3. The system may be divided functionally into three parts:

(a) Guidance information: localizer, glide slope.

(b) Range information: marker beacon, DME.

(c) Visual information: approach lights, touchdown and centerline lights, runway lights.

4. The following means may be used to substitute for the OM:

(a) Compass locator; or

(b) Precision Approach Radar (PAR); or

(c) Airport Surveillance Radar (ASR); or

(d) Distance Measuring Equipment (DME), Very High Frequency Omni–directional Range (VOR), or Nondirectional beacon fixes authorized in the Standard Instrument Approach Procedure; or

(e) Very High Frequency Omni–directional Radio Range (VOR); or

(f) Nondirectional beacon fixes authorized in the Standard Instrument Approach Procedure; or

(g) A suitable RNAV system with Global Positioning System (GPS), capable of fix identification on a Standard Instrument Approach Procedure.

5. Where a complete ILS system is installed on each end of a runway; (i.e., the approach end of Runway 4 and the approach end of Runway 22) the ILS systems are not in service simultaneously.

b. Localizer

1. The localizer transmitter operates on one of 40 ILS channels within the frequency range of 108.10 to 111.95 MHz. Signals provide the pilot with course guidance to the runway centerline.

2. The approach course of the localizer is called the front course and is used with other functional parts, e.g., glide slope, marker beacons, etc. The localizer signal is transmitted at the far end of the runway. It is adjusted for a course width of (full scale fly–left to a full scale fly–right) of 700 feet at the runway threshold.

3. The course line along the extended centerline of a runway, in the opposite direction to the front course is called the back course.

CAUTION–
Unless the aircraft's ILS equipment includes reverse sensing capability, when flying inbound on the back course it is necessary to steer the aircraft in the direction opposite the needle deflection when making corrections from off–course to on–course. This "flying away from the needle" is also required when flying outbound on the front course of the localizer. Do not use back course signals for approach unless a back course approach procedure is published for that particular runway and the approach is authorized by ATC.

4. Identification is in International Morse Code and consists of a three–letter identifier preceded by the letter I (●●) transmitted on the localizer frequency.

EXAMPLE–
I–DIA

5. The localizer provides course guidance throughout the descent path to the runway threshold from a distance of 18 NM from the antenna between an altitude of 1,000 feet above the highest terrain along the course line and 4,500 feet above the elevation of the antenna site. Proper off–course indications are provided throughout the following angular areas of the operational service volume:

(a) To 10 degrees either side of the course along a radius of 18 NM from the antenna; and

(b) From 10 to 35 degrees either side of the course along a radius of 10 NM. (See FIG 1–1–6.)

FIG 1–1–6
Limits of Localizer Coverage