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ALTERNATIVE LOG MARKING SYSTEMS

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ABSTRACT

Increasing market, environmental and physiological pressures are emphasising the need for a practical and cost effective alternative to the present aerosol spray paint commonly used to mark logs in forest harvesting operations.

The versatility of the aerosol can makes finding an all encompassing alternative log marking system difficult. No one system will suit all end users, therefore a combination of alternatives may be required. Manufacturers are actively promoting research and development into alternative log marking systems. The forest industry must work with the manufacturers to achieve effective and practical solutions.

Alternative systems may be more costly in financial terms. However, cost comparisons must include the downstream environmental and human costs associated with using the present aerosol can system.

INTRODUCTION

Increasing environmental, economic and health costs have placed pressure on manufacturers and industry alike to develop alternative log marking systems to the traditional aerosol can.

Strong environmental pressure on the users of ozone depleting CFC propellants in aerosols has led to the development of an ozone "friendly" hydrocarbon substitute. This propellant, however, being spirit based, has recently come in for some criticism from the Occupational Safety and Health Department as a source of excessive solvent exposure. Underlying all this is the ever present pressure for any alternative to be "cost effective". The requirements of the product marketers, both domestically and overseas, to have a simple and effective method of marking their various products also needs considering.

The standard aerosol spray can will be difficult to replace due to its versatility and ease of application. While alternative systems are available, they lack the multifaceted aspects of the aerosol can. The ability to use one system for both log end and side marking is one of the aerosol's strengths. It is unlikely in the next five years that the aerosol can will be completely eliminated from the New Zealand forest harvesting scene. Instead, a marked reduction in the aerosol's use could be achieved by combining their use with that of an alternative system.

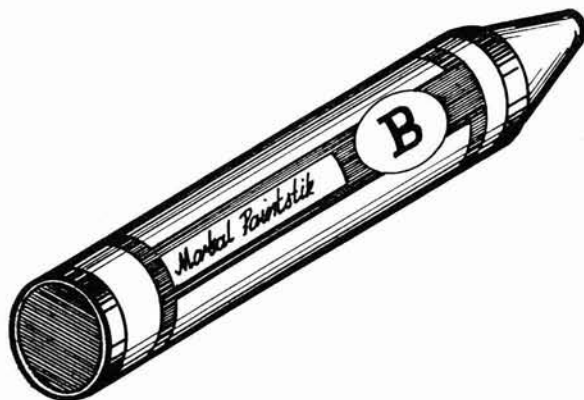
It is encouraging to note that manufacturers are rising to the challenge and putting a great deal of time and effort into the research and development of alternative systems. LIRO has been assisting with this development phase by acting as an intermediary between the manufacturers and industry, in terms of feedback and design developments. This Report outlines a few of the main alternative products currently being investigated by industry in New Zealand.

ACKNOWLEDGMENTS

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LOG MARKING OPTIONS

Markal Paintstik

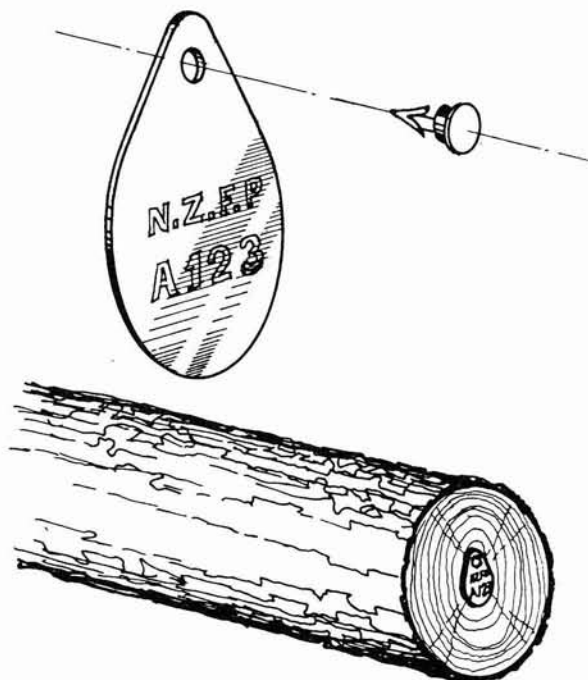


Distributor - Welding Engineers N.Z. Limited, Auckland.

