Australian Government
Department of Defence
Capability Acquisition and Sustainment Group

S-70A-9 Black Hawk Main Landing Gear Explosive Failure

Introduction Into Service of Replacement Equipment

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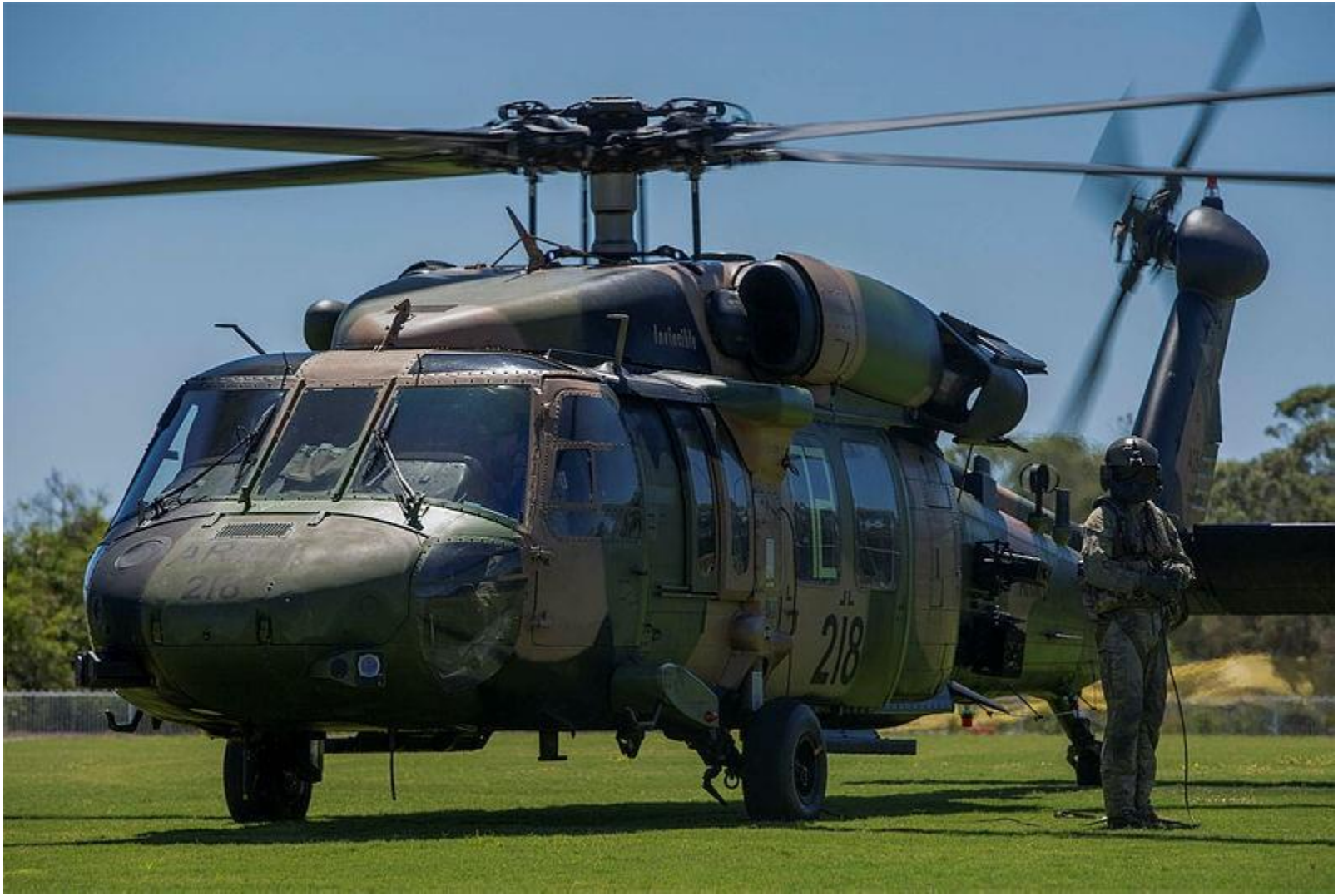
Scope

- Introduce Aircraft and Role
- Role and Function of the Hydraulic Rig
- Failure Incident
- Issues Identified
- Lessons Learnt

