1. INTRODUCTION

On May 27, 2011 during landing approach of A/C G200 #165 at Stewart International Airport (SWF), Newburgh, NY,The right hand main landing gear collapsed causing the right hand wing and associated parts to contact the runway surface.
Right main landing gear actuator tear down was requested by the NTSB.
The investigation and tear down was conducted by Chief investigator office Mr. G. Eschinasi Israel ministry transport.

2. PURPOSE

This document presents the investigation results of the right main landing gear Actuator 27300-000-05 IL 111 A/C 165.
The investigation was performed in order to find locking /unlocking problem, that can explain the events mentioned above.

3. REFERENCES

3.1 CMM Test data sheet no ATR26300CMM
3.2 Acceptance test procedure for MLG Actuator ATP26300-000-05

4. BACKGROUND

The actuator was upgraded from dash -04 to -05 at Gulfstream Appelton USA.

5. FINDINGS

5.1 Receiving inspection

5.1.1 Visual inspection

Some miner deviations were observed, the following deviations has not any impact of the event of the right MLG collapsing.

1. Name plate improper marking (see fig. 1, 2).
The name plate should be replaced when updating the actuator, and not doing it by crossing the old number and adding the new version on the old name plate.

2. Sealing and plugging of cylinder vent holes.

Vent holes should be left open to the atmosphere and not sealed as can be seen (see fig 3)

