Her Majesty's Canadian Ship PROVIDER P.O. Box 99000 Stn Forces Halifax, NS B3K 5X5

6600-1 (AOR 508)

ZeFebruary 1997

Distribution List

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UNSATISFACTORY CONDITION REPORT OF SEA BOOTS

References: A. Letter to Cdr Maggio (N14) dated 12 Nov 96

B. Meeting on HMCS PROVIDER with Capt(N) Brooks (Deputy Director General DCIEM), Dr. Dick (DCIEM), LCdr Towns (N34-3), LCdr MacKinnon (FSMO), Lt(N) Young (MO), and WO Wood (PA HMCS HALIFAX) on 30 Jan 97

- 1. Due to numerous complaints regarding foot, knee and leg pain by the ship's company, a footwear survey was created by the medical staff of HMCS PROVIDER and distributed to all personnel. The letter at reference A outlined these findings to Cdr Maggio and resulted in involvement at the Command Surgeon level and DCIEM. The meeting at reference B reviewed the concerns with the sea boot design and the desire to investigate a suitable substitute or new design. The recommendation at the meeting was to produce a formal UCR to enable MARLANT and DCIEM to pursue the investigation and development of a new design of sea boot.
- 2. The table at Annex A shows that 72% of the 84% respondents have suffered from foot and leg pain they associate with the wearing of sea boots. This is divided into 48% currently experiencing pain with sea boots and 24% now wearing other forms of footwear to avoid the discomfort of sea boots. The crew spent an average of 13.39 hours per day on their feet while at sea. Annex B is a copy of the original questionnaire.
- 3. The most common complaints were that of arch and heel pain to the point of plantar fasciitis. Many complained about the lack of ankle support with associated ankle pain and about anterior knee pain and stiffness.
- 4. The use of alternative forms of footwear is a safety issue since most are neither designed nor approved for use at sea. The most common substitutions were ankle boots, Hull Tech boots, field combat boots and garrison boots.
- 5. It is obvious from the above results that the current sea boot design is unsatisfactory. The medical concerns are those of short term disability and personnel discomfort.

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- 6. As discussed at reference B, a formal Unsatisfactory Condition Report on form (A) CF 777A is submitted with this package in order to begin a more formacity strigation of this problem. Annex C lists the characteristics considered desirable in a new design of sea boot by this ship's company.
- 7. Your timely consideration of this important matter would be greatly appreciated. Please do not hesitate to contact my Medical Officer, Lieutenant (N) Ian Young, at local 2787 if you have any questions.

S.D. Andrews Captain (N)

Commanding Officer

List of Annexes:

Annex A - Results of Footwear Survey

Annex B - HMCS PROVIDER Footwear Survey

Annex C - Desirable Characteristics for a new Sea Boot

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Info

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National Defence Défense nationale

Maritime Forces Pacific Headquarters FMO Victoria BC VOS 180

MARP: 18400-1 (F1t Sp MO) 5250-1

27 June 1996

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APPROPRIATE FOOTWEAR AT SEA

- 1. During my service as BSurg CFB Shearwater 1988-90. I became aware that foot discomfort to outright pain was a significant dissatisfier for many men and women at sea, often preceding knee and/or back pain. After the past three years as Flt Sp MO, it has become increasingly obvious that the culprit is not simply a moving steel deck but more the inadequacy of the footwear.
- 2. The "sea boot" has no ankle support, no arch support and no cushioning. Walking at any time is, in effect, constant impact/trauma to the foot and axial skeleton, and walking fleet decks in sea boots provides no greater comfort than walking on steel with bare feet.
- 3. On the request of one of the coxswains, I signed a chit for issue of Hull Tech work boots, specifically for relief of foot pain. That trial was so successful, I have since issued approximately three more within four to five months. To put cost into perspective, custom orthotics to be placed inside sea boots would require \$190 per set (usually two sets per person), not including medical referral for specialist assessment.
- 4. Lt Crumbeck, hospital physiotherapist, sailed in HMCS ANNAPOLIS last year, completing an occupational health survey of the crew: 60% of respondents (200 crew members) complained of chronic foot pain. Lt Crumbeck himself wore the sea boots and found them very poor. To alleviate the discomfort, he put Anti-Shox Orthotics in the boots with marked improvement. These particular inserts reduce impact on the sole (1b/in2) by 40%. I asked for information from the company producing these inserts and have enclosed same. Lt Crumbeck felt each sailor should have two pairs and we, therefore, asked the company for a quote on a total of 4,000 pairs: the full-length sports orthotics would be \$21.30 per pair. Theoretically, we should be able to see a happier fleet for relatively little cost. Perhaps MARPAC would support a trial within one vessel.