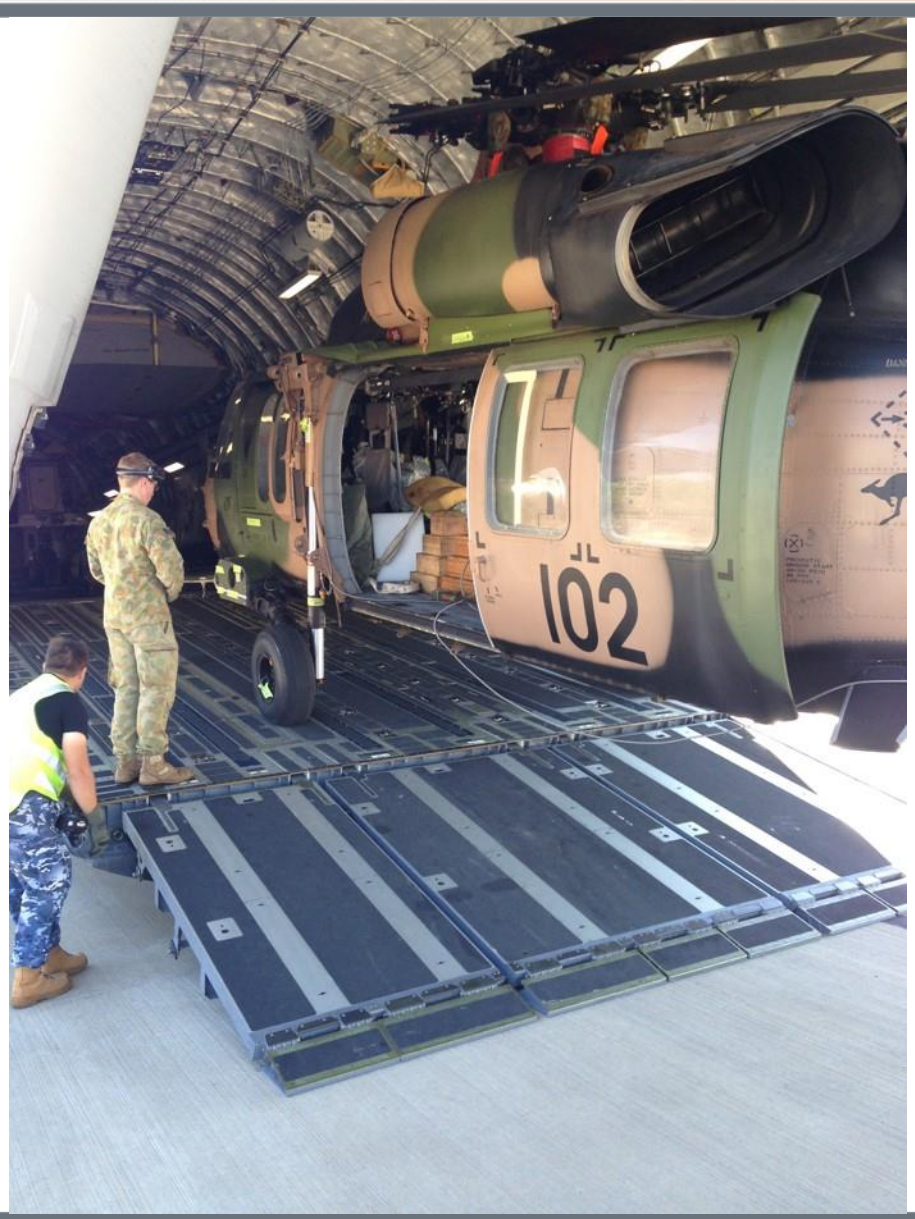
The Aircraft

- **S-70A-9 Black Hawk**

Role

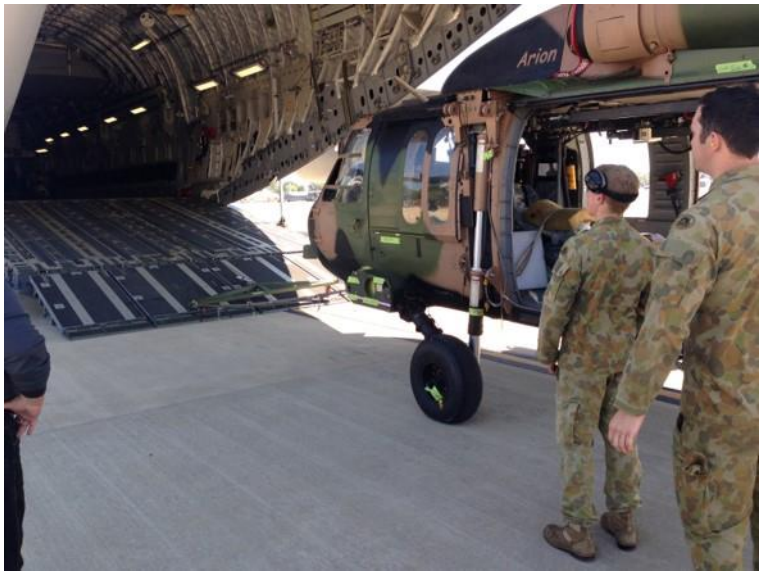


Strategic Lift



Role and Function of Hydraulic Kneeling Rig

- **External control to landing gear struts**
- **Raise and lower the landing gear struts during strategic