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Technical Specification for CAP, SERVICE, NO. 1 DRESS, RAF Female Officers, WO's, Air Ranks, Group Captains and Ceremonial Band RAF

Defence Clothing

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PREFACE

TABLE 1 - PRODUCT LIST

Item Name	CAP, SERVICE, RAF, Various						
Development File No	D/DCTA/P1749 (ST) & D/DCTA/P2285T (ST)						
Product Support File No.	D/DCTA/452/064 (QPS) & D/DCTA/526/01 (QPS)						
Nato Stock Number (NSN)	Description Pattern						
8410-99-130-7375 to 7386	CAP, SERVICE No.1 Dress, RAF Officers Female	35/R/1973					
8410-99-130-7617 to 7628	CAP, SERVICE No.1 Dress, RAF WO's Female	35/R/2014A					
8410-99-978-8978 to 8989	CAP, SERVICE No.1 Dress, RAF Officers Air Ranks Female	35/R/2205A					
8410-99-978-8990 to 9001	CAP, SERVICE No.1 Dress, RAF Officers Group Captain Female	35/R/2204A					
8410-99-869-1888 to 1899	CAP, SERVICE No.1 Dress, RAF Ceremonial Band RAF	35/R/2256					

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TABLE 2 – ISSUE RECORD

Issue No	Comments	Issue Date
5	Reformatted to DE&S template. Updated specs & docs.	05 November 2008
4	Up issue of pattern number for new masters and addition of how to attached fabric to peak. New badge for WOs	04 May 2005
3	Reformatted, related specifications and documents addressed. Addition of the RAF Female Ceremonial Band Cap. UK/SC/5371 Iss 1 dated 4th Nov 94 has been superseded by this specification	04 August 2003
2	Reformatted without technical change.	03 November 1997

PART 1

1. THE PRODUCT

- a. <u>Use of the Product.</u> Five peaked caps of the same design but with different peaks, for wear by RAF female officers.
- Pattern No.35/R/1973 bears a cloth covered peak and is worn with an embroidered badge for wear by RAF Officers up to the rank of Wing Commander as No.1 Dress.
- Pattern No.35/R/2014A bears a cloth covered peak and is worn with an anodised aluminium badge for wear by RAF Warrant Officers as No.1 Dress.
- Pattern No.35/R/2205A bears a black PVC peak embellished with two rows of gold embroidered oak leaves for wear by RAF Air Ranks.
- Pattern No.35/R/2204A bears a black PVC peak embellished with one row of gold embroidered oak leaves for wear by RAF Group Captains.
- Pattern No 35/R/2256 bears a black PVC peak embellished with one row of gold braid for wear by the RAF Ceremonial Band
- The size schedule provides for eleven sizes and special measure.

FIGURE 1









TABLE 3 – RELATED SPECIFICATIONS AND DOCUMENTS

Specification/Document	Detail
BS EN ISO 105	Textiles. Tests for Colour Fastness.
Part X12	Colour Fastness To Rubbing
BS EN ISO 139	Textiles - Standard Atmosphere for conditioning and testing.
BS EN ISO 845	Celluar plastics and rubbers. Determination of apparent (bulk) density.
BS EN 12590	Textiles. Industrial Sewing Threads made wholly or partly from Synthetic Fibres.
BS 2780	Glossary of leather terms.
BS 3412	Methods of Specifying General Purpose Polyethylene Materials for Moulding and Extrusion.
BS 3870 Parts 1 and 2	Stitches and seams
BS 4560	Fabrics for linings in uniform clothing
BS 5139	Method of Specifying General Purpose Polypropylene and Propylene Copolymer Materials for Moulding and Extrusion
UK/SC/3907	Buttons, anodised aluminium, gold and silver
UK/SC/4687	Embroidered and other distinguishing items and the components used therein
UK/SC/4776	Cloth, buckram, jute
UK/SC/4885	Cloths, barathea worsted, blue-grey
UK/SC/4906	Peak, cap, RAF male and female embellished
UK/SC/5146	Braid, cord, lace, metallised polyester, gold, silver
UK/SC/5628	Cloth Velvet Cotton & Silk WR.
SATRA Test Method TM408 (modified) Jan 1985 TM 25 Jun 1989	Adhesion of finish of upper materials Upper materials flexing machine

2. PATTERNS.

- a. <u>Master Patterns</u>. 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. <u>Standard Patterns</u> . 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.

3. PRODUCT DESIGN

a. <u>Product Description</u>. A peaked cap with shaped band, bevel and crown formed by seaming and blocking.

