PILATUS AIRCRAFT LTD. CH-6371 STANS, SWITZERLAND

SERVICE LETTER

SUBJECT: L-3 COMMUNICATIONS AVIONICS SYSTEMS, INC. SERVICE LETTER (SL) 174

To all Customers, Operators and Service Centers: Date: Dec 03/08

This Service Letter is issued to draw attention to the following vendor information:

STORAGE OF ELECTRO-MECHANICAL GYRO PRODUCTS

L-3 Communications have issued SL-174 to provide the latest information for the maintenance of JET® and AIM® Series attitude indicators held in storage.

The SL gives the correct storage conditions and maintenance actions required for the different types of attitude indicators.

Pilatus advises operators to make sure their storage facilities are aware of the correct storage procedures as given in SL-174.

Operators requiring further information on this subject, please contact one of the addresses given below:

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Attachments: **L-3 COMMUNICATIONS AVIONICS SYSTEMS, INC. SL-174**

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L-3 communications
Avionics Systems

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Service Letter

Date: December 16, 2002 **SL-174**

NOTE: This Service Letter supersedes SL-113(), SL-131(), SL-168() and SA-89().

Effectivity: Electro-Mechanical Gyro Products listed below.

JET® Series

AI-330 Attitude Indicator	ADI-330 Attitude Directional Indicator	DG-710 Directional Gyro
AI-340 Attitude Indicator	ADI-331 Attitude Directional Indicator	RG-225 Rate Gyro
AI-350 Attitude Indicator	ADI-332 Attitude Directional Indicator	RG-227 Rate Gyro
AI-360 Attitude Indicator	ADI-333 Attitude Directional Indicator	VG-204 Vertical Gyro
AI-803 Attitude Indicator	ADI-334 Attitude Directional Indicator	VG-206 Vertical Gyro
AI-804 Attitude Indicator	ADI-335 Attitude Directional Indicator	VG-208 Vertical Gyro
AI-903 Attitude Indicator	ADI-350 Attitude Directional Indicator	
AI-904 Attitude Indicator		

AIM® Series

1100 Attitude Indicator	1200 Attitude Indicator	205 Directional Gyro	520 Attitude Indicator

Subject: Product Storage

Purpose: To provide Avionics Systems service centers and maintenance personnel with storage information for gyro products.

Advisory: Using the following advisory instructions as well as those within SL-10 Electro-Mechanical Gyro Products.

1. Continued Airworthiness (Maintenance)

The products listed in the effectivity paragraph do not require scheduled maintenance or scheduled overhaul. A need for maintenance is indicated when the instrument fails to operate properly.

Each instrument is maintained on a "Condition Monitored' basis. Functional monitoring is based upon the following:

- Visual observation by the user.

Each Instrument has unlimited service life, where service life is defined as that point in time where repair is no longer economical. Instruments repaired and returned to operating conditions, following normal usage, will generally be practical.

2. JET® Series Attitude Indicators and Attitude Directional Indicators

The storage conditions for indicators are as follows:

A. The indicator should be stored in its original shipping container, or as a minimum, the inner carton of the shipping container.

1) If space is not available for storing the indicator in its original shipping container, the indicator must be placed on shelves containing thick dense foam [equivalent to the foam found in the Avionics Systems shipping container] to prevent vibration or shock damage.

B. The storage area of the indicator should be environmentally controlled to avoid excessive exposure to high temperatures.

C. Indicators stored for more than 18 months must be exercised as follows:

CAUTION: THE FOLLOWING PROCEDURES SHALL BE CONDUCTED IN AN APPROPRIATE INSTRUMENT SHOP ENVIRONMENT. PERSONNEL EMPLOYED WITHIN THE SHOP SHALL BE FAMILIAR WITH THE REQUIREMENTS OF SERVICE LETTER SL-10 "GYRO HANDLING AND PACKAGING".

1) Remove the indicator from the shipping container and packaging. Apply power to the indicator and let it operate for 3 minutes before continuing on to the next step.