lift operations**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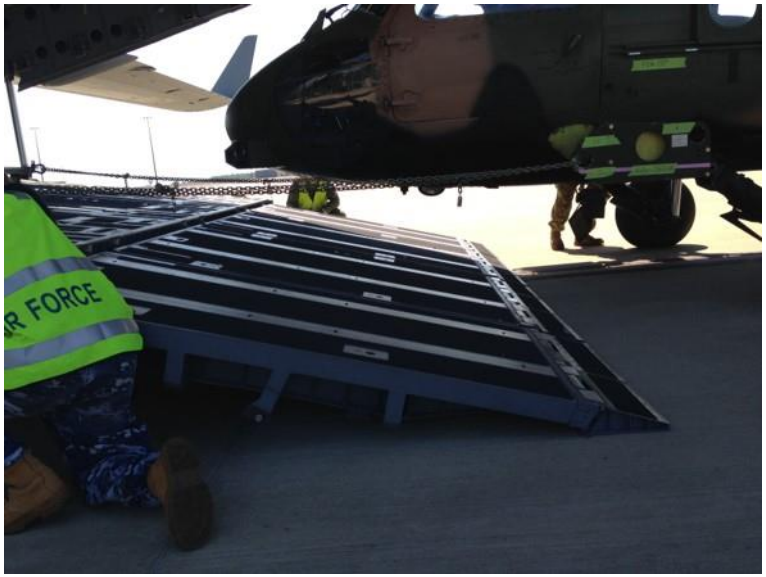
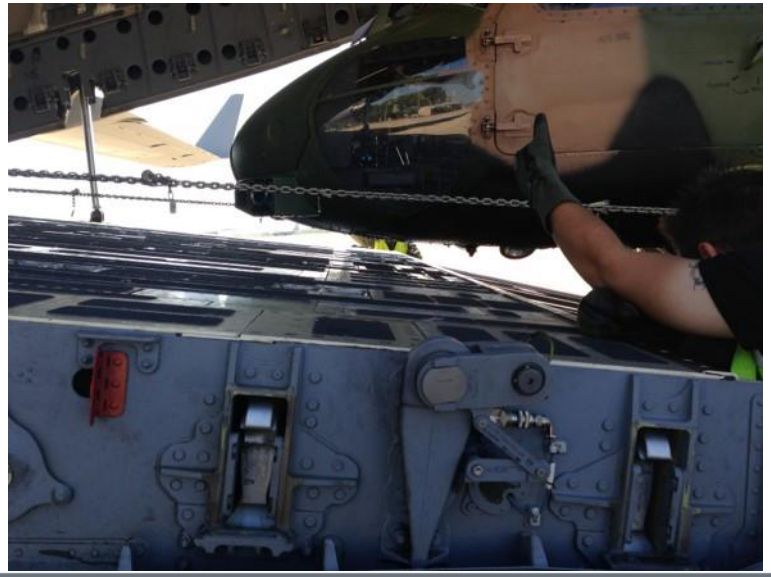
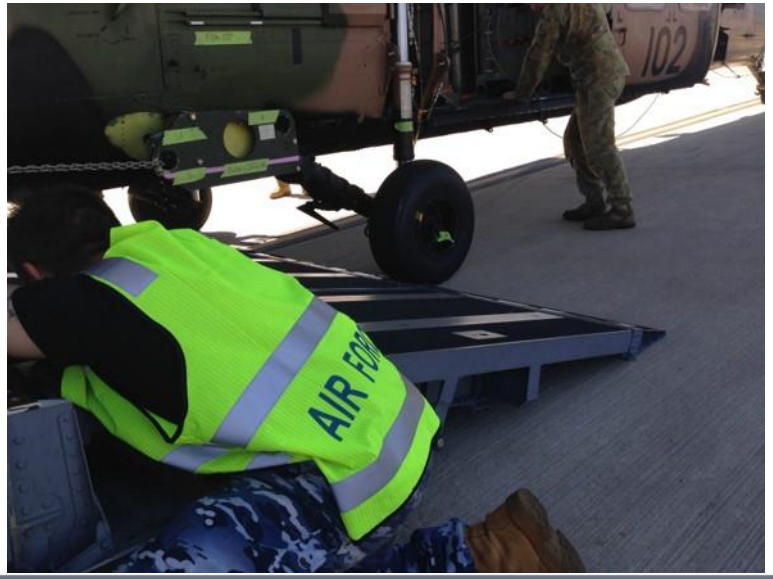

R FORCE

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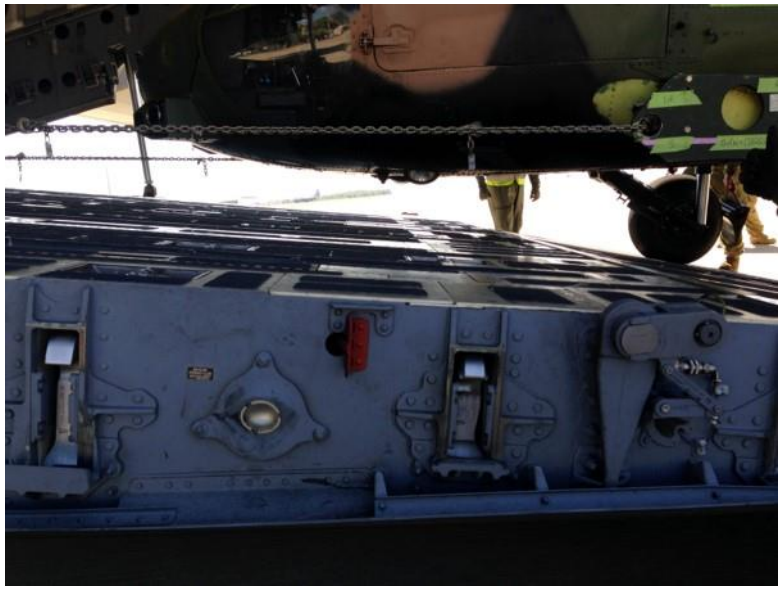

