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## Technical Note TN-563

# Developmental Summary of Tait Orca Battery Fit

17 March 1999

### Applicability:

This Technical Note applies to all models of the Tait Orca series, except where specifically stated. Serial number ranges are listed against the appropriate versions of product.

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### Introduction:

This Technical Note summarizes the developmental history associated with the Tait Orca Chassis and Battery construction, along the pathway to the best degree of Battery-Radio fit. All relevant improvement actions are noted against each revision.

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## 1. Chassis:

**1a) IPN: 303-11194-00      Radio s/n range: 14000000 - 14002000**

### History:

The slot for the Battery catch was not properly specified, leading to parts having a maximum clip height of 11.90, causing some Batteries to fall off radios. Supplier and stock sorting lead to use of parts greater than 11.90, and those below this figure to be scrapped.

**1b) IPN: 303-11194-01      Radio s/n range: 14002001 - 14007800**

### History:

Parts machined to new spec of 12.1+/-0.05, ensuring Battery would always engage, but emphasized Battery rattle by allowing Radio to sit further off the Chassis.

**1c) IPN: 303-11194-02      Radio s/n range: 14007801 - onwards**

### History:

Dovetailed to go with new dovetail in the rear panel. This improved Radio sealing and fit, but removed pressure on the Battery, so that it immediately felt looser.

## 2. Battery Base:

**2a) IPN: 303-03046-00      Battery s/n range: 15000000 - 15003300**

**History:**                      These parts made the loosest fitting Batteries, having the most side to side and up/down rattle. Early Ultrasonic welding processes also contributed to the possibility that Batteries would not clip home properly. A test chassis was constructed to test Batteries against, to ensure resultant production process tolerances were checked.

**2b) IPN: 303-03046-01      Battery s/n range: 15003301 - 15015970**

**History:**                      Four pairs of side ribs and pads added to base. A perceived positive improvement received from users, but Batteries still having noticeable movement, especially with the 02 Chassis.

**2c) IPN: 303-03046-02      Battery s/n range: 15015971 - onwards**

**History:**                      Two pairs of top ribs added, as well as increase to side ribs. Better alignment at bottom of Radio, and making for tightest fit so far, representing the best that can be achieved to date.

## 3. Battery Catch:

**3a) IPN: 303-30071-00      Battery s/n range: 15000000 - 15008200**

**History:**                      Use of 30% Glass reinforced Nylon. Passed Mil spec, but attracted comments about being too easy to use, and the potential danger of accidental Battery dislodgment.

**3b) IPN: 303-30071-01      Battery s/n range: 15008201 - 15016417**

**History:**                      Use of 50% Glass reinforced Nylon, due to comments about actuation force and breakage of original catch. Twice as stiff to operate and exceeds MIL spec. Tendency for Battery dislodgment was reduced

**3c) IPN: 303-30071-02      Battery s/n range: 15016418 - onwards**

**History:**                      Small modifications to catch face and underside rear, brought the Battery catch to the limit of what can be achieved in catch design.

## 4. Conclusions

<b>Best fit now:</b>	The best fit (present production items) are: 02 Chassis; 02 Battery Base and 02 Battery Catch.
<b>Compatibility:</b>	The present Battery will fit on all Radios with the 02 Chassis, most radios with the 01 Chassis, but unlikely to fit on the 00 Chassis. Oldest Batteries (prior to 15003984) will be very loose on new (14007797 onwards) Radios. New Radios should therefore have new version Batteries.
<b>Retrofitting of Catches:</b>	For Radio with the 00 Chassis, new Batteries can be fitted with the 01 version catch, if it is found that the Battery does not catch on the Radio properly.

## 5. Issuing authority

<b>Name and position of issuing officer</b>	Durham Sheriff MRD Customer Services Engineer.
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