

**Technical Specification for
CAP, SERVICE
RMP (Stiff Top)**



Defence Clothing
Integrated Project Team

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PREFACETABLE 1 – PRODUCT LIST

Item Name	CAP, SERVICE RMP (Stiff Top)	
Development File No.	D/DCTA/P2659 (ST)	
Product Support File No.	D/DCTA/452/029 (QPS)	
NATO Stock Number	Pattern Number	
8405-99-130-6663 to 6675	22841	

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TABLE 2 – ISSUE RECORD

Issue No.	Comments	Issue Date
4	Reformatted specs and doc updated	27 August 2003
3		12 October 2001

PART 1

1. THE PRODUCT

- a. Use of the Product. A stiff topped peaked cap for wear by the RMP.

FIGURE 1.

Patt 22841



Patt 22841



ABLE 3 – RELATED SPECIFICATIONS AND DOCUMENTS

Specification/Document	Detail
BS EN ISO 105 Part X12	Textiles – Tests for colour fastness. Colour Fastness To Rubbing.
BS EN 12590	Textiles Industrial sewing threads made wholly or partly from synthetic fibre.
BS EN 20139	Textiles – Standard Atmosphere for conditioning and testing.
BS 2780	Glossary of leather terms.
BS 3870 Part 1 and 2	Stitches and seams.
BS 4060	Pressed wool felts.
BS 4560	Fabrics for linings in uniform clothing
UK/SC/3907	Buttons, anodised aluminium, gold and silver.
UK/SC/4776	Cloth, buckram, jute.
UK/SC/5516	Cloths wool uniform dress.
UK/SC/5628	Cloths velvet cotton and silk WR.
UK/SC/5696	Leather, sheep, headleathers.

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.
- b. 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 23. PRODUCT DESIGN

- a. Product Description. A PVC Peaked cap design and shape of the cap is to be in accordance with that of the Standard Pattern. The schedule provides for twelve sizes and special measure.

TABLE 4 – PRODUCT COMPONENTS

4.1 Crown tip, bevel and crown tip piping	<ul style="list-style-type: none"> Cloth, uniform, wool, scarlet Pattern No. 8849B to UK/SC/5516 NATO Stock No. 8305-99-869-4373.
4.2 Band	<ul style="list-style-type: none"> Cloth, uniform wool, Navy Pattern No. 8849U, to UK/SC/5516.
4.3 Crown tip and bevel lining	<ul style="list-style-type: none"> Cloth, twill viscose, 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.
4.4 Crown disc	<ul style="list-style-type: none"> Cellulose acetate sheet, colourless, 0.1mm thick.
4.5 Interlining crown tip, bevel and crown tip piping	<ul style="list-style-type: none"> Cloth, compressed felt, wool, white, natural, unstoved, Pattern No. 8056A, to BS 4060 NATO Stock No. 8305-99-942-7158. Or an alternative approved by the DC IPT.
4.6 Headleather and pocket for front support	<ul style="list-style-type: none"> Basil, natural, at least 1.0mm but not more than 1.3mm thick, to comply with the requirements of UK/SC/5696. Or an imitation leather of poromeric quality. Or an alternative approved by the DC IPT.
4.7 Bow for headleather	<ul style="list-style-type: none"> Braid, white 13mm. +/- 1mm.

TABLE 4 – PRODUCT COMPONENTS Continued

4.8 Band stiffener (Listed in order of preference)	<ul style="list-style-type: none"> • 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, 1000 g/m². • Or high density polyethylene sheet, 1.0mm thickness ± 0.10mm, 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.
4.9 Peak	<ul style="list-style-type: none"> • 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 fabric 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 7.
4.10 Lining for peak	<ul style="list-style-type: none"> • Skiver green, to comply with the colour fastness requirements of Table 9 or imitation Skiver green, embossed, cotton backed plastic. The term Skiver is defined in BS 2780. • Or an alternative approved by the DC IPT.
4.11 Binding for peak	<ul style="list-style-type: none"> • PVC, black, 0.6mm thick.
4.12 Chinstrap	<ul style="list-style-type: none"> • PVC, black, 490mm long by 10mm wide, at least 1.0mm but not more than 1.3mm thick, with buckles.
4.13 Chinstrap buttons	<ul style="list-style-type: none"> • Button, insignia, RMP, anodised aluminium, gold, 14mm (22 ligne), to Specification UK/SC/3907 NATO Stock No. 8455-99-973-0333.
4.14 Binding stiffener at peak	<ul style="list-style-type: none"> • Cloth velvet fawn or black to comply with the colourfastness requirements for perspiration Table 2 of UK/SC/5628.

