

DEVELOPMENT OF A GENERALIZED APPROACH  
TO ESTABLISHING WORK MEASUREMENT  
PROGRAMS IN COMMERCIAL BANKS

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DEVELOPMENT OF A GENERALIZED APPROACH  
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DISSERTATION

Presented to the Graduate Council of the  
North Texas State University in Partial  
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

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Denton, Texas

January, 1970

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## CHAPTER I

### INTRODUCTION

Work measurement, the establishment and use of unit time standards or manpower standards, is an important and useful management tool. Once developed, standards provide the basis for determining manpower requirements, ascertaining and controlling costs, comparing and evaluating performance of employees, supervisors, or work centers, and improving operating methods and procedures.

Work measurement is a more complex endeavor than it might first appear to be. The information generated through work measurement can be used in numerous ways in managerial planning and controlling. Different techniques and approaches exist for establishing standards. Therefore, it is important for a commercial bank or any other type of institution to consider, prior to embarking upon a formalized work measurement program, the uses which can be made of work measurement information, the various means by which standards can be established, and the policies and procedures required for guiding the entire effort. In other words, careful management planning should precede the actual implementation of a work measurement program. Apparently, in many instances adequate attention has not been given to the overall aspects of planning a work

measurement program. Not uncommonly, firms seem to fail to recognize the full potential of work measurement or the various means by which it may be accomplished.

Over the past several years, a number of commercial banks, caught in the squeeze of higher interest expense and rising operating costs, have instituted work measurement programs in an effort to reduce or control payroll expenses, a significant element of their total costs. Born of necessity, some of these programs have been inadequately conceived, hastily implemented, and less than totally successful. In some banks work measurement programs have actually collapsed after existing for only a short period of time. In other banks, numerous difficulties and problems have confronted the work measurement effort. Perhaps one of the most important reasons for the difficulties or problems encountered and the failures experienced is the lack of detailed and comprehensive management planning preceding the implementation and operation of the work measurement program.

#### Purpose of the Research

The purpose of this research is to recommend a set of comprehensive management plans to guide the establishment and operation of work measurement programs in commercial banks. This set of guidelines may potentially be of benefit to commercial banks initiating work measurement programs for the first time. In addition, the guidelines may provide an

evaluation checklist whereby banks already engaged in work measurement can evaluate their efforts at implementation and operation.

To be of maximum benefit to the commercial banking industry, any set of recommended work measurement plans should incorporate sound theory reflected in the literature and desirable current practices in banking situations as identified through field research.

Also, any set of management plans for work measurement in commercial banking must be so designed that adequate attention is brought to bear on specific difficulties or problems which banks already engaged in work measurement have encountered.

In fulfilling its basic purpose of developing a set of management plans, this research examines work measurement theory and practice as set forth in the literature, investigates current work measurement practices in the banking industry, and identifies problems which commercial banks actually performing work measurement have experienced. The set of plans or generalized approach to work measurement implementation and operation, finally offered is not based on conjecture, but is strongly grounded in sound theory as set forth in the literature and actual practice observed in the industry.

### Hypotheses

The major hypotheses upon which this research is based are as follows: (1) work measurement is a potentially valuable tool for planning and controlling bank operations; (2) because several techniques exist for establishing work measurement standards, a sound work measurement program does not depend upon the use of any particular technique; (3) comprehensive management planning is required in order to gain the full benefits of work measurement; (4) commercial banks have not been totally successful in their work measurement efforts; (5) part of the lack of total success in work measurement is attributable to a failure to adequately plan for the implementation and operation of the program; and (6) a generalized approach for the implementation and operation of work measurement programs may be of benefit to commercial banks.

### Significance of the Research

In part, this study derives its significance from its potential contribution to commercial bank management. The comprehensive management plans recommended as a result of this research may, potentially, provide guidance in work measurement implementation and operation which will enable commercial banks to utilize more fully and effectively the information provided by such programs to plan and control certain phases of bank operations. Thus, to the extent that they are used, the set of recommendations may

contribute to improved management and increased profitability within the industry. In addition to this potential contribution to bank management, this research is significant because it is, as near as can be determined, the first attempt to investigate in detail work measurement practices and problems in the commercial banking industry and to develop a comprehensive set of guidelines for implementing and operating work measurement programs within the industry.

#### Scope of the Research

This research is limited to a consideration of work measurement programs, practices, and problems within the commercial banking industry of the United States. Other types of financial or industrial enterprises are not specifically examined. Nor is any attempt made to compare specifically programs, practices, or problems in the commercial banking industry with those of any other industry. However, where applicable, the experiences of other industries, as related in the literature, are used to aid in the development of recommendations for work measurement implementation and operation.

#### Methodology

Both primary and secondary sources of data are used in this research. Secondary sources are utilized to

(1) provide background information on the banking industry;

(2) provide the requisite theoretical foundation for an examination of practices and problems; and (3) provide a limited insight into current work measurement practices in commercial banking as well as other industries. Primary sources of data utilized in this research include a questionnaire survey of commercial banking institutions and a series of interviews with representatives of banks in different parts of the United States. Because of the nature and extent of the data collected through primary research, greater emphasis is placed upon this data.

The general methodological procedure used in conducting the research for this dissertation, although not in specific sequence due to overlapping between stages, was as follows.

1. An in-depth study of the literature was made. Pertinent texts, periodicals, and public documents available in the North Texas State University and Dallas Public libraries were carefully examined for information relative to work measurement. During the course of the review of secondary sources, it was discovered (as had been anticipated), that relatively few texts or articles from periodic journals dealt specifically with work measurement programs in commercial banks. Some of the sources that did treat directly with commercial banks' work measurement activities were found to be inferior as sources of research data; consequently, little was learned directly from the



literature concerning bank practices or problems in work measurement. However, secondary sources were helpful in providing background information, descriptions of the use and application of various work measurement techniques, and indications of generally accepted practices as well as an understanding of the theory of work measurement.

2. A series of interviews was held with representatives of a number of commercial banks. Specifically, sixty-one representatives of twenty-six commercial banking institutions located in twelve cities and seven states were interviewed during the course of the research. The selection of banks to be interviewed was accomplished in consultation with representatives of the Bank Administration Institute who possessed knowledge of the nature of individual bank programs. Several factors were considered in arriving at the list of banks to be interviewed. Among these factors were the size of the bank, the type of bank (unit or branch), geographic location, use or non-use of consultants in implementing work measurement, work measurement techniques employed, and the starting date of the program. A deliberate effort was made to arrive at a combination of interviewee banks which would afford an examination of work measurement programs under varying conditions and situations. In addition to interviewing banking officials, representatives of the Bank Administration Institute and one major consulting firm were also interviewed.

During the interviews, extensive use was made of a portable tape recorder in order to be able to produce verbatim transcripts of the interviews and thus reduce the possibility of quoting interviewees out of context. In order to obtain the most usable information possible, each interviewee was assured in advance that anything discussed during the course of the interview would be considered confidential and in no instance would the interviewee or his institution be directly related to interview material cited in the paper. For referencing purposes, a random number table was used to assign code letters to each interviewee bank. When material from a particular bank is used in the paper, the bank's code letter is cited in the footnote reference. Code letter designations are consistent, so that throughout the paper a reference to a specific bank always receives the same alphabetic designation.

In addition to recording much of the interview material on magnetic tape, extensive notes were taken during the series of interviews. Copies of work measurement manuals, forms, etc., actually used by several of the interviewee banks were also obtained.

3. A survey questionnaire was developed and subjected to field testing. Based on information gathered from the literature, interviews with a selected number of banking officials, and consultation with representatives of the Bank Administration Institute, a survey questionnaire was

developed and tested during October-November, 1968. Twelve banks and the Bank Administration Institute were selected to participate in this field test. Test results or evaluations were received from ten of these institutions. After examination of the results and consideration of suggestions offered by the testing institutions, a final questionnaire was developed. This final version of the questionnaire, a copy of which is included in the Appendix, contained a set of forty-five questions.

4. A questionnaire survey of a number of commercial banks was conducted. On December 5, 1968, the final version of the questionnaire was mailed to a selected group of one hundred sixty-four commercial banks. Included in this survey group were the one hundred largest commercial banks in the United States, ranked in terms of resources as of December 31, 1967. Also included in the survey group were sixty-four other banks thought to have, by officials of the Bank Administration Institute, work measurement programs.

Because the purpose of this research, in part, was to examine practices and problems of banks having work measurement programs, no effort was made to construct a sample which would indicate with any type of statistical significance the number of banks in the country having such programs. Rather, a deliberate effort was made to survey those commercial banks known to be engaged in, or most likely to be engaged in, work measurement.

A second mailing of twenty-seven questionnaires was sent to selected banks not responding to the first questionnaire mailing. The final tabulation of results indicated that 141 questionnaires had been returned. This was a response rate of 85.98 per cent. Approximately 73 per cent of the returned questionnaires were completed by bank officers. Table LXI in the Appendix shows a tabulation by title of those completing the questionnaire.

5. The results of the questionnaire survey were analyzed. All of the questionnaires were carefully scrutinized, and tables presenting the findings of the survey were developed. Fifty-eight of these tables appear in the body of this paper and seven appear in the Appendix. The seven tables in the Appendix contain material not germane to the development of the paper or material of limited usefulness or doubtful value in the overall development of the paper. The questionnaire findings constitute a considerable portion of the material pertinent to current banking industry practices.

6. The material gathered through the series of interviews was analyzed. All of the interview transcripts were reviewed and classified for use in appropriate sections of the paper. Because of the large volume of material gathered in the interviews (almost seven hundred pages of notes and nineteen individual work measurement manuals or study reports), it was necessary to develop a classification and

retrieval system which would permit the fullest use of the interview materials. Consequently, a detailed subject index was prepared, all of the interview material was carefully reviewed and classified according to the index, key punch cards which show the material referenced and its location were prepared, and the cards were processed through an IBM 1130 computer to produce a complete listing of interview material by subject, type, bank, and location within the file of interview material.

7. A comprehensive set of recommended work measurement guidelines was developed. Based upon the findings from the questionnaire survey, the interviews with banking officials, and the literature, a set of comprehensive management plans, or generalized approach for guiding the implementation and operation of work measurement programs in commercial banks, was constructed.

#### Limitations of the Research

Several limitations upon this study should be noted. Among these are the following:

1. This study is not intended to be nor does it purport to be statistically representative of the entire commercial banking industry. While the results depicted adequately and accurately seem to reflect the current state of the art in the banking industry, no statistical significance should be attached to the findings.

2. Constraints of time, financial resources, and knowledge precluded either questionnaire survey of all banks engaged in work measurement or interviews with all banks active in work measurement. Therefore, this research is based on less than a total sample of all commercial banks having work measurement programs.

3. It is possible that some element of bias exists in the study. Although an effort was made to eliminate bias in the questionnaire survey through careful construction and advance field test, it is possible that some of the questions may have been inadequately or improperly worded; thus, some degree of unintentional bias may have affected the questionnaire results. Additional bias may have been introduced during the series of interviews. It is possible that some of the interviewees may have withheld information, offered inaccurate information, or otherwise slanted their views to favor a particular emphasis or course of action. It is also possible that some element of bias may have been introduced into the study through the interpretations of the study findings.

4. The generalized approach to work measurement stemming from this research will not fit, nor is it intended to fit, all of the commercial banks in this country. The management guidelines offered are intended primarily to be of benefit to larger commercial banking institutions.

5. To an extent, the generalized approach to work measurement represents an idealized approach which may not be applicable in its entirety in particular situations without proper modifications. Furthermore, because the recommended approach is an eclectic composite of sound or desirable theory and practice, no one particular institution may be currently adhering to the proffered generalized approach.

6. The set of guidelines for implementing and operating work measurement programs is not, nor is it intended to be, a detailed step-by-step procedural approach to establishing a work measurement program in a commercial bank. Rather, the generalized approach deals only with the overall management planning aspects of initiating and operating work measurement programs. Specific procedures for implementing the approach are subject to development by banks which may desire to use the suggested guidelines.

None of the above enumerated limitations to this research seem to detract from its significance to the banking industry or its potential contribution to improving managerial planning and controlling within particular commercial banks.

## CHAPTER II

### THE BANKING INDUSTRY: STRUCTURE AND TRENDS

#### Historical Background

##### Development of the Banking System

The bank of North America, considered by many writers to be the first authentic bank to be organized in this country, was formed in 1781.<sup>1</sup> Although occasional references are made to banks which existed prior to this time, such institutions may have been banks in name only. In large measure, such early banks were probably little more than public and private issues of bills of credit.<sup>2</sup> The bank of North America came into existence under concurrent charters from the Continental Congress and the Pennsylvania legislature because there was some question regarding the authority of the Congress to grant a charter.<sup>3</sup> Federal authority to grant charters was later upheld in 1819 and again in 1824 by the Supreme Court.<sup>4</sup>

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<sup>1</sup>Gerald C. Fischer, American Banking Structure (New York and London, 1968), p. 9.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

<sup>4</sup>Jules I. Bogen, editor, Financial Handbook (New York, 1964), p. 2.11.



With some notable exceptions (such as the Bank of North America and the First and Second Banks of the United States and whatever private banks were in existence), "all of the banks in operation in the country prior to the passage of the National Currency Act in 1863 were initially state chartered."<sup>5</sup> And with its failure to renew the charter of the Second Bank of the United States in 1836, the federal government withdrew from any supervision of the nation's banking system; thus, inaugurating a period of free banking.<sup>6</sup> During this period banking expanded rapidly, but due to laxness of state regulation, banking abuses and failures were all too common.<sup>7</sup>

The financial exigencies of the Civil War led Congress to pass, on June 3, 1864, legislation later to be christened the National Banking Act.<sup>8</sup> This law established the basis for the development of a system of federally chartered and regulated banks. State banks in existence at the time were given the opportunity to become members of the national banking system. Thus, in effect, the National Banking Act established the basis for the dual banking system that

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<sup>5</sup>Fischer, op. cit., p. 15.

<sup>6</sup>Milton L. Stokes and Carl T. Arlt, Money, Banking and the Financial System (New York, 1955), p. 343.

<sup>7</sup>Bogen, op. cit., p. 2.12.

<sup>8</sup>Marshall C. Corns, The Practical Operations and Management of a Bank (Boston, 1962), p. 75.

exists in the United States today by providing chartering and regulatory alternates to state banking.<sup>9</sup>

In December, 1913, Congress passed the Federal Reserve Act. This act was designed to correct deficiencies in the American banking structure, to promote economic stability, and to establish a central banking system for the country.<sup>10</sup> By law, national banks were compelled to become members of the Federal Reserve System. State banks retained the right to apply for membership or to remain independent of the system.

During the 1920's and early 1930's, the banking system passed through a period of financial crisis in which bank failures reached staggering proportions.<sup>11</sup> The culmination of the crisis was the banking holiday of 1933. Federal legislation passed after the moratorium was designed to strengthen the powers of supervisory agencies, to control credit, and to provide for the insurance of bank deposits through the newly created Federal Deposit Insurance Corporation.<sup>12</sup> The banking statutes passed during this time represent the most recent legislation exercising a decisive

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<sup>9</sup>Carter H. Golembe, "The Present Structure of the United States Commercial Banking System," The Banker's Handbook, edited by William H. Baughn and Charles E. Walker (Homewood, Illinois, 1966), p. 997.

<sup>10</sup>Stokes and Arlt, op. cit., p. 363.

<sup>11</sup>Golembe, op. cit.

<sup>12</sup>Bogen, op. cit., p. 2.20.

influence on the structure of commercial banking which has been enacted by Congress.<sup>13</sup>

#### Development of Banking Forms

The development of the banking system in this country engendered several banking forms: unit banking, branch banking, group banking, chain banking, and satellite banking. In terms of operational management, unit and branch banking are the most distinct and important forms. Essentially, a unit bank maintains only one place of business.<sup>14</sup> But, a branch bank maintains complete banking facilities in offices away from its main office or head office.<sup>15</sup>

In early stages of American banking development, "the right of a bank to establish branches was rarely questioned."<sup>16</sup> And indeed, branch banks were numerous in certain parts of the country prior to the Civil War.<sup>17</sup> After 1865, due to the effects of the war, legislation, and other factors,<sup>18</sup> branch banking declined in importance and almost disappeared.<sup>19</sup> By 1900, the United States was essentially a unit

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<sup>13</sup>Golembe, op. cit., p. 998.

<sup>14</sup>Corns, op. cit., p. 102.

<sup>15</sup>National Cash Register Company, Bank Terminology (Dayton, Ohio, 1962), p. 2.

<sup>16</sup>Fischer, op. cit., p. 15.

<sup>17</sup>Ibid., p. 16.

<sup>18</sup>Ibid., p. 24.

<sup>19</sup>Bogen, op. cit., p. 2.21.

banking nation; less than two per cent of the country's banking offices were controlled by branch banks.<sup>20</sup>

In 1909, when the state of California enacted liberal branch banking legislation, "branching was of so little importance that three-fifths of the states had no branching statute."<sup>21</sup> Only twelve states permitted branch banking, either on a statewide or limited basis, in 1910. By 1935, the number of states allowing branch banking had risen to thirty-five. In 1945, thirty-seven states permitted branching and in 1967 forty states allowed some form of branching.<sup>22</sup>

#### Current Structure of the Banking Industry

Today's banking industry is basically a combination of state and national banks, as far as chartering and regulation are concerned, and branch banks and unit banks as far as operations are concerned. At the end of 1967, there were 13,721 banks in this country. Of this total, 6,071 were national banks and 7,650 were state banks.<sup>23</sup> Some 5,698 banks operated in states allowing branch banking and 8,023 operated in unit banking states.<sup>24</sup> Of the total number of

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<sup>20</sup>Fischer, op. cit., pp. 30-31.

<sup>21</sup>Ibid., p. 60.

<sup>22</sup>Ibid., p. 59.

<sup>23</sup>Federal Reserve Bulletin, LIV (August, 1968), p. A-91.

<sup>24</sup>U. S. Department of Commerce, Statistical Abstract of the United States (Washington, 1968), p. 446.

commercial banks, 3,487 maintained branches or additional offices.<sup>25</sup>

The activities of these banks are supervised by various federal and state agencies. National banks fall under the jurisdiction of the Comptroller of the Currency, the Federal Reserve System, and the Federal Deposit Insurance Corporation. As a general rule, the Comptroller examines national banks, the Federal Reserve examines state member banks, and the Federal Deposit Insurance Corporation examines non-Federal Reserve member state banks. State chartered banks are periodically examined by the appropriate state agency.<sup>26</sup>

Unlike other countries, the United States banking structure still retains much of a small unit characteristic.<sup>27</sup> While there are a number of very large institutions in the industry, in 1963 over seventy-five per cent of all the banks in this country held deposits of less than ten million dollars.<sup>28</sup> On the other hand, some degree of concentration does exist in the banking industry. For example, concentration ratios published at the end of 1962 indicated that the one hundred largest banks in the country held forty-six per cent of the commercial banking system's

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<sup>25</sup>Federal Reserve Bulletin, LIV (April, 1968), p. A-87.

<sup>26</sup>Corns, op. cit., pp. 127-28.

<sup>27</sup>Golembe, op. cit., p. 1002.

<sup>28</sup>Ibid., p. 1004.

deposits, while fourteen per cent of the system's deposits were held by the five largest institutions.<sup>29</sup>

### Important Trends in Modern Banking

Since the end of World War II, a number of significant developments and changes have occurred in the commercial banking industry. Some of the most frequently mentioned developments are (1) increased competitive pressure from other financial institutions,<sup>30</sup> (2) increased operating costs,<sup>31</sup> (3) more rapid increase in loan demand than in supply of loan funds, (4) advent of the computer, (5) expansion of the marketing function, (6) recognition on the part of bank managers of the need for financial and operational planning, and (7) the emergence of the credit card.<sup>32</sup>

These major developments suggest two primary trends: increased competition and expanded services. These trends have had a significant effect upon commercial banks, and their effect can best be seen by examining the changes in bank operating ratios and numbers of branch facilities.

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<sup>29</sup>Ibid., p. 1005.

<sup>30</sup>"Banking: At the Crossroads," Forbes, CI (June 15, 1968), 22.

<sup>31</sup>Harvey G. Kolberg, "The Application of Systems Principles and Techniques to Bank Operations in Small and Medium Size Banks," unpublished thesis, The Stonier Graduate School of Banking, Rutgers University, New Brunswick, New Jersey, 1966, pp. 12-17.

<sup>32</sup>E. Sherman Adams, "Oncoming Challenges for Commercial Bankers," The Commercial and Financial Chronicle, CCV (May 25, 1967), pp. 2054-2055.

Changes in Operating Ratios

Table I shows the operating ratios of all Federal Reserve System member banks for the period 1945-1967. An examination of this data indicates that in 1945 total

TABLE I

OPERATING RATIOS OF ALL FEDERAL RESERVE  
SYSTEM MEMBER BANKS, 1945-1967\*

(Expressed as a per cent  
of total earnings)

Year	Total Earnings	Salaries and Wages	Interest on Time Deposits	Other Current Expenses	Total Expenses	Net Current Earnings Before Taxes
1967	100.0	20.4	34.1	21.1	75.6	24.4
1966	100.0	20.4	32.4	21.5	74.3	25.7
1965	100.0	21.9	30.4	21.4	73.7	26.3
1964	100.0	22.9	27.3	21.6	71.8	28.2
1963	100.0	23.8	25.6	21.6	71.0	29.0
1962	100.0	24.6	23.2	21.5	69.3	30.7
1961	100.0	25.6	18.7	21.6	65.9	34.1
1960	100.0	25.6	16.1	21.6	63.3	36.7
1959	100.0	26.2	15.8	21.6	63.6	36.4
1958	100.0	27.8	15.8	21.2	64.8	35.2
1957	100.0	27.7	13.7	21.0	62.4	37.6
1956	100.0	28.5	10.7	21.3	60.5	39.5
1955	100.0	29.4	10.2	21.5	61.1	38.9
1954	100.0	30.3	10.2	21.6	62.1	37.9
1953	100.0	29.9	9.3	21.4	60.6	39.4
1952	100.0	30.2	8.8	21.7	60.7	39.3
1951	100.0	30.7	8.3	21.8	60.8	39.2
1950	100.0	30.6	8.3	23.0	61.9	38.1
1949	100.0	31.0	8.8	23.5	63.3	36.7
1948	100.0	31.0	8.9	23.6	63.5	36.5
1947	100.0	30.9	9.2	23.9	64.0	36.0
1946	100.0	29.1	8.8	23.2	61.1	38.9
1945	100.0	27.6	8.7	24.0	60.3	39.7

\*Source: Federal Reserve Bulletin, selected volumes.

expenses constituted 60.3 per cent of total current earnings for member banks. By 1960, the percentage had not changed greatly, rising only to 63.3 per cent. But by 1967, total expenses accounted for 75.6 per cent of total current earnings. Since the net current earnings percentage is a residual value, it is readily apparent that the increase in expense percentage has resulted in a decrease in the earnings ratio: from 39.7 per cent in 1945 to 36.7 per cent in 1960 to 24.4 per cent in 1967.

An examination of gross income and expense data for Federal Reserve member banks accentuates the profit margin squeeze. In 1945, total revenue for all member banks was \$2.1 billion. By the end of 1967, total revenue had climbed to almost \$17.9 billion, an increase of 8.5 times. During the same time period, total expenses rose from \$1.3 billion to \$13.5 billion or approximately 10.66 times. Net current income before taxes, for the same period of years, increased from \$.8 billion to almost \$4.4 billion, an increase of 5.22 times.<sup>33</sup>

One of the contributing factors behind the pressure on profits is a shift in the deposit mix. Table II shows the changes which have occurred in the composition of commercial bank deposits during the period 1945-1958. At the end of

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<sup>33</sup>Federal Reserve Bulletin, LIV (May, 1968), A-94; XXXIV (May, 1948), 576.



TABLE II

COMPOSITION OF COMMERCIAL BANK  
DEPOSITS, 1945-1968<sup>a</sup>(Deposits expressed in  
millions of dollars)

Year End <sup>b</sup>	Total Deposits	Demand Deposits <sup>c, d</sup>	Time Deposits <sup>e</sup>	Per Cent of Total Deposits	
				Demand	Time
1968	431,820	228,080	203,740	52.82	47.18
1967	395,008	211,183	183,825	53.46	46.54
1966	352,287	192,514	159,773	54.65	45.35
1965	332,436	184,731	147,705	55.57	44.43
1964	307,170	179,631	127,539	58.48	41.52
1963	275,120	163,530	111,590	59.44	40.56
1962	262,122	163,878	98,244	62.52	37.48
1961	248,689	165,779	82,910	66.66	33.34
1960	229,843	156,403	73,440	68.05	31.95
1959	219,903	152,293	67,610	69.25	30.75
1958	216,017	150,152	65,865	69.51	30.49
1957	201,326	143,501	57,825	71.28	28.72
1956	197,515	145,147	52,368	73.49	26.51
1955	192,254	143,539	48,715	74.66	25.34
1954	184,757	137,548	47,209	74.45	25.55
1953	176,702	132,705	43,997	75.10	24.90
1952	172,931	131,919	41,012	76.28	23.72
1951	164,840	126,703	38,137	76.86	23.14
1950	155,265	118,762	36,503	76.49	23.51
1949	145,174	108,846	36,328	74.98	25.02
1948	142,843	106,922	35,921	74.85	25.15
1947	144,103	108,743	35,360	75.46	24.54
1946	139,033	105,103	33,930	75.60	24.40
1945	150,227	119,986	30,241	79.87	20.13

<sup>a</sup>Source: Federal Reserve Bulletin, selected volumes.<sup>b</sup>All 1968 figures are preliminary.<sup>c</sup>Includes Interbank, U. S. Government, and other deposits. Prior to 1956, includes Interbank Time Deposits.<sup>d</sup>For some years, reported amounts have been rounded to agree with total deposits.<sup>e</sup>Includes Interbank Time Deposits and Time Deposits except for years prior to 1956.

1945, commercial bank deposits were composed of almost 80 per cent demand deposits and 20 per cent time deposits. Over the years the deposit mix has changed so that at the end of 1968, the percentage of demand deposits had decreased to about 53 per cent of total deposits, and the percentage of time deposits had increased to 47 per cent of total deposits.

In the post-war period, interest rates payable on time deposits have risen from a basic rate of 2.5 per cent to 4.0 per cent. And in some instances, rates as high as 6.25 per cent are permissible today.<sup>34</sup>

Table I indicates the effect a higher ratio of time deposits and higher rates of interest on such deposits has had on bank profitability. In 1945 interest on time deposits amounted to only 8.7 per cent of total current earnings, but in 1967 it amounted to 34.1 per cent. And more significantly perhaps, the percentage more than doubled between 1960 and 1967.

In gross terms, interest on time deposits for all Federal Reserve member banks was approximately \$183 million in 1945. By 1967, it had reached \$6.1 billion.<sup>35</sup> This represents an increase of over thirty-three times between 1945 and 1967.

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<sup>34</sup>Ibid., LIV (October, 1968), A-11; XLIII (December, 1961), 1424.

<sup>35</sup>Ibid., LIII (May, 1968), A-94; XXXIV (May, 1948), 576.

While Table I indicates that salaries and wages as a percentage of total earnings have declined from 27.6 per cent in 1945 to 20.4 per cent in 1967, it should not be inferred that salaries are becoming less significant as an element of cost. In gross terms, salaries and wages for member banks amounted to \$580 million in 1945. In 1967 they amounted to \$3.6 billion dollars. Or in other words, salaries and wages increased 6.29 times between 1945 and 1967.<sup>36</sup> Thus, salary expense still constitutes a major cost for banks and it has been increasing at a relatively significant rate.

Since World War II, commercial banks have experienced substantial increases in total earnings; however, increases in expenses during this period have been even more substantial. The result is that net earnings have not kept pace with increases in gross revenue and bank profit margins have therefore been lowered.

#### Increase in Branch Offices

Table III shows that in 1945 only 1,122 of the nation's commercial banks maintained branch offices. This represented a scant eight per cent of the total number of banks. At the end of 1967, some 3,487 banks, or over twenty-five per cent of the nation's banks, maintained branch offices. Thus, between 1945 and 1967, the number of banks with branches increased by slightly over 210 per cent.

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<sup>36</sup>Ibid.

Table III also reveals that while the total number of commercial banks decreased by 287 between 1945 and 1968, the number of branch offices in existence rose by 14,478.

TABLE III  
NUMBER OF BANKING OFFICES IN THE  
UNITED STATES, 1945-1968\*

Year End	Total Commercial Banks (Head Offices)	Branches, Additional Offices, Facilities	Banks Maintaining Branch Offices	Per Cent of Total Banks Maintaining Branches
1968**	13,724	18,425	n.a.	n.a.
1967	13,721	17,928	3,487	25.41
1966	13,770	16,908	3,313	24.06
1965	13,804	15,756	3,140	22.75
1964	13,761	14,601	2,966	21.55
1963	13,569	13,498	2,791	20.57
1962	13,427	12,345	2,619	19.51
1961	13,432	11,353	2,484	18.49
1960	13,472	10,483	2,329	17.29
1959	13,474	9,652	2,164	16.06
1958	13,501	8,861	2,010	14.89
1957	13,568	8,204	1,893	13.95
1956	13,640	7,589	1,790	13.12
1955	13,716	6,923	1,659	12.10
1954	13,840	6,306	1,571	11.35
1953	13,981	5,826	1,474	10.54
1952	14,046	5,465	1,359	9.68
1951	14,089	5,153	1,361	9.66
1950	14,121	4,843	1,291	9.14
1949	14,156	4,579	1,226	8.66
1948	14,171	4,349	1,166	8.23
1947	14,181	4,161	1,119	7.89
1946	14,044	3,981	1,086	7.73
1945	14,011	3,947	1,122	8.01

\*Source: Federal Reserve Bulletin, selected volumes.

\*\*June 30, 1968.

This post-war increase in branch banking is perhaps indicative of the desire of commercial banks to follow their customers into the suburbs and to expand their retail banking services.<sup>37</sup> In any event, the figures indicate the increased importance of branch banking.

#### Impact of Cost and Branch Trends

Arising out of all the post-war developments in commercial banking, but particularly the changes in operating ratios and branch trends, is the recognition by bank managers that more attention must be paid to principles and techniques of good management.<sup>38</sup> Changes in profitability have increased the need for planning and control in the income-expense areas. The growth of branch banking has increased the need for some means of controlling decentralized operations. Increasingly, in order to fulfill these needs, bankers have instituted programs for better planning and control of operations. In particular, programs for expense accounting, work measurement, and branch control have been initiated in the post-war era.

Expense accounting.--It is generally accepted in the banking industry that bankers have had little knowledge

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<sup>37</sup>Golembe, op. cit., p. 1000.

<sup>38</sup>Adams, op. cit., p. 2055.

regarding their costs.<sup>39</sup> To some extent, bankers have been in the paradoxical position of expecting corporate borrowers to know their own costs in order to substantiate loan requests, while at the same time bankers have been unable to make such a determination for themselves.<sup>40</sup> This lack of cost knowledge has resulted in bankers' traditionally undercharging for the services they perform. Generally, this undercharge was more than offset by requiring corporate customers to leave large balances on deposit.<sup>41</sup> But over the years, corporate financial managers have grown more astute and are now reluctant to leave large cash balances sitting idle in banks.<sup>42</sup> Many corporate treasures now recognize that it is more profitable to pare bank balances to a minimum and pay fees for the services performed by a commercial bank.<sup>43</sup> As a result, corporate balances have shifted out of commercial deposits and into time deposits and other short-term investments.<sup>44</sup> Table II reveals the

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<sup>39</sup>"Banking: At the Crossroads," p. 30.

<sup>40</sup>David A. Radius, "Work Measurement Plus Cost Analysis Equals Improved Decisions," The Magazine of Bank Administration, XLIV (June, 1968), 20.

<sup>41</sup>James P. Furniss and Paul S. Nadler, "Should Banks Reprice Corporate Services?" Harvard Business Review, XLIV (May-June, 1966), 95.

<sup>42</sup>"Banking: At the Crossroads," pp. 22-23.

<sup>43</sup>Furniss and Nadler, op. cit., p. 97.

<sup>44</sup>"Banking: At the Crossroads," p. 23.

dramatic impact this movement has had on the composition of bank deposits.

Thus, in the 1960's the commercial banker found his sources of free money slipping away, his operating costs increasing rapidly, his profit margin dropping, and his corporate customers demanding fee quotations for bank services. Confronted with such circumstances, bankers turned to management tools and techniques which would assist them in determining their costs of doing business, pricing new services, and in exercising some degree of control over soaring expenses. Expense budgeting and costing systems began to be implemented.

Work measurement.--Another program that bankers began to implement in the 1960's was work measurement. Fed by the need for accurately determining costs and controlling expenses, work measurement programs became more and more a tool of modern bank management during this period. Table IV presents information relative to the starting dates of work measurement programs as determined through the questionnaire survey of commercial banks. This table shows that 93 of the 103 respondents reporting the starting date of their present work measurement program indicate that the program had its birth between 1960 and 1968, inclusive. This means that of all the programs covered by the survey, 90.29 per cent came into existence during the 1960's, the

period of the profit squeeze. Only 7.77 per cent of the programs were born in the 1950's and 1.94 per cent in the 1940's.

TABLE IV  
STARTING DATES OF WORK MEASUREMENT PROGRAMS  
IN SURVEYED COMMERCIAL BANKS\*

(103 banks replying to this  
particular question)

Year Started	Number of Responses	Per Cent of Responses**
1968	13	12.62
1967	21	20.39
1966	14	13.59
1965	21	20.39
1964	13	12.62
1963	5	4.85
1962	2	1.94
1961	3	2.91
1960	1	.97
1959	1	.97
1958	2	1.94
1957	..	..
1956	1	.97
1955	1	.97
1954	1	.97
1953	..	..
1952	1	.97
1951	1	.97
1950	..	..
1949	1	.97
1948	1	.97
Total	103	100.00

\*Source: Questionnaire mailed to select group of commercial banks, December, 1968.

\*\*Column total adds to 99.98 per cent because of rounding.



This coincidence of the increase in work measurement programs with the advent of the profit squeeze appears to be too great to be entirely accidental. The conclusion suggested by the simultaneous occurrence of these events is that rising costs and declining profit margins led commercial banks to initiate measures designed to control their operating costs. Such a conclusion is also amply supported by the literature. Radius,<sup>45</sup> Baldyga,<sup>46</sup> Jordan and Higgins,<sup>47</sup> Stoft,<sup>48</sup> and Melick<sup>49</sup> indicate that work measurement programs in banks are basically designed for and implemented to control costs and provide information for pricing services.

Additional supporting evidence for such a conclusion comes from a series of interviews held with various bankers across the country. The question, "How did your bank become interested in work measurement?" elicited the following responses from several of the interviewees.

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<sup>45</sup>David A. Radius, "One Bank's Approach to the Profit Squeeze," Banking, LIX (September, 1966), 136ff.

<sup>46</sup>Donald A. Baldyga, "Clerical Work Measurement Using MTM Data," Journal of Methods-Time Measurement, XI (March-April, 1966), 16-25.

<sup>47</sup>B. Glen Jordan and Daniel T. Higgins, "Performance Measurement for Clerical Operations," Banking, LIX (November, 1966), 53ff.

<sup>48</sup>D. Duane Stoft, "Improving Profits via Work Measurement," Burroughs Clearing House, LII (October, 1967), 23-25ff.

<sup>49</sup>Gail M. Melick, "Potential Benefits of a Work Measurement Program," Bankers Monthly, LXXXIII (March, 1966), 51.

Our costs had been going up and profits had not been going up with the costs. So the board of directors wanted to find out what was wrong.<sup>50</sup>

. . . our bank's percentage of salaries to operating or to gross income was much higher than it should be, compared to all the other banks of our size in the country.<sup>51</sup>

I think the main reason was, of course, to control the operating costs.<sup>52</sup>

. . . the realization of the fact that the amount of staff seemed to be going up disproportionate to the amount of new business.<sup>53</sup>

The evidence strongly suggests that work measurement in commercial banks is primarily a product of the 1960's. While not wholly responsible for its birth, the profit pinch gave added impetus to the development of such programs in banks.

Performance control in branches.--In addition to the need for cost control, a second factor influencing the development of work measurement in banking has been the rapid post-war expansion of branch banking facilities. It is generally recognized that as decentralization increases in an organization, the need for control also increases.<sup>54</sup>

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<sup>50</sup>Confidential interview with official of bank U.

<sup>51</sup>Confidential interview with official of bank T.

<sup>52</sup>Confidential interview with official of bank K.

<sup>53</sup>Confidential interview with official of bank Y.

<sup>54</sup>William H. Newman, Charles E. Summer, and E. Kirby Warren, The Process of Management, 2nd ed. (Englewood Cliffs, New Jersey, 1967), p. 740.

For example when a bank manager delegates work to a branch manager he creates a need for knowing that the work is performed in accordance with his expectations. This means that for delegation or decentralization to be effective there must be some basis for measuring actual performance and comparing it to anticipated results. Therefore, performance standards must be set which will serve as benchmarks with which actual performance can be compared. Work measurement is a tool which permits the setting of standards and allows the establishment of a performance base in such areas as personnel utilization and overall operating effectiveness. Work measurement thereby enables the control of decentralized operations.

Available evidence suggests that banks operating large numbers of branches were generally the first to establish work measurement programs. Of the 103 survey respondents reporting starting dates for their work measurement programs in Table IV, the 10 banks which started their current programs prior to the decade of the profit squeeze are all branch banks.

In interviews with officials of three of these ten banks, it was generally affirmed that the original interest in work measurement came not so much from a need to reduce

costs, or to pare staff, but from a need to establish some basis for comparing and evaluating the overall performance of branch offices.<sup>55</sup>

Since World War II, and primarily since 1960, bank managers, because of rising costs, declining profit ratios, and increasing decentralization in the form of new branch offices, have recognized the need for application of better management techniques. Work measurement, born of this recognition, has become a necessity, not a luxury for a number of banks in their efforts to better plan and control operations.

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<sup>55</sup>Confidential interviews with officials of banks Q, F, and B.

## CHAPTER III

### THE USES AND TECHNIQUES OF WORK MEASUREMENT

#### Applying Work Measurement to Office Activities

##### Definition of Work Measurement

Defined in its broadest sense, work measurement is simply a means "of establishing an equitable relationship between the volume of work performed and the manpower utilized in completing that volume."<sup>1</sup> Normally, this relationship is expressed either in terms of the time required by a qualified worker performing at a normal rate of speed under uniform conditions and experiencing normal fatigue and delays to produce one unit of output or accomplish one set of tasks,<sup>2</sup> or in terms of the quantitative manpower required to process the total workload volume of a given work center.<sup>3</sup> When the relationship is expressed in terms

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<sup>1</sup>Bureau of the Budget, A Work Measurement System: Development and Use (Washington, 1950), p. 2.

<sup>2</sup>"Industrial Engineering Terminology Definitions Approved by ASME Work Standardization Committee," Industrial Engineering Handbook, edited by H. B. Maynard (New York, 1956), p. 1.91.

<sup>3</sup>Department of the Air Force, Management Engineering Procedures (Washington, 1968), p. AI-5.

of time requirements for producing one work unit, the end result is called a unit time standard. When the relationship is expressed in terms of numbers of people required to accomplish total work volume, the end result is referred to as a manpower standard.

Regardless of the technique used in arriving at unit time standards or manpower standards, the basic purpose of work measurement remains the same--to specify the amount of time it should take to perform a given amount of activity.

#### Difficulties in Measuring Office Activities

Basically, any work can be measured and time standards set for its accomplishment if the following criteria are met: (1) the work is done in a reasonably repetitive manner; (2) work content is relatively consistent; (3) work effort results in a quantifiable unit of output; and (4) the volume of activity is sufficient to warrant measurement.<sup>4</sup>

Special characteristics of office work.--Office activities have been referred to as the information handling and memory functions of a firm.<sup>5</sup> Within these functions the office can be said to render two broad types of services: (1) operating services, and (2) control services. Operating

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<sup>4</sup>Elmer V. Grillo and Charles J. Berg, Jr., Work Measurement in the Office (New York, 1959), p. 10.

