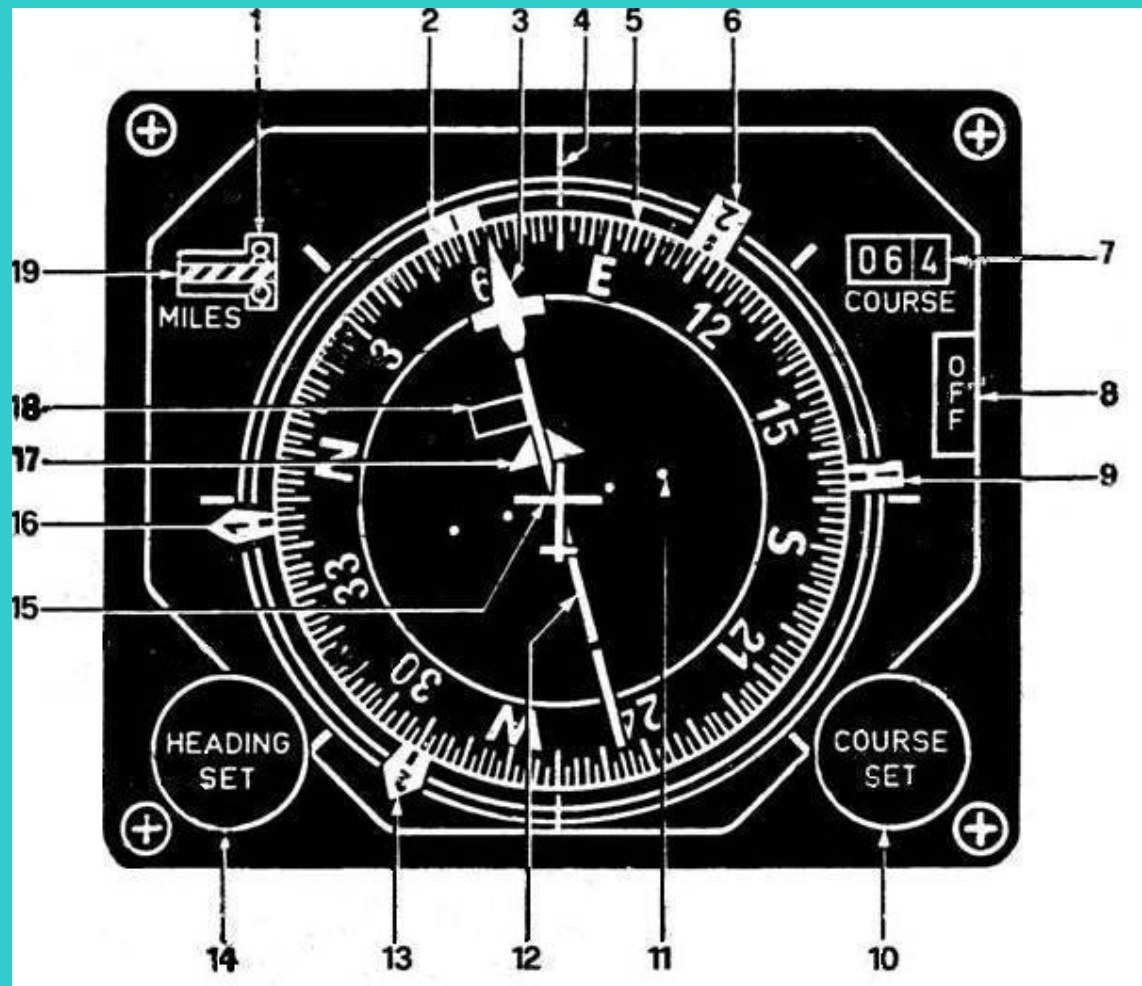
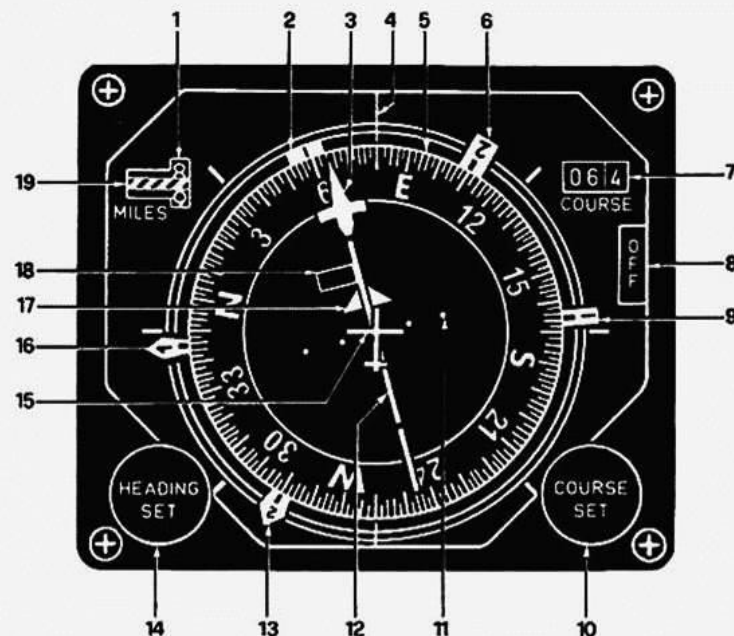