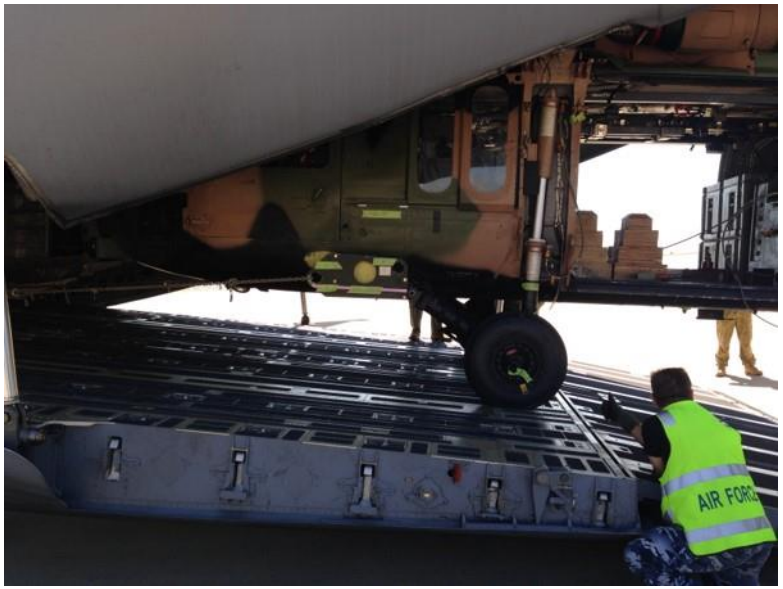
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