

# **Aerodrome Inspectors Workshop**

## **Inspecting Traffic and Wind Indicators**

**Location: Trinidad & Tobago, 9-13 JUN 2014**

**Presenter: Kelly J. Slusarski, FAA ACSI**

# INSPECTING TRAFFIC AND WIND INDICATORS

## OBJECTIVES

### Criteria for inspecting:

- ✓ wind cones
- ✓ segmented circles and traffic pattern indicators

# Aerodrome Requirements

## FAA:

1. An airport must provide and maintain a wind cone.
2. For each runway available for air carrier use, a supplemental wind cone must be installed:
  - At the end of the runway, or
  - At least at one point visible to the pilot on final approach and prior to takeoff

## ICAO:

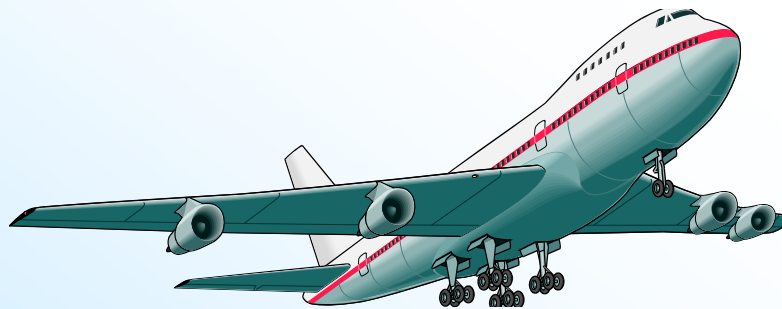
An aerodrome shall be equipped with at least one wind direction indicator.

A wind direction indicator shall be located so as to be visible from aircraft in flight or on the movement area.

Clearly visible and understandable from a height of at least 300 m.

# Aerodrome Requirements

- Wind direction indicators, including supplemental indicators, must be lighted if the airport is open for air carrier operations at night

