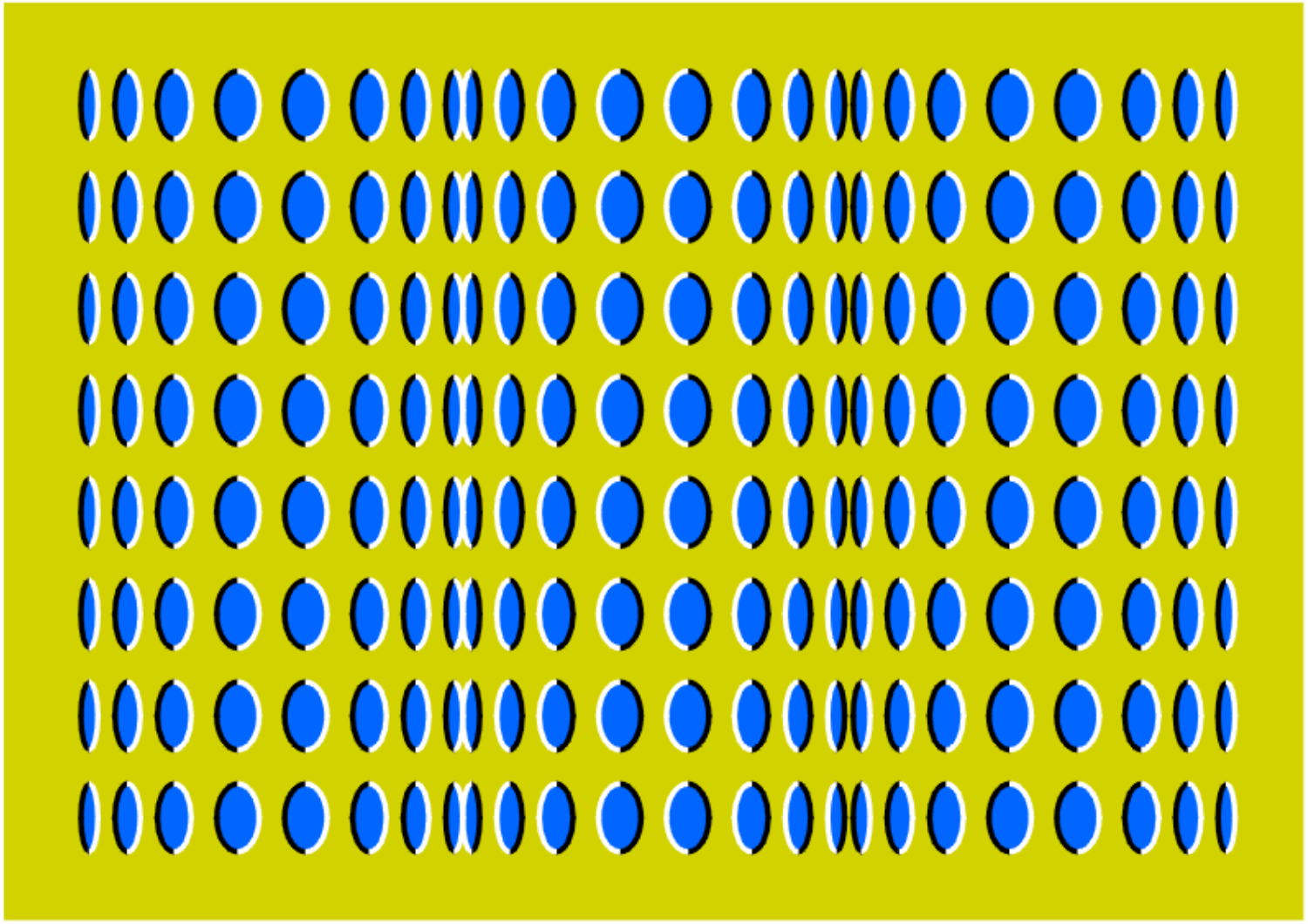