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5. At a time of major change within any organization, small flems can make a big difference to an overall sense of well being. I submit that sore feet make for unhappy sailors and recommend that the fleet seek a replacement for the present sea boot.

Fleet Support Medical Officer for Commander

Enclosure: 1

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A TEX A

RESULTS OF FOOTWEAR SURVEY

Number of respondents = 219

Total number of ship's company as per sailing nominal role = 261

Percent response = 84%

TABLE: Results of Footwear Survey by Department

DESCRIPTION	ADM	AIR	CBT .	DECK	ENG	SUP	TOTAL
YES wear sea boots, YES complain of foot/leg pain	9	5	19	24	31	17	105 (48%)
NO do not wear sea boots because of discomfort	0	8	. 2	13	15	14	52 (24%)
NO do not wear sea boots because not issued	0	6	0	0	0	0	6 (3%)
YES wear sea boots, NO discomfort	2	13	12	-5	20	4	56 (25%)
Average number of hours per day spent on feet	11.55	12.96	13.70	15.62	13.59	12.91	13.39 hrs/day

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MEX B

HMCS PROVIDER FOOTWEAR SURVEY

Sick Bay requests that all members of the crew take a few minutes to complete the following anonymous survey. Circle appropriate answers and amplify where requested. Once completed, turn survey into your Departmental Supervisor or return directly to Sick Bay. All surveys to be completed and turned in by 10 Sep 96.

- I. DEPARTMENT: ADM AIR CBT DECK ENG SUP MOC:
- 2. DO YOU WEAR SEA BOOTS? YES NO

If answer NO, give reason:

Type of boot worn instead:

3. AVERAGE NUMBER OF HOURS PER DAY (24 hrs) SPENT ON FEET AT SEA:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

4. DO YOU SUFFER FROM FOOT/ANKLE/KNEE/HIP PAIN? YES NO

Describe briefly:

Do you feel this pain is associated with wearing sea boots? YES NO Explain:

ANNEX C

DESIRABLE CHARACTERISTICS FOR A NEW SEA BOOT

Arch Support

Ankle Support

Cushioned Insole

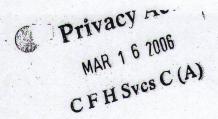
Waterproof

Durable Soles (to be able to withstand non-skid surface on the decks)

Warm for wear in cold weather but able to be worn in warm conditions comfortably

Toe Protection (re-evaluate need for steel toe as this adds significantly to boot weight)

Quick and easy to put on (to increase speed of response to Emergency Stations)



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MINUTE SHEET NOTE SERVICE DESIGNATION - DÉSIGNATION SECURITY CLASSIPICATION - COTE DE SÉCURITÉ UNCLAS

*RPO 009 /98

TD - D.T.

SUBJECT - SWET

Status of Clothing

DATED - DATES
10 Feb 98

REPERRED TO TRANSMISE A

REMARKS - REMARQUES (TO BE SIGNED IN FULL SHOWING APPOINTMENT, TELEPHONE NUMBER AND DATE) (ATTACHÉ DE SIGNATURE, FONCTION, NUMÉRO DE TÉLÉPHONE ET DATE)

ALL DCPO'S

Ref: A. FCPO MTG 5 Feb 98

- 1. The Formation Chief has requested our assistance in reviewing the status of clothing issued to Naval personnel and its performance.
- 2. In particular:
- a. The wear and tear
- b. Clothing considered to be unsat be it at sea or ashore
- c. Clothing considered unsafe
- d. Clothing that does not hold up well in foul wx; and
- e. Clothing after so many washes have to be repaired or replaced

These are examples of what we need to discuss.

- 3. To accomplish this, DCPO's in consultations with their personnel are to review Items marked "X" from attached annex A.
- 4. A meeting of all DCPO's will take place 1000 hrs Fri Feb 13 in the Marc St. Georges Conf Room to formulate a list of discrepancies to be forwarded to FCPO.