HSI Horizontal Situation Indicator



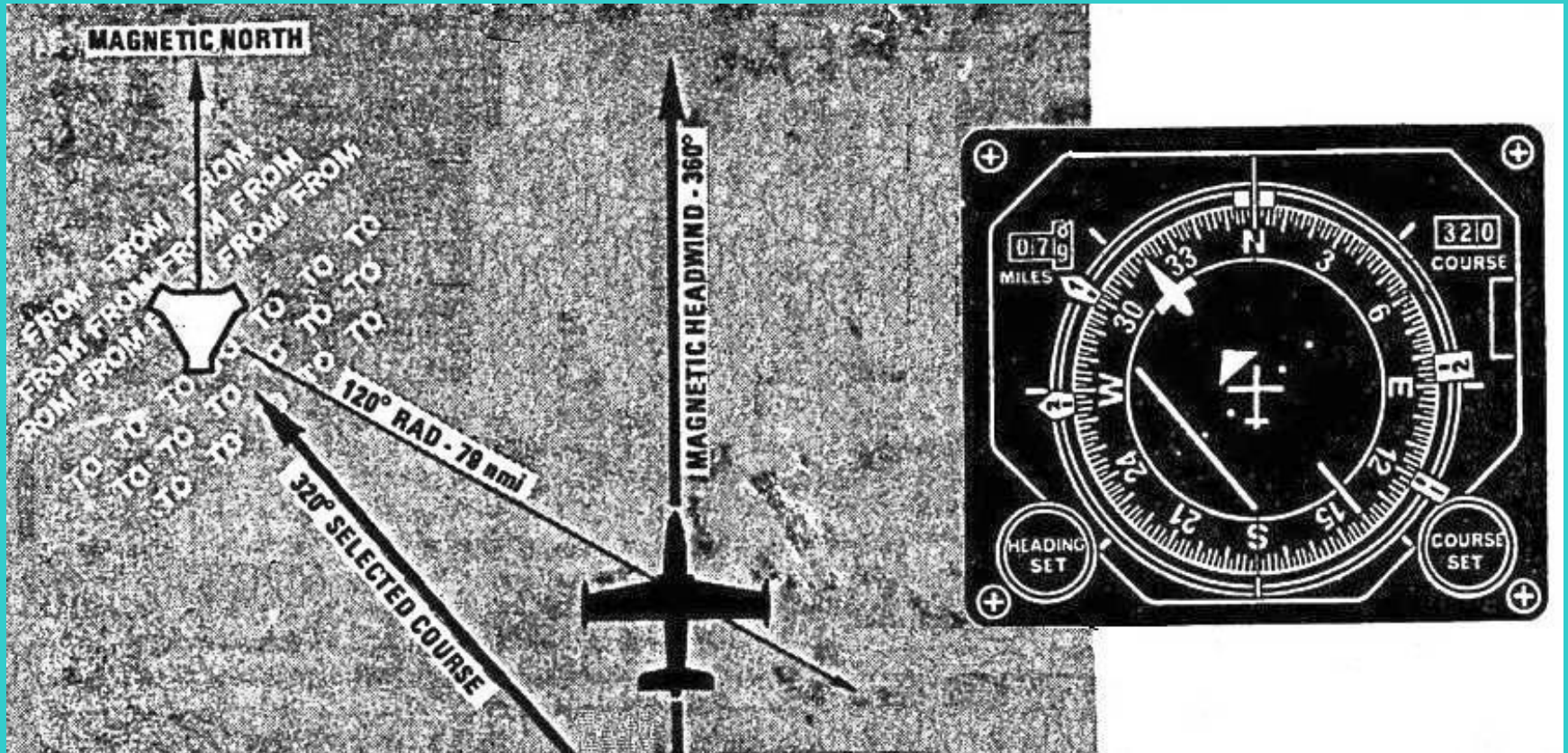
HSI Horizontal Situation Indicator



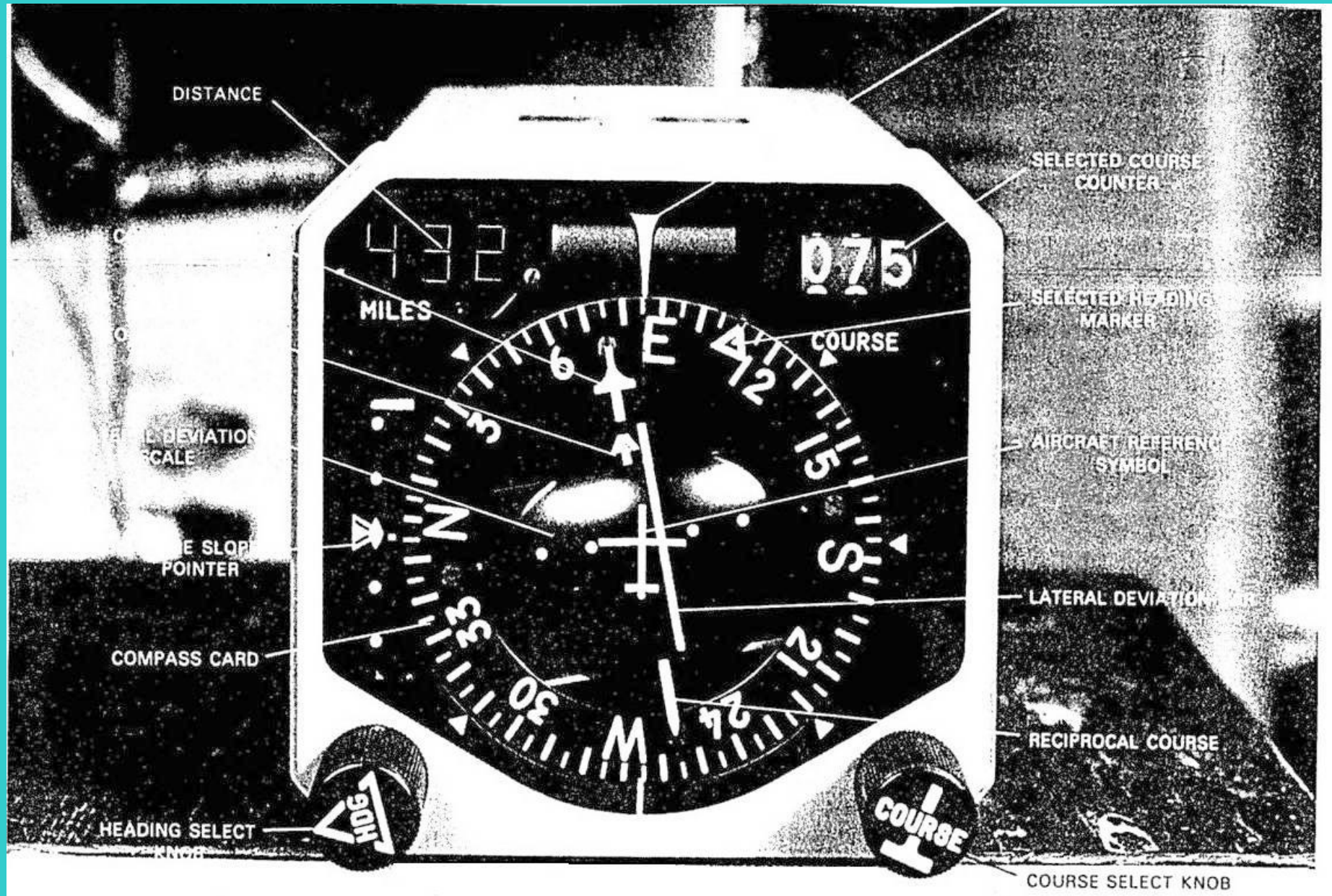
NOMENCLATURE	FUNCTION
1. "MILES" distance indicator	Indicates the distance, in nautical miles, of the aircraft from the selected TACAN station.
2. Selected heading reference	Is set by the "HEADING SET" knob.
3. Course arrow	Indicates the course selected with the "COURSE SET" knob.
4. Fixed lubber line	Permits reading of the aircraft magnetic heading.
5. Compass card	Indicates the aircraft heading in degrees at the fixed lubber line.
6. Bearing pointer "2" (tail)	Stowed under bearing pointer No. 1
7. "COURSE" window	The value of course selected by the "COURSE SET" knob appears in the window.
8. "OFF" flag	In view - Indicates that no power is supplied to the instrument.
9. Bearing pointer "1" (tail)	Indicates the radial of the selected TACAN station, VOR station or waypoint.

10. "COURSE SET" knob	Sets the desired course. The relevant information appears in the "COURSE" window and is indicated by the course arrow.
11. Course deviation scale	Allows the deviation bar to indicate the amount of deviation from the selected radial. Every dot represents a 5-degree deviation from the radial of a TACAN or VOR station, or inherent to a waypoint, or 1.25-degree deviation from a localizer beam.
12. Course deviation bar	Lateral displacement of this bar indicates the amount and direction of the deviation from the selected course.
13. Bearing pointer "2" (head)	Stowed under bearing pointer No. 1.
14. "HEADING SET" knob	Sets the heading reference.
15. Miniature aircraft	Points of reference to compare the HSI readings with the aircraft heading.
16. Bearing pointer No.1 (head)	Indicates the bearing of the selected TACAN station, VOR station or waypoint.
17. TO-FROM indicator	Indicates whether the aircraft is moving TO or away FROM the selected TACAN station, VOR station or waypoint.
18. Deviation bar flag	In view - Indicates that the indications of the course deviation bar, course arrow and TO-FROM indicator are unreliable.
19. Distance flag	In view - Covers the distance indication when the information is unreliable and when the TACAN system is set to operate in the REC mode.