3. Released actuator rod end nut.
The rod end nut was found released (see fig 4), it should be tighten.

Fig 1 Name plate improper marking

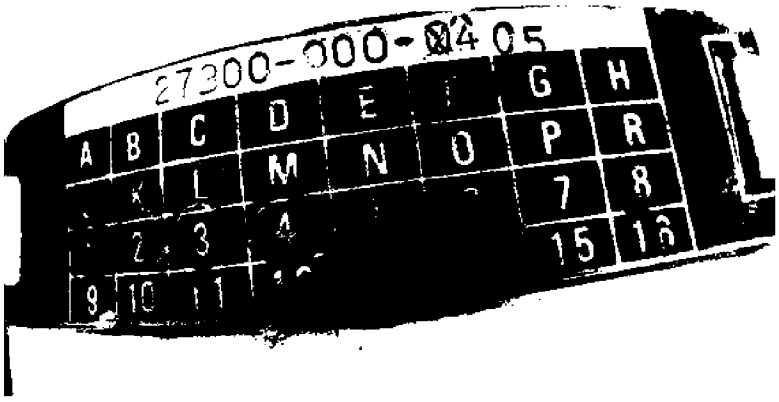


Fig 2 Name plate improper marking

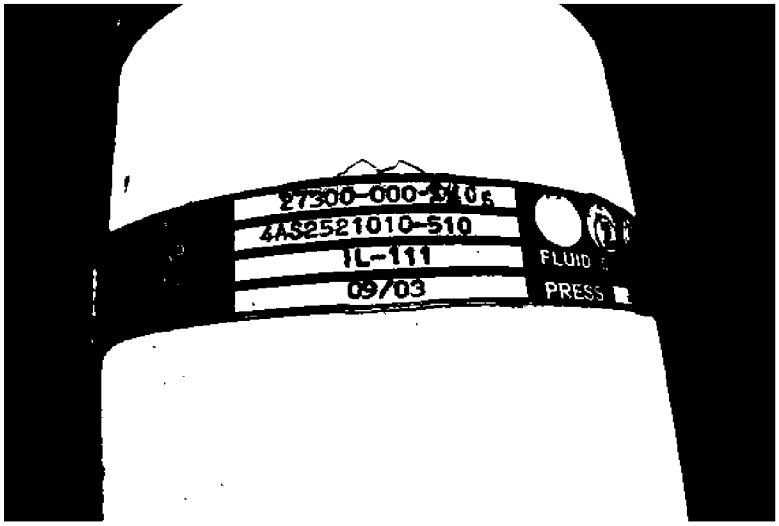


Fig 3 Sealing cylinder vent holes

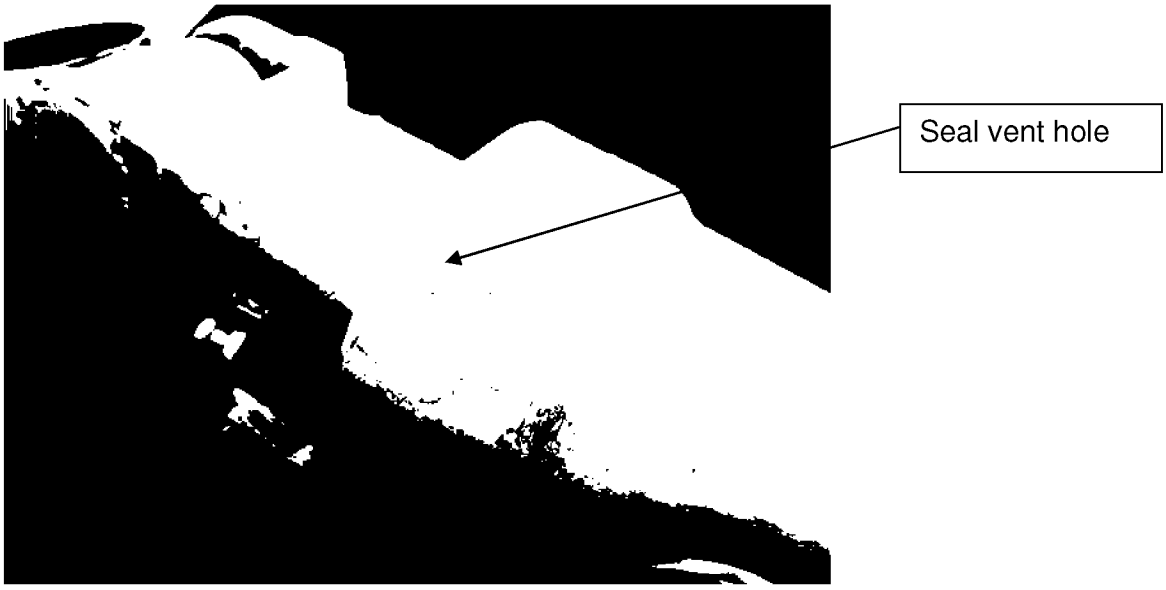
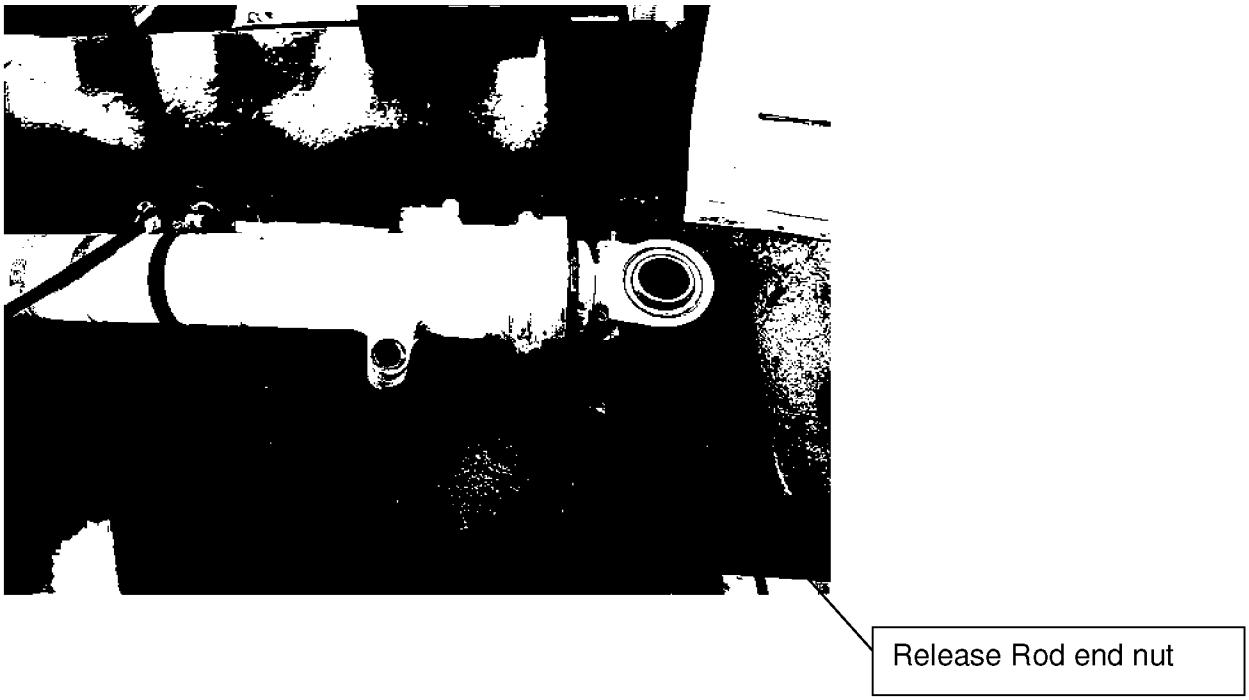