<sup>5</sup>Harry L. Wylie, editor, Office Management Handbook (New York, 1958), p. 1.1.

services encompass such functions as reception, typing, filing, billing, etc. Control services include accounting, statistical analysis, and other activities concerned with planning, coordinating, and measuring the performance of the organization.<sup>6</sup>

Although work measurement has been widely used in factory operations for many years, its application to office activities has come about slowly because office work was felt by many to have certain characteristics which made application more difficult in the office than in the factory.<sup>7</sup> Among the most frequently cited special characteristics of office work are (1) the large amount of mental work involved; (2) the high variability in work content; (3) the large number of low volume activities;<sup>8</sup> (4) the frequent fluctuations in the level of activity;<sup>9</sup> (5) the absence, in many cases, of a tangible product;<sup>10</sup> (6) the

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<sup>6</sup>Ibid., pp. 1.3-1.4.

<sup>7</sup>C. L. Littlefield and Frank Rachel, Office and Administrative Management (Englewood Cliffs, N.J., 1964), p. 412.

<sup>8</sup>Ibid.

<sup>9</sup>D. A. Stivers, "Leveling Peak Office Workloads: One Company's Approach," Management Review, XLVI (March, 1957), 20.

<sup>10</sup>Arthur E. Fain, "Setting Standards for Jobs That Require Mental Decisions," The Office, XLVII (April, 1958), 94.

lack of volume data on office production;<sup>11</sup> and (7) the absence of strict job specialization.<sup>12</sup>

Special characteristics of bank work.--"Commercial banks have long been recognized for their distinct capabilities as paper handlers and record keepers."<sup>13</sup> In rendering their various services such as making loans, processing checks, administering trusts, reconciling accounts, and handling lockbox or other types of collections, banks are essentially engaged in performing certain information handling and memory functions. By nature then, a bank engages in work which is basically nothing more than office work. As such the activity taking place within a bank has the same characteristics of any other type of office work: it requires mental decisions, and there are many low volume tasks, etc. However, despite the similarities, historically "banks have considered their office work forces unique, with duties . . . different from other kinds of industries."<sup>14</sup> Primarily, this has been because of the extreme fluctuations in banking operations. Activity volumes are subject to yearly,

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<sup>11</sup>William E. Arnstein, Management Services by Accounting Firms (New York, 1967), p. 379.

<sup>12</sup>George D. Wilkinson, "Office Methods and Standards," Industrial Engineering Handbook, p. 8.96.

<sup>13</sup>Raymond C. Kolb, "The Paper Work in Banks," The Banker's Handbook, p. 158.

<sup>14</sup>William B. Hanson, "Performance Measurement of Bank Clerical Operations," The Bankers Magazine, CL (Winter, 1967), 83.



monthly, and even daily fluctuations which cause workloads to experience wide variations in volume and intensity.<sup>15</sup> Such features were long thought to render bank work unmeasurable.<sup>16</sup>

#### Measurable Office Activities

Examination of the special characteristics of office and bank work indicates that difficulties in measuring these activities are frequently overstated.<sup>17</sup> While judgment and decision making are involved in a great deal of office or bank work, the mental effort is, in a great many cases, of such a nature that times for arriving at decisions can be determined through study over a period of time which would encompass normal variations.<sup>18</sup> According to one writer, if the work measurement study has carefully considered and assigned a fair time value to all the physical elements necessary in making a decision, it is reasonable to expect that the decision will have been reached by the time the physical processes have been completed.<sup>19</sup> Even though variability in work content does exist so that a simple task such as typing a letter or preparing a loan application is different each time, an "average time" for handling the "average" letter or loan application can still be determined,

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<sup>15</sup>Ibid.

<sup>16</sup>Ibid.

<sup>17</sup>Littlefield and Rachel, op. cit.

<sup>18</sup>Ibid.      <sup>19</sup>Fain, op. cit., p. 101.

for despite variability in work content, there is also great similarity. While it is true that there are many low volume activities which do not justify the use of elaborate work measurement techniques, many of these activities can be measured through use of less sophisticated techniques at relatively low cost. Frequent fluctuations in workload volumes present problems, but they do not preclude measurement. While tangible products are absent in many cases, such as looking up a deposit account balance for a customer, human effort is still directed toward the accomplishment of a task, and the time required for accomplishment can be determined even though no end product is tangibly produced. Although volume data is lacking on many office activities, this problem can be readily overcome through the establishment of appropriate records. While job specialization is not as strict in the office and an employee may perform several tasks rather than only one, time values can still be determined for each of the several tasks.

In actual practice, between seventy-five per cent<sup>20</sup> and ninety-five per cent<sup>21</sup> of all office work is considered by authorities to be measurable. And in one instance, a management consulting firm indicated to one of the country's

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<sup>20</sup>Littlefield and Rachel, op. cit.

<sup>21</sup>"Clerical Time Measurement," Bruce Payne and Associates, Inc., New York, no date, p. 4.

larger banks that as much as ninety-eight per cent of the bank's clerical work could be measured.<sup>22</sup>

Generally, only two types of office work are considered to be outside the purview of work measurement: (1) creative jobs, such as design draftsmen or methods analysts, and (2) jobs where an individual must be maintained at a work station regardless of volume, such as a receptionist or a supply room attendant.<sup>23</sup> All other office activities from adding and addressing to coding and collating, from multigraphing and multiplying to tallying and teletyping, are considered to be measurable.<sup>24</sup> Specific types of bank operations which are measurable will be considered in detail in the following chapter.

#### Uses of Work Measurement Data

Work measurement is a two-edged sword. Its results can be utilized for either the planning or controlling of operations.<sup>25</sup> As a planning device, work measurement provides data concerning how long any task or group of activities should take. In essence, the unit time standards or manpower standards generated through work measurement serve as standing plans which can be used to determine future staff

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<sup>22</sup>Confidential information extracted from management consulting firm's proposal to officials of bank N.

<sup>23</sup>P. M. Grieve, "Can you Profit from Clerical Work Standards?," Management Review, XLV (March, 1956), 195.

<sup>24</sup>Wylie, op. cit., p. 21.2

<sup>25</sup>Littlefield and Rachel, op. cit., pp. 410-11.

needs, price new products or services, prepare expense budgets, establish performance objectives, schedule operations, and indicate the need for new methods or equipment.

As a control tool, work measurement standards provide the basis for controlling overtime, controlling costs, comparing performance of work centers, employees, or supervisors, and paying wages based on output.

Work measurement thus provides a basis for short range as well as long range planning and scheduling.<sup>26</sup> At the same time, it offers management a tool for gauging how well current operations are proceeding as compared to planned expectations, thereby establishing a basis for taking corrective action.

In the following paragraphs, the general planning and controlling uses to which work measurement data can be put will be examined. In order to simplify presentation, the major uses of work measurement data have been grouped under five headings: (1) manpower determination, (2) cost determination, (3) performance evaluation and improvement, (4) improvement of operating methods and procedures, and (5) incentive wages.

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<sup>26</sup>Earl R. Lind, "Let's Compare Work Measurement Techniques," Systems and Procedures Journal, XVIII (January-February, 1967), 13.

### Manpower Determination

Staff adjustments.--One of the prime uses of work measurement data is to make adjustments in current staff complements. By objectively providing an indication of "should take" time, work measurement gives management the ability to compare time actually spent with what should be spent. Where current staff is insufficient, additional employees can be added.<sup>27</sup> Where current staff is in excess of what standards show to be required, deletions can be made.<sup>28</sup>

Projection of future manpower needs.--Knowing the time required for performing activities, anticipated volume increases can be translated into numbers of people. Thus, work measurement data provides a basis for forecasting the need for additional manpower, thereby enhancing control over additions to staff.<sup>29</sup>

Justification of overtime.--Time data provides a work center supervisor a tool which can be used to justify use of overtime in order to accomodate peak periods of activity or to meet crucial deadlines.<sup>30</sup>

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<sup>27</sup>Thomas C. Pitney, "Bank Approaches to Controlling Clerical Costs," Burroughs Clearing House, XLV (November, 1960), 98.

<sup>28</sup>Bruce Payne and David Swett, Office Operations Improvement (New York, 1967), pp. 17-18.

<sup>29</sup>Pitney, op. cit.

<sup>30</sup>Grillo and Berg, op. cit., p. 157.

### Cost Determination

Unit or functional costs.--The determination of costs requires knowledge of the amount of time involved in producing work units or rendering services.<sup>31</sup> Work measurement, through unit time standards, supplies this information, thereby making it possible to assign labor costs to specific work units or to entire functions.

Pricing new services.--Where detailed cost standards are available, the cost of performing new or additional services can be determined in advance and realistic charges for performance of these services can be set. Work measurement, by supplying an indication of time required for service performance, is the backbone of pricing new services.

Expense budget preparation.--By forecasting anticipated volumes and applying unit time standards to them, the total number of required manhours for the coming period can readily be determined.<sup>32</sup> These hours can then be translated into dollar figures. Likewise, costs other than labor which tend to vary with volume can be projected. Thus, work measurement data facilitates budget preparation.

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<sup>31</sup>Stoft, op. cit., p. 63.

<sup>32</sup>Payne and Swett, op. cit., p. 109.

Performance Evaluation and Comparison

Comparison between work centers.--Work measurement standards, by expressing group performance in common terms, make it possible to compare the performances of heterogeneous work centers.<sup>33</sup> The standard hours produced in a work center during a given period can be divided by the number of actual hours expended during the same period and an indication of how effectively the work center utilizes its available time can be had. Comparisons can then be made between centers on the basis of how well they utilize the manhours they have available to them.

Evaluation of individual employees.--In those instances where the work measurement program provides for reporting of individual effort, one employee can be compared with another on the basis of effective utilization of time. Such a comparison makes possible the identification and subsequent rewarding of high performers, while at the same time identifying low performers who may need special supervisory assistance.<sup>34</sup> Individual performance indices also make it possible to evaluate an individual's progress over a period of time, noting the extent or lack of improvement in his performance.

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<sup>33</sup>Melick, op. cit.

<sup>34</sup>Payne and Swett, op. cit., pp. 84-94.

Evaluation of supervisors.--Closely allied to performance comparisons between work centers is the evaluation of work center supervisors. Actually, in comparing performances of work groups, management is evaluating those charged with the responsibility of overseeing the work groups. While it is not the only basis on which a supervisor should be evaluated, the performance index of his work center does offer some indication of his managerial ability, particularly in the effective utilization of available manhour resources.<sup>35</sup>

Establishment of performance goals.--Work measurement provides a tool for setting various work center or employee goals. Among the goals which may be established for the work center are such things as percentage utilization of available hours, achievement of specified staffing levels, and maintenance of standards coverage.<sup>36</sup> A basic employee goal would be achievement of a specified level of efficiency as measured by utilization of available time. Thus, work measurement can be used to set individual or group performance targets and to monitor progress toward achievement of stated objectives.

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<sup>35</sup>H. Jack Hansen, "Work Measurement as a Base for a Total System," The Office, LXVIII (February, 1968), 72.

<sup>36</sup>Baldyga, op. cit., p. 22.



Improvement of Operating Methods  
and Procedures

Production scheduling.--By providing a work center supervisor with a tool for precisely estimating time required for processing work, work measurement makes it easier for a supervisor to allocate manhours to accomplishment of tasks; higher priority activities can be assigned adequate manpower. In addition, work measurement data makes it possible to determine the amount of manhours that will be needed to process fluctuating workloads. With a knowledge of anticipated volumes and the time required for their processing, workers can be scheduled into the work center at appropriate times, or through the use of backlogging, workloads can be smoothed-out and handled by a constant size work force.<sup>37</sup> In addition, knowledge of processing times makes it possible to achieve greater synchronization of work flows between departments.

Indication of need for methods changes.--Low percentage performances reflected on periodic work measurement reports may be attributed to several causes; one cause is poor work methods. Therefore, the performance report may serve as the stimulus for investigating current methods. Work measurement data also enables a comparison between present methods and proposed methods.<sup>38</sup> Before changes are initiated, they can

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<sup>37</sup>Grillo and Berg, op. cit., pp. 155-57.   <sup>38</sup>Ibid., p. 160.

be carefully compared with current methods to ascertain the kind and amount of savings which might accrue from adopting new methods. After a new method has been installed, work measurement data provides a tool for following-up the installation to determine if anticipated results have actually been achieved.<sup>39</sup>

Indication of need for equipment and other facilities.--

As stated in the preceding paragraph low performance is attributable to several factors. Two of these are poor equipment and inadequate facilities. The work measurement report may lead to a study of these items. And as in comparing methods, work measurement data provides a means for comparing types of equipment<sup>40</sup> or different physical facilities.

Incentive Wages

An incentive wage is a financial inducement other than base pay or overtime paid to an employee for exceeding an established goal.<sup>41</sup> Normally, the financial inducement bears an established relationship to quantity of production, or quality of production, or other factors.<sup>42</sup> Despite

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<sup>39</sup>Ibid., pp. 160-161.

<sup>40</sup>Grieve, op. cit., p. 197.

<sup>41</sup>"Industrial Engineering Terminology Definitions," p. 1.77.

<sup>42</sup>Ibid.

widespread use in manufacturing,<sup>43</sup> wage incentives have been slow to catch on in the office.<sup>44</sup>

Incentive wage systems, whether group or individual, require accurate time standards. Because such standards affect compensation, they must be set with great care.<sup>45</sup> Work measurement, through its more precise techniques such as predetermined elemental data systems or stopwatch time study, provides a means whereby accurate standards can be set for use in wage determination and payment.

#### Techniques of Work Measurement

The primary purpose of this section is to examine briefly the techniques used for measuring work and setting standards. In order to show how the techniques fit into the overall procedural framework of work measurement, brief consideration will first be given to general procedures for conducting work measurement.

Although the precise procedure followed in developing work measurement standards will vary depending upon the techniques used, the general procedure consists of four phases: (1) preliminary planning, (2) pre-measurement analysis, (3) measurement, and (4) post-measurement utilization and maintenance of standards.

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<sup>43</sup>"Truth About Wage Incentives and Work Measurement Today," Factory, CXVII (April, 1959), p. 77. This article reports on a survey responded to by 201 manufacturing plants. Sixty-seven per cent of the respondents reported the use of wage incentives in the plant.

<sup>44</sup>Grillo and Berg, op. cit., p. 165. <sup>45</sup>Ibid., p. 166.

The preliminary planning phase consists of all those activities concerned with the initial establishment and implementation of the work measurement effort. As a procedural step, preliminary planning would take place before the first work measurement study and would not be repeated for subsequent studies. Included in the preliminary stage would be the following activities: (1) determination of objectives, (2) establishment of policy guidelines, (3) selection of the consultant if one is used, (4) assignment of the work measurement group to an organizational unit, (5) selection and training of analysts,<sup>46</sup> and (6) general orientation of organizational members.<sup>47</sup>

The pre-measurement analysis phase is concerned with all those activities which must be performed before measurement actually begins in a specific work center. Normally, this might include: (1) indoctrination of work center personnel, (2) analysis and improvement of work center operations,<sup>48</sup> (3) determination and description of measurable work activities, (4) installation of production reporting system,<sup>49</sup> and (5) selection of appropriate work measurement techniques.<sup>50</sup>

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<sup>46</sup>Ibid., pp. 12-21.

<sup>47</sup>"Administrative Work Measurement," Business Systems (Cleveland, 1966), p. 11.4.

<sup>48</sup>Pitney, op. cit., p. 48.

<sup>49</sup>Wallace J. Richardson, "Work Sampling Today," Factory, CXVII (September, 1959), 48.

<sup>50</sup>"Administrative Work Measurement," p. 11.6

The measurement phase encompasses all those activities necessary to the collection of data and to the development of standards.

The post-measurement phase includes all efforts associated with implementation and utilization of work measurement standards. Among these activities are: (1) implementation of a continuous reporting system,<sup>51</sup> (2) management application of the standards to achieve stated objectives,<sup>52</sup> (3) audit of reported data in order to verify correctness, and (4) restudy or revision of standards as required.<sup>53</sup>

Among the best known techniques for measuring office or bank activities are historical records, short interval scheduling, self-logging, wrist watch time study, work sampling, stopwatch time study, and predetermined time systems. In the following paragraphs, each of these techniques will be described and their apparent advantages and disadvantages will be cited.

#### Historical Records

General description.--Historical records represent the simplest form of work measurement.<sup>54</sup> Essentially, the

<sup>51</sup>Radius, "One Bank's Approach to the Profit Squeeze," p. 138.

<sup>52</sup>"Why Not Set Standards for Office Work?" Personnel Administration, XXI (September, 1958), 48.

<sup>53</sup>Grillo and Berg, op. cit., p. 20.

<sup>54</sup>"Administrative Work Measurement," p. 11.7.

historical records technique involves the correlation of production volumes and manpower data which have been collected over an appropriate time period. For example, a payroll issuing section of a firm may have recorded the following figures over a four year period: in 1965, five payroll employees issued 10,980 monthly payroll checks; in 1966, six employees issued 13,296 checks; in 1967, seven employees issued 17,400 checks; and in 1968, eight employees issued 19,320 checks.<sup>55</sup> Over this four year span of time the average number of employees in the section was 6.5 and the average number of checks issued was 15,249. Relating these figures indicates that on the average one payroll clerk is needed for every 2,346 checks issued. This figure thus becomes a rough manpower standard. If a unit time standard is required, the number of employees can be converted into annual hours and the resulting figure divided into the number of items.

Occasionally, instead of relating volume to people, the historical records technique may relate people to people. For example, in the illustration above, the total number of employees on the payroll could be substituted for the number of payroll checks in which case the number of payroll clerks required would be stated as a function of the total number of people on the payroll.

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<sup>55</sup>Ibid. This illustration is developed from material presented in the cited source in different form.

Advantages.--The historical records technique of setting standards offers the following advantages: (1) it is easy to install and maintain,<sup>56</sup> (2) it is simple to understand,<sup>57</sup> (3) it can be used at a minimum of cost,<sup>58</sup> (4) it provides information quickly,<sup>59</sup> (5) it can be used in small offices which perform varied functions or it can be used in large offices which perform only one function,<sup>60</sup> and (6) it requires no special training in order to set standards.<sup>61</sup>

Disadvantages.--Among the disadvantages of using the historical records approach to setting work measurement standards are (1) standards set by this technique include all the inefficiencies of the past,<sup>62</sup> (2) the lack of an absolute measurement of effectiveness negates the possibility of performance comparison between work centers,<sup>63</sup> (3) when work methods are changed it is difficult to change standards,<sup>64</sup> and (4) the standards are only approximate and

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<sup>56</sup>John O. Heritage, "Work Measurement for Better Maintenance at Less Cost," Factory Management and Maintenance, CXIII (January, 1955), 90.

<sup>57</sup>"Administrative Work Measurement," p. 11.10.

<sup>58</sup>Lind, op. cit., p. 14.

<sup>59</sup>A. M. Webster, "Work Standards and Standardization," Systems and Procedures Journal, X (November, 1959), 32.

<sup>60</sup>"Administrative Work Measurement," p. 11.10.

<sup>61</sup>Grillo and Berg, op. cit., p. 118.

<sup>62</sup>"Administrative Work Measurement," p. 11.11.

<sup>63</sup>Grillo and Berg, op. cit.      <sup>64</sup>Ibid., p. 119.

cannot be used where great accuracy is required, such as in the payment of incentive wages.<sup>65</sup>

### Short Interval Scheduling

General description.--Although not so much a separate and distinct technique, short interval scheduling does represent a different approach to setting work standards. The hallmark of this approach is the "batch" of work which can be completed in a short period of time, normally one hour. While other methods of work measurement may be employed to determine how much can be accomplished in one hour, a unique way used in short interval scheduling, is to have the supervisor assign pre-counted batches of work to employees and note the completion time.<sup>66</sup> Batch sizes can be manipulated until the amount of work which can be completed in an hour is determined. In effect, the batch becomes one standard hour of work. While in other work measurement techniques the standard is usually expressed in terms of time per unit, in short interval scheduling the reverse is true: standards are expressed in terms of units per fixed period of time.

Advantages.--Among the advantages claimed by proponents of short interval scheduling are (1) it provides a measure

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<sup>65</sup>Ibid.

<sup>66</sup>Raymond J. Behan, "SIS in the Order Processing Department," Systems and Procedures Journal, XIX (November-December, 1968), 21.



against which an employee can compare his performance at any time,<sup>67</sup> (2) it provides a supervisor a tool for continuously evaluating the performance of his people,<sup>68</sup> and (3) it provides the basis for establishing an effective production control system.<sup>69</sup>

Disadvantages.--In the literature, the disadvantages of short interval scheduling are carefully avoided by those writing on the subject. However, the technique does have some obvious disadvantages which can be seen by looking closely at its mechanics of operation.<sup>70</sup> Among these disadvantages are (1) establishing standards by having the supervisor dispense work and note the completion time may result in inaccurate standards; (2) the technique is primarily designed to set standards which can be used to control work flow and does not readily lend itself to other uses; and (3) because short interval scheduling has been used as the basis for achieving sizable reductions in staff,<sup>71</sup> use of this technique may create morale problems in an organization.<sup>72</sup>

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<sup>67</sup>Ibid., p. 23.

<sup>68</sup>Ibid.

<sup>69</sup>Maurice A. Murray, "Let's Look at Short Interval Scheduling," Systems and Procedures Journal, XV (March-April, 1964), 14-17.

<sup>70</sup>Behan, op. cit.

<sup>71</sup>Donald L. Gerber, "Predictability and Control Through Short-Interval Scheduling," Systems and Procedures Journal, XVII (November-December, 1966), 38.

<sup>72</sup>Ibid.

### Self-Logging

General description.--Self-logging is largely a participative work measurement technique in that standards are developed from time and volume data recorded by the employees themselves.<sup>73</sup> In this technique of setting standards, each employee in a work center maintains a daily log indicating which tasks he performs, the amount of time he spends on each, and the number of items he processes.<sup>74</sup> Usually the activities to be measured are determined and described in advance so that all employees have standardized work categories in which to charge their time. After the logs have been kept for a sufficiently long period of time (normally at least one week,<sup>75</sup> but possibly as long as three months<sup>76</sup>), standards can be set from the accumulated time and volume data.

Advantages.--As a technique of work measurement, self-logging has the following advantages: (1) its cost is relatively low,<sup>77</sup> (2) it is simple and easy to understand,<sup>78</sup> (3) it is relatively well accepted by employees,<sup>79</sup> (4) it

<sup>73</sup>"Administrative Work Measurement," p. 11.11.

<sup>74</sup>Grillo and Berg, op. cit., p. 50.      <sup>75</sup>Ibid., p. 58.

<sup>76</sup>Herman Limberg, "How to Cut Office Costs with Performance Standards," Management Methods, XV (February, 1959), 52.

<sup>77</sup>Ibid., p. 50.

<sup>78</sup>"Administrative Work Measurement," p. 11.15.

<sup>79</sup>Richard S. Fitts, "Techniques of Measurement," Office Executive, XXXIII (October, 1958), 11.

does not require elaborate training for usage,<sup>80</sup> and (5) it can be used to measure small work centers or isolated jobs which do not justify expensive measurement methods.<sup>81</sup>

Disadvantages.--Among the obvious disadvantages of the self-logging technique are (1) it simply indicates the time currently being expended on various activities, not the time that should be spent on these activities,<sup>82</sup> (2) worker carelessness in recording times and volumes may produce numerous errors in the data,<sup>83</sup> (3) maintenance of logs over a period of time may disrupt normal work routine and upset employees, (4) analysis may be costly and time consuming because of the volume of logs produced, and (5) the standards produced by this technique are only approximations.<sup>84</sup>

#### Wrist Watch Time Study

General description.--Although rarely discussed in the literature, the wrist watch is used occasionally in setting work measurement standards. Where company policy prohibits the use of a stopwatch, or where a job does not warrant more

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<sup>80</sup>Grillo and Berg, op. cit., p. 120.

<sup>81</sup>Lind, op. cit., p. 14.

<sup>82</sup>"Administrative Work Measurement," p. 11,15.

<sup>83</sup>Frank M. Knox, Integrated Cost Control in the Office (New York, 1958), p. 172.

<sup>84</sup>Grillo and Berg, op. cit.

refined study, or where supplemental data is needed, the wrist watch can be effectively used to gather time data.<sup>85</sup>

In conducting a wrist watch work measurement study, an analyst would first break the job down into broad elements. Then he would observe the job being performed through several cycles and record the time values for each element. From this information, a time standard could then be developed.<sup>86</sup>

Advantages.--Proponents of the wrist watch technique claim that it provides adequate data for developing accurate standards, it is less damaging to morale than stopwatch time, and it can be rather quickly learned by the average analyst.<sup>87</sup>

Disadvantages.--As a technique of measurement, the wrist watch method probably suffers from the same deficiencies as the stopwatch technique. Additionally, a disadvantage of the wrist watch technique is that great precision in standards cannot be obtained because the timing device is not designed to produce such accuracy.

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<sup>85</sup>Ibid., pp. 75-76.

<sup>86</sup>Ibid., p. 76.

<sup>87</sup>Confidential interview with official of bank P.

### Work Sampling

General description.--Work sampling is a quantitative technique for analyzing the activity times of men or machines.<sup>88</sup> Work sampling, based upon the laws of probability, operates under the premise that a random sample drawn from a large group will tend to resemble the group from which it is drawn.<sup>89</sup> In general, the more samples taken, the more the characteristics of the sample group will tend to resemble the characteristics of the universe from which the sample is drawn. The specific number of random samples needed in a given case depends upon the desired level of accuracy and the percentage occurrence in the total observations of the activity under study.<sup>90</sup>

The general procedure for setting work measurement standards through work sampling is as follows: (1) determine and define the categories of activities to be measured, (2) determine the number of observations needed, (3) make the observations at random intervals, (4) summarize the collected data and develop activity percentages, and (5) apply volume and hour data to the percentages and develop time standards.<sup>91</sup>

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<sup>88</sup>Robert E. Heiland and Wallace J. Richardson, Work Sampling (New York, 1957), p. 1.

<sup>89</sup>Ralph M. Barnes, Work Sampling, 2nd ed. (New York, 1957), p. 11.

<sup>90</sup>Ibid., p. 15.

<sup>91</sup>Grillo and Berg, op. cit., pp. 80-94.

Usually, before the study starts arrangements are made to collect all volume data and production counts necessary for establishing standards. This data in conjunction with the activity percentages developed through sampling makes it possible to develop unit time standards.

As an illustration of the procedure involved in developing standards, assume that a work center has only two activities, filing cards and typing letters. Also assume that the following data have been developed or collected during the sampling period: (1) sixty per cent of the work center's activity was devoted to filing and forty per cent to typing, (2) during the study period, the work center had available 1,000 hours, and (3) during the study, 50,000 cards were filed and 800 letters were typed.

Applying the percentages to total available hours indicates that during the sample period 600 hours were expended in filing cards and 400 hours were expended in typing letters. Since 50,000 cards were filed, the time per unit is .012 hours (600 hours divided by 50,000 cards). Likewise, the time for typing a letter is .5 hours (400 hours divided by 800 letters). Thus work sampling can be used to set time standards.

Advantages.--A number of advantages of work sampling as a standards setting technique are cited in the literature. The most frequently mentioned are (1) it is a relatively

inexpensive technique, (2) it produces quick results, (3) it does not disrupt the normal work routine, (4) it is less tedious to the analyst than other techniques,<sup>92</sup> (5) it can be used by analysts without lengthy technical training,<sup>93</sup> (6) it can be used on non-standardized work, (7) it produces results with known reliability and accuracy,<sup>94</sup> and (8) it can be used on small sections not justifying more elaborate techniques.<sup>95</sup>

Disadvantages.--The major disadvantages associated with the work sampling technique are (1) it does not provide a detailed record of the conditions under which work is performed;<sup>96</sup> (2) it fails to provide detailed data regarding work methods;<sup>97</sup> (3) when procedures change the entire study must be done over; and (4) it is difficult to explain the technique to most employees.<sup>98</sup>

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<sup>92</sup>Ibid., p. 123.

<sup>93</sup>"Administrative Work Measurement," p. 11.29.

<sup>94</sup>Richardson, op. cit., p. 125.

<sup>95</sup>Lind, op. cit.

<sup>96</sup>Grillo and Berg, op. cit., p. 124.

<sup>97</sup>Richardson, op. cit.

<sup>98</sup>Grillo and Berg, op. cit., pp. 123-24.

### Stopwatch Time Study

General description.--Perhaps the best known technique of work measurement is stopwatch time study. This technique utilizes a decimal minute stopwatch and close observation of the work under study to arrive at time standards. Normally, the analyst begins his study with an elemental breakdown of the job recorded on a form. He then observes the work and records either the time for each element or the elapsed time at the completion of each element. In the first instance, the watch is returned to zero at the end of each element. This is the "snap-back" method of time study. Or the analyst may let the watch run throughout the study, simply noting and recording the elapsed times at which elements are completed. By subtracting elapsed times from each other, times for each element can be determined. This is the "continuous" method of time study.<sup>99</sup>

Advantages.--The stopwatch technique offers the following advantages: (1) it provides information on methods, procedures, and conditions, (2) it provides accurate measurement of time,<sup>100</sup> (3) it is a fast method of developing standards for repetitive operations, and (4) because of the

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<sup>99</sup>Ibid., pp. 68-72.

<sup>100</sup>"Administrative Work Measurement," 11.19.



nature of time study results, the stopwatch technique can be used where the end result of measurement requires a precise standard.<sup>101</sup>

Disadvantages.--Perhaps the most frequently mentioned disadvantage of the stopwatch is the morale problem often attendant on its use.<sup>102</sup> The stopwatch may connote "efficiency" and "control" to the office worker and, consequently, resentment toward use of a stopwatch may build up when the watch is introduced in an office situation. Additional problems associated with this technique are that it is unsatisfactory for measuring long cycle activities or work that is varied in nature,<sup>103</sup> it requires a relatively well trained person, and it is a costly way to measure low volume operations.<sup>104</sup>

#### Predetermined Time Systems

General description.--Predetermined time systems were developed to overcome the deficiencies inherent in other techniques. The underlying premise of these systems is that the time required to perform certain fundamental motions is relatively constant.<sup>105</sup> Therefore, once the basic body

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<sup>101</sup>Grillo and Berg, op. cit., p. 121.

<sup>102</sup>Ibid.

<sup>103</sup>Ibid.

<sup>104</sup>"Administrative Work Measurement," 11.19.

<sup>105</sup>Grillo and Berg, op. cit., p. 104.

motions have been determined, time values for these motions, which are universally applicable, can be developed.

Among the better known predetermined time systems are Motion-Time Analysis (MTA), Work -Factor, Methods-Time Measurement (MTM), and Basic Motion Time Study (BMT).<sup>106</sup> In general, the time values used by these systems were developed through time study of various operations, motion picture analysis, and laboratory studies.<sup>107</sup>

The basic procedure for setting standards by predetermined time systems is essentially the same regardless of the system used.<sup>108</sup> The work operation is observed very closely, a sequential list of motions is constructed, the motions are classified and appropriate time values assigned, and occurrence frequencies are applied. The end result is an extremely precise measure of the time required for performing a work activity.

Work measurement theorists often distinguish between predetermined time systems and standard data.<sup>109</sup> In essence, standard data is simply a grouping of several basic motions or elements into larger although still relatively small

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<sup>106</sup>Delmar W. Karger and Franklin H. Bayha, Engineered Work Measurement, 2nd ed. (New York, 1965), pp. 40-45.

<sup>107</sup>Ralph M. Barnes, Motion and Time Study, 4th ed. (New York, 1958), pp. 460-61.

<sup>108</sup>Grillo and Berg, op. cit., pp. 105-106.

<sup>109</sup>"Administrative Work Measurement," p. 11.20.

blocks of time. Such larger blocks of time can be developed from pure predetermined times or from a firm's own time study data. For the purposes of this paper, such a distinction is not of consequence. Therefore, either predetermined elemental time systems or standard data are referred to in the following chapters as simply predetermined time systems.

Advantages.--Proponents of predetermined time systems claim the following advantages for this work measurement technique: (1) the time values are extremely accurate because they have been thoroughly researched, (2) standards developed through this technique are more precise and objective than those developed through other techniques, (3) standards can be easily revised without restudying the entire job when methods change,<sup>110</sup> (4) standards can be established relatively fast by those trained in predetermined systems,<sup>111</sup> (5) the cost of maintaining standards is low, (6) the technique has a high degree of acceptability to both supervisors and managers,<sup>112</sup> (7) new methods can be evaluated prior to implementation,<sup>113</sup> and (8) an organization's own personnel can be trained to use predetermined times effectively.<sup>114</sup>

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<sup>110</sup>David B. Brennan, "Work Measurement for Control of Clerical Costs," Management Accounting, XLIX (May, 1968), 43.

<sup>111</sup>Grillo and Berg, op. cit., p. 125.

<sup>112</sup>"Administrative Work Measurement," p. 11.22.

<sup>113</sup>Lind, op. cit.      <sup>114</sup>Hanson, op. cit., p. 85.

Disadvantages.--The primary disadvantages associated with the use of predetermined time systems are the high initial training costs involved in developing skilled analysts and the technique's limited usefulness in measuring other than highly routine, repetitive tasks.<sup>115</sup>

#### Special Problems in Developing Standards

As previously mentioned, the purpose of work measurement is to develop a standard expression of time required for the accomplishment of a given amount of activity. If a work measurement standard is truly to reflect "should-take" time, adjustments must be made to observed or actual time in order to compensate for differences in rates of speed between workers, and for normal fatigue and delay. While a detailed consideration of the problems of performance rating and allowance development will be briefly considered because of their importance in developing standards.

#### Performance Rating

It is generally recognized that within any given work group some employees will take more or some will take less time to complete a task than will others.<sup>116</sup> To set work standards based on the time required by the fastest worker

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<sup>115</sup>Grillo and Berg, op. cit.

<sup>116</sup>Clifton A. Anderson, "Performance Rating," Industrial Engineering Handbook, p. 3.46.

would be grossly unfair to those workers who perform at an average rate of speed. On the other hand, to set standards based on the time required by the slowest worker would produce loose standards which might be unfair to the company.<sup>117</sup> Therefore, in setting work measurement standards which are standards in the truest sense, it is usually necessary to rate the performance of the individual under study in order to adjust the observed time to a normal time which the average qualified worker can meet. This process of adjusting observed times to normal times is referred to as performance rating or leveling.<sup>118</sup>

The two principal formal methods for adjusting performance are pace rating and the Westinghouse leveling system.<sup>119</sup> Pace rating is primarily an attempt to evaluate the speed or tempo at which an employee works and relate this to some preconceived concept of normal speed.<sup>120</sup> The Westinghouse system, sometimes referred to as skill and effort rating, attempts to assign numerical weights to skill, effort, conditions, and consistency in order to level the observed time to a normal time.<sup>121</sup> While the mechanics of these two approaches differ, the basic concepts are the same.<sup>122</sup>

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<sup>117</sup>Ibid.

<sup>118</sup>"Industrial Engineering Terminology Definitions," pp. 1.86 and 1.81.

<sup>119</sup>Bayha and Karger, op. cit., p. 95.

<sup>120</sup>Barnes, Motion and Time Study, pp. 365-66.

<sup>121</sup>Bayha and Karger, op. cit.

<sup>122</sup>Grillo and Berg, op. cit., p. 134.

To apply either of the two formal rating systems with consistency and accuracy requires extensive training and re-training on the part of the analyst.<sup>123</sup> And because the application of rating is fraught with human judgment, it has long been a point of contention in work measurement.<sup>124</sup>

Generally, performance rating is not used in conjunction with the simpler approaches to office work measurement such as historical records, short interval scheduling (batching), or self-logging. As a result, these techniques tend to produce time expressions which are not standards, but rather averages of performance, past or present.

Wrist watch time study, work sampling, and stopwatch time study would all appear to require the use of performance rating if the standards developed through these techniques are to reflect normal times and not simply present average times.

Predetermined time systems do not require the use of performance rating because such ratings have already been incorporated into the basic motion times through careful analysis.<sup>125</sup> Thus, predetermined times represent the only technique of work measurement which can be used without performance rating and still produce a normal time for completing a given amount of activity. Any other technique must apply a

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<sup>123</sup>Anderson, op. cit., p. 3.58.

<sup>124</sup>Ibid.

<sup>125</sup>Bayha and Karger, op. cit., p. 49.

rating factor if the resulting expression of time is to be a normal time and not an average observed time.

#### Personal, Rest, and Delay Allowances

Once a normal time has been arrived at it must further be adjusted by adding allowances to cover the personal needs of the worker, normal job fatigue, and unavoidable delays encountered in performing a task.<sup>126</sup> While the need for applying such allowances is widely recognized and accepted, there remains some disagreement on how such allowances should be set or precisely what should be included.<sup>127</sup> Bayha and Karger point out that management policy is generally the governing factor in determining how much time will be allowed for various adjustments.<sup>128</sup>

Allowances may be added to normal times either in terms of minutes per unit of activity or as a percentage of normal time.<sup>129</sup> In most office situations, allowances are expressed as percentages.<sup>130</sup> Such allowances generally run from ten to fifteen per cent, but may run as high as twenty-five per cent of the normal working day.<sup>131</sup>

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<sup>126</sup>Grillo and Berg, op. cit., p. 137.      <sup>127</sup>Ibid.

<sup>128</sup>Bayha and Karger, op. cit., p. 536.

<sup>129</sup>Barnes, Motion and Time Study, p. 389.

<sup>130</sup>Grillo and Berg, op. cit.

<sup>131</sup>Ibid., pp. 137-38.

### Factors Affecting Choice of Techniques

Some writers are quick to point out that no one best technique for measuring office activities exists in the abstract,<sup>132</sup> that there is no ultimate technique for solving all work measurement problems,<sup>133</sup> and that each technique has a value and use.<sup>134</sup> The determination of which technique should be used in a given situation depends upon a number of important factors. Some of the most critical of these would appear to be management policy, the type of work for which standards are being developed, the funds available for work measurement expenditure, and the objectives which management wants work measurement to achieve.

#### Management Policy

In some cases, guidelines established by management limit the choice of work measurement techniques. Frequently, for example, management rules out the use of stopwatch time study. Some managers feel that introduction of a stopwatch into the office would create morale problems; consequently, this measurement technique may be arbitrarily excluded from use. Illustrative of this type of policy decision are two banks interviewed during the course of the present research.

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<sup>132</sup>Ibid., p. 117.

<sup>133</sup>"Administrative Work Measurement," p. 11.29.

<sup>134</sup>Lind, op. cit., p. 15.



One bank indicated that the stopwatch time study approach was ruled out because management did not like the image associated with it.<sup>135</sup> Another bank indicated that consulting firms using time study as a major technique of work measurement were not considered during the bank's efforts to choose a consulting firm to help start the program.<sup>136</sup> Several other banks that were interviewed indicated, directly or indirectly, a very similar position regarding the use of time study.

Conversely, there are instances in which management may become convinced of the efficacy of a particular technique and reach a decision that that technique will be the predominant one used. Consequently, work measurement policy regarding techniques will be developed accordingly. For example, one large bank decided upon the use of MTM prior to the consideration of various consulting firms to initiate the work measurement program.<sup>137</sup>

Thus, selection and use of particular work measurement techniques is often limited or keenly influenced by managerial policy decisions. It is not difficult to imagine that, in some cases, such decisions may be the key factors in the use or non-use of techniques.

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<sup>135</sup>Confidential interview with official of bank S.

<sup>136</sup>Confidential interview with official of bank N.

<sup>137</sup>Confidential interview with official of bank J.

### Type of Work

As indicated briefly in the consideration of work measurement techniques, some techniques lend themselves more readily to the measurement of certain types of activities than do others. Therefore, the choice of techniques for measuring office activities should suit the types of work being measured.<sup>138</sup>

According to Grillo and Berg, historical records, self-logging, and work sampling are techniques which are applicable to office activities that are primarily mental rather than manual.<sup>139</sup> Although not stated as such, by inference it would appear that these two authors consider stop-watch time study and predetermined time systems to be more applicable to office operations which are primarily physical rather than mental.<sup>140</sup> Another source indicates that for physical, clerical, and professional work, self-logging and work sampling have very good applicability, historical records have good applicability, and stopwatch time study and predetermined times have only average applicability to such work.<sup>141</sup>

Certainly not everyone would agree with the applicability ratings cited in the preceding paragraph. Some might feel very strongly that a particular technique is far superior to

<sup>138</sup>Carl John, "Standards for Clerical Activities," NAA Bulletin, XL (July, 1959), 39.