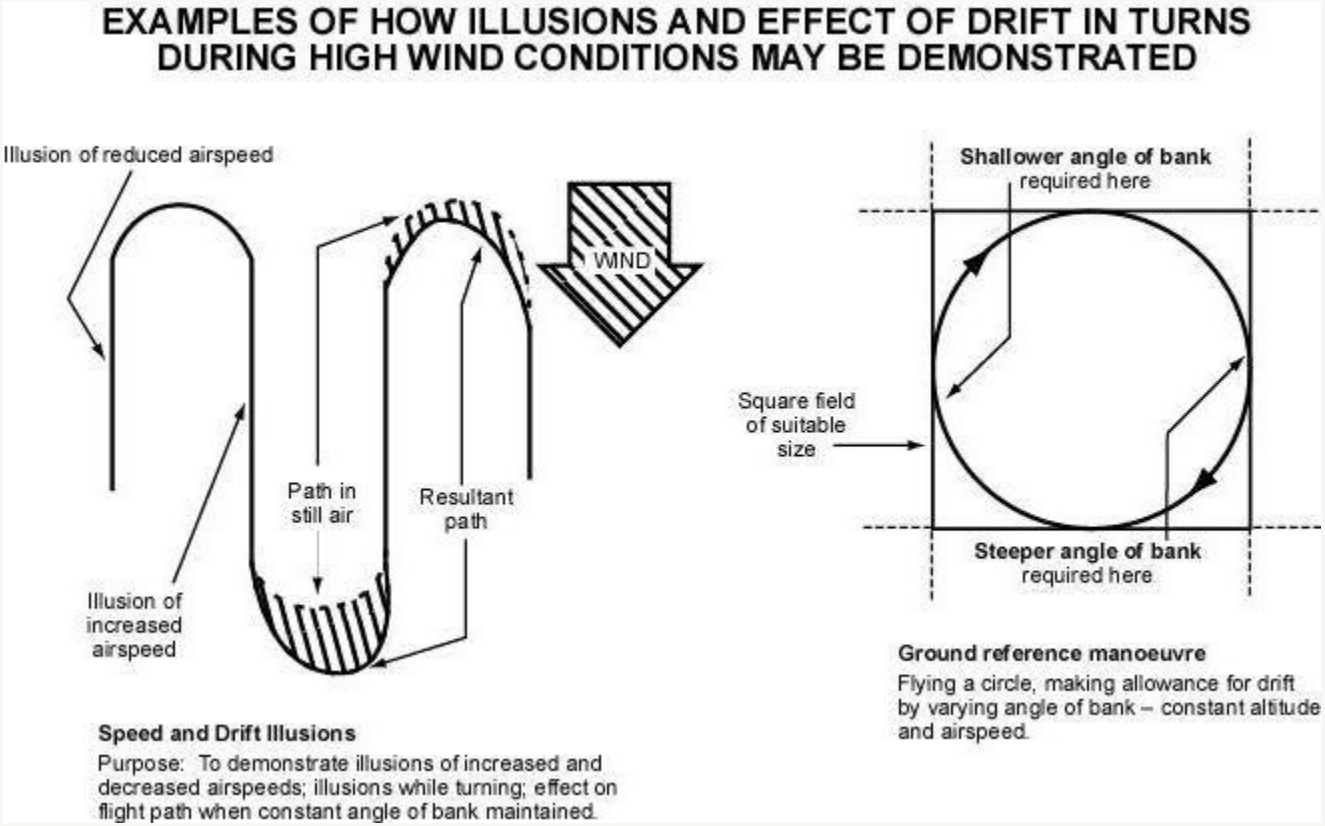
Ex. 20 – Illusions Created by Drift