TABLE 4 – PRODUCT COMPONENTS

4.1 Main material for crown tip, bevel, band for all caps. Covering, and Lining for peaks of Pattern Nos.35/R/1973 and 35/R/2014A	Cloth, barathea, worsted, blue/grey, Pattern No.8373A, to Specification UK/SC/4885 NATO Stock No.8305-99-942-5419
4.2 Additional band	Braid, textile, black, worsted, 44mm wide, Pattern No.9337A to Specification UK/SC/4687, NATO Stock No.8315-99-973-0787
4.3 Lining	Cloth, plain weave, polyester, dark blue, Pattern No.8721C, to BS 4560, NATO Stock No.8305-99-769-6222
	or, an alternative approved by the DC IPT.
4.4 Interlining crown tip, bevel and band	Expanded polyurethane, not less 3mm not more than 5mm thick, having cells of uniform size and conforming to the requirements of Table 9.
4.5 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, 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 to BS 5139 Thickness ± 0.10mm, either solid or perforated.
4.6 Peak stiffener for	Flexible vulcanised fibre, approximately 2mm thick
Pattern No.35/R/1973	or, Polypropylene sheet designated BS 5139: 1991,
Pattern No.35/R/2014A	PP-H, E, N
	 or Polypropylene C,006 according to BS 5139, thickness approximately 2mm.
	or an alternative approved by the DC IPT.

TABLE 4 – PRODUCT COMPONENTS CONTINUED

4.7 Peak stiffener	Flexible vulcanised fibre, approximately 2mm thick,
Pattern No.35/R/2205A	 or, Flexible fibreboard, 1.75mm thick ± 0.10mm
Pattern No.35/R/2204A	or an alternative approved by DC IPT
Pattern No.35/R/2256	
4.8 Peak covering for	See main material at clause 4.1
Pattern Nos.35/R/1973	
and 35/R/2014A	
4.9 Peak covering for	Flexible PVC, black/beige laminate, with black side
Pattern Nos.35/R/2205A	polished and beige side flock sprayed to peak stiffener approx 1mm thick
35/R/2204A and 35/R/2256	Suiterier approx Tillin trick
4.10 Peak Air Rank	 Peak, cap, RAF embellished Male and Female, Pattern No.35/R/1999 to Specification UK/SC/4906, NATO Stock No.8410-99-132-0623
	The embellishment is to be stitched through the black PVC material on the peak.
4.11 Peak Group Captain	Peak, cap, RAF embellished Male and Female, Pattern No.35/R/2000 to Specification UK/SC/4906, NATO Stock No.8410-99-132-0624
	The embellishment is to be stitched through the black PVC material on the peak.
4.12 Peak Ceremonial Band	Embellished Braid gold 6mm Pattern No 9517A to comply with the requirements of Specification UK/SC 5146 NATO Stock No 8315-99-130-8323.
	The finished peak is to comply with the requirements of Table 11.
4.13 Lining, PVC peaks	Skiver green as defined in BS 2780 or an alternative approved by the DC IPT To comply with the requirements of Table 8.
4.14 Binding, PVC peaks	PVC, black, 0.6mm thick
4.15 Binding stiffener at peak	 Cloth, velveteen, cotton, fawn or black to comply with the physical and colour fastness requirements of UK/SC/5628 Table 1 and 2,
4.16 Chinstrap	PVC, black, 10mm wide, by 480mm long at least
Pattern No 35/R/2256	1.0mm but not more than 1.3mm thick, with buckles

