

ROYAL CANADIAN MOUNTED POLICE
TELECOMMUNICATIONS BRANCH

PURCHASE SPECIFICATION 113/73 (REVISION 5)
MOBILE SIREN LOUDHAILERS

APPROVED:

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1.0 INTRODUCTION

1.1 This specification will detail the supply of electronic siren loudhailers for use in R.C.M. Police vehicles at various locations throughout Canada.

1.2 This specification must be read in conjunction with the attached "Tender or Proposal Request Document", hereinafter referred to as the "Request Document".

1.3 The specification contains the following sections:

Section 2.0 PACKAGING AND DELIVERY

Section 3.0 DOCUMENTATION REQUIRED WITH THE RESPONSE DOCUMENT

Section 4.0 ELIGIBILITY

Section 5.0 EQUIPMENT EVALUATION

Section 6.0 GENERAL

Section 7.0 OSCILLATOR/AMPLIFIER

Section 8.0 SPEAKERS

Section 9.0 MICROPHONE

2.0 PACKAGING AND DELIVERY

2.1 Each unit must be shipped in a separate container.

2.2 Equipment shall be supplied in accordance with the general delivery guidelines included in the "Request Document".

2.3 The supplier shall be responsible for shipping and/or delivering to the location(s) specified in the contract.

3.0 INFORMATION REQUIRED WITH THE RESPONSE DOCUMENT

3.1 The response document shall include a paragraph by paragraph reply indicating compliance or non-compliance to this specification. Where non-compliance is shown, the degree thereof must be clearly stated.

3.2 A detailed price list is to be included listing individual units costs for each "Type" and an extension price to the total number indicated for each item.

3.3 A copy of the service, maintenance, manual and the advertised performance standards for the equipment offered shall be included.

4.0 ELIGIBILITY

4.1 Preference will be given to equipment previously used by the R.C.M.P. or production models that have been previously evaluated and found acceptable by the R.C.M.P. The R.C.M.P. reserves the right to evaluate any equipment prior to awarding of contract, which has not been previously used or evaluated.

5.0 EQUIPMENT EVALUATION

5.1 Suppliers wishing to submit equipment for evaluation as part of the bid submission, must submit the equipment to R.C.M.P. Headquarters, Telecommunications Branch, prior to the response deadline date. Accompanying the equipment to be evaluated must be: full performance specifications, descriptive literature and operations and maintenance manuals. Prototype models will not be considered for evaluation against a tender or proposal.

5.2 Evaluation will be done by R.C.M.P. laboratory tests or field service or both. Failure of production samples to meet the supplier's published specification and/or the R.C.M.P. specification, whichever is the more stringent, shall make the equipment ineligible; except where in the opinion of the R.C.M.P., the variations are minor and will not affect the performance of the equipment. Any defect or breakdown considered by the R.C.M.P. to be more than minor in nature detected during the evaluation against a tender or proposal shall make the equipment ineligible.

6.0 GENERAL

6.1 Instruction and maintenance manuals shall be supplied in the quantities outlined in the attached request document. Manuals shall include full schematic and intercabling diagrams, installation and maintenance instructions and a complete parts list. Where equipment has been modified to meet R.C.M.P. requirements, complete modification diagrams and information shall be included.

- 6.2 Suppliers shall guarantee a continued supply of up-to-date service bulletins on the equipment supplied.
- 6.3 Equipment shall conform to any applicable Canadian Standards (CSA) requirements.
- 6.4 The equipment shall utilize solid state devices for all active circuit devices.
- 6.5 Fuses must be replaceable without opening the housing of the unit.
- 6.6 Where incandescent devices are used for illuminating displays or control purposes, a simple method of replacement shall be provided.
- 6.7 All control and function switches shall be of a high quality commercial type and, in the opinion of the R.C.M.P., mechanically strong.
- 6.8 Rotary type function switches are desirable.
- 6.9 The use of push-button control switches may be acceptable, providing they are "human engineered" to ensure that falsing or breakage will not occur. Such switches shall be physically separated and precautions included to prevent activation of more than one switch at a time.
- 6.10 The operation of the installed siren system in its normal configuration in a vehicle must not be adversely affected in any way by the radio frequency field radiated from the antenna of a 30 watt VHF or UHF transmitter. The antenna may be located on the fender, roof, trunk or in the rear window area of the vehicle.
- 7.0 OSCILLATOR/AMPLIFIER
- 7.1 The overall dimensions of the oscillator/amplifier shall not exceed the following: height 95 mm, width 178 mm, depth 216 mm (3.75 in x 7.0 in. x 8.5 in.) exclusive of siren loudhailer control knobs and mounting bracket.

