

# Navigation Overview

# Types of Navigation

- Pilotage
  - Landmarks
  - Beacons (Bonfires)
- Dead-reckoning
  - Landmarks/Beacons
  - Aircraft compass and Airspeed Indicator
- Radio Navigation
  - Non-directional Radio Beacon (NDB)
  - Very High Frequency Omni-range Radio (VOR)
  - Distance-Measuring Equipment (DME)
- Inertial Navigation
  - Inertial Navigation System (INS)
- Satellite Navigation Systems
  - Global Positioning System (GPS)

# Radio Navigation

- Non-directional Radio Beacon (NDB)
  - “Here I am”
  - Only at airports
- Very High Frequency Omni-range Radio (VOR)
  - “Here I am & this is the course from me to you”
  - At airports and on routes between airports
- Distance-Measuring Equipment (DME)
  - “Here I am & this is the distance from me to you”
  - At airports and on routes between airports
- Inertial Navigation System (INS)
  - “This is your latitude, longitude, groundspeed, ...”
  - Accelerometers exhibit drift over time
- Global Positioning System (GPS)
  - This is your latitude, longitude, groundspeed, ...