TABLE 4 – PRODUCT COMPONENTS CONTINUED

4.17 Chinstrap Pattern Nos.35/R/1973	Leather cattlehide, chrome tanned, black patent finish, thickness 1.0 - 1.2mm, 10mm wide. No pool of free patent film when testing according.
35/R/2014A, 35/R/2205A and No.35/R/2204A	No peel of free patent film when testing according to SATRA test Method TM408 (modified).
	The flexing endurance of finish, minimum flexes to slight cracking is to be 500,000 dry and 50,000 wet, when tested according to SATRA test Method TM25
4.18 Chinstrap Buttons	Button, anodised aluminium RAF, 22 ligne (14mm) to comply with the requirements of Specification
Pattern Nos.35/R/2256	UK/SC/3907 NATO Stock No.8455-99-137-4438 Pattern No 35/R/1766A
4.19 Chinstrap buttons	Buttons, black, 18 ligne (13mm), flexible, cap,
Pattern Nos.35/R/1973	sewn-on or push through with split pin.
35/R/2014A, 35/R/2205A and 35/R/2204A	or an alternative approved by the DC IPT.
4.20 Interlining for band	Cloth, black, interlining
lining	or an alternative approved by the DC IPT.
4.21 Crown wire	Steel, galvanised, flat section, 3mm wide, 25 SWG with steel or brass connecting tube. All metals rust proofed
	or, An alternative approved by the DC IPT.
4.22 Front support	High density polyethylene designated BS 3412:1992, PE, E, N or C, 62-006
	or an alternative approved by the DC IPT.
4.23 Additional crown lining	Clear PVC sheeting 0.1mm thick.
4.24 Badge eyelets for WO's caps	Eyelets, brass, black, oval
4.25 Badge Officers and Group Captains caps	Badge, Organisation, RAF, Cap, embroidered, Officers below Air Rank, Pattern No.35/R/1977, NATO Stock No.8455-99-130-2851
4.26 Badge Air Ranks	Badge Organisation RAF Cap Officers Air Rank, Pattern No 35/R/1979, NATO Stock No 8455-99-130-2850
4.27 Badge WO's caps	Badge, Organisation, RAF Cap dead gilt and burnished, RAF Warrant Officers, Pattern No D00482. NATO Stock No.8455-99-385-8165

TABLE 4 – PRODUCT COMPONENTS CONTINUED

4.28 Threads for all purposes	Thread, polyester and cotton, continuous filament, polyester core, cotton sheath, to BS EN 12590
	a. Metric Ticket 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 sewing

TABLE 5 – PRODUCT CONSTRUCTION

5.1 Crown tip, bevel and band	To be combined to polyurethane foam. The foam is to be combined to the outer material with rubber solution and the laminate produced is to comply with the requirements set out in Table 10 The bond is to be continuous to ensure that the outer material is free from blisters.
	 The crown tip is to be cut in two pieces and be shaped to a point at the centre back. A wedge is to be cut and seamed out of the centre piece of the crown tip to produce the required shape. All seam are constructed using seam type 4.03.03 of BS 3870 with the stitching 0.2cm from the seam. The wedge seam, 11cm long on size 56 and proportionate on other sizes, is to extend from the centre back to the centre of the crown tip.
	The bevel, cut one-piece, is to be shaped to a point at the centre back to form the back part of the band. The bevel is to be joined at the centre back, as an extension of the crown tip wedge seam, using seam type 4.03.03 of BS 3870.
	 The cloth band, cut one-piece, is to be shaped at the sides and be seamed to the bevel, using seam type 4.03.03 of BS 3870.
5.2 Additional headband	A band of worsted braid, seamed at the centre back, is to be fitted to the outside of the band/bevel with the bottom edge 0.5cm above the bottom edge of the cap.
	The band is to be securely sewn to the cap at:
	a) the top of the centre backb) along the bottom edge between the centre back and the button position
5.3 Band stiffener	The stiffener, is to be securely overlapped where it is joined at the centre back, and stitched to the outer material at the top and bottom.

TABLE 5 – PRODUCT CONSTRUCTION CONTINUED

5.4 Lining	The crown lining is to be cut in two pieces - crown tip and bevel. The bottom of the bevel lining is to be securely tacked at the base of the band.
	The additional crown lining PVC sheeting is to be attached to the crown tip lining.
5.5 Headband	3.5cm deep, made from interlined lining joined at the centre back. The edges of the headband lining are to be turned in 1cm using seam type 6.02.01 with stitching 0.7 from the edge and securely sewn to the band at the bottom and to the bevel lining at the top.
5.6 Peak	Chamfer edged on the brow line.
	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, an additional strip of band stiffener approx. 2.5cms in depth and running the length of the peak is to be attached to the inner edge of the peak. The bottom edge of the stiffener is to be bound with velveteen.
	When fitted the peak is to be correctly balanced and central to the front of the cap.
	 For Pattern No. 35/R/2205A, 35/R/2204A and 35/R/2256 the outer edge of the peak is to be bound with black PVC, 6mm deep.
	Air Ranks and Group Captains peaks are to be embellished to comply with the requirements of Specification UK/SC/4906
	Ceremonial Band Peaks. Black side uppermost. A row of gold braid is to be sewn to the peak adjacent to the PVC binding.
	Officers and Warrant Officers peaks are to be cloth covered as the standard pattern. The seam is not to show on the upper side of the peak.
5.7 Chinstrap buttons	A button is to be sewn on each side of the cap, to retain the chinstrap, positioned 1.5cm behind the junction of the peak on each side of the cap and 1cm from the bottom edge of the band.
5.8 Front support	To be securely attached to the band stiffener at the centre front of the cap.

