

## (8) A LONG-TERM PLAN

91. The average anticipated output during the next five years is so very much greater than the output in the years immediately preceding the war as to suggest that there is very little real difficulty about providing a sufficient number of engineers for future requirements. It must be emphasized, therefore, that the anticipated output for the next few years is not only very much in excess of that of any of the pre-war years, but it is also in excess of what is likely to be maintained once the effect of the increased numbers of students in the immediate post-war years is spent. The estimate for 1952 is near the level at which output would establish itself in the absence of any special provision to increase it. It may be a little too high. The following short calculation will indicate that an output of, say, 90 to 95 would not be sufficient to reach the desired figure of 850 per million in ten years' time.

*Short Calculation Based on Present Population of 1,825,000 and 25,000  
Per Annum Increases*

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Present number of professional engineers .. .. .                        | 1,150 |
| Number in ten years' time at 850 per million .. .. .                    | 1,764 |
| <hr/>                                                                   |       |
| Increase necessary .. .. .                                              | 614   |
| Wastage on 4-per-cent. per-annum basis over ten years (approx.) .. .. . | 580   |
| <hr/>                                                                   |       |
| Total output required over ten-year period .. .. .                      | 1,194 |

*i.e.*, 120 annually.

92. It would appear, therefore, that a figure of 120 annually would meet the position over a ten-year period. It is now necessary to consider the following questions :—

- (i) What is the long-term effect of providing for an output of 120 per year ?
- (ii) How many students will it be necessary to train to provide such an output ?
- (iii) Is it possible to obtain a sufficient number of these students ?
- (iv) If the students can be obtained, what accommodation problems, if any, are likely to be caused at the University colleges ?

These questions are considered in order below.

(i) WHAT IS THE LONG-TERM EFFECT OF PROVIDING FOR AN OUTPUT OF 120 PROFESSIONAL ENGINEERS PER YEAR?

93. The following more detailed table shows the effect year by year of bringing 120 engineers annually into the profession, allowing wastage at 4 per cent. per annum and an increase of 25,000 in the population each year. It will be seen that on reaching the goal of 850 per million of the population in ten years, it is possible to consider a goal of 900 per million, which would be reached in a further five years, and then a goal of 950 per million which would be reached in a little under a further ten years. At the expiration of the period the annual wastage on a 4 per-cent per-annum basis will be rising slowly from 92 and the number required to cover increases in population will be 24, giving a total annual requirement rising slowly from 116. This corresponds very closely with the figure of 120 adopted for the annual output, which indicates that the plan fits in very well with the requirements when shortages have been overcome and conditions become more stable. As will be seen later, the plan is limited during the first ten years by the fact that the school population is not likely to increase during that period, but after that it would be possible to increase the annual output of professional engineers should an alteration be required in the estimate for wastage, for increased population, or for any other cause.