

The interpretation of the HSI (Horizontal Situation Indicator) on the ILS

The HSI indicates not only the heading but also the selected localizer.

Bearing respectively heading of the aircraft



The **lubber line** defines the aircrafts longitudinal axis.

The **red heading bug** provides the heading for the autopilot

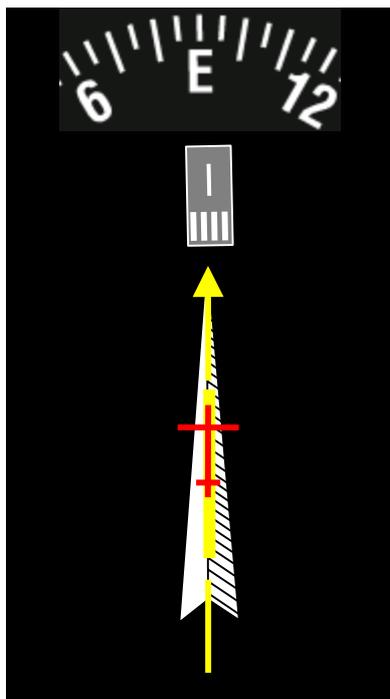
The **heading** is indicated under the lubber line.

This fixed **aircraft symbol** represents the actual aircraft. Like the aircraft it always flies straight forward and is aligned with the lubber line.

The **OBS** sets the course pointer to the selected radial or localizer.

Rotating the **heading knob** sets the heading bug. Coupled to an autopilot the heading bug remains under the lubber line and the aircraft flies the selected heading.

OBS - Omni directional Bearing Selector and CDI - Course Deviation Indicator on the ILS

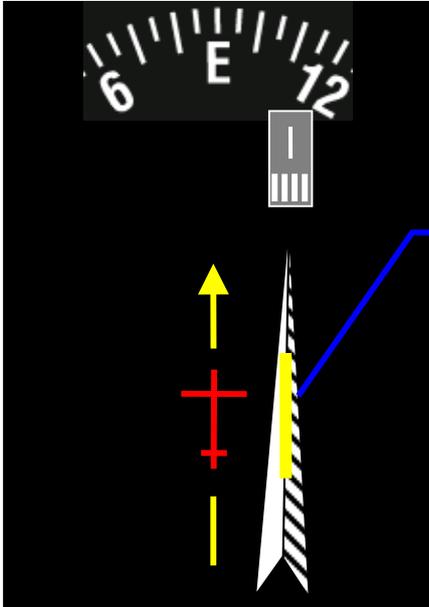


OBS
Rotating the OBS sets the arrow (course pointer).

The aircraft is located on the localizer.

Quoting Jeppesen's introduction: Back Course Box include Front Course for HSI setting!

- ◆ On the ILS the arrow-head always must be set to Front Course!
- ◆ There is no exception!
- ◆ This way the HSI will always function as a command instrument!



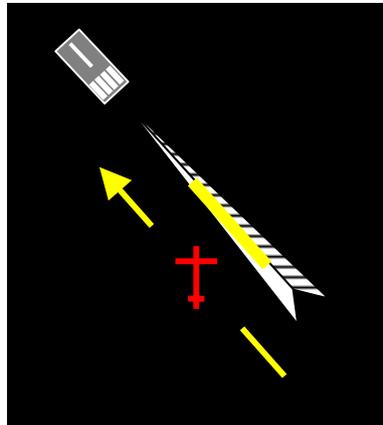
the localizer is represented by the CDI.



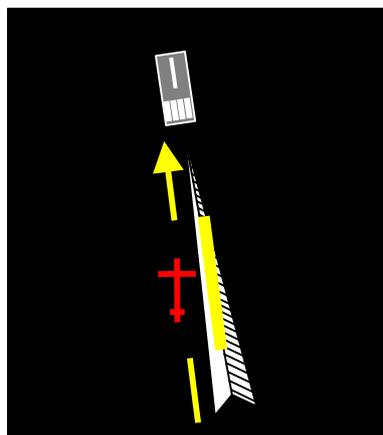
the CDI represents the localizer.
the glide slope indicator.

The indication ahead of respectively behind the localizer.

The CDI moves from the top to the bottom, or put into other words: from ahead towards behind. (provided that the arrow-head is set on Front Course).



The CDI is located ahead of the aircraft, which means the aircraft flies towards the localizer.

