

## CORRESPONDENCE

SIR,

A.S.R.I.

I read Mr. Sampson's article in the January, 1956, issue of the *Journal* (Vol. 9, No. 1) with very great interest as I was, in a very small way, associated with this competition. Looking back now, from across the Atlantic, at the 'basis of marking' shown on page 62, I am amazed that no factor was included for cost. This should have carried at least 100 marks.

The United States Navy, which is believed to have unlimited money, in fact has this plentiful supply because they watch the cost of every item closely. This drive to cut costs has been intensified by a new branch of engineering called 'Value Engineering'.

I suggest that, although Economics was taught at the R.N.E.C., no naval engineer keeps the £ sign clearly before him in his work. As a result, fewer and fewer ships can be bought for the same money. To give a ridiculous example; if a technical section specified pure titanium tubes for a heat exchanger, no other Admiralty department could question this decision. If told that titanium tubes were thirty times as expensive as aluminium bronze, the engineer might reply: 'So what; they are thirty times as good.'

Until technical officers have responsibility for the money as well as the hardware, no savings will be made in the cost of equipment. The technical officer will not lower the specification to save money today.

(Sgd.) P. D. TATTON-BROWN,  
Commander. R.N.

SIR,

### Fundamentals

Lieutenant-Commander Bowers and I discussed this problem at some length one evening and found ourselves basically in agreement, so perhaps we should not continue this discussion in print, unless anyone else wants to join in.

Suffice it to say that each has his own opinion of what confuses him. For me, and I believe for many others, it is 'two different sorts of force'. For instance, by which sort is a body acted on when it is accelerating due to its own weight, and which sort acts on an hydraulic ram—is it gravitational force, or inertia force?

For Lieutenant-Commander Bowers, apparently the confusion is between the constant unit of force (or weight) and the variable total weight of (or gravity force on) a body as it moves about the universe. To the rising generation of space travellers, this will be a commonplace!

(Sgd.) J. SIDGWICK,  
Commander, R.N.

SIR,

### Notes from Sea

As a 'Barrack Stanchion' of over a year's standing, I always turn first to the 'Notes from Sea', and I was interested to see two things on pages 84 and 86 of the January issue (Vol. 9, No. 1) of the *Journal*.

I was the Engineer Officer of one of the Mediterranean Fleet fast frigates (H.M.S. *Roebuck*) for 18 months after her conversion, and I can recall only two

instances of boiler feeding trouble, once the feed water regulators had been adjusted and the water tenders instructed in their operation. In both cases, the cause was not the regulator, but in one case was due to a sticky closed feed controller, and in the other, to the steam valve becoming disconnected from its piston in the main feed pump governor.

It is with the greatest diffidence that I cross swords with S.E.O.(F), Mediterranean, but I feel that the Steadiflow, although, in my opinion, not as good as the Robot, is a much maligned regulator and that many cases of alleged feed regulator trouble are, in reality, due to other causes ; e.g. hunting of the extraction or main feed pump, fluctuating exhaust pressure, etc.

While I was workshops E.O. of *Forth* in 1949-50, we had several cases of erosion of non-ferrous valves as mentioned by *Virago*, notably F.F.O. heater steam valves. Our own design of gradual-opening valve which, it was hoped, would give the desired amount of control but not cause so much erosion on the valve seat and lid, was a failure, and eventually stainless steel false seats and monel metal valve lids were manufactured and used with success in ships of the First Destroyer Squadron.

(Sgd.) J. L. FOSTER,  
*Lieutenant-Commander, R.N.*

SIR,

### Work Study—One Way of Doing It

*And a jolly good way too !*

It is most heartening to see that while much study is rightly given to methods of turning ratings into priests, politicians and leaders, there are also some officers who are concentrating on how to get on with the job, and in doing so find that happiness, keenness and initiative is induced through achievement in real work.

I had the opportunity on four occasions of clocking ratings in large numbers over fairly long periods. The total hours worked divided by the number of ratings on the books always came to 17 point something hours per week. It is interesting to see that the writers in the article found roughly the same answer. In my case, what was indeed worse, was that random observation, although not so accurate as clocking, gave the impression that only 6 or 7 of the 17 hours were actually spent doing something—12 hours out of the 17 would have been a good utilization but we never seemed able to reach anything like it. The reason was that we did not adopt any methods akin to those described in planning, job analysis and multi-activity.

It is also interesting to know that human inertia of resisting change seems to be much the same in naval and civilian, officer and rating, circles.

The system described and the charts used seem to me to be neither complicated to construct nor difficult to understand, and it is to be hoped that this pioneer work will receive wide publicity and application throughout the Fleet and Shore Establishments and be applied to many other activities besides engineering. If savings are found, as in the cases described, in all our manifold naval activities we could either save the taxpayer a great deal of money or have a larger Navy for the same money.

All good wishes to the new Navy and may it progress its activities on the lines of Messrs. Dibsall and Allies.

(Sgd.) C. W. JONES,  
*Captain, R.N.*

SIR,

**Notes from Sea**

We are most interested in the remarks by H.M.S. *Delight* on page 82 of the *Journal of Naval Engineering* of January, 1956 (Vol. 9, No. 1) that 'unless the (air) cocks are kept well open, bearing temperatures tend to rise'.

We have already observed that air bubbles can be separated from water by a perforated baffle, provided time is available for the bubbles to reach the free surface.

The selective rejection of the air appears to be due to surface tension preventing the bubble taking an elongated shape to enable it to pass through the holes.

It has occurred to me that this may happen with the lubrication of a bearing, if the air bubbles in the oil are of a diameter greater than the bearing clearance. After a time sufficient air, unable to pass the bearing, would collect and obstruct further supply of oil, thus producing overheating.

An additional effect would be that the effective resistance of the bearings to oil-flow would increase, thus diverting more of the total flow to the gearing sprayers.

We agree with the ship's observation that there is less air in the oil when working at maximum tank level, since this increases the circulation time for any particular sample of oil and thus offers more time for air release, besides giving more oil in which the air is distributed.

We also agree with your comment regarding the only means of releasing the air. We feel, however, that the air is present in such small bubbles in high power machinery and space restrictions are so great that it may not be possible to release an adequate amount of air. A drain tank of very large free surface area and minimum depth is necessary.

(Sgd.) C. H. CARSLAND,  
*Director,*  
*Messrs. Drysdale and Company Limited.*

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