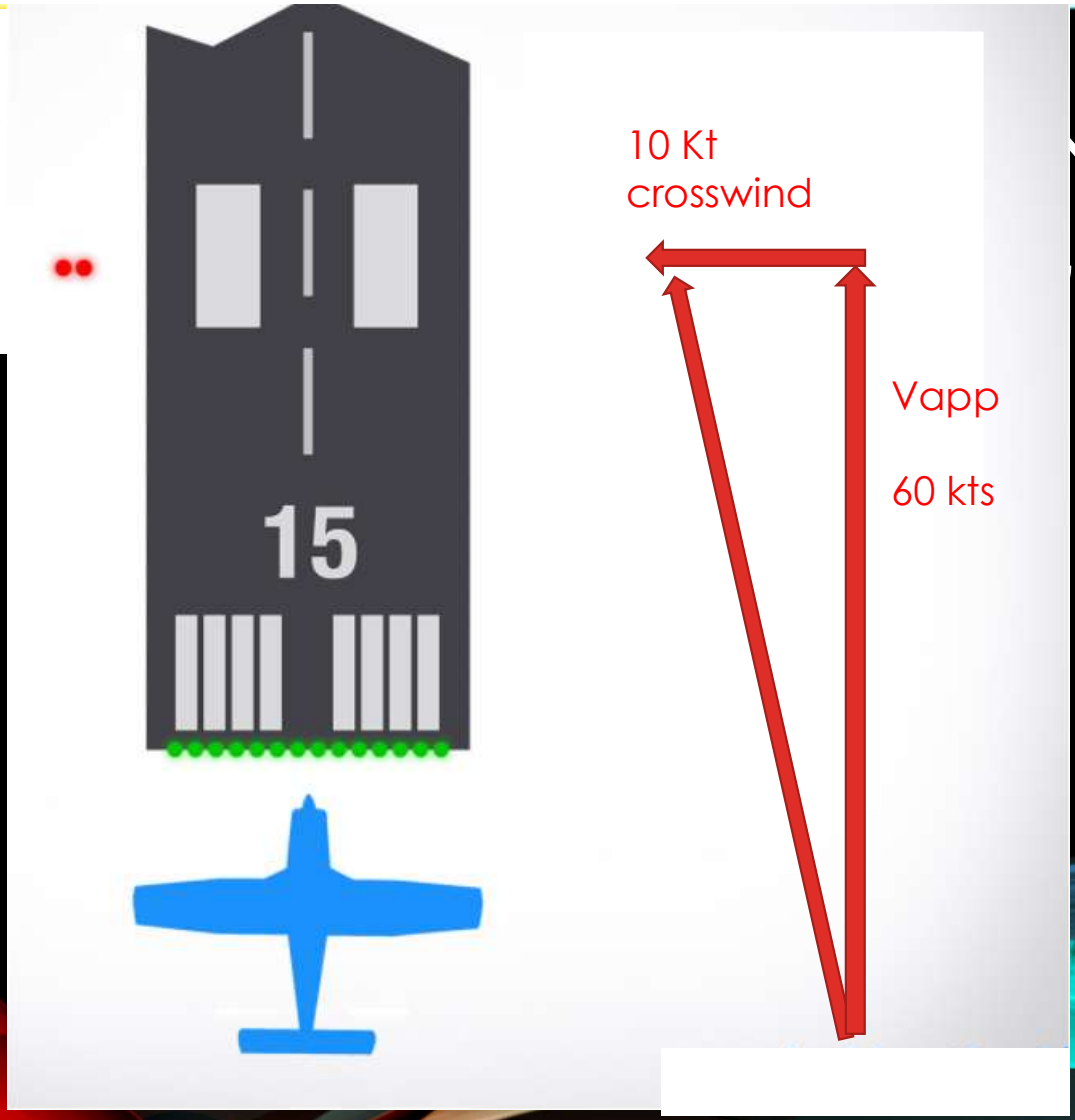
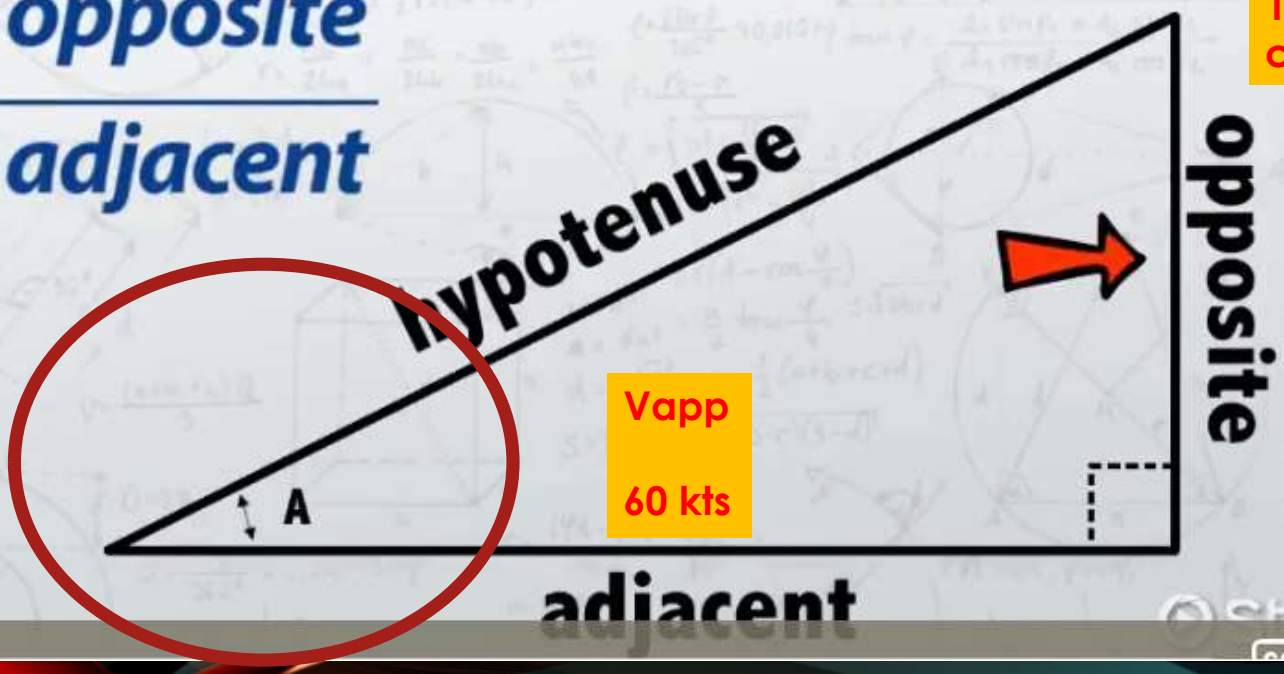
NDING