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SCPO

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CHANGAIL KON SHIRT Service Dress, White, LS CHIANSE, Trave rightministry, Blanche & mandres longuis COAT, Service Dress, Black TUNIQUE, Fenue réglementaire, Notre CAP Service Dreas, NCM
CAROUTTE, Tenue righernessaire, MR
ORVO
CAP, Service Oreas, Jenior Officer
CASQUETTE, Tenue rigiemeniaire, officier subaliena TAMBALON, Tenue de base, Hoir BENET, BLACK TROUSERS, Service Dress, White PANTALOX, Tenue réglementaire, Biano SAC de chapeau, Noir CRAVATE Noise SCANE BIACK FOULARD, NOW MAINCOAT BIACK OVERODAT, All-Weather, Black PARDESSUS, Toutes adisons, Koh BAG, Cap, Black CHAPEAU OTHER PANTALON, Tenue réglementaire, Not SHRUBE. Tenus de base. Bieve, à manches longres MOUSERS, Service Diess, Black DESCRIPTION OPVOU WESUPE SZE

SERVIETTE de buin, Glenche	SERVIETTE de man, Blanche	DRAWERS, Extreme Cold Weather CALEÇON LONG, Temps tole hold	UNDERSHIRTS, Externe Cold Wealther SOUS-VETEMENTS, Temps the fold	SAC, Molleton	HAT BADDE CHAPEAU	CEINTURE & sanger, Blanche	GEINTURE & sangle, Nobe	QLOVES, Listher, Black QANTS on suit, Nors	SOCIOS, White CHAUSSETTES, Blanches	SOCKS, BILLCY CHALLSSETTES, Nolling	CHAUSSETTES, Gases	SHOES, White SOUTIERS, Blancs	OVERSHOES, BIACH COUVRE-CHAUSSURES, NOM	SHOES, GYTHALLUM, GABY SOULLERS OF GYTHALAG, G/TS	SHOES, Outlond, Black SOULIERS, Richeffeur, Mohr	BOOTS, Antile, Sa'thy BOTTINES, Sacurna	SWEAT PANTS PANTALON DE SURVÉTEMENT	BLOUSON DE SURVÈTEMENT	T-SHIRT, AITHOUGH GILET, AITHINGUO
					-			X	X	X	X:	X	×		X	X]

SHORTS, Grey SHORT, Orb.

THUNKS, Swimming

SHIRT, Service Dress, White, Officer, SS CHEMISE, Tenue réglementaire, B'anche, officier, & maniches courtés

DAVON

SHIRE Service Cress, White, NCM, S3 CHEMISE Tenus replamentation Blanche, NB, Americhes courses

F	•							(1							, ,				C	FI	4 Sv	cs (C (4
			•		OVERSHOES, Black						SHOES, Oxford, Black						BOOTS, Sea issue						BOOTS, Ankle, Safety	CLOTHING ITEM
Other	Washes	Foul Weather	Unsafe	Unsat Sea/Shore	Wear/Tear	Other	Washes	Foul Weather	Unsafe	Unsat Sea/Shore	Wear/Tear	Other	Washes	Foul Weather	Unsafe	Unsat Sea/Shore	Wear/Tear	Other	Washes	Foul Weather	Unsafe	Unsat Sea/Shore	Wear/Tear	AOI
Would like to have a half boot version.		Keep feet dry but not warm.	DESTACKS SPIT SHILL ON SHOWS WIRD PATTING ON ON THETHE DIFFER			t enough narrow width shoes in the	40	No good for wet weather		les wear out middle	Leather soles wear out too mickly				Sole grips unsat on wet decks		ized, do not : sizes, lacks	TUBBER SOIE HEN TO	e makes cleaning out col	Ω.			1	

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BRIEFING NOTE NAVAL SEA BOOT AND SANDAL

ISSUE

1. Seagoing sailors have complained for many years about the discomfort of wearing the present naval sea boot and tropical sandal. The sea boot is heavy, uncomfortable and provides little support for the ankle. In addition, it readily conducts the cold when worn on the upper deck in winter and is difficult to keep dry. The sandal is unsightly, highly uncomfortable and the sole is made of a soft material that wears rapidly. Recently, commercial shoe manufacturers have shown complete disinterest in producing the present pattern of sandal in the limited numbers the Navy requires as these are unmarketable elsewhere.