NOTE: Refer to the appropriate technical publication for recommended calibration fixtures and input power requirements.

2) With power applied carefully pick up indicator and slowly rotate the instrument ± 360° in roll and approximately ± 60° in pitch. Do this a minimum of four times.

3) Secure the indicator in a suitable calibration fixture (calibration fixture which matches the aircraft instrument panel angle) and place it on a scorsby table. Apply power to scorsby table and allow the indicator to operate for a minimum of 30 minutes.

CAUTION: IT IS STRONGLY RECOMMENDED THAT POWER BE REMOVED FOR AT LEAST 20 MINUTES PRIOR TO GYRO HANDLING. FAILURE TO PROVIDE A 20 MINUTE SPIN DOWN, BEFORE HANDLING, WILL CAUSE DAMAGE TO THE GYRO.

4) Remove power from scorsby table and indicator. Do not move indicator for at least 20 minutes. This allows the internal spinning mass (spinning at approximately 24,000 rpm) to coast to a complete stop.

5) Return indicator to its shipping container or foam layered shelf.

D. Under normal conditions and exercising every 18 months the indicator may be stored for a period of five (5) years without degradation of performance characteristics.

3. JET® Series Vertical Gyros and Rate Gyros.

The storage conditions for gyros are as follows:

A. The gyro should be stored in its original shipping container, or as a minimum, the inner carton of the shipping container.

1) If space is not available for storing the gyro in its original shipping container, the gyro must be placed on shelves containing thick dense foam [equivalent to the foam found in the Avionics Systems shipping container] to prevent vibration or shock damage.

B. The storage area of the gyro should be environmentally controlled to avoid excessive exposure to high temperatures.

C. Gyros stored for more than 18 months must be exercised as follows:

CAUTION: THE FOLLOWING PROCEDURES SHALL BE CONDUCTED IN AN APPROPRIATE INSTRUMENT SHOP ENVIRONMENT. PERSONNEL EMPLOYED WITHIN THE SHOP SHALL BE FAMILIAR WITH THE REQUIREMENTS OF SERVICE LETTER SL-10 "GYRO HANDLING AND PACKAGING".

1) Remove the gyro from the shipping container and packaging. Apply power to the gyro and let it operate for 3 minutes before continuing on to the next step.

NOTE: Refer to the appropriate technical publication for recommended calibration fixtures and input power requirements.

2) Exercise the instrument in the following manner a minimum of four times.

a. For Vertical Gyros:

- With power applied carefully pick up gyro and slowly rotate the instrument ± 360° in roll and ± the lowest pitch limit set for each individual instrument.

b. For Rate Gyros:

- Go to Paragraph 3).

3) Secure the gyro in a suitable calibration fixture and place it on a scorsby table. Apply power to scorsby table and allow the gyro to operate for a minimum of 30 minutes.

CAUTION: IT IS STRONGLY RECOMMENDED THAT POWER BE REMOVED FOR AT LEAST 20 MINUTES PRIOR TO GYRO HANDLING. FAILURE TO PROVIDE A 20 MINUTE SPIN DOWN, BEFORE HANDLING, WILL CAUSE DAMAGE TO THE GYRO.

4) Remove power from scorsby table and gyro. Do not move gyro for at least 20 minute. This allows the internal spinning mass (spinning at approximately 24,000 rpm) to coast to a complete stop.

5) Return gyro to its shipping container or foam layered shelf.

D. Under normal conditions and exercising every 18 months the gyro may be stored for a period of up to three (3) years without degradation of performance characteristics.

E. Gyros stored longer than 3 years must be exercised annually thereafter in accordance with the procedures outlined in Paragraph C. 2) above.

4. AIM® Series Attitude Indicators (except for models 1100 and 1200), Directional Gyros, Attitude Gyros.

   The storage conditions for AIM products are as follows:

   A. The instruments should be stored in its original shipping container, or as a minimum, the inner carton of the shipping container.

