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## SB 3500-15   Service Bulletin
## SN3500 Primary Navigation Display

Date:          June 04, 2010

Regarding:   SN3500 Primary Navigation Display, Software Release 4.02

SB Rev:      Initial Release

### Reason

Change to Localizer unflagging when using composite localizer input.

### Applicability

The software change for the Composite Localizer unflagging applies only to SN3500 installations that have been configured to use the SN3500 <u>internal</u> composite localizer converter. This can be verified if necessary by displaying the NAV1 or NAV2 maintenance page (as appropriate) to verify:

LOC DV      COMP

This SB does <u>not</u> apply for any other LOC DV setting such as A429 or ANALOG which utilize an external LOC converter.

### Compliance

Recommended

### Description

A customer reported that their installation using an SN4500 with VIR30 NAV/LOC receiver stays flagged longer than expected when entering the localizer from outside the beam. We have determined that the internal flag is in fact more sensitive than the converter inside the VIR30 as originally utilized in the aircraft. Because the SN4500 and SN3500 use the same composite localizer converter design, an SN3500 software change was made to match the VIR30 characteristics.

<u>Note:</u>

When an installation uses the internal LOC converter (LOC DV set to COMP), and after initially loading this software, a LOC GAIN adjustment on the front panel of the SN3500 is required. The "default" gain is set to zero which <u>disables</u> the composite localizer input until the adjustment is made the first time by the

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installer. This adjustment is made on the NAV1 or NAV2 maintenance page using a ramp LOC test set.

Other enhancements included with this software update are:

- Improved TACAN display for self test and negative range rates
- Power-On-Restore of brightness setting for NVIS operations
- TACAN relay output discrete for external annunciation
- New Reversionary Attitude control input for installations with analog DME
- New external brightness control input.
- Heading bug color selectable to Orange or White

The SB 3500-15 related files including the software update, software load utility and instructions can be accessed on the Sandel website at:

www.sandel.com/SN3500_EHSI_sup_sb.php   [case-sensitive]

Or you can contact Sandel Product Support at (760)727-4900 selection "2"

**Warranty Reimbursement**

None.

**Manpower**

1 hour

**Approval**

This modification does not affect the original approval.

Contact Sandel for details if needed.

**Identification**

No change

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**Testing**

<u>Ramp or Bench Test:</u>

Perform the following procedure once for <u>each</u> LOC channel configured for composite localizer, using the respective aircraft receiver. This test may be performed with a ramp test set, or may be performed on the bench with a signal generator at nominal RF signal level (25uV or greater).

On the NAV maintenance page, when the LOC DV is selected to COMP a new display entry "GAIN" has been added on the maintenance screen. This displays the signal amplitude of the composite LOC signal being received. 100.0 units represent "normal modulation" of the 90/150 tones at 0.0 DDM, localizer centered.

This procedure applies only when desiring to use Composite Localizer, and uses the LOC GAIN adjustment and the corresponding LOC AMPL display on the maintenance page. The LOC AMPL value is color coded AMBER/GREEN to correspond to the deviation data flagged/unflagged.

1. On the SN3500 NAV maintenance page, select LOC DV and change to COMP to select Composite Localizer.

2. Select GAIN.

3. Set 0 DDM (STD) on the test set, and tune the receiver to match the LOC frequency on the test set.

4. Adjust the SN3500 GAIN value so the average value of LOC AMPL reads 100.0 +/- 2.5.

5. Exit the SN3500 maintenance page to the normal pilot's LOC display.

6. On the test set remove both 90Hz and 150Hz tones simultaneously and verify the SN3500 display flags within 2 seconds.

7. On the test set select .155 DDM Left and verify that removing either tone individually will flag the SN3500 display within 5 seconds.

8. On the test set select .155 DDM Right and verify that removing either tone individually will flag the SN3500 display within 5 seconds.

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Perform any other LOC performance tests desired.

## Related Documentation

82005-IM Rev. J            Installation Manual

82005-PGERR Rev J2     Pilots Guide Errata

82005-PG Rev. K           Pilot's Guide

82005-PGSUP Rev. B    Pilots Guide Supplement

**END**