Things aren't always as they seem to be…



What you will learn:

- ✓ Illusions produced by drift at low altitudes and how to counteract them.

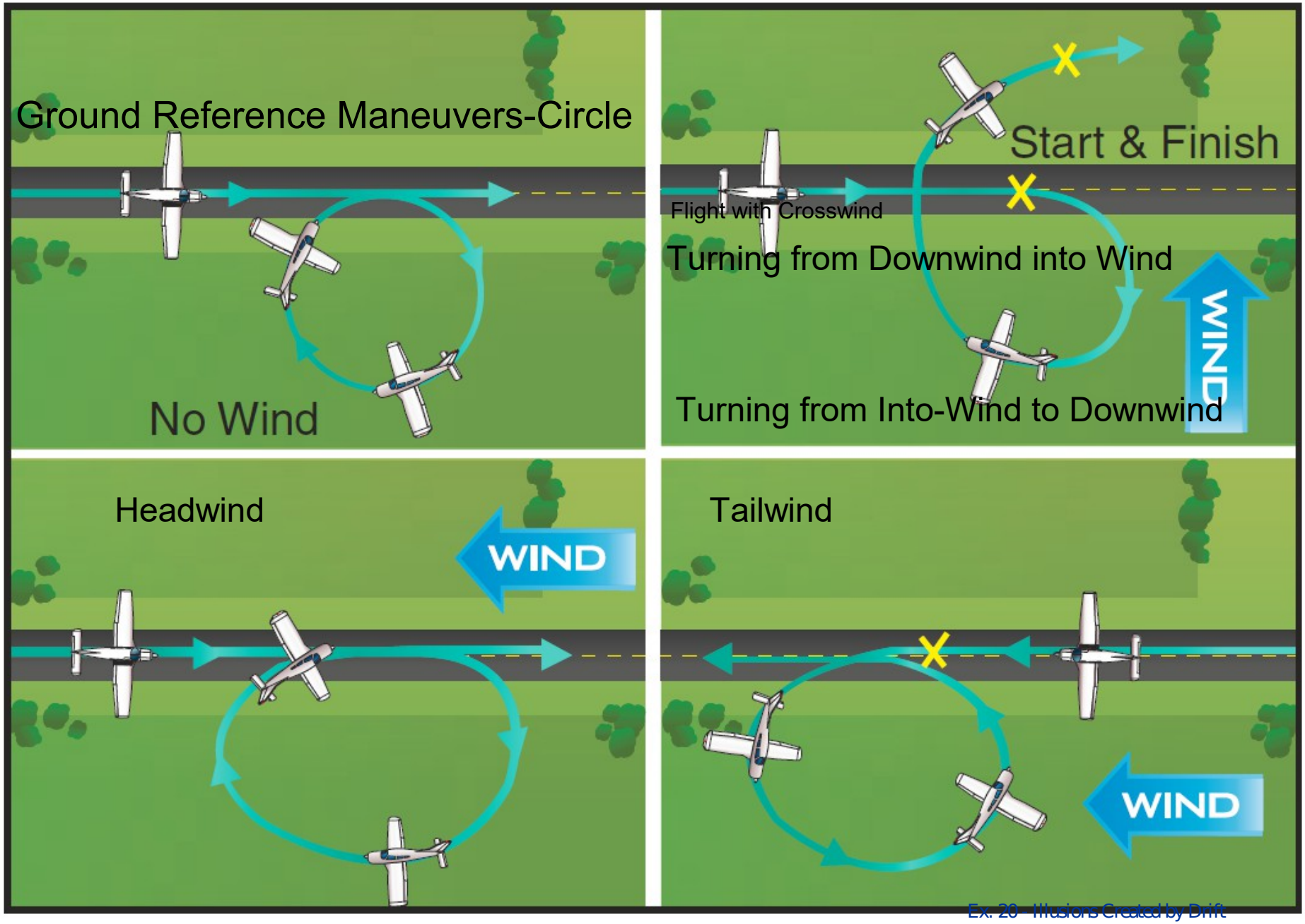


Why learn this:

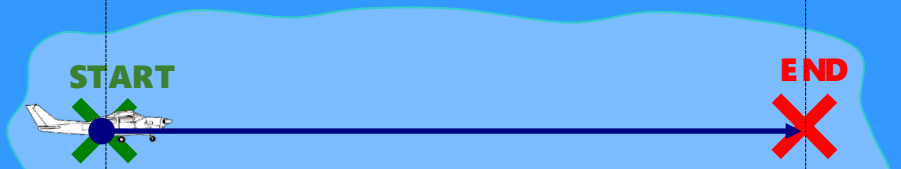
- ✓ Our brains, eyes and ears are not used to operating in “flight mode”
- ✓ Pilots are subject to many illusions and must be aware of them
- ✓ Thinking an illusion is real and acting accordingly may be dangerous!
- ✓ Illusions are worst when Winds are high and we are low and slow.

Links:

- ✓ You understand the difference between airspeed and ground speed
- ✓ You understand the difference between slips, skids and coordinated flight
- ✓ You can interpret instruments to accurately check your airspeed and turn coordination.


Ground Reference Maneuvers-Circle
No Wind
Start & Finish
Flight with Crosswind
Turning from Downwind into Wind
WIND
Turning from Into-Wind to Downwind
Headwind
WIND
Tailwind
WIND

Flight into Wind/Downwind



NO WIND

When flying with into a strong headwind, what will your apparent speed be?