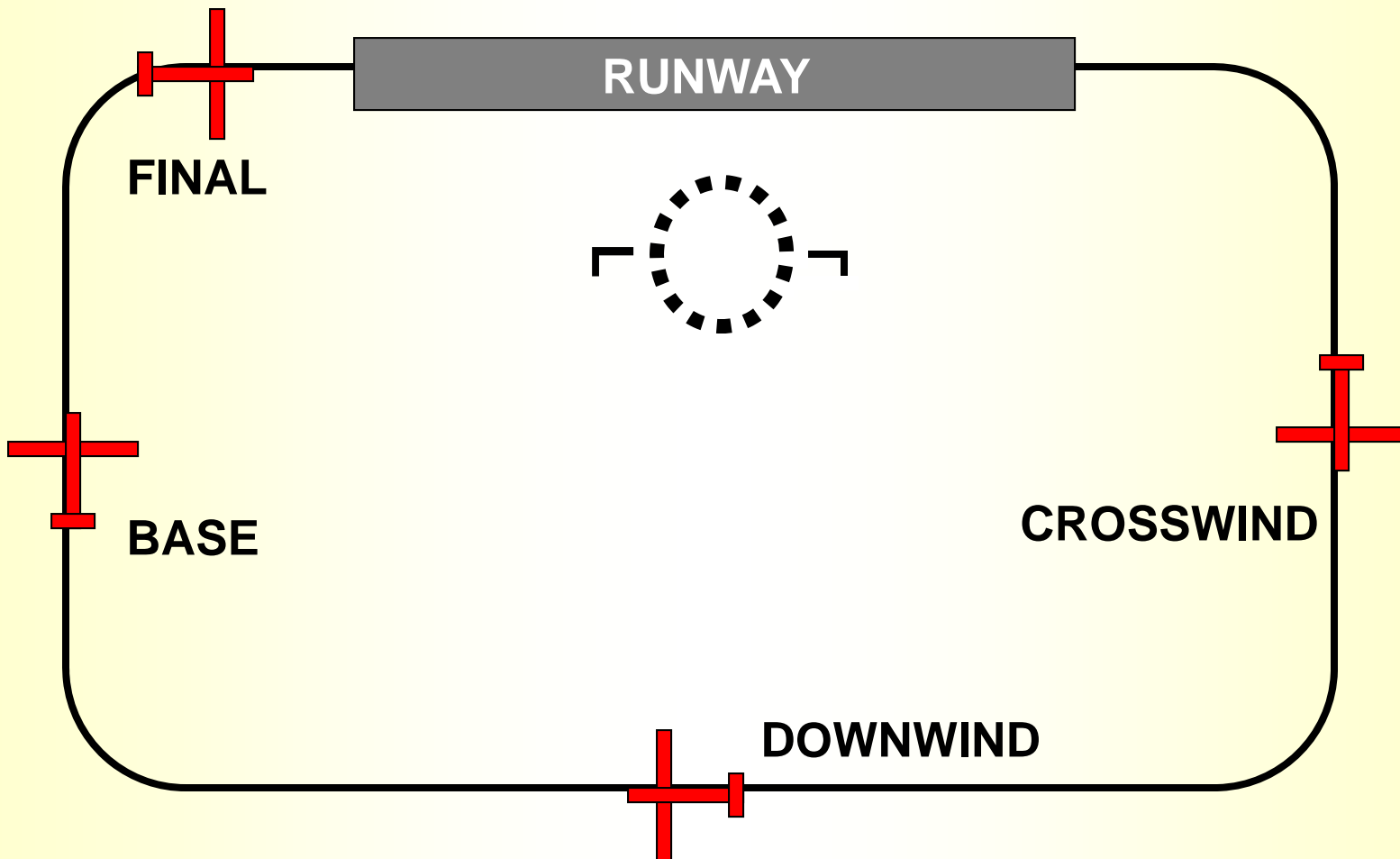


# Aerodrome Requirements

FAA standard:

- Applies to airports serving air carriers when no ATCT is operating
- If such an airport has a right hand traffic pattern, install around the wind cone a
  - ➔ Segmented circle
  - ➔ Landing strip indicator
  - ➔ Traffic pattern indicator

# RIGHT HAND TRAFFIC PATTERN

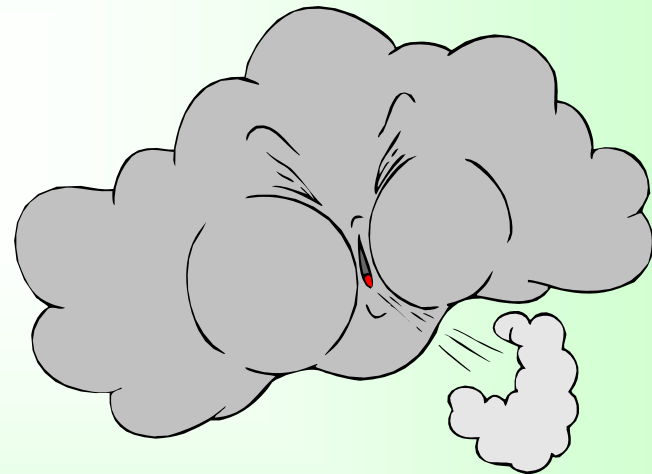


## SECTION 139.323(c)

- ACs contain methods and procedures for the installation, lighting and maintenance of traffic and wind indicators
  - AC 150/5340-30, *Design and Installation Details for Airport Visual Aids*
  - 150/5345-27E, *Specification for Wind Cone Assemblies*
  - AC 150/5340-5D, *Segmented Circle Airport Marker System*
  - AC 150/5340-26B, *Maintenance of Airport Visual Aid Facilities*