<sup>139</sup>Grillo and Berg, op. cit., p. 126.      <sup>140</sup>Ibid.

<sup>141</sup>"Administrative Work Measurement," p. 11.31.

all others and usable for practically all work. Nevertheless, there does appear to be some general relationship between the work being measured and the technique for measuring it. As an official of one bank whose institution uses three major work measurement techniques asserts, "you cannot go all stopwatch or all random sampling or all predetermined. You have to see what fits the best."<sup>142</sup> If this is really the case, then the type of work for which standards are being set exerts some degree of influence over the choice of technique.

#### Availability of Funds

Work measurement costs can involve substantial sums of money. For example, one bank with less than two hundred employees spent around \$100,000 in consulting fees alone.<sup>143</sup> In the case of another larger bank, the proposal submitted by the consultant indicated the bank could expect to spend \$36,500 for consulting fees.<sup>144</sup> These figures do not include staffing or other costs associated with work measurement.

Some organizations, particularly where work measurement is not intended primarily to affect reductions in staff, may be reluctant to spend large sums for establishment of standards. Where this happens, the choice of techniques may be limited to those involving minimal training and implementation.

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<sup>142</sup>Confidential interview with official of bank F.

<sup>143</sup>Confidential interview with official of bank U.

<sup>144</sup>Confidential information extracted from management consulting firm's proposal to officials of bank N.

costs, such as historical records<sup>145</sup> or self-logging.<sup>146</sup> Generally, predetermined time systems involved the highest costs<sup>147</sup> because a formal training course is usually required.<sup>148</sup> The costs of using stopwatch time study or work sampling would probably fall somewhere between the two extremes.<sup>149</sup>

Management then, through its control of financial resources and its willingness to commit such resources to work measurement, may exert a considerable influence upon the selection of techniques.

#### Objectives of Work Measurement

Although not widely discussed in the literature, there appears to be some general relationship between the use that is made of work measurement data and the means employed to develop it. Thus, the selection of a work measurement technique depends, at least partly, on the objectives which management has established for work measurement.<sup>150</sup> But, as Knox points out, many organizations undertake work measurement without a clear understanding of what they want to accomplish or the best means of reaching their objectives.<sup>151</sup>

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<sup>145</sup>Grillo and Berg, op. cit.

<sup>146</sup>"Administrative Work Measurement," p. 11.31. <sup>147</sup>Ibid.

<sup>148</sup>Grillo and Berg, op. cit.

<sup>149</sup>"Administrative Work Measurement," p. 11.31.

<sup>150</sup>Fitts, op. cit., p. 14.

<sup>151</sup>Knox, op. cit., p. 159.

Some techniques, by their very nature, are not capable of producing the type of data needed for some uses of work measurement. For example, the payment of incentive wages requires an accurate and precise time standard.<sup>152</sup> Techniques such as historical records, self-logging, short interval scheduling, or work sampling do not provide the required degree of precision. On the other hand, where work standards are being used simply for measurement of group performance, extreme precision is not required and a less precise or a less elaborate technique of measurement can be used effectively.<sup>153</sup>

If imprecise techniques are used where great accuracy is required, the results produced will be less than satisfactory. If overly precise techniques are used where precision is not required, the cost and time for developing data may exceed the value of the data. Therefore, as in trying to reach any objective, it would seem important to first determine what is to be accomplished and then determine the best means of getting there. This means that work measurement efforts should be guided by goal orientation, not technique orientation.

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<sup>152</sup>R. C. Horne, "What Kind of Work Measurement Program?" Personnel, XXXVI (November, 1959), 27.

<sup>153</sup>Ibid.

## CHAPTER IV

### WORK MEASUREMENT PRACTICES IN COMMERCIAL BANKS

The purpose of this chapter is to describe selected practices of commercial banks in the area of work measurement as determined through the questionnaire survey and interviews with knowledgeable bank officials. The bulk of the material presented in this chapter is derived from the survey findings.<sup>1</sup> Pertinent interview material is used to support the survey findings and to provide information on certain points which could not be adequately explored by a questionnaire. No attempt is made to examine every work measurement practice of commercial banks; rather, only general practices or those which seem of particular importance are considered. Because the tables presented in the following pages are largely self-explanatory, comments and additional explanation of tabular material is minimal.

#### Extent and Scope of Work Measurement

##### Number of Banks With Programs

While it is not the purpose of this research to precisely determine how many of the nation's commercial banks

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<sup>1</sup>All of the tables presented in this and subsequent chapters are based on findings of the questionnaire survey of commercial banks conducted in December, 1968.

are engaged in work measurement, the questionnaire results would seem to establish some minimal number. Table V indicates that 107 banks of the 141 banks answering the questionnaire have or have had work measurement programs.

TABLE V  
NUMBER OF COMMERCIAL BANKS  
HAVING WORK MEASUREMENT  
PROGRAMS

(141 banks replying to this  
particular question)

Does Bank Have Work Measurement Program?	Number of Responses	Per Cent of Responses
Yes	107	75.89
No	34	24.11
Total	141	100.00

Prior to the present research, the Bank Administration Institute, primarily to determine the extent of work measurement in banks, conducted a postcard survey of 927 banks which were Institute members.<sup>2</sup> Some 571 banks responded and of this total, 120 banks indicated they had at least one person engaged full time in work measurement. Based upon previous knowledge of work measurement programs, the Institute concluded that no bank which would significantly affect the results was excluded from the survey and that virtually all banks with programs responded.

<sup>2</sup>Dan Momjian and George W. Steffen, "Work Measurement at Work in Banking," The Magazine of Bank Administration, XLIV (October, 1968), 6.

While a specific cross-check has not been attempted between the present research and the Institute's survey, a general review does indicate that some respondents to the present survey did not answer the Institute's survey and some respondents to the Institute's survey did not participate in the present survey. Based on the results of both surveys, it seems safe to assume that at least 107 commercial banks are engaged in work measurement and that the maximum number so engaged is in excess of 120.

Current Work Measurement Coverage

Table VI indicates the size of the total work force of banks with work measurement programs as revealed by the questionnaire survey. According to the Department of Labor, in January, 1968, there were 882,200 people employed in the

TABLE VI

SIZE OF TOTAL WORK FORCE IN  
SURVEYED COMMERCIAL BANKS

(105 banks replying to this  
particular question)

Personnel Category	Number of Personnel	Per Cent of Total Personnel
Employees	237,544	87.07
Officers	35,280	12.93
Total	272,824	100.00



banking industry.<sup>3</sup> This means that a minimum of 272,824 people or approximately 31 per cent of the total number of employees in banking are employed by banks having work measurement programs included in this survey. While the total number of banks engaged in work measurement is estimated at less than one per cent of all banks in the country,<sup>4</sup> the number of people affected or potentially affected by work measurement is considerably greater.

Certainly only a portion of the 272,824 people employed by the surveyed banks are at present covered by work measurement standards. Table VII shows that only 115,748 or approximately 42 per cent have at least some of their

TABLE VII  
NUMBER OF PERSONNEL HAVING SOME OF  
THEIR ACTIVITIES COVERED BY WORK  
MEASUREMENT STANDARDS

(105 banks replying to this  
particular question)

Personnel Category	Number of Personnel	Per Cent of Covered Personnel
Employees	107,680	93.03
Officers	8,068	6.97
Total	115,748	100.00

<sup>3</sup>U. S. Department of Labor, Employment and Earnings Statistics for the United States 1909-68, Bulletin No. 1312-6 (Washington, 1968), p. 795.

<sup>4</sup>Momjian and Steffen, op. cit.

activities covered by standards. The bulk of those covered, 93 per cent, are employees. Relatively few bank officers have their activities covered by work measurement standards.

#### Future Work Measurement Coverage

Commercial banks are planning to expand their work measurement coverage as Table VIII indicates. Ninety-five banks indicate that they plan to place the activities of an additional 57,248 people under work measurement standards in the foreseeable future. Such planned coverage concerns primarily employees, not officers. Over 97 per cent of those intended for future coverage are classified as employees.

TABLE VIII

NUMBER OF PERSONNEL NOT PRESENTLY COVERED  
BY STANDARDS TO BE INCLUDED  
IN FUTURE COVERAGE

(95 banks replying to this  
particular question)

Personnel Classification	Number of Personnel	Per Cent of Personnel to be Covered
Employees	55,704	97.30
Officers	1,544	2.70
Total	57,248	100.00

Table IX presents a comparison of work force size, personnel under standards, planned additional coverage, and total potential coverage for the 87 banks responding to the three questions necessary for such a tabulation. This table

TABLE IX

COMPARISON OF TOTAL WORK FORCE, NUMBER OF PERSONNEL UNDER STANDARDS, PLANNED ADDITIONAL STANDARDS COVERAGE, AND TOTAL POTENTIAL COVERAGE OF PERSONNEL

(87 banks replying to this particular question)\*

Personnel Category	Size of Work Force		Personnel Under Standards		Additional Personnel Coverage		Total Potential Work Force Coverage	
	Number of Personnel	Per Cent of Total Work Force	Number of Personnel	Per Cent of Work Force Category	Number of Personnel	Per Cent of Work Force Category	Number of Personnel	Per Cent of Total Work Force
Employees	193,194	86.19	91,984	47.61	49,004	25.37	140,988	72.98
Officers	30,961	13.81	7,578	24.48	1,545	4.99	9,123	29.47
Total	224,155	100.00	99,562	44.42	50,549	22.55	150,111	66.97

\*Only banks answering all of questions eight, nine, and ten of the questionnaire are included in this tabulation.

indicates that 44.42 per cent of the work force in these banks is presently covered by work measurement standards and an additional 22.55 per cent will be covered. Thus, these banks are estimating that coverage of two-thirds of their work forces is a possibility. Of the total personnel to be included in this planned coverage, approximately 73 per cent are employees and 29 per cent are officers.

Size of Work Measurement Staff

As indicated by Table X, some 764 analysts are engaged in work measurement activities in 105 banks. The smallest staff included in the survey is one part-time analyst. Two banks report a staff of this size. The largest staff is 34 full time analysts. Two other banks reported having staffs of 30 full time analysts.

TABLE X

NUMBER OF ANALYSTS ASSIGNED TO  
WORK MEASUREMENT PROGRAMS

(105 banks replying to this  
particular question)

Employment Status	Number of Analysts	Per Cent of Total Analysts
Full-time	732	95.81
Part-time	32	4.19
Total	764	100.00

Table XI shows that in 104 banks the activities of the work measurement analysts are supported by 151 clerical or secretarial personnel. Seven banks report that no clerical

TABLE XI  
NUMBER OF CLERICAL SUPPORT PERSONNEL ASSIGNED  
TO WORK MEASUREMENT PROGRAMS

(104 banks replying to this  
particular question)

Employment Status	Number of Personnel	Per Cent of Total Personnel
Full-time	107	70.86
Part-time	44	29.14
Total	151	100.00

support personnel are assigned to the work measurement program. The largest support staff is 14 full time employees reported by one bank.

Because gross figures on analysts and clerical personnel are not very meaningful, ratios have been developed to shed more light on work measurement program staffing patterns. Table XII shows the ratio of work measurement analysts to total reported personnel categories for all responding banks. Overall, one analyst is employed for every 311 employees or every 357 employees and officers in the work force.

TABLE XII  
 RATIO OF ANALYSTS TO REPORTED STAFF  
 (105 banks replying to this  
 particular question)

Personnel Category	Number of Personnel	Number of Analysts*	Ratio of Analysts to Personnel
Total employees only	237,544	764	1:311
Total employees and officers	272,824	764	1:357

\*Includes full-time and part-time analysts.

Table XIII relates the number of analysts to the number of personnel covered by work measurement standards. As indicated, the ratio is one analyst to every 150 employees or every 161 employees and officers covered.

TABLE XIII  
 RATIO OF ANALYSTS TO COVERED STAFF  
 (92 banks replying to this  
 particular question)\*

Personnel Category	Number of Personnel	Number of Analysts**	Ratio of Analysts to Personnel
Total employees only	100,926	675	1:149
Total employees and officers	108,750	675	1:161

\*Only banks replying to both questions three and nine of the questionnaire are included in this tabulation.

\*\*Includes full-time and part-time analysts.

In Table XIV, total potential work force coverage is related to the number of analysts. This table reveals a ratio of one analyst for every 229 employees or every 243 employees and officers that will be included in eventual work measurement coverage. Of all the analyst ratios, those presented in Table XIV are perhaps the most meaningful because they indicate that, on the average, commercial banks are currently staffing work measurement programs at an approximate ratio of one analyst for every 200 people to be covered by standards.

TABLE XIV  
RATIO OF ANALYSTS TO POTENTIALLY COVERED STAFF  
(92 banks replying to this particular question)\*

Personnel Category	Number of Personnel	Number of Analysts**	Ratio of Analysts to Personnel
Total employees only	154,655	675	1:229
Total employees and officers	163,923	675	1:242

\*Only banks replying to both questions three and ten of the questionnaire are included in this tabulation.

\*\*Includes full-time and part-time analysts.

As far as ratios of support personnel are concerned, 104 banks indicate that they employ 151 people to provide clerical

and secretarial assistance for 760 analysts. This is an overall ratio of one clerical person for every five work measurement analysts.

Departments or Functions  
Covered by Standards

Some of the most common functions covered by work measurement standards are listed in Table XV. As indicated in the tables, the more routine and repetitive the function,

TABLE XV

FUNCTIONAL AREAS IN WHICH SURVEYED COMMERCIAL  
BANKS HAVE APPLIED OR PLAN TO APPLY  
WORK MEASUREMENT STANDARDS

(105 banks replying to this  
particular question)

Functional Area	Number of Responses	Per Cent of Total Respondents
Proof and transit	104	99.05
Lock box	82	78.10
Bookkeeping	100	95.24
Key punching	87	82.86
Tabulating machines	59	56.19
Computer operating	35	33.33
Tellers	98	93.33
Check filing	102	97.14
Print shop	49	46.67
Mail room	69	65.71
Statement rendering	92	87.62
Stenography	58	55.24
Credit investigation	68	64.76
Auditing	24	22.86
Loan and discount tellers	86	81.90
General ledger accounting	66	62.86
Charge card operations	51	48.57
Safe deposit	75	71.43
Collections department	86	81.90
Installment loans	94	89.52
Trust	79	75.24
Others	45	42.86



the more likely it is to be measured. High-volume, production-type operations such as proof and transit, book-keeping, and check filing are measured by virtually all banks having work measurement programs. Conversely, more complex or non-routine functions, such as computer operating or auditing, tend to be measured by relatively few banks.

Examination of Table XV also reveals that banks apparently find many of their functional areas susceptible to measurement. Seventy-five per cent or better of the respondents indicate that they have set or plan to set standards in eleven of the listed functional areas.

The range of work measurement coverage in banks is even greater than indicated in Table XV. Forty-five banks indicate that they have measured functions other than those listed. Some of these other measured activities are addressograph, payroll, messengers, personnel, international banking, coin and currency, switchboard, wire transfer, and business development.

Branch activities are also relatively well covered by work measurement standards. Table XVI reveals that over 77 per cent of all the branch offices included in the survey operate under such standards. Of the 88 banks replying, only 10 indicate that they have not covered any of their branches. Fifty banks, or approximately 57 per cent of the respondents, indicate that 100 per cent of their branches are covered by work measurement standards.

TABLE XVI

TOTAL NUMBER OF BRANCHES AND NUMBER  
OF BRANCHES UNDER STANDARDS(88 banks replying to this  
particular question)

Branches	Number	Per Cent of Total Branches
Under standards	4,233	77.61
Not under standards	1,221	22.39
Total	5,454	100.00

Preliminary Work Measurement Planning

As indicated in Chapter III, preliminary work measurement planning encompasses all those activities concerned with the initial establishment and implementation of the work measurement effort. The following section examines specific practices of commercial banks in such preliminary planning endeavors as work measurement objectives, work measurement policies, organizational location of the work measurement group, the use of consultants for initiating programs, selection and training of analysts, and orientation of organization personnel.

Work Measurement Objectives

Basic objective.--Based on information gathered in interviews with bank officials, the basic objective of work measurement in banks appears to be staff-cost control.

Seventeen of the banks interviewed specifically stated that the primary objective established for accomplishment by their work measurement programs was to provide such control. In some cases, the control objectives were actually stated in terms of dollar payroll savings or in numbers of people that could be reduced from staff. This control aspect of work measurement was strongly emphasized by one particular official who declared that the primary objective of work measurement is staff reduction, and everything else is secondary.<sup>5</sup> In another instance, an official stated that though his bank ostensibly had a list of several objectives, all of these received only lip service except the principal objective of cost control.<sup>6</sup> Another official, when asked if his bank initiated work measurement primarily for cost control, replied, "I do not think there is any question about it. The other objectives were certainly important but not nearly of the magnitude."<sup>7</sup>

In the case of some of the branch banks interviewed, the emphasis for initially becoming involved in work measurement was not so much cost control as it was the need for branch staffing and control of decentralized operations.<sup>8</sup>

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<sup>5</sup>Confidential interview with official of bank I.

<sup>6</sup>Confidential interview with official of bank N.

<sup>7</sup>Confidential interview with official of bank G.

<sup>8</sup>Confidential interviews with officials of banks F and Z.

Thus, as touched on in Chapter II, several of these branch banks have a history of work measurement dating back some years before the current cost squeeze.

Although staff-cost control appears to be the basic objective of work measurement in banks; many banks also have secondary objectives. While, as previously indicated, they may not be accorded the importance of or be taken as seriously as staff-cost control, these secondary objectives do represent statements of intention to use work measurement for various other purposes. Among some of the more frequently mentioned secondary goals are methods improvement, systems analysis, standard cost data, improved working conditions, supervisory training, improved customer service, improved employee relations, and improved salary administration.

However, the general impression gathered from the interviews is that banks look upon work measurement as basically a means for controlling costs through determination and control of manpower requirements. Their basic work measurement objectives therefore tend to reflect this somewhat limited viewpoint.

Written statements of objectives.--In the questionnaire survey, each bank was asked if written statements of work measurement goals had been established before the start of the work measurement program. Table XVII shows a tabulation

TABLE XVII

WRITTEN GOALS ESTABLISHED PRIOR TO  
START OF WORK MEASUREMENT PROGRAMS(102 banks replying to this  
particular question)

Were Written Goals Established Before Start?	Number of Responses	Per Cent of Total Respondents
Yes	63	61.76
No	39	38.24
Total	102	100.00

of the answers. Perhaps the most surprising thing about this table is that it reveals that 38 per cent of the respondents admit their objectives were not reduced to writing before the start of the program. In all probability these respondents did have in mind some purpose that the work measurement program was to achieve. The fact that such a purpose was not stated in writing would seem to support the conclusion that work measurement actually had a narrow objective to achieve in many banks. Where the objective is limited it may not be necessary to reduce it to writing.

Generally, when a bank uses a consulting firm to start the program, goals are more likely to be formulated than they are when consultants are not used. Two of the major consulting firms employed by banks furnish management with a list of objectives that work measurement can accomplish.

Normally, these objectives are then passed on to organization members in some sort of written form. For employees these goals may be stated in letter or memorandum, while for managers and supervisors they may be spelled out in considerable detail in a work measurement manual.

Future objectives.--Table XVIII indicates that 78 per cent of the responding banks have a short range objective of

TABLE XVIII  
MANAGEMENT'S INTENTIONS REGARDING WORK  
MEASUREMENT PROGRAM

(102 banks replying to this  
particular question)

Management's Current Plan Is To	Number of Responses	Per Cent of Total Respondents
Expand and extend coverage	80	78.43
Maintain present coverage only	18	17.65
Lessen coverage	2	1.96
Discontinue program	1	.98
Undecided	1	.98
Total	102	100.00

expanding and extending their work measurement coverage. This table rather clearly shows that the great majority of banks have not yet exhausted the potential for standards coverage or the usefulness of work measurement. Also, only three banks anticipate a diminished future role for work measurement.

Additional insight into future plans was gained during the series of interviews with bank officials. While the initial thrust has been toward staff-cost control, most of the banks interviewed indicated that in the future work measurement will accomplish other objectives. The most frequently mentioned of these planned objectives was the incorporation of work measurement data into a standard cost system.

One particular bank indicated that it is presently designing a management information system which will make extensive use of data inputs from work measurement.<sup>9</sup> This system will make possible the use of flexible budgeting based upon anticipated volume data. One large branch bank indicated that it is planning to use work measurement data in order to simulate new branches before they are opened.<sup>10</sup>

Based on the interviews, it appears that most banks plan to use work measurement data more extensively in the future than they have in the past.

#### Work Measurement Policies

Basic policies.--Normally, banks going into work measurement establish, directly or indirectly, a number of guidelines for the operation of the program. Illustrative of these guidelines are policies concerning (1) achievement of staff reductions, (2) measurement of officers,

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<sup>9</sup>Confidential interview with official of bank W.

<sup>10</sup>Confidential interview with official of bank V.

(3) measurement of supervisors, and (4) establishment of allowances.

Without exception, every bank interviewed professed that one basic policy laid down for the work measurement program was that no employee would be terminated solely as a result of work measurement. Table XIX, which shows the methods used to achieve staff reductions, illustrates the prevalence of such a policy. Only six of the responding banks indicate a resort to termination in order to affect staff savings. In the bank interviews most of the

TABLE XIX  
METHODS USED FOR ACHIEVING  
REDUCTIONS IN STAFF

(94 banks replying to this  
particular question)

Reduction Methods	Number of Banks Using Method	Per Cent of Respondents Using Method
Discharge	6	6.38
Normal turnover	89	94.68
Transfer	57	60.64
Retirement	37	39.36
Other	10	10.64

interviewees were quick to point out that the rate of turnover in banking is such that there is no need for terminating people in order to reduce staff; therefore, it is relatively easy to adopt a no-termination policy and to adhere to it



rather closely. In addition, the interviewees point out that such a policy enhances program acceptance. However, in the case of two particular banks, while top management professed a no-termination policy, employees were discharged as a result of the work measurement findings.<sup>11</sup>

Another general policy area is that of measuring activities performed by bank officers. Table XX indicates that almost 63 per cent of the survey respondents exclude officers from measurement as a matter of policy. The interviews

TABLE XX

EXEMPTION OF OFFICERS FROM  
STANDARDS COVERAGE(104 banks replying to this  
particular question)

Does Bank Exempt Officers?	Number of Responses	Per Cent of Responses
Yes	65	62.50
No	39	37.50
Total	104	100.00

reveal that, in general, unit banks and branch banks in the central or eastern part of the country exempt officers from measurement, while branch banks in the western section of the country do not. In fact, because the western banks are

<sup>11</sup>Confidential interviews with officials of banks L and N.

using work measurement for staffing branch facilities, they must normally include officers in the measurement in order to develop adequate staffing patterns.

Table XXI shows that about two-thirds of the survey respondents do not, as a matter of policy, exclude supervisors from work measurement coverage. This does not mean that supervisors in these banks are normally included in measurement the same as employees. It does mean, as clarified in

TABLE XXI  
EXEMPTION OF SUPERVISORS FROM  
STANDARDS COVERAGE

(102 banks replying to this  
particular question)

Does Bank Exempt Supervisors?	Number of Responses	Per Cent of Responses
Yes	34	33.33
No	68	66.67
Total	102	100.00

the interviews, that when a supervisor performs a measurable activity, the majority of banks would measure that portion of his job which is subject to measurement. A comparison of Tables XX and XXI also seems to indicate that most banks are not as reluctant to measure supervisors as they are officers.

A review of Chapter III shows that allowances for personal needs, fatigue, and delay are largely determined

through management policy. In those cases where a bank uses a work measurement consultant, the bank normally adopts the allowance percentage that the consultant regularly uses; thus, in these cases, management policy evolves from the policy of the consultant.

Often the allowance policy is spelled out in supervisors' manuals. Examination of several of these manuals indicates that four of the interviewed banks specify a 15 per cent allowance; one specifies 12 per cent; and one specifies 13.5 per cent, not including scheduled coffee breaks. It thus appears that banks have recognized the necessity of allowance policies and tend to specify a figure of around 15 per cent.

Written policy statements.--In the questionnaire survey, each bank was asked to indicate if it had written policies and procedures to guide the operation of the work measurement program. Table XXII shows a tabulation of the

TABLE XXII

WRITTEN POLICIES AND PROCEDURES TO GUIDE  
OPERATION OF WORK MEASUREMENT PROGRAM

(103 banks replying to this  
particular question)

Does Bank Have Written Policies and Procedures?	Number of Responses	Per Cent of Total Respondents
Yes	78	75.73
No	25	24.27
Total	103	100.00

results. Almost 76 per cent of the respondents indicate the existence of such written statements. It is interesting to compare the results of this table with Table XVII, written statements of goals. Such a comparison indicates that 14 per cent more banks have written policy and procedural statements than have written statements of objectives. Perhaps part of this difference is attributable to the fact that while goals may be stated very simply, the complexities of operating a work measurement program require more specific guidance in the policy and procedure area.

Organization Location of Work Measurement

Major department assignment.--As Table XXIII indicates, work measurement programs are normally assigned to one of the major departments within a bank: operations or controller. Almost 84 per cent of the work measurement programs are located within these two departments. The

TABLE XXIII

ORGANIZATIONAL LOCATION OF WORK  
MEASUREMENT PROGRAM

(105 banks replying to this  
particular question)

Major Department	Number of Responses	Per Cent of Responses
Operations	45	42.86
Controller	43	40.95
Other	17	16.19
Total	105	100.00

remainder of the programs are assigned to various departments such as executive, staff, data processing, and personnel.

Reporting level--Table XXIV shows that two-thirds of the work measurement programs at least report to a vice president. In several cases the program reports much higher:

TABLE XXIV

## TITLE OF PERSON TO WHOM WORK MEASUREMENT PROGRAM SUPERVISOR REPORTS

(105 banks replying to this particular question)

Title of Person	Number of Responses	Per Cent of Responses
Vice president or higher	70	66.67
Assistant vice president	13	12.38
Assistant controller	6	5.71
Assistant cashier	3	2.86
Others	13	12.38
Total	105	100.00

two programs report to an executive vice president, two report to a senior vice president, one reports to the president, and one reports directly to the chairman of the board. Only 21 per cent of the programs report to an assistant cashier, assistant controller, or other junior officer. Table XXIV seems to indicate that banks apparently attach some importance

to the work measurement program and therefore, have it report at a fairly high level in the organization.

Highest ranking person assigned to program.--As Table XXV reveals, approximately 62 per cent of the work measurement programs in the surveyed banks have at least a junior

TABLE XXV

TITLE OF HIGHEST RANKING PERSON ASSIGNED  
TO WORK MEASUREMENT PROGRAM

(106 banks replying to this  
particular question)

Title of Person	Number of Responses	Per Cent of Responses
Vice president or higher	7	6.60
Assistant vice president	14	13.21
Assistant cashier	12	11.32
Assistant controller	6	5.66
Systems, methods, or work measurement officer	11	10.38
Other officers	16	15.09
Non-titled	40	37.74
Total	106	100.00

officer assigned to them. Six programs have a vice president assigned to them and one has a comptroller assigned to it. These seven represent the highest ranking officers reported among the work measurement staffs.

The fact that an officer is generally assigned to the program further illustrates the importance attached to work measurement efforts.

The Use of Consultants

Number of banks using consultants.--Table XXVI indicates that almost 83 per cent of the surveyed banks engaged the services of a consultant in the implementation of the work measurement program.

TABLE XXVI

USE OF CONSULTANT TO START  
WORK MEASUREMENT PROGRAM

(105 banks replying to this  
particular question)

Did Bank Use Consultant?	Number of Responses	Per Cent of Responses
Yes	87	82.86
No	18	17.14
Total	105	100.00

Reasons for using consultants.--Table XXVII shows the reasons the surveyed banks reported for engaging consultants to assist in implementing work measurement programs. Over 72 per cent of the banks responding to the survey stated that the basic reason for using the services of a consultant was to secure the training or technical knowledge necessary for

TABLE XXVII

PRIMARY REASONS FOR EMPLOYING CONSULTANTS TO  
START WORK MEASUREMENT PROGRAMS(87 banks replying to this  
particular question)

Primary Reasons	Number of Responses	Per Cent of Responses
To provide technical knowledge or training	63	72.41
To reduce manpower or cost	7	8.05
To aid in getting program off to good start	9	10.34
More economical than developing own program	4	4.60
Miscellaneous reasons	4	4.60
Total	87	100.00

performing work measurement. According to the interviewees, rarely is the consultant looked upon as someone who will do the actual measurement. Instead, banks have a tendency to look upon the consultant as someone who does the training and assists with the implementation.

Slightly over 10 per cent of the respondents indicate that they used a consultant in order to get the program off to a good start. A couple of the interviewee banks pointed out that added emphasis or push is given to a program when an outside expert is brought in. This would seem to indicate that a consultant may be used to furnish some sort of psychological lift at the start of a work measurement program.



Reasons for not using consultants.--Several of the banks interviewed did not employ the services of a consulting firm to implement the work measurement program. Generally, when a consultant is not used it is because a bank already has the talent or feels it can get the talent to initiate its own program. In the case of one bank whose program traces its history back to the 1950's, the bank simply was not aware of the services provided by consulting firms; therefore, it looked to its own people to develop the kind of program needed.<sup>12</sup> In another bank, the controller had a background in industrial engineering and felt that he could bring in other people with similar backgrounds who could do the job.<sup>13</sup> In this particular case, the man who was hired to implement the program as a member of the bank's staff had a doctorate in industrial engineering.

One other bank indicated that it did not use a consultant because the bank had previously had bad experiences with such firms.<sup>14</sup>

One bank official indicated that there may be some psychological advantage in not using a consultant. He pointed out that development of a program by in-house people

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<sup>12</sup>Confidential interview with official of bank F.

<sup>13</sup>Confidential interview with official of bank Y.

<sup>14</sup>Confidential interview with official of bank H.

who use it may cause employees to view the program more favorably than one developed by people from outside the organization.<sup>15</sup>

Number of consultants considered.--The number of consulting firms considered for use by individual banks using consultants varies considerably. As Table XXVIII indicates, some banks consider only one firm, while others consider a

TABLE XXVIII

NUMBER OF CONSULTING FIRMS CONSIDERED BY  
COMMERCIAL BANKS USING CONSULTANTS TO  
START WORK MEASUREMENT PROGRAM

(67 banks replying to this  
particular question)

Number of Consultants Considered	Number of Banks Considering Number of Consultants	Per Cent of Banks Considering Number of Consultants
1	13	19.40
2	9	13.43
3	18	26.87
4	7	10.45
5	8	11.94
6	5	7.46
7	4	5.97
8	2	2.99
9	..	..
10	1	1.49
Total	67	100.00

number of different firms. On the average, a bank using a consultant to help start a work measurement program looks at

<sup>15</sup>Confidential interview with official of bank V.

three and four firms. What is perhaps surprising about the information in Table XXVIII is that over 19 per cent of the banks using consultants failed to consider more than one firm.

Basis for selection of consultant.--The two biggest factors in the choice of one consultant over another appear to be experience or reputation and the measurement technique or system used by the consultant. Table XXIX shows that these two factors were involved in the selection process far more frequently than any other factors. Several of the interviewee banks stressed experience in banking as an important

TABLE XXIX

## BASIS FOR SELECTING CONSULTING FIRMS

(69 banks replying to this particular question)

Selection Basis	Number of Replies	Per Cent of Total Respondents
Measurement technique, reporting system, or approach to program	24	34.78
Previous experience or reputation	29	42.03
Recommendations or references	9	13.04
Analyst training	5	7.25
Consultant's philosophy compatible with bank's	5	7.25
Consultant used by bank for other services	3	4.35
Miscellaneous reasons	16	23.19

factor affecting the choice of consultants. These banks indicated that they wanted someone who was familiar with their particular problems. Two of the interviewed banks stated that the consulting firm was selected because of its "soft-sell" approach to work measurement which was more harmonious with bank management's philosophy than were other approaches.

Major consulting firms used.--The results of the questionnaire survey indicate that the 87 banks which have used consultants have used 15 different consulting firms. Table XXX reveals that two firms, Bruce Payne and Paul Mulligan, have been used by 56 per cent of the respondents. No other

TABLE XXX  
CONSULTING FIRMS USED BY COMMERCIAL BANKS  
TO START WORK MEASUREMENT PROGRAMS

(87 banks replying to this  
particular question)

Consulting Firm	Number of Banks Using Firm	Per Cent of Respondents Using Firm
Bruce Payne	28	32.18
Paul Mulligan	21	24.14
Peat, Marwick, Mitchell	5	5.75
Arthur Young	5	5.75
John Joynt	5	5.75
Booz, Allen, Hamilton	3	3.45
McKinsey and Company	3	3.45
Others (15 firms)	17	19.53
Total	87	100.00

firm comes close to approaching the volume of business done by either of these two organizations. Of the top seven firms used by banks, five are management consulting firms and two are public accounting houses.

Selection of Work Measurement Analysts

Sources of analysts.--Table XXXI indicates that 45 per cent of the surveyed banks draw their work measurement analysts from employees already on the bank's payroll. Only 4 per cent of the banks completely staff their programs with people coming from outside the bank. Fifty-one per cent of the banks staff from both sources. Based upon the series of

TABLE XXXI

SOURCES OF WORK MEASUREMENT ANALYSTS

(100 banks replying to this particular question)

Sources of Analysts	Number of Replies	Per Cent of Total Respondents
Inside the bank	45	45.00
Outside the bank	4	4.00
Both sources	51	51.00
Total	100	100.00

interviews, there appears to be a tendency for banks to select the original group of analysts from people already on

the bank's staff. In some cases this is done by using a draft system or assigning departments a quota of analysts to furnish. However, as replacements are needed many banks find that they must go outside the organization to fill these vacancies. Two banks in particular indicated that general personnel shortages made department managers reluctant to relinquish to the work measurement program any people they presently had.<sup>16</sup> Two other banks indicated that it was difficult to get anyone to transfer into the program after it had been in operation for a time.<sup>17</sup>

TABLE XXXII

SOURCES OF WORK MEASUREMENT ANALYSTS  
BY WEIGHTED AVERAGE BASIS

(94 banks replying to at least part  
of this particular question)\*

Sources of Analysts	Weighted Number of Analysts**	Per Cent of Analysts
From inside bank	418.36	57.86
From outside bank	304.64	42.14
Total	723.00	100.00

\*Only banks replying to both questions three and thirty-eight of the questionnaire are included in this tabulation.

\*\*Weighted number of analysts was determined by multiplying the number of full-time analysts on each bank's staff by the reported percentage of inside or outside origin and cumulating the totals.

<sup>16</sup>Confidential interviews with officials of banks J and S.

<sup>17</sup>Confidential interviews with officials of banks K and M.

Table XXXII shows that on a weighted basis almost 58 per cent of the present work measurement staff in surveyed banks comes from inside the bank. But, this table also indicates that a substantial portion of the analysts come to the program from outside the bank.

Methods for selecting analysts.--Table XXXIII shows the major selection methods used in choosing analysts.

TABLE XXXIII  
METHODS USED FOR SELECTING  
WORK MEASUREMENT ANALYSTS  
(101 banks replying to this  
particular question)

Selection Methods	Number of Responses	Per Cent of Total Respondents
Aptitude tests	50	49.50
Interviews	91	90.10
Others	24	23.76

Logically, most banks rely upon the interview method for screening and selecting analysts. Almost half of the respondents favor the use of some sort of aptitude test. Among the other methods used are appointment (five banks use this method), and selection by the consulting firm (two banks use this method). According to the table, many banks use more than one method of selection.

Characteristics sought in analysts.--Table XXXIV indicates the various traits or qualities that banks seek in their work measurement analysts. The characteristic specifically mentioned most often is analytical ability; however,

TABLE XXXIV  
QUALITIES OR CHARACTERISTICS SOUGHT IN  
WORK MEASUREMENT ANALYSTS

(96 banks replying to this  
particular question)

Qualities or Characteristics	Number of Responses	Per Cent of Total Respondents
Analytical ability	44	45.83
Communications skill	22	22.92
Good personality	22	22.92
Ability to work with detail	20	20.83
Sales ability	19	19.79
Ability to work with people	19	19.79
Self-motivation	19	19.79
Imagination or creativity	18	18.75
Intelligence	15	15.63
Aggressiveness	13	13.54
Mathematical ability	12	12.50
Management potential	11	11.46
Knowledge of banking	10	10.42
Objectivity	9	9.37
Experience or work record	9	9.37
Inquisitiveness	7	7.29
Perseverance	7	7.29
Interest in work measurement	6	6.25
Technical aptitude or ability	6	6.25
Appearance	6	6.25
Education	4	4.17
Tact	4	4.17
Others	28	29.17

examination of the table also reveals that banks apparently feel that human relations skills, intelligence, creativity,



and self-motivation are very important. It is interesting to note that experience or work record and banking knowledge are accorded minor status among the attributes sought.

Training of Work Measurement Analysts

Training methods.--Training given to work measurement analysts runs the gamut from formal classroom sessions to self-study. Table XXXV shows that on-the-job training and classroom sessions are the methods most widely used by the responding banks. The interviews with bankers show that normally formal classroom training is augmented by on-the-job training under the guidance of an experienced analyst.

TABLE XXXV

KINDS OF TRAINING GIVEN TO  
WORK MEASUREMENT ANALYSTS

(101 banks replying to this  
particular question)

Training Methods	Number of Responses	Per Cent of Total Respondents
On-the-job training	72	71.29
Classroom	76	75.25
Self-study	4	3.96
Outside seminars	3	2.97
College courses	2	1.98
Other	2	1.98

When a bank uses a consultant, formal training is usually included as part of the implementation package. Such training is normally followed by involvement in an actual measurement situation during which the consultant acts as coach and adviser to the analysts for a period of time.

Some banks actually conduct their own in-house classroom training which is comparable to that provided by the consultant.<sup>18</sup> Three of the banks interviewed had a qualified trainer on their staff who instructed analysts in the techniques of work measurement. However, such a practice would seem to require a substantial size work measurement staff in order to be economical. Thus, in-house professional training would appear to be limited to a few large banks.

In some cases, interviewed banks indicated a total reliance upon on-the-job training.<sup>19</sup> In these banks, a new analyst would simply be assigned to work with an experienced analyst or would be given a minor study to conduct and thus would receive his training through observation, coaching, and actual work involvement.

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<sup>18</sup>Confidential interviews with officials of banks J, O, and W.

<sup>19</sup>Confidential interviews with officials of banks C, P, and U.

Extent of training given.--Table XXXVI shows the amount of classroom training given analysts by the surveyed banks. Almost 41 per cent give about four weeks of training. These banks use Methods-Time Measurement either in pure form or in standard data form. The MTM Association has a prescribed

TABLE XXXVI  
AMOUNT OF CLASSROOM TRAINING PROVIDED  
WORK MEASUREMENT ANALYSTS

(64 banks replying to this particular question)

Weeks of Training	Number of Responses	Per Cent of Responses
Less than 1	3	4.69
1	17	26.56
2	5	7.81
3	4	6.25
4	26	40.63
5	5	7.81
6	4	6.25
Total	64	100.00

course which an analyst must complete with a satisfactory test score in order to become a certified MTM practitioner; consequently, banks using this technique normally adhere to the training requirements specified by the Association. Where techniques other than MTM are used, there is no such rigid specification regarding content or extent of training.

In general, as Table XXXVI reveals where classroom training is used at least one week is usually provided for

for the analysts. Few banks give less than this amount of training.

Table XXXVII reports the amount of on-the-job training survey respondents give their analysts. While this table reports the responses of only a very limited number of banks, it does show that over 56 per cent of the respondents provide their analysts with six or more months of on-the-job-training.