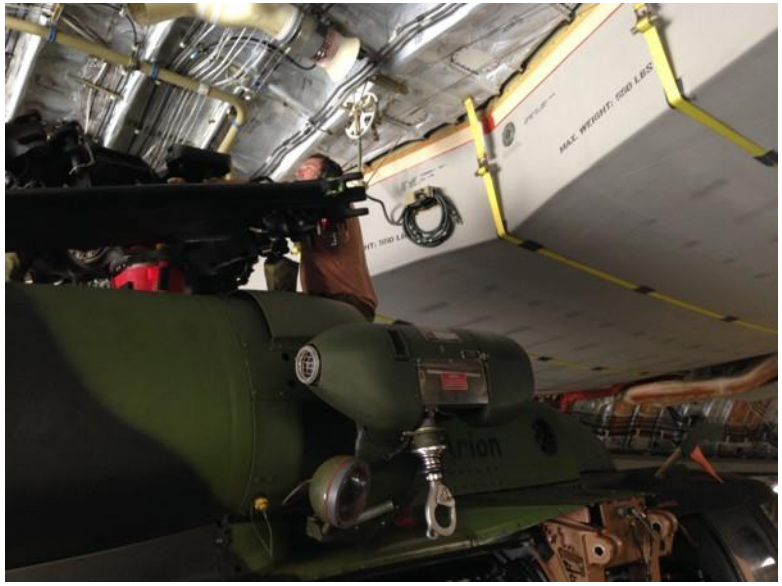
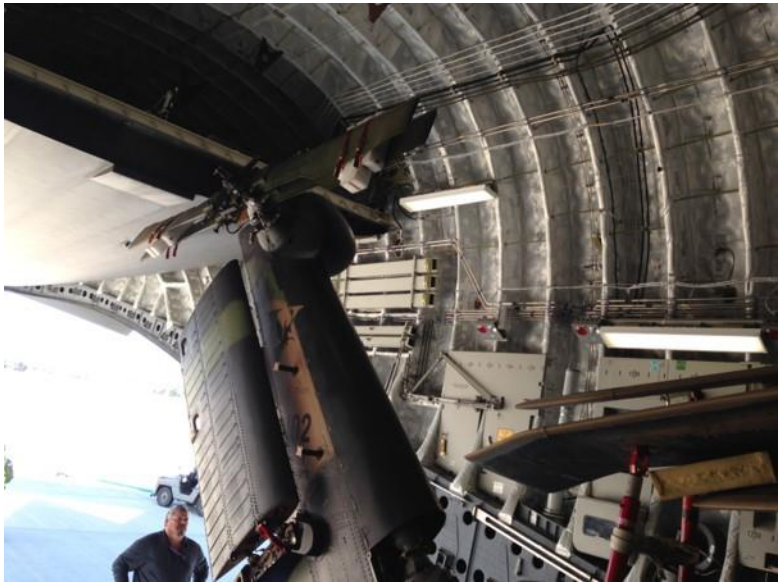
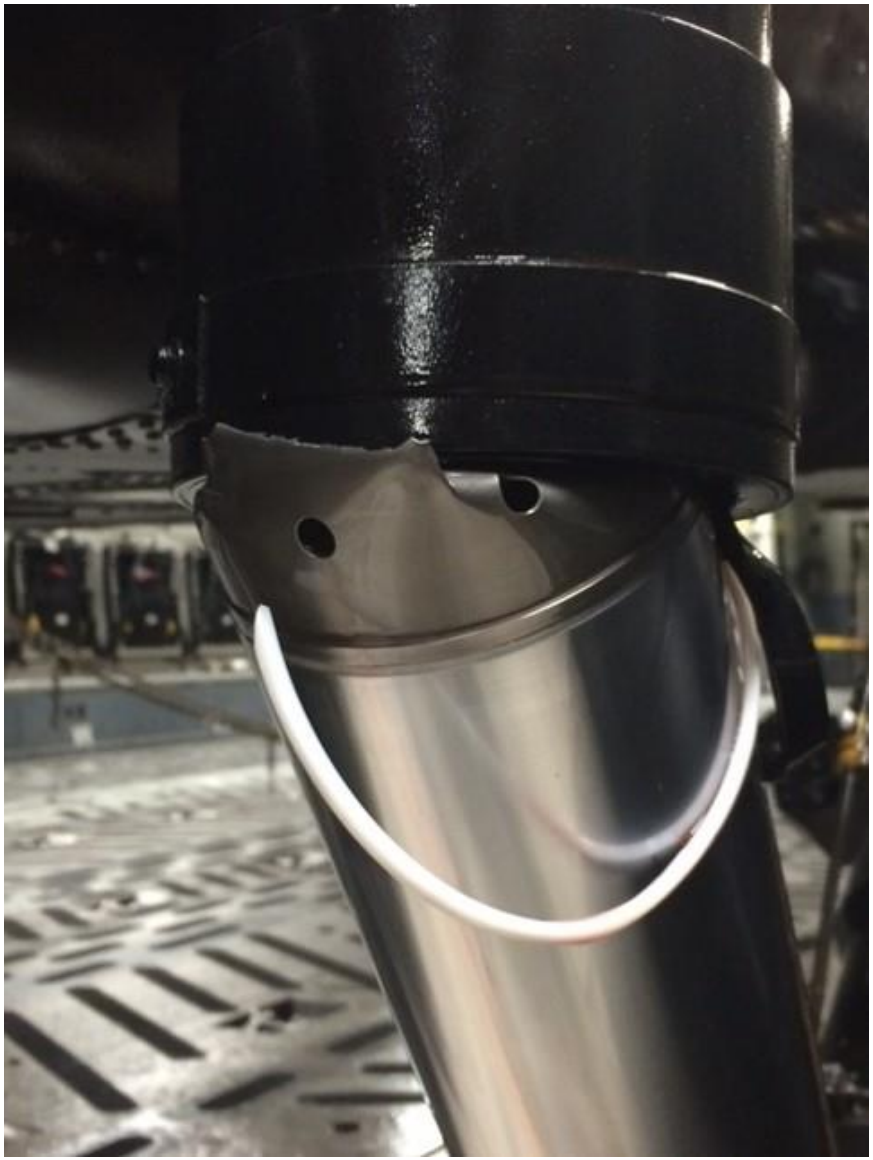