      1) If space is not available for storing the instrument in its original shipping container, the unit must be placed on shelves containing thick dense foam [equivalent to the foam found in the Avionics Systems shipping container] to prevent vibration or shock damage.

   B. The storage area of the instrument should be environmentally controlled to avoid excessive exposure to high temperatures.

   C. Indicators and gyros stored for more than 6 months must be exercised as follows:

      CAUTION: THE FOLLOWING PROCEDURES SHALL BE CONDUCTED IN AN APPROPRIATE INSTRUMENT SHOP ENVIRONMENT. PERSONNEL EMPLOYED WITHIN THE SHOP SHALL BE FAMILIAR WITH THE REQUIREMENTS OF SERVICE LETTER SL-10 "GYRO HANDLING AND PACKAGING".

      1) Remove the instrument from the shipping container and packaging. Apply power to the instrument and let it operate for 3 minutes before continuing on to the next step.

         NOTE: Refer to the appropriate technical publication for recommended calibration fixtures and input power requirements.

      2) With power applied carefully pick up instrument and slowly rotate the instrument ± 360° in roll and ± the lowest pitch limit set for each individual instrument. Do this a minimum of four times.

      3) Secure the instrument in a suitable calibration fixture (calibration fixture which matches the aircraft instrument panel angle) and place it on a scorsby table. Apply power to scorsby table and allow the unit to operate for a minimum of 30 minutes.

         CAUTION: IT IS STRONGLY RECOMMENDED THAT POWER BE REMOVED FOR AT LEAST 20 MINUTES PRIOR TO INSTURMENT HANDLING. FAILURE TO PROVIDE A 20 MINUTE SPIN DOWN, BEFORE HANDLING, WILL CAUSE DAMAGE TO THE UNIT.

      4) Remove power from scorsby table and instrument. Do not move instrument for at least 20 minute. This allows the internal spinning mass (spinning at approximately 24,000 rpm) to coast to a complete stop.

      5) Place unit into its shipping container or foam layered shelf.

   D. Under normal conditions and exercising every 6 months the indicator or gyro may be stored for a period of up to three (3) years without degradation of performance characteristics.

5. AIM® Series 1100 and 1200Attitude Indicators

The shelf life storage conditions for Avionics Systems Attitude Indicators are as follows:

A. The indicators should be stored in their original shipping containers, or as a minimum, the inner carton of the shipping container.

B. The ambient environment should be environmentally controlled to avoid excessive exposure to high temperatures.

C. Indicators stored for more than 18 months must be exercised as follows:

CAUTION: THE FOLLOWING PROCEDURES SHALL BE CONDUCTED IN AN APPROPRIATE INSTRUMENT SHOP ENVIRONMENT. PERSONNEL EMPLOYED WITHIN THE SHOP SHALL BE FAMILIAR WITH THE REQUIREMENTS OF SERVICE LETTER SL-10 "GYRO HANDLING AND PACKAGING."

1) Remove the indicator from the shipping container and packaging. Secure the indicator in a suitable calibration fixture (calibration fixture which matches the aircraft instrument panel angle). Apply power to the indicator. Refer to the appropriate component maintenance manual for recommended calibration fixtures and input power requirements.

2) Allow the indicator to operate for a minimum of one (1) hour. During the one hour period, the indicator should be exercised manually a minimum of four (4) times through approximately ± 30.0 in pitch and ± 360.0 in roll, at approximately equal intervals. An alternate method is to scorsby the indicator through ± 7° yaw, pitch, and roll for 1 hour.

3) After exercising the indicator, power should be removed and the gyro wheel allowed to run down for a period of 20 minutes. After 20 minutes minimum, the indicator should be subjected to performance testing in accordance with the appropriate maintenance manual.

D. Under normal conditions and exercising every 18 months the indicator may be stored for a period of up to three (3) years without degradation of performance characteristics.

If further information is required, please contact:

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