HSI Horizontal Situation Indicator

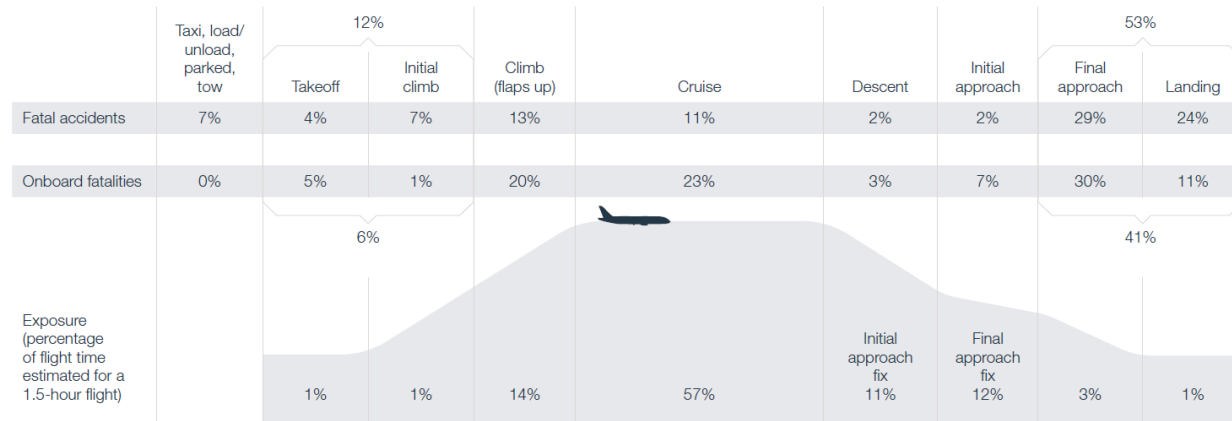


HSI Horizontal Situation Indicator



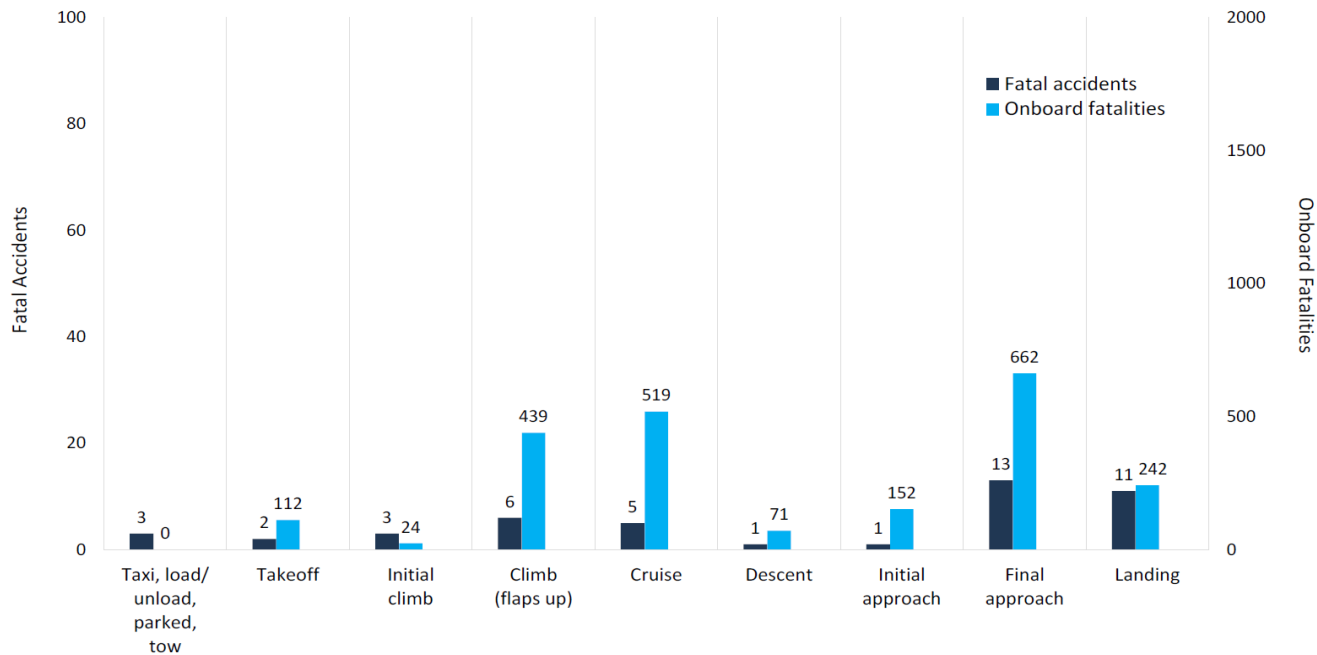
Incidenti per fasi di volo

Percentage of fatal accidents and onboard fatalities | 2010 through 2019

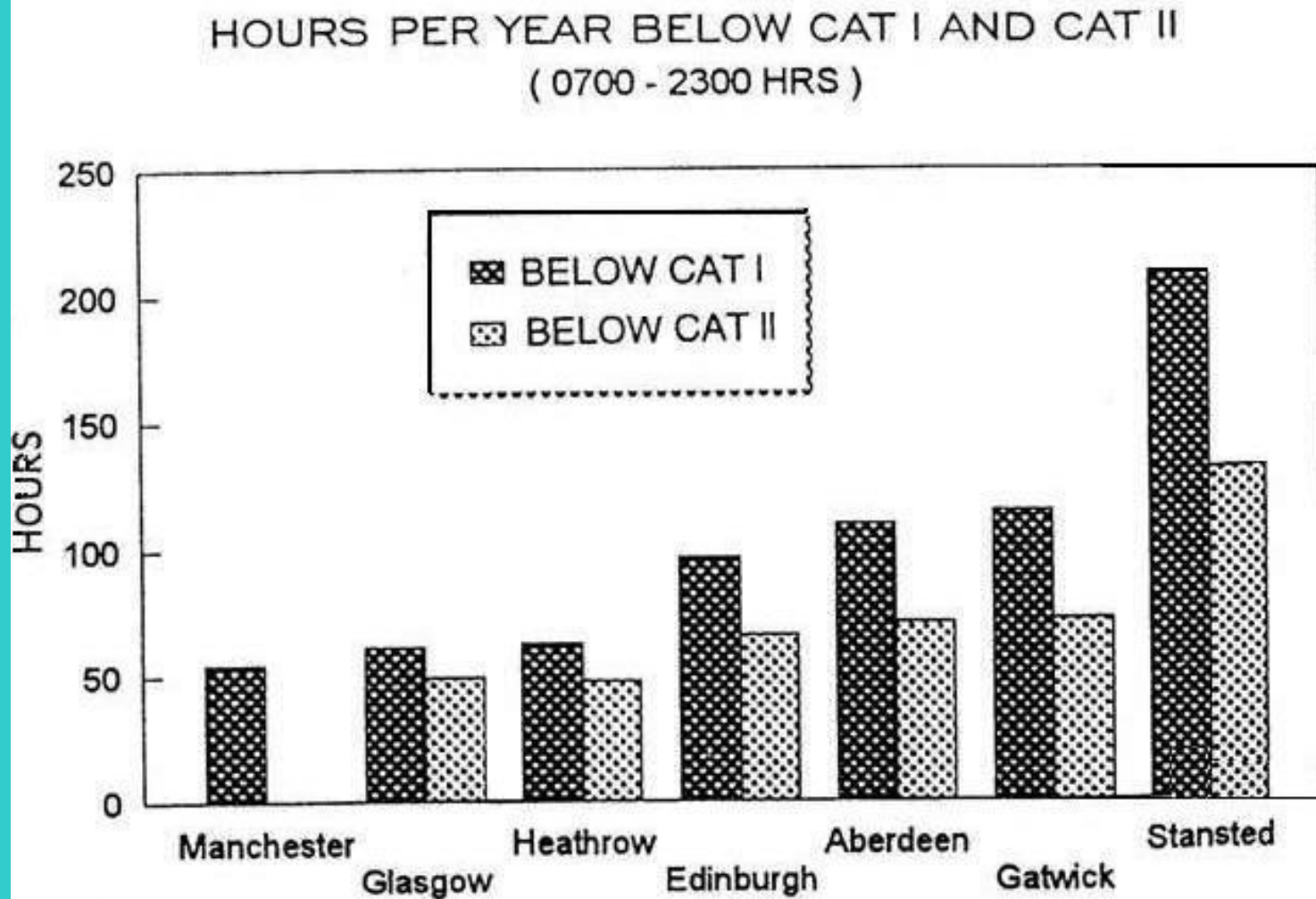


Note: Percentages may not sum to 100% because of numerical rounding.

