Technical Specification for
HELMET WHITE ROYAL MARINES

Defence Clothing

Integrated Project Team

PROPERTY OF :-
DEFENCE CLOTHING
INTEGRATED PROJECT TEAM
DLO Caversfield
Skimmingdish Lane
Bicester
Oxon
OX27 8TS

PREFACE

TABLE 1 – PRODUCT LIST

Item Name	Helmet White Royal Marines
Development File No	
Product Support File No.	
Pattern No.	22451B
NATO Stock Numbers	8415-99-474-5915 to 5918

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

IPR STATEMENT

This specification contains information which is proprietary to the Secretary of State for Defence and shall remain the property of the Secretary of State. It is issued in strict confidence and must not be seen by any unauthorised person. The specification is supplied solely for the purpose of Information/Tender/Contract and shall not be copied or reproduced or used for any other purpose whatsoever without the express prior written permission of the Secretary of State as represented by the Intellectual property rights group.

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
03	Complete specification review due to change from a moulded polyether helmet to natural cork helmet.	21 March 2007

PART 1

1. THE PRODUCT

a. Use of the Product. A white helmet worn by the RM Marines

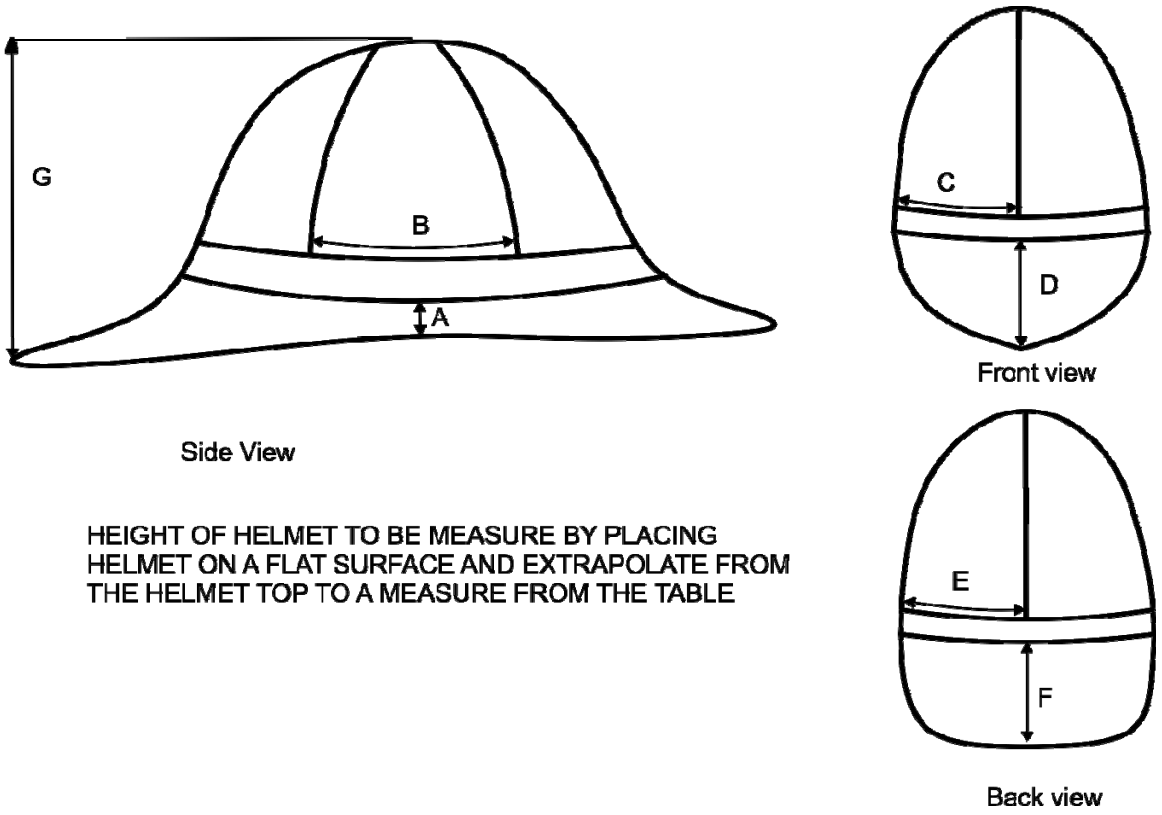


FIGURE 1. Helmet White Royal Marines

TABLE 3 - RELATED SPECIFICATIONS AND DOCUMENTS

Specification/Document	Detail
BS EN 12590	Industrial sewing threads made wholly or partly from synthetic fibres
BS 3870	Stitches and seams
Part 1	Classification and terminology of stitch types
Part 2	Classification and terminology of seam types
UK/SC/5696	Leather sheep headleathers
UK/SC/5900	Cloth cotton 3 x1 twill FS SF

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.

c. Paper Patterns. Paper Patterns to provide a guide to manufacture may be obtained from the DC IPT Technical Information Office.

PART 2

3. PRODUCT DESIGN

a. Product Description**.** A white cork helmet

TABLE 4 – PRODUCT COMPONENTS

4.1 Cork Natural	• Granulated cork 2.5mm to 3mm thick laminated to paper for stability
4.2 Cloth for outer cover, band and brim lining	• Cloth cotton 3 x 1 twill white to UK/SC/5900 Pattern No 8078A NATO Stock No 8305-99-136-7420
4.3 Cloth crown lining	• Cloth cotton 2 x2 twill cream 145gms/m²
4.4 Brim lining	• Cloth coated PVC on knitted cotton 525gms/m² in green to match standard pattern