TABLE XXXVII  
AMOUNT OF ON-THE-JOB TRAINING PROVIDED  
WORK MEASUREMENT ANALYSTS

(23 banks replying to this particular question)

Months of Training	Number of Responses	Per Cent of Responses
1	4	17.39
2	1	4.35
3	4	17.39
4	1	4.35
5	..	..
6	9	39.13
More than 6	4	17.39
Total	23	100.00

Orientation for Organization Members

Table XXXVIII indicates the extent of efforts made to orient different organization members concerning the work measurement program before the actual installation of the program. Approximately 75 per cent of the banks classify

TABLE XXXVIII

EXTENT OF EFFORT MADE TO EXPLAIN WORK MEASUREMENT PROGRAM  
TO ORGANIZATION MEMBERS BEFORE START OF PROGRAM

(100 banks replying to at least part  
of this particular question)

Extent of Effort	Personnel Category											
	Employees			Supervisors			Middle Management			Top Management		
	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies
Intensive	25	25.77	44	44.00	38	38.38	48	50.00	48	38.38	35	36.46
Moderate	48	49.49	44	44.00	48	48.49	12	12.50	12	13.13	1	1.04
Superficial	21	21.65	10	10.00	13	13.13	..	..	..	..	..	..
None	3	3.09	2	2.00	..	..	..	..	..	..	..	..
Total	97	100.00	100	100.00	99	100.00	96	100.00	96	100.00	96	100.00

their attempts at employee orientation as either moderate or intensive; 88 per cent classify their attempts to orient supervisors as either moderate or intensive; 87 per cent classify their attempts at middle management orientation as moderate or intensive; 86 per cent classify their efforts to orient top management as moderate or intensive. The most intensive efforts are aimed at top management and supervisors. Fifty per cent of the respondents indicate an intensive effort to explain the program to top management and 44 per cent indicate such an effort directed at supervisors. The extent of the efforts aimed at these two groups would seem to indicate that their orientation is considered important to the work measurement program.

It is interesting to note that 25 per cent of the banks classify their employee educational efforts as either superficial or non-existent. This percentage is almost double the comparable figure for any of the other groups. This would seem to imply that the employee is not considered as critical a factor in the program as the other groups.

Table XXXIX shows the normal orientation methods used. The most widely used method for all personnel categories is the group meeting. The second most widely used method for all categories is letter or memo. This table also indicates that supervisors receive special attention in a number of banks: 35 per cent of the respondents use training courses or seminars to acquaint supervisors with work measurement.

TABLE XXXIX

METHODS USED TO EXPLAIN WORK MEASUREMENT PROGRAM TO ORGANIZATION MEMBERS BEFORE START OF PROGRAM

(89 banks replying to at least part of this particular question)\*

Methods Used	Personnel Category											
	Employees			Supervisors			Middle Management			Top Management		
	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies
Letter or memo	46	50.55	39	41.05	45	47.87	35	39.33				
Group meetings	64	70.33	71	74.74	76	80.85	75	84.27				
Training courses	2	2.20	25	26.32	8	8.51	1	1.12				
Seminars	2	2.20	8	8.42	9	9.57	7	7.87				

\*91 banks replying to employee portion of question; 95 banks replying to supervisor portion of question; 94 banks replying to middle management portion of question; 89 banks replying to top management portion of question.

In Table XI the number of orientation methods used for each personnel category is shown. In the majority of cases, only one method is used for each group. However, the table does indicate that a number of banks do not rely solely upon one method, but use a combination of educational means to explain the program.

### Pre-Measurement Analysis

Pre-measurement analysis encompasses all those activities which must take place in a work center before the actual measurement of work begins. Normally this activity begins with the selection of departments to be studied and continues through the actual analysis of work center operations and the installation of improved methods and procedures. The following section specifically examines pre-measurement practices of commercial banks in the areas of department selection, work center analysis, methods and procedures analysis, and quality level consideration.

#### Selection of Departments to be Studied

In the initial selection of departments to study commercial banks appear to look for one of three types of situations: (1) work centers where the activities are routine, repetitive production type operations,<sup>20</sup> (2) work centers

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<sup>20</sup>Confidential interviews with officials of banks E and G.



TABLE XL  
 NUMBER OF METHODS USED TO EXPLAIN WORK MEASUREMENT PROGRAM  
 TO ORGANIZATION MEMBERS BEFORE START OF PROGRAM

(89 banks replying to at least part  
 of this particular question)

Number of Methods Used	Personnel Category											
	Employees			Supervisors			Middle Management			Top Management		
	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies
1	71	78.02	62	65.26	60	63.83	63	70.79				
2	18	19.78	19	20.00	24	25.53	23	25.84				
3	1	1.10	13	13.69	10	10.64	3	3.37				
4	1	1.10	1	1.05	..	..	..	..				
Total	91	100.00	95	100.00	94	100.00	89	100.00				

which are having operating problems, or (3) work centers where the activities are varied in nature, thus providing a variety of training experiences for the fledgling analysts.<sup>21</sup>

Table XLI shows the parties who may be involved in the actual selection of the departments. Apparently the selection process will most likely involve more than one party. The two people figuring in the selection most prominently are the work measurement supervisor and the affected

TABLE XLI  
SELECTION OF DEPARTMENTS TO BE STUDIED  
(104 banks replying to this  
particular question)

Person or Group Selecting Departments	Number of Responses	Per Cent of Total Respondents
Work measurement supervisor	67	64.42
Work measurement analyst	4	3.85
Department heads request initial studies	36	34.62
Department heads request restudies	33	31.73
Consulting firm	15	14.42
Others	48	46.15

department head. Sixty-four per cent of the respondents indicate the work measurement manager is involved in choosing

<sup>21</sup>Confidential interview with official of bank C.

departments and 66 per cent indicate individual department heads are involved in either initial study requests or requests for restudies.

According to the results depicted in Table XLI, the consultant is involved in department selection 14 per cent of the time. In some cases, at the beginning of his engagement the consultant will develop a rather complete schedule of all departments which he feels are measurable.<sup>22</sup> In other instances, he may simply specify or select the initial departments to be studied.<sup>23</sup> Therefore, the consultant's role in selecting departments is normally limited to the early stages of work measurement efforts.

Forty-six per cent of the time a person or group other than those specifically identified in the table is involved in the selection process. Included in this category are members of top management such as the president, comptroller, various vice presidents, or committees such as the operating, profit planning, or work measurement committees.

#### Analyzing the Work Center

Once a decision has been reached regarding which department or departments are to be studied, the actual analysis of

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<sup>22</sup>Confidential interviews with officials of banks G and N.

<sup>23</sup>Confidential interview with official of bank C.

the work center is ready to begin. Typical study procedure, as ascertained through the interviews, is illustrated in the following section.<sup>24</sup> This procedure considers only that activity which takes place before actual measurement begins.

General study procedure.--A typical work measurement study involves the following pre-measurement procedural steps: (1) initial contact is established with division or department manager of work center to be studied, (2) analyst meets with work center supervisors, (3) program is explained to area employees in group meeting, (4) work center activity is studied and charted and measurable jobs are determined, (5) improvements to existing methods and procedures, if any, are made, and (6) data collection procedures are instituted.

The initial contact with the division manager may be by letter or telephone, but it is typically an in-person contact. The basic purpose of this contact is to let the manager know that his department is to be studied and to reemphasize to him the purposes of work measurement. At this time organization charts, functional statements, or other information of a macro nature may be requested.

After the initial contact with the department manager, the analyst usually meets with the area supervisors. In

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<sup>24</sup>This generalized study procedure was developed from specific procedural information furnished by banks H, I, O, P, R, and V.

general, he explains the work measurement program to them, outlines their role in the study, and solicits their suggestions or opinions.

Next, a group meeting of all work center employees is usually held. The analyst explains the program to the employees, outlines their part in it, and attempts to allay any fears that work center personnel may have.

The fourth step in the pre-measurement analysis procedure is the fact-finding phase. During this stage the analyst gathers all the detailed information he needs regarding work center activities. This may involve the preparation of work distribution charts, layout diagrams, flow charts and the collection of volume and frequency data. Once all this information is collected, the analyst determines what categories of activity will be measured and how the measurement will be accomplished.

Often during the course of the fact-finding phase in a work center, opportunities for improvements are discovered. Normally, any of these which can be implemented in relatively short order are instituted before measurement begins. A subsequent section will examine the actual extent of efforts to improve methods and procedures before measurement.

Finally, procedures are implemented for gathering any volume, work hour, or frequency data which will be required for the eventual calculation of work measurement standards.

Branch study procedure.--Generally speaking, at least for the banks interviewed, the procedure for studying a branch facility is the same as the procedure for studying any other work center. However, because the work performed in all branch facilities tends to be similar, banks normally study only a sample of representative branches rather than the total number of branch offices.<sup>25</sup>

Extent of Methods and Procedures Analysis

The extent to which methods and procedures are analyzed before measurement begins varies from a detailed analysis to no analysis at all. Table XLII shows that 59 per cent of the

TABLE XLII

EXTENT OF METHODS AND PROCEDURES ANALYSIS  
CONDUCTED PRIOR TO SETTING  
WORK MEASUREMENT STANDARDS

(105 banks replying to this  
particular question)

Extent of Methods and Procedures Analysis	Number of Responses	Per Cent of Respondents
Detailed analysis	39	37.14
Only obviously deficient methods corrected	62	59.05
No analysis	9	8.57

survey respondents fall somewhere between these two extremes in that they attempt to improve only those methods that are

<sup>25</sup>Confidential interviews with officials of banks B and X.

obviously deficient. Accounting for this failure to study present methods in great detail before measurement is the apparent pressure to achieve standards coverage as rapidly as possible. This point was mentioned by several bank officials during the series of interviews. The following comment from one official is typical.

We are under a certain amount of pressure to provide coverage and so we violate all of the theoretical rules of improving methods, standardizing, and then measuring. We measure first. Hopefully, noting the poor methods and maybe making some minor improvements. Then once an area is measured, hopefully, we will have the manpower to go back and improve the methods.<sup>26</sup>

However, it should be noted that a number of banks do devote detailed attention to improving methods before setting standards: 37 per cent of the survey respondents indicate such a degree of attention.

#### Consideration of Quality Levels

Table XLIII indicates the actions banks take in regard to quality of work performed. Thirty-four per cent simply assume that the quality level is acceptable and almost 5 per cent indicate that no consideration is given. Assuming that the level is acceptable would seem to be tantamount to no consideration; therefore, the no consideration percentage is actually about 39 per cent. However, lack of specific quality level consideration may run even higher because, as

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<sup>26</sup>Confidential interview with official of bank B.

TABLE XLIII

CONSIDERATION OF QUALITY LEVELS OF THE  
WORK FOR WHICH STANDARDS ARE BEING SET(106 banks replying to this  
particular question)

Consideration Given to Quality	Number of Responses	Per Cent of Respondents
Assume level acceptable	36	33.96
Establish quality standards	19	17.92
Build error correction time into standards	49	46.23
Provide for error correction as non-standard time	27	25.47
No consideration	5	4.72
Other	2	1.89

indicated in the interviews, most banks normally include sufficient time in their work standards for performing quality work, but generally this is done without devoting attention to existing or planned quality levels. What is sufficient time would appear to be arrived at through visceral decisions in most cases, not through study.

The time employees spend correcting errors is usually handled in one of two ways: (1) a certain amount of time for correcting errors is built into the standard, or (2) error correction is considered to be non-standard time. The interviews were helpful in clarifying this point. Normally, the time an employee spends correcting errors committed by others is built into the time standard the employee reports



under. The errors the employee makes which he must correct are usually not covered by time standards. The time thus spent by the employee in correcting his own errors therefore lowers his efficiency.

### Measurement

This section examines commercial banks' practices in the actual measurement of work. The following topics are considered in succeeding paragraphs: work measurement techniques used, the use of performance leveling, establishment of branch standards, supervisory participation in work measurement, and preparation of the final study report.

### Work Measurement Techniques Used

Table XLIV shows the work measurement techniques used by commercial banks. As can be seen from the table,

TABLE XLIV  
WORK MEASUREMENT TECHNIQUES USED

(106 banks replying to this  
particular question)

Technique	Number of Using Banks	Per Cent of Respondents
Stopwatch	47	44.34
Wrist watch	16	15.09
Work sampling	49	46.23
Self log	54	50.94
Short interval scheduling	14	13.21
Historical records	22	20.75
Predetermined times	86	81.13

predetermined times are used by more banks than any other technique. This technique is followed in popularity by self-logging, work sampling, and stopwatch time study. Perhaps the most surprising thing indicated by Table XLIV is the widespread use of stopwatch time study, particularly in view of the fact that many of the interviewees abhorred the technique and eschewed its use.

Table XLV indicates the number of techniques banks use. Over 27 per cent of the respondents indicate that they use

TABLE XLV  
NUMBER OF WORK MEASUREMENT TECHNIQUES USED

(106 banks replying to this particular question)

Number of Work Measurement Techniques Used	Number of Banks Using Number of Techniques	Per Cent of Banks Using Number of Techniques
1	29	27.36
2	21	19.81
3	27	25.47
4	15	14.15
5	9	8.49
6	4	3.78
7	1	.94
Total	106	100.00

only one work measurement technique. Only one respondent indicates the use of all techniques. As the table shows, most banks use between one and four techniques. The average for all respondents is 2.72.

Table XLVI and XLVII provide information concerning the relative importance of the different work measurement techniques. Table XLVI shows the number of people under standards set by each technique as developed from information on the number of people under standards and the percentage usage of each technique reported by each of the respondents.

TABLE XLVI

NUMBER OF PEOPLE UNDER STANDARDS SET BY  
DIFFERENT WORK MEASUREMENT TECHNIQUES

(94 banks replying to this  
particular question)\*

Techniques	Number of People Under Standard Set by Technique**	Per Cent of People Under Standard Set by Technique
Stopwatch	26,310	24.85
Wrist watch	1,957	1.85
Work sampling	18,321	17.30
Self log	7,971	7.53
Short interval scheduling	824	.78
Historical records	1,485	1.40
Predetermined times	49,018	46.29
Total	105,886	100.00

\*Only banks replying to both questions nine and twenty-four of the questionnaire are included in this tabulation.

\*\*Number of people under standards set by different techniques was determined by multiplying each individual bank's number of people under standards by the bank's percentage usage of each technique and totaling the results.

This tabulation indicates again that predetermined times are the most important technique used. Some 46 per cent of the people under standards in the responding banks work under

standards set by this technique. Almost 25 per cent of the people work under stopwatch time study standards and 17 per cent operate under work sampling standards. The remaining techniques occupy positions of minor importance.

Table XLVII shows the usage of techniques according to per cent of utilization. This table further emphasizes the importance of predetermined times as a major measurement technique. It shows that 45 of the 82 banks indicating use of predetermined times use this technique of measurement between 91 and 100 per cent of the time. Only five banks use stopwatch time study as extensively and only one uses work sampling as extensively. It appears from the table that stopwatch time study, work sampling, self-logging, and historical records tend to be used as supporting techniques and not as major techniques of work measurement by most banks.

Predetermined time systems are the most widely used of all the measurement techniques employed by commercial banks. They are used by more banks and they are used a greater percentage of the time. More people work under standards set by this technique than by any other technique.

#### Performance Leveling

As discussed in Chapter III, when a technique other than predetermined times is used it is usually necessary to rate the performance of the individual under observation in order to arrive at a normal time. Table XLVIII shows the practices

TABLE XLVII  
 WORK MEASUREMENT TECHNIQUES USED DISTRIBUTED  
 BY PERCENTAGE OF USAGE

(106 banks replying to this  
 particular question)

Percentage of Usage	Responses by Technique							Predetermined Times
	Stop Watch	Wrist Watch	Work Sampling	Self Log	Short Interval Scheduling	Histor- ical Records		
91 - 100	5	..	1	..	..	1	45	
81 - 90	1	2	2	1	..	..	5	
71 - 80	2	..	..	2	..	..	4	
61 - 70	..	..	..	..	1	..	4	
51 - 60	7	..	..	..	..	..	..	
41 - 50	1	4	3	1	..	1	2	
31 - 40	1	..	4	1	..	..	4	
21 - 30	3	..	3	3	1	..	1	
11 - 20	3	1	4	5	2	3	2	
1 - 10	18	7	22	30	7	13	15	
Total	41	14	39	43	11	18	82	

of commercial banks in this area. Almost 43 per cent of the respondents use pace rating; almost 11 per cent use skill and effort rating; and 16 per cent use some method other than these two formal systems. In some cases, "other" represents a subjective value judgment on the part of the analyst, while in a few instances it represents a cross-checking of results obtained from one technique with those obtained from another technique.

TABLE XLVIII  
 TYPES OF LEVELING FACTORS USED  
 (56 banks replying to this  
 particular question)

Leveling Factors	Number of Banks Using Factor	Per Cent of Banks Using Factor
Pace rating	24	42.86
Skill and effort rating	6	10.71
Other	9	16.07
None	17	30.36
Total	56	100.00

What is revealing about Table XLVIII is that 30 per cent of the responding banks indicate that no attempt is made to level time values obtained from techniques other than predetermined times. This would seem to indicate that in some cases the standards set by banks are not standards, but rather are simply averages of performance.

Setting Standards for  
Branch Offices

As previously indicated, the procedure for studying a branch facility is essentially the same as for any other work center. However, the standards set for branch operations may be handled in several different ways: (1) common standards which apply to all branches and central office functions may be set, (2) separate standards may be set for each branch office, or (3) a combination of common and separate standards may be set. Table XLIX indicates that the most prevalent practice is to set a combination of standards. Usually this

TABLE XLIX

PROCEDURE FOR DEVELOPING WORK MEASUREMENT  
STANDARDS FOR BRANCH BANKING OFFICES

(85 banks replying to this  
particular question)

Procedure for Development	Number of Responses	Per Cent of Total Respondents
Common standards for central office and branches	15	17.65
Separate standards for branches	20	23.53
Combination of common and separate standards	54	63.53

means that, as ascertained from the interviews, standards which apply to all branches are set on certain common activities such as cashing a check or taking a deposit. Where

equipment used in a particular branch is different or operating conditions vary, the common standard may be adjusted to compensate for these differences.

In addition it may mean that universal standards are set for application to all branches, but where the branch performs a service which is unique, a separate standard will be set for performing the service in that branch office.

Far from complicating work measurement, the possession of branch facilities by a bank seems to facilitate the measurement process. Several of the banks contacted actually started their measurement efforts in the branches and had programs operating there for a number of years before they attempted to measure central office or headquarters functions.<sup>27</sup> These banks indicate that it is relatively easier to measure branches because of the tremendous similarity of work. The study of a sample of branches produces standards which can be applied to the total number of branches. On the other hand, so these bank officials point out, each work measurement study of a central office function is unique; thus, the measurement of these areas is more difficult and time consuming.

#### Supervisory Participation in Work Measurement

Tables L, LI, and LII indicate the extent to which work center supervisors are involved in the actual measurement

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<sup>27</sup>Confidential interviews with officials of banks F, Q, V, and X.



process. Table L shows that practically all banks discuss the standards with the supervisor as they are being established. Usually, as brought out in the interviews, the analyst keeps the supervisor advised as to what is being measured, what elements are included, etc.

TABLE L  
DISCUSSION OF STANDARDS WITH WORK  
CENTER SUPERVISOR AS PART OF THE  
PROCESS OF SETTING STANDARDS

(103 banks replying to this  
particular question)

Are Standards Discussed as Part of the Process?	Number of Responses	Per Cent of Total Respondents
Yes	99	96.12
No	4	3.88
Total	103	100.00

Table LI indicates that almost all banks discuss the standards with the work center supervisor after they have been set. At this point the analyst usually presents his findings to the supervisor and discusses any standards which appear to be incorrect.

As Table LII reveals, the majority of banks require that the work center supervisor approve the standards before they are implemented. Normally, according to bank officials

TABLE LI

DISCUSSION OF STANDARDS WITH WORK  
CENTER SUPERVISOR AFTER BEING SET(101 banks replying to this  
particular question)

Are Standards Discussed After Being Set?	Number of Responses	Per Cent of Total Respondents
Yes	98	97.03
No	3	2.97
Total	101	100.00

interviewed, this approval is more in the nature of a certification that no significant element of work has been omitted than it is an acceptance of the final time values arrived at during work measurement.

TABLE LII

REQUIREMENT OF APPROVAL BY WORK CENTER  
SUPERVISOR BEFORE STANDARDS  
ARE PUT INTO EFFECT(101 banks replying to this  
particular question)

Is Approval Required?	Number of Responses	Per Cent of Total Respondents
Yes	71	70.30
No	30	29.70
Total	101	100.00

The standard data approach used by the Mulligan consulting firm makes extensive and direct use of supervisory participation in the actual process of setting standards.<sup>28</sup> Under the approach employed by this firm, standards are jointly developed by the work center supervisor and the work measurement analyst. Generally, the supervisor is assigned to work with the analyst for a specified number of hours per day at a location removed from the work center. While the supervisor describes in detail all of the activities performed in the work center, the analyst flow charts the operations and assigns elemental time values to the work performed. Using this approach it is possible that the analyst may never see the actual work for which standards are being developed. The Mulligan approach perhaps represents the ultimate in supervisory participation in work measurement. While almost all banks involve the supervisor to some extent in the measurement process, none do so to the same extent as those banks employing the Mulligan approach.

#### Final Study Report

After standards have been developed for a work center, it is customary to prepare a final report of the study findings. While the specific format and contents of the final report may vary from one bank to another, this report

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<sup>28</sup>Confidential interviews with officials of banks G, N, and S.

generally includes the following items: (1) summary of study findings, (2) recommendations, and (3) detailed supporting information.<sup>29</sup>

The findings section of the report includes such items as current operating effectiveness, existing staffing conditions (whether over or under), and extent of volume fluctuations or peak load situations.

The recommendations section indicates the action which the work center should take in regard to its present staffing or in regard to implementation of improved methods and procedures.

The final section of the report shows in considerable detail what is included in each time standard, descriptions of all jobs, volume comparisons, work load distribution charts, or other information which serves to support the study findings.

#### Use and Maintenance of Work Measurement Standards

This section focuses first on the uses to which work measurement is put in commercial banks and the reports which are generated through the use of work measurement data. Next, the procedures used to audit reported work measurement data and the staff required to update standards are considered.

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<sup>29</sup>This generalized study report was developed from an examination of detailed study reports furnished by banks N, P, and S.

Uses of Work Measurement Data

In the questionnaire survey each bank was asked to indicate what use was actually being made of work measurement data at the present time. Table LIII shows a tabulation of the answers to this question.

TABLE LIII  
ACTUAL USES OF WORK MEASUREMENT DATA  
(106 banks replying to this  
particular question)

Use of Data	Number of Responses	Per Cent of Respondents
Staff adjustments	101	95.28
Future staff needs	77	72.64
Cost standards	75	70.75
New service pricing	72	67.92
Methods changes	72	67.92
Objectives establishment	72	67.92
Performance comparison	71	66.98
Equipment needs	70	66.04
Employee evaluation	69	65.09
Supervisor evaluation	61	57.55
Production scheduling	55	51.89
Expense budget preparation	43	40.57
Overtime justification	42	39.62
Incentive wages	13	12.26
Others	17	16.04

The most prevalent use of work measurement data is for effecting staff adjustments. The second greatest use is for determining future manpower and the third biggest use is for cost standards. The results of this table seem to lend further support to the point made earlier in this chapter that staff-cost control is the principal objective of work measurement in banks.

It is interesting to note that of the listed uses of work measurement data, eleven are used by 50 per cent or better of the respondents. Only expense budget preparation, overtime justification, incentive wages, and "other" are used by less than 50 per cent of the respondents. Among the other uses listed by respondents are teller scheduling, job evaluation, salary review, and preparation of job descriptions.

Based on information gathered in the interviews, there is some reason to believe that the extent of use of work measurement as indicated in Table LIII may be overstated somewhat. Many of the uses listed in the table are work center level uses, and therefore, whether they are used or not in a given bank depends upon the work center supervisor. According to some of the interviewed officials, there is reason to believe that supervisors may simply not be using work measurement extensively. For example, one bank official indicated that the supervisors in his bank were not using work measurement data at all.<sup>30</sup> Another official stated that supervisors in his bank were using work measurement only for control.<sup>31</sup> And a third official stated that the use individual supervisors make of work measurement data varies.<sup>32</sup> The general impression gained from the interviews with banking officials is that work measurement data, at

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<sup>30</sup>Confidential interview with official of bank U.

<sup>31</sup>Confidential interview with official of bank S.

<sup>32</sup>Confidential interview with official of bank G.

present, is used for a limited number of purposes. However, most of the officials interviewed foresee extensive use of the data. Perhaps a correct interpretation of Table LIII is that these are the things banks are presently using work measurement for as well as the anticipated future uses.

Table LIV shows the percentage of banks by number of uses to which work measurement data can be put. Very few

TABLE LIV  
NUMBER OF USES MADE OF WORK MEASUREMENT

(106 banks replying to this particular question)

Number of Uses to Which Data Can Be Put	Number of Banks Employing Number of Uses	Per Cent of Banks by Number of Uses
1	2	1.89
2	1	.94
3	3	2.83
4	8	7.55
5	5	4.72
6	7	6.60
7	12	11.32
8	12	11.32
9	13	12.26
10	13	12.26
11	8	7.55
12	12	11.32
13	5	4.72
14	5	4.72
15	..	..
Total	106	100.00

banks admit to a single use and none professes using work measurement data for more than 14 purposes. The average number of uses which commercial banks claim is slightly over

8. This would seem to imply that while work measurement is finding a place of usefulness in commercial banking, it is not yet being used to its fullest extent.

#### Work Measurement Reports

The most common of all measurement reports is the performance report. This report usually compares the input of actual manhours with the number of hours earned by producing units of output at the specified standard time. The result of this comparison is an index of operating effectiveness or a utilization percentage. Table LV indicates that over 94 per cent of the survey respondents actually prepare some type of report in which the performance of the work center is compared against standard performance.

TABLE LV

#### NUMBER OF SURVEYED COMMERCIAL BANKS PREPARING WORK MEASUREMENT PERFORMANCE REPORTS

(105 banks replying to this  
particular question)

Does Bank Prepare Performance Report?	Number of Responses	Per Cent of Respondents
Yes	99	94.29
No	6	5.71
Total	105	100.00



Table LVI shows the frequency with which performance reports are prepared. Almost 39 per cent of the respondents prepare a report on a weekly basis. Over 48 per cent do so on a monthly basis. The remaining respondents prepare a performance report on a basis ranging from bi-weekly to once for each study.

TABLE LVI  
FREQUENCY OF WORK MEASUREMENT  
PERFORMANCE REPORTS

(95 banks replying to this  
particular question)

Frequency of Report	Number of Responses	Per Cent of Responses
Weekly	37	38.95
Monthly	46	48.42
Bi-weekly	4	4.21
Bi-monthly	2	2.10
Other	6	6.32
Total	95	100.00

As Table LVII shows, the performance report may be prepared by the work center supervisor, the work measurement section, or by another group, principally the computer section. As determined from the interviews, the supervisor is primarily responsible for submitting the work center data, although as the table indicates, he may in many cases prepare the entire report. The extent of computer preparation is perhaps understated in the table because frequently when data

TABLE LVII

PERSON OR SECTION PREPARING WORK  
MEASUREMENT PERFORMANCE REPORT(105 banks replying to this  
particular question)

Report Prepared by	Number of Responses	Per Cent of Respondents
Work center supervisor	41	39.05
Work measurement section	38	36.19
Other*	31	29.52

\*In all instances, other refers to computer preparation of report.

is submitted to the work measurement section it is simply checked and then sent to the computer for actual preparation. One consulting organization, Bruce Payne, provides a computer program for performance report preparation. Most of the interviewed banks which retained this particular firm also used the computerized reporting package.

Auditing Procedures

Most banks perform some sort of audit of activity data submitted by the work centers. Normally this audit consists of a quick check of the data by a work measurement analyst.<sup>33</sup> The purpose of this procedure is to catch obvious reporting errors. In one particular case, the work measurement section supervisor writes a monthly memorandum to work centers

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<sup>33</sup>Confidential interviews with officials of banks G, P, R, and S.

submitting erroneous data and point out the errors made and probable causes, etc.<sup>34</sup>

Some banks feel that the basic responsibility for auditing activity data should rest with the supervisor of the work center because it is part of his job to submit accurate information.<sup>35</sup> Specific instructions for performing this audit are usually found in the supervisor's work measurement manual.

The most unusual audit procedure discovered during the interviews was the case of bank I where management had decided that the audit of the activity reports was to be performed by the auditing department. In this particular bank, falsification of activity reports was looked upon as an offense equal with the deliberate falsification of other bank records.

In general, the audit performed on submitted work measurement data is a cursory one intended only to catch obvious errors. Detailed item by item auditing procedures are not widely used.

#### Staff Required for Maintenance of Standards

In their efforts to achieve work measurement coverage as rapidly as possible, commercial banks usually build-up the analyst staff at the start of a program. After the

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<sup>34</sup>Confidential interview with official of bank M.

<sup>35</sup>Confidential interviews with officials of banks I and K.

desired coverage is reached the size of the staff is normally pared down considerably. While the present research was not specifically concerned with determining the number of analysts required for maintaining work standards, several of the interviewees did reveal what happens to the size of the work measurement staff when the maintenance phase of the program is reached. The experiences of three banks are offered as being, if not representative, at least illustrative.

In one bank where the maintenance phase has already been reached, the work measurement staff has been reduced from four analysts to one analyst.<sup>36</sup> In a second bank, the analyst staff reached a high point of 70 analysts and has now been cut to 25.<sup>37</sup> In the third bank which has not yet reached the maintenance stage, it is anticipated that the present staff of 12 analysts will be reduced to a complement of between 4 to 8 analysts.<sup>38</sup>

At their high points, these three banks employed 86 work measurement analysts. Once all three have arrived at the maintenance phase they will employ between 30 and 34 analysts. This will represent an approximate reduction in the analyst force of somewhere around 67 per cent.

While maintenance requirements will vary for individual banks, it is obvious that a sizable reduction in staff occurs once initial standards coverage is achieved.

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<sup>36</sup>Confidential interview with official of bank G.

<sup>37</sup>Confidential interview with official of bank J.

<sup>38</sup>Confidential interview with official of bank S.

## CHAPTER V

### WORK MEASUREMENT PROBLEMS IN COMMERCIAL BANKS

The purpose of this chapter is to enumerate and describe problems commercial banks have encountered in their efforts to implement and operate work measurement programs. A number of problems, some critical and some of a less serious nature, are considered in the following pages. It should be noted that, in all probability, not every bank has experienced all of the difficulties listed. While a few of the problems are relatively common to most banks, others occur on a somewhat limited basis. But, this chapter identifies a wide range of problems which could conceivably be encountered by a commercial bank during the course of establishing and operating a work measurement program.

In an attempt to present the problems in a logical sequence as well as to place them in proper perspective, each of the problems considered is related to one of the four phases in the installation and operation of a work measurement program; namely, preliminary planning, pre-measurement analysis, measurement, and the use and maintenance of standards. However, due to the nature of some of the problems, there is a tendency for several problems to overlap two or more phases. Where this occurs, the problem is considered

at what is deemed to be its initial point of occurrence. For example, problems associated with communication may occur during all four phases; however, the initial difficulty usually arises during the preliminary planning stage. Therefore, the communication problem is considered under the preliminary planning phase of work measurement.

The work measurement problems presented in this chapter have been derived from three sources: (1) direct enumeration in the questionnaire survey; (2) inference from current practices revealed in the questionnaire survey; and (3) direct enumerations made by various banking officials during the series of interviews. Problems from these three sources are brought together as each phase of the establishment and operation of a work measurement program is considered.

For the sake of clarity, the problems directly enumerated in the questionnaire survey are presented in their entirety at this point in the chapter. Table LVIII on the following page, shows a tabulation of the responses to the survey question, "What do you consider to be the three most critical problems encountered during the installation and operation of your work measurement program?" Commercial banks indicate that they have encountered a wide range of problems. Each of these problems will be considered in detail in subsequent sections of the chapter.

TABLE LVIII

MOST CRITICAL PROBLEMS ENCOUNTERED DURING THE  
INSTALLATION AND OPERATION OF THE WORK  
MEASUREMENT PROGRAM

(98 banks replying to this  
particular question)

Most Critical Problems	Number of Responses	Per Cent of Total Respondents
Improper use of results	29	29.59
Supervisory acceptance	27	27.55
Activity reporting	23	23.47
Management support	20	20.41
Fear or resentment	17	17.35
Lack of understanding	16	16.33
Management acceptance	16	16.33
Lack of communication	16	16.33
Employee acceptance	14	14.29
Program maintenance	10	10.20
Supervisory participation	9	9.18
Training of analysts	8	8.16
Setting of accurate standards	7	7.14
Nature of work studied	6	6.12
Turnover of analysts	6	6.12
Poor supervisors	5	5.10
Lack of qualified analysts	5	5.10
Keeping program on schedule	4	4.08
Difficulties with consultant	4	4.08
Obtaining job information	3	3.06
Morale of analysts	2	2.04
Implementation	2	2.04
Complexity of system	2	2.04
Miscellaneous problems	18	18.37

Table LIX shows the results of an attempt to get at commercial bank work measurement problems through another direction--identification of the basic causes of the problems

TABLE LIX  
BASIC REASONS FOR WORK MEASUREMENT  
PROBLEMS ENCOUNTERED

(93 banks replying to this  
particular question)

Reasons for Problems	Number of Replies	Per Cent of Respondents
Wrong measurement technique	9	9.68
Inadequate advance planning	15	16.13
Inadequate top management support	23	24.73
Inadequate middle management support	42	45.16
Opposition from employees	22	23.66
Opposition from supervisors	40	43.01
Opposition from middle management	26	27.96
Inadequate indoctrination for supervisors and employees	34	36.56
Inadequate indoctrination for middle and top management	22	23.66
Other	34	36.56

enumerated in Table LVIII. In essence, Table LIX reflects the actual problems because it deals with causes, while Table LVIII deals with the effects resulting from the basic causes. As can be clearly seen from the table, management support, supervisory acceptance, and communications are at the heart of many of the problems. This table will be referred back to in subsequent discussions of problems.



## Preliminary Work Measurement Planning

### Top Management Commitment

In the series of interviews with representatives of twenty-six commercial banking institutions, officials of twelve of these organizations specifically mentioned having problems associated with management's commitment to the idea of work measurement or support for the program. In some instances, the lack of support was of such a nature as to be extremely detrimental to the program. In the case of bank N, top management's failure to support the work measurement program was blamed for the demise of the program after a short period of existence. In the case of Bank U, the program manager was experiencing extreme difficulty in getting any of the bank's departments to report the information needed for producing monthly reports. This particular manager indicated that he was receiving no help from top management in getting the departments to report.

In three other instances, top management's failure to support the work measurement efforts resulted in standards not being implemented in specific areas. In one of these cases, that of bank L, two different departmental managers exerted such pressure on the top manager of the bank that he acquiesced to their demands not to implement standards in their respective areas. In bank J, one department manager

"absolutely refused to have his people tally."<sup>1</sup> This manager pointed out to the executive vice president of the bank that keeping production records would interfere with the normal work routine of his employees and possibly result in sizable dollar losses to the bank. The executive vice president acceded to the department manager's demands, and the work measurement people were withdrawn from the area after having spent six months in an effort to establish standards. In bank K, standards were written for the teller area, but were not implemented because of departmental management's ability to influence top management not to inaugurate the system.

In bank E, support for the work measurement program originally came from the president, but when this individual died support for the program waned because other high level managers did not believe in the program. People who were in the program were moved elsewhere and replacement personnel were not always assigned to the program.

The remaining six banks which indicated problems of management support did not experience the difficulties that banks E, K, L, N, U, and J did. An official of bank Z stated that some difficulties were encountered in the attempt to generate management support at the start of the program or

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<sup>1</sup>The term "tally," as used in work measurement parlance refers to recording of unit count or manhour data by the individual employee.

to maintain it during the life of the program. Officials of bank D felt that top management in their bank had offered lip service support, not genuine commitment. Representatives of banks O and S felt that work measurement could have achieved greater results with better management backing. An official of bank W, indicating the coolness of support from top management stated, "I think that the battles we won, we won with our own guile and salesmanship. We did not really go to 'big daddy' for a club or things like this." An official of bank C stated that top management's initial interest had waned over a period of time.

In banks A and M, although lack of top management support was not specifically stated as such, it could be inferred from the difficulties these institutions were experiencing. Representatives of bank M indicated that the program was encountering considerable resistance from middle managers. Political "in-fighting" and personality problems, they felt, were furthering the difficulties work measurement was experiencing. In bank A, the work measurement function had been shifted about from department to department within the organization. At the time of the interview, the program was staffed by only one individual. A second position was vacant at the time of the interview and had been vacant for a period of time.

While problems of management support were not indicated by the remaining twelve banks interviewed, in each case

representatives of these institutions maintained that commitment on the part of high level management is absolutely essential to success in work measurement.

That management support for work measurement has been a problem for some commercial banks can also be seen from an examination of Tables LVIII and LIX. In Table LVIII, 20 per cent of the respondents indicate that management support has been a critical problem. Sixteen per cent indicate that management acceptance of work measurement has been a critical problem. In Table LIX, almost 25 per cent of the respondents point to inadequate top management support as a basic cause of the problems encountered by the work measurement program. In addition, 45 per cent indicate inadequate middle management support as a casual factor for work measurement difficulties.

Failure to Integrate Work Measurement  
with Other Programs

In some cases, perhaps because work measurement is viewed as a short-term endeavor, there has been a failure to integrate the work measurement program into the total framework of management programs within the bank. Where this happens, a lack of congruence may exist between the work measurement program and other programs such as expense budgeting, financial planning, or standard costing. For example, one respondent to Table LVIII stated that one of the problems experienced by his bank was that "Standards

for performance and information for standard cost are not entirely compatible." Such a failure no doubt exists because of inadequate attention to the relation between the output of the performance measurement program and the requirements of the standard costing program. A similar situation was found to exist in bank L. According to one high ranking official of this institution, the work measurement program was initiated in order to provide the basis for a costing system. Yet, another official of this bank who was involved in the daily operation of the work measurement system claimed that the work measurement data, because of the terms in which it was expressed, could never be used as a basis for a costing system. This again would appear to be a failure on the part of management to integrate the output of one program with the needs of another program.

In bank W, after several years of operating the work measurement program, this need for integration between programs had apparently been recognized. At the time of the interview in this bank, work measurement officials were in the process of redesigning the program and analyzing the relation between work measurement and other types of management information programs in order to provide a multi-use data base for management. One official pointed out that work measurement must be integrated with other types of programs in order to avoid conflicts between programs, as well as to assure the permanency of the work measurement effort.

In the case of other banks such as A, E, N, and U, the general impression gathered from the representatives interviewed was that work measurement was more or less considered as an adjunct program; consequently, it was apparently not well integrated into the overall framework of management programs. Of these four programs, two (banks N and U) were defunct and two (banks A and E) were experiencing operating difficulties. While not all the blame for the difficulties encountered by these programs can be placed on the failure to integrate, certainly a portion of it rightly belongs there.

#### Work Measurement Objectives

Limited nature of objectives.--As discussed in Chapter IV, work measurement objectives in commercial banks have generally been of a rather limited nature with the primary emphasis being placed upon staff-cost control. Seventeen of the institutions contacted during the present research indicated that this type of control was the basic objective of the program. On the surface limited objectives may or may not indicate existence of problems. Two points may be inferred from limited work measurement objectives: (1) that management has not fully considered or recognized the usefulness of work measurement for other purposes and therefore has not done a complete job of planning, or (2) that management, in some cases, may be over-emphasizing the control

aspects of work measurement, while failing to recognize its potential as a planning tool.

An over-emphasis on cost reduction was apparent at banks N and L. Officials of bank N expressed the opinion that the work measurement program was probably looked upon by top management as a one-time cost reduction program; consequently, the program quickly earned a reputation as a "hatchet" endeavor. Employee morale suffered and the program died in less than two years. In the case of bank L, the emphasis on quick cost reduction led to the summary termination of employees some of whom were six months or less from retirement. Needless to say, morale problems arose in this institution. According to one official of this bank, the situation became so bad at one point that something tantamount to a "revolt" was brewing among the middle managers of the bank. Officials of this institution admit that any savings in personnel were strictly short term.