MAX. WEIGHT: 500 LBS

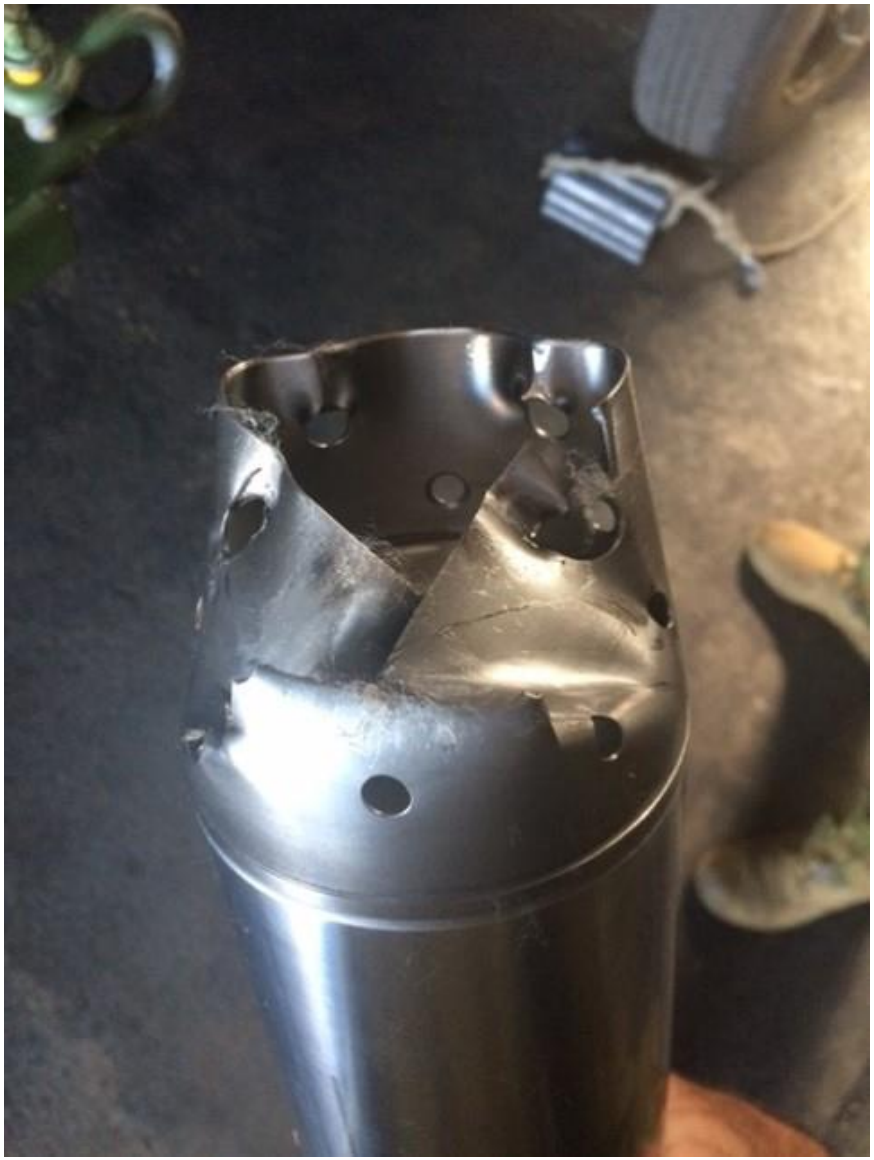


Incident

- **Final aircraft of 3 to be unloaded from C-17 on arrival in Richmond**
- **Active airfield**
- **Failure Incident**

Incident





Actions on Failure

- **Risk – to aircraft and personnel**
- **Support from 10 tonne aircraft jack to stabilise the aircraft**
- **First Aid rendered where required**
- **MLG strut replaced to facilitate unload**

Investigation

- **Desktop investigation at AASPO**
- **Item Replacement due to Obsolescence**
- **OEM recommended replacement**
- **OEM documentation**

Introduction into Service

- **OEM initiated**
- **AASPO utilised Engineering process rather than Logistic process**
- **Financial constraints**
- **Operating Unit conducted IIS Testing via checklist**