Distribution of fatal accidents and onboard fatalities | 2010 through 2019



Agibilità degli aeroporti



ILS Instrumental Landing System

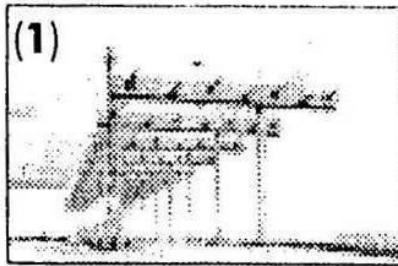
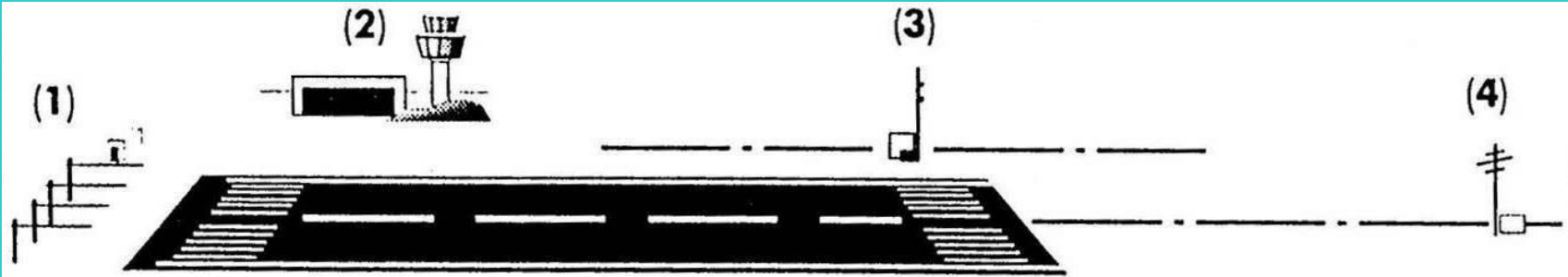
Category	Decision height	Runway visual range (RVR)
I ^[14]	> 200 ft (60 m) ^[b]	> 550 m (1,800 ft) ^[c] or visibility > 800 m (2,600 ft) ^[d]
II	100–200 ft (30–60 m)	ICAO: > 350 m (1,200 ft) FAA/JAA(EASA): > 300 m (1,000 ft)
III A	< 100 ft (30 m)	> 700 ft (200 m)
III B	< 50 ft (15 m)	ICAO/FAA: 150–700 ft (50–200 m) JAA(EASA): 250–700 ft (75–200 m)
III C ^[e]	No limit	None

La categoria caratterizza le:

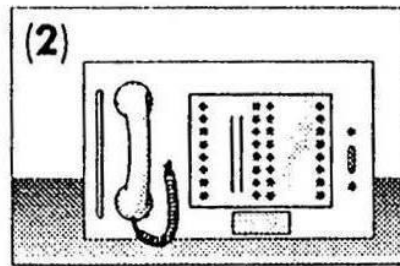
- apparecchiature al suolo
- apparecchiature di bordo
- le qualifiche del pilota