BACKGROUND

2. In Aug 96, as a result of discussions at the MARCOM Clothing and Dress Advisory Committee Working Group (MARCOM CDAC WG), a consolidated UCR for both the sea boot and tropical sandal were forwarded to NDHQ for corrective action. DSSPM and DMPPD staff have been working closely to come up with optimum solution to both footwear problems.

CURRENT STATUS

3. DSSPM funded a short term contract to have the SORs reviewed and redrafted to meet the actual needs of the Navy in respect to footwear. This phase is now complete and the MARCOM CDACWG formally reviewed and approved, with minor modification, the redrafted SORs on 15 Apr 97. The next phase has commenced and will use these SORs to determine viable alternatives for replacement. DSSPM is currently staffing a letter to DSS and shoe manufacturers requesting input and samples of boots/sandals that should meet the SOR. A team of NDHQ sailors will work with the DSSPM staff to select the new seaboots and sandals.

CONCLUSION

4. DSSPM and DMPPD staffs are closely working together to find suitable replacement sea boots and sandals as funding permits.

Prepared by: LCdr R.P. Richardson, DMPPD 9-3A/N34-8-2A, 994-8781

Date: 5 Oct 97

CFH Svcs C (A)

SATISFACTORY CONDITION OF NAVAL CLOTHING REPORT BY MAROPSGRU FIVE SHIPS AND SUBMARINES - 18 feb 98

The following observations were made during focus group meetings held in MAROPSGRU FIVE ships, submarines and HQ regarding problems with particular orders of naval dress. Items marked (**) are suggestions for improvement.

a. NCDs

wear out easily,

(2) buttons fall off regularly,

(3) poor workmanship - after a few washes, material tends to wear excessively causing items to tear easily and thread to lose its strength. This in turn causes material to literally fall apart,

shrinks too fast, (4)

(5) fire retardant washes off far too quickly,

(6) fabric has little elasticity and remains rigid and starchy until fire retardant is washed out, at which time the fabric's threads begin to unravel,

colors not matching (i.e. pants black, jacket purple),

jacket unsuitable for cold weather, (8)

(9) jacket should have a zip in hood,

(10) pants crotch rips apart too easily, and

(11) ** clearer directions on the care and maintenance of the garments WRT washing, drying and ironing.

Sea Boots

no ankle support, poor protection, poor insulation, no cushioning,

(2) high upkeep,

(4) soles tend to wear quickly when walking on nonskid - increased risks of slipping or falling,

leather insteps tends to wear quickly due to constant salt water exposure, thereby tearing or splitting of the leather between the sole and instep,

(6) boot is too low and catches when going down ladders,

takes too long to dry out,

(8) material does not stand well to everyday shipboard use; this is obvious by the amount of boots that have the material ripped or torn or even exposed toe caps,

(9) not enough arch and ankle support,

(10) soles are too hard for the environment and causes the feet to hurt after a while,