This product is widely used by the United States forest industry as a multi-purpose lumber marker, primarily for marking numbers and quality codes on log ends. It

is the same shape and size as a large crayon and can be fitted to a re-usable holder, allowing full use of the paintstik. It comes in thirteen different colours covering practically all those required by the forest industry. It is easy to apply, lead free, weather and fade resistant and marks easily on a wide variety of surfaces. The paintstik can be applied to wet, green, rough or smooth timber and can be used within a -10°C to 65°C temperature range.

Plastic Log Tags



Manufacturer - ITW New Zealand Limited, Auckland.

Plastic log tags are a prototype product currently under development by Mainspan Products of Auckland. The log tag consists of two parts; a plastic timber nail and a plastic timber tag, which clip together to form the complete unit.

The flat-headed plastic nail comes in eleven different colours to enable colour coding of log grades and/or types. The head of the nail can be hot-foil stamped or embossed with a number.

The pear shaped tag is made from thin plastic. It is 65mm in diameter and is available in the same range of colours as the nail. The tag can either be hot foil stamped or embossed with a company logo. The tag has enough remaining space to allow any additional information to be written on it with a felt tip marker pen.

The tag and nail are easily assembled on site, as they press fit together, then the assembled tag can be hammered into the butt of the log. As the whole unit is made of plastic, it poses few downstream problems for the sawmill and other end users. As the tag is a prototype, unit cost is still to be established and would depend on plastic variations, thickness and quantities.

A complete unit includes both the nail and tag, though it would be feasible to use a coloured nail for each log and one complete tag per load. In this way, the nail will identify the log type by its colour and the gang by a number stamped or embossed on the nail's head. Any additional information can be written on to a tag and attached to a log.

Aerosol Ink Dyes

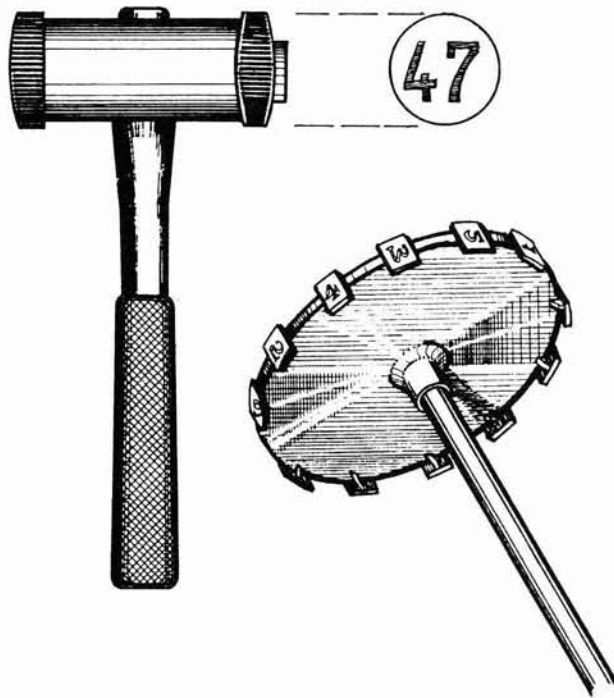
Aerosol ink dyes are another prototype product, and are currently being tested in the field by Petersen Chemicals Limited. They are based upon the same principle as the standard aerosol spray paints except that the primary agent is dye instead of paint. The main advantage of this concept is that the ink's physical construction means that when it dries in the nozzle, it does not clog preventing further use. It should be stressed that nozzle blockage is a common occurrence and a major cause of paint waste within the forest industry.



*Manufacturer - Peterson Chemicals
Limited, Auckland.*

Initial field trials with this product showed good results, except in wet weather. When used on wet logs the ink dyes tend to smear and run. This has been further investigated by the manufacturer and a second prototype dye, which is hoped to overcome this problem, is currently being field tested. A further area of research currently being investigated is the development of a water based product using new generation propellants to replace the hydrocarbon propellant currently in use. Here again, there have been problems with wet weather application and cost effectiveness. The successful development of such a product would represent a major breakthrough in aerosol technology and alleviate several of the aerosol problems currently facing the forest industry.