L'effettiva possibilità di atterrare
dipende anche dalle minime di compagnia

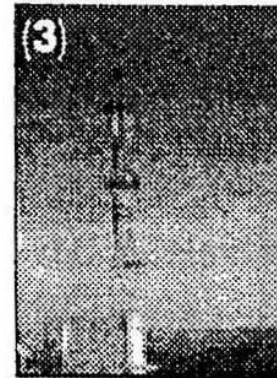
Componenti dell'ILS



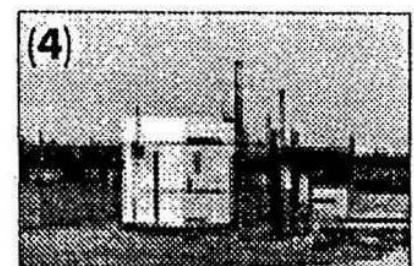
Localizer station



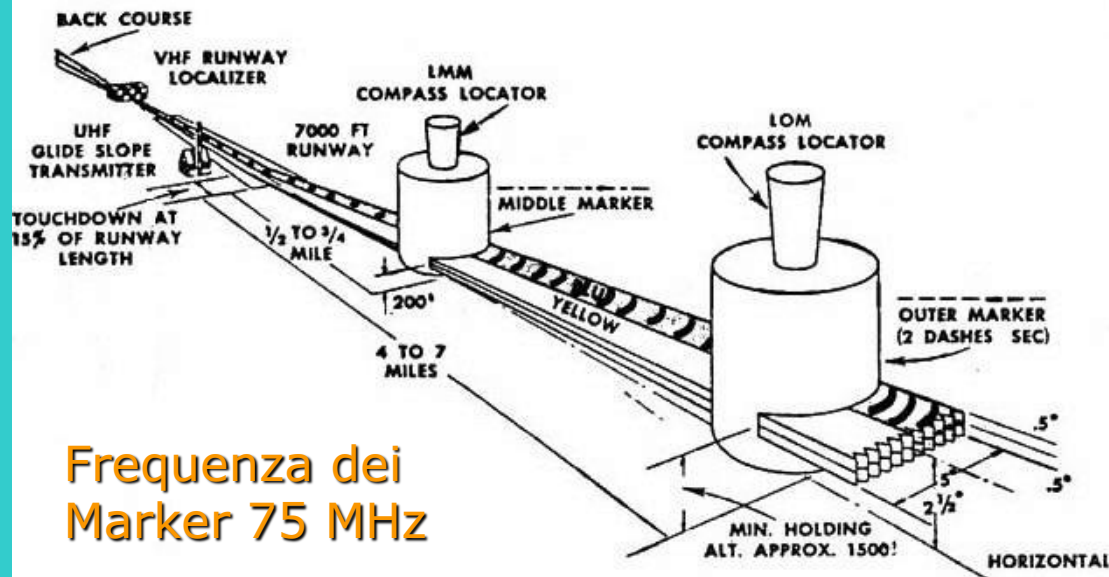
Remote control /
display unit



Glide slope
station



Marker Beacon station

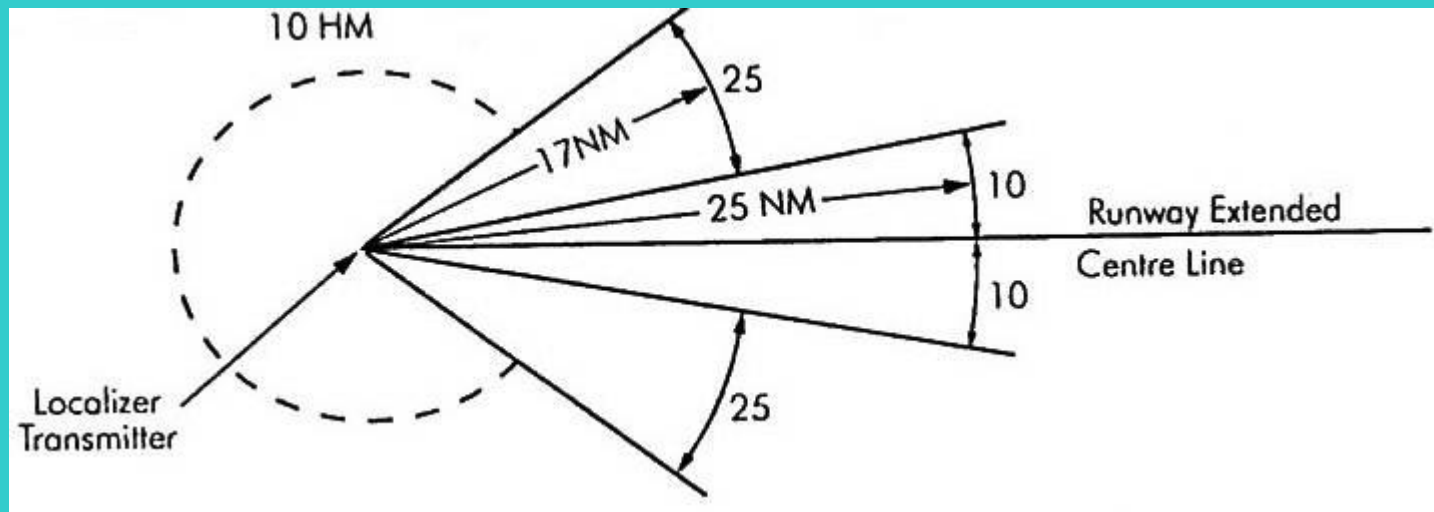


Frequenza dei Marker 75 MHz

