

CONFIDENTIAL

From COMMANDER CUMMING to SIEBE, GORMAN & CO., LTD.,

4th M a r c h, 1939.

Dear Sir Robert,

Thank you for your letter of 1st March re: the graphs we prepared in connection with air aided Escape from Submarines.

Curiously enough Commander MacVicker from Fort Blockhouse was in my office the day I received your letter and we were discussing the same problem.

At the moment we have mislaid the original tracings for our graphs, but I am having my copies retraced and further information added to them which we have developed since the original tracings were made.

I hope to send you the complete new set within the next ten days.

In connection with these graphs, I enclose one I made from your decompression tables where we assumed that, owing to the rapid decompression which occurs during the D.S.E.A. ascent even with the apron, it would be unwise to subject men to Air Pressure for more than, say, half the time allowed for a diver who does "stage" decompression whilst returning to the surface. This was quite an arbitrary assumption and I should be very glad to have your views. For shallow depths it may be too low, for deeper depths too high a time allowance.

You will remember also that you very kindly sent me a graph of time at which oxygen poisoning may be expected to set in at varying pressures but advised me that no thorough set of experiments had been carried out and the figures were largely theoretical.

If, during your new investigations, you have time to go into this matter, I should be very glad to have a revised graph.

The above two points appear to me to be insufficiently appreciated when considering escapes from depths of over 100 feet where it appears to me that the "Total Time Factor" becomes vital and, therefore, any reduction of time effected by reducing the flooding period by the air aided escape method becomes valuable.

Yours sincerely,

[Signed] A. S. CUMMING.