TABLE 5 – PRODUCT CONSTRUCTION CONTINUED

5.9 Crown wire	 A cap wire with connecting tube is to be fitted in the crown, tacked in position at the centre back through the lining to the crown tip/bevel seam.
5.10 Badge, Cap Officers, Group	The badge is to be positioned with the centre in line with the centre of the cap.
Captains and Air Ranks.	The base of the surmounting crown and wing tips are to be in line with the band / bevel seam.
	Only the top of the badge is to be sewn to the bevel of the cap, as on the Standard Pattern
5.11 Eyelets and badge WO's cap	Two oval eyelets are to be securely clenched through the band and stiffener, positioned 3cm apart (1.5cm each side of the centre front of the cap) and 1cm above the band/bevel seam, all measurements from the centre of the eyelets.
	A WO's badge is to be securely fitted in the eyelets.
5.12 Seams and stitching to	Crown tip, bevel and band seams are to be seam type 4.03.03 with the top stitching 0.2cm from the seam.
BS 3870	 Machine stitching is to be stitch type 301, with at least eight but not more than ten stitches per 2cm, and is to be correctly tensioned.
	The peak is to be sewn to the stiffener with approx 4 stitches per 2 cms
5.13 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

Size & internal circumference		50	51	52	53	54	55	56	57	58	59	60	Special measure
Air Rank	8410-99-978 -	8978	8979	8980	8981	8982	8983	8984	8985	8986	8987	8988	8989
Group Captain		8990	8991	8992	8993	8994	8995	8996	8997	8998	8999	9000	9001
Officers	8410-99-130-	7375	7376	7377	7378	7379	7380	7381	7382	7383	7384	7385	7386
WO's	0110 00 100	7617	7618	7619	7620	7621	7622	7623	7624	7625	7626	7627	7628
Band	8410-99-869-	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899

TABLE 7 – MEASUREMENTS AND TOLERANCES

All measurements are in cm unle														ances ım)	
Size & internal circumference		50	51	52	53	54	55	56	57	58	59	60	S/M	+	-
Crown diameter	Length	20.2	20.	20.	21.1	21.4	21.7	22	22.3	22.6	22.9	23.2		2	2
			5	8											
	Width	18.2	18.	18.	19.1	19.4	19.7	20	20.3	20.6	20.9	21.2		2	2
			5	8											
Depth from crown tip/bevel se	am to bottom														
edge of cap														2	2
at centre front(including band)			10												
at centre back		7.5								2	2				
Depth of band	at centre front						4	4.5						2	2
Depth of stiffener	at centre front	5.5							2	2					
	at centre back	4								2	2				
Peak Pattern Nos 35/R/2204A	, 35/R/2205A											1	1		
	Depth at centre	5.4													
Length f	from point to point	27.2								5	5				
Peak Pattern Nos														1	1
35/R/2014A,35/R/1973,35/R/2256								5							
Depth at centre															
	from point to point		25								5	5			
Chinstrap Length when fully ex	xtended							48						2	2

TABLE 8 – 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)

The crown tip interlining is to conform with the requirements of the following table:

Agency	Rating for Colour Change	Method of test
Rubbing Wet	4	BS EN ISO 105 (X12)
Rubbing Dry	3	

TABLE 9 – ADDITIONAL REQUIREMENTS FOR EXPANDED POLYURETHANE

PROPERTY	REQUIREMENT	METHOD OF TEST
Apparent density kg/m ³	25-30	BS EN ISO 845

TABLE 10 – 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:		
10.1 Sample preparation	Specimens which have been conditioned for 24 hours in the standard testing atmosphere defined in BS EN ISO 139 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	
10.2 Procedure	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 the sample.	
10.3 Calculation and expression of results	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 11 – TEST FOR THE DELAMINATION OF PEAKS

11.1 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.
	 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.
11.2 Edge test	Edge of peak to mandrel
	Lage of peak to manarer
	Internal edge of peak
	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.
11.3 Flat test	Flat edge to mandrel
	Peak 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.

4. <u>LABELLING REQUIREMENTS.</u>

The size number, NATO Stock Number and the contract number, format and position are to be as follows:

- 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 additional crown lining, including pressure sensitive, self adhesive labels

TABLE 12 - SPECIMEN LABELS

Example Identification and marking label

Size NSN Contract No:

The size number is to be 1.2cm high and the remaining characters 6cm high.