

Remarks: The filling can be done in shorter time if work is properly arranged. No attempt was made to speed up at all. The packing was very badly arranged. The packer fumbled, and lost many motions. It should be noted that from forty to sixty seconds of time were used for tying the string on a package.

The subject of the next study was posting cash sheets.

December 3, 1915.

Time Study (Miss Ableman)

Operation: Posting cash sheets—eleven items.

Item	Seconds
1.....	23.4
2.....	38.0 Filed wrong.
3.....	365.0 Payment all made. No supply card. Held for correspondence.
4.....	22.8
5.....	22.0
6.....	50.8 Initial different. Had to look on sheet five times.
7.....	20.4
8.....	23.4
9.....	24.0
10.....	19.6
11.....	18.6

Total 628.0 seconds, or 10 minutes 28 seconds

Average—57 seconds
High—6 minutes 5 seconds
Low—18.6 seconds

The third study dealt with the simple task of addressing envelopes.

November 1, 1915.

Time Study (Miss Levinson)

Operation: Addressing envelopes from typewritten copy.
First test: Addressing from copy on sheet.

Item	Seconds
1.....	10
2.....	12
3.....	13
4.....	14
5.....	10
6.....	10
7.....	8
8.....	11
9.....	12
10.....	14

Total.....114 seconds

Average per envelope—11.4 seconds
Second test: Addressing ten envelopes from cards—2 minutes.
Average per envelope—12 seconds.
Time on ten tests to insert envelopes—2.5 seconds.

The final example I give deals with various operations not counted as regular work. Similar operations occur on any clerical job.

November 2, 1915.

Time Study (Miss Fieldman)

Time Study—one hour. Various operations not counted as regular work.

ASKING MAN ABOUT ORDERS	ROUTE FOR WORK	REACHING ORDER	UNPINNING ORDER	TALKING TO MISS SASS	TALKING TO CHECKER	WAITING FOR WORK	GETTING ORDER BLANKS
20 sec.	3 sec.	6 sec.	18 sec.	10 sec.	228 sec.	85 sec.	
20 sec.	6 sec.	12 sec.			150 sec.		
14 sec.	2 sec.				35 sec.		
20 sec.	5 sec.				15 sec.		
18 sec.					104 sec.		
14 sec.							
110 sec.	16 sec.	18 sec.	18 sec.	10 sec.	532 sec.	85 sec.	

Total of entire operation—789 seconds, or 13 minutes—22% of one hour—waste motion.

Since 1915 the systematization of time study work has proceeded rapidly. The sheet has been standardized so as to facilitate the work, with space left for all observations and remarks that may possibly have a bearing on the subject under study. The sheet shown here is a sample of a typical time study made in 1927, and taken from a paper which I read before the Third International Management Congress at Rome, Italy, in September of that year.

Before leaving the subject, I wish to point out that the person selected to do time study work should have more than the average intelligence, considerable power of observation and ability to suggest improvements. These qualifications are of vital importance. The person selected must then be thoroughly trained in the art of taking time studies. On operations with which he is unfamiliar it is not usually possible for the time study man to make observations for the elemental times and detect inefficiencies in the operation at the time the study is in progress. In general, it is preferable that the maker of the time study note the operation for a sufficient time to enable him to describe it thoroughly in writing, and point out what may appear to him to be waste motions, before he begins the actual study. Usually there is a great temptation to make merely an arbitrary division into elements, and then proceed to time these hasty and ill considered divisions. A study of this kind will not give information of much value, but if the procedure that I have sketched is followed

TIME STUDY SHEET

DATE: 6-11-27
FILE NO.:
STUDY NO.: 7

OPERATOR NAME: Frederick Winslow Taylor
INDUSTRY OR OPERATION: The Taylor Society
DESCRIPTION OF OPERATION: Time study of the work of a clerk in a Post Office
BY WHOM STUDIED: Frederick Winslow Taylor
PLANNED AND APPROVED BY: Frederick Winslow Taylor
DATE: 6-11-27
PLACE: Post Office
TOOL USED: None
MACHINE USED: None
SUMMARY OF ELEMENTS: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

Figure 12

the information gained from such a study can be of very great value to all concerned in working out better organization procedures.

In conclusion, and perhaps at the risk of some repetition, I wish to insist again that while time study is a form of precise measurement, and has great value in the development of scientific management, it should never be assumed to be the first step in that development, nor should it be undertaken until a sufficiently trained person has been secured to make the investigation. It should not be forgotten, either, that time study itself is in a process of constant development, and is as yet by no means perfect or universally applicable in any special form to all organizations engaged in business.

Frederick Winslow Taylor, a man who had a keen eye for future possibilities, seems to have had an idea that at some time in the future the application of time study might be incorporated in a

handbook and become of universal use in production. He was evidently thinking of machine shop practice, however, when he stated at a meeting of the American Society of Mechanical Engineers, held in 1895 in this very city of Detroit, "Practically the greatest need felt in an establishment wishing to start a rate fixing department is the lack of data as to the proper rate of speed at which work should be done. There are hundreds of operations which are common to most large establishments, yet each concern studies the speed problem for itself, and days of labor are wasted in what should be settled once and for all, and recorded in a form which is available to all manufacturers.

"What is needed is a handbook on the speed with which work can be done, similar to the ordinary engineering handbooks. And the writer ventures to predict that such a book will before long be forthcoming. Such a book should describe the best methods of making, recording, tabulating and indexing time observations, since much time and effort are wasted by the adoption of inferior methods."

Thirty-three years have passed since this prediction was made, but it must be admitted that, while great progress has been made, its fulfillment is not yet reached anywhere completely, and most certainly not in office management. In my opinion it never will be completely fulfilled in the problems relating to office operations, for even in organizations engaged in similar businesses clerical methods differ, and sometimes very considerably. To divide the usual clerical work into the smallest possible units or elements by means of a time study is also not feasible, as the elements in such cases would be so minute as to render their timing of little value. You will remember that in this connection I have stated that we have no reason for believing time study will ever reach a state of absolute perfection. No form of human activity has as yet reached such a state, and there is no reason to suppose that more rapid strides will be made in this field than in many others.

For a long time then, at least, it will be necessary for each company to develop its own standards and elements, and I may say from my own experience, that there are few things that will pay more liberally for the effort expended toward organization improvement and simplification than the scientific time study.