As these two examples illustrate, over-emphasizing a limited, short-run objective can have deleterious effects on the long term success of the work measurement program.

Lack of written goals.--Table XVII in Chapter IV shows that 38 per cent of the surveyed banks do not prepare a written statement of goals prior to beginning the work measurement program. While it is not absolutely imperative that objectives be expressed in writing in order to be effective,

it is generally considered to be good practice to do so.<sup>2</sup> By inference, the fact that 38 per cent of the respondents did not write out their goals before the start of the program could be interpreted to mean that some banks have not carefully thought through the possible uses of work measurement or have not clearly identified the objectives to be achieved.

Lack of written goals would also appear to increase the difficulties of communicating program objectives to organizational members. Where a written statement does not exist, communication must be accomplished orally. While such communication can be accomplished effectively, it is generally accepted that some combination of means, oral as well as written, is much more effective.

To the extent that lack of written goals indicates management uncertainty about the objectives of work measurement or to the extent that it causes communication difficulties, the absence of formally written goals may be considered a problem.

Lack of goal communication.--During the series of interviews, lack of goal communication was specifically touched upon as a problem at banks L and U. In both of these institutions, a management consulting firm simply arrived upon the

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<sup>2</sup>Henry L. Sisk, Principles of Management (Cincinnati, 1969), p. 51, indicates that "stating an objective implies that the statement be in written form."



scene one day ready to begin measurement. In neither case had top management, as near as can be determined, given any advance notice to other members of the organization. A representative of bank U stated that "there was a lack of communication. They [the consulting firm] just showed up one day and word got around that somebody was in. Efficiency experts, they called them. And right away everybody was on the defensive." In each of these banks, morale problems developed and the programs experienced difficulties. While all of the difficulties encountered probably cannot be blamed upon a communications failure, there appears to be little doubt that top management's failure to communicate was a major contributant to the difficulties.

In bank I, the communication problem was of a less serious nature. An official of this bank observed that "top management has not communicated properly. . . . Top management has not told middle management just what the benefits have been that are being derived from O.I.P."

The entire communication problem will be considered in more detail in a subsequent section.

#### Work Measurement Policies and Procedures

Lack of written statements.--Table XXII in Chapter IV indicates that 24 per cent of the survey respondents do not have written policies and procedures to guide the operation of the work measurement program. While, as in the lack of

written goals, absence of written policies or procedures does not in itself constitute a problem, it may be indicative of a failure to provide proper guidance for the operation of the program. Lack of written policies and procedures may also complicate problems of communications.

Policy violations.--Violations of stated management policies were observed in banks L and N. In each of these cases, management maintained that a policy of achieving staff reduction through natural attrition would be followed, but, policy notwithstanding, in each institution employees were terminated as a result of the work measurement program. These policy violations served to increase employee morale problems.

#### Organizational Arrangements for Work Measurement

As indicated in Chapter IV, work measurement programs in commercial banks are generally located within either the operations division or the controller's division. Neither of these locations, per se, appears to pose a problem. Organizational location does become a problem, however, when the work measurement function is placed at too low a level within the organization, or when difficulty is experienced in crossing department or division lines, or when lack of official status for the function head creates cooperation problems. All of these difficulties were observed during the interviews with banking officials.

In bank N, one official maintained that the work measurement group, four levels removed from the president, was located too far down in the organization to effectively perform its functions. Communications with management were hampered because of the number of levels through which they had to travel.

Banks O, S, and W indicated problems of crossing departmental lines. In bank O, the work measurement function is located in the operations division and serves only that division. Although this bank has a relatively large branch system, the work measurement group has been precluded from measuring these areas. According to a representative of the bank, a "political" situation restricts work measurement to the operations area. An official of bank W expressed the opinion that in his bank the work measurement functions, as a part of the systems and planning group of the operations areas, had been organizationally misplaced for three years. He indicated that several large divisions such as retail banking, commercial banking, the international division, and the trust division were not part of the operations division, and that some difficulties of trying to cross over into these areas had been experienced. This official went on to state that the work measurement function's new location in the controller's division would probably allow the program to serve the entire organization more effectively. In bank S, an official indicated that some problem of getting recommendations implemented in areas such as installment loans,

savings, and trust had been encountered because, "we have to kind of rely on a liason relationship, so to speak, with these people and believe me that's like nothing."

In bank U, the work measurement program head did not have official status. It was his opinion that not being an officer of the bank increased his problems of attempting to communicate with officers of the bank because they did not accept or respect his position as head of the work measurement effort.

One of the most unusual organizational arrangements for work measurement was encountered in bank C. Here a team of four analysts was set up as a section of a department within the controller's division. No one was designated as program head. It was not until approximately a year later, after the program had encountered difficulties which threatened the existence of the entire work measurement effort, that an officer of the bank was officially designated as the work measurement program manager.

#### The Use of Consultants

Selection of firm.--As revealed in the previous chapter, almost 83 per cent of the questionnaire survey respondents used the services of a consulting firm in starting their work measurement programs. But as indicated in Table XXVIII, over 19 per cent of the banks employing consultants did not consider more than one firm. By inference, therefore, it would

appear that some banks do not sufficiently consider alternative approaches to work measurement which may be offered by different firms. Theoretically, consideration of only one firm does not afford bank management sufficient opportunity to compare alternative courses of action which may be taken in work measurement. While in some cases, consultants have been effectively chosen without considering more than one firm, in other cases they have not. Bank I considered only one firm and retained one of the most respected consultants in the industry. Bank L considered only one firm and retained a firm with one of the most dubious reputations in the industry.

Overselling by consultants.--Several of the banking officials interviewed expressed the opinion that there is a tendency for consulting firms to oversell on what a work measurement program can accomplish or the speed with which it can be accomplished. A representative of bank K felt that the consultant used by his bank had oversold on the amount of dollar savings and the coverage time required. An official of bank N ventured the opinion that the consultant retained by his institution had made some rather bold statements regarding savings. One official of bank W felt that all consultants generally oversell because they make their proposals on the basis of very favorable assumptions. An official of bank G, a former consultant

himself, when asked if consultants tended to oversell what a work measurement program can accomplish, replied,

Definitely. I do not think there is any question about it. I have told those that I talked to that I think they ought to really tone down their wild figures they give on objective savings because nobody believes them.

In the case of bank L, the consultant apparently misrepresented his service. The chairman of the board of this bank selected the firm on the basis that the work measurement approach used would provide the basis for a standard cost system. Another official of this bank indicated that the system installed by the consultant was primarily a scheduling device and could not be used for unit costing purposes because it did not provide the detailed unit time standards required for this purpose.

In all fairness to the consulting firms, if any overselling on their part does occur, it is probably not deliberate. Their estimates on savings are normally made on the basis of previous experience in other institutions and a limited feasibility study in the particular bank. Such estimates may reflect a good amount of optimism because it is difficult to consider all the variable factors which may influence actual savings.

A problem may arise, however, when top management is not fully aware of the optimism in the consultant's proposal. In such a case, management may push to achieve the proposed savings or may become impatient at the rate at which savings

are being accomplished. In an effort to reach stated savings, management may then take actions which have a detrimental effect on the normal progress of the work measurement effort. Something of this nature apparently occurred in bank N, where an executive vice president, despite a policy that no one would be terminated as a result of the program, expected to see recommended staff reductions accomplished immediately. This bank's program soon earned a bad reputation and ceased to function in less than two years.

Consultant as nominal program head.--In some cases, where a consultant remains in-house for a period of several months there may be a tendency for people within the organization to look upon him as the head of the program. If so, when he departs a leadership void may occur. A representative of bank C expressed the opinion that his institution had experienced this problem. Officials of banks E and Y, while not confronted with this problem, did point out that, in their opinion, if a bank leaned too heavily on a consultant to run the program during its formative stages a leadership problem could develop when the consultant left.

Bank G reported that the consultant was actually in charge of the work measurement program for six months. In bank N, the consultant was in charge for a period of eight months. While such a practice does not necessarily pose a problem, banks entering into work measurement should be

aware that it could, potentially, create problems. For example, an official of bank K indicated that while the consultant was in-house he possibly over-communicated with various managers, promising more than the program could deliver. This official went on to say that, "some of the things that were never implemented are still thrown back at us."

Other difficulties with consultants.--Table LVIII indicates that four per cent of the survey respondents consider difficulties with the consultant to be one of the most critical problems encountered during the installation and operation of the work measurement program. In addition to the problem already mentioned, other difficulties may arise because of the consultant's inexperience in banking or because of the personalities of the consultants involved. An official of bank Z maintained that the consultant retained by his bank actually used the institution as a learning experience. In the words of this official,

We were the first bank that they contacted for this kind of study. They had done some key punch type of analysis prior to this, but nothing in terms of the branch office environment. And it was somewhat of a new experience for them. . . .

In this case, the consultant's inexperience in banking, coupled with the bank's inexperience in work measurement created some communications difficulties at the start of the program.



In the case of bank L, the consultant actually brought in his own people to do the work measurement. A representative of this bank stated that the attitude of the people from the consulting firm was extremely bad. They saw their job as simply one of reducing staff. This official went on to say that he was instrumental in having the consultant remove two people from the engagement because of their belligerent attitude.

#### Program Staffing

Size of staff.--What constitutes an adequate size work measurement staff depends upon a number of variable factors such as the rate at which coverage is to be achieved, the number of people to be covered, etc. Therefore, it is rather difficult to determine, in the abstract, whether a bank is improperly staffed for work measurement. However, during the course of the interviews, two institutions did express the opinion that their current work measurement complement was not adequate. In bank A, with a total of 570 employees, 186 of whom were under standards at the time and 154 of whom were to be included in additional coverage, only one analyst was assigned to the program. By his own admission, the analyst felt this was not adequate staffing to maintain present coverage while also attempting to increase coverage. In bank X, only one analyst was assigned

to the job of maintaining standards for 240 branches. Obviously, this constitutes understaffing.

Obtaining analysts.--According to Table LVIII, several banks have experienced difficulties in obtaining qualified work measurement analysts. An official of bank S indicated that the tight labor market in his area made it extremely difficult to obtain analyst trainees from the outside. An official of bank V reported that it was almost impossible to obtain trained analysts in his area even though the bank was actively engaged in recruiting them.

Even banks attempting to fill analyst openings from within the organization have encountered difficulties. Representatives of banks K and M stated that it was difficult to get people from within the organization to transfer to the work measurement program. The official from bank M felt that this was perhaps due to the reluctance of department managers to relinquish their good employees. The representative of bank K was of the opinion that insiders were reluctant to transfer because they had seen the problems the work measurement analysts encountered and simply did not desire to become involved in problems of that nature.

Some banks rely on a draft or quota system to staff the program initially, but even here difficulties may be met. Bank F used such a draft system, but the work measurement manager was not allowed to select the people who were drafted.

In a situation such as this, department managers may use the draft as an opportunity to foist off onto the work measurement program unwanted or undesirable employees.<sup>3</sup>

Initial training of analysts.--As shown in Table LVIII, slightly over eight per cent of the responding banks specify training of analysts as one of the most critical problems experienced in their work measurement efforts.

In some instances, the initial training given work measurement analysts appears to be limited in scope. The two predominant consulting firms employed by commercial banks rely almost exclusively on standard data as a work measurement technique. Consequently, the training offered by these firms is limited to instruction in the use of the consultant's own standard data system or to instruction in the basic predetermined time system from which the standard data was developed. The analysts so trained are (according to an official of bank D) capable of applying with skill only one technique. Chapter III shows that no one best technique for the measurement of all banking activities exists in the abstract; therefore, lack of training in the use of other techniques would appear to be a handicap to those analysts receiving instruction only in standard data or predetermined elemental time systems.

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<sup>3</sup>This is precisely what happened at bank W. The first list of draftees submitted by departmental managers was rejected by top management because many of the people whose names were submitted were not felt to be suitable analyst material.

Even where training encompasses more than one technique, instruction may not be of sufficient depth to allow skillful application. As an example, bank T initially offered a relatively comprehensive classroom training course of six weeks duration. But when asked about the capability of his analysts to apply the various work measurement techniques, an official of the bank replied:

To be honest with you, they are very capable in the use of standard data. Their secondary capability would be in MTM. I would say they are somewhat weak in the older types of work measurement techniques such as time study. They know very little about work sampling. . . .

Apparently, a few banks provide an insufficient amount of classroom training for their analysts. Table XXVI in Chapter IV shows that almost five per cent of the survey respondents offer their analysts less than one week of classroom instruction. As has been shown throughout this paper, work measurement is a technical and complex field of endeavor. Because of the technical details involved, it would appear unlikely that sufficient technical expertise could be gained in less than a week. If this is true, then some banks are apparently sending their analysts out with insufficient training.

Training replacement analysts.--Training replacements for the original cadre of analysts presents a problem to some banks. With the original group of analysts it is fairly easy to provide formal classroom training because several

analysts are being instructed at the same time; consequently, classroom instruction is relatively economical. Replacements, however, are seldom made in groups. Thus, provision of formalized instruction for a single analyst may not be economical. Normally, a bank may approach this problem in one of four ways: (1) it may forego classroom training and simply rely upon on-the-job training to provide the analyst with the necessary technical knowledge, (2) it may send the analyst to a consulting firm which provides periodic training sessions at an off-site location, (3) it may hold replacement analysts until several are ready for training and then have a consultant come in to provide the instruction, or (4) it may hold analysts until several are ready and then provide classroom training through an instructor who is already a member of the bank's staff.

Total reliance upon on-the-job training would not appear to be desirable because of the theory and techniques which must be thoroughly understood to skillfully practice work measurement. Yet, some banks do just this. In fact, Table XXXV shows that twenty-five per cent of the survey respondents do not provide any classroom training. Officials of banks C, P, and U indicated that no classroom training was given to replacement analysts. The new analysts were assigned to work with more experienced analysts until enough knowledge had been absorbed so that they could conduct studies on their own. The representative of bank C

was not at all happy with this arrangement and bemoaned the fact that there was no type of college training in clerical work measurement available in his area for the bank's replacement analysts.

If a bank chooses to send an analyst to a consulting firm for training, it faces a problem of having to hold the analyst, perhaps for several weeks, until one of the scheduled sessions begins. During the interim, the analyst cannot really be productive. In addition, there may be a problem of cost of the training: fees, plus living and travel expenses if the instruction is to take place at an out of town location.

The problems of holding analysts and of training expenses are also encountered if the bank decides to wait until a group is ready and then recall the consultant.

Retaining a qualified instructor on the bank's staff involves the problem of having to wait until a group of analysts is ready to undergo training. It is also an approach that can only be used by banks with large staffs of analysts.

Regardless of the approach taken, some problems are likely to be encountered in training replacement analysts. Perhaps the more serious problems are those associated with a total on-the-job training approach.

Retaining analysts.--Table LVIII reveals that slightly over six per cent of the banks indicating critical work measurement problems consider turnover of analysts to be a problem of this magnitude. Undoubtedly, some of the turnover problem is simply natural attrition, but it may be heightened by several other factors: (1) the draft system used by some banks, (2) requests from department managers that analysts be assigned to their departments as managers or supervisors, (3) boredom or other morale problems, and (4) the use of women as analysts.

Under the draft or quota system of staffing a work measurement program, an analyst is assigned to the program on a relatively temporary basis.. Possibly by the time he is thoroughly trained and competent to perform work measurement studies, he is rotated out of the program and the problem of replacing him and training a new analyst confronts the work measurement manager. This type of planned rotation would certainly increase the normal rate of turnover and accentuate the attrition problem.

Some banks look upon the work measurement program as a training ground for potential managers because it provides them an opportunity to become thoroughly acquainted with the operations of many of the bank's departments. But, as an official of bank C indicated, this familiarity with operations sometimes results in problems for the program:

. . . these guys go through an area and make the study and come out with a good feeling of the pulse of the operation. They have studied it, each job individually, they know what the standards are. They are much more proficient than the supervisor or the department head. . . . They have developed the results, so they really have a feeling for that department. And what happens to us is maybe we want to provide a new service for customers or maybe some big new account comes in here and wants an existing service, but a little different, you know. Who is the guy that they are going to want to come in to work with them to try to set up the procedures and try to work with the cost boys to determine what our costs should be and what charges we should make? It's one of my men. . .

Several of the banks contacted during the present research employed women as work measurement analysts.<sup>4</sup> Generally, these banks have found them to be as effective as men, except that their rate of turnover has been higher. An official of bank D indicated that marriage, pregnancy, transfer of husbands, graduation of husbands from college, etc., definitely made the rate of turnover among women analysts higher than among male analysts.

Table LVIII indicates that two banks replying to the questionnaire survey consider morale among the analysts to be one of the most critical problems encountered. As pointed out in the interviews, morale problems may arise for several reasons. First, setting work measurement standards, an activity which requires great attention to detail, may become rather boring. Officials of banks I, J, X, and E all indicated that work measurement could be a monotonous job.

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<sup>4</sup>Banks B, D, F, J, and P are specific examples.



Second, as officials of banks J and V pointed out, analysts may view the work measurement program as a stepping stone to bigger and better work; consequently, they may tend to become somewhat impatient if they remain in the work measurement function for long. Third, morale problems may arise from salary differentials which exist among analysts.

Particularly where a bank utilizes a draft system for staffing, analysts performing the same work may not receive the same pay. Representatives of banks I and W indicated that this had been a minor problem. Finally, morale problems may arise where the program encounters set-backs. In bank J where the work measurement group was pulled out of one department after spending six months in an effort to set standards, one official admitted, "it hurt us. It hurt psychologically. It hurt the department. I think it had a tremendous effect on every analyst in the department."

#### Work Force Orientation: Developing Support for the Program

The purpose of work force orientation is to acquaint managers, supervisors, and employees of the bank with the goals, policies, procedures, requirements, benefits, etc., of the work measurement program. That commercial banks have not done an adequate job explaining, interpreting, and otherwise building acceptance and support for the program is

obvious from a consideration of Tables LVIII and LIX. These tables show that a number of banks have experienced problems associated with inadequate communication and orientation.

Extent of orientation.--Table LIX specifically shows that better than 36 per cent of the banks replying to the particular survey question feel that inadequate orientation for supervisors and employees was a basic reason for the problems encountered by the work measurement program. In addition, almost 24 per cent feel that inadequate orientation for middle managers was one of the causes of work measurement problems.

Table XXXVIII in Chapter IV further supports the contention that work measurement orientation has been inadequate in some instances. The table shows that almost 25 per cent of the responding banks made either a superficial effort or no effort whatsoever to explain the work measurement program to the bank's employees. Two per cent of the respondents indicate that no effort was made to explain the program to the bank's supervisors. Ten per cent of the respondents made only a superficial effort at indoctrinating supervisors. In 13 per cent of the cases, only a superficial attempt was made to orient the middle managers of the bank. Top management also received inadequate orientation in some instances:

better than 12 per cent of the respondents classify attempts at top management orientation as superficial, while one per cent indicate that top management received no indoctrination at all.

By inference, Table XL in Chapter IV, seems to imply that attempts at orientation have not been as forceful as they perhaps should have been. This table shows that in the majority of cases only one orientation method is used to explain the program to employees, supervisors, middle managers, and top managers. Such reliance upon a single method of orientation would not seem to provide sufficient opportunity for reinforcement of the work measurement message as would use of some combination of communication media.

Several cases of inadequate orientation were uncovered during the series of interviews with banking officials. In banks L and U, no general attempt was ever made to explain the work measurement effort to members of the organization. In bank N, according to one official, orientation was accomplished through the "rumor mill." An official of bank W felt that lack of continuing orientation had been a problem. At bank U an official admitted that supervisory training in the use of work measurement data had been limited to the time during which the consultant was in-house and had not been carried through on a continuing basis. Representatives of banks D and I, while not experiencing problems

associated with a lack of continuing orientation, expressed the opinion that work measurement indoctrination must be accomplished on a continuing basis if it is to be effective.

Effects of inadequate orientation.--Inadequate or ineffective orientation may result in a number of problems. Table LVIII indicates that banks have experienced problems such as lack of supervisory acceptance, fear or resentment, lack of understanding, and lack of employee acceptance. All of these problems rather clearly stem from a basic failure to communicate effectively or orient organization members regarding the work measurement program. Table LIX shows that commercial banks have also experienced problems of opposition from employees, supervisors, and middle managers. These problems would seem to stem, again, from a basic failure to achieve support or acceptance for the program through effective orientation.

Better than 27 per cent of the survey respondents indicate supervisory acceptance as one of the most critical problems experienced. An official of bank K stated that the supervisors in his bank indicated that they did not have the time to devote to the work measurement program. In bank Y, the supervisors were, according to a representative of this institution, apathetic regarding the work measurement program. This official expressed a desire for a little opposition from the supervisors because he felt this would be

easier to combat than the complete lack of interest he was encountering. Some banking officials felt that the lack of interest or acceptance on the part of the supervisor could be traced back to his immediate superior. Officials of banks D, Q, S, and U expressed the opinion that the interest a first line supervisor displayed in the work measurement program was a function of the amount of interest displayed by his superior. In some instances, lack of interest or lack of acceptance on the part of the supervisor may become so strong as to manifest itself in the form of opposition to the program. Table LIX shows that 43 per cent of the responding banks consider opposition from supervisors to be a basic reason for the problems encountered during the installation and operation of the program. Based on the results depicted in Tables LVIII and LIX together with comments made during the interviews with banking officials, there can be little doubt that banks have not effectively communicated with first line supervisors concerning the work measurement program.

Another problem experienced by banks has been fear or resentment. Table LVIII shows that over 17 per cent of the respondents consider this to be one of the most critical problems experienced. To some extent this fear or resentment may have developed out of a lack of understanding of the program objectives and requirements. Table LVIII shows lack of understanding as a critical problem for 16 per cent

of the respondents. Fear or resentment and lack of understanding has possibly led to lack of employee acceptance and together these three factors have probably manifested themselves in the form of opposition to the program. Table LIX reveals that almost 24 per cent of the survey respondents have experienced opposition from the employee group. In the case of bank W, opposition from the employees was so strong in one particular department that it resulted in an attempt to unionize. At the time of the interview in this bank, an official indicated that all measurement activity in this one department had ceased and that the bank was awaiting a final decision from the National Labor Relations Board as to whether or not this department constituted a bargaining unit.

Some opposition to the work measurement effort has also come from the ranks of middle management. Table LIX shows that almost 28 per cent of the survey respondents consider this to be one of the basic causes of the problems experienced. In some cases, this opposition has been rather strong and widespread. An official of bank L stated that every division manager in his organization resisted the program. A representative of bank M expressed the opinion that middle management resistance in his institution had been rather widespread. In other banks contacted, apathy or lack of firm support on the part of middle management was more in evidence than overt opposition. An official

of bank K felt that middle management participation in work measurement had been completely lacking in his organization. A representative of bank S stated that his bank's program had not had good support from upper middle management. In bank F, an official voiced the opinion that middle management support had not been as strong as it should have been.

One of the survey questions asked the respondents to classify the opinions of employees, supervisors, middle managers, and top managers concerning the work measurement program. Table LX shows a tabulation of the results. This table indicates that disappointed or negative reactions are generally very minor. At the same time, it shows that excellent opinions are held by a fairly small percentage of employees, supervisors, and middle managers. Top management is the only group holding a significantly large percentage of excellent opinions. This table also indicates that, generally, the higher the organizational rank, the better the opinion of the work measurement program. For example, 22 per cent of the respondents indicate either an excellent or good opinion for employees; over 44 per cent indicate an excellent or good opinion for supervisors; 62 per cent indicate excellent or good opinions for middle managers; and 85 per cent indicate an excellent or good opinion on the part of top managers.

A comparison of Table LX with Table XXXVIII in Chapter IV seems to indicate that there is a general relationship

TABLE LX  
 OPINIONS OF THE WORK MEASUREMENT PROGRAM AND  
 ITS RESULTS HELD BY ORGANIZATION MEMBERS  
 (100 banks replying to at least part  
 of this particular question)

Opinion	Personnel Category											
	Employees			Supervisors			Middle Management			Top Management		
	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies	Number of Replies	Per Cent of Replies
Excellent	1	1.00	8	7.92	11	10.89	37	37.00				
Good	21	21.00	37	36.63	52	51.49	48	48.00				
Fair	27	27.00	44	43.57	29	28.71	6	6.00				
Neutral	44	44.00	3	2.97	2	1.98	4	4.00				
Disappointed	1	1.00	2	1.98	3	2.97	4	4.00				
Negative	6	6.00	7	6.93	4	3.96	1	1.00				
Total	100	100.00	101	100.00	101	100.00	100	100.00				



between the intensity of the efforts made at indoctrination and the opinions held by the various categories of personnel. According to Table XXXVIII, the most intensive efforts are directed to top management; Table LX indicates that this group holds the most favorable opinion. Table XXXVIII indicates that the least intensive efforts are made to indoctrinate employees; Table LX shows that this group has the lowest percentage of excellent opinion. Efforts at orienting supervisors and middle managers are more intense than for employees and less intense than for top management. These two groups hold percentages of excellent opinions falling between the extremes of top management and employees. The results of these two tables would therefore seem to lend additional support to the notion that banks have not adequately oriented all organizational members concerning work measurement.

#### Pre-Measurement Analysis

##### Work Center Orientation

As discussed in Chapter IV, prior to beginning a study in a specific work center, the work measurement group will initiate contacts with the division manager, the work center supervisor, and the work center employees. The purpose of these contacts is to further explain the objectives and procedures of work measurement. As pointed out in the preceding section, commercial banks have not done an effective job in

their overall orientation efforts. While much of the failure has occurred in the initial orientation efforts, orientation at the work center level has apparently not been too effective either. Judging from the interviews on a collective basis, orientation of the work center prior to the actual study is usually accomplished in a cursory fashion. For example, in bank H all of the employees in a work center are brought together as a group and the work measurement program is explained to them in one half-hour session. Because of the complexity of work measurement and the normal fear of measurement possessed by most employees, such a short explanatory session would not appear to be sufficient to orient the employees adequately to the program, answer their questions, and allay their fears.

Attempts at supervisory indoctrination at the work center level have apparently not been entirely adequate. The lack of supervisory acceptance and the abundance of resistance would seem to indicate this. Generally, based on the interviews with banking officials, it would appear that efforts to orient the work center supervisor have not been well organized. In many instances, indoctrination is left to the work measurement analyst to accomplish on an informal basis. As an official of bank S stated in describing the approach used in his bank, "it's by no means an organized type of thing that could really be considered a worthwhile educational experience for the supervisor."

### Methods and Procedures Analysis

Table XLII in Chapter IV shows that the majority of banks do not analyze in detail current operating methods and procedures prior to setting standards. The most common practice, that followed by 59 per cent of the respondents, is to analyze and improve only those methods and procedures which are obviously deficient. A few of the respondents, over eight per cent, do not analyze methods and procedures at all before setting standards. From these practices, it may be inferred that, in a number of instances, commercial banks are setting standards on activities which are being performed in accordance with inefficient or inadequate methods. It would appear that a standard set on an inefficient method is not really much of a standard. In theory, it is necessary to improve methods and procedures before setting standards in order not to establish standards on work that should not be done at all or work that is done in a wasteful manner. To some extent, commercial banks are violating commonly accepted work measurement theory by not analyzing and simplifying methods and procedures before measurement takes place.

In response to the survey question concerning the most critical work measurement problems encountered, the results of which are tabulated in Table LVIII, one bank listed as a critical problem the lack of methods improvements which had been accomplished. Another bank, indicating the basic

reasons for the problems experienced (Table LIX), listed as one of the reasons the fact that work measurement was "not preceded by job simplification." In an interview with representatives of bank B, one official expressed the opinion that lack of methods improvement had been a definite problem for his institution.

According to Table LVIII, a few banks have experienced difficulty in obtaining job information. This problem may complicate the attempt to improve methods; certainly, it is a detriment to establishing work measurement standards.

#### Quality Level Consideration

Table XLIII in Chapter IV shows that, in regard to quality levels of work performed, almost five per cent of the respondents do not give any consideration to quality, while 34 per cent simply assume that quality work is being performed. Assuming that the level is acceptable is probably tantamount to no consideration; therefore, the percentage of banks not considering process quality levels is possibly as high as 39 per cent. From this it is possible to infer that a sizeable percentage of commercial banks do not know the amount of rework that is taking place within work centers, the causes of rework, or the effect of rework on staffing levels or equipment utilization. Generalizing from the interviews, banks usually allow an employee "sufficient time" for correcting his own errors, but "sufficient

time" seems to be arrived at by guess or intuition, not by actual study. Whether lack of consideration of quality levels is a serious problem is not known. But, potentially, ignorance of quality levels could have an effect on the adequacy and accuracy of the work measurement standards.

## Measurement

### Implementation Schedule

In the measurement stage of program establishment and operation one of the problems encountered by commercial banks has been that of adhering to the implementation timetable. Table LVIII shows that four per cent of the survey respondents consider keeping the program on schedule to be one of the most critical problems faced during the installation and operation of the program. On the same table another two per cent of the respondents refer to "Implementation" as a critical problem. It may be presumed that this refers to the implementation schedule.

In Table LIX, three of the responses classified under "Other" refer to difficulties encountered in implementing the program. One response specifically mentions a "tight schedule." The other two responses refer to problems of size which make implementation difficult, both timewise and otherwise.

Difficulties with the implementation schedule were also discussed in several of the interviews. An official of bank G frankly admitted that his bank had slipped some in meeting

the implementation schedule established by the consultant. A representative of bank K felt that the consultant was over-optimistic concerning the amount of time required for implementing the program. This official admitted that the work measurement group was experiencing difficulty in trying to meet the schedule. An official of bank D stated that his work measurement people were not meeting the coverage standards established by the consultant. He said his people were taking consistently longer to establish standards than the time allotted by the consultant. In bank C, an official indicated that the work measurement group was having trouble completing its studies because analysts were continually being pulled off studies to work on special projects. An official of bank J expressed the opinion that in the first studies attempted by the work measurement group, the analysts had been spread over too many areas: consequently, days and even weeks had been added to the implementation schedule.

#### Selection and Use of Measurement Techniques

Use of a single technique.--Table XLV in Chapter IV shows that over 27 per cent of the survey respondents use only one work measurement technique. As illustrated from the literature in Chapter III, no one best technique of work measurement exists in the abstract; rather, the technique to be used should be chosen in light of the work to be measured, the type of standard to be set, the objectives

of the measurement, and various other factors. That a number of banks use only one work measurement technique would seem to imply that in some cases these factors are not considered in selecting a technique. The result may well be that banks are over-measuring in some areas and under-measuring in others. In interviews with officials of bank D, one representative indicated that the bank was using work measurement for branch staffing, cost accounting, and individual employee motivation. The same detailed and refined measurement approach was used for all three purposes. This official expressed the opinion that, as far as the first two uses were concerned, the bank was "overspending" to get the results desired. These objectives could have been obtained by using a less sophisticated approach, he maintained.

As shown in Chapter IV, most of the banks relying upon a single technique use some form of predetermined time system. The discussion in Chapter III pointed out that this technique is one of the most accurate and effective techniques for setting standards on routine, repetitive work; however, its usefulness for measuring other than repetitive activities is generally limited. Thus, it would appear that those banks restricting themselves to this one technique preclude the measurement of work which is non-repetitive, non-routine, or of long cycle duration. Therefore, one of the problems associated with total reliance upon a single technique, particularly a predetermined time system, is that a number of

clerical or administrative activities may not lend themselves to measurement; consequently, some activities which could be measured by using other techniques are not measured at all and the bank loses whatever benefit might be gained from measurement in these areas.

Difficulties in measuring work.--Table LVIII shows that some banks have experienced difficulties in their efforts to set standards. This table indicates that seven per cent of the survey respondents feel that the setting of accurate standards has been one of their most critical problems. In addition, six per cent of the respondents feel that the nature of the work being studied has been a critical problem. According to the results depicted in Table LVIII, almost ten per cent of the respondents feel that one of the causes of the difficulties encountered was the use of the wrong work measurement technique. By inference these problems would seem to indicate further that some banks have not done an effective job of selecting the work measurement technique in light of the type of work being studied or the end results to be achieved.

Measurement practices contrary to accepted theory.--In the series of interviews several rather minor malpractices were brought to light. In banks H and R, stopwatch time study was being used to set standards, but neither of these banks was using accepted work measurement formulae to



determine the number of time study observations to make. The determination was simply made on the basis of intuition.

Banks C and P were found to be using wrist watch time study, a generally accepted technique. But neither of these banks used a standardized approach to defining elemental breakdowns or to recording them during the time study. Pieces of foolscap were used to record the activity taking place and the time used. Such a lack of uniformity in the collection of data could possibly lead to inconsistency in the standards and would certainly complicate the task of maintaining or updating the standards.

Bank P was also found to be using a dubious approach to making wrist watch time study observations; an approach which could have a deleterious effect on employee morale. An official of this bank admitted that occasionally employees were studied, without their being aware of it, by an analyst seated across the room pretending to study someone else. Such an approach is obviously contrary to generally accepted work measurement practice and should not be considered at all.

All of the preceeding problems mentioned in this section are of a minor nature, and none was found during the course of the research to exist on a broad scale.

#### Performance Leveling

Table XLVIII in Chapter IV indicates that 30 per cent of the survey respondents do not use any type of performance leveling when a work measurement technique other than

predetermined times is used. Generally accepted theory and practice as described in Chapter III indicates that observed times should be adjusted for differences in operator skill and effort or pace, if the resulting time expression is to reflect a standard and not simply an actual time. That 30 per cent of the survey respondents do not make such adjustments would seem to imply that the standards set in these cases are not standards in the generally accepted sense of the term.

Some 16 per cent of the respondents in Table XLVIII indicate that some means of performance rating other than the two normally accepted systems of skill and effort and pace rating are used. In several of these cases, the rating method used is simply an arbitrary judgment on the part of the analyst. Banks C and P were found to be using such an arbitrary method. The analysts in these banks received no training in performance rating even though the primary technique of measurement employed by these institutions was wrist watch time study. The analysts simply made adjustments to observed times based on their own unqualified opinions as to how fast or how slow the operator under study was performing. Such an unsystematic approach could conceivably lead to lack of consistency in the standards produced.

### Supervisory Participation in Measurement

Tables L and LI in Chapter IV indicate that almost all commercial banks attempt to keep the work center supervisor informed both during and after the process of setting standards. But apparently these efforts at involvement have not been entirely successful for as Table LVIII indicates, slightly over nine per cent of the survey respondents consider supervisory participation to be one of the most critical problems encountered during the installation and operation of the work measurement program. As previously discussed, supervisors may not understand the requirements of the program, they may be apathetic, or they may feel they do not have time to devote to the program; hence, they may be reluctant or even unwilling to participate in the measurement effort. Where such is the case, lack of supervisory participation may stem from basic failure to communicate program objectives, requirements, etc.

### Work Measurement Coverage

Work force coverage.--Table IX in Chapter IV indicates that at the present time almost 48 per cent of the employees in 87 responding banks have some activities covered by work measurement standards. Planned coverage will supposedly increase this figure to almost 73 per cent. While such coverage is generally considered to be good, it still leaves some 29 per cent of the total employee work force not covered

by work measurement standards. To a great extent, as determined through interviews with banking officials, this is because many banks limit their thinking about work measurement standards to unit time standards only. And because many of the people employed in these banks perform work which does not lend itself to unit time measurement, they are not considered as being subject to measurement. But as banks in the western part of the United States have demonstrated with their application of broad manpower standards, particularly in branch office operations, many non-routine, non-repetitive jobs can be covered by work measurement standards if manpower standards rather than unit time standards are used. The fact that a number of banks have apparently not considered such standards would seem to indicate that the full potential of work measurement as a managerial planning and control device has not yet been recognized; thus, total work force coverage is indicated at something less than is possible or perhaps even desirable.

Departmental coverage.--Much of the preceding argument can also be applied to departmental coverage. As Table XV in Chapter IV indicates, most of the survey respondents have covered or plan to cover those departments which perform relatively routine or repetitive functions. Generally, the less repetitive the work performed in a department, the less likely it is to be covered by work standards. But, by

broadening their outlook from simple unit time standards to broad manpower standards, it is possible that commercial banks could cover, to some extent, practically all departments within the bank. The fact that this has not been done or is not planned for the future would seem to imply that banks have not yet recognized the possibility or the potential benefit of doing so.

### Use and Maintenance of Standards

#### Use of Work Measurement Data

Table LVIII shows that almost 30 per cent of the survey respondents list improper use of work measurement results as one of the most critical problems experienced during the work measurement program. This is the largest single problem category enumerated by the responding banks. As clarified in the interviews, improper use of results may refer to limited use of work measurement data by first line supervisors or to limited use or misuse of data by middle and top managers. Table LIII in Chapter IV appears to furnish additional substantiation that work measurement data is not fully utilized in commercial banks. This table shows that 27 per cent of the responding banks do not use work measurement for determining future staff needs; 29 per cent do not use it for determining cost standards; 32 per cent do not use it for pricing new services; 32 per cent do not use

it for determining the need for methods changes; 32 per cent do not use it for setting objectives; 33 per cent do not use it for comparing performance; 34 per cent do not use it for determining the need for equipment or other facilities; 35 per cent do not use it for evaluating employees; 42 per cent do not use it for evaluating supervisors; 48 per cent do not use it for production scheduling; 59 per cent do not use it for preparing expenses budgets; 60 per cent do not use it for justifying overtime; and 88 per cent do not use it for paying incentive wages.

Limited use of data by supervisors.--As indicated elsewhere in this paper, many of the uses of work measurement data are work center level uses. This means that if work measurement data is to be used effectively in a commercial bank, the work center supervisor must be one of the prime users of the data. This point was emphasized in several of the interviews. An official of bank Z stated that, in his opinion, the lowest level of supervision is the one that makes the work measurement program work. A representative of bank Y maintained that the first line supervisor is the most important individual in the entire program. One official of bank E expressed the opinion that if first line supervision does not use the information generated by the work measurement program, then the information being generated is useless.

While everyone recognizes that the supervisor must make use of work measurement data if the program is to be entirely successful, the general consensus of opinion of the banking officials interviewed is that first line supervisors in commercial banks are not at the present time effectively or fully utilizing the data provided them by the work measurement program. Generally, supervisors are making, at best, limited use of the work measurement information available to them. This is clearly obvious from an examination of Table LIII. In some cases, such as that of bank S, supervisors use reported work measurement data only as a control device. In other cases, such as that of bank B where a definite need for activity scheduling at the work center level exists, supervisors do not take advantage of the reported data for work scheduling.

During the course of the interviews several explanations were offered as to why supervisors do not use work measurement data for managing their work centers. First, they may simply not understand how the data can be used. This explanation was offered by an official of bank R. If it is true that supervisors do not understand how to use work measurement results, then it is obvious that attempts at orientation have not been successful. Second, supervisors may look upon work measurement as some form of control imposed from higher in the organization and may consequently take a dim view of its usefulness as a tool for work center

management. Such an explanation was given by an official of bank Z. If this is a valid assumption, then greater opportunity should be provided for supervisory participation in the measurement program. Third, supervisors may identify so closely with their employees that they do not think of themselves as managers and do not see the value of work measurement. This explanation was offered by officials of banks J and T. If this is so, then attempts at supervisory training need to be increased. Fourth, supervisors may simply lack the necessary qualifications for first line management positions and may therefore be ignorant of many of the commonly accepted managerial tools and techniques. Table LVIII shows that five per cent of the survey respondents point to lack of qualified supervisors as a critical problem faced by the work measurement program. During the interviews this point was raised on several occasions. When asked what one of the biggest problems encountered by the work measurement program had been, an officer of bank T replied succinctly, "Stupid supervisors." Officials of banks D and W maintained that supervisors get their jobs by default or through circumstances, not on the basis of any managerial ability. Representatives of banks B, X, and Y all expressed the opinion that the supervisors in their banks were not as good as they should be. All of the aforementioned factors seem to point to lack of effective supervisory training in the use of management tools and techniques.