- 7.2 Operating temperature range of the siren/amplifier must be at least -30°C to $+60^{\circ}\text{C}$, reference 25°C .
- 7.3 In the "PA" and "Radio" modes, the frequency response from 300 to 3000 Hz shall be within ± 3 dB of a 0 dB reference of 15 watts RMS output at 1 KHz.
- 7.4 In the "PA" and "Radio" modes, the distortion at a 1 KHz test tone frequency shall not exceed 10% at any given gain control setting up to 35 watts RMS audio power output into a single speaker.
- 7.5 In the siren mode, the unit must be capable of delivering a minimum of 70 watts RMS power into a single speaker when operating from a 13.8 VDC supply. A change of supply voltage by $\pm 10\%$ must not degrade or increase the audio output power by more than 2 dB in the "PA" mode and by more than 1 dB in the siren modes.
- 7.6 Switches and controls shall be provided for the following functions.
- (a) "Radio", which will permit amplification of a signal from a 3 or 8 ohm source. The sensitivity of the radio input shall provide the rated output per Section 7.4 with 1 Volt RMS input.
 - (b) "PA" which shall permit amplification of a signal from an attached microphone.
 - (c) "Wail" in which the siren shall produce a continuous up and down variation of the siren tone frequency at 8 to 15 cycles per minute. The siren tone frequency must vary from 300 Hz to 1400 Hz maximum and 700 Hz to 1150 Hz minimum.
 - (d) "Yelp" in which the siren shall produce a continuous up and down variation of the siren tone frequency at 160 to 240 cycles per minute. The siren tone frequency must vary from 300 Hz to 1400 Hz maximum, 700 Hz to 1150 Hz minimum.
 - (e) An ON/OFF switch.
 - (f) A gain control, controlling "Radio" and "PA" functions.
 - (g) An ON/OFF indicator light will be provided.

- 7.7 Activation of the press-to-talk switch on the microphone shall provide PA over-ride on all siren functions.
- 7.8 Mounting brackets which will permit mounting the oscillator/amplifier below an automobile dashboard, or on the transmission hump, will be provided.
- 7.9 The unit shall be capable of operation in vehicles having the negative battery terminal grounded.
- 8.0 SPEAKERS
- 8.1 A choice of speakers for the mountings listed below must be available with the unit offered. The cost of each type shall be included with the tender document.
- (a) Roof/Fender mounting.
 - (b) Concealed mounting behind a grill or inside the engine compartment.
 - (c) Mounting inside speaker compartment of a light bar. The overall speaker dimensions, including driver and flared horn, are approximately 127 mm high, 216 mm wide, 175 mm deep (5 in. x 8.5 in. x 7 in.). The horn's flared opening must be flat with no protrusions so that it will be flush with the interior of the light bar grill.
 - (e) Roof mounting type with chrome plated brass bell for marine application.
- 8.2 The exact type of speaker to be supplied shall be provided with the schedule.
- 8.3 Speakers shall be supplied that have a replaceable diaphragm/voice coil assembly. It must be possible to replace the assembly without special jigs or fixtures. Costs and installation details will be provided with the tender document.

- 8.4 The speaker driver shall be rated for operation at a driver input power level not less than 1 dB above the rated output power of the siren amplifier offered when operating in the siren mode. It must be designed for use with the various speaker horns detailed in paragraph 8.1. The driver unit must be detachable from the speaker horn.
- 8.5 The speaker shall have the capability of sustained operation for 30 minutes at its rated power.
- 9.0 MICROPHONE
- 9.1 A microphone shall be supplied with each unit and will be of the noise cancelling type. It must be equipped with a plastic or rubber sheathed "coiled cord".
- 9.2 Preference will be shown for equipment on which the microphone connects to the unit by means of a suitable plug and retaining arrangement rather than being "hard wired".