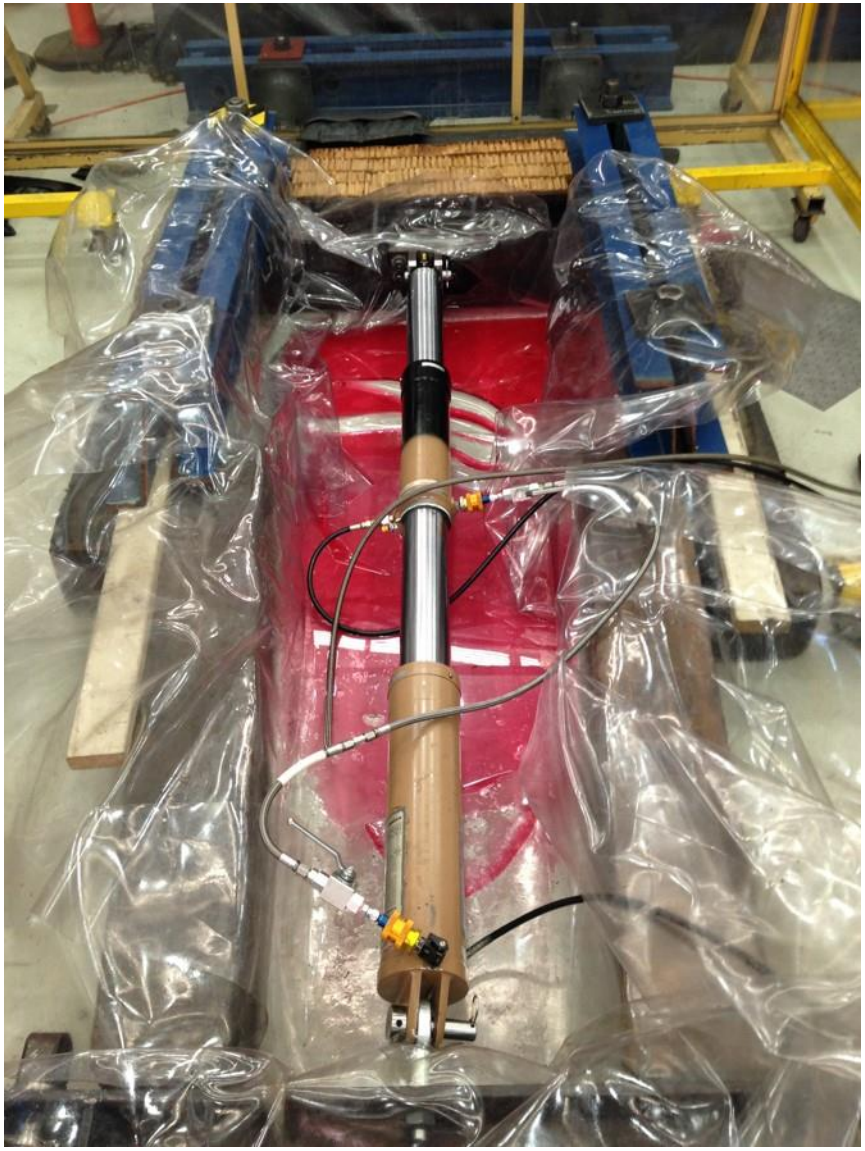
Process Failures

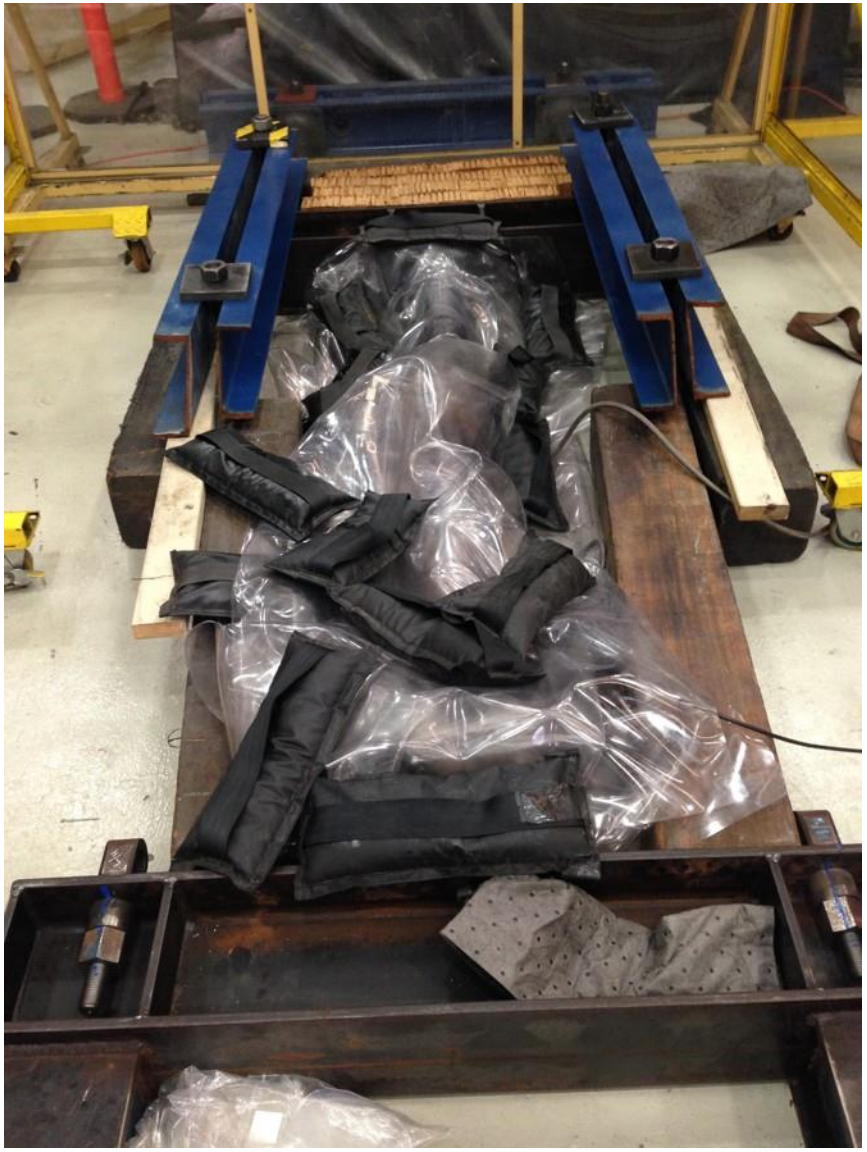
- Hose Fittings
- Pre-Use requirements
- Bleeding
- Father-Son processes
- Active airfield impact
- Performance metrics

