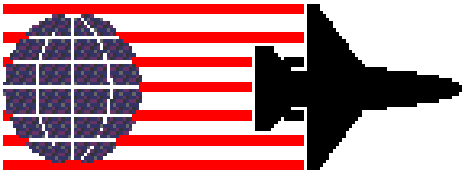
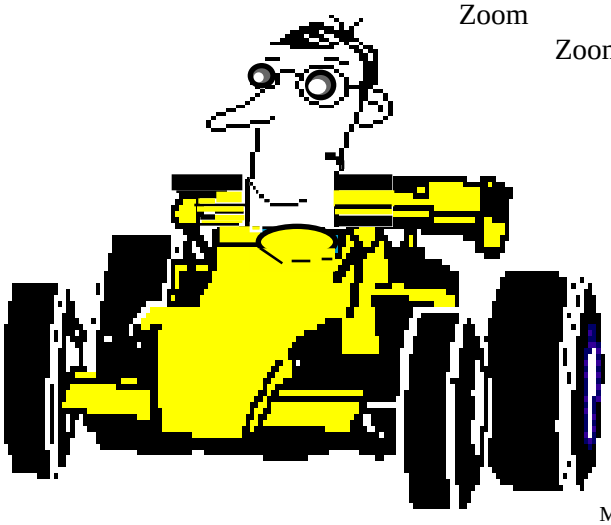
The Met-L-Chek®

Penetrant Professor



May 20
Armed Forces
Day

May 29
Memorial
Day



READER REACTION

We usually get reader's reactions to what we publish in this newsletter. In fact, we have come to expect them. But last month's issue, in which we discussed the FAA funded work at Iowa State University and Sandia Laboratories, resulted in a wide variety of comments. Our favorite was the comment that the issue was one of the best and most useful that had been published. But, at the other end of the spectrum was a comment that we should have been more circumspect in our comments, particularly with regard to the fact that Met-L-Chek® was not the manufacturer of the penetrant that showed that their new penetrant produced indications that were not as bright as their ten year old penetrant. Our feelings about discussing this are based on two or three premises. The first premise is that the research that was performed was funded by an agency of the government. Because of this, since the public paid for it, we feel that the public has a right to the results. But second, when we checked with an official of the FAA, we were told that

the information was in the public domain, and that it was the desire of the FAA to disseminate it for use by the penetrant using community. And our last premise is that we did not want our customers to wonder if Met-L-Chek® had made any changes in their penetrant that resulted in fresh product producing less bright indications than product made 10 years ago. We would have expected that there would have been no difference between the performance of our ten year old product and the current product, and it was gratifying to see that a competently performed test demonstrated that this was indeed true.

With regard to the work done at Iowa State University and Sandia Laboratories, we have been asked about the proper concentration for soluble developers. The Iowa State work had shown that brighter indications were achieved when the manufacturer's recommended concentration of developer was used. With this information, we thought that one could simply look on the AMS-2644 QPL to see what concentration was used to qualify the developer. However, although the qualification concentration of hydrophilic emulsifier is shown on the QPL, it is not shown for the soluble or suspendible developers. We think that it would be useful to

May 13
Mother's Day

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include this information on the QPL, and perhaps this will happen in a future issue of the document. Met-L-Chek® form "b" soluble developer, **D-76B**, is qualified at 2 pounds per gallon for post emulsifiable fluorescent penetrants. Soluble developers are not approved for either water washable penetrants, or for Type II visible penetrants. Met-L-Chek ® form "c" suspendible developer, **D-78B**, is qualified for use with all fluorescent penetrants at a concentration of 1/2 pound per gallon, and with visible penetrants at a concentration of 2 pounds per gallon. These concentrations are what has been determined to be the right ones for the developers to meet the criteria for qualification and listing on the QPL. As the research at Iowa State has shown, lower concentrations can be used, but the indications lack the full brightness that is achieved when the qualification concentrations are used.

PENETRANT PROFESSOR is an occasional publication of the Met-L-Chek Company. To receive it-- call, fax or email Beverly Clarke

REFRACTOMETERS

George Orwell wrote a wonderful story entitled "Animal Farm", in which one of the classic events was the posting of a sign that read, "All animals are equal, but some are more

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equal than others." It turns out that with regard to the testing of emulsifier strength, like in the Orwell story, while all refractometers are presumably equal, some of the refractometers seem to be more equal than others. **NADCAP** requires that the user of hydrophilic emulsifier prepare a new concentration chart for each new batch of emulsifier that is used. Presumably this is because a chart prepared by the manufacturer may not be the same as a chart prepared by the user. It can be a question of some refractometers being more equal than others. To deal with this, Met-L-Chek® is offering calibrated refractometers that are in sync with the concentration chart that accompanies the emulsifier, **E-58D**. When the user prepares a chart for a fresh batch of emulsifier, and uses one of these calibrated refractometers, the chart will be the same as the chart supplied by Met-L-Chek®. If you are interested in one of these calibrated tools, please contact us or your local Met-L-Chek® distributor.

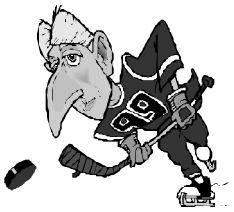
RPS 702

We just received a copy of Rolls-Royce specification RPS 702 that has several points worth comments as concerns materials that are approved for use.

Under paragraph 2.5.1.1, certain materials listed on AMS-2644 are

Stanley?

Ducks?



now specifically listed as approved. This will make things easier for many penetrant users working to Rolls-Royce specifications.

Under paragraph 2.6.1.2, non-aqueous wet developers are approved, so long as they contain 50% or less of isopropanol. This point is interesting in light of the recent work reported by CASR. This work, conducted at Iowa State University, found that non-aqueous developers that were isopropanol based produced brighter indications than similar developers that were acetone based. Assuming that this is true, one might be in the position of deciding whether to use a developer that dried fast, but produced less bright indications, or to use a developer that produced brighter indications, but dried slower. It is also interesting to note that some OEM's have outlawed acetone on their premises. Acetone is significantly more flammable than Isopropyl alcohol which is something else to consider. But in any event, Met-L-Chek® **D-70** non-aqueous developer is isopropanol based, available in 12 oz.(300ml) and 16 oz.(400ml) aerosols (12 cans to the case) and contains less than 50% isopropanol, therefore meeting the RPS 702 requirements, and producing brighter indications than developers based on acetone.

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