Fig 4 Release actuator rod end nut.

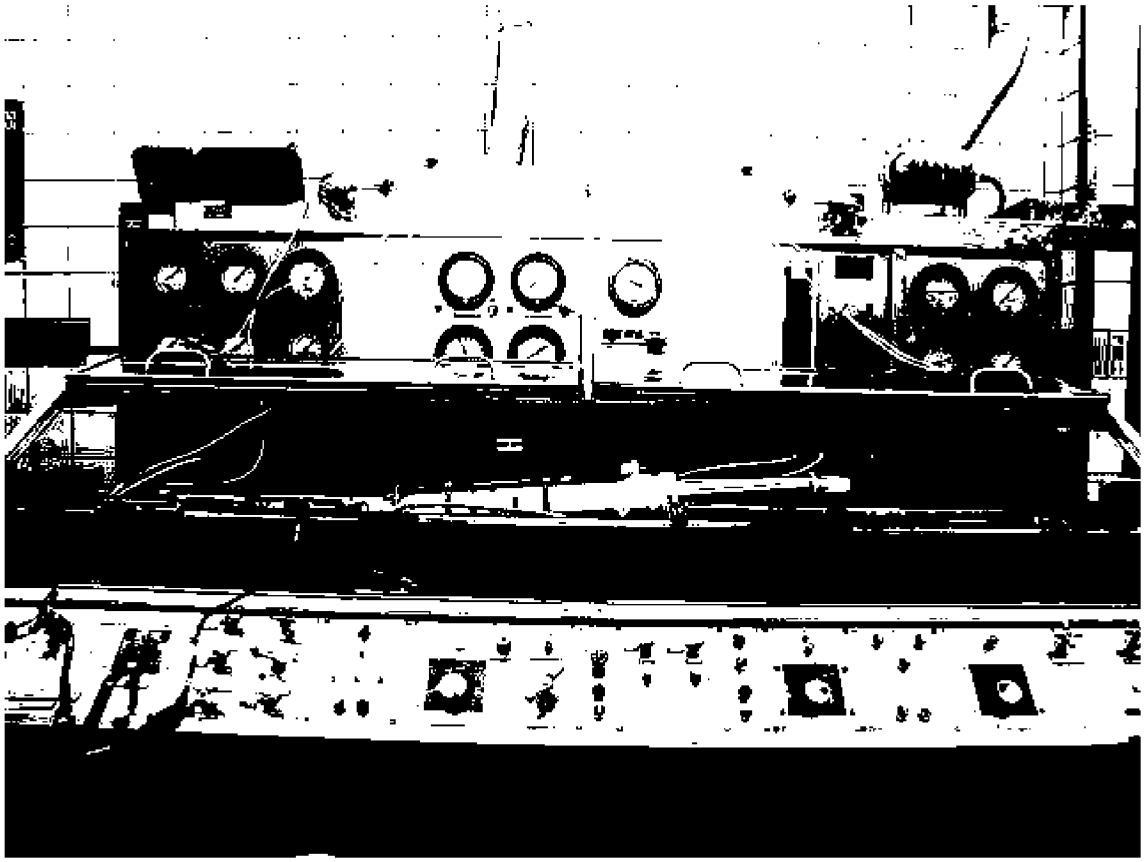


5.1.2 Acceptance test

The MLG actuator was subjected to ATP according to ref 3.2 the results were:

a. No evidence of locking/unlocking problems or electric indication failure was found during actuator ATP test.
b. The locking/unlocking pressure results show compliance with ATP requirements.
c. Clearance measurements of the piston rod at locked position show compliance with the ATP requirements (see attached ATP).
d. Excessive hydraulic leakage from the actuator gland and cylinder were detected during the ATP

Fig 5 Test rig.

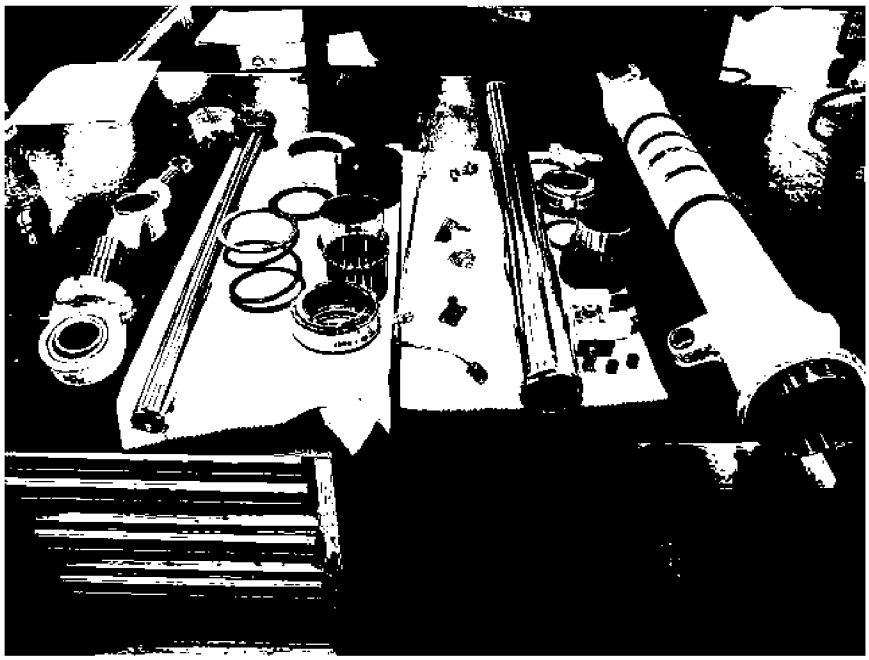


5.2 ACTUATOR DISASSEMBLY

The MLG Actuator was disassembled and visually inspected, the results were:

No defects or damage marks has been observed on actuator parts.
Results of dimensional inspection performed on several parts were OK:

Fig 6 Disassembly of actuator



6. CONCLUSIONS

a. No evidence of locking/unlocking problems or electric indication failure was found during actuator ATP test.
b. The locking/unlocking pressure results which have been measured show compliance with ATP requirements, and were similar to Gulfstream APPELTON test (data sheet results ATR26300CMM of actuator 27300-000-05 IL 111.not attached).
c. Clearance measurements of the piston rod at locked position show compliance with the ATP requirements (see attached ATP).
d. No defects or damage marks have been observed on actuator parts during disassembly.

From the above we can conclude that the actuator No 27300-000-05 IL 111 functioned properly during Landing of A/C 165.