# PURPOSE OF WIND INDICATORS

- ◆ Visual display of
  - ✓ Wind direction
  - ✓ Wind speed





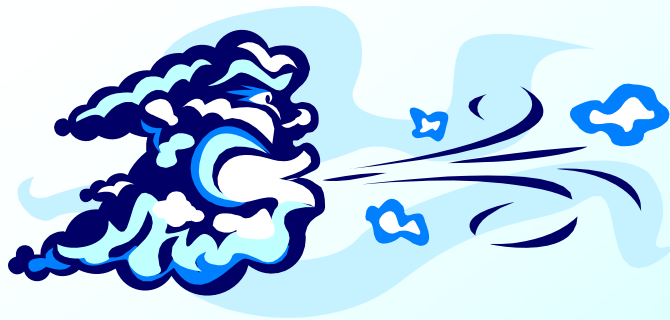
# TYPES OF WIND INDICATORS

- Recommended
  - ✓ Wind sock
- Not recommended
  - ✓ Tetrahedron
  - ✓ Wind tee



# WIND SOCK OPERATION

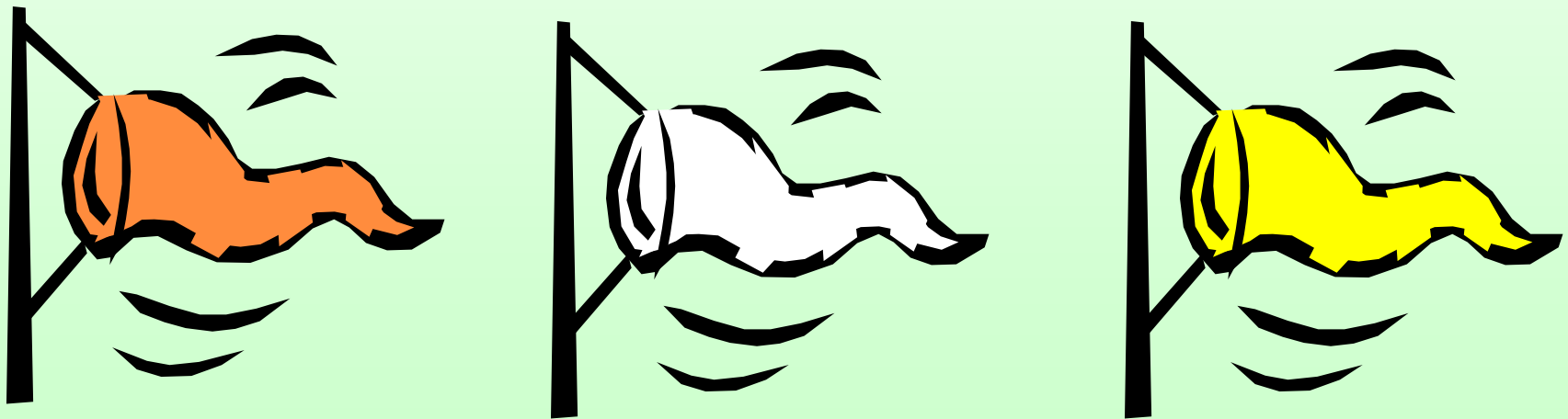
- ✿ Rotate freely around a vertical shaft
- ✿ In wind speeds of 3 knots or more, must indicate true wind direction  $\pm 5^\circ$
- ✿ When fully extended, indicate approximately 15 knots of wind



# WIND SOCK SPECIFICATIONS

## FAA Standard:

- ◆ White, yellow, or orange to contrast with surroundings
- ◆ Primary wind socks - 8 or 12 feet long
- ◆ Supplemental wind socks - 5 to 9 feet long



# WIND SOCK SPECIFICATIONS

## ICAO:

- Preferably white or orange. Where a combination of two colors is required to give adequate conspicuity against changing backgrounds, they should preferably be orange and white, red and white, or black and white, and should be arranged in five alternate bands, the first and last bands being the darker colour.
- The wind direction indicator should be in the form of a truncated cone made of fabric and should have a length of not less than 3.6 m and a diameter, at the larger end, of not less than 0.9 m.

# WIND SOCK SPECIFICATIONS

- ◆ Support pole must be:
  - ✓ Perfectly vertical
  - ✓ Capable of supporting the wind sock in wind speeds up to 75 knots
  - ✓ Frangible and cause minimum damage if struck by aircraft

# WIND SOCK SPECIFICATIONS

- ◆ Lighting must
  - ✓ Provide minimum 2 foot-candles
  - ✓ Provide no glare that would interfere with aircraft or ATCT operations
  - ✓ For supplemental indicators, be visible to aircraft from 1/2 mile away

# WIND SOCK SPECIFICATIONS

- ◆ Primary wind indicators should
  - ✓ Be centrally located with respect to runways
  - ✓ Not violate any airport surfaces such as RSAs, OFZs or Part 77 surfaces
  - ✓ Not have lettering or logos on the fabric

# WIND SOCK SPECIFICATIONS

- ◆ Supplemental wind indicators should
  - ✓ Be a low mass type
  - ✓ Be no more than 10 feet high
  - ✓ Not penetrate the OFZ
  - ✓ Provide wind information for a specific runway end

