

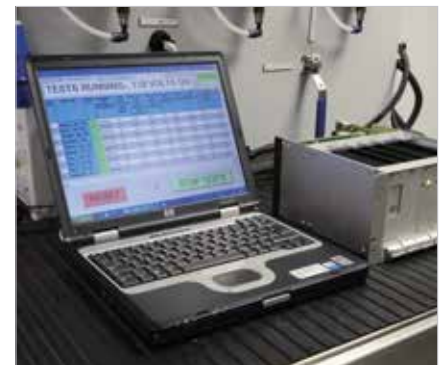


MASS TRANSIT – REPAIR, REFURBISH AND RE-MANUFACTURE

Working with the rail industry leaders, ASL has a breadth of knowledge of rolling stock that is unique within the market sector. Each customer has distinct requirements covering materials supply, repair, re-conditioning and re-manufacture. ASL responds to each customer with an integrated range of services which corresponds with individual customer requirements.

INTEGRATED SUPPORT

From product supply to supply chain management issues, ASL excels in the approach and 'no nonsense' methods of key integrated support, aiming to improve the operational fitness of its customers to meet the public's needs and requirements. The Team at ASL has previously met challenges to re-manufacture brake control systems, wheel slide protection and the power control of train management systems. ASL offers a clear **safety case-free** solution at a fraction of the OEM cost. With key dedicated support ASL will reduce TAC and downtime and will identify and remove any obsolescence materials issues.



FUTURE-PROOF YOUR STOCK

Whether through obsolescence or supply chain restructuring, the fact remains that spare circuits and LRUs will become depleted. A single component or PCB card can stop an entire system operating and force massive untimely investment in new replacement systems.

At ASL, its expertise is in the provision of a re-furbish and re-manufacturing service to avoid this scenario.

ASL SPARES INVENTORY

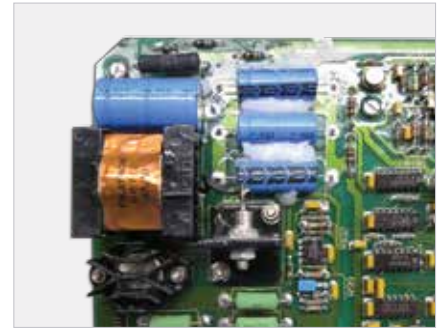
- / Over 250,000 lines in stock
- / 15 million individual components
- / Quality assured (lot traceability)
- / Access to many millions more
- / Spare parts stock has been established at ASL for more than 35 years

REFURBISHMENT

Any electronic circuit will degrade over time as components age, connectors wear, solder joints are subjected to the stresses of their operational environment, and power supplies fail. This aging process can cause unreliable, intermittent and often repeat failures on circuit boards and LRUs.

By undertaking a pro-active analysis of the assembly or PCB, ASL can demonstrate compelling results that identify degraded circuit performance. The refurbishment process identifies potential component failures that will result in a failed assembly. During this process ASL will develop a plan to remove high potential failures and obsolescent risk. Solder joints are re-worked and any worn components will be replaced. This effective method reduces and eliminates PCB failure, this means that the life of the circuit is extended and the reliability improved.

Working from an existing circuit/system, ASL will provide risk-free refurbishment option increasing the life, reliability and warranty of equipment. This process will identify the next problematic area and remove the risk of failure and reduce high value inventory.



RE-MANUFACTURE

When the OEM has restructured or skill fade has created a less than supportive OEM, ASL will provide the support to replicate any PCB or System LRU. The depletion of available spares is a key driver to business reliability.

DOCUMENT / TEST CAPABILITY

- / Circuit electronic schematics, double sided and Multi-layer PCBs are created from little or no information
- / Physical layout is re-created to ensure retro fitment to existing platforms
- / Electronic Bill of Materials (BoM) is created with manufacturer, generic part number and future obsolescence details
- / Bespoke Functional test developed and manufactured to validate PCB / LRU operation

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I was immediately impressed by the ASL approach. ASL quickly understood the technical requirements of the brief and left me confident that they could deliver the solution we required. The quality of repairs and turnaround times were very impressive, we were suffering an attrition rate of up to two modules failures per month, this has reduced to a maximum of two modules per year. ASL team has consistently exceeded our expectations on this project. Turnaround times were cut from 14 weeks to 3 weeks and some low stock items are returned fully functioning within 4 working days. Lack of information has been no obstacle and circuits are maintained successfully. Reliability has been improved by re-manufacture of old circuits and systems.



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