DC IPT

Technical Specification for CAP, SERVICE Royal Marines

Defence Clothing

Integrated Project Team

PROPERTY OF :-
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Defence Equipment & Support

MINISTRY OF DEFENCE

PREFACE

TABLE 1 – PRODUCT LIST

Item Name	CAP, SERVICE Royal Marines
Nato Stock Number (NSN)	8405-99-571-3461 to 3474
Pattern No(s)	22150
Development File No	NN/41/042/14
Product Support File No.	NV/452/061

Any colour shown in this document is for representation and must not be used for colour matching.

IPR STATEMENT

Technical documents in this specification refer to the edition current at the date of tender or contract unless otherwise stated.

TABLE 2 – ISSUE RECORD

Issue No	Comments	Issue Date
8	Reformatted to DE&S template. Related Specifications & Documents (Table 3) updated. Clause 4.2 amended. Scarlet banding material pattern changed from; Pattern 8849B to Pattern 8851B.	31 January 2008
7	Clause 5.8 Amended	21 April 2006
6	Clause 5.8 Chinstraps and Buttons – addition for use of split pin buttons. Clause 4.5 Interlining Bevel – Reverted back to previous specifications to include use of flexible polyurethane foam.	10 March 2004
5	Reformatted Specifications & Documents Updated	06 August 2003

PART 1

1. THE PRODUCT

a. Use of the Product. A peaked cap with a scarlet band and white crown for wear by Royal Marines. The size schedule provides for fourteen sizes.

FIGURE 1.

Patt 22150

Patt 22150

TABLE 3 -– RELATED SPECIFICATIONS AND DOCUMENTS

Specification/Document	Detail
BS EN ISO 105 Part X12	Textiles. Tests for colourfastness Colour Fastness To Rubbing
BS EN 12590	Textiles. Industrial sewing threads wholly or partly made from synthetic fibres
BS EN ISO 139: 2005	Textiles. Standard atmospheres for conditioning and testing
BS 2780	Glossary of leather terms
BS 3870 Parts 1 and 2	Stitches and seams
BS 4560	Fabrics for lining in uniform clothing
UK/SC/3907	Buttons, anodised aluminium gold and silver
UK/SC/4164	Cloth, coated, PVC on cotton, white
UK/SC/4776	Cloth, buckram, jute
UK/SC/5516	Cloths, wool, uniform dress
UK/SC/5628	Cloth velvet cotton and silk WR
UK/SC/5696	Leather, sheep, head leathers
UK/SC/6153	Cloths, Woollen & Cloths Wool Worsted

2. PATTERNS.

a. Master Patterns. The DC IPT at Caversfield holds a Master Pattern for this product. Potential contractors may view the pattern on site by arrangement with the DC IPT Commercial Department.

a. Standard Patterns. A Standard Pattern may be obtained from the DC IPT Technical Information Office and may be used to provide the criteria for all materials, components and manufacturing features not fully defined in this specification.

PART 2

3. PRODUCT DESIGN

a. A peaked cap with a scarlet band and white PVC crown. The size schedule provides for fourteen sizes.

TABLE 4 – PRODUCT COMPONENTS

4.1 Crown tip, Bevel and Crown Piping	• Cloth, coated PVC on cotton, White No.2. Pattern No.8180B, Specification UK/SC/4164, NATO Stock No.8305-99-122-2621
4.2 Band	• Cloth, woollen, Doeskin Faced Scarlet. Pattern No.8851B to UK/SC/6153, NATO Stock No.8305-99-869-5326
4.3 Lower band	• Cloth, uniform, wool, Navy, Pattern No.8849U to UK/SC/5516,
4.4 Crown and Bevel lining	• Cloth, twill viscose, or plain weave polyester or plain weave, viscose. • All linings to be grey or black to meet the colour fastness requirements for perspiration, Table 4 Ref: 1.4 of BS 4560
4.5 Interlining Bevel	• Wadding white as on standard pattern, or • PVC white laminated to flexible polyurethane foam, 3mm thick.
4.6 Crown disc	• Cellulose acetate sheet, colourless, 0.1mm thick, • Or, Sheeting, 0.1mm to 0.13mm.
4.7 Headleather	• Leather, sheep, basil at least 1.0mm and no more than 1.3mm thick, to UK/SC/5696. The term basil is defined in BS 2780. • Or an alternative approved by the DC IPT.
4.8 Bow for headleather	• Braid, white 13mm ± 1mm
4.9 Band stiffener	• Cloth, buckram, jute, laminated 2 ply, impregnated buckram to comply with the buckling and flexibility tests specified in specification UK/SC/4776, or • Glued hessian plain weave 1000g/m², or • High density polyethylene sheet, 1.0mm thickness ± 0.1mm, either solid or perforated, or • Air expanded plastic, 1.2mm thickness, or • High density polypropylene sheet, 1.0mm thickness ± 0.1mm, either solid or perforated