TABLE 4 – PRODUCT COMPONENTS Continued

4.15 Wire for crown	<ul style="list-style-type: none"> Steel, galvanised, flat section 5mm wide 25 SWG, steel or brass connecting tube, all metals are to be rustproofed.
4.16 Front support	<ul style="list-style-type: none"> Spring steel support with brass tip.
4.17 Badge holder	<ul style="list-style-type: none"> Brass, as on Standard Pattern or an alternative approved by the DC IPT.
4.18 Sewing Threads	<ul style="list-style-type: none"> Thread, corespun polyester /cotton, to BS EN 12590. <ul style="list-style-type: none"> a. Metric Ticket No. 25 (26).Peak to stiffener. b. Metric Ticket No. 36 (35).Bevel, band, sewing in crown, back and front finishing, lining and all hand sewing. c. Metric Ticket No. 75 for all other purposes.

TABLE 5 – PRODUCT CONSTRUCTION

5.1 Crown tip	<ul style="list-style-type: none"> The crown tip, oval in shape, is to comply with the measurements set out in Table 6. The measurements are to be taken from the crown tip-piping seam. The crown tip and piping are to be securely combined to white felt with a suitable adhesive to form a waterproof barrier and the laminate produced is to comply with the requirements set out in Table 8. The bond is to be continuous to ensure that the outer material is free from blisters. 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	<ul style="list-style-type: none"> The bevel, combined to white felt as specified in para 5.1 above, is to be quartered with the seams opened and pressed flat.
5.3 Band	<ul style="list-style-type: none"> The band is to be joined at the centre back of the cap in line with the seam of the bevel. The band is to have a stitched out welt, 0.6cm from the bottom edge, formed using seam type 6.05.01 of BS 3870.
5.4 Band stiffener	<ul style="list-style-type: none"> 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 through the outer material immediately below the stitched out welt, and basted through the outer material at the band/bevel seam.

TABLE 5 – PRODUCT CONSTRUCTION Continued

5.5 Lining	<ul style="list-style-type: none"> • 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. The lining may be securely glued with a suitable adhesive or stitched by hand or machine. • 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	<ul style="list-style-type: none"> • The peak, black side uppermost, chamfer edged on the brow line and lined on the underside, is to be identical in shape to that of the Standard Pattern. • 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. • The peak is to be securely sewn on to the stiffener with approximately four stitches per 2cms.
5.7 Headleather	<ul style="list-style-type: none"> • 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 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.

TABLE 5 – PRODUCT CONSTRUCTION Continued

5.8 Chinstrap and buttons	<ul style="list-style-type: none"> • A button is to be sewn on each side of the cap to retain the chinstrap, positioned 1cm from the bottom edge of the band and in line with the side seam of the bevel.
5.9 Crown wire	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 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 sewn to the centre front of the band stiffener. • The front support is not to protrude above the bevel/piping seam.
5.11 Badge holder	<ul style="list-style-type: none"> • The badge holder is to be fitted vertically between the band and the stiffener at the centre front of the cap, with the socket next to the band and the projection at the top of the holder protruding on the outside 0.5cm above the band/bevel seam. • The holder is to be securely sewn, through the holes in the sides, to the stiffener. The opening, made in the band/bevel seam, to accommodate the shank of the badge, is to be securely tacked at each side of the badge holder.
5.12 Seams and stitching to BS 3870	<ul style="list-style-type: none"> • 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.
5.13 General	<ul style="list-style-type: none"> • 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 – MEASUREMENTS AND TOLERANCES

All measurements are in centimetres except where other wise stated

															Tols(mm)		
NATO Stock Nos.		8405-99-130-	6663	6664	6665	6666	6667	6668	6669	6670	6671	6672	6673	6674	6675	+	-
Size & internal circumference			51	52	53	54	55	56	57	58	59	60	61	62	Special Measure		
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		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		2	2
Crown		All sizes oval 1.2															
Bevel depth	At back and sides	5.5													2	2	
	At front	6.5													2	2	
Band width		5													2	2	
Peak	Depth at centre front	4.5													1	1	
	Length from point to point	22													5	5	
Headleather depth		4													2	2	
Stiffener depth		6													2	2	
Front support	Length	8													2	2	
	Width	1.2													2	2	
Chinstrap	Width	1													-	-	
	Length when fully extended	49													10	10	

