

# Crosswind circuit

## CIRCUIT TRAINING

### Objectives

- To correctly position the aeroplane controls while taxiing.
- To compensate for drift throughout the circuit.
- To take-off and land in crosswind conditions.

### Considerations

#### On the ground

- Aeroplane has tendency to weathercock into wind
- Position controls to compensate for wind

#### On take -off

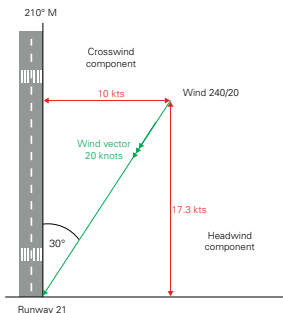
- Allow for drift to track along the runway centreline

#### In the circuit

- Allow for drift and headwind/tailwind on each leg
- Base leg will be affected the most

#### Calculating crosswind component

- Need W/V from TAF or METAR
- Convert the direction to magnetic - apply variation
- Vector diagram
- Need pencil, paper, ruler and protractor



#### On landing

- As crosswind increases amount of flap used decreases - to improve directional control
- More airspeed needed if gusty conditions
- Need to consider overall suitability of runway in crosswind conditions

#### Maximum demonstrated crosswind

- In Flight Manual
- Limited by ability of rudder and aileron to control aeroplane
- For this aeroplane is \_\_\_\_\_ kts

#### Flight Manual graph

#### Nav computer

#### Windsock

#### Tower

#### Formula

- Angular difference between wind and RWY

#### Plot on watch face

- Percentage of distance around watch face x wind strength = X/W component
- 30° = half wind strength, 60° = full wind strength



### Air exercise

#### Take-off

- Line-up, adjust reference point for drift
- Ailerons fully into wind, elevator neutral
- During take-off roll reduce aileron to neutral by rotate point

#### Circuit

##### Climb-out

- Wings level, in balance
- Adjust heading to track extended centreline

##### Crosswind

- Reference heading allows for drift
- Expect some headwind or tailwind

##### Downwind

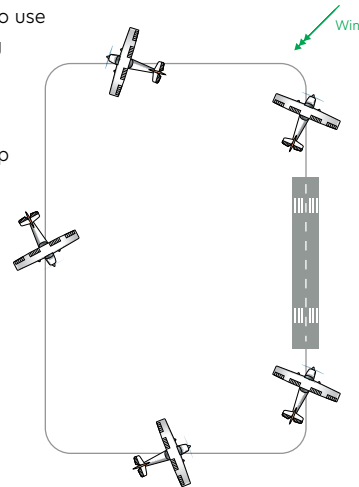
- Allow for wind on downwind turn
- Track parallel to runway
- Assess runway and decide on speeds and flap setting to use
- Check downwind spacing

##### Base

- Allow for drift and headwind or tailwind
- Extend all the landing flap
- Anticipate turn onto final

##### Final

- Track extended centreline
- Power controls rate of descent



- Lift off at slightly higher speed than normal
- After lift-off make a gentle balanced turn into wind

#### Landing

- Combination of kick straight and wing down methods

##### Kick-straight

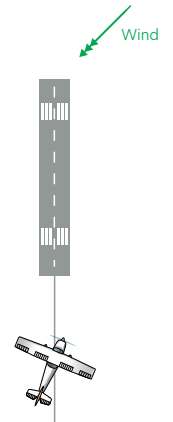
- Crab into wind
- Just before touchdown, kick straight, aileron to keep wings level

##### Wing-down

- From short final
- Wing held down, rudder to keep aligned with centreline - sideslip
- Land on into wind wheel first

##### Combination

- Crab into wind on final
- During round-out switch to wing down method
- Aileron to stay aligned with centreline, rudder to stay straight
- Into wind wheel touches down first



### Airmanship

- Making the calculations improves SA
- Max crosswind is a recommendation, but may be other limits

### Aeroplane management

- Control position on ground wrt wind
- May need to use brakes

### Human factors

- Assessing runway suitability improved ADM