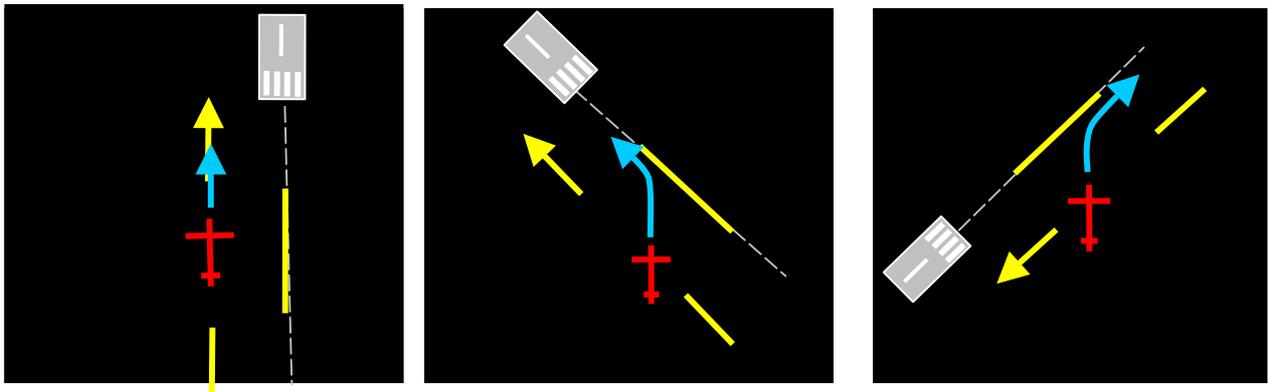


The CDI is located ahead of the aircraft, which means the aircraft flies towards the localizer.

ILS basics on the HSI indicator

- ◆ On the ILS the arrow (course pointer) must always be set to the published Front Course.
- ◆ This way the HSI will always function as a command instrument.
- ◆ The arrow merely indicates the bearing of the localizer.
- ◆ The CDI represents the localizer.
- ◆ There is no TO-FROM flag on the localizer.
- ◆ 1 dot on the localizer represents 0.5° (if 5 dots per side are indicated).
- ◆ The CDI deflects to either side, depending how far the aircraft is positioned in the MINUS resp. PLUS side. (see ILS)
- ◆ Rotating the arrow-head has no effect on the position of the CDI.
- ◆ If the CDI is located ahead of the aircraft, the aircraft flies towards the CDI.
- ◆ If the CDI is located behind the aircraft, the aircraft flies away from the CDI.

The flight path in relation to the localizer



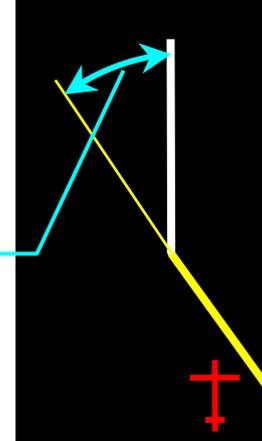
When the CDI starts moving away from the instrument edge, the aircraft is 2.5° away from the localizer centerline.

1 dot represents a 0.5° deviation (if 5 dots per side are indicated as shown by the HSI fig.). The 2.5° full scale deflection is absolutely mandatory for any instrument maker, how many dots he draws in is left to his own discretion.

How to track the proper interception heading towards the localizer.



The best way is to position the end of the CDI needle under the lubber line. This way the angle between the HSI arrow-head (course pointer) and the lubber line will be your interception angle.



30° - interception angle: the course pointer is 30° left of the lubber line.

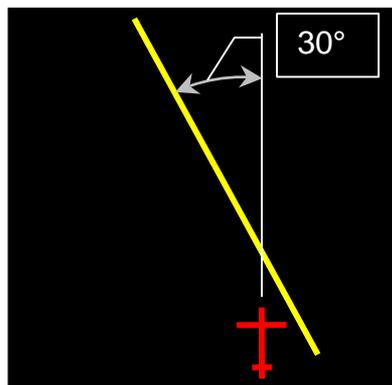
The more the CDI moves to the center, the more the aircraft has to be steered to the left in order to hold the CDI under the lubber line.

- ◆ The yellow line represents the localizer.
- ◆ The white line represents the lubber line (heading).
- ◆ The red aircraft symbol shows the aircraft's position in relation to the localizer.

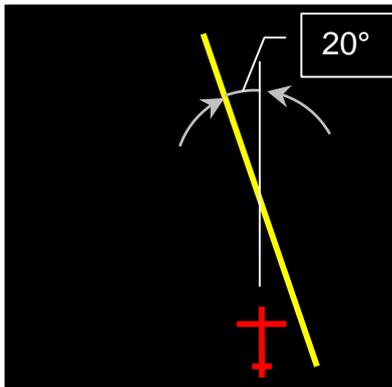
When passing the OM (outer marker) inbound, it is more practical to hold the lubber line between the CDI and the course pointer. This way you avoid an overshooting.

The picture above shows an interception heading of 105°.

There is no difference whether a localizer is tracked inbound or outbound!



The aircraft intercepts the localizer with an angle of 30°.



The aircraft intercepts the localizer with an angle of 20°.

POWER TIPS: ILS on the HSI

- ◆ On the ILS the arrow-head (course pointer) must always be set to the published Front Course.
- ◆ This way the HSI will always function as a command instrument.
- ◆ The CDI represents the localizer.
- ◆ There is no “TO-FROM” flag on the localizer.
- ◆ 1 dot on the localizer represents 0.5° deviation (if 5 dots per side are indicated).
- ◆ Rotating the arrow-head has no effect on the position of the CDI in relation to the arrow.
- ◆ If the CDI is positioned ahead of the aircraft, the aircraft flies towards the localizer.
- ◆ If the CDI is positioned behind the aircraft, the aircraft flies away from the localizer.
- ◆ The glide slope indicator always functions as a command instrument.
- ◆ 1 dot on the glide slope indicator represents 0.1° (if 5 dots per side are indicated).