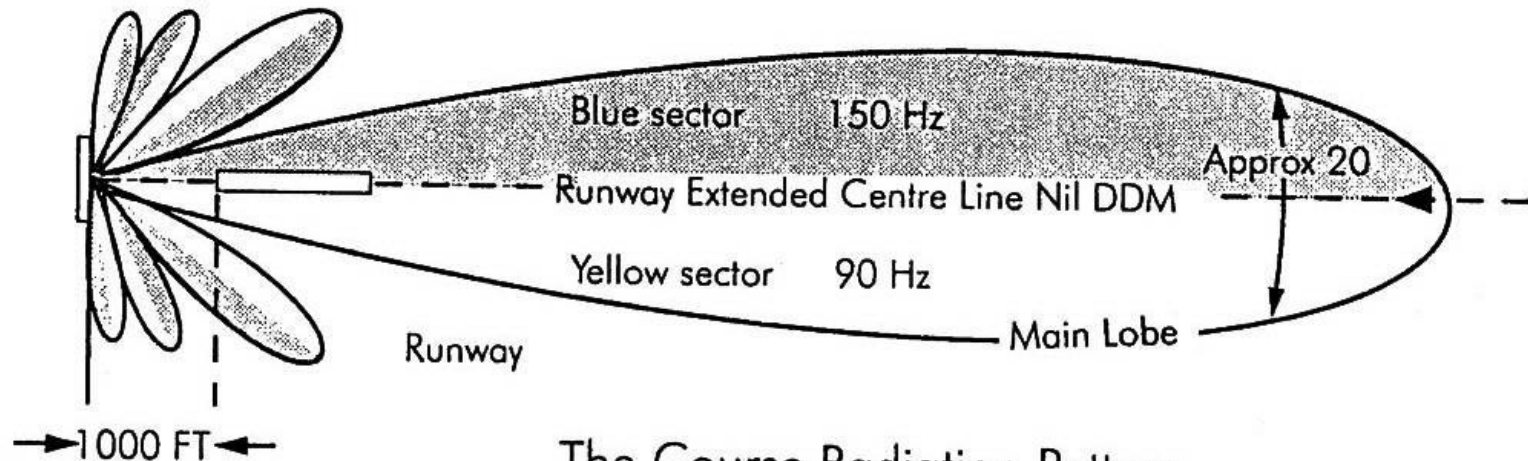
Figure 9-34. Instrument landing system. Many outer and middle markers do not have compass locators.

Ci si sincronizza solo sulla frequenza del Localizer





Course side lobes
producing spurious
equisignals



The Course Radiation Pattern

Scostamenti rispetto al Localizer

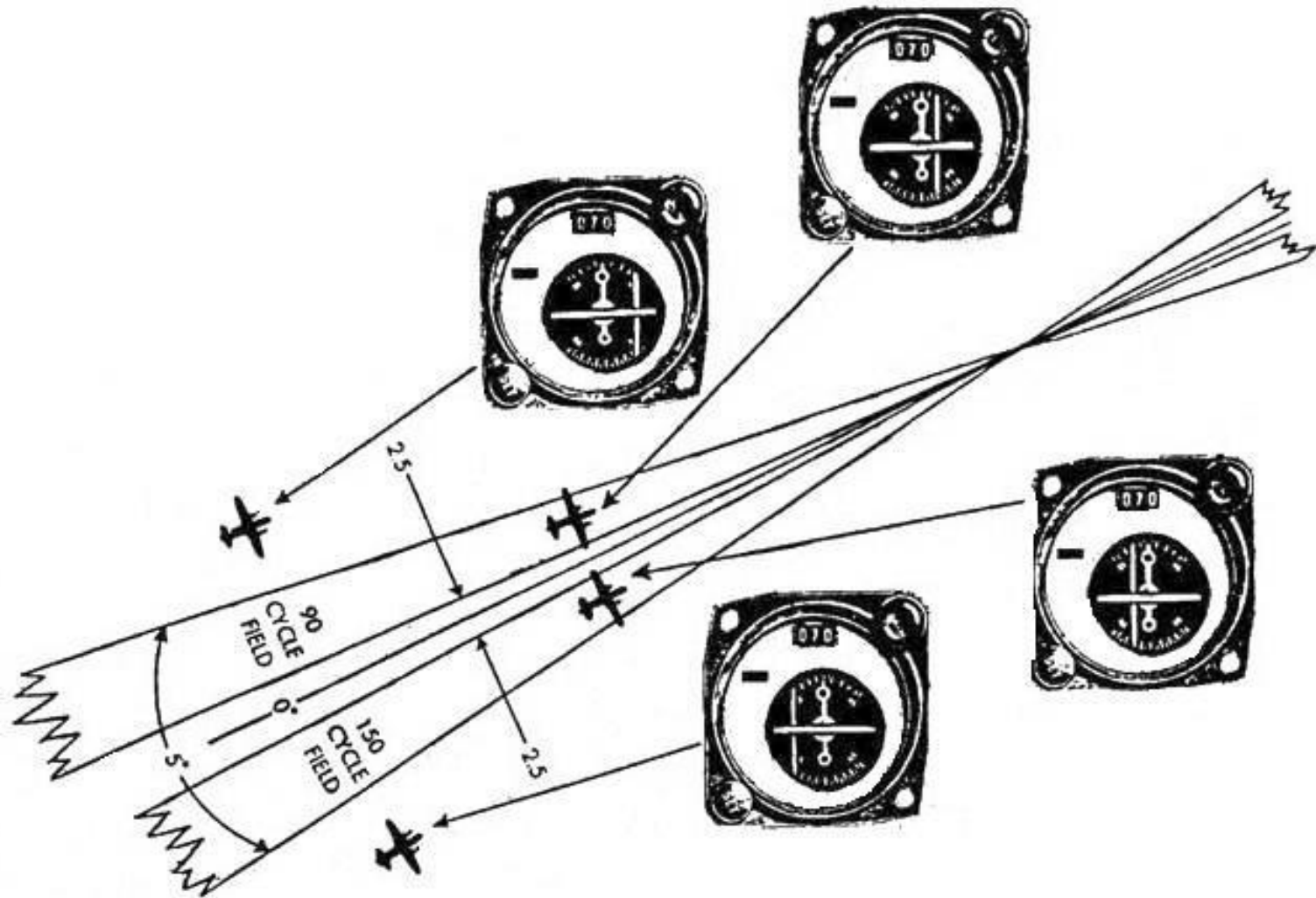
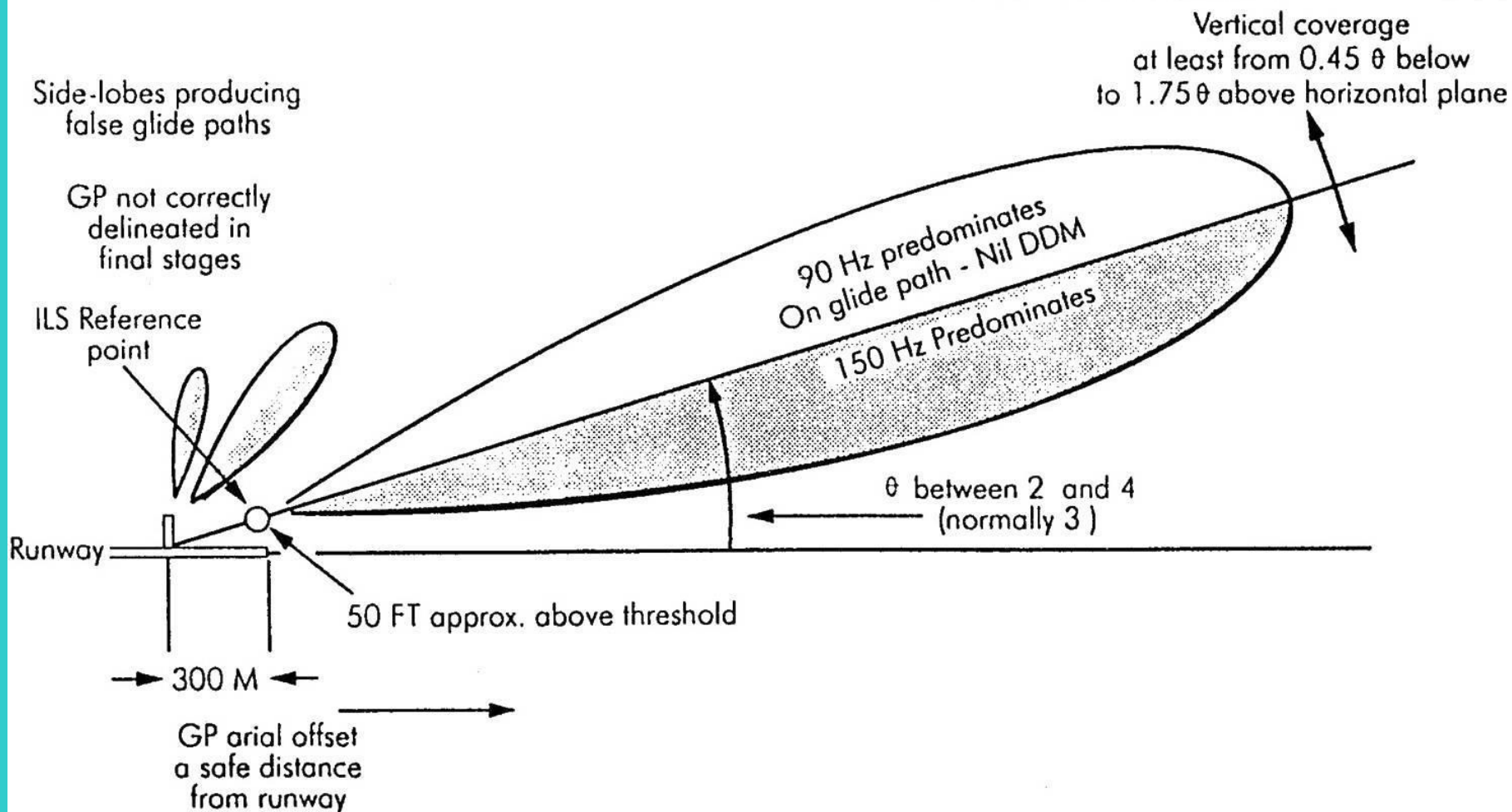


