



## Anderson Group of Companies

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# Technical Bulletin

### **INCIDENT:**

I received a report by Phil Gearside at about 5 p.m. on the 7<sup>th</sup> of March, 2006 that an Allied plant grader, number 703 was involved with an incident at Ulan Coal on Saturday the 4<sup>th</sup> of March, 2006 where an operator was injured by the movement of the grader while doing some inspections to diagnose the cause of the air leak on the service brake valve.

I was informed by Phil that Ulan Coal through Paul Austin wanted a representative of Anderson Group of Companies to come to the mine site and investigate the following.

1. Replace the service brake valve as it had a major air leak
2. Investigate and check to confirm the safety circuit is as it is on the approval drawings.
3. Function test the machine that included the service brake operation as well as the park brake and report on findings.
4. Confirm the machine is functioning as designed.

**NOTE:- The machine design is that the braking circuit has two independent braking systems.**

### **CIRCUMSTANCES:**

#### **Events of the checks during the visit at Ulan on the 8<sup>th</sup> of March, 2006.**

1. Surface induction carried out by Ulan Coal.
2. Removed the leaking service brake valve. This was performed under my supervision by a Night Shift fitter called Peter Scott.
3. Installed brand new service brake valve.
4. Tested machine for any faults after the new valve was installed. No problems encountered. The tests included normal driving and operation of the service brake, drive through test in first gear at maximum flight revs and using service brake only. No movement of the machine was encountered. Park brake tests were also performed and no movement was observed in first gear and maximum flight revolutions.
5. Shut engine down, isolated and tagged machine and checked all grader pneumatic schematic circuit hosing to confirm approval drawings. No errors were noticed here. Assisted by Dean Endicott and Matt.
6. Machine was once again fully tested under full operating range to confirm the operation of the park brake and the service brake. The machine was performing as designed where there was no movements of the vehicle when brakes were applied both by using the service brake and also the park brake in first gear.

## **INVESTIGATION:**

1. After the replacement of the service brake valve there was no indication at any stage that the machine pneumatic schematic circuit or the condition of the braking system was at fault.
2. It was noticed though that the service brake valve was contaminated by sediment and dust. It appears as the system has had water contamination over a period of time causing the service brake valve to be contaminated. This in turn indicated that there was an internal by pass through the valve dumping the air out of the service brake air system.
3. There were also indications of internal corrosion to the air supply hoses and fittings to the service brake valve.

## **Conclusion**

In my opinion the cause of the incident was not associated with the design or the incorrect assembly of the braking system on the Grader 120G.

The machine was tested and passed all the criteria once the service brake valve was changed.

The service brake valve had a fault and an “Out of Service Tag” should have been placed on the machine until a competent person who has the skills and knowledge to repair the equipment diagnosed the fault and replaced the failed component.

Machine was left with an “Out of Service Tag” until Ulan Coal was satisfied with the findings.

## **RECOMMENDATIONS:**

1. Replace service park brake valve. (Completed)
2. Replace delivery hoses and fittings to the service brake valve at next service or ASAP.
3. Recommend to install water separator and lubricator to the air supply system to remove some of the incoming moisture and lubricate the system. This is recommended on other machines if moisture is an issue.
4. Maintain the water separator and lubricator on a regular basis.
5. All future 120G machines to have water separator/lubricator fitted as standard items.

Thankyou

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10<sup>th</sup> of March, 2006

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