VALUE AND QUALITY CONTROL IN ENGINEERING

In the race for economical manufacture it is often said that the U.S.A. is leading, and most certainly she cannot be accused of inhibitions when the main-spring is publicised progress and change denoting success, if only temporarily.

For example, a new prefix to the word Control such as Value or Quality, brings forth voluminous reporting intent on influencing the industrial scene in the Western hemisphere at least that this is something new and simply must be applied.

Hitherto it could be said that the U.S.A. emphasis in manufacturing has been on volume or mass production on a big scale necessitated by vast resources, capacity and manpower, and that quality control, as such, has been neglected.

This was a fact at one time fundamental to engineering in the States when, wherever possible, components were used in the as-forged condition for so long as they met a functional need, in for example, the chassis of a car, vehicle or tractor. The objection to such components was excessive noise, and eventually came the demand for quieter mechanical motion and the introduction of machining and grinding—which perhaps served to echo quality!

Even so, the U.S.A. car production policy has always been dictated by a 12 months' road performance before the user bought a new one. Consequently it is said to be due to this sales policy that better class cars have found favour with the American public, which is borne out by the exceptional increase in the demand for British cars with an accredited service performance of up to five years and more, smaller in overall size and better quality throughout.

No wonder that it became necessary for new slogans to appear including "Quality Control", followed recently by "Value Engineering" to help to boost up the sales of American cars. How far this will succeed is pure conjecture if based on propaganda and mute psychology. That the approach to a finished article is principally related to design, production and purchasing is obvious, and yet in the process thereto the problems evolved are largely a matter of human conflict, and invariably concluded by mutual concession with neither side entirely satisfied. What does matter in the final analysis is the functional value and quality which is invariably determinable by comparison, which again is the operative word to the built-up cost and selling price.

It is equally applicable to team spirit and personnel co-ordination after breaking-down prejudices, dislikes and initiative which are so often dominant factors in the mental make-up of a designer, for example. The final arbiter is economic necessity influenced by the law of supply and demand, and in recognising that the road ahead is a challenge and also that as a nation we must not fail to revive our heritage as "a nation of shopkeepers" with the determination to win through, however uneven the odds may be at the start!

Work will need to be the first interest of everyone in every country, and so long as that is the guiding principle, there can be no fear of what may befall anyone.

From: F. B. Willmott, M.I.Prod.E.

Letters to the Editor

FACT OR FICTION?

As a professional writer (non-fiction) I was very interested in the letter from Mr. H. Ward: "Is British Industry Hamstrung by British People?" Mr. Ward asserts that there is "love, ambition, struggle, hate and great human stories" to be found in factories.

I have spent a lot of time over many years trying to work out plots which would be suitable for fictional writing about factory life. Looking back over my own 20 years' experience in factories, I am beaten by the depressing dullness and drabness of it all. I think only a woman could write interestingly about factory life, but even if she did, it would be essential to stretch credulity to its elastic limits.

The essentials of good fictional work comprise conflict, and crises, well mixed together. In a well-run factory, you can have conflict all right but you had better do your writhing in your own time. We cannot bring in physical danger as an ingredient because any well-run plant is safe.

The research and development side of industry is much more interesting and dramatic than production. It is much more interesting if the characters in the story can be out and about, instead of being imprisoned in factory walls. The most successful engineer-story-writer was the late Nevile Shute, but he had to put his heroes in aeroplanes and keep them out of the factory.

Actually, the non-fiction works currently available and dealing with technical achievements are more fascinating reading than any of the fictional works with an engineering background. For example, "There's Always Another Dawn" is a gripping narrative about the American X15 aircraft project, in which 10,000,000 man-hours were expended over a period of five years in order to make an aeroplane fly at Mach 6.

Other absorbing titles include: "Forty Years with Ford", "The Men Behind the Space Rockets", "The Story of the Volkswagen", "The Tale of the Comet", etc.

From: Clifford T. Bower, A.M.I.Prod.E.
"USING PLASTICS"

Report of the London Graduate Section

12th Annual Weekend School, October, 1961

The School was held, as in previous years, at the Beatrice Webb House, near Dorking in Surrey, which it would be difficult to better as a venue for this annual event.

On this occasion the main theme was "Using Plastics", and the lectures were directed towards the application of plastics from a production engineering aspect.

The School was honoured and most pleased to have as its Chairman, Mr. G. A. J. Witton, and as guests, Mr. A. L. Stuchbery, Vice-Chairman of Council and Mr. S. Caselton, Deputy Secretary of the Institution.

The Chairman opened the proceedings officially on the Saturday afternoon by introducing Professor M. Kaufman, of the National College of Rubber Technology, whose lecture was entitled "An Introduction to Plastics". This valuable and essential opening subject was handled in a clear and interesting manner. The theory of polymerisation, the molecular structures, characteristics and properties of both thermoplastic and thermosetting materials were described and an outline of appropriate production techniques included extrusion, compression and injection moulding, vacuum forming, blow moulding and foaming.

This lecture was, of necessity, general in nature and the discussion which followed raised such questions as dimensional stability and temperature susceptibility. Professor Kaufman indicated that these questions were, to a certain extent, interrelated and that continued research was providing materials with improved characteristics.

In his well-illustrated lecture on "The Application of Plastics to Bearing Surfaces", Mr. M. S. Madan, of Du Pont (U.K.) Ltd., dealt with a limited range of specific materials (notably nylon, acetal and p.t.f.e. resins) and was thus able to give much useful data on the application and design of plastic bearings—data which included clearances, working pressures and temperatures, lubricants and friction coefficients.

The social evening which followed these two lectures was enlivened by a magnificent firework display in the neighbouring village of Holmbury St. Mary, and it was long past midnight before discussions and conversations ceased and the last guest retired to bed.

On the Sunday morning, Mr. P. G. Pentz, B.Sc., of Leicester Lovell & Co. Ltd., described "The Application of Plastics to Jigs and Tools" and showed how considerable savings in time, weight and cost can be achieved by using the appropriate techniques. His illustrations covered checking jigs and fixtures, metal-forming tools and foundry patterns, and the advantages and limitations of plastics in these applications were carefully enumerated. Mr. Pentz also outlined the direction of future trends and the potentialities offered by the combination of plastics with metals either as inserts or in electrodeposited form.

To round off the weekend, Mr. M. D. Terry, of C.I.B.A. (A.R.L.) Ltd. gave a lively talk on "The Use of Plastic Adhesives". The setting characteristics of various glues, the design of joints and pre-treatment of components were all considered in detail, and Mr. Terry was able to demonstrate very graphically the comparative shear strengths of glued versus riveted joints in aluminium.

In closing the School, Mr. Witton thanked the speakers for their valuable contributions and, in drawing attention to the lively discussions which each had provoked, emphasised the importance of the occasion in bringing knowledge of the latest materials and techniques to those who would be in a strong position to advocate their use.

LETTERS TO THE EDITOR — continued

I heartily agree with Mr. Ward’s remarks about academic segregation and would like to add that all the means of mass-communication seem to be in unpractical hands. The B.B.C. Television Service seems to be dominated by people who regard a coffee percolator as a complicated piece of apparatus. Politics and the arts are the staple programme diet apart from an occasional technical documentary by Raymond Baxter. The only regular practical programme is Barry Bucknell’s ‘Do It Yourself’: now this has been cut to 15 minutes!