Figure 9.37. Relation of the localizer beam to CDI indications. Note that To-From indicator is blank, front course is **set** in course selector window, and CDI is directional.



Simplified diagram of glide path radiation pattern

Scostamenti rispetto al Glide Slope Indicator

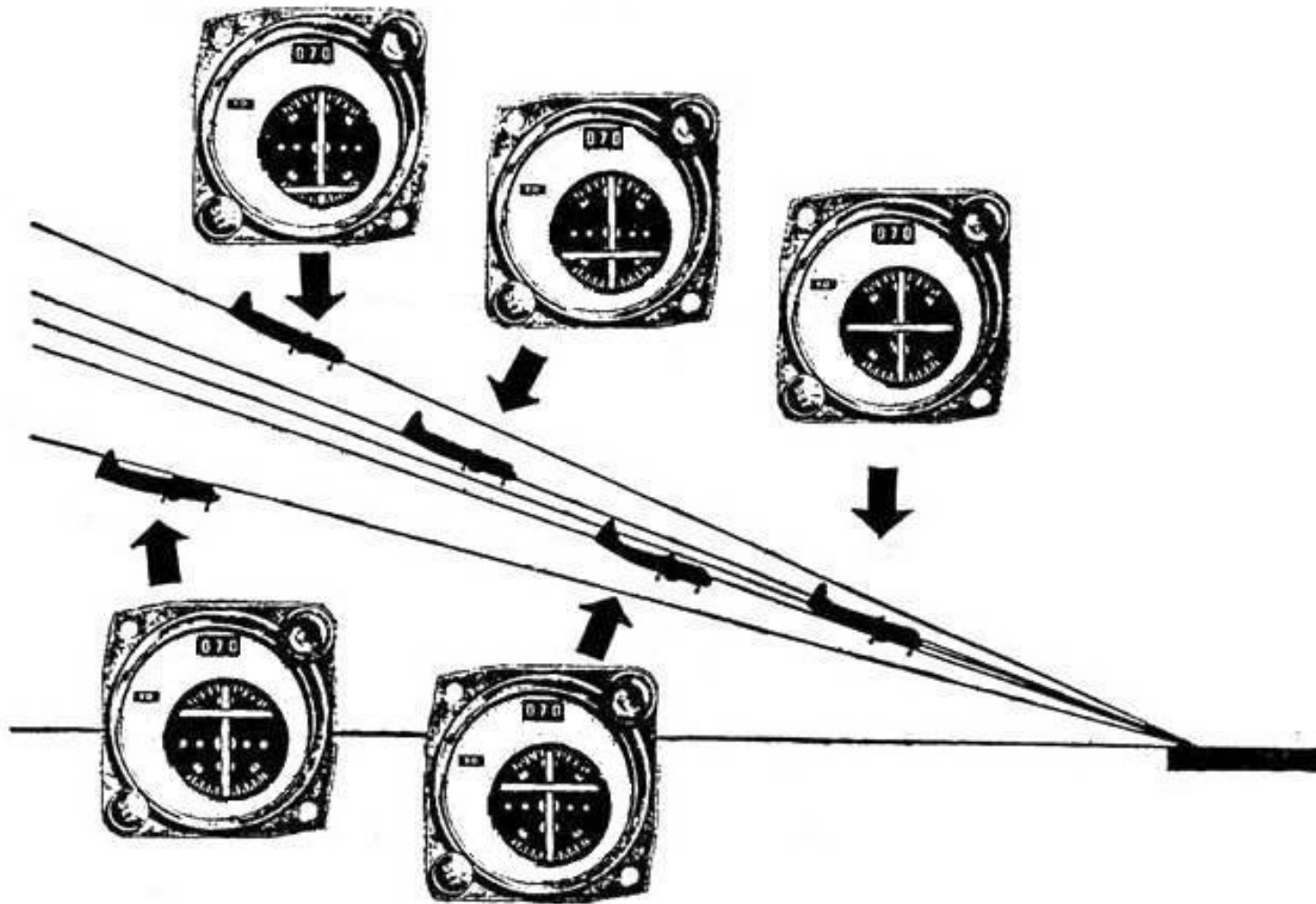
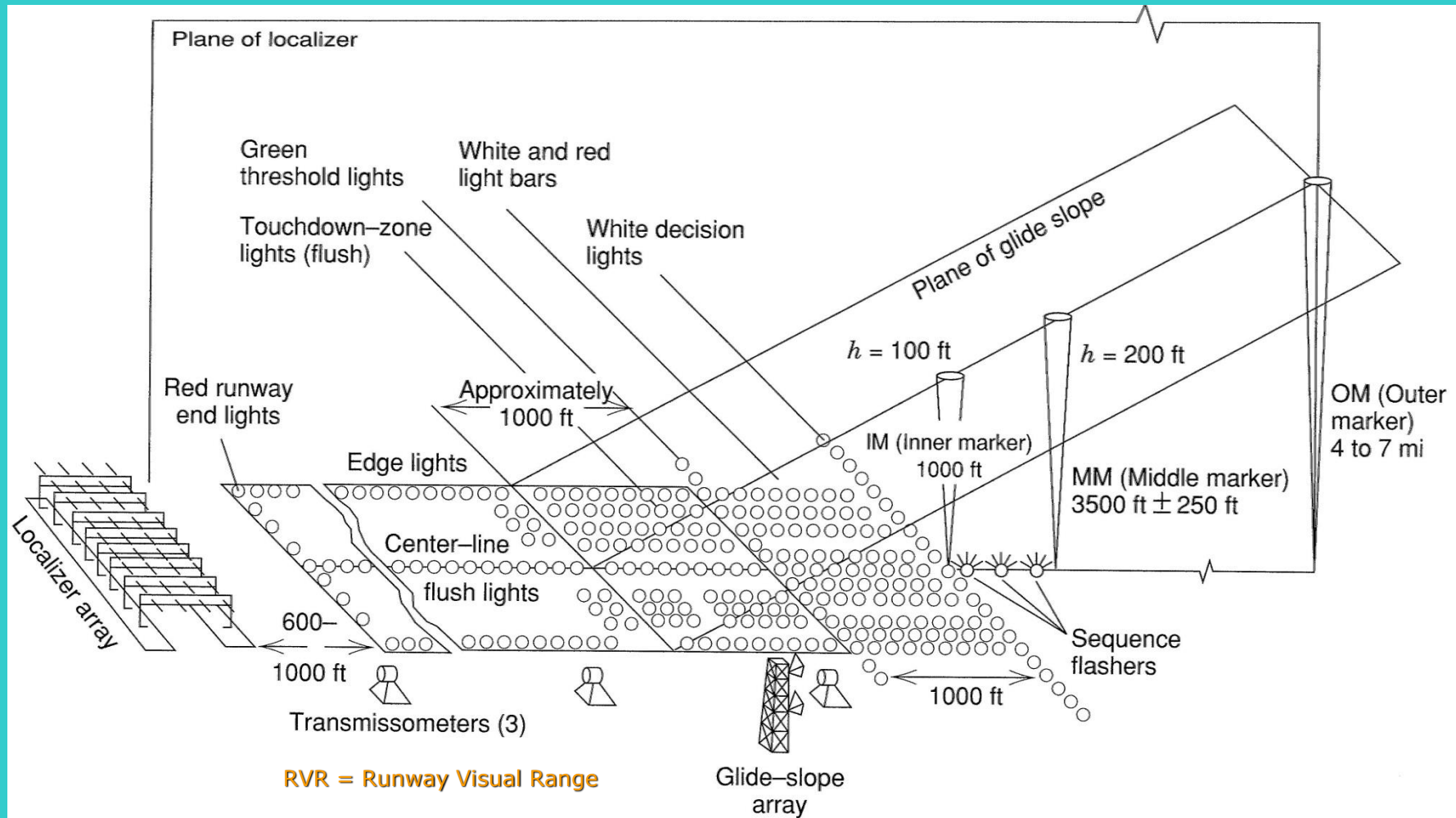
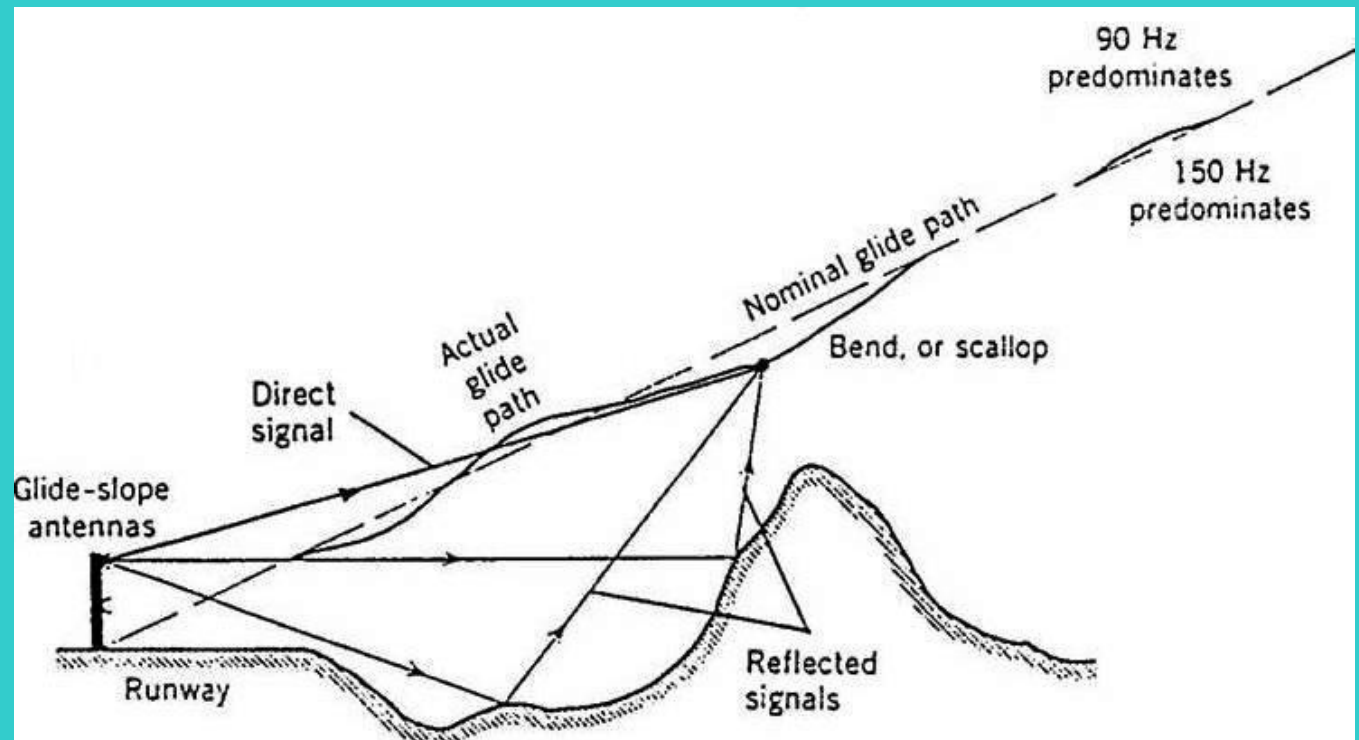
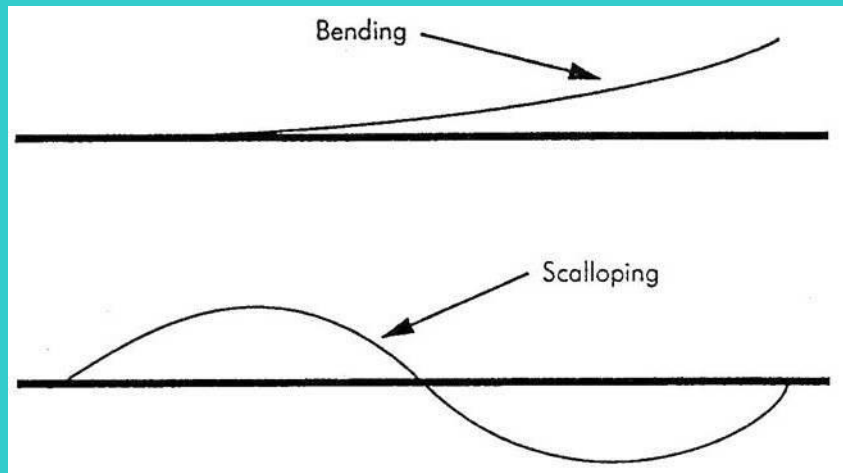


Figure 9.38. Relation of the glide path to the glide slope indicator.