Regardless of the reason or reasons why supervisors do not use work measurement data in managing their work centers, the point that they do not do so was made abundantly clear in the series of interviews with banking officials and further supported by the results of the questionnaire survey.

Misuse of work measurement by management.--In some instances there are indications that management has been overzealous in its use of work measurement information. On occasion, work measurement has been used as a club rather than a tool. An officer of bank L strongly maintained that the work measurement system used in his bank did nothing other than give a "wedge" to "top management to hold down the clamps." In banks N and R work measurement according to officials of these institutions was used as a means of forcing reductions in staff.

Officials of banks Q and Z expressed concern that top management could place too much faith in the results of work measurement and read into the reports a degree of accuracy that was never intended. Such faith of over-acceptance could then lead to intemperate use of work measurement information.

In other instances, there are indications that work measurement is not being used fully or effectively by top management. The most remarkable case of non-use uncovered during the interviews was the case of the bank where the

board of directors paid \$100,000 in consulting fees for initial studies and assistance in getting the work measurement program started. At the time of the interview in this bank the program was, to all intents and purposes, inoperative and the program manager, although making a valiant attempt to get the program going again, was receiving no support or cooperation from top management. Nor was there any evidence that any of the results produced by the program had ever been used.

Several illustrations mentioned earlier show that top management in banks L, J, and K refused to implement the work measurement program in certain areas. In effect, management in these banks refused to use work measurement as a tool in these areas. Consequently, non-implementation in these areas is a problem of lack of use as well as it is a problem of lack of support.

It was indicated in Chapter IV that many banks look upon work measurement as a means of reducing staff. In fact, consultants often cite staff reductions of twenty per cent or better as a distinct possibility for banks beginning a work measurement program. If banks are using work measurement as a tool for reducing the size of the present staff, then Table LXI would seem to indicate that these efforts have been less than totally successful. This table shows that some 68 responding banks have been able to reduce their

staffs by only a little more than four per cent. The obvious conclusion to be drawn from this table is that wholesale reductions in staff have not been achieved through the use of work measurement. For banks which anticipated drastic reductions in present staff complements, the non-achievement of such would appear to constitute a problem.

TABLE LXI  
NUMBER OF STAFF REDUCTIONS  
COMPARED TO WORK FORCE

(68 banks replying to this  
particular question)\*

Personnel Category	Staff Size Before Measurement**	Number of Reductions	Reductions as a Per Cent of Staff Size
Employees and Supervisors	134,041	6,627	4.94
Officers	17,866	53	.30
Total	151,907	6,680	4.40

\*Only banks replying to both questions eight and eighteen on the questionnaire are included in this tabulation.

\*\*Staff size before measurement was arrived at by adding the number of reductions back to current staff.

#### Work Measurement Performance Reporting

The previous Chapter records that 94 per cent of the survey respondents prepare some type of report comparing actual work center hours available against work center hours earned at standard. That problems have been encountered in the collection of data and the preparation of the performance

report is apparent from an examination of Table LVIII which shows that over 23 per cent of the respondents consider work measurement activity reporting to be one of the most critical problems experienced. From an analysis of the interview material, the major problems associated with work measurement activity reporting would appear to be erroneous work counts, the volume of paperwork necessitated by some reporting systems, and the time required for reporting activity counts and manhour data.

Erroneous work counts.--During the series of interviews, officials of banks F, I, K, N, O, Q, R, S, V, W, and Y indicated that their institutions had experienced some problem of inaccurate work counts. In many instances, these problems were of a minor nature. In others, they were of a more serious nature. For example, an official of bank Y classified the problem of inaccurate reporting as "Very serious." In bank W, the problem of inaccurate reporting was purported to be the second most serious problem encountered by the program. That the problem of erroneous work counts may have been serious in bank O was inferred from an official's statement that "the bank has dismissed more than one employee for intentional falsification of work measurement data." And in bank N, work center supervisors initiated changes in the size of standardized work batches so that it would appear volume had increased significantly. According to an official of this institution, six months after the

start of work measurement, reported volume data could not be relied upon because of inaccuracy.

Most of the banking officials interviewed tended to view the problem of erroneous work counts not as a deliberate attempt by supervisors or employees to falsify data, but more as a problem of carelessness in reporting and a lack of controls for detecting inaccurate information. But, whether deliberate or not, inaccurately reported data has been somewhat of a problem for work measurement programs in commercial banks.

Volume of paperwork.--Some banks prepare weekly performance reports showing the individual performance of every employee under standards within the work center. Such a reporting procedure requires that each employee keep track of his own output and in some cases his own time.

If a large number of employees are reporting, a substantial volume of paperwork may be produced. In some cases, such as that of banks Q and V, banks have been more or less forced to turn to computer-generated activity counts in order to reduce the reporting problem to manageable proportions. And in at least one other instance, that of bank X, departments have been taken off work measurement reporting after a certain level of performance has been established because of the burden of continuing to report activity.

These examples illustrate, at least to a limited degree, that the volume of paperwork may be something of a problem for some banks.

Reporting time.--In some cases, particularly where individual performance reports are utilized, the time for reporting activity data may be a problem. An official of bank M indicated that the average employee in his institution spent 6.7 minutes per day reporting the necessary work measurement data. In bank K, an official estimated that fifteen minutes per employee per day was required for reporting. In bank O, the reporting time was estimated by one official at ten minutes per employee per day. Where large numbers of people are employed, many manhours may be expended in simply reporting the necessary work measurement data.

Even where individual reporting is not used, the time required for reporting and keeping track of the necessary paperwork may be substantial. For example, in bank L one official estimated that, "in an average department one full time clerk would be required to fill out the daily reports." Unfortunately, this official did not define an "average" department; however, it was apparent that he considered the expenditure of effort for reporting purposes to be excessive.

### Work Measurement Audit Procedures

Audit of performance reports.--As indicated in Chapter IV, most of the banks interviewed perform some type of brief audit of the reported activity data and the weekly or monthly performance report. To some extent, the accuracy of reported work center data is felt to be the responsibility of the work center supervisor; therefore, he is expected to audit any reported data. Generally, the work measurement analyst audits the periodic performance reports. It would appear that the audits performed by these parties are, in most cases, cursory at best, designed only to detect the most obvious errors. Because detailed audits are not performed on periodically reported data, it is possible that some inaccuracies may exist both in the reported work center data as well as the performance reports.

Periodic work center audits.--As near as can be determined, none of the banks contacted during the course of the present research perform any type of periodic reappraisal of work centers to determine the adequacy or accuracy of the originally established standards. Normally, work center supervisors or department managers are expected to call to the attention of the work measurement group any conditions necessitating changes in the standards. Such a practice would appear to be deficient in at least three

respects. First, work center supervisors may fail to call to the work measurement group's attention any changes favorable to the work center, but will likely bring to their attention any changes which may be detrimental to the work center. In other words, changes in methods or procedures which serve to increase the work center's performance against standard may not be reported, while changes which lower performance probably will. Second, because some changes may not be reported the work measurement group performance reports may be, to an extent, inaccurate. Third, subtle changes taking place over a period of time may go completely undetected.

Without some periodic review of the work center it is possible the distortions may occur in the performance reports and that standards, once accurate and adequate, may become invalid or unreliable as a managerial tool. To the extent this happens, lack of periodic work center audits may be considered a problem.

#### Maintenance of Standards

Table LVIII shows that 10 per cent of the survey respondents consider maintenance of the work measurement program to be a critical problem. The maintenance problem is primarily one of keeping standards updated and accurate. Difficulty in accomplishing this may be caused by several factors: (1) the number and rapidity of changes required, (2) entrance into the maintenance phase of the program much sooner than anticipated, (3) lack of detailed documentation



regarding methods and procedures included in the original standards, and (4) reduction in the work measurement staff once the maintenance phase of the program has been reached.

In bank Q, an official stated that maintenance of the standards had been the number one problem of the work measurement program because of the rapidity of changes taking place in the administrative end of the bank. An official of bank T, commenting on the maintenance job, remarked that "the average life of the standards in this bank is about four months." These two observations illustrate the point that changes in methods and procedures may increase the job of maintaining standards.

A representative of bank J, when asked if his bank had moved into the maintenance phase of the program, replied,

. . . we moved into the maintenance phase a long time ago. We did not plan it, but we did. . . . The maintenance thing is a hell of a lot bigger job than we ever anticipated it was going to be . . . . We did not have much control over when we were going to begin the maintenance, really.

This official also said that the maintenance phase was actually entered into before the first study was complete. It is possible that many banks do not adequately understand how soon program maintenance begins or how much effort is involved. Consequently, problems may result.

For some banks, lack of detailed documentation may pose a problem for maintaining work measurement standards. As recorded in Chapter III, some work measurement techniques

do not provide detailed documentation regarding work methods and procedures; most notably, historical records, self-logging, and work sampling. Where these techniques are used as major methods of measurement, it is to be anticipated that difficulties in maintenance will be encountered.

As discussed in Chapter IV, once banks reach what is considered to be the maintenance phase of the work measurement program, the work measurement staff is normally reduced considerably. There is a possibility that in some cases this reduction in the number of analysts is accomplished without proper consideration of the importance of maintenance, or the number of changes which will have to be made in the standards. This would mean that in some cases the staff assigned to maintaining standards may not be entirely adequate.

#### Summary of Most Critical Problems

That commercial banks have experienced a number of different problems in their efforts to establish and operate work measurement programs has been amply demonstrated in this chapter. Many of these problems, representing minor difficulties or theoretically incorrect practices, are not of a critical nature. On the other hand, there are some problems which tend to seriously disrupt, damage, or even destroy the work measurement effort. Drawing from the material presented in this chapter as well as all previous chapters, this section attempts to enumerate in generalized

summary form what appear to the most critical work measurement problems which commercial banks have encountered. Because these problems have been dealt with throughout the chapter, no further attempt is made to discuss them in detail.

#### Inadequate Advance Planning

Sixteen per cent of the respondents in Table LIX specifically indicate inadequate advance planning as a cause of the difficulties encountered by the work measurement program. Even if inadequate advance planning had not been enumerated by a single bank, it could still be deduced as a critical problem from the material in this and other chapters. The limited nature of work measurement objectives, the absence of written goals, the lack of written policies and procedures, the inadequate attention paid to selecting consultants, inadequately constituted orientation efforts--all these appear to indicate that many commercial banks have not carefully formulated work measurement objectives, considered alternative means of accomplishing goals, delineated policy frameworks, and established procedural guidelines prior to embarking upon a work measurement program.

#### Inadequate Management Commitment

Inadequate support by either top management or middle management has been specifically identified in Tables LVIII and LIX as both a problem and a problem cause. Evidence presented in this chapter also suggests that, on several

occasions, top management as well as middle management in several commercial banking institutions has failed to support the work measurement program at crucial points. Management has also, in other instances, failed to exhibit continuing interest in the program. That management commitment has been or may potentially be a problem is also supported by the fact that most of the banking officials interviewed stressed the necessity of having such commitment if the work measurement program is to succeed.

#### Inadequate Communication

Specifically mentioned as a major source of difficulty, inadequate communication concerning the work measurement program may also be inferred from the existence of resistance, lack of acceptance, limited nature of attempts to orient organization members, limited use of different orientation media, and the frequent absence of a continuing orientation effort.

#### Ineffective Use of Results

That work measurement data has not been used to its fullest extent as a managerial tool is evidenced by the emphasis on the controlling rather than the planning aspects of work measurement data, the lack of use by both first line supervisors and upper level managers, and improper use, in some cases, of the results.

## CHAPTER VI

### RECOMMENDATIONS FOR A GENERALIZED APPROACH TO ESTABLISHING WORK MEASUREMENT PROGRAMS IN COMMERCIAL BANKS

The purposes of this chapter, in accordance with the original intent of the research as expressed in Chapter I, are twofold: (1) to suggest a comprehensive set of guidelines pertaining to work measurement program implementation and operation which may assist those banks which initiate such programs for the first time, and (2) to suggest a program implementation and operation checklist whereby those commercial banks already engaged in work measurement may evaluate their efforts at establishing and operating their current programs. These recommendations are not intended to be a complete, step-by-step set of procedures for implementing work measurement programs, but rather to be a general set of guides which illustrate the range and nature of activities which must be considered in establishing and operating a work measurement program. While the set of recommendations presented is intended primarily for larger commercial banks, such guidelines can be used, with appropriate modifications, by smaller commercial banking institutions or by other types of firms.

The set of work measurement guidelines presented actually represents an eclectic composite of sound and desirable work measurement practices as determined and distilled through careful research of the literature, analysis of the questionnaire survey results, and analysis of in-depth interviews with bank officials engaged in managing work measurement programs. This composite represents, to an extent, ideal work measurement practices which may not be presently followed in their entirety by any particular institution. The recommendations are not, however, based upon conjecture, but are strongly grounded in actual observation and analysis of current work measurement practices and problems in commercial banks as well as sound theory as enunciated in the literature.

In order to be of maximum benefit, any set of recommended work measurement guidelines must be designed to overcome the deficiencies of program operation or the problems experienced by commercial banks as enumerated in the previous chapter. At the same time, any set of comprehensive work measurement plans must also incorporate sound practices described in the literature or observed in actual use in commercial banking situations. The set of guidelines presented has been designed to fulfill both of these requirements.

For clarity of presentation, ease of comprehension, and maintenance of continuity, the four phase approach to

establishment and operation of work measurement programs first presented in Chapter III is again utilized in this chapter.

#### Preliminary Work Measurement Planning

It is a truism in management literature that planning occupies a position of primacy among the steps in the management process. Planning is an activity that must be accomplished before the other activities of organizing, directing, and controlling can be carried out satisfactorily.<sup>1</sup> In establishing a work measurement program it is vitally important that a commercial bank carefully chart its course of action before embarking upon actual measurement of work. It is necessary at the outset to specify the objectives which the bank wishes to achieve, to formulate policies to guide the implementation and operation of the program, to place the work measurement function in a proper organizational location, to determine the extent to which extra-organizational assistance will be needed, to determine the size of the work measurement staff as well as the amount of training which should be afforded its members, and to develop means of communicating the goals and policies of the program to all members of the organization. Thus, preliminary work measurement planning encompasses a wide range of activities and occupies

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<sup>1</sup>Harold Koontz and Cyril O'Donnell, Principles of Management, 4th ed. (New York, 1968), p. 83.

a place of singular importance in the implementation and operation of the entire program. Eventual success in the total endeavor rests to a considerable extent upon the planning accomplished at the outset. Therefore, preliminary work measurement planning must be accomplished in a very careful and deliberate fashion. The following sections enlarge upon some of the areas which must be considered and the details which must be worked out during the preliminary planning stage of work measurement implementation and operation.

#### Top Management Commitment

As a prerequisite to other preliminary planning activities, the top management of a commercial bank should assess its own commitment to the idea of using work measurement as a management planning and control tool. As in any other major program work measurement requires continuous support from top management.<sup>2</sup>

Time.--Much of the preliminary planning for a work measurement program is work that can only be accomplished by top management of a bank; consequently, top management must be willing to devote considerable time and energy to the initial

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<sup>2</sup>Top management support for the program was emphasized on many occasions during the interviews as being one of the most important factors in the success of a work measurement program. In the literature, Radius, "One Bank's Approach to the Profit Squeeze," p. 136, states that unless top management supports the program, the effort ". . . will be a waste of time and money."



efforts to plan and implement the program. In addition to the expenditure of time required at the outset, top management will also be required to devote adequate time to the program throughout its life. On a continuous basis it is necessary for top management to monitor progress of the program, to evaluate results achieved, to restructure goals as conditions warrant, and to interpret or re-formulate policies as necessary. Thus, to assure the success of the work measurement program, top management must have the willingness to commit a portion of its time not only to the initial planning, but also to the day to day functioning of the program.<sup>3</sup>

Interest.--The second important area of top management commitment is that of interest. Because it is almost a truism that a subordinate manager's interest in any program is a function of his superior's interest, it is necessary that top management commit the required amount of interest and enthusiasm not only at the start of the work measurement program, but also throughout the existence of the program.<sup>4</sup> On a continuing basis top management must indicate to

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<sup>3</sup>An official of bank U indicated that one of the problems encountered by his program was that top management had been too busy to devote the requisite amount of time to the program.

<sup>4</sup>The importance of continuous top management interest was stressed by officials of banks D and I. In banks E and C, work measurement officials expressed concern that management's interest had waned over a period of time.

subordinate managers and to employees that results of the work measurement efforts are being closely followed and that top management is concerned with how and to what extent work measurement data is being used by subordinate managers to manage the affairs of their centers of responsibility.<sup>5</sup>

Financial resources.--To assure the success of the work measurement program top management must be willing to commit the requisite financial resources for establishing and operating the program on an effective and continuous basis. Outlays for consultant's fees, analysts' salaries, training, equipment, supplies, and other items often amount to substantial sums of money.<sup>6</sup> Niggardliness in providing an adequate staff, sufficient training, clerical support, or operating supplies may spell the difference between partial and complete achievement of work measurement objectives. While in many cases work measurement programs return considerably more than the monetary outlays involved in their implementation and operation, top management must be willing to commit the necessary resources without guarantee that the program will return substantial sums. Top management must be willing to commit resources in the hopes of providing a

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<sup>5</sup>A representative of bank Q stated that follow-up by management was an important element in program success.

<sup>6</sup>Bank U reportedly expended \$100,000 in consulting fees alone. Bank L admitted an expenditure of \$84,000 in consulting fees.

tool for better managing and controlling of operations, not simply for achieving short-run gains.

A work measurement program involves substantial commitments or top management time, interest, and financial resources. A great deal of the ultimate success of the program rests upon the depth of management commitment in these areas. Therefore, before undertaking work measurement, top management of a commercial bank must ascertain that it is willing to make the requisite commitments to the endeavor, recognizing that commitment means total support of the program throughout its life, as well as at the start.

#### Work Measurement Goals

Goals represent the end points of planning, the objectives toward which courses of action are directed.<sup>7</sup> It is widely recognized in management literature that in order to lay out a course of action it is first necessary to know the end toward which the action is directed. In essence, planning is a process of reasoning backward from a desired end to specific means to be employed to reach that end. This means that in establishing a work measurement program it is first necessary to know what the program is to achieve in the way of objectives before policies, procedures, or derivative plans can be developed. Top management must

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<sup>7</sup>Koontz and O'Donnell, op. cit., p. 84.

consider what work measurement can achieve and then, in the light of specific organizational needs, spell out the desired goals for the program.

Frequently in work measurement planning, more attention is devoted to specific means of measuring work than to concentrating upon the ends toward which measurement of work is directed.<sup>8</sup> Such efforts seem to be entirely misplaced. It is first necessary to know what work measurement is to be used for before the techniques for the actual accomplishment of measurement can be determined. To a considerable extent, the objectives of work measurement determine or even dictate the means used to develop data.<sup>9</sup> For example, where the objective of work measurement is to provide a means for payment of incentive wages, a precise and accurate measurement technique such as predetermined time systems or stopwatch time study must be used. On the other hand, where the objective of work measurement is simply to provide information for overall work center staffing, a much less precise technique such as self-logging or work sampling can be used. In either instance, to select the means to the end before the objective is determined may well result in over-measurement or under-measurement or quite possibly in failure

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<sup>8</sup>As an example, in bank J the measurement technique apparently was chosen before objectives were formulated and a consultant selected.

<sup>9</sup>See Chapter III.

to reach the desired objective. Therefore, it is vitally important that top management clearly have in mind its work measurement objectives before proceeding any further in the planning process.

Possible work measurement goals.--As indicated in Chapter III, work measurement data can be put to a number of uses. Among the more common objectives which may be established for a work measurement program are the following: (1) to provide a basis for objectively making adjustments to current staffing levels, (2) to provide a basis for determining future staffing requirements, (3) to provide a basis for justification of the payment of overtime, (4) to provide a basis for determining current unit, functional, or standard costs, (5) to provide a means whereby prices for performing new services can be determined, (6) to provide information which facilitates the preparation of work center expense budgets, (7) to provide a basis for comparing the performance of work centers, (8) to provide a basis for comparing the performance of employees, (9) to provide a basis for evaluating the performance of work center supervisors, (10) to provide a means whereby various types of performance goals for employees or work centers can be established, (11) to provide a tool for improving production scheduling, (12) to provide information which can be used to indicate the need for improving work methods, (13) to provide information

which can be used to indicate the need for new equipment or other facilities; and (14) to provide a basis for the payment of wages.

The preceding list of work measurement goals, while relatively complete, is not intended to be an exhaustive list of goals. The list is primarily intended to show the variety of goals and the wide range of possible uses of work measurement data with which top management is confronted at the outset of work measurement planning. From among these goals top management must select those which it wishes to accomplish through the work measurement program.

Integration of work measurement goals.--While the objectives of work measurement are being determined, top management should take steps to see that the program is carefully integrated into the total network of management programs. Information generated by the program should be compatible with the requirements of other programs--standard costing, expense budgeting, and salary administration. Effectively integrating the work measurement program prior to the initiation of measurement will help reduce potential conflicts between the goals of the work measurement program and the goals of other programs.

Proper emphasis among goals.--In selecting the goals which it desires to achieve, top management must be careful to establish proper balance among stated program objectives.

For example, it is extremely easy to over-emphasize the cost reduction or control aspects of work measurement while neglecting the more positive planning aspects. Although staff reduction goals may be of paramount short-run importance at the start of a program, accentuating such goals may prove to be a detriment in the long run, as can be demonstrated in actual practice.<sup>10</sup>

In formulating goals, it may be wise to avoid stating goals of specific dollar savings or specific numbers of staff reductions which are to be accomplished.<sup>11</sup> Once such goals are established a certain amount of pressure may be created to reach these objectives regardless of the wisdom of so doing. Top management should be aware that, if properly used, work measurement has the ability to increase performance and effectiveness and thereby enhance the profitability of operations. Therefore, rather than emphasizing cost reduction goals, it would appear to be sounder practice to emphasize cost avoidance and performance improvement goals.

In striking a balance between goals, top management must be cognizant of the fact that to be truly effective work measurement should offer something of benefit to all members of

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<sup>10</sup>Confidential interviews with officials of banks L and N.

<sup>11</sup>This point was emphasized by an official of bank N who placed part of the blame for the failure of his bank's program on an over-emphasis of staff reductions which led to a morale problem. In the literature, Brennan, *op. cit.*, p. 44, also indicates that playing down dollar savings may permit more normal progress for the program.

the organization.<sup>12</sup> Middle managers need to feel that work measurement provides them with information to more effectively manage their departments or divisions. Supervisors need to feel that work measurement furnishes them a tool for facilitating the supervising and operating of their work centers. Employees need to feel that work measurement works to their advantage through improved distribution of work loads, improved methods, recognition of individual contributions, and better salary administration. Therefore, top management should develop a total package of goals which emphasizes the importance and benefits of work measurement to all levels of the organization.

Written statements of goals.--Once top management has decided what the work measurement program is to accomplish, the goals should be reduced to writing. A written statement or objectives would seem to serve several purposes.<sup>13</sup> First, such a statement clarifies intent as to what the program is to accomplish and reduces the possibility of misunderstanding of purpose. Second, it serves as an indication of management's commitment to the program and philosophy of work measurement. Third, it assists in marshaling organizational

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<sup>12</sup>An official of bank W suggested that part of any savings affected by work measurement should be shared with the employees. If the work measurement program saved \$600,000, he felt that \$200,000 should be given back to the employees in some form.

<sup>13</sup>Adapted from Sisk, op. cit., p. 52.



effort toward accomplishment of the stated objectives. Fourth a written statement of objectives provides a control standard against which actual accomplishments of the program can be compared.

Communication of goals.--Once the goals of the work measurement program have been established and expressed in writing it is necessary to communicate these objectives to all members of the organization.<sup>14</sup> It is important that everyone in the bank understand what the goals of the program are and why they are necessary objectives for the bank. Top management should make a concerted effort to see that all members of the organization comprehend the goals established for work measurement. Specific means for communicating goals will be considered in a subsequent section.

#### Work Measurement Policies

A policy is a general guide to action.<sup>15</sup> It establishes the framework within which specific courses of action leading to the accomplishment of stated objectives are developed. After work measurement goals have been determined, it is then necessary for top management to outline the policy boundaries within which the entire program will operate. Policies are

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<sup>14</sup>Table LIX indicates that inadequate program orientation for employees, supervisors, and managers has been a problem of substantial proportion. Table LVIII indicates that failure in communications has been a problem.

<sup>15</sup>Koontz and O'Donnell, op. cit., p. 85.

important because, by delimiting the sphere of operation, they tend to channel organizational effort toward the accomplishment of goals laid out for the work measurement program. To avoid confusion and to make most effective use of the work measurement function, it is necessary that top management formulate adequate policies prior to commencing the actual measurement of work.

Possible work measurement policies. -- Among some of the more important policies which should be delineated and clarified are (1) the extent to which activities will be covered; that is, which departments, what priority of coverage, and whether or not officers and supervisors will have their activities measured; (2) the amount of authority the work measurement group will have; for example, will the function have authority to seek out jobs, and will recommendations be recommendations only; (3) the means by which any reductions in staff will be accomplished: normal attrition, termination, or transfer; (4) the time, effort, and financial resources which will be expended on the program; (5) the extent to which methods and procedures will be analyzed and improved prior to establishment of standards; (6) program maintenance; that is, how standards are to be maintained, when and under what conditions standards are to be changed, and what size staff will be provided for accomplishing the maintenance function; (7) the degree of participation which will be solicited from employees and supervisors; (8) the type and

size of allowances which will be added to normal time values; (9) the extent to which various techniques of work measurement will or will not be used; (10) the sources from which analysts will be drawn, whether from inside or outside the bank; (11) the types of performance reports which will be prepared; that is, whether group or individual performance reports will be prepared; and (12) the extent to which managers at various organizational levels will be expected to use work measurement data.<sup>16</sup>

As the foregoing list of policies illustrates, a work measurement program requires the formulation of guidelines in a number of different areas. As can also be clearly seen from the list, adequate and effective policies can only be determined after top management has carefully determined and defined the objectives which it desires to achieve through work measurement.

Written statements of policies.--Once policies have been formulated by top management they should be committed to writing. A written statement of policies would appear to offer the following advantages to an organization: (1) it furnishes general guidance to those members of the organization charged with carrying out the program, (2) it further clarifies the intent of top management regarding the use of

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<sup>16</sup>The first seven policies listed are from Grillo and Berg, op. cit., pp. 18-21. The remaining policies have been developed from material presented in previous chapters.

measurement data, how measurement will be accomplished, and the role of employees and supervisors in the program, and (3) the very act of reducing policies to writing requires top management to think the work measurement program through and decide upon important details regarding establishment and operation of the program in advance of implementation.<sup>17</sup>

Communication of policies.--As with goal statements, written statements of policies should be communicated to those members of the organization who will be affected.<sup>18</sup> This is not to say that all policies should be communicated to all members of the organization. Many of the policies relate to the technical aspects of the program and are of interest only to those involved in operating the program. However, those policies which relate to the employee, the supervisor, or the middle manager and their expected roles, obligations, or rights should be communicated to these groups. Efforts should be made to see that all members of the organization clearly understand those policies which affect them.

#### Work Measurement Procedures

A procedure is a guide to action which details the exact manner in which an activity is to be accomplished.<sup>19</sup>

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<sup>17</sup>Adapted from "Formalizing," Business Systems, pp. 9.2-9.3.

<sup>18</sup>See Tables LVIII and LIX for an indication of the importance of communicating effectively.

<sup>19</sup>Koontz and O'Donnell, op. cit., p. 87.

Procedures are important to the operation of the work measurement program because they facilitate communication of operating details and requirements, promote uniformity of action, and serve as a training guide for new analysts.

Possible work measurement procedures.--Procedures for operating the work measurement program should encompass the following areas: analysis of the work center, measurement of work, use of performance leveling, computation and application of allowances, calculation of standards, reporting of work center data, preparation of performance reports, requirements for auditing standards, initiation of requests for study or restudy, and report distribution.<sup>20</sup>

Differences in objectives, in techniques of measurement, and in operating technicalities make it difficult to generalize about specific work measurement procedures. Each bank should analyze its own requirements and formulate procedures accordingly. Nevertheless, procedures should be considered an important part of the planning activity and care taken to formulate procedural statements which will provide adequate and effective guidance in the operation of the entire program.

Written statements of procedures.--To be most effective, procedural statements should be expressed in writing.

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<sup>20</sup>These inclusive procedural activities have been generalized from descriptive technical material presented in Chapter III and from a consideration of several banks' procedures manuals.

Developing formalized written statements of procedures has several advantages: (1) the very act of reducing procedures to writing requires top management and the work measurement group to think through all of the details of the program, (2) a procedural statement clarifies the responsibilities of all parties involved in the measurement of work or the reporting of data, (3) communications are made easier by the existence of written procedures, and (4) training of analysts or work center supervisors is enhanced where formal procedures are available.<sup>21</sup>

Communication of procedures.--Work measurement procedures must be communicated to those members of the organization who are expected to adhere to such procedures. One way of accomplishing this is to prepare manuals of procedures for distribution to all managers, supervisors, and work measurement analysts. Some banks find it advantageous to prepare one manual which can be used by all parties.<sup>22</sup> Other banks prepare separate manuals for each group.<sup>23</sup> Because of differences in the depth of understanding required by each of

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<sup>21</sup>Adapted from "Formalizing," pp. 9.2-9.3.

<sup>22</sup>Banks O, K, and J are examples of institutions doing this.

<sup>23</sup>Bank T uses three separate manuals: one for managers, one for first-line supervisors, and one for work measurement analysts.

these parties, it may be a good practice to prepare one manual which can be used by supervisors and managers and another manual which can be used by analysts. The manual for use by managers and supervisors should deal more with reporting responsibilities and requirements, while the manual for use by work measurement analysts should be more concerned with the technicalities of analysis and measurement.<sup>24</sup>

Organizational Location of the Work  
Measurement Function

As with any functional activity or major program, the positioning of the work measurement effort within the organization may have considerable bearing upon the ultimate success of the function. Through organizational location top management may confer status or lack of status upon the program.<sup>25</sup> It should be borne in mind that, in the abstract, no ideal location for work measurement exists. The work measurement group has been located successfully in several different places by various banks.<sup>26</sup> The best location for any particular bank depends upon several factors.

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<sup>24</sup>This recommendation is made on the basis of an examination of the contents of supervisor's manuals issued by banks J, K, and T and an examination of the analyst's manual issued by bank T.

<sup>25</sup>Confidential interview with official of bank P.

<sup>26</sup>Table XXIII indicates that operations and controller are the two most common locations, but it also shows that other locations have been used. A representative of bank P maintained that specific functional location was not really important as long as management supported the program.

Factors affecting location.--Some of the more important factors influencing the location of the work measurement function in a commercial bank are (1) the goals established for the program by top management, (2) the importance attached by management to the program, (3) the need for crossing departmental lines, and (4) the extent of authority assigned to the work measurement group.

The goals established for the work measurement program would appear to be of significant importance in determining the functional location of the work measurement effort as well as its reporting level. For example, where the only or the primary goal of the program is to provide data for pricing new services or for developing a standard cost system, the necessity for locating the function within the accounting area is obvious. On the other hand, where the basic purpose of work measurement is to determine and control staff levels, it is equally obvious that the function belongs not with the accounting division but with that functional area of the bank charged with staff control.

The level of reporting may also be implicit in the goals determined for the program. For example, if top management decides that work measurement should serve the organization on a bankwide basis, then the function should be located at a high enough level so that this can be accomplished. If on the other hand, the program is to be



for the benefit of only a single department, as is the case in some institutions,<sup>27</sup> then location within that department at perhaps a lower level is indicated. In any event, before placing the work measurement function within the existing organization structure, top management should carefully consider the goals of the program and then place the function in such a location that achievement of these goals is facilitated, not hindered.

A second factor influencing location is the importance top management attaches to the work measurement effort. If top management feels that work measurement is of considerable importance and wishes to convey this sense of importance to the rest of the organization, then location at a relatively high reporting level can do much to confer organizational status upon the work measurement program.<sup>28</sup> By the same token, location within a prestigious division within the bank may convey the same idea of importance. Where the work measurement effort is viewed as being of only minor importance, location can also serve to underscore this lack of importance.

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<sup>27</sup>In bank O the work measurement program serves only the operations division.

<sup>28</sup>S. Ian Rastall, "The Industrial Engineering Function in Branch Banking," Journal of Industrial Engineering, XV (September-October, 1964), pp. 261-265, indicates that significant benefit may derive from a high reporting level during the early years of the program. Once firmly established and accepted, the program could be integrated into the organization at a lower level.

Where the work measurement program has a need for crossing departmental lines, as is the case where the function is to operate bankwide and serve the needs of the entire organization, then it is important to locate work measurement in such a position that moving across lines is made easier.<sup>29</sup> This may mean locating the function outside existing divisional arrangements, possibly in some type of staff capacity. However, if top management commitment to the program is sufficiently strong, the ability to cross departmental lines may not be hampered by any organizational location.<sup>30</sup>

The extent of authority granted the work measurement group is another factor affecting optimal location. If top management grants the group functional authority for seeing that its staffing or other recommendations are carried out, then the program should be located where it can exercise such authority. If, on the other hand, top management desires the work measurement group to rely upon salesmanship to get its recommendations accepted and implemented, another location, possibly as a pure staff function, is indicated.<sup>31</sup>

Other organizational considerations.--In order to engender sufficient organizational respect so that work

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<sup>29</sup>The section "Organizational Arrangements for Work Measurement" in Chapter V indicates that some work measurement programs have experienced difficulty in crossing departmental lines.

<sup>30</sup>Confidential interview with official of bank E.

<sup>31</sup>Grillo and Berg, op. cit., p. 19.

measurement can accomplish its objectives no matter how limited or how broad, top management should choose someone from within the bank, a person knowledgeable in banking as well as respected throughout the organization, to head the program.<sup>32</sup> Such a move not only enhances the stature of the program, but also assures that the work measurement group possesses the requisite banking knowledge to cope with problems related to the technical aspects of banking work. In general, such a person should be an officer of the bank,<sup>33</sup> the specific title depending upon the institution, the importance attached to the program, and the reporting level decided upon.

Because much of the work done by the work measurement group relates to accounting and to systems analysis, regardless of the final location chosen, some provision should be made for a liason relationship between work measurement and accounting as well as systems analysis. Even where standard costs are not part of the work measurement objectives, much of the data developed by work measurement is of value to the accounting function; therefore, some means of getting this data to accounting should be arranged. Because work measurement is also involved with methods and procedures

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<sup>32</sup>Banks G, I, O, and X are examples of banks doing this. In each case, implementation appears to have gone smoother than in cases where the program manager lacked organizational stature or was brought in from outside.

<sup>33</sup>A representative of bank U felt that lack of official status had hampered his attempts to secure cooperation from the officers of the bank.

and frequently uncovers situations calling for a complete systems study, arrangements should also be made for keeping the systems analysis group advised of work measurement findings.

### The Use of Consultants

Many of the goals, policies, and organizational arrangements for work measurement are things which only top management of a bank can or should determine. While outside assistance can be used to clarify goals or policies, it should not be relied upon to entirely formulate them. Therefore, top management should not, at least ideally, consider the use of a consultant for work measurement purposes until it has established the basic objectives which are to be achieved and formulated the basic policy guidelines for the operation of the program.<sup>34</sup> Although a good consulting firm can be used effectively and efficiently in establishing a work measurement program, top management should not abdicate its primary planning responsibilities to the consultant.

After initial goal and policy formulation, top management should consider the possibility of acquiring outside assistance for the implementation of the program. In evaluating such a possibility, top management should examine the advantages and disadvantages of using consultants as well as

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<sup>34</sup>Seymour Tilles, "Understanding the Consultant's Role," Harvard Business Review, XXXIX (November-December, 1962), 98.

any organizational factors favoring or precluding the use of extra-organizational assistance.

Advantages of using consultants.--It is readily apparent that as indicated in Chapter IV, using a consulting firm may offer a number of potential advantages. Some of the most important of these are: (1) adequate training can be provided work measurement analysts, (2) selection of potential analysts may be facilitated, (3) a psychological lift may be given to the program by bringing in an outside expert, (4) continuing consultation is available regarding vexatious technical problems, (5) the consultant brings to the job a sometimes substantial amount of previous work measurement experience, (6) communications may be facilitated by using the consultant as an intermediary, and (7) if or when something goes wrong, blame can be placed on the consultant rather than members of the organization.<sup>35</sup>

Disadvantages of using consultants.--Among the distinct disadvantages of using consultants are the following: (1) bringing in an outsider may have an adverse psychological effect upon the organization, causing fear or resentment among managers or employees; (2) consulting fees may run to rather substantial amounts; (3) training given neophyte analysts may be limited to only the technique favored by the

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<sup>35</sup>Confidential interview with official of bank X.

consultant, thus creating not skilled work measurement analysts, but only specialists in the application of one technique; (4) where the consultant is in-house for a long period of time he may come to be looked upon as the head of the work measurement program, thus his eventual departure may create a leadership vacuum as far as the program is concerned; (5) management does not always clearly understand what it is buying in the way of consulting services and may be forced to live with something it does not particularly like because of economics or psychological problems of selecting another consultant; and (6) consultants may oversell what work measurement can accomplish and thereby create pressure for attempting to achieve more than is feasible.<sup>36</sup>

Organizational factors affecting use of consultants.--

Several other factors may influence a bank's decision to use or not to use a consultant in initiating its work measurement efforts. First, a bank may discover that it already has in-house industrial engineers on the payroll working in other capacities. Where such is the case, the bank may simply decide to use the talent already available.<sup>37</sup> Second, a bank's previous experience with consulting firms may exert

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<sup>36</sup>Developed from material previously presented in Chapters III and IV.

<sup>37</sup>Bank T is an example of an institution already having several industrial engineers on its staff.

considerable influence over its decision to use a consultant in connection with work measurement. Where previous experience has been unfavorable, a dim view will probably be taken regarding further employment of consultants.<sup>38</sup> Third, as a matter of pride or for other psychological reasons, a bank may desire to establish a work measurement program entirely on its own.<sup>39</sup>

Regardless of whether a consultant is ultimately retained or not, any bank beginning a work measurement program should weigh the advantages and disadvantages of using a consultant against the advantages and disadvantages of starting a program on its own.

#### Selecting a Consulting Firm

If top management decides that using a consultant is advantageous to the work measurement effort, then it should systematically proceed to evaluate possible firms and select the one best suited for the organization. To effectively do this, something approaching the following procedure should be used: (1) delegate responsibility for evaluation and selection to some manager or group of managers, (2) develop a set of program specifications which the consultant will be expected to fulfill, (3) develop a list of possible consulting firms, (4) present the program specifications to the

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<sup>38</sup>Confidential interview with official of bank H.

<sup>39</sup>Confidential interview with official of bank V.

candidate firms and invite proposals, and (5) evaluate the consulting firms' proposals and recommend selection of a particular firm.<sup>40</sup>

Designate study group.--Responsibility for conducting the detailed study of consulting firms should be delegated to a small group of managers. This committee should include the officer selected to head the work measurement program as well as other bank officers who will be affected by the program--the controller, the operations division manager, the systems analysis manager. Ideally, the selection of a consultant should not be left to one man. It should be a group effort so that the firm finally selected and retained is acceptable to the various functional managers within the organization.

Develop program specifications.--In order to purchase a service, a bank must know what is to be expected from that service. Therefore, the selection group should prepare a set of work measurement program specifications which includes the goals desired by top management, applicable policies, type and amount of assistance desired from the consultant, etc. This set of specifications can then serve as a basis for evaluating the ability of each consultant to render the type and amount of assistance desired by the bank.

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<sup>40</sup>This suggested procedure is based on the general approach used by bank S and the procedure suggested by Tilles, op. cit., pp. 87-99.



Develop list of consulting firms.--There are a number of consulting firms, both management consulting firms and public accounting houses, which offer work measurement services. Names of prospective firms can be gathered from other banks who have used consultants, from the American Institute of Certified Public Accountants, or from the Association of Consulting Management Engineers. An effort should be made to compile a list of reputable as well as diverse firms; that is, firms using different approaches to work measurement. Such an effort will help assure that different techniques or systems of work measurement and different methods of training or implementation are examined by the selection committee.