4.5 Headleather	• Sheep natural at least 0.95mm thick but not more than 1.5mm thick to UK/SC/5696
4.6 Brow band	• Vulcanised fibre 1mm thick
4.7 Brow band covering	• Velvet
4.8 Brow band comforter	• Low density polyurethane foam 6mm thick
4.9 Drawstring	• Twine white cotton
4.10 Studs for attaching brow band	• High density polyethylene
4.11 Rivets for brow band	• Steel plated finish 3mm wide bifurcated
4.12 Curb chain hooks	• Brass length from attachment 4cm, bent at 45°, length from bend 1.2cm
4.13 Rivets for curb chain hooks	• Nickel plated 6.4mm wide tubular
4.14 Brow band adjusters	• Cattlehide chrome tanned 2mm thick
4.15 Glue bonding cork to cork	• Natural rubber smoked ribbed
4.16 Glue for bonding cork to cotton	• Natural rubber unsmoked

TABLE 4 – PRODUCT COMPONENTS CONTINUED

4.17 Ventilator	• Brass 3.5cm diameter with bored and threaded 14mm long central boss with washer • to accommodate the Ball Ornament Helmet RM, Nato Stock Number 8465-99-741-0709
4.18 For all purposes	• Thread corespun polyester/cotton to BS EN 12590. • Metric Ticket No. 75 for all sewing.

TABLE 5 – PRODUCT CONSTRUCTION

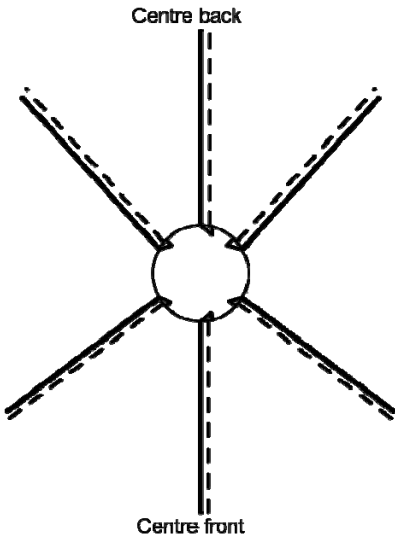
5.1 Crown lining and Brim Lining	• The crown lining is to cut in six panels and seamed using seam type 1.01.01 to BS 3870 Part 2. • Brim lining to be cut as one and attached to the crown lining using seam type 1.01.01 to BS 3870 Part 2 • This is then to be bonded to the inside of the cork inner.
5.2 Cork inner	• The inner is to be produced with two layers of granulated cork laminated to paper. • The component parts are to be bonded with two coats of rubber solution, without the junctions in the inner and outer layers coinciding. • The joints are to be chamfered to create a smooth join
5.3 Crown Covering  Top view of the crown to show the fold direction of each seam	• The outer covering is to be cut in six panels joined using seam type 2.02.01 to BS 3870 Part 2. • The depth of seam should be 5 +/- 1mm • The direction of the in-turn of the seams is to be as diagram • This cover is to be bonded to the cork inner under pressure • Each seam shall be additionally traced all the way down with a boning tool • The front seam should align correctly to the point of the front peak • The cover should be free from air bubbles and show no sign of delamination