arctan

the inverse of the tangent function used to compute the angle measure from the tangent ratio of a right triangl

$$\tan = \frac{\text{opposite}}{\text{adjacent}}$$



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CROSSWIND LANDING PLANNING

Approach Speed kts	Crosswind	Crosswind Angle required
50	10	11*
	15	17*
60	10	9.5*
	15	14*
70	10	8*
	15	12*

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CROSSWIND TACTICS

- Use less flaps and higher approach speed
- Always ADD ½ of the gust factor for safety to Vapproach
- When wind direction is variable, use the worst case
- If you run out of a flight control (aileron or rudder)– go around!

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CROSSWIND LANDING PLANNING

Approach Speed kts	Crosswind	Crosswind Sidelslip Angle required
50	10	11*
	15	17*
60	10	9.5*
	15	14*
70	10	8*
	15	12*
140	15	3.1*
	30	7.1*

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SHSS FLIGHT TEST TECHNIQUE

How much crosswind can my aircraft handle?

Steady Heading SideSlip (SHSS) Flight Test Technique:

<u>At a safe altitude (3000 AGL):</u>

1. **Select a heading roughly into the wind**
2. **Pick a visible point on the horizon (as far as possible)**
3. **Note your heading**
4. **Trim to hold Vapproach level and maintain Vapproach with altitude (NOT power)***
5. **Slowly feed in rudder and aileron so that the aircraft continues towards your horizon point**
6. **When you run out of aileron OR rudder, or can no longer move the control(s)….**
7. **Note your heading and bank angle ****
8. **Important: Release rudder and aileron slowly when complete**
9. **Return to level flight**

The difference in headings is the sideslip angle that your aircraft can perform for crosswinds

*** May descend at high rates in some aircraft**

**** Some aircraft will drag a wingtip (or float) before running out of flight control authority**

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QUESTIONS?