Branding Hammers

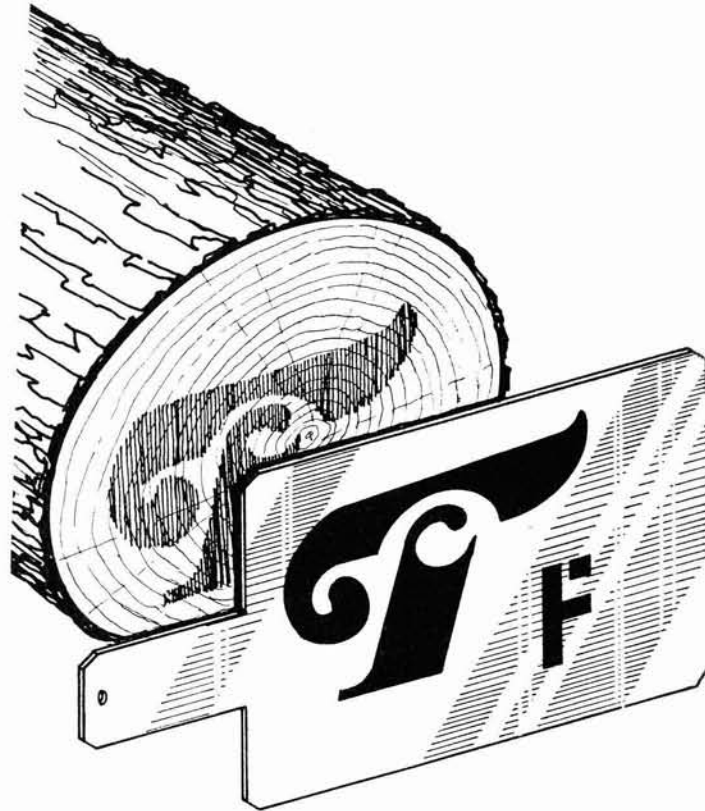


*Manufacturer - Skipper Australia Pty.
Limited*

Several types of branding hammers are available from overseas companies. One such hammer tested in New Zealand was the "Skipper" designed rotating branding hammer. Field testing found this type of branding hammer to be too awkward to be of much practical use to industry in New Zealand.

Some forestry companies have made their own simplified versions of the overseas branding hammers by adapting wedging hammers and ball hammers. A metal surface is attached to the face of the hammer on which the gang number is machined. One solid hit on to the butt of the log leaves a readable impression of the gang number. The initial cost of setting up this system is soon recovered, as there is no continued financial outlay with which to contend. This system is usually used in conjunction with spray paint and stencils.

Stencils



*Manufacturers - Several within
New Zealand*

These plastic and/or metal stencils have been used for some time by industry. The aims of this system are to reduce the amount of aerosol paint being used, and to make the log more presentable to the end purchaser. The stencil consists of a flat sheet of plastic which has up to four log grades cut out of it and/or a company logo. The stencil is placed up against the butt of the log and the aerosol sprayed on to it. The result is a well defined and standardised print. Field trials with this system have shown that crews using the stencils do significantly reduce their paint consumption, and even more so when combined with a gang number branding hammer.

PRODUCT SUMMARY CHART

PRODUCT	EASE OF USE	WORK IN RAIN	USE ON BARK	ENVIRONMENTAL IMPACTS
AEROSOLS	GOOD	GOOD	GOOD	POOR
PAINTSTIK	GOOD	GOOD	AVERAGE	GOOD
LOG TAGS	GOOD	GOOD	N/A	AVERAGE
INK DYES	GOOD	POOR	GOOD	POOR
BRANDING	POOR	GOOD	N/A	GOOD
STENCILS	GOOD	GOOD	N/A	POOR

CONCLUSIONS

Marketing, environmental, and physiological pressure will increase for an alternative log marking system to the present aerosol spray can. No one system will suit all end users within industry due to various end user requirements. For example, while one sector may use the log tag system, such a system may be totally inappropriate for another.

The inability of most alternative log marking systems to effectively and easily mark over bark appears to be a major factor in reducing their acceptance by the logging industry.

Industry must work with the manufacturers to achieve effective and practical solutions. Manufacturers are actively promoting

research and development into alternative log marking systems. Any major change must be industry lead, as small individual users do not have the buying power to influence manufacturers decisions.

Alternative systems may be more costly in financial terms. However, cost comparisons must include the downstream environmental and human costs associated with using the present hydrocarbon propelled paint system.

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