TABLE 5 – PRODUCT CONSTRUCTION CONTINUED

5.4 Brim binding	• The brim is to be bound using seam type 3.05.01 to BS 3870 Part 2 • The join is to be overlapped on the right side of the helmet & pointing to the rear
5.5 Ventilator	• The ventilator and washer are to be clench through the centre of the crown as on the standard pattern
5.6 Curb chain hooks	• The hooks are to be riveted to the inside of the helmet, one on each side. • Opening to the outer brim • The hook should have a 12mm crank & positioned to create a gap of at least 3mm from the brim
5.7 Headleather	• The headleather is to be perforated/cut as on the standard pattern to facilitate the drawstring • Drawstring to be of sufficient length for a bow to be tied at back seam • To be joined at the centre back • The headleather shall lay flat & be tack glued to the brow band
5.8 Brow band	• The brow band is to be 3cm deep • The velvet is to be glued to the inside of the brow band • The brow band is to be securely joined at the side • A foam insert is to be glued to the inner front of the brow band • Four strips of leather 4.5cm long by 1.8cm wide are to be riveted to the brow band, spaced equidistantly around the band as on the standard pattern • The headleather is to be sewn to the brow band using seam type 2.01.02 to BS 3870 • Four stud loops are to be pierced through the crown 1.5cm above the crown/brim junction and then through the leather strips • To be held in place by 4 spring clips

TABLE 5 – PRODUCT CONSTRUCTION CONTINUED

5.8 Band	• A band constructed as on standard pattern • Topstitched at top and bottom • Joined at the centre back, so as to create a tight fit • Constructed in a way to give a smooth appearance
5.9 Stitching	• All stitching is to be stitch type 301 to BS 3870 Part 1 • Cover seams, internal lining, and band 8-10stitches per 2cm • Brim binding and headleather attachment 6-8 stitches per 2cm

TABLE 6 – SIZES AND NATO STOCK NUMBERS

NATO Stock Number	**Size**
8415-99-474-5915	Size 54 and 55
8415-99-474-5916	Size 56 and 57
8415-99-474-5917	Size 58, 59 and 60
8415-99-474-5918	Size 61 and 62

TABLE 7 – MEASUREMENTS AND TOLERANCES

	Helmet size	Internal circumference of headband with foam compressed	Brim depth at side from bottom of band	Side panel at top of band	Front panel at top of band	Front peak from bottom of band	Back panel at top of band	Back peak from bottom of band	Height
			A	**B**	**C**	**D**	**E**	**F**	**G**
Small block	Size 54	54	5	10.8	10.0	7	10.2	9	18
	Size 55	55							
Medium block	Size 56	56	5	11.5	10.2	7	10.5	9	18
	Size 57	57							
Large block	Size 58	58	4.5	11.5	10.6	7	10.9	9	18
	Size 59	59							
	Size 60	60							
Extra large block	Size 61	61	4.5	12	10.8	7	11.3	9	18
	Size 62	62							
Tolerances		±0.5	±0.2	±0.3	±0.3	±0.3	±0.3	±0.3	±0.5

All measurements in centimetres

The measurements B,C,E shall be from top stitch line to top stitch line in Figure 1.

4. LABELLING REQUIREMENTS.

TABLE 8 – SPECIMEN LABELS

Size
NSN
Contract No.

Figure 2. Example Identification and marking label