TABLE 4 – PRODUCT COMPONENTS CONTINUED

4.10 Peak	• Flexible PVC, Black/beige laminate, with black side polished and beige side flock sprayed, approximately 1.0mm thick, laminated to flexible vulcanised fibre or flexible fibreboard, or • Two-part laminate, poly cotton, impregnated with polyurethane with black patent finish, approximately 1.0mm thick, laminated to polypropylene/polyethylene, surface finish leather grain, colour to be bottle green, approximately 1.5mm thick • Total thickness of peaks to be no less than 2.5mm and no more than 2.8mm, to comply with the requirements of Table 8
4.11 Lining for peak (Except for two part Laminate)	• Embossed cotton backed plastic. Skiver green or imitation skiver green, the term skiver is defined in BS 2780 and to conform to Table 9
4.12 Binding for peak	• PVC, black, 0.6mm thick.
4.13 Binding stiffener at Peak	• Cloth, velveteen, fawn or black, to comply with the colour fastness requirements for perspiration, Table 2, of UK/SC/5628
4.14 Wire for crown	• Steel, galvanised, flat section 5mm wide 25 SWG with steel or brass connecting tube. • All metal to be rust proofed
4.15 Front support	• Sprung steel support with brass tip • Or an alternative approved by the DC IPT
4.16 Chin strap	• PVC, black, 10mm wide, & 510mm long. At least 1.0mm but not more than 1.3mm thick with buckles
4.17 Buttons	• Button, anodised aluminium, RM 23 ligne, NSN 8455-99-869-2206 Pattern No 28077 to UK/SC/3907
4.18 For all purposes	• Thread, corespun polyester/cotton, to BS EN 12590 • Metric Ticket No.26 for peak to stiffener • Metric Ticket No.36 for bevel, band, sewing in crown, back and front finishing, lining and all hand sewing • Metric Ticket No.75 for all other sewing

TABLE 5 – PRODUCT CONSTRUCTION

5.1 Crown	• The crown tip, oval in shape, is to comply with the measurements set out in Table 7 • The measurements are to be taken from the crown tip piping seam. • The perimeter of the crown tip is to have a piped edge joined in line with the back seam of the bevel quarters.
5.2 Bevel	• The bevel is to be quartered with the seams opened and pressed flat. • Wadding is to be graded in thickness from front to rear to reproduce the desired roll and secured in place.
5.3 Band	• The band is to be constructed in two parts. The lower portion is to be 0.6cm wide. The upper portion, 4.4cm wide. The seam is to be at the centre back of the cap in line with the seam of the bevel.
5.4 Band stiffener	• The stiffener is to be cut sufficiently long to allow a 2cm overlap where it is joined at the back of the cap slightly offset to reduce the thickness. • The stiffener is to be stitched to the outer material by the edge stitching of the upper band.
5.5 Lining	• The crown lining is to be sewn in with the crown tip piping seam and be securely attached at the bottom edge of the stiffener by hand or machine stitching or securely glued with a suitable adhesive • The lining is to be cut deep enough to allow the side and back bevel to roll without distortion. • A detachable transparent disc, sufficient to cover the crown tip, is to be inserted on top of the crown lining.
5.6 Peak	• The peak, black side uppermost, chamfer edged on the brow line and lined on the underside. • The outer edge is to be bound with black PVC, 0.6cm deep when finished. • When fitted the peak is to be correctly balanced and central to the front seam of the bevel quarters. • The peak may be fitted to the band stiffener by sewing the inner edge of the peak to either the inner or outer edge of the stiffener. • The seam allowance from seam to inner peak edge is not to be less than 0.3cm and not more than 0.5cm. • When fitting the peak to the outer edge of the stiffener, the bottom edge of the stiffener is to be bound with velveteen. • When fitting the peak to the inner edge of the stiffener, a strip of velveteen, depth 2.5cm is to be sewn to the head leather prior to attaching the head leather to the cap, extending the length of the peak.

TABLE 5 – PRODUCT CONSTRUCTION CONTINUED

5.7 Headleather	• Each cap is to have a brachered headleather, the ends of which are to be overlapped 1cm at the centre back of the cap and tacked together at the top edge through a white braid bow. • The taping on the headleather may be sewn to the band by hand or machine, but in neither case is the leather to show below the bottom edge of the band.
5.8 Chinstrap and buttons	• A button is to be sewn on or pushed through with a split pin each side of the cap, to retain the chinstrap, positioned 0.6cm from the bottom edge of the band just above the seam between the scarlet and blue bands, and 2cm behind the junction of the peak.
5.9 Crown wire	• A cap wire with a connecting tube is to be fitted on the inside of the cap above the piping of the crown.
5.10 Front support	• The front metal support is to be fitted with a good quality leather tab rivetted and turned over at the top of the support. • The front support is not to protrude above the bevel/piping seam. • The tab is to be securely sewn on the inside of the piping of the crown to lie immediately behind the front bevel seam. • The bottom of the support is to be housed in a 2.5cm square pocket of good quality leather or buckram sewn to the centre front of the band stiffener.
5.11 Seams and stitching to BS 3870	• Machine stitching is to be stitch type 301, with at least eight but not more than ten stitches per 2cm. • The piping is to be formed using seam type 1.12.01. • The brachering on the headleather is to be stitch type 304 with at least six stitches per 2cm. • The felling on the headleather is to have at least six stitches per 2cm.
5.12 General	• Sewing threads may be treated with stain free lubricants. • All seams are to be free from pucker. • The cap is to be free from all ends of sewing thread, be blocked and pressed and delivered in a clean condition.