Present program specifications to consultants.--Once the list of candidate firms has been agreed upon by the selection committee, program specifications can be presented to the firms and proposals can be solicited. The number of firms actually invited to present proposals will vary, but in all probability a minimum of three firms or a maximum of six firms should be asked to do so.<sup>41</sup> In many cases, consultants will probably wish to augment their written proposals with oral presentations and should be encouraged to

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<sup>41</sup>This suggestion is in keeping with current banking practice. Table XXVII reveals that on the average commercial banks consider three or four consulting firms before making a selection.

do this in order to further clarify the firm's methods of operation, etc.<sup>42</sup>

Select appropriate firm.--Proposals submitted by the consulting firms should be carefully evaluated against the program goals established by top management as indicated in the program specifications. Among the factors which should be carefully considered in choosing a consultant are: (1) the firm's ability and technical competence, (2) the type and extent of training offered, (3) the reputation enjoyed by the firm, and (4) previous experience in banking.<sup>43</sup>

The importance of each of these factors in the final selection will, of course, depend upon the individual bank. However, prime consideration should be placed upon the ability of the consultant to train analysts who are able to carry on the program after the consultant departs from the scene. In many cases, it is possible that banking experience may be the most important desired qualification; however, technical expertise should not be sacrificed simply for the sake of specific banking experience.

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<sup>42</sup>Bank S asked prospective consultants to measure at least one simple task. This procedure gave the bank officials an indication of the technicalities of setting standards and the ease with which different techniques could be applied in the bank.

<sup>43</sup>See Table XXIX.

### Selection of Work Measurement Analysts

The importance of the analyst to the success of the work measurement program should not be underestimated.<sup>44</sup> Occupying the interface between work measurement management and the employees and supervisors, the analyst is the pivotal point of contact for the entire work measurement effort. His manner, his actions, and the technical knowledge he displays may have a great deal to do with the reaction of supervisors and employees to the program.

Characteristics required.--Because of the nature of the job, an analyst should possess several different characteristics or qualifications.<sup>45</sup> He should have an analytical bent in order to inquire into the intricacies of work, describe operations, define job elements, sense the need for improvements, and institute required changes. An analyst should also possess some mathematical facility in order to determine frequencies, apply formulae, and calculate standards. He should have an affinity for detail, for working with numbers and the other minutia of work measurement.

In addition to analytical or technical ability, the work measurement analyst must also have what are commonly referred to as human relations skills. He must be able to

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<sup>44</sup>Officials of bank E, G, H, and W emphasized the importance of the analyst in the eventual success of the program.

<sup>45</sup>See Table XXXIV for a complete listing of analyst characteristics sought by the surveyed banks.

work with people, to sell his ideas to others, to use required amounts of tact, to gain the confidence and respect of employees and supervisors, and to communicate effectively with members of management.

In addition to analytical ability and human relations skills, a work measurement analyst should possess such personality traits as intelligence, creativity, objectivity, and self-motivation.

Obviously, finding all of the aforementioned traits in a potential analyst may be difficult. If it becomes necessary to make some trade-off between traits, it may be desirable to sacrifice some degree of technical ability for some degree of human relations facility or other personality characteristics because of the importance of the "working with people" aspect of the job.<sup>46</sup>

Sources of potential analysts.--Potential work measurement analysts may come from the ranks of those people already on the bank's payroll or they may come to the program from outside the organization. Something can be said to recommend either source. First, those analysts coming to the work measurement program from inside the bank possess some

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<sup>46</sup>A factor accounting for success in the work measurement program that was mentioned by several officials of interviewed banks was "good analysts." Where this term was used, the officials appeared to have in mind the ability of the analysts to work with people, not necessarily the technical ability possessed by the analysts.

knowledge of banking operations.<sup>47</sup> They are familiar with organizational arrangements, possible personality problems, may be known by and have the respect of people within the organization, and have other insights into the functioning of the enterprise which may possibly enhance their efforts at measuring work. On the other hand, those analysts coming into the work measurement program from outside the organization often bring with them fresh insights.<sup>48</sup> They may bring to the bank new ideas and a new objectivity which may be helpful in analyzing old methods and developing new ones.

As a generalization, a bank should attempt to staff its work measurement program with people from inside the bank as well as from outside in order to secure the benefits associated with using either group. The fact that banks presently staff their measurement programs with an approximate sixty per cent insiders and forty per cent outsiders fully indicates that total staffing from inside is not considered absolutely necessary by those banks already engaged in work measurement.<sup>49</sup>

Selection methods.--It is generally recognized that effective personnel selection must not simply rely upon one single selection method, but should use some combination

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<sup>47</sup>Payne and Swett, op. cit., p. 51.

<sup>48</sup>Officials of banks R and Y indicated this as an advantage of using outside people.

<sup>49</sup>See Table XXXII.

of interviews, selection tests, and background checks.<sup>50</sup> The primary selection method used in choosing work measurement analysts is the interview. Normally, the prospective analyst should be subjected to a series of interviews with different people: the personnel manager, the manager of the work measurement function, the analysts with whom the prospect may eventually work. Some banks have found that a non-directive, group interview is helpful in exploring the candidate's background, interests, and general suitability for work measurement employment.<sup>51</sup>

Selection tests may also be used to gather information on a prospective analyst. There are a number of commercially available tests which indicate the degree of mathematical ability, verbal facility, or general aptitude possessed by a prospective analyst.<sup>52</sup> Where tests are used, the test scores should not be taken as absolute indicators of an analyst's ability. Rather, they should be used as supporting devices. Some banks have found that those scoring highest on the various tests do not necessarily make the

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<sup>50</sup>Dale S. Beach, Personnel: The Management of People at Work (New York, 1965), p. 210.

<sup>51</sup>Officials of bank R indicated that the "group" method of interviewing had been helpful in determining the suitability of potential analysts. In this bank, several present analysts participate in the interviewing of a prospective analyst.

<sup>52</sup>See John B. Miner, Personnel Psychology (New York, 1969), Chapter 7, "Selection: Psychological Testing," for a listing of the most commonly used personnel selection tests.

best analysts;<sup>53</sup> therefore, complete faith should not be placed in the selection tests.

As with selecting any type of employee, background checks may be helpful in indicating the type of experience the candidate has had, the degree of success he has had in his past employment, his ability to work with people, and his enthusiasm and dedication to the work he has performed. Because specific background experience may not be important in selecting analysts (successful analysts have come with many different types of backgrounds),<sup>54</sup> the background check should be more concerned with the personality of the analyst, his self-motivation, etc., rather than with the specific type of work he has performed previously, or the specific type of educational background he has. Ideally, all work measurement analysts should have a college background, but lack of such should not exclude any candidate from consideration.<sup>55</sup>

#### Training of Work Measurement Analysts

Not only must the analyst be carefully selected in order to obtain a person possessing the requisite personality

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<sup>53</sup>Confidential interview with official of bank J.

<sup>54</sup>Confidential interviews with officials of banks R and Y.

<sup>55</sup>Payne and Swett, op. cit., p. 52, suggest that experience within the organization may offset lack of college education. Bruce Horel, "Work Measurement as a Cost Reduction Tool," Burroughs Clearing House, XLVIII (October, 1963), p. 47, indicates that in selecting analysts ". . . emphasis must be placed on attitudes and abilities rather than on specific job experience or scholastic attainments."

traits, but he must also be carefully trained in the technical aspects of analysis and measurement of work. The following paragraphs consider the subject areas in which an analyst should receive training, the methods which should be used, and the extent of training the analyst should receive.

Subject areas.--Among the subject areas in which an analyst should receive training are the following: (1) work measurement techniques, (2) performance leveling, (3) procedures and methods analysis, (4) human relations, and (5) banking operations.

Ideally, a work measurement analyst should have knowledge of several measurement techniques in order to be able to measure work which does not lend itself to measurement by certain techniques.<sup>56</sup> This is not to say that an analyst must be equally skilled in the application of all techniques or that one technique will not be the primary means of measurement utilized. It does mean that an analyst should have some degree of appreciation for each of the techniques and a knowledge of the advantages and limitations of each. For example, where an analyst is being extensively trained in the application of Methods-Time Measurement as the basic measurement technique, he should also be exposed during the course of his training to the use of other techniques such as work sampling, self-logging, historical records, and

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<sup>56</sup>As indicated in Chapter III, no one best work measurement technique exists in the abstract.



batching. While admittedly his skill in applying these techniques will not approach his facility in the application of the primary measurement method, the analyst will be able to make a more judicious application of the basic technique armed with a knowledge of other techniques.

The second area in which an analyst should receive training is performance rating. Where a non-predetermined technique is not used as the major method of measurement, it is particularly important that the analyst possess the ability to level observed times to normal times.<sup>57</sup> However, even where predetermined time systems are used it may be desirable that the analyst possess a basic understanding of rating and perhaps be able to a very limited extent to make some use of performance rating when techniques requiring rating are used. The training in rating may best be accomplished through use of rating films which are commercially available from organizations such as the Society for the Advancement of Management.<sup>58</sup> If extensive use of performance leveling is required, as in time study, it should be borne in mind that periodic retraining is necessary in order to assure a proficient level of application.<sup>59</sup>

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<sup>57</sup>See Chapter III.

<sup>58</sup>Barnes, Motion and Time Study, op. cit., p. 376.

<sup>59</sup>Confidential interview with official of bank Q.

Because analysis and improvement of existing methods and procedures is an important part of the normal work measurement effort, it is imperative that an analyst be trained in this area. He should possess some basic understanding of the use of procedure flow charts, flow process charts, flow diagrams, operations charts, and other analysis devices.<sup>60</sup>

Human relations is another area in which a work measurement analyst should receive training. Because the analyst is in frequent contact with employees, supervisors, and managers, it is important that he possess adequate skill in handling interpersonal relations.<sup>61</sup> Unfortunately, in many cases, training in human relations is afforded short shrift or even overlooked.<sup>62</sup> The success of a work measurement program does not depend entirely upon technique. There have been instances where programs which were less than technically adequate have enjoyed success because the importance

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<sup>60</sup>Confidential interview with official of bank T.

<sup>61</sup>Payne and Swett, op. cit., p. 57.

<sup>62</sup>One major consulting firm offers a four week training course. The first three weeks are devoted to instruction in Methods-Time Measurement. The final week covers the use of the consultant's standard data, methods improvement, systems analysis, flow charting, and human relations. It appears that training in human relations is sacrificed for technical training. The source for this information is Payne and Swett, op. cit., p. 56, and a confidential letter from the president of the firm offering the training.

of good human relations was recognized.<sup>63</sup> Thus, training for work measurement should not be limited only to the technical aspects involved, but should also cover the problems involved in working with and through people.

A final area in which an analyst should possess some knowledge is that of banking operations.<sup>64</sup> This would include a knowledge of the specific bank's history and traditions as well as an understanding of the mechanics of processing checks, making loans, etc. Analysts coming from inside the organization may already possess such knowledge; thus, for them this area could be omitted in training. But those analysts coming from outside the organization should receive basic orientation in this area in order to further their understanding of the work that is to be measured.

Training methods.--Work measurement training should not rely upon any single method of training, but should utilize a combination of classroom and on-the-job methods.<sup>65</sup> Classroom methods should be used to acquaint analysts with the

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<sup>63</sup>Banks P and C are examples of institutions using unsophisticated methods of measurement yet enjoying, to all appearances, relatively good success in work measurement. Both banks attribute their success, at least in part, to a low-key, human-relations-oriented approach to measurement.

<sup>64</sup>Officials of banks B and F expressed opinions that it is extremely important for an analyst to have a knowledge of banking.

<sup>65</sup>Table XXXV indicates that banks are currently doing this.

theories and techniques of analyzing, simplifying, and measuring work. On-the-job methods should be used to teach the practical aspects of applying theory learned in the classroom.

Where classroom instruction is used, care should be taken to see that the instructor is well-qualified in all aspects of work measurement. Banks having large work measurement staffs may find it advantageous to retain a qualified instructor to train replacement analysts.<sup>66</sup> Between training sessions this instructor could serve as a technical advisor to the program or even as supervisor of the work measurement effort. Smaller banks may not be able to afford to retain a qualified instructor. However, this should not be used as an excuse for neglecting classroom training. These smaller banks could effectively use consultants in order to provide the needed theoretical training. In any event, sound formal training should be provided every work measurement analyst.

While the importance of formal training should not be underestimated neither should the importance of on-the-job training be overlooked. Only through training on the job will the analyst learn the practicalities of applying what was taught in the classroom.<sup>67</sup> It is therefore imperative

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<sup>66</sup>Banks J, O, and W have qualified work measurement instructors on their staffs.

<sup>67</sup>An official of a major consulting firm stated during the course of an interview that analysts, after completing the formal training course, ". . . are like children starting to crawl." He pointed out that six or eight months of additional training on-the-job are required to produce a capable analyst.

that the analyst be provided with proper guidance during his initial efforts in measuring work. During his on-the-job training the analyst should be under the supervision of a senior work measurement analyst who can provide guidance and coach the new analyst. On-the-job training should be looked upon as a means of developing and sharpening the analyst's skills. However, it would appear to be neither practicable nor wise to place an analyst in an on-the-job situation without first providing sufficient formal training.<sup>68</sup>

Extent of training.--The extent of training given work measurement analysts depends somewhat upon the measurement techniques being used. Some techniques such as historical records or self-logging are relatively simple and can be easily learned.<sup>69</sup> Other techniques such as time study or predetermined time systems are more difficult to understand and apply, and consequently require longer learning periods.<sup>70</sup> For example, banks using Methods-Time Measurement must give their analysts a three-week formal training course in order to meet requirements established by the MTM Association.<sup>71</sup>

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<sup>68</sup>Unfortunately, a practice followed by banks C, P, and U.

<sup>69</sup>See Chapter III.

<sup>70</sup>See Chapter III.

<sup>71</sup>Confidential interviews with officials of banks J, W, and X.

While it may be difficult to generalize on the length of the training period, it would appear that because of the complexity and detail associated with work measurement, formal training periods of less than two weeks may not be sufficient to cover the subject material which should be included in the formal training course. Since almost fifty-four per cent of the surveyed banks presently offer four weeks or more classroom training to their analysts,<sup>72</sup> it is suggested that banks establishing work measurement programs give serious consideration to formal classroom training programs of this length.

Since almost fifty-seven per cent of the surveyed banks provide six or more months of on-the-job training for their analysts,<sup>73</sup> it would appear reasonable to suggest that banks beginning work measurement programs should require a similar period before certifying an analyst as qualified to perform work measurement on his own.

Size of work measurement staff.--The number of work measurement analysts required in a particular program depends upon such factors as the size of the organization, the number of people to be covered by standards, the complexity of the work to be measured, and the timetable established for achieving work measurement coverage.<sup>74</sup> In addition, several

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<sup>72</sup>See Table XXXVI.

<sup>73</sup>See Table XXXVII.

<sup>74</sup>Payne and Swett, op. cit., p. 50.

other factors would also appear to have a direct bearing on the size of the staff. These factors are the type of standards which are being set, the degree of geographical decentralization, the extent of methods analysis conducted before measurement, and the availability of funds for work measurement expenditure. Because of the variable factors involved, it is difficult to postulate an absolute staffing figure or ratio. However, the staffing ratios developed from the survey of commercial banks would appear to offer some sort of guideline for staffing. As indicated in Chapter IV, commercial banks are now staffing their work measurement programs at a ratio of one analyst to every 242 officers and employees to be covered by standards. This ratio compares favorably with the one analyst for every 300 workers cited by Grillo and Berg as a common rule of thumb in office situations.<sup>75</sup>

In staffing the work measurement program provision of clerical or secretarial support personnel should not be overlooked. As revealed by the survey of banks currently engaged in work measurement, one support clerk is presently provided for every five analysts. This ratio would appear to be reasonable as a general guideline. However, as in determining the proper number of analysts, each bank should carefully evaluate its own needs for clerical support, taking

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<sup>75</sup>Grillo and Berg, op. cit., p. 17.

into consideration the number of reports to be prepared and the need for performing other clerical activities.

#### Work Force Orientation

As soon as top management has decided to initiate a work measurement program, efforts to explain the goals of the program, the necessity, and the benefits to be derived from work measurement should begin.<sup>76</sup> It is imperative that such efforts begin forthwith in order to scotch the circulation of rumors detrimental to the program.<sup>77</sup> Top management must take appropriate steps to see that middle managers, first line supervisors, and employees are carefully and honestly appraised of the work measurement program.

Middle managers.--One of the key elements in the success of the work measurement program is support by middle management.<sup>78</sup> Because it is almost a truism that the interest a subordinate manager displays in a particular program or project is a function of the interest displayed by his superior, the middle manager is in a position to influence the use of work measurement by lower level managers.<sup>79</sup>

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<sup>76</sup>Tables LVIII and LIX indicate that orientation efforts have been a major problem for banks.

<sup>77</sup>Payne and Swett, op. cit., p. 33.

<sup>78</sup>Table LIX indicates that inadequate support from middle managers has been an important problem.

<sup>79</sup>Confidential interviews with officials of banks D, S, and V.



Therefore, it is important that middle managers fully understand and actively support the work measurement endeavor. To this end, middle managers should be brought into the initiation of work measurement efforts at a very early point, possibly as early as the first efforts at goal and policy formulation. Such involvement would allow middle managers to participate fully in the development of the program and enable the resolution of objections and problems at an early stage of program formulation.

While it is important that middle managers understand the mechanics of the program, it is perhaps more important that they understand and appreciate how effective use of work measurement data can facilitate managerial planning and controlling functions. The content of middle management orientation should therefore emphasize how work measurement data can be used to establish objectives, plan staff requirements, compare performance, identify situations requiring corrective action, and control costs.<sup>80</sup>

In order to communicate the work measurement message effectively, several methods of orientation should be used. Group meetings should be used to acquaint middle managers with the general features of the program. Seminars may be used to provide an opportunity for in-depth exploration of

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<sup>80</sup>As revealed in Chapter IV, one of the major problems faced by banks has been limited use of work measurement data by managers.

uses or problems. In addition, some banks may wish to send middle managers to some type of abbreviated training session in order to fully acquaint them with operating details of the program.

Supervisors.--The great majority of the banks interviewed during the course of the present research identified the first line supervisor as a key person in the ultimate success of the work measurement program. In order for the program to be effective, the supervisor must make use of the data provided by work measurement.<sup>81</sup> This being the case, it is necessary that the first line supervisor fully understand the benefits to be derived from work measurement, the mechanics of program operation, and believe in the use of work measurement as a management tool. Therefore, the first line supervisor should be subjected to the most intensive orientation of all.<sup>82</sup> As in the indoctrination of middle managers, group meetings should be used to initially acquaint the supervisor with the general features of the program. These meetings should be followed by seminars or training sessions designed to show the supervisor how to make maximum use of the information provided him by work measurement.

Employees.--While program success is undoubtedly enhanced by employee acceptance, such acceptance does not

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<sup>81</sup>See Chapter V.

<sup>82</sup>Table XXXVIII shows that supervisors presently receive the second most intensive indoctrination.

assume the critical importance of acceptance by middle managers or first line supervisors.<sup>83</sup> However, careful orientation attempts should be made to the employee group in order to allay any fears concerning employment security or the role of the individual worker vis-à-vis the work measurement program.<sup>84</sup> Normally, initial indoctrination efforts can be made successfully through letters, memos, and group meetings. These communication devices can be used to outline the general purposes of the program, describe the potential benefits, and outline management policy regarding areas of particular concern to the employees. It would not appear practical or necessary to resort to seminars or training sessions in order to acquaint the employee with what he needs to know concerning the program and its operation.

Need for continuing orientation.--Work measurement orientation, if it is to be effective, must not be a one-time affair. Rather, it should be accomplished on a continuing basis. Normal turnover among middle managers, supervisors, and employees necessitates repetitive efforts at orientation if new organization members are to be

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<sup>83</sup>An official of bank J stated that employee resistance to work measurement is probably limited to the first two weeks of a study.

<sup>84</sup>Payne and Swett, op. cit., p. 34, and Grillo and Berg, op. cit., p. 27.

adequately informed about the work measurement program.<sup>85</sup>

In addition, orientation on a continuing basis also serves to indicate top management's on-going support of and interest in the work measurement effort.

For middle management, continuing orientation should possibly be included as a regular part of normal staff meetings. During such meetings middle managers could be informed of development in measurement efforts, concrete examples of the benefits of work measurement could be pointed out, and problems could be discussed. A good practice followed by one bank is to have a series of weekly luncheons where a small group of middle managers is brought together and the program and current developments are discussed.<sup>86</sup>

Work measurement orientation should be made an integral part of any supervisors' training courses conducted by the bank.<sup>87</sup> In particular, efforts should be made to see that all new supervisors are thoroughly acquainted with the mechanics of work measurement and the benefits to be derived

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<sup>85</sup>Confidential interviews with officials of banks D, I, and W. In the literature, Henry O. Ruhnke, "Selecting Clerical Personnel," Banking, LVIII (November, 1965), 55. estimates annual turnover for the banking industry to be approximately twenty-five per cent. Within particular banks or departments within banks, turnover may be even higher. For example, an official of bank C stated that, in a particular year, turnover of personnel in his bank's transit department exceeded two hundred per cent. These figures underscore the need for continuing orientation efforts.

<sup>86</sup>Confidential interview with official of bank Y.

<sup>87</sup>Confidential interview with official of bank Y.

from its effective use. Hopefully, by incorporating work measurement training into normal supervisory training, supervisors will come to view work measurement as another management tool for planning and controlling operations and not as something separate and apart from other normal management tools.<sup>88</sup>

For employees, continuing orientation should be made a part of the normal induction orientation for new employees.<sup>89</sup> By introducing work measurement to the new employee upon his reporting to work, he will probably be more inclined to accept work measurement and the requirements it imposes as simply another facet of his job. In addition to new employee indoctrination, efforts should also be made to keep all other employees apprised of the work measurement program.

#### Pre-measurement Analysis

Pre-measurement analysis generally encompasses the selection of departments to be studied, development of an implementation schedule, indoctrination of work center personnel, collection of pertinent work center information, analysis of operating procedures and methods, examination of quality

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<sup>88</sup>Knox, op. cit., p. 160, suggests that for work measurement to be successful it must exist not as something separate and apart, but must be made an integral part of supervisory management.

<sup>89</sup>At the time of the interview, officials of bank W were in the process of redesigning their work measurement program. One element of this redesign was incorporation of work measurement indoctrination into the normal new employee orientation process.

levels, definition and description of measurable work activities, and the installation of procedures for collecting work counts and manhour data. The pre-measurement phase is very important to the total work measurement effort for it is in this phase that the factual foundation for the establishment of standards is constructed.

### Selection of Departments

Selection criteria.--As indicated in Chapter IV, there are several bases for selecting the initial departments to be subjected to work measurement. Some of these criteria are (1) the ease with which operations can be measured; that is, whether the work is of a routine, repetitive nature and lends itself readily to measurement, (2) existence of operating problems requiring solution, or (3) the potential for training analysts; that is, whether the work center offers varying types of work or situations which confront the analysts with an assortment of diverse problems. Generally, it seems preferable to begin work measurement efforts in those work centers which are easiest to measure--proof, transit, and bookkeeping.<sup>90</sup> In addition to being easier to measure, these areas, because of the relatively large numbers of people performing similar tasks, afford

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<sup>90</sup> In actual practice these appear to be the areas selected most often for initial studies. These are also the areas recommended for initial study by Jordan and Higgins, op. cit., p. 53.

the work measurement group the opportunity of getting a number of people under standards in fairly short order at the beginning of the program.

Initially, it may also be important that the work measurement effort concentrate on those work centers which appear to be more receptive to the measurement effort.<sup>91</sup> Where supervisors are open-minded and receptive to new ideas, implementation usually proceeds more smoothly.

Based on the experience of commercial banks currently engaged in work measurement, it seems likely that almost all functional areas can eventually be included, to some extent, in work measurement coverage.<sup>92</sup>

Parties to the selection process.--Ideally, the selection of the work centers and the order in which they will be studied should be a joint effort involving the work measurement program manager, top management, and where extra-organizational assistance is used, the consultant himself.<sup>93</sup> Top management should be involved because, in all likelihood, they may know of specific areas in which there is greater need of applying work measurement and they may also possess knowledge of areas where receptivity may be greatest. The

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<sup>91</sup>Grillo and Berg, op. cit., p. 23.

<sup>92</sup>See Table XV.

<sup>93</sup>Table XLI shows that selection of departments is usually accomplished by several parties, but it also shows that top management is usually not one of these parties.

program manager should be involved because he possibly possesses the best knowledge of the capabilities of the work measurement staff. Finally, where a consultant is retained, he should be involved in the selection of departments because he may have insights, gained from previous experience, into potential opportunities or problems associated with measuring specific functional areas. Thus, a collective selection will help assure that appropriate work centers are selected and a proper sequence of implementation is developed.

Implementation schedule.--Once the departments to be studied have been selected, it is necessary to develop a schedule showing the order in which departments are to be studied and the estimated length of time required for measuring each work center.<sup>94</sup> Committed to writing, this schedule serves as a guide for channeling the work measurement effort as well as a basis for evaluating the progress made by the program.

#### Work Center Orientation<sup>95</sup>

Initial work center contact.--Initial contact with the work center to be studied should be made by the program

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<sup>94</sup>As indicated in Chapter IV, it is important to develop a realistic implementation schedule if problems of meeting the schedule are to be avoided.

<sup>95</sup>The orientation procedure suggested here is based on a composite of the actual procedures used by banks C, F, H, I, J, O, P, Q, R, V, and Y.



manager through the middle manager in whose division the work center is located. While in actual practice this initial contact may be made by letter, telephone, or in person, it would appear to be best to establish contact with the divisional manager on a personal basis. During this contact, the work measurement manager informs the divisional manager that one of his work centers is to be studied, reemphasizes the purpose and mechanics of work measurement, and arranges for a meeting between the divisional manager, the program manager, the affected work center supervisor, and the analysts who will be involved in the study.

During the second meeting, the analysts should be introduced to the work center supervisor and details of the impending measurement study should be carefully explained to the supervisor. Ideally, the division manager should take the lead in explaining the program to the work center supervisor. The program manager and the analysts may furnish specific details and otherwise fill in incomplete portions of the division manager's explanation. Hopefully, by relying upon the division manager to explain the program, an impression can be conveyed to the work center supervisor that the division manager is interested in and supports the efforts being made by the work measurement group.

During this second meeting, arrangements should be made for an actual starting date for the study. The work center supervisor should also be instructed to arrange for a general meeting of all work center employees so that the program can be further explained to them.

Employee orientation.--When the study is ready to begin, all of the work center employees should be brought together and the work measurement analysts introduced to the group. It is important at this point to explain thoroughly what is to be done, why it is to be done, and what is to be the role of the employees in the measurement effort. The work center supervisor should take the lead in explaining the program to the employees so that they will understand that he supports the program and is interested in the results. During this group meeting, it may be beneficial to emphasize the benefits that employees can derive from work measurement.<sup>96</sup>

#### Work Center Analysis

General fact-finding.--The first step in the analysis of a work center is to determine, in a general fashion, what goes on in the work center. This involves a consideration of organizational relationships within the work center, a determination of interdepartmental relationships, a study of work flows, an identification of activities performed

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<sup>96</sup>Grillo and Berg, op. cit., pp. 27-28.

within the work center, an examination of workload distribution, an analysis of volume fluctuations and peak load considerations, and a study of all other factors bearing upon the general activity that is performed within the specific work center.<sup>97</sup>

Much of the needed information regarding the general operation of the work center can be supplied by the supervisor. However, the employees themselves should not be overlooked as a valuable source of information. In many cases, supervisors may not be intimately acquainted with all details of the operation. In such cases, the employees will have to be relied upon to furnish much of the needed information. Also, calling upon the employees to supply information may help create a greater feeling of participation and involvement in the entire measurement process. A practice followed by one bank which may have something to commend its usage by other banks is to interview every single employee in the work center.<sup>98</sup> According to an official of this bank, such a procedure makes each employee feel a little more important and no one feels slighted because he is not interviewed.<sup>99</sup> Certainly, in a large

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<sup>97</sup>Confidential interviews with officials of banks P and V.

<sup>98</sup>Confidential interview with official of bank P.

<sup>99</sup>An official of bank E stated that if four people are performing the same job it may be necessary to study all four in order to avoid the problem of having anyone feel slighted or unimportant.

work center this procedure may not be practical, but the potential psychological advantages of interviewing each employee should be considered wherever size of the work center does not preclude such a practice.

Procedures and methods analysis.--Procedure and methods analysis encompasses the preparation of procedure flow charts, work distribution charts, flow process charts, flow diagrams, and operations charts. The purposes of procedures and methods analysis are twofold: (1) to collect all necessary detailed information for subsequent use in determining measurable activities and defining jobs or tasks, and (2) to identify poor procedures and methods and make improvements before actual measurement or work begins.

As indicated in Chapter IV, the most common practice for banks is to improve only those methods which are obviously deficient rather than attempting to analyze all procedures and methods in a detailed fashion. Theoretically, all procedures and methods should be analyzed before measurement in order to achieve standardization and alleviate the possibility of duplication of effort resulting from setting standards on methods which may quickly become outdated and necessitate remeasurement too soon after the original measurement has been completed.<sup>100</sup> In addition, analysis and improvement of operating procedures and methods offers the

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<sup>100</sup>Barnes, Motion and Time Study, op. cit., p. 3.

opportunity for substantial savings through the elimination of unnecessary work, duplication of effort, and improper use of worker energy and skills.<sup>101</sup>

However, in actual practice, commercial banks seem to be caught in a dilemma regarding the extent of methods and procedures analysis and improvement. On the one hand, sound theory requires detailed analysis and improvement. But on the other hand, the need for standards in banking operations demands achievement of coverage as rapidly as possible. Therefore, each bank is faced with the problem of weighing the need for detailed methods study against the need for rapid standards coverage. While such a situation can only be reconciled in terms of the needs of the particular bank, it would appear to be somewhat unwise to slight procedures and methods analysis and improvement for the sake of overly rapid standards coverage.<sup>102</sup>

In improving operations it is beneficial to solicit the ideas and opinions of both supervisors and employees. It has been the experience of some banks that these two

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<sup>101</sup>As an indication of the potential benefit to be derived from work simplification, an official of bank Q estimated that fifty per cent of the savings produced by the work measurement program in his bank is attributable to work simplification.

<sup>102</sup>An official of bank J expressed the opinion that commercial banks are fifty years behind in their efforts to apply work standards and that delaying work measurement coverage for two or three years in order to improve methods would not make much difference. He further stated that setting a standard on a task performed in accordance with poor methods does not result in much of a standard.

sources occasionally have a number of good ideas and have only been awaiting the opportunity to express them to someone.<sup>103</sup> In addition to gaining ideas, solicitation of suggestions from employees and supervisors may also be helpful in creating a feeling of participation in the work measurement effort.

Quality level consideration.--Part of the pre-measurement analysis should also be concerned with considerations of the quality of the work performed.<sup>104</sup> This would involve an examination of the extent of errors made in work performed, the frequency of errors, and their probable causes. Such an investigation of process quality may indicate the need for methods changes, new equipment, or additional training. While a number of banks indicate that they include in their standards sufficient time for performing quality work, to do so without first examining process quality would appear to be rather unrealistic. Therefore, at least ideally, specific consideration should be afforded quality levels.<sup>105</sup>

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<sup>103</sup>Confidential interview with official of bank N.

<sup>104</sup>Ralph Currier Davis, Industrial Organization and Management, 3rd ed. (New York, 1957), p. 182, suggests that a performance standard is actually an expression of quantity, quality, and cost in relation to time. Because a work measurement standard is a basic type of performance standard, it logically follows that consideration of process quality should be taken into account in the setting of work measurement standards.

<sup>105</sup>At the time of interview, an official of bank S indicated that his bank was in the process of establishing a quality control department which would be involved in studying process as well as service quality.

Description of work activities.--After procedures and methods have been analyzed and improved and quality levels considered, the next step preparatory to measurement is to define and describe all categories of activity to be measured.<sup>106</sup> The amount of detailed description necessary depends to an extent upon the technique of measurement used. For example, Methods-Time Measurement, other predetermined time systems, and stopwatch time study require a finely detailed listing of the individual elements which go to make up each work operation. Such a listing normally includes a brief definitive statement of each step in the operation, a definition of the unit count, and an identification of the individual element's frequency of occurrence in the operation. Where work sampling or self-logging are used, the work activity description is usually less precisely detailed; that is, each individual element is not listed, but the activity is described in more general terms.

Regardless of the technique used, work category definitions should always be reduced to writing so that their completeness can be verified and general agreement reached as to what is included in the activity and what unit counts are required. In addition, written documentation facilitates the job of maintaining accurate standards by providing

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<sup>106</sup>Knox, op. cit., p. 183, and Limberg, op. cit., p. 51, maintain that accurate definitions of activities to be measured are imperative if the work measurement effort is to be successful.

a detailed description against which procedural changes can be compared and the extent of change required in the standard can be determined.<sup>107</sup>

Installation of data collection procedures.--After the categories of work activities to be measured have been decided upon and defined, the next step is to implement procedures for the collection of item counts and manhour data. Such procedures should be installed sufficiently in advance of measurement so that deficiencies in the data collection system can be corrected and problems of incorrect reporting resolved before they adversely affect the work measurement system. Wherever possible an effort should be made to utilize existing work counts. In many cases, counts may already be available through computer runs of machine tabulations.<sup>108</sup> Utilizing these sources not only facilitates the collection of needed data, but also assures a more accurate count. In order not to overburden work center employees, the number of manually recorded and reported counts should be held to a minimum.

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<sup>107</sup>An official of bank T emphasized in very strong terms the importance of having every work measurement standard well documented in order to facilitate maintenance of the standards.

<sup>108</sup>Bank V requires computer programmers to consult with work measurement personnel regarding unit count requirements before computer programs are finalized. As a result, many required counts are automatically obtained as by-products of normal computer processing. Eventually, the bank hopes to be able to generate ninety per cent of its count information in this manner.



Branch study procedure.--In general, as indicated in Chapter IV, the procedure for studying a branch facility is basically the same as that for studying any other work center. However, because of the tremendous similarity of operations performed in branch offices, it is normally not necessary to study all branch facilities. The general practice should be to select and study only a representative group of branches. While such a sample could be determined on a random basis, most banks will probably find it more practical to classify branches as to types and carefully select what appears to be a representative group.<sup>109</sup> Normally, the sample of branches should be determined by those most knowledgeable in branch operations.

#### Measurement

The third stage in the implementation of a work measurement program is that of measurement. This phase of the program involves the collection of time and production data, the application of frequencies and allowances, and the calculation of standards.

#### Types of Work Measurement Standards

As discussed in Chapter III, the measurement of work may result in either of two types of standards: a unit time standard or a manpower standard. The specific type of

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<sup>109</sup>This practice is followed by banks B and X.

standard to be set is an out-growth of the objectives established for work measurement by top management.

Unit time standards.--The most common type of standard, and possibly the only type some people associate with work measurement, is the unit time standard. This type of standard is an expression of the time required by a qualified worker performing at a normal rate of speed under uniform conditions and experiencing normal fatigue and delay to produce one unit of output or accomplish one set of tasks. A unit time standard may be thought of as a detailed standard. Any specific work center may involve a number of such standards. Obviously, the development of unit time standards is essential to many of the objectives of work measurement such as payment of incentive wages, production scheduling, cost accounting, etc.

Manpower standards.--As opposed to a unit time standard, a manpower standard is a quantitative expression of the manpower necessary to accomplish the total workload of a given work center. A manpower standard represents what may be termed a "broad-brush" standard. Branch banks, in particular, use manpower standards to arrive at "quotas" or required staffing levels for manning branch facilities. Manpower standards may be constructed from unit time standards or they may be established from a general rather than a detailed type of measurement procedure. Because of their nature, the

usefulness of manpower standards is generally limited to determining or appraising levels of staffing.

#### Measurement Techniques

Unit time standards or manpower standards may be set through the use of several different techniques, each of which has specific advantages as well as disadvantages.<sup>110</sup> It is important that the advantages and disadvantages of various techniques as well as the other factors influencing selection and use of a particular technique be kept in mind in order to make the best application of technique to the job at hand.

Techniques available.--Listed in their order of simplicity, the following techniques are available for use by commercial banks: historical records, short interval scheduling, self-logging, wrist watch time study, work sampling, stopwatch time study, and predetermined time systems. As indicated in Chapter IV, all of these techniques have been used to measure work performed in commercial banks.<sup>111</sup> The technique used most often and to a greater extent than any other is the predetermined time system, either in its pure form or in the form of standard data. While predetermined times seem to lend themselves to measuring much of the

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<sup>110</sup>See Chapter III for a discussion of the advantages and disadvantages of different measurement techniques.

<sup>111</sup>See Table XLIV.

clerical work performed in a bank, no one single technique, whether predetermined times or stopwatch or any other technique, should be used to the total exclusion of all other techniques. Most banks will find that some combination of techniques must be used in order to measure the full range of activities to be included in work measurement coverage.

Factors affecting selection of techniques.--In addition to the inherent advantages and disadvantages associated with each technique, other factors should be considered in the use of techniques. Among these factors are management policy, the type of work being measured, the objectives established for work measurement, and the availability of funds for work measurement expenditure.

Frequently, management policy decisions preclude the use of some techniques or specify the use of others.<sup>112</sup> A common policy decision among banks is to rule out the use of stopwatch time study. Another frequent policy decision is to rely upon predetermined times as the primary means of measurement. Where guidelines like these exist, the selection of techniques is narrowed down. However, top management should be careful in enunciating such policies because they reduce the number of tools available for developing standards. Top management should be cognizant that no tool is in and of

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<sup>112</sup>See Chapter III.

itself bad or in and of itself superior to all others. Each has a value, a use, and a place.

Some techniques lend themselves more readily to the measurement of certain types of work than do others. The measurement of routine, repetitive clerical tasks such as filing checks, operating a proof machine, key punching cards, or posting ledgers is probably best accomplished through the use of predetermined times or stopwatch time study. Conversely, non-repetitive or non-standardized administrative tasks such as interviewing a customer for a loan, analyzing a balance sheet, or collecting a delinquent account are probably best done through work sampling or self-logging. Therefore, selection of a measurement technique should consider the nature of the work being measured.

The objectives of the work measurement program also appear to have a considerable bearing upon the selection of techniques.<sup>113</sup> Where the goal is a detailed, precise standard to be used in paying incentive wages or for a standard cost system, a technique which produces such results must be used. On the other hand, if the objective is to produce only a broad-gauge manpower standard for determining approximate staffing levels, less detailed information is needed and techniques such as work sampling, self-logging, or historical records can be used. Thus, in order to avoid

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<sup>113</sup>Horne, op. cit., p. 27.

over-measurement or under-measurement, techniques should be selected in accordance with the end results desired.

Top management's unwillingness to commit financial resources may impose a constraint upon technique selection. If funds are not available for training analysts in the use of more sophisticated techniques, the work measurement program may be forced to use less sophisticated techniques which can be applied with a minimum of formal training.

In choosing appropriate techniques for measuring specific activities, it is necessary then to consider the advantages and disadvantages of each technique as well as any of the above mentioned factors which may influence selection.

#### Measurement Procedures

As emphasized in a preceding section, the work measurement group should develop well-defined, written procedures to guide its own operation. These procedures should include specific instructions regarding the manner in which the measurement of work is to be accomplished. Although the exact procedure to be followed depends upon the technique of measurement used, generally the measurement process involves observation of the activity under study, assignment of time values, application of performance adjustments, and addition of various allowances.

### Performance Rating

One of the advantages associated with the use of predetermined time systems is that these systems do not require the work measurement analyst to make adjustments for the speed or skill and effort displayed by the individual under observation. Predetermined time systems have already been, in effect, adjusted so that the time values expressed in these systems are the times required by the average well-trained operator working at a normal pace, under uniform conditions and experiencing normal delay and fatigue to perform certain work activities. Using any other technique of work measurement it is necessary, if the resulting expression of time is to be considered a standard time and not just an expression of actual observed time, to make adjustments to observed times in order to compensate for individual differences in speed, skill, and effort.<sup>114</sup>

Generally, where performance rating must be employed it is preferable to utilize one of the recognized methods of adjustment such as pace rating or the Westinghouse system of leveling.