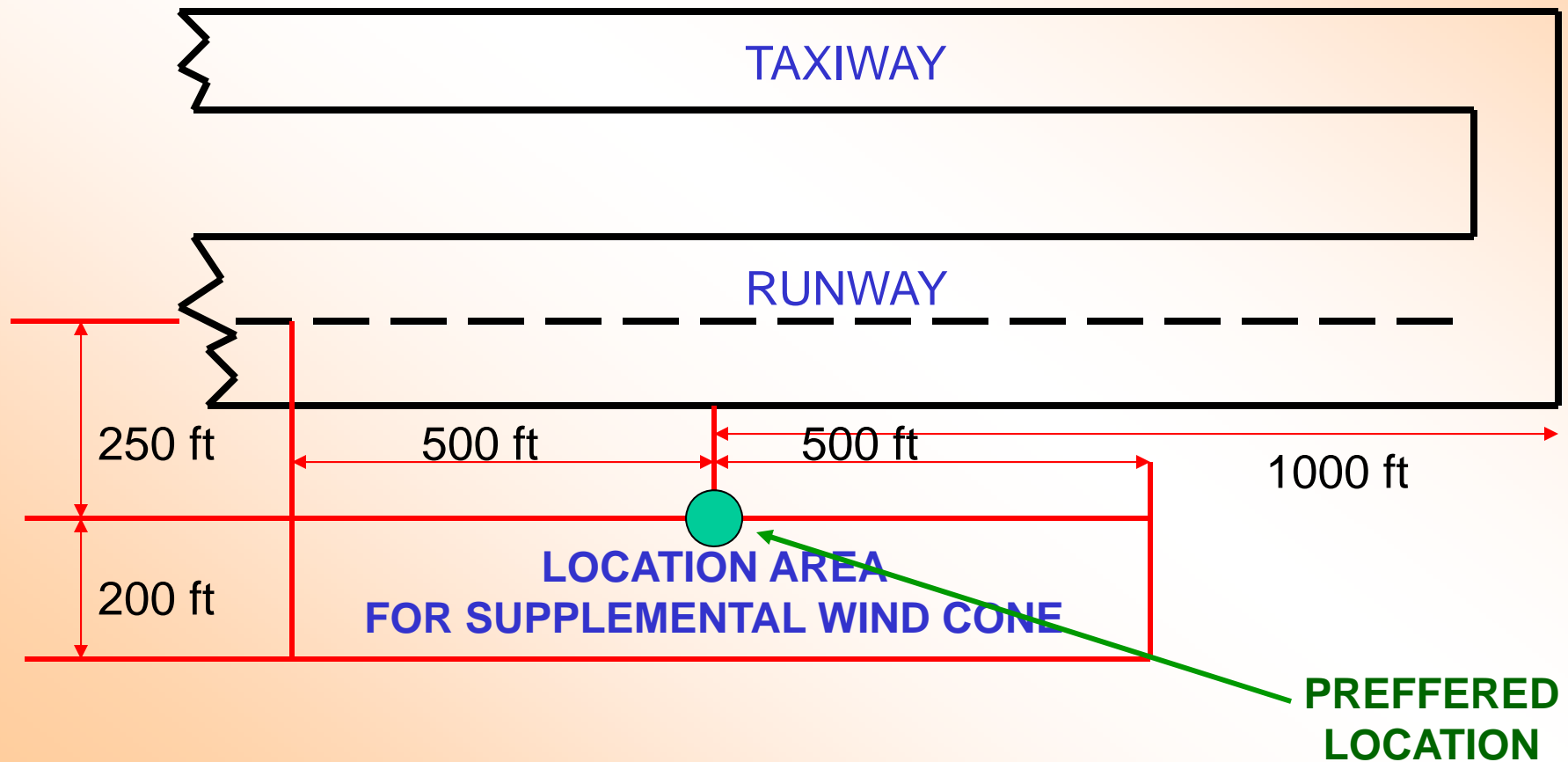


# WIND SOCK SPECIFICATIONS

- ◆ Supplemental wind indicators should
  - ✓ Be located 500' - 1500' from the runway end
  - ✓ Be on the left side of landing aircraft unless special circumstances exist
  - ✓ Be no closer than 250' from the runway CL

NOTE: Preferred location is 1000' from the end and 250' left of CL

# LOCATION OF SUPPLEMENTAL WIND SOCK



# SEGMENTED CIRCLE AIRPORT MARKER SYSTEM

- ◆ A system of pilot aids and air traffic control devices
- ◆ Must be highly visible and conspicuous to the pilot
- ◆ Lighting not required

