SANDEL®

SN3308 PILOT'S GUIDE INSERT

Ref: Sandel Service Letter 3308-10

Applicability: SN3308 Pilot's Guide 82001-PG Rev C and previous.

Instructions:

In the Flags and Abnormal Conditions section of the SN3308 Pilot's Guide update as follows:

1) Under the CONDITION column, line out the words "Fluxgate failure" and replace with **FLUXGATE TOTAL ELECTRICAL FAILURE"**
2) In the DISPLAY column, to the right of Fast Slave Mode, write "**See PG Insert**" to refer to the following information:

The following explanation applies when the SN3308 is installed using 'internal slaving'.   This is an installation-selected mode and is used with most remote DG's such as KG102 or Mid Continent.

A fluxgate is an electronic compass sensor, with most of the characteristics of a wet compass. The fluxgate is the <u>only sensor which provides heading</u> to the SN3308. The remote Directional Gyro turns the SN3308 compass card directly, but does not know which way North is. The fluxgate supplies North and thereby the SN3308 ensures correct compass card orientation, slowly and continually correcting for gyro drift by using the North input from the fluxgate. This correction occurs at 3 deg/minute. It is imperceptible in flight.

The SN3308 has a Fast Slave Mode which turns the card at 25 deg/sec. The heading is redlined during this operation for a minimum of approximately 7 seconds. Fast slave mode normally occurs once per flight when systems are powered up. Fast Slave mode may also occur <u>at any time</u> the Compass Card does not match North from the fluxgate for more than 25 degrees for more than 2 minutes. This delay is incorporated to ensure that no fast-slaving operation occurs during turns, when the fluxgate (like the compass) is not level.

Fast Slaving is an abnormal condition during flight. It can be caused by a defect or error in either the remote gyro, the remote fluxgate, an undetected fault in the SN3308, or aircraft wiring, or from any cause (including all mechanical fluxgate failures) which would allow the compass card and fluxgate heading to stay diverged. If it occurs during flight the card will realign to the fluxgate signal, even if the fluxgate is incorrect.

Fast slaving is automatic. If a fast slave occurs inflight or the compass digits redline, cross-compare the HSI heading to magnetic compass (wet compass) heading with wings level. Pilots normally navigate by flying magnetic track from point to point. Comparing compass heading to actual track is also a good way to detect a compass heading error.

Other systems rely on the SN3500's heading output and could affect things such as traffic, lightning position, and GPS map displays. If the autopilot is engaged during fast slave the auto-pilot will follow the heading bug or the course pointer and should be disengaged. If there is to be any action taken by the pilot other than disengagement of the autopilot – especially on an approach – ATC should be notified immediately of the system malfunction while simultaneously executing a missed approach and relative heading direction assistance should be requested.