



## YOUR AIRCRAFT SYSTEMS MAY BE VULNERABLE!

**CAUTION** – Magnetic disturbances or magnetic flux fields propagated by underground/buried or surface objects made of steel can cause significant directional heading errors in slaved compass system(s) indications...

- *Many low-wing airplanes, including some regional airliners, as well as helicopters are susceptible to magnetic disturbances caused by buried- and surface-objects containing or made of steel*
- *Directional heading errors have contributed to loss of separation between aircraft during initial departure and subsequently caused the issuance of pilot deviations*
- *Such errors have been documented to be up to 40 degrees*
- *Errors in heading may be indicated on one or both installed slaved directional indicators (HSI, EHSI, PND, etc.) which MAY or MAY NOT be detectable and alerted to the pilot by a comparator monitor, if installed*
- *Heading error indications vary in magnitude and may be observable in the same or different directions, depending upon flux field density*

**WHAT to DO** – Try not to spend excessive time positioned over a known or published area or obvious areas such as manhole covers and drain grates. Watch for slowly, un-annunciated changing heading(s) indications. If you encounter or suspect heading errors...

- *Follow the instructions of the manufacturer's flight crew operations manual (FCOM) or pilot's guide for detecting and correcting heading errors. In the absence of such instructions, the following steps may be followed:*
- *First, ensure that the heading system(s) are powered in the "MAG" (slaved) mode regardless of the exposure to surrounding magnetic disturbances.*
- *Second, move away from the parking spot (or area of disturbance) in the "MAG" mode; then...*
  - *Once free of detected magnetic disturbances select "DG" (if not selectable to "DG", remain in "MAG") and begin taxiing; then,*
  - *Actuate the "SLEW" switch (if installed) for the affected compass system(s) to correct to the approximate heading while observing another directional reference or the standby compass until being cleared by ATC to "line up and wait" on the runway;*
  - *After lining up on the runway centerline, notify ATC of a delay if required, remain stationary and switch from "DG" to "MAG" (unless previously selected to "MAG");*
  - *Actuate the "FAST SLAVE" button or switch, if installed, or otherwise observe heading realignment at a rate of 3 degrees per second to the appropriate heading; or,*
  - *If your aircraft does not have a "FAST SLAVE" switch or button, remain in "DG" mode, then request take-off, or depart and remain in "DG" mode, throughout the climb;*
  - *Upon reaching un-accelerated, level flight, switch to "MAG" and expect realignment;*
  - *Observe realignment upon selection, if able, or actuate the "FAST SLAVE" button or switch and observe heading correction.*

*Note: While in "DG" mode, be prepared to accept some drift or precession in the system(s) which could be caused by acceleration and maneuvering during the climb-out.*