What might you be tempted to do to “fix” this “problem”?

HEADWIND

Why might that be dangerous?

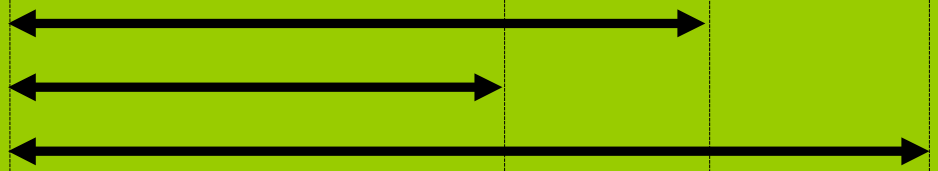
When flying with a strong tailwind, what will your apparent speed be?

TAILWIND

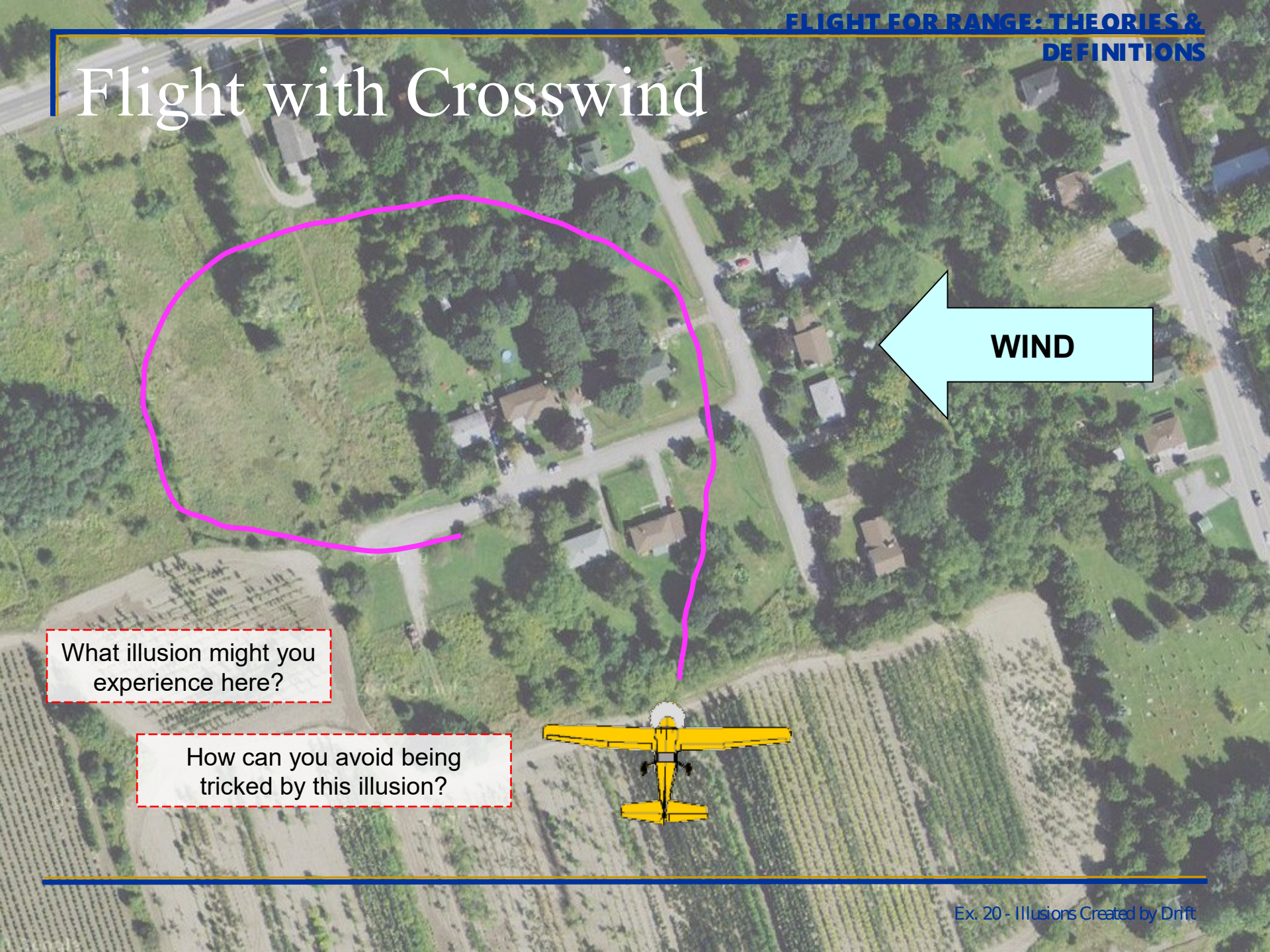
What might you be tempted to do to “fix” this “problem”?