(11) the inner soles are flattened and lack contour for normal feet,

(12) ** new boots needed, perhaps similar to Kodiac,

(13) ** insulated boots is needed to prevent freezing

MANS CAF

Introduction

- 1. Aim. The aim of this SOR is to define the requirement for a shipboard style safety boot for CF personnel serving in sea-going and shore units as follows; HMC SHIPS, auxiliary vessels, Sea Training Units, Fleet Diving Units, Fleet Maintenance Groups, Canadian Forces Fleet Schools (Damage Control and Seamanship Divisions), and Canadian Forces Maritime Experimental Test Range.
- 2. Background. The CF personnel identified above have operated with a known deficiency in footwear for some time. This deficiency is pronounced during operational deployments where the Boots, Safety, Shipboard Style NSN 8430-21-893-5758, have been documented to be heavy, lacking support, uncomfortable, cold, difficult to dry, sweaty and unhygienic. The composite Unsatisfactory Condition Report, UCR MARC: N1/002/96 dated August 96, supported by Maritime Command medical reports and health surveys, has focused attention on this item of operational dress given the recent increase in extended deployments in more extreme theatres of operation, and mixed gender crews. Increased high threat missions such as the Gulf War and Adriatic Sea patrols have caused coastal Sea Training Staffs to focus more attention on the adequacy and standard of combat clothing during their sea safety inspections and "work-ups". During these inspections it was discovered that the outsole tread was frequently worn smooth within 6 months use and that the outsole was cracking and parting from the upper portion of the boot. Based on these observations, Sea Training staff ordered, on average, 40 personnel per ship to report to clothing stores for return and exchange of shipboard safety boots. This action was not directly reflected in the MARCOM UCR mentioned above. Although there has been an absence of UCRs in the 20 years since the shipboard safety boot was first issued, personnel have, nevertheless, become generally dissatisfied with their footwear. No doubt the initial shipboard safety boot was an improvement over what was previously worn at sea but so too have technological advances enabled new improved materials to be used that may now provide different characteristics without the same trade-offs. Unfortunately documentation for the acquisition of the original shipboard safety boot could not be found, however, one characteristic which was not included was the requirement for an insulated boot. This would explain the general dissatisfaction because of cold, dampness and lack of cushioning. Regardless, personnel simply took it upon themselves to resolve their problem on their own, never documenting the problem in UCRs. In many cases when problems were brought to higher authority they were addressed as medical problems, not necessarily caused by the inadequacies of the shipboard safety boot, and as a consequence were given either a medical solution, gratuitous issue of an"ANTI-SHOX" sports orthotics insert, or tacit approval to resolve their problem in their own way. Most often the latter option resulted in personnel wearing Service Oxfords, NSN 8430-21-860-7169, and/orAnkle Boots, NSN 8430-21-866-7447 with or without a locally manufactured hard rubber outsole. In other cases, personnel laced aircrew zippers into their ankle boots. When problems arose in trades where safety and greater wear and tear were everpresent factors, such as in Hull Tech, Mar Eng, Bos'n and some upper deck trades, means were found to circumvent the system for issue of Construction Engineers Work Boots, NSN 8430-21-905-7544. It has been estimated that upwards of 50% of shipboard personnel exercised their "freedom" to resolve their discomfort by

wearing other service footwear. It is important to note that the most popular solution, wearing * service oxfords, was paid for, not by the DND, but by the members themselves despite the fact that the leather soles do not last more than a few months when worn on wet non-skid painted decks. Although it is not within the purview of this SOR to define the requirements for improvements in service oxfords for sea-going personnel it is considered that this should be pursued as another SOR initiative. The intent of this SOR is to define the requirement for an improved sea safety boot for issue to all personnel identified above in lieu of an array of shipboard footwear for which there is limited stowage space.

- 3. Capability Deficiency. The current shipboard safety boot, albeit selected to meet the need some 20 years ago, is now considered inadequate because of its weight and lack of cushioning, ankle and arch support. These shortcomings have resulted in a significant number of documented cases of chronic foot pain and in some cases knee and back pain. The current shipboard safety boot is not insulated, and does not breathe properly, leading to cold, damp feet, particularly in the toe area, cases of fout odour and general discomfort. It has been reported by Sea Training Staffs, that, due to the length of recent deployments to war zones and the requirement for personnel to stand more watches on the upper deck where exposure to the elements and non-skid is greatly increased, the outsole previously reported to be satisfactory has been wearing out within 6 months, cracking and separating from the uppers necessitating large numbers of returns for exchange. In addition it has been reported that in conditions of snow, slush or water build up on deck, the closed tread does not permit liquids to escape leading to reduced grip. The current shipboard safety boot is not quick donning, as a result users have resorted to several alternate methods of quick tie up such as shortened lacing and laced-in zippers. Neither of these options are approved dress for sea-going personnel; one is slovenly in appearance and both further reduce ankle support.
- 4. Requirement. Numerous UCRs, consolidated and approved by MARCOM staff, substantiate a requirement to issue sea-going personnel with an all weather general purpose shipboard safety boot which provides better protection and comfort than the current design.

II. OPERATIONAL ENVIRONMENT

- 5. General. Due to improvements in technology the trend is to procure waterproof, breathable, limited maintenance, lightweight and durable protective clothing and footwear.
- 6. Climatic Conditions. The conditions in which the sea safety boot will be wom are the same as those detailed in the Canadian Patrol Frigate Programme SOR Tables 3.3.7.1-1 and 3.3.7.1-2 (attached) for ambient environmental conditions in which full operational capability is essential. It is essential that the sea safety boot be capable of being worn year-round wherever sea-going units are required to operate in the following environmental conditions:
 - a. Ambient Temperatures From -40 to 48C air temperature and up to 35C sea temperature.

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EQUIPMENT (C) EFFECTS ON SUB SYSTEMS (D) RECOMMENDATIONS

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