Further Investigation

- **DSTG Forensic investigation**

Further Investigation

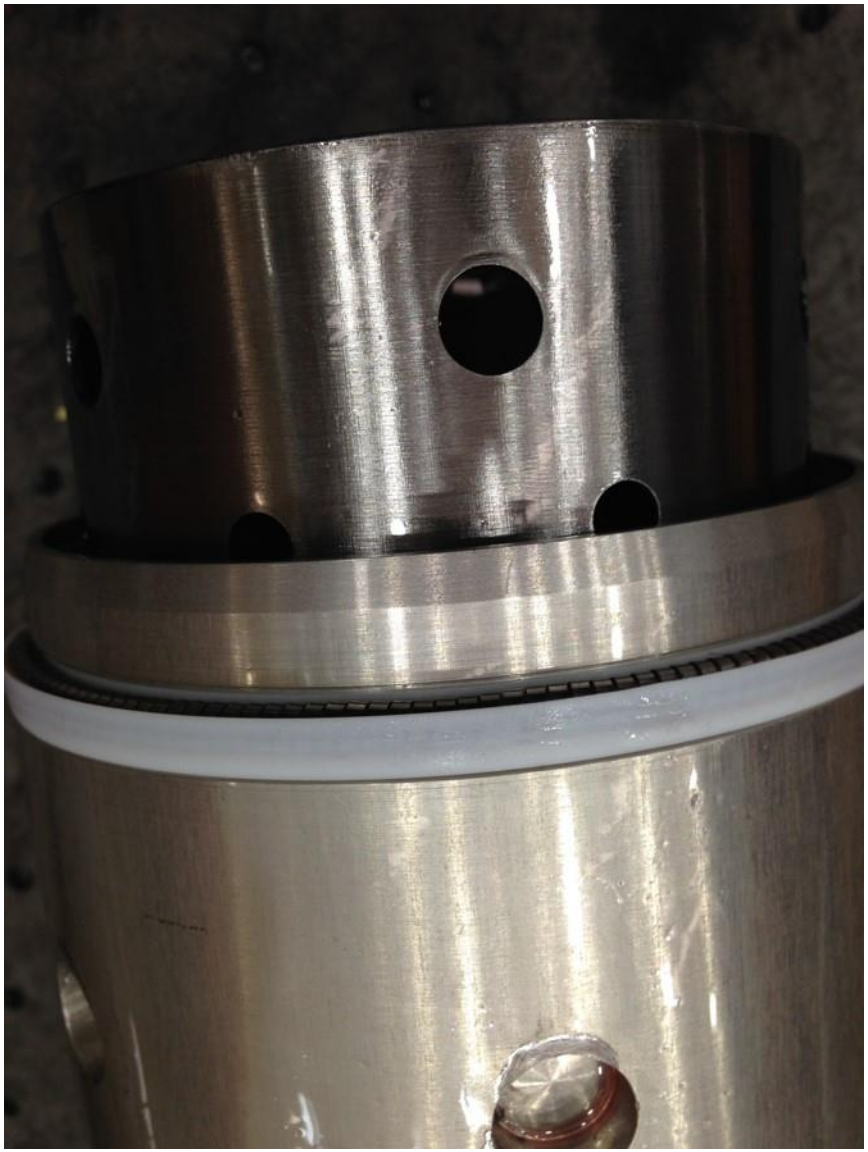


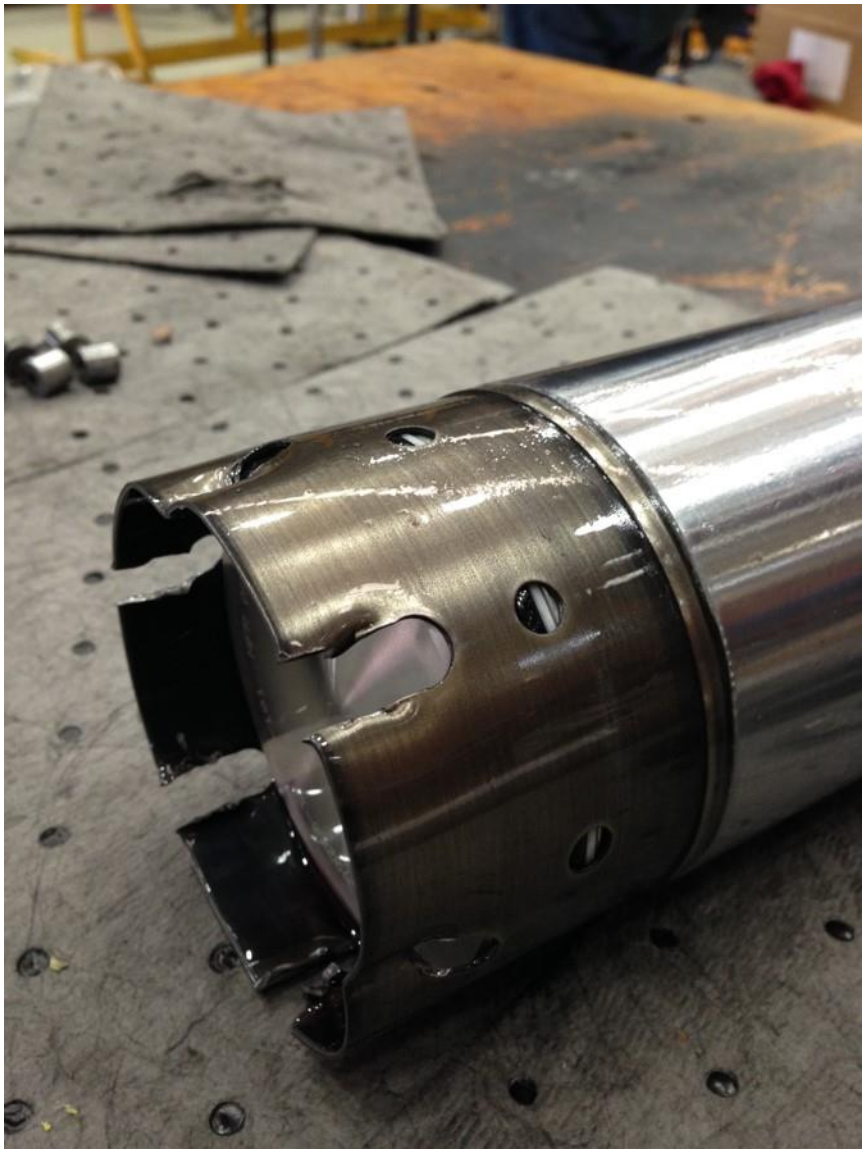


Further Investigation

- **DSTG Forensic investigation**
- **Confidence gained in fleet state**
- **Failure mode confirmed**

Further Investigation





Further Investigation

- **DSTG Forensic investigation**
- **Confidence gained in fleet state**
- **Failure mode**
- **Trial loads with revised processes**

Good Luck not Good Management

- **Multiple strat lifts conducted previously with new rig**
- **Confirmation of in service rig pressure settings**
- **Bleeding**

Lessons Learned

- **Deeper initial analysis required**
- **Detailed form, fit and functions consideration**
- **Existing processes**
- **Revised processes**
- **Communication**

Lessons Learned

- **Logistic processes in place**
- **Detailed planning including budgeting requirements**
- **SPO controlled process and testing**
- **“So What?”**
- **“What If?”**

Questions?