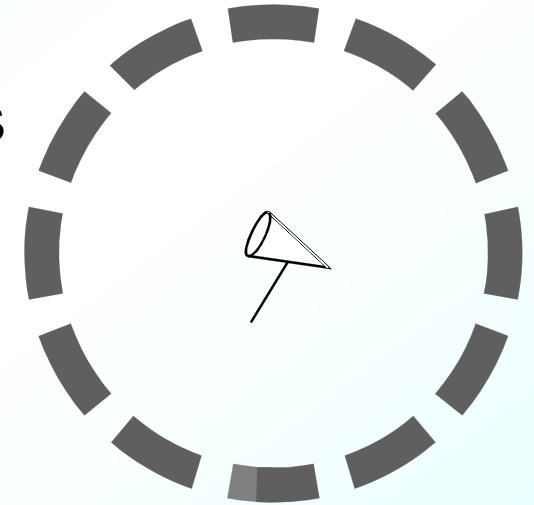
# SEGMENTED CIRCLE AIRPORT MARKER SYSTEM

- ◆ May consist of
  - ➔ Segmented circle\*
  - ➔ Landing strip indicator\*
  - ➔ Traffic pattern indicator\*
  - ➔ Closed field signal
  - ➔ Wind direction indicator
  - ➔ Landing direction indicator (wind tee)
  - ➔ Right turn indicator

\* Required  
by Part 139

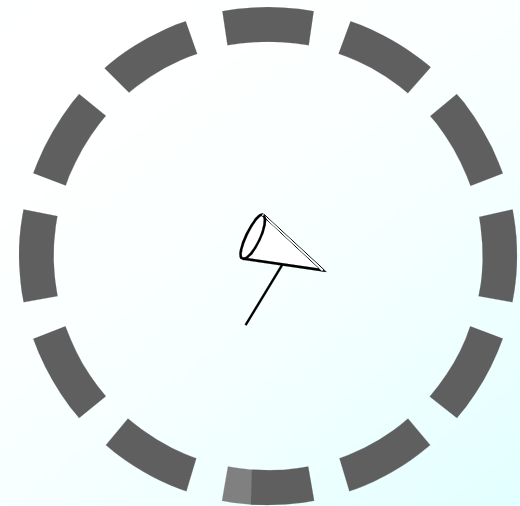
# SEGMENTED CIRCLE

- Aids the pilot in locating obscure airports
- Indicates where traffic and wind indicators are located
- ICAO: *The location of at least one wind direction indicator should be marked by a circular band 15 m in diameter and 1.2 m wide. The band should be centered about the wind direction indicator support and should be in a color chosen to give adequate conspicuity, preferably white.*



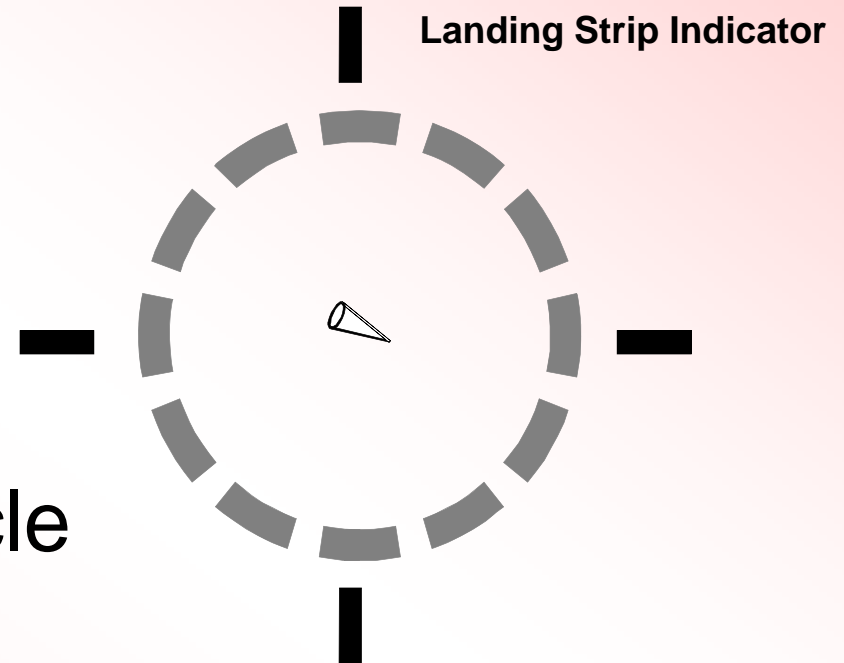
# SEGMENTED CIRCLE

- ✿ Installed in a position of maximum visibility
- ✿ If possible, located around the primary wind cone



