

[639] The routine, uncreative work has to be done by someone, and may be quite all right for a routine, uncreative trained engineer, fitted by nature for such jobs. But we should first make sure that most of those who were born with the capacity to be inventors, have been identified, instilled with the inspiring prospect, given a suitable education for an inventor (or for some equally precious function for which he was also fitted), and on graduation, usually with a postgraduate degree, that he be offered work which is inventive, honored, well paid, and assured. We do this with our military academies and officer corps. How would it be if we handled those as we have our future engineer inventors? Then the graduate of Annapolis would find his own job, which could hardly be that of naval officer. He might find work as an oiler on a merchantman, or as radioman, or yeoman, or petty officer on shore patrol, and only after 10 years or so of such work might he hope to become a naval officer.

[640] The matter of Age merits further attention (ftN 632.8, p. 200). Invention is distinctly a matter for youth. Rossman's⁵⁹⁵ inventors made their first invention at 21.3 years average, and their first patented one at about 27,⁶⁴⁰ whereas other eminent men have been found to begin their activity at 24, the age at which Wechsler's⁶⁴¹ measurements placed the peak of creativity. Lehman's⁶⁴² counts of 554 important modern inventions, and of 40 greatest such, showed modal ages of about 33, and about 5% under 20, whereas Schmookler's⁶⁴³ current patentees have a modal age of about 44, with none under 20. The higher standard of inventive achievement, the younger the ages and the narrower the age distribution.⁶⁴⁴ Chemists, he finds, make their most important contributions when 30-34, on the average, but the greatest chemical advances were from men of 26-30. Nobel chemists published their prize-winning work at average 40, physicists at 34, and 30% percent of them before 30, medical Nobelists at 44.⁶⁴⁵ Spooner's study⁶⁴⁶ of Westinghouse engineers and scientists, with a modal age of 32, showed a modal age at patenting of 43, which would mean 40 when inventing, with no more patenting after 55. He concludes that ordinary invention goes best at 27-48, and outstanding successes at 26-45. Of the assigned patents of 1938 sampled by Sanders⁴⁰⁹ 16% had inventors 20-29 years old at the time of application, and for the 1952 patents 9%. For his 1938 assigned patents 13% of the applicants were 55 or older, and 26% of the 1952 applicants (whose patents were doubtless superior to the earlier ones, as per ¶ 116). Lehman found for creators in all lines that the earlier starters averaged more and better contributions.⁶⁴⁷ Raymond Stevens observed⁶⁴⁸ that in his A. D. Little laboratory for custom inventing there had been a sharp rise of youth since 1940, to leave less than 12% in the age group 43-54. "If men are generally hired at 25, and need 5 years of experience to develop full value, there is left a bare 10-year period between 30 and 40 for their best original creation." The remaining 25 years before retirement should be managed, he says, with flexibly evolving practices, not rules, in order to do justice, yet place men where they can be most competent.

⁶⁴⁰ Sanders' assigning patentees had made their first successful patent application at about age 32. Their age on receiving the *sampled* patent average 41 for 1952 patents, 39 for 1938 patents. Application for the sampled patents averaged 2 years earlier. N 409.

⁶⁴⁴ But W. Dennis points out that Lehman's decline with age is more or less countered by his tendency to downgrade the more modern achievements. (Cf. our ¶ 522). The Age Decrement; *Ann. Psy.*, Aug. 1958; pp. 457-60.