TABLE 7 – TEST FOR THE DELAMINATION OF PEAKS

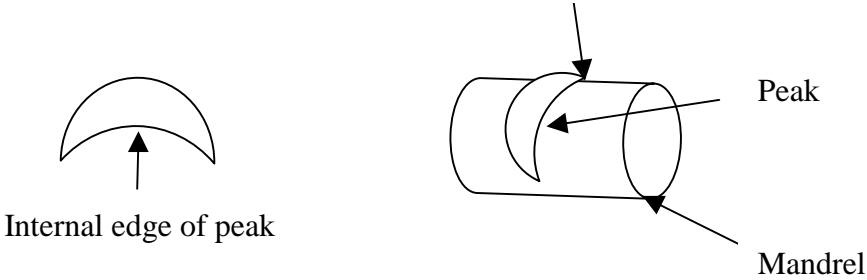
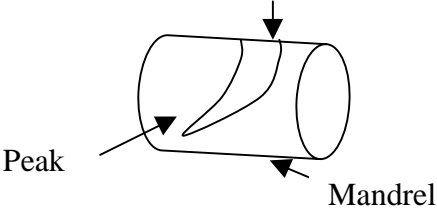
7.1 Test procedure	<ul style="list-style-type: none"> Four cap peaks (detached from caps) are to be taken from batches of up to 500 and conditioned for 24 hours in the standard atmosphere defined in BS EN 20139. Two peaks are to be placed in an environmental chamber at $70 \pm 2^\circ\text{C}$ and 95 - 100% relative humidity for 6 hours \pm 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 $-20 \pm 2^\circ\text{C}$ for 2½ hours \pm 5 minutes. Immediately after removal, each peak is to be subjected to the following two tests using a mandrel of diameter $150 \pm 1\text{mm}$.
7.2 Edge test	<p style="text-align: center;">Edge of peak to mandrel</p>  <ul style="list-style-type: none"> 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.
7.3 Flat test	<p style="text-align: center;">Flat edge to mandrel</p>  <ul style="list-style-type: none"> 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 or cracks; any such damage on either peak is to render the batch rejected.

TABLE 8 – METHOD OF TEST. To Determine Fabric/foam Laminate Bond Strength.
The minimum bond strength of the laminated fabric is to be 1.25N/25mm when determined by the following method:

8.1 Sample preparation	<ul style="list-style-type: none"> • Specimens which have been conditioned for 24 hours in the standard testing atmosphere defined in BS EN 20139 are to be cut 200mm x 25mm with at least two samples being cut with the 200mm dimension in the warp and weft direction respectively.
8.2 Procedure	<ul style="list-style-type: none"> • The conditioned samples are to be delaminated by hand for 100mm. The tails are to be clamped in the jaws of a CRE tensile testing machine. The sample is then to be peeled apart with a jaw separation of 100mm/min for a 50mm length of sample.
8.3 Calculation and expression of results	<ul style="list-style-type: none"> • The maximum value of peel bond strength is to be recorded for each sample that peels for 50mm without the foam breaking. If the foam does break during delamination this fact is to be noted and the value at break recorded. • The mean value of two results for samples, which delaminate for 50mm without the foam breaking, is to be calculated in the warp and weft direction respectively.

TABLE 9 – TEST REQUIREMENTS.

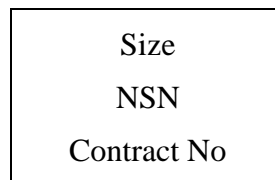
- The peak lining is to conform to the requirements of the following table:

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

4. LABELLING REQUIREMENTS Information and format is to be as follows:

- For stock sizes: NATO Stock Number, size and the contract number.
- For special measure: NATO Stock Number, size of wearer and the contract number.
- Position: Clearly marked on a label attached at the centre of the crown lining. Or
- Clearly printed on a pressure sensitive self-adhesive label.
- The identification label is to be covered by the crown disc including pressure sensitive, self adhesive labels.

FIGURE 2 – SPECIMEN LABELS



- The size number is to be 12mm high and the remainder of the characters 6mm high.