TABLE 6 – SCHEDULE OF NATO STOCK NUMBERS AND ACTUAL BODY MEASUREMENTS

NATO Stock Number 8405-99-571-	3461	3462	3463	3464	3465	3466	3467	3468	3469	3470	3471	3472	3473	3474
Size and internal circumference	49	50	51	52	53	54	55	56	57	58	59	60	61	62

TABLE 7 – MEASUREMENTS AND TOLERANCES

All measurement are in cms unless otherwise stated

Size and internal circumference	49	50	51	52	53	54	55	56	57	58	59	60	61	62	Tolerances (mm)	
Crown Length	25.8	26.1	26.4	26.7	27	27.3	27.6	27.9	28.2	28.5	28.8	29.1	29.4	29.7	2	2
Width	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.7	27	27.3	27.6	27.9	28.2	28.5	2	2
Crown All Sizes	1.2 Oval															
BEVEL																
at centre front	5.7														2	2
at centre back	graduating to 5														2	2
Band width	5														2	2
PEAK																
deep at centre front	5.5														1	1
from point to point	24.5														5	5
Head Leather depth	4														2	2
Stiffener depth	5.5														2	2
Front Support Length	7.6														2	2
Width	1.2														2	2
Chinstrap Width	1														1	1
Length when fully extended	51														10	10

TABLE 8 – TEST FOR THE DELAMINATION OF PEAKS

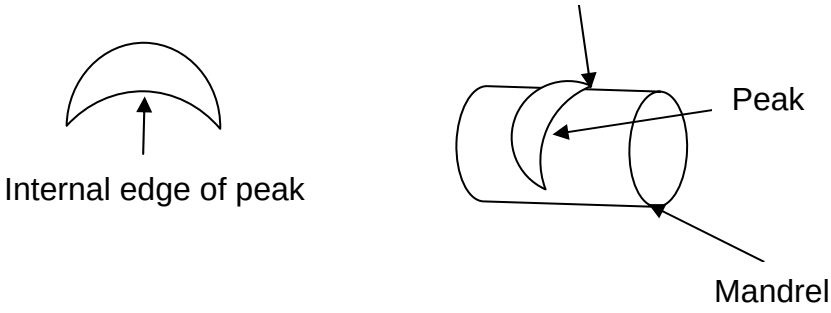
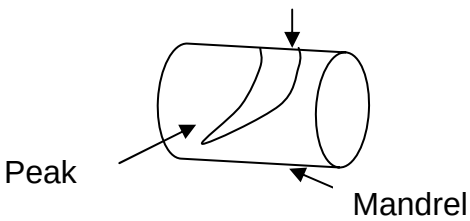
8.1 Test Procedure	• Four cap peaks (detached from caps) are to be taken from batches of up to 500 and conditioned for 24 hours in the standard atmosphere defined in BS EN ISO 139:2005. • Two peaks are to be placed in an environmental chamber at 70± 2°C and 95 - 100% relative humidity for 6 hours ± 15 minutes. After removal, the peaks are to be examined for delamination of the black PVC and the (green) skiver, delamination of either peak is to render the batch rejected. Any degree of distortion is to be such that it will not affect the subsequent fitting of the peak to a cap; severe distortion of either peak is to render the batch rejected. • Two peaks are to be placed in a freezer at – 20 ± 2°C for 2½ hours ± 5 minutes. Immediately after removal, each peak is to be subjected to the following two tests using a mandrel of diameter 150± 1mm
8.2 Edge test	Edge of peak to mandrel  • Use the minimum of force required to bend the internal edge of the peak around the mandrel, ensuring free contact with the circumference of the mandrel. Repeat with the other side up. Examine both sides of the peak for fractures or cracks; any such damage on either peak is to render the batch rejected.
8.3 Flat test	Flat edge to mandrel  • Use the minimum force required to bend the face of the peak around the mandrel, ensuring free contact with the circumference of the mandrel. Repeat with the other side up. Examine both sides of the peak for fractures and cracks: any such damage on either peak is to render the batch rejected.

TABLE 9 – TEST REQUIREMENTS.

The peak lining is to conform to the requirements of the following Table:

Agency	Rating for colour change	Method of Test
Rubbing wet	4	BS EN ISO 105 (X12)

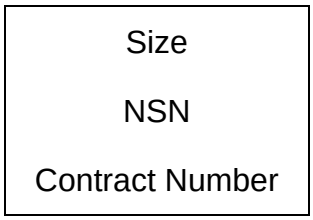
4. LABELLING The size number, NATO Stock Number and the contract number is to be either:

- Clearly marked on a label to be sewn to the centre of the crown lining.

Or

- Clearly printed on a pressure sensitive self adhesive label to be adhered to the crown lining.
- The identification label is to be covered by the crown disc, including pressure sensitive self adhesive labels.

FIGURE 2. Identification and marking label



- The size number is to be 1.2cm high and the remainder of the characters 0.6cm high.