Technical Note TN-683

TOPB200 Battery Cell Rattle Solution and implementation

20th August, 2001

Applicability

This Technical Note only applies to the Tait Orca range of TOPB200 battery types. (this includes TOPB201, TOPB202, TOPB2U0, TOPB2V0, TOPB2Z0 and TOPB2Z1 packs)

1. Information:

Background

During a recent investigations into the performance of the Tait Orca battery packs it was discovered that the TOPB200 type of battery packs were susceptible to the cells becoming lose in the battery pack. The 'cell rattle' only occurred when the pack was subjected to physical abuse in excess of the MIL STD 810-drop test spec. The 'cell rattle' was deemed to be the main cause of internal broken welds and damaged NTC components.

TEL made a decision to research and implement a mechanical solution that would hold the cells more securely in the battery pack and therefore preventing the 'cell rattle' problem.

NOTE: The changes outlined in this document took place on TOPB200 type batteries from serial number **15157011**. The first job to be built with the new mods was Job No. **155070.** The date code on these radios will be **H01** (for August 2001)

Tait Electronics Limited
PO Box 1645, Christchurch, New Zealand
Telephone: +64–3–358–3399
Facsimile: +64–3–358–3903

2. Modification:

The Solution

Note: *These modifications can only be made in the factory to new battery packs. Existing battery packs* ***can not*** *be modified.*

The following steps are now used in the production of the TOPB200 battery pack:

- A foam insert (23mm x 40mm) is placed into the back cover of the battery pack (Diagram 1 below).
- Four special pre-made straps are welded over several of the welds already placed on the battery cells by the cell manufacturer. (Diagram 2 below)
- Once the welding is completed, a Mylar card (which is the full length of a completed cell) is placed on the battery cell and stuck there with double-sided adhesive. (Diagram 3).
- The battery pack is then ultra-sonically welded together as normal

CSO's

Please inform all logistics, sales and technical staff of these changes.

Diagram 1:

Diagram 2:

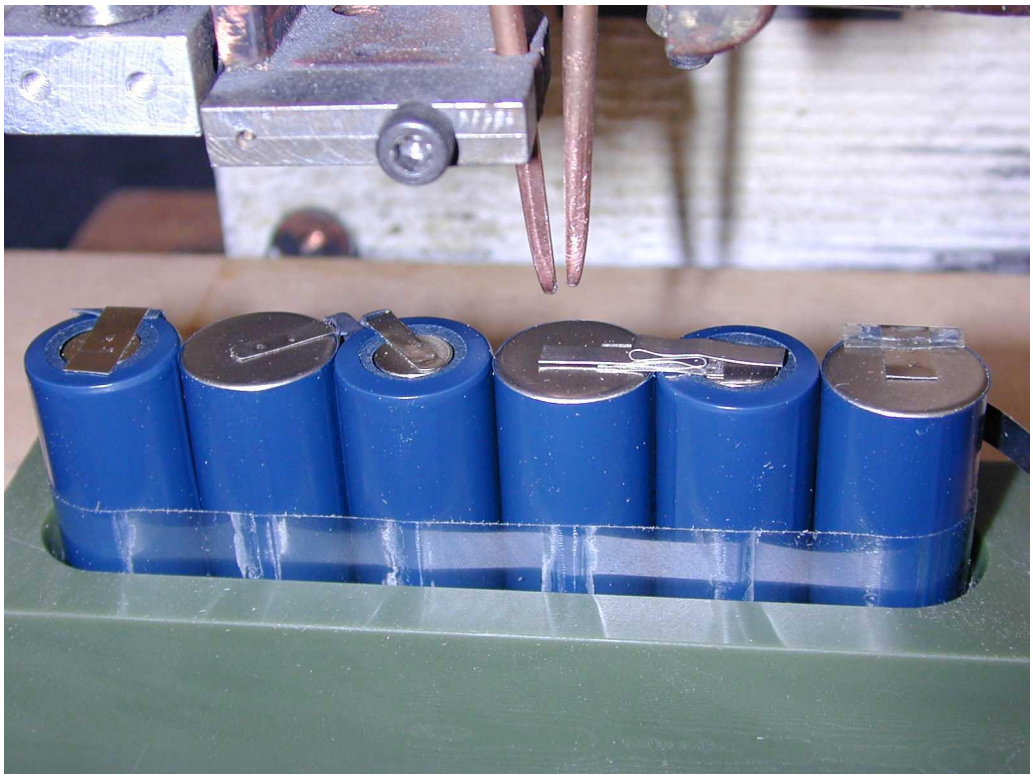
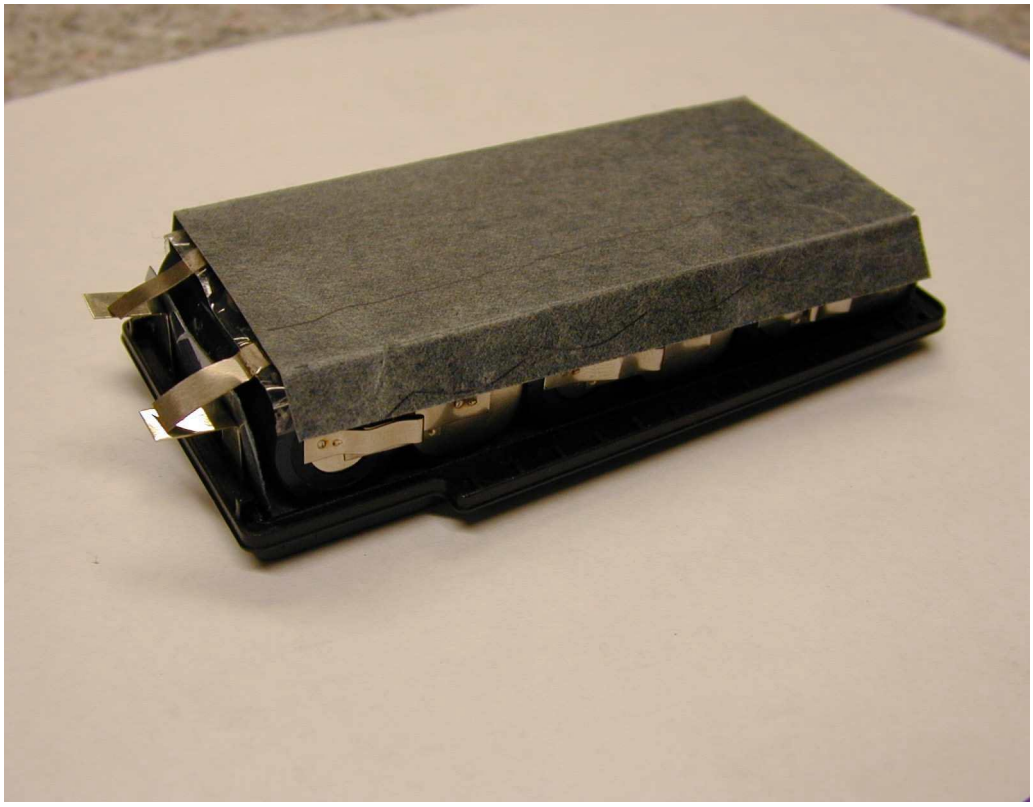


Diagram 3:



4. Issuing authority

Name and position of issuing officer Barry Crates
Senior Customer Support Engineer