LOGGING INDUSTRY RESEARCH ORGANISATION

P.O. Box 147,
ROTORUA,
New Zealand.
Telephone: 07-348-7168
Facsimile: 07-346-2886

TECHNICAL NOTE TN-12

Peltor Lite-Com:
Helmet Mounted Two-Way Radio Communications System

LITE-COM SYSTEM

The "Lite-Com" system is a hands free two-way radio communication system incorporating the MAXON 49-SA compact portable two-way FM radio system into helmet mounted Peltor Grade 4 earmuffs. The design has many applications over a wide variety of industries, including forestry, and has been used by Tasman Pulp & Paper Limited, Kawerau for several years.

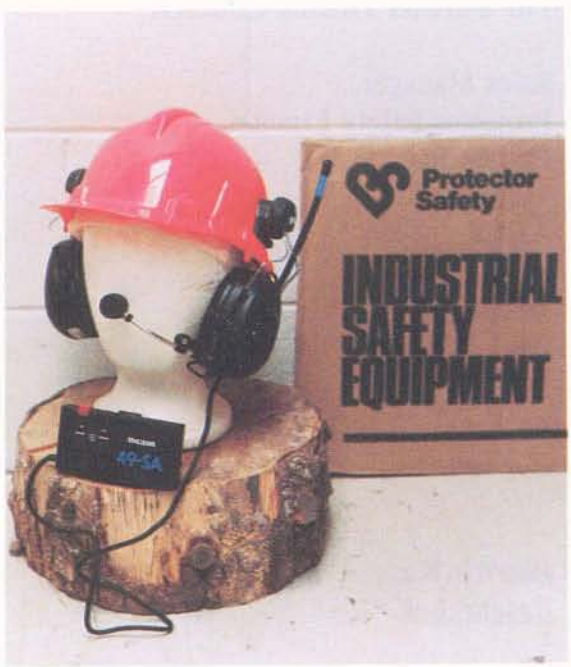

Figure 1 - Peltor Lite-com system

OPERATING FEATURES

The Lite-Com unit comes complete with belt clip, helmet, headset/microphone with adjustable mic boom and pre-installed crystals. Total weight of the MAXON radio unit is approximately 250 grams and is powered by a 9 volt battery. Suppliers recommend the use of rechargeable alkaline batteries.

In push to talk (PTT) position the user must manually depress the switch in order to transmit. When the switch is released, the unit is then able to receive transmittions from the other units. The voice activated position (VOX) makes the transmition fully automatic. In VOX mode the operator's voice activates the transmitter allowing "hands free" operation of the system.

The wearer can adjust the audio output (Hi-Med-Low) coming through the earmuff speakers using the volume setting switch on the unit. Microphone sensitivity also has three settings (Hi-Med-Low) which reduces false triggering of the VOX circuit by loud background noise. The adjustable mic boom ensures a proper fit to the wearer's face further ensuring correct operation of the VOX circuit. The small flexible antenna (approx 15 cm) extends from one earmuff providing a good signal reception of up to 1 kilometre.

FORESTRY APPLICATION

A hands free two-way communication system offers a great deal of freedom for forestry operations, especially timber harvesting. The ability to have workers communicate easily over long distances and/or over loud noises ensures that important instructions are clearly understood and potential problems and/or dangerous situations avoided. The Lite-Com system gives contractors the freedom to have fallers work in areas on their own which would normally require an additional worker as a safety measure. Fallers could check in with one another at set time intervals, in a similar manner to the "safety-link" buddy system. Fallers could also simply and effectively ask each other and/or other members of the crew (i.e. skidder operator) for assistance if required. The training of new workers or current workers learning new skills would also be simplified as the trainer could talk the trainee through the task as it is being performed. A similar system is currently used for new operator training by Bell Equipment (N.Z.) Limited.

SPECIFICATIONS

General

Frequency Range:	53-502/53-046/43-05/43-956 MHz
No of Channels:	1
Input Voltage:	9 VDC
Current Drain:	
(standby)	12 mA
(Receive)	45 mA max
(Transmit)	50 mA max
Dimensions:	6.5cm High 11cm Wide 2 cm Deep
Weight:	250 grams

Receiver

Sensitivity (20dB Quieting)	0.5 uV max
Squelch Sensitivity (Threshold)	0.5 uV max
Modulation Acceptance Bandwidth	± 7KHz min
Spurious & Image Rejection	20 dB
Frequency Stability (0° to 49°C)	± 2 KHz max

Transmitter

RF Energy Output 10.000 uV/m @ 3 metres	(FCC MAX)
Spurious & Harmonic Emissions	20 dB min
FM Hum & Noise	40 dB min
Audio Distortion	10% max
Frequency Stability (0° to 40°C)	± 2 KHz max

PRICE

The current price for the Lite-Com system is NZ$650.00 per unit incl. GST. This includes conversion to Telecom N.Z. approved frequencies. Imported units from the U.S.A., Canada and Europe cannot legally and/or safely operate in New Zealand without this frequency conversion.

For Further Details Contact:

Sales Manager,
Protector Safety Limited,
Private Bag,
Milford,
AUCKLAND.

Telephone : (09) 444 3443
Fax : (09) 444 7303

Patrick Kirk
Researcher.

October, 1993.