

383. N 376, table 4, Phys. scis., guessing 86% own funds, acc. to table 2. Add \$6.1 m. for indep. research institutes, from p. 31 and table 17.

384. NSF: *Research and Development by Nonprofit Research Institutes and Commercial Laboratories, 1953*, prepared by Maxwell Research Center, Syracuse Univ., 1956, 81 pp. The foundations' own contributions were est. from tables 1 and 3, and from table 5 that 87% of all was related to invention.

385. *Revs. of Data on R&D*, No. 22, August 1960, table 3, reduced to 87% as above.

386. *Ibid.*, Table 4.

387. *Ibid.*, Table 3, for all R&D. One may compare also NSF: *Scientific Research Expenditures by the Larger Private Foundations, 1956*.

388. NSF: *Revs. of Data on R&D*, No. 35, 1962.

389. From the source of our N 384, its table 26, it was est. that 95% of the commercial laboratories' work was related to invention. This percentage was applied to table 11; and for 1956 data, was applied to table B-2 of the *op. cit.* in N 381.

390. NSF: *Revs. of Data on R&D*, No. 33, April 1962, table 1b, gives \$2,240 m. as the sum put up by industry for conduct of research in 1953-4. For capital expenditures we use *Sci. & Engg.*, N 381, p. 32 and table A-33, indicating a building supplement of 32.5% in 1955-6. We assume the same percentage for building in 1954. From NSF's earlier rept., N 85, table A-14, it appeared that about 97% of the R&D was anent invention, so our figures are reduced to this percentage. Trade assns. are not included in our data; comrl. laboratories are.

392. *Sci. & Engg.*, N 85, p. 36.

393. Jewkes, J., Sawers, D. & Stillerman, R.: *The Sources of Invention*, 1958, 428 pp. Reviewed by Gilfillan in *Current Econ. Comment* 21: 58-60. The many case histories of invention, by Stillerman, can be useful.

394. Arthur D. Little, Inc.: *The Military's Use of Resources and Technical Innovation*, Rept. to National Inventors' Council and the Army, Navy and Air Force, Oct. 6, 1959, 57 pp. mimeo., p. 26. Cf. also Van Deusen, N 204 on the Inst.; and Schon N 669. A far more encouraging view of inventing for the military, though still with demonstration of obstructions, was obtained by questioning successful inventors, such as would probably usually fall in our category of the Organized. J. N. Mosel, assisted by B. S. Sanders & I. H. Siegel: Incentives and Deterrents to Inventing for National Defense; *PTCJRE* 1:185-215. In the same issue its Director J. C. Green describes the NIC, as also in How Does the Govt. Treat the Indep. Inventor?, *Product Engg.* 31:55, Aug. 15, 1960, claiming an adoption rate of about 1/1000.

395. Van Deusen, N 204, p. 132.

U.S. News & World Rept.: A Vanishing American, the small . . . inventor. Nov. 23, 1956, p. 113-6.

396. Sanders, B. S., & Rossman & Harris: Patent Acquisition by Corporations; *PTCJRE* 3:217-61, 1959; table 7.

397. Am. Pat. Law Assn.: *How the Stanley Bill Imperils. . . Inventor*, 1922, at end; vs. McFarlane and Sen. bill.

398. Van Deusen, N 204, pp. 132,3.

399. Chase, Stuart: Calling All Inventors; condensed in *Reader's Dig.*, Jan. 1941, pp. 15-18.

400. Study No. 3 (N 138), table 6 provides the yearly count of patents issued to American corporations. We divide this for the latest year, 1955, by the number of patents to Americans in that year, 26,413, to get 61%. For later data we modify accordingly the data in *Hist. Stat. of the U.S.*, Rev. Ed. 1960, p. 599, and from Sanders (N 396), table 7 which provides data on patents assigned to companies later than on issue. We assume the same ratio (4.9%) of subsequent to initial assignment. Of these 58% were known from the Patent Office files, and 42% from inventor and other sources, since assignments are often not officially recorded, even sometimes assignments by contract before issue. Later assignments are especially to small companies.

401. Sanders, N 396, p. 255.

402. N 396, p. 218.

403. Sanders, B. S., & Rossman & Harris: The Growing Importance of Chemical in Comparison with Mechanical Patents, *PTCJRE* 4:84-91, 1960, p. 90.

404. Sanders, N 396, pp. 218, 237; and N 132, tables 1 and 9.

405. N 324, table IV.

406. The struggle of the successful independent inventor is told by the eminent and tragic Rud. Diesel, in A. Flettner: *Story of the Rotor*, p. 82.