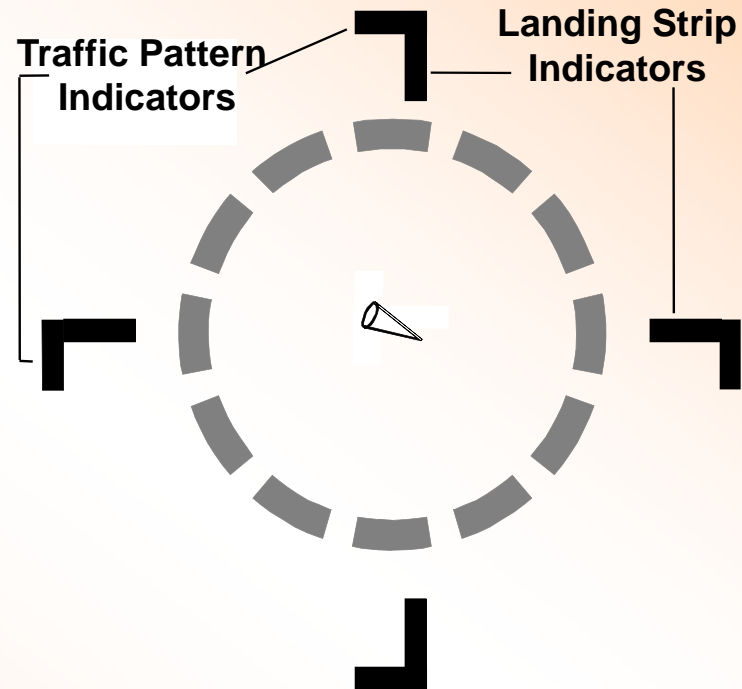
# LANDING STRIP INDICATOR

- Necessary when a right-hand traffic pattern exists or is required
- Located outside the segmented circle
- Laid out parallel to the runway



# TRAFFIC PATTERN INDICATOR

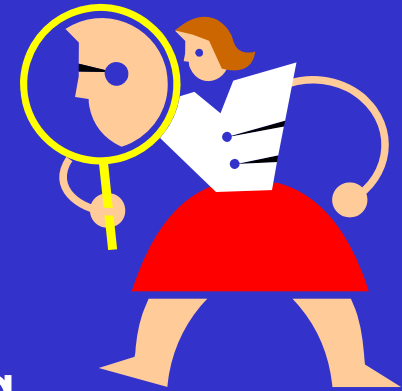
- Used only on runways with right-hand traffic patterns





# ACSI CHECKLIST FOR WIND INDICATORS

- ✓ Free rotation of wind sock
- ✓ Condition of wind sock
- ✓ Lights operational/not missing
- ✓ Sock color contrasts with surroundings
- ✓ Vertical (plumb) support

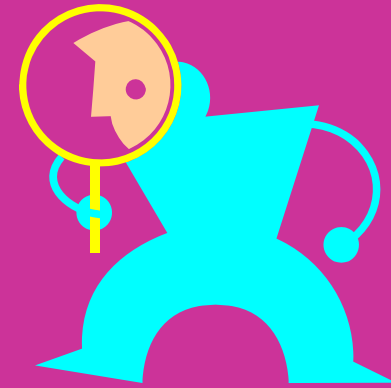


# ACSI CHECKLIST FOR WIND INDICATORS

- ✓ Operational obstruction lighting if required
- ✓ Placement not in the OFZ or safety area unless approved by an airspace determination
- ✓ Accurate information in the ACM



# ACSI CHECKLIST FOR TRAFFIC INDICATORS



- ✓ Indicators not obscured
- ✓ Ground inside circle is free of vegetation and treated to provide added contrast
- ✓ Conspicuous coloration
- ✓ Well maintained
- ✓ If required, landing strip and traffic pattern indicators correctly positioned

# TRAFFIC PATTERN INDICATOR