How can you avoid being tricked by this illusion?

Why might that be dangerous?

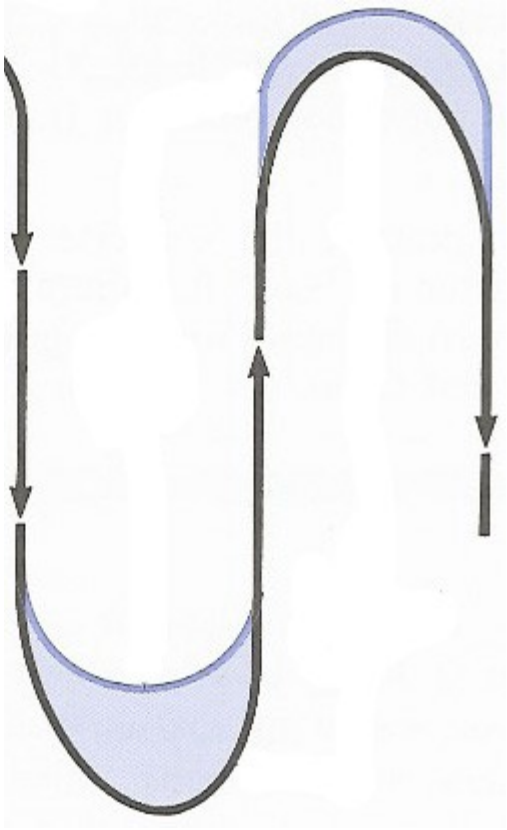


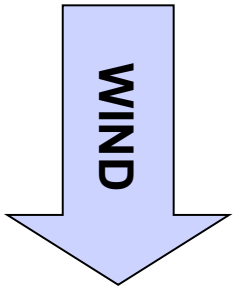
Flight with Crosswind



Flight with Crosswind

Turning Downwind/Into Wind





What illusions will you experience when turning downwind? Into wind?

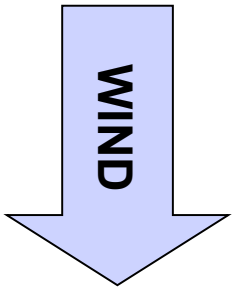
What might you be tempted to do to “fix” this “problem”?

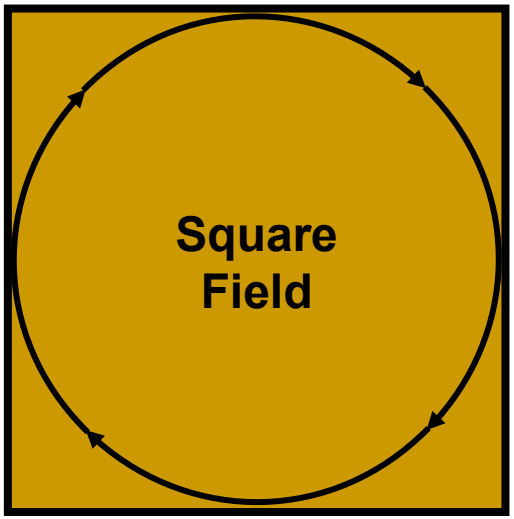
Why might that be dangerous?

How can you avoid being tricked by these turning illusion?

Sketch the plane’s track given the winds

Flying a Circle





How must the angle of bank be varied to obtain a circular track?

SAFETY

When flying close to the ground, especially in strong winds:

- **Look well ahead**
- **Avoid breaking regulations, flying over noise-sensitive areas, disturbing livestock or wild animals**
- **Maintain safe airspeed** (periodic checks of AI)
- **Maintain coordinated flight** (periodic checks of TC)
- **Keep a good lookout**
- **Avoid steep turns.**

Conclusion

- ✓ This is an introduction to one of many types of illusions that pilots may experience

- ✓ Knowing when to expect illusions and how to maintain accurate coordinated flight despite them is critical for safety

QUESTIONS?