

## Thermography

### Prevention – Detection – Technology with Mal Campbell MIAME

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We know there are many ways in which temperature may be measured or detected. The most traditional method employed is with the use of an alcohol or mercury filled glass tube thermometer. Another common method is the use of a thermocouple or temperature probe connected to an appropriate measurement device. Even the human body is capable of detecting a difference or change in temperature.

A technologically advanced method of temperature measurement being employed by an increasing number of industries is that of Thermography. If someone asked you what THERMOGRAPHY or Thermal Imaging was, what would you say? A colourful picture? Something from a Hollywood movie? Or a pre-emptive and preventative diagnostic tool used for, among other things, scheduled maintenance.

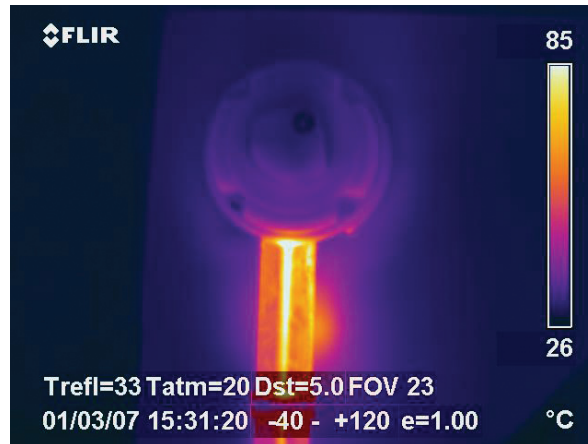
Unfortunately there are many misconceptions regarding the 'newest' of the commercially available Non Destructive Testing (NDT) protocols – Thermography. Although used in the Defence and aviation Industries for many decades, only recently has Thermography been readily available for use in many other industries.

Industries and Professions now utilising Thermography include Building/Construction, Engineering (ie Mechanical/Electrical/Automotive) Veterinary, Medical, Refrigeration and Air Conditioning, Surveillance, Rescue and Emergency Services. There are very few Industries for which Thermography has no application.

#### What is Thermography?

All objects emit Infrared Radiation. Put simply, Thermography is the measurement of this Infrared Radiation

**A faulty battery switch and the result of no action being taken**



# DIAGNOSTICS

(IR) which is directly related to the objects temperature. This emitted radiation can help to predict the serviceability or possible failure of components, equipment and systems.

A Thermal anomaly (abnormal operating temperature) in a component or system can be easily identified using IR Thermography compared with traditional temperature measurement techniques. On detection of this anomaly corrective measures may be immediately implemented prior to component failure.

As a Risk Management and Diagnostic Tool, Thermography is a preventative, cost effective, non destructive means of identifying areas where problems may occur. Images are captured for diagnosis whilst the equipment is fully operational. As with any other NDT protocol, Thermography has many strengths, however it is not suitable for diagnosing all "faults" or anomalies.

Qualified (and Certified) Thermographers 'capture' the image and then the relevant person interprets the image. Just the same as a Radiographer takes an X-Ray and then a doctor interprets the image. Although in its infancy in some industries, the benefits of Thermography are rapidly being recognised and utilised by an increasing number of people.



## Back issues of the AUTOMOTIVE ENGINEER JOURNAL

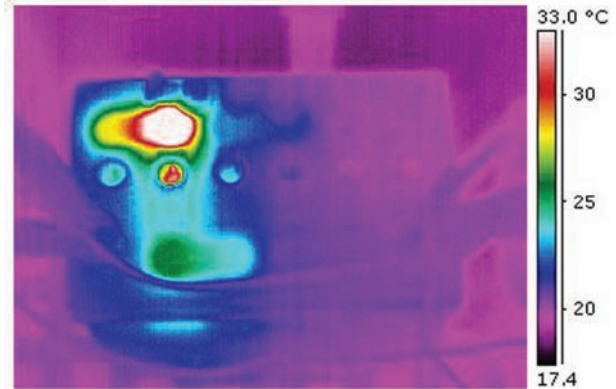
### IAME members...

Should you wish to obtain a back issue/s of IAME's bimonthly journal "The Automotive Engineer" please contact the IAME office in your state.

The back issues of the Journal are limited and in some cases not available. However please let us know of the back issue/s you would like and you will be advised if available.

This offer is only available to IAME members and a postage fee may be applicable to forward multiple copies.

## A lead acid battery with a faulty cell and the end result of no action taken



There are a large range of cameras now available which are more portable and affordable than ever before. For this reason more and more Companies (both large and small) are incorporating Thermography into their maintenance schedules.

MALBAR THERMAL IMAGING are demonstrating the application of Thermography's non destructive diagnostic capabilities in the Automotive Industry, for IAME members of the Sydney & Illawarra Branch. For further information please refer to the Sydney and Illawarra Branch notice flyer enclosed with this issue of the Journal. 🚗

*For further information about Thermography please contact Malbar Thermal Imaging on free call 1800 244 566. For a free information pack visit the website [www.malbargroup.com.au](http://www.malbargroup.com.au). Mal Campbell is the Managing Director of MALBAR MARINE ELECTRICS PTY LTD and MALBAR THERMAL IMAGING.*