Discussion

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Paper on **"Study of Anelastic Recovery with Time in Copper and Brass and the Precise Separation of Uniaxial Tensile Strain Components"** by D. Das et al published in Vol 49 No. 1 PP 29 to 40, 1974.

The Paper as such an interesting one is based on experimental observations. In any experimental study it is expected that investigator would give proper attention to evaluate the experimental technique. The authors, unfortunately, seem to fail to evaluate the experimental technique on which the analyses presented in the paper stand. For instance, the accuracy of the Micro-Strain Gauge (MSG) claimed by the author is 10^{-6} mm/mm; this means sensitivity of the said MSG-developed by the author (Ref. 1 of author's paper) - appears to be in the range of Angstrom Unit. From technical point one obviously gets interested to know the method of Calibration of such a precision and sophisticated instrument and how such an accuracy is maintained during on experiment. The calibration procedure as described in original reference (ref. 1) seems to be dubious.

Further, from the paper it appears that the authors have attempted to develop empirical relationship from experimental observations. It is not clear how the method of separation of strain components claimed by the author as "more realistic" has been obtained. The point is very important and as such one would expect the detailed logistic development. This point has some bearing with the title of the paper where the word "precise separation of uniaxial tensile strain components" is given while the idealised condition of strain separation as followed in the text seems to be contradictory.

Lastly one more word on the figures which are so poorly drawn.

Authors' reply

The authors of the paper "Study of Anelastic Recovery with Time in Copper and Brass and the Precise Separation of Uniaxial Tensile Strain Components" take the pleasure of appreciating the reader's keen interest in their paper. However the authors are glad to put forward the answers or clarifications to the reader's quaries.

Firstly, it is the usual practice that a new gauge is to be calibrated before its use in experimentation to reveal precise and accurate

neasurement. But it should be remembered hat a primary or more sensitive gauge cannot ›e calibrated by a secondary one which is ess sensitive. The most sensitive gauge in ıse in our country is the Resistance Strain Jauge (RSG.), the sensitivity of which is only 0-5. With the help of this RSG, capacitor-Micro-Strain Gauge (MSG) designed and leveloped by the authors cannot be calibrated ınd as such calibration is meaningless. Yet, ıowever, for checking up the MSG readings vith RSG, the authors have conducted ertain observations which are shown in the ollowing table.

From the above table it is evident that the eadings of the two gauges are in close agreenent, but in the readings with RSG the igures in the sixth place are not available vhich is quite logistic.

The authors fail to understand how the eader could get, the calibration procedure of the gauge in the paper (Ref. 1) which is not there at all. What is there in Ref. 1 is the calculation of accuracy of one micro-strain measurement. It seems that the reader might might have confused between accuracy and sensivity.

Secondly so far as the separation of strain components is concerned, the authors have explained the method of separation as clearly as practicable. The method is claimed to be "more realistic" relative to the method of separation adopted by Mitra. In Mitra's separation some anelastic strain crept in the so—separated elastic strain due to anelastic recovery during unloading & as such both the elastic and anelastic components were less reliable (Ref 4)

Lastly the authors admit the inferior quality of drawing for the figures.

Material	Load, Kgf	Strain with cap. Micro-strain Gauge (MSG) $\times 10^6$	Strain with Resistance Strain Gauge (RSG) $\times 10^6$
Brass	710	227	220
	1210	408	400
Copper	530	164	160
	1030	340	340