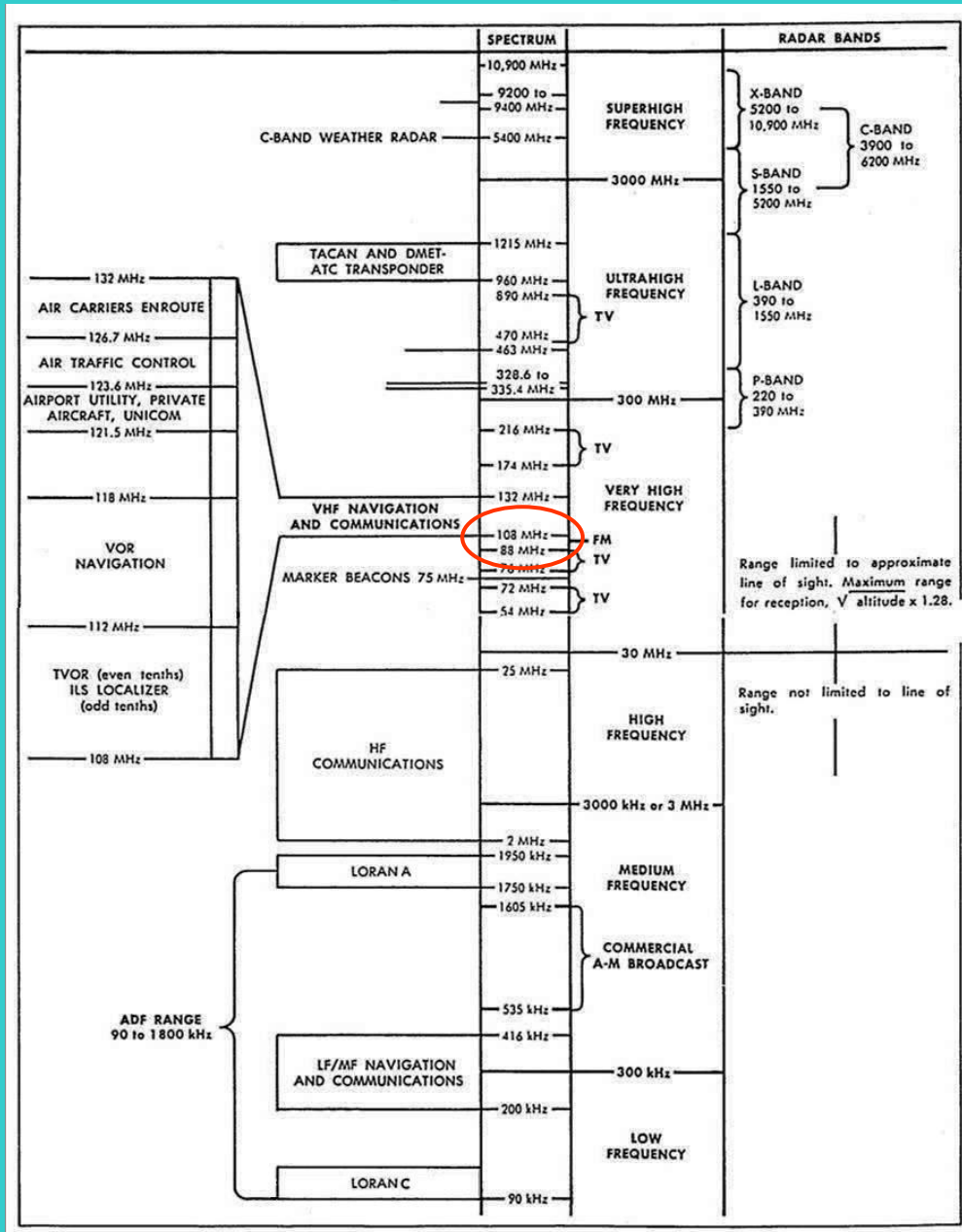
Attrezzature al suolo per l'atterraggio



Fattori che influenzano il segnale ILS



Banda frequenza Localizer



Limiti dell'ILS

- Precoce allineamento
- Necessità di un ambiente fisico adatto
- Limitazione delle frequenze a 70 canali
- Interferenza da potenti stazioni a terra
- Sensibilità ai veicoli e velivoli in movimento a terra

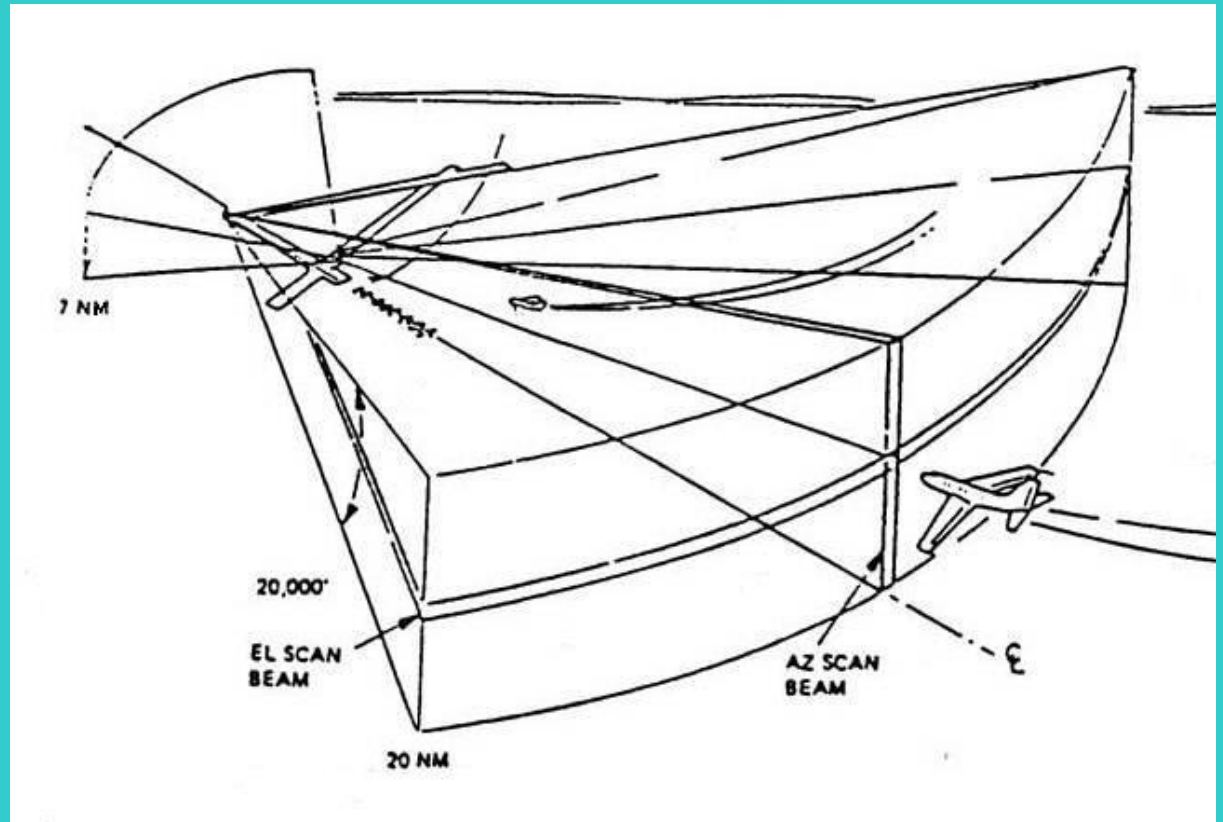
MLS Microwave Landing System

5031 ÷ 5091 MHz 200 canali

$\pm 60^\circ$ in Azimuth AZ

20° in Elevazione EL

Segmento iniziale di 1,5 km



PDME

Precision Distance Measuring Equipment