### Supervisory Involvement in Measurement

While in most cases the supervisor of a work center is not directly involved in measurement to the extent that he actually sets the standards, he is an important source of

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<sup>114</sup>See Chapter III.

information to the analyst while the analyst is constructing the standards.<sup>115</sup> The work measurement analyst should cultivate and make full use of this source. One way of doing this is to continually check with the supervisor during the course of the measurement to verify the completeness of what is included in the measurement and to ascertain the reasonableness of the time standards being developed. Such a procedure assists in making the final results more acceptable and assures that the standards finally developed do not contain surprise results.<sup>116</sup>

At the completion of a work measurement study, the work center supervisor should be required to certify to the completeness of the work standards.<sup>117</sup> This is not to say that the supervisor must agree that the time values are correct. Hopefully, he will agree with the standards. But it is important that he indicate that all elements have been included in the work activities for which standards have been established in order to reduce future disagreements concerning the completeness of the standards. Any differences

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<sup>115</sup>Payne and Swett, op. cit., p. 59.

<sup>116</sup>The need for continually checking with the work center supervisor was strongly emphasized by an official of bank V.

<sup>117</sup>Final study report format used by banks N and S contains an "Acknowledged" and "Approved" block for the work center supervisor's signature. Bank Y also requires approval of standards by the supervisor before they are implemented. Bank O seeks to obtain approval, but does not required it. Table LII indicates that seventy per cent of the surveyed banks require approval of the work center supervisor before putting the standards into effect.



of opinions regarding the standards should, ideally, be reconciled at the level of the work center supervisor, the work measurement manager, and the analyst. Only those differences which cannot be resolved at this level should be referred to the middle management level.

#### Employee Involvement in Measurement

With the exception of self-logging, employee involvement in measurement is primarily passive. However, like the work center supervisor, the employee represents a source of useful information and should be utilized wherever possible.<sup>118</sup> Spot-checks with employees on the completeness of measurement or the reasonableness of time values may help forestall difficulties arising from incomplete or inaccurate measurement. In addition, solicitation of informational inputs from employees may create a greater feeling of participation and enhance the acceptance of the final standards.

#### Work Measurement Coverage

Per cent of work force.--Some indication of the extent to which standards can be applied to a commercial bank's work force can be gathered from current industry coverage as revealed by the survey of banks engaged in work measurement. Table IX in Chapter IV shows that approximately 48 per cent of all non-official personnel have some of their

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<sup>118</sup>Grillo and Berg, op. cit., p. 33.

activities covered by work standards. At some time in the foreseeable future, an additional 25 per cent of the non-official work force is to be included under standards coverage, bringing total potential coverage for this group to almost 73 per cent. As these figures clearly indicate, a commercial bank embarking upon a work measurement program could reasonably anticipate that approximately three-fourths of its non-official personnel can be covered by work standards.

Table IX also shows that approximately 14 per cent of official personnel are presently covered by standards. Planned coverage in this area will expand the number under standards to over 29 per cent of all official personnel. This latter figure would seem to suggest a reasonable expectation for coverage of official personnel.

It should be kept in mind that the extent of standards coverage depends upon the type of standard being set. For example, where detailed unit time standards are being set something much less than total work force can be covered by such standards. On the other hand, where broad-manpower standards are being set it is entirely conceivable that almost the entire work force could be covered by these standards.

Management policy will also influence the extent of standards coverage. In many cases, top management may wish to exclude officers, and possibly supervisors, from

work measurement standards coverage.<sup>119</sup> Where this occurs, per cent coverage of the work force will necessarily be lower. Theoretically, many officers could be included in standards coverage if manpower standards rather than detailed unit time standards were used. Several large branch banks include their officers under this type of coverage in order to provide staffing information to those charged with administering branch activities.<sup>120</sup>

Branch office coverage.--Branch offices apparently present no insurmountable difficulties as far as work measurement is concerned. In fact, some banks see having a large number of branch offices as something which makes work measurement easier and increases the speed and extent of coverage. As revealed in the survey, 77 per cent of all the branch offices of the respondents are covered by work measurement standards.<sup>121</sup> Fifty banks indicate that all their branch offices are covered to some extent by standards. Certainly this figure indicates that one hundred per cent coverage of branch operations is not beyond the realm of possibility for a branch bank embarking upon work measurement.

In setting standards for branch facilities, three different approaches may be used: (1) separate standards may

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<sup>119</sup>See Tables XX and XXI.

<sup>120</sup>Confidential interviews with officials of banks B, Q, X, and Z.

<sup>121</sup>See Table XVI.

be set for each branch office, (2) universal standards may be set which apply to all branch offices in the system, or (3) a combination of unique and universal standards may be set. Sound practice seems to indicate the use of the third approach.<sup>122</sup> Because of the great similarity of operations performed in branch facilities, it is possible to establish system-wide standards for common activities such as cashing a check, taking a deposit, etc.<sup>123</sup> Where individual branch offices possess unique equipment or operate under different conditions, the system-wide standards can be adjusted to take into consideration these differences.<sup>124</sup> To impose universal standards without such adjustments would, in effect, penalize or unduly reward those offices possessing differences. To set separate standards for each branch office would appear to be uneconomical as well as unnecessary.

#### The Final Study Report

At the conclusion of each work measurement study, a final study report should be prepared. The contents of this

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<sup>122</sup>As indicated in Table XLIX, over sixty-three per cent of branch banks surveyed follow this procedure.

<sup>123</sup>Confidential interviews with officials of banks X and Z.

<sup>124</sup>Confidential interviews with officials of banks V and X.

report and suggested distribution are considered in the following paragraphs.<sup>125</sup>

Contents of the study report.--While the specific contents of the final study report will depend upon the objectives of work measurement, the depth of analysis and the techniques used, in general the report should contain four major sections: an introduction, a summary of findings, a set of recommendations, and detailed documentation to support the findings and recommendations.

The introductory section of the report should outline the purpose of the study, reemphasize the benefits of work measurement to the work center, explain how the study was conducted, show the inclusive time period of the study, and enumerate the techniques of analysis and measurement employed.

The findings section of the report should present a list of all standards developed during the study, show existing staffing conditions, enumerate ineffective procedures and methods, and highlight volume fluctuations or work flow irregularities and any attendant peak load problems.

The recommendations section of the report should reflect suggested additions or reductions to current staffing levels,

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<sup>125</sup>The final study report format suggested in this section is a composite of the report format used by banks M, N, P, and S.

outline changes advised in operating procedures and methods, specify a starting date for performance reporting, and specify any volume or manhour reporting requirements for preparation of performance reports.

The final section of the study report should contain all necessary documentation supporting the findings and recommendations of the study. Normally, this would include such things as operation summaries and/or task analysis sheets showing in detail how each standard was developed, procedure job descriptions for each position in the work center, and any detailed volume data used in preparing standards or developing workload patterns.

Distribution of the study report.--Although specific distribution of the final study report depends upon a number of factors peculiar to each bank, as a minimum the report should be distributed to the supervisor whose work center is involved, the department or divisional manager to whom the work center supervisor reports, the member or members of top management monitoring the progress and operation of the work measurement program, and the manager of the work measurement group. In addition to these recipients, copies of the report could benefit the following organizational groups: the personnel department, the systems and procedures department, and the cost accounting department.

### Use and Maintenance of Work Measurement Standards

The fourth and final phase of work measurement program implementation and operation involves the periodic reporting of information, the use of such information for improved managerial planning and control, and the maintenance of accurate standards. To a great extent, the fourth phase is an indicator of how well the first three phases of work measurement have been accomplished. If the work measurement information produced is used effectively by first line supervisors, middle managers, and top managers, then efforts at preliminary planning, pre-measurement analysis, and measurement have been successful. If the information supplied managers is not used, then failure has probably occurred during one of the earlier phases.

In order for work measurement information to be of greatest benefit in planning and controlling operations, it is necessary that a periodic performance reporting system be installed, accurate reporting be carried out, and accurate standards be maintained.

#### Work Measurement Performance Reports

A work measurement performance report compares actual work center performance against expected or standard performance. This comparison results in something variously referred to as an effectiveness ratio, utilization index, or efficiency index. The general purpose of the comparison

between hours actually used and hours produced at standard is to indicate how effectively a work center is utilizing its available manpower resources. Comparisons of performance may be made on several different bases and reports published at various intervals. The advantages and disadvantages of the different types of performance reports and their reporting frequencies will be considered in subsequent paragraphs.

Despite the type of performance report or the frequency of preparation, the work center supervisor should always receive a copy of his work center's report.<sup>126</sup> Ideally, the supervisor should receive his work center's performance report before any other level of management receives it so that he can investigate the indicated problem areas and be in a position to answer any questions from middle or top management regarding the operation of his work center.

To be most effective, performance reports must be not only accurate, but also timely; that is, they should be prepared and issued as soon after the reporting period as possible. Because of the volume of paperwork involved in reporting work center data, calculating performance percentages, and issuing reports, particularly in larger banks, some institutions have found it desirable to utilize a computer in report preparation in order to assure accurate preparation and timely

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<sup>126</sup>Payne and Swett, *op. cit.*, p. 95, state that performance reports are designed for use by first-line supervisors.



issuance.<sup>127</sup> Some consulting firms even offer to their clients packaged computer programs for preparing performance reports. In any event, it would be highly desirable for a commercial bank initiating a work measurement program to give serious consideration to use of the computer for report preparation.

Types of work center reports.--Comparisons of actual performance versus standard performance may be made in these different ways: (1) the total performance of the entire work center as a group may be compiled, (2) performance may be calculated by groups of positions within the work center, or (3) performance may be calculated for each individual employee within the work center. Each type of report has certain attendant advantages and disadvantages.

The major advantages of a group report for the total work center are (1) it is relatively easy to prepare, (2) it requires less preparation time than the other types of reports, (3) it normally involves comparatively less data collection time and effort, and (4) it is a good indicator of overall work center performance.<sup>128</sup>

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<sup>127</sup>Banks B, K, and V prepare reports by computer.

<sup>128</sup>Advantages of group reporting were determined by analyzing report formats, data collection requirements, and preparation procedures and comparing them with similar actions required for preparation of individual performance reports.

The major disadvantage of a group report is that it fails to provide detailed information which can be used to identify poor performers, reward high performers, or pinpoint responsibility for inaccurate volume reporting.<sup>129</sup>

In comparison with group performance reporting, an individual performance reporting system, by supplying detailed information on each employee's accomplishments, offers the following advantages: (1) it provides a basis for awarding merit raises to outstanding performers, (2) it provides a basis for determining which employees to promote, (3) it provides the supervisor with productivity trends on each employee--thus he can evaluate the individual's progress in learning the job and he can likewise identify those individuals who are in need of greater supervisory assistance, (4) it protects the individual employee in that it provides the supervisor with an objective rather than subjective means of evaluation, (5) it pinpoints the responsibility for incorrect reporting, and (6) it provides a good indicator of overall work center performance through summation of individual performances.<sup>130</sup> In general, users of the individual reporting system indicate that it gives the supervisor a much more refined management tool than other reporting systems.

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<sup>129</sup>Confidential interview with official of bank Y.

<sup>130</sup>Advantages of individual reporting were developed from information supplied by banks K, T, and W.

However, individual reporting is not without its disadvantages.<sup>131</sup> Some of the most important of these are (1) the time required for reporting, (2) the cost of reporting, (3) the relatively large amount of paperwork which must be handled, (4) disruption of the employee's work routine, particularly, if he must keep track of more than a small number of work activities.

Situated between the extremes of total group reporting and individual reporting is reporting by positions. Where this approach is used, performance is indicated by job classifications. For example, in the collateral and accounting section of one bank's petroleum department, performance is shown for each of the following measured positions: bookkeeper, teller, and secretary. In each instance, more than one employee occupies each position.

Performance reporting by position may offer the following advantages: (1) it can be used to construct a good indicator of overall work center performance, (2) it requires less reporting and preparation effort than does the individual report, (3) it shows a supervisor those areas in his work center which need attention, and (4) it serves to identify by positions, the responsibility for inaccurate reporting.<sup>132</sup>

Among the disadvantages of the position performance report, the most prominent appears to be that such a report

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<sup>131</sup>See Chapter V.

<sup>132</sup>Advantages and disadvantages of reporting by position were derived by comparing this system with group and individual reporting.

fails to provide detailed information for evaluating and rewarding individual performance. While this type of report gives the supervisor more detail than a group report, it does not offer the amount of detail provided by the individual report.

The type of performance report chosen by a particular bank should depend upon the uses planned for the reported data. Where staff control is the basic purpose of work measurement, group reporting may be entirely satisfactory. Where salary administration, evaluation of training efforts and standard costs are included in the work measurement objectives, a detailed individual performance report would seem to be required.

Frequency of work center reports.--In actual practice, work center performance reports may be produced at various time intervals. As shown in Chapter IV, the two most common reporting periods for commercial banks are one month and one week.

There may be several factors in favor of monthly reporting. First, it is more economical to produce a single monthly report than it is to produce weekly reports. Second, for many work centers, a normal work cycle is one month; thus, a monthly report reflects a complete work cycle. Third, where staffing is the only consideration, a monthly report provides data at a relatively frequent interval.

On the other hand, a monthly report may lack some degree of timeliness and, therefore, afford a work center supervisor a somewhat less effective control tool.<sup>133</sup> Situations requiring immediate corrective action may not be detected until the situation has become more serious through the passage of time.

Proponents of a weekly performance report point out that having work measurement information available on this basis allows a supervisor to take corrective action on problems before they become serious.<sup>134</sup> Variations also tend to stand out more because they are not averaged out over a lengthy period of time.

The biggest drawbacks to weekly performance reporting appear to be (1) increased cost of report preparation due to increased frequency of issuance, (2) increased data collection and reporting time, and (3) because a week is not a normal work cycle for many banking operations, over-emphasis on variables which tend to average out over the work cycle.

In determining the proper performance reporting period each bank must decide for itself which frequency offers the greatest advantages in achieving the objectives that have been established for work measurement. Where data is needed and used on a frequent basis, the reporting system should provide the data at more frequent intervals. Where data is

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<sup>133</sup>Payne and Swett, op. cit., p. 86.

<sup>134</sup>Ibid.

not needed or used on a frequent basis, the reporting period should encompass a longer time frame.

Reports for middle and top management.--Work measurement reporting should, ideally, adhere to the well-known pyramid of reports concept.<sup>135</sup> The most detailed reports should go to the work center supervisor. Successively higher levels of management should receive successively less and less detailed information. For example, at the department or division level, the middle manager may only need to know the overall performance of each of the sections comprising his department. At the level of top management, performance by departments or divisions of the bank may well be all that is required.<sup>136</sup> However, in designing reports for submission to middle and top management, both groups should be consulted as to the amount of detail they require from the performance reports.

Auditing work center reports.--To assure the accuracy of data submitted by reporting individuals or by the total work center, definite auditing procedures should be established. These procedures should be incorporated into the

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<sup>135</sup>Littlefield and Rachel, op. cit., p. 95.

<sup>136</sup>Grillo and Berg, op. cit., p. 141, indicate that reports submitted to top management should permit a quick determination of the performance of various functional areas.

supervisor's work measurement manual and the work measurement analyst's manual.<sup>137</sup>

Because of his intimate knowledge of work center operations, the primary responsibility for assuring reporting accuracy should fall upon the work center supervisor. Where an individual reporting system is utilized, the supervisor should be required to check the data inputs submitted by each employee before submitting such data to the work measurement section. The supervisor's audit of the data should basically be one of verification of the reasonableness of the reported data.

Once data has been submitted to the work measurement group, a cursory check of the data should be made by the analyst to spot any obvious reporting errors missed by the work center supervisor.<sup>138</sup> When errors are detected, the supervisor should be immediately notified so that corrections can be made. After the work center performance report has been prepared, the analyst should go over the report and note any areas where volume data or performances appear to be out of line with normal expectations. These differences should be resolved with the work center supervisor before the performance reports are issued.

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<sup>137</sup>Manuals in use by banks J, K, O, and S specify that the supervisor perform an audit of reported work center data.

<sup>138</sup>This procedure is followed by banks A, G, K, M, P, and R.

In some cases, it may be desirable for the work measurement section to advise the work center supervisor, in memorandum form, of the number and types of reporting errors detected by the analyst.<sup>139</sup> This practice would alert the supervisor to areas requiring his special attention.

#### Using Work Measurement Reports

The uses which can be made of work measurement data have been discussed in other chapters as well as in previous sections of the present chapter; therefore, specific uses which can be made of reported performance information by different levels of management will be considered at this point only briefly in order to show how each level of management may use work measurement reports for improved planning and control.

Supervisors.--Much of the information contained in the work measurement performance report is intended to be of greatest benefit to the work center supervisor. Depending upon the actual amount of detail shown in the report, a work center supervisor can use the performance report to (1) determine when to request additions to staff, (2) determine when to reallocate existing manpower among assigned tasks, (3) determine when to request overtime hours or part-time assistance, (4) prepare work center expense budgets,

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<sup>139</sup>This procedure is used by bank M.



(5) compare employee performance, evaluate training effectiveness, and determine which employees need special supervisory assistance, (6) improve production scheduling and work flow within the center, (7) determine the need for improving existing methods or replacing present equipment, (8) facilitate awarding of merit increases or identify candidates for promotion, and (9) establish individual or group performance goals.<sup>140</sup>

Middle management.--At the department or division level, a middle manager can use work measurement performance reports to: (1) make adjustments to present work center staffing levels, (2) plan for future staffing needs, (3) determine unit or functional costs for each work center, (4) determine costs of performing new or additional services, (5) compare performance between work centers and evaluate supervisors, (6) award salary increases to supervisors whose work centers perform above standard, (7) determine the need for improved procedures or new facilities and equipment, and (8) establish performance goals for the work center.<sup>141</sup>

Top management.--Executive level management of a commercial bank can use work measurement performance reports to

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<sup>140</sup>This list of uses is based on material presented in Chapter III.

<sup>141</sup>This list of uses is based on material presented in Chapter III.

(1) make adjustments to current staff by reallocating excess personnel from a department where they are not needed to one where they are needed, (2) plan for future staffing needs, (3) determine present functional costs, (4) evaluate feasibility of performing new services, (5) compare divisional performance and evaluate middle managers, (6) assign salary increases and determine candidates for promotion, and (7) establish departmental performance goals.<sup>142</sup>

#### Maintenance of Work Measurement Standards

To be of utmost benefit to a bank, work measurement standards must be accurate. As methods, procedures, and equipment change it is necessary to revise the originally established standards. To assure that standards changes are accomplished systematically, a definite maintenance procedure should be established and adequate staff provided for accomplishing the maintenance function.

General maintenance procedure.--Some indication of the need for revising standards may be determined through the monthly audit of performance reports by the work measurement analyst. Unusually high or low performances may signal this need. Such extraordinary performance figures should be investigated to determine their cause and ascertain if standards should be adjusted. When revision is needed, it should be made as expeditiously as possible

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<sup>142</sup>This list of uses is based on material presented in Chapter III.

Provision should also be made for a work center supervisor to request restudy of some work activity or of the entire work center. Despite the amount of care exercised in establishing standards initially, it is always possible that some task was overlooked or some key job elements omitted. These omissions might not show up until performance reports are prepared on a regular basis. When this happens, the work center supervisor should be allowed to request restudy. However, in providing for restudy requests, the supervisor should be required to give reasonable justification for his request.

Any changes in methods or procedures which affect work center standards should immediately be brought to the attention of the work measurement group. Provision should be made so that changes instituted by the systems and procedures group are automatically communicated to the work measurement section.<sup>143</sup> Work center supervisors should also be required to notify the work measurement people of any changes implemented in the work center without assistance from systems and procedures personnel. By keeping the work measurement group informed of all changes, the impact of such changes on work standards can be quickly evaluated and appropriate revisions made as rapidly as possible.

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<sup>143</sup>In bank B all procedural changes are sent, on a daily basis, to the work measurement group where they are evaluated for possible impact on existing standards.

Staff required for maintenance.--The exact size of the staff required for maintenance of standards will depend upon the rapidity of changes in methods, in procedures, and in equipment as well as top management's willingness to commit financial resources to the maintenance function. Based upon the experience of several of the surveyed banks as well as that of a major consultant, the ratio of analysts to covered staff required for performing the maintenance function may run between one analyst for every three hundred covered employees to one analyst for every five hundred covered employees.<sup>144</sup>

It is important that the maintenance function not be underestimated, either in terms of necessity or in terms of staff required. Continued effective use of work measurement information requires accurate standards. To provide such standards necessitates continuous review and updating on the part of the work measurement group.

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<sup>144</sup>See Chapter IV. Payne and Swett, op. cit., p. 51, cite a maintenance ratio of between 200-400 employees under standards to each work measurement analyst. The results of the survey of commercial banks would seem to indicate that a maintenance ratio of 1:200 is too low.

## CHAPTER VII

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

#### Summary

From its modest beginning in 1781 with the chartering of the Bank of North America, the American banking system has developed into a strong and viable system of almost 14,000 commercial banking institutions.

Since the end of World War II, a number of important changes or developments have taken place in commercial banking. Among the most significant of these are increased competition and expansion of banking services. The impact of these two developments can easily be seen from an examination of the trends in bank operating ratios and numbers of branch facilities. For all Federal Reserve member banks, net current earnings as a per cent of total earnings declined from 39.7 in 1945 to 24.4 in 1967. While the earnings ratio was falling, the existing number of branch offices was climbing rapidly: from 3,947 in 1945 to 18,425 by June 30, 1968.

As expense ratios increased, profit margins declined, the deposit mix shifted, and the number of branch facilities increased, many commercial bankers recognized the need for better management tools. As a result, expense accounting,

branch performance control, and work measurement programs began to be instituted in commercial banks.

The advent of work measurement programs in commercial banks corresponds generally to the trends in branch office expansion and profit margin declension. Slightly over ninety per cent of the banks identified by the present research as having work measurement programs initiated their programs during the 1960's, the period of the squeeze on profits. The remainder of the banks, all of which are branch banks, began their work measurement programs prior to the decade of the profit squeeze. Indications are that these branch banks initiated their programs to achieve some type of control over decentralized operations. Those banks beginning programs in the 1960's did so in order to control costs.

Defined in its broadest sense, work measurement is a means of establishing an equitable relationship between work volume. Generally, any type of work that is relatively routine and consistent in content can be measured. Long applied in the factory, work measurement did not enjoy wide application in commercial banking or other office situations until relatively recently. This delay in application was due primarily to the feeling that office work was characterized by special features which made its measurement difficult. Despite difficulties in measuring bank office work, work measurement is being applied to many types of bank activities.

Once established, work measurement standards provide a basis for determining manpower requirements for ascertaining costs, for comparing performances, and for improving operating methods and procedures.

Among the best known techniques for establishing work measurement standards are historical records, short interval scheduling, self-logging, wrist watch time study, work sampling, stopwatch time study, and predetermined time systems. Each of these techniques has certain inherent advantages and disadvantages. The particular technique used on any given occasion depends upon the work being measured, the type of standard being set, the objectives of the measurement, funds available for measurement, and management policy regarding use or non-use of specific techniques.

In setting accurate standards, care must be taken to adjust observed times to normal times, as well as to allow appropriate time increments for rest, delay, and personal needs of the worker.

The questionnaire survey portion of this research identified 107 banks having some form of work measurement program. These institutions employ more than 272,000 people, of whom around 42 per cent are currently under standards. Planned future coverage will increase the per cent of the total work force covered to better than 60 per cent

Work measurement programs in commercial banks are currently staffed at an approximate ratio of one analyst to

every 200 people to be included in eventual standards coverage. Efforts of the work measurement analysts are supported by clerical personnel at a ratio of one support clerk for every five analysts.

Work measurement coverage has touched almost every functional area within commercial banking. However, the more routine or repetitive the function is, the more likely it is to be subjected to measurement.

Work measurement objectives in commercial banks are generally of a limited nature with particular emphasis on staff-cost control. In a number of cases, work measurement goals are not committed to writing before the start of the program.

Various policy guidelines may be adopted by different banks, but one policy that is almost universal in banking is that no employee will be terminated as a direct result of the work measurement program.

Within commercial banks, work measurement programs are generally located in the controller's division or the operations division.

Most banks starting work measurement programs employ the services of a consultant in order to provide the necessary training for analysts and to give the program a boost at the start. Banks generally consider around three consulting firms before making a selection; however, a number of banks do not consider more than one firm. The two most



widely used consulting firms are Bruce Payne and Paul Mulligan, both of which rely upon predetermined time systems as the basic technique of work measurement.

On a weighted average basis, almost sixty per cent of the work measurement analysts employed by the surveyed banks come to the program from inside the bank. Among the most prominent characteristics or qualifications sought in analysts are analytical ability, human relations facility, intelligence, creativity, and self-motivation.

Generally, banks give their analysts a combination of classroom and on-the-job training. The two most common classroom training periods are four weeks and two weeks. Over fifty-six per cent of the banks provide their analysts six or more months of training on the job.

In attempting to orient the bank work force to the objectives, policies, etc., of the program prior to implementation, the most intensive efforts are generally aimed at top managers and first line supervisors. The most commonly used method of orientation is a group meeting.

Once a work center has been chosen for study, the general procedure for analysis is as follows: the department head is contacted, the analysts meet with the work center supervisor, the program is further explained to the employees of the work center, the activities performed are studied in detail, improvements in methods and procedures are made, and data collection procedures are implemented.

While better than twenty-seven per cent of the survey respondents use only one technique for measuring work, most banks use a combination of techniques. The technique used most often and to a greater extent than any other is some form of predetermined time system. Self-logging, work sampling, and stopwatch time study are also widely used, but not to the extent of predetermined times.

It is common practice to discuss the standards with the work center supervisor as they are being developed as well as after they have been developed. Most banks also require that the work center supervisor signify, in some fashion, his approval or concurrence after the standards have been established.

After standards have been set in an area, it is customary to issue a final report on the work measurement study of that area. This report usually contains a summary of study findings, a list of recommendations, and a detailed listing of the standards as well as any necessary supporting documentation.

On a continuing basis, the most commonly issued work measurement report is a performance report. This report compares actual manhour expenditures against manhours earned by producing at standard. The most common reporting period is one month; the second most common is one week.

Commercial banks have encountered a number of problems in their efforts to implement and operate work measurement

programs. Among the range of problems that have been experienced are the following: lack of top management commitment, insufficient communication of objectives, failure to adhere to stated policies, insufficient training for analysts, inadequate work force orientation, insufficient consideration of methods, procedures and quality levels prior to establishing standards, failure on the part of supervisors and managers to utilize fully and effectively the data provided by the work measurement program, and over-zealous use of work measurement by top management. It appears that the most critical problems experienced by commercial banks have been inadequate advance planning, inadequate commitment to work measurement by supervisors, middle managers, and top managers, insufficient or ineffective communication regarding program objectives, policies, and procedures, and ineffective use of work measurement information.

In order to alleviate many of the problems which commercial banks have encountered in work measurement, a generalized approach to planning, implementing, and operating work measurement programs is recommended. Banks initiating programs of this type should give careful consideration to the formulation of objectives, to the development of policies, and to the establishment of procedures. Careful attention should also be given to the need for employing outside assistance in order to implement the program.

Because the work measurement analyst is an important factor in the success of the program, it is necessary to select carefully and to train adequately the individuals who will occupy these positions.

Work measurement orientation efforts should begin as soon as top management has decided to implement the program. These efforts should be directed to all organization members, but especially to first-line supervisors. Supervisors should be thoroughly instructed in the use of data provided by the work measurement program. To be most effective, work measurement indoctrination should be conducted on a continuing basis.

Prior to the actual setting of standards in a work center, methods and procedures should be analyzed and improved. Also, process quality levels should be examined.

Because work measurement standards may be established through the use of several techniques, it is important that a bank give proper consideration to the factors which affect the selection of a work measurement technique--advantages and disadvantages of each technique, type of work being studied, and availability of funds for work measurement expenditure.

At the end of each study a final report should be prepared. This report should summarize the study findings, present recommendations, and offer detailed documentation in support of the findings and recommendations.

At the end of each study a final report should be prepared. This report should summarize the study findings, present recommendations, and offer detailed documentation in support of the findings and recommendations.

In order to make effective use of work measurement data, a periodic performance report should be prepared. This report can be designed to indicate performance by work center, by employee, or by groups of positions. Each bank should assess its own needs in order to determine the appropriate type of report and the appropriate reporting period.

To maintain the accuracy of the performance reports, periodic audits of the data should be made by the work center supervisor and the work measurement analyst.

### Conclusions

Based upon the findings from the study of the literature, from the questionnaire survey of commercial banks practicing work measurement, and from the series of interviews with banking officials operating or affected by work measurement programs, several conclusions may be made concerning work measurement in the banking industry. For clarity as well as conciseness, these conclusions are presented in terms of the following original research hypotheses which are enumerated in Chapter I.

1. Work measurement is potentially a valuable tool for planning and controlling bank operations. The data presented

in this paper strongly suggests that this hypothesis be accepted as valid. The material presented in Chapter II clearly indicates that work measurement can provide bank managers with a powerful planning and controlling device which can be used to ascertain a bank's manpower needs in current as well as future periods, to determine costs of present activities or proposed service offerings, to compare and evaluate the performances of employees, supervisors, or work centers, and to indicate the need for changes in current methods, procedures, equipment, or other facilities. Additional supporting evidence for accepting this hypothesis comes from the questionnaire survey. Table LIII in Chapter IV shows that commercial banks are using or plan to use work measurement information for a number of different purposes. While, as indicated previously, this table may overstate present usage of work measurement, it may also clearly indicate that bank managers recognize the potential for utilizing work measurement for a number of planning and controlling purposes. Further evidence of the dollars and cents value of work measurement comes from a series of interviews with banking officials. Bank O claims, as a direct result of the work measurement program, annual payroll savings of \$4.5 million; bank H claims total savings of around \$2 million since the inception of the work measurement program; and bank I reports total savings, in terms of cost avoidance as well as cost displacement, of \$1.8 million.

But the total value of a work measurement program cannot be measured in terms of dollar savings alone. One of its great potential benefits is providing bank managers with needed statistical information regarding bank operations. Apparently, therefore, banks have recognized some potential in work measurement. For example, officials of bank W see work measurement as a base upon which a multi-use data file leading to the development of an over-all management information system may be constructed. And to all this evidence the fact that commercial banks have been instituting work measurement programs at a rapid rate during the 1960's, and it becomes even more obvious that banks are beginning to recognize the potential value of work measurement. Therefore, the first hypothesis must be accepted as valid.

2. Because several techniques exist for establishing work measurement standards, a sound work measurement program does not depend upon the use of any particular technique. The data presented in this paper strongly suggests that this hypothesis be accepted as valid. The review of the literature presented in Chapter III supports the contention that no one best technique of work measurement exists in the abstract and that work measurement effectiveness depends upon more than the technique employed. Research also confirms that each technique of work measurement has certain inherent advantages as well as disadvantages. While some techniques may supply more refined or detailed information, each can be

used effectively. Additional evidence in support of the hypothesis that work measurement does not depend upon the use of any particular technique comes from the results of the questionnaire survey. Table XLIV depicted in Chapter IV reveals that each of the seven commonly used techniques of work measurement plays a role in the measurement of bank activities. Table XLVII in the same chapter also indicates that different banks use different techniques as major measurement methods. Some banks use predetermined time systems most of the time. Other banks use stopwatch time study as the major technique. Evidence from the series of interviews also strongly suggests that work measurement program effectiveness does not depend upon the use of any particular technique. Bank N used a predetermined time system, but the program went out of existence in a relatively short period of time. Bank O also used a form of predetermined time system and was able to achieve tremendous dollar savings. Bank P employed wrist watch time study as the major technique of measurement, and the officials of this bank were apparently pleased with the results produced by their work measurement program. Bank H used stopwatch time study as the major measurement method and was able to produce sizeable dollar savings. Thus, the evidence from the literature research, from the questionnaire survey, and from the series of interviews seems to indicate clearly that a successful work measurement program does not depend entirely upon the



use of any particular technique of measurement. Therefore, the second hypothesis must be accepted as valid.

3. Comprehensive management planning is required in order to gain the full benefits of work measurement. Evidence presented in this paper suggests that this hypothesis should be accepted as valid.

Preceding chapters indicate that work measurement is a technical and complex endeavor. Work measurement data may be used in several ways to accomplish different objectives. Work measurement requires many management policy decisions on subjects ranging from methods for achieving staff reductions to exemption of officers from measurement and to specifying appropriate allowances for rest and delay. Work measurement requires detailed specification of procedures relative to analysis of methods and procedures, to utilization of techniques, to collection of data, and to issuance of reports. Effective use of work measurement requires an understanding of, or appreciation for, the different techniques of measurement and a knowledge of when and how to apply them. Effective utilization of work measurement information requires that the program be integrated with other types of management programs. Because of the range of decisions which must be made and the breadth of plans which must be devised, little doubt exists that management must carefully formulate comprehensive work measurement plans if the program is to provide the fullest possible

benefit to the organization. Because of the complexities and technical intricacies involved, it is imperative that management determine in advance of program implementation the goals to be accomplished by work measurement, the policy frameworks necessary for guiding the program, and the procedures to be followed. All of these factors point to the necessity of comprehensive planning; therefore, the third hypothesis must be accepted as valid.

4. Commercial banks have not been totally successful in their work measurement efforts. The data collected through the questionnaire survey and the series of interviews with banking officials indicates that this hypothesis is valid. As previously related, there have been instances of complete program failure; for example, bank N. There have been other cases in which the work measurement program was inoperative; for example, bank U. In other instances work measurement standards were not implemented within certain functional areas; for example, banks J, K, and L. These examples of total and partial program failures clearly indicate that not all efforts at work measurement in the commercial banking industry have been successful. Lack of total success is also readily apparent from a consideration of the numerous problems which banks have encountered in their attempts to implement and operate programs. The limited use made of work measurement data by many first line supervisors or managers also suggests something less than

complete success for commercial banking's work measurement efforts. On the other hand, if work measurement is viewed simply as a means of reducing the numbers of employees on the payroll, then Table LXI in Chapter V suggests that these efforts have been less than totally successful--reductions have been less than five per cent of total staff for a group of sixty-eight banks. Taken together, the findings of this research reveal that work measurement in banking has been less than an unqualified success; therefore, the fourth hypothesis must be accepted as valid.

5. Part of the lack of total success in work measurement is attributable to a failure to plan adequately for the implementation and operation of the program. Data from the questionnaire survey and the series of interviews suggests that this hypothesis is valid. Table LIX shows that sixteen per cent of the survey respondents consider inadequate advance planning to be one of the basic causes of the problems experienced. Even without specific identification, inadequate advance planning can be inferred from the narrowness of work measurement objectives in many banks, from the failure to specify objectives in writing, from the absence of written policies or procedures, and from failure to orient adequately the work force to work measurement. In some cases it appears that banks, looking upon work measurement as a short-term, one time program, may not recognize the necessity for careful and precise advance planning. In other

cases where a consulting firm is retained, management appears to abdicate part of its planning responsibility to the consultant. Whatever the reason may be, the data presented in this paper strongly implies that inadequate advance planning is at least a partial cause of the lack of total success; therefore, the fifth hypothesis must be accepted as valid.

6. A generalized approach to planning for the implementation and operation of work measurement programs may be of benefit to commercial banks. Because banks have been less than totally successful in their work measurement endeavors and because part of this lack of complete success is attributable to inadequate advance planning, it may be concluded that a generalized approach to work measurement planning is needed. Consequently, the sixth hypothesis is accepted as being valid. Research data seems to indicate that the banking industry needs a generalized set of guidelines which acquaints bank managers with the wide-range of planning activities involved in work measurement, which emphasizes the important points that should be considered in initiating a program, and which provides a general framework for overall work measurement planning. Such a generalized approach could benefit banks initiating work measurement programs for the first time because it would focus attention on those elements of program development which other banks have found important or troublesome. Armed with a comprehensive set of work measurement guidelines, commercial banks implementing

work measurement programs would, therefore, be in a better position to avoid difficulties which other banks encountered. Also, there is reason to believe that a set of guidelines may be beneficial as an evaluation checklist for banks already engaged in work measurement. A set of guidelines would enable these banks to check their implementation efforts against a generalized plan for program establishment and thereby determine areas of deficiency in their efforts. Therefore, the sixth hypothesis is accepted as valid.

#### Implications for Further Research

Logically arising from the conclusions reached and the recommendations offered by this research are implications for additional research. The first and most obvious implication is the need for field testing, through actual application in one or more commercial banks, of the suggested generalized approach to work measurement. This field test could be accomplished in the following manner: (1) identify one or more banks not currently operating work measurement programs, but desiring to implement one, (2) persuade top managers of the selected banks to follow the suggested generalized approach in implementing their programs, (3) monitor the implementation to determine adherence to the generalized approach, (4) after the program has been in operation for a suitably long period of time, evaluate the implementation and operation efforts to determine the range and nature of problems experienced, (5) identify one

or more banks which implemented work measurement programs without using the suggested general approach, (6) evaluate the implementation efforts and determine the range and nature of problems experienced by banks not following the generalized approach, (7) compare the range and nature of problems experienced by banks adhering to the generalized approach with those not following it, and (8) ascertain if the generalized approach was able to reduce the range and nature of difficulties for those banks following it below that of the banks not following it. Conceivably, the type of field test suggested could take several years to complete, and because it is extremely difficult to apply strict laboratory type controls in the business world, the results could well be inconclusive. However, a test of this nature would seem to be in order as an additional research project.

A second implication for further research is the need to evaluate and modify specifically each phase or step suggested in the generalized approach. This type of evaluation could be accomplished by distributing copies of the generalized approach and a minutely detailed questionnaire to every bank identified by the present research as having a work measurement program. Results of this additional research could then be used to verify further the applicability or acceptability of the generalized approach and to affect modifications in its content.

A third implication for further research is the need to develop a generalized approach to work measurement programs for small banks. The generalized approach suggested by the present research is primarily intended for large commercial banks. While with certain modifications it should prove useful to smaller institutions, there does appear to be a need for a set of guidelines which deals specifically with implementation and operation of work measurement programs in small commercial banks.

A final implication for further research is the need for a more detailed and more comprehensive study of work measurement in banks. Specifically, a detailed examination of work measurement procedures would seem to be in order. The present research has concerned general practices and problems. This overall consideration should be followed by an in-depth study of specific practices and related problems.

APPENDIX

QUESTIONNAIRE SURVEY COVER LETTER

Dear

I am a doctoral candidate at North Texas State University. My dissertation concerns the development of a set of guidelines to assist commercial banks in the implementation and operation of work measurement programs. My investigation into this timely and important subject is being financed through a research grant from the Bank Administration Institute. Findings from this project will be made available through BAI.

As part of my research, I am conducting a detailed questionnaire survey of approximately two hundred banks throughout the country. The information gathered from this survey will be used as part of the factual foundation upon which work measurement guidelines will be constructed.

My questionnaire is enclosed with this letter. Would you be so kind as to share with me your bank's experiences in work measurement by completing the questionnaire and returning it in the pre-stamped envelope?

Incidentally, all information gathered in this survey will be handled in such a way as to protect the integrity and identity of the individual respondents. Any published results of the findings will be on a group basis. You will note that on the questionnaire your bank has been assigned a code number in order to additionally protect submitted data.

Your cooperation in this research will be greatly appreciated. Thank you for your time and consideration.

Sincerely,

Donald L. Caruth

Enclosures



COMMERCIAL BANK  
WORK MEASUREMENT SURVEY  
QUESTIONNAIRE

Bank Code: \_\_\_\_\_

1. Does your bank now have, does it plan to institute, or has it had previously, a formal work measurement program?  
Yes \_\_\_\_\_ No \_\_\_\_\_  
(If no, omit questions 2 through 45 and return questionnaire.)
2. When was your present work measurement program started? \_\_\_\_\_
3. How many analysts, including the section supervisor, are assigned to the work measurement program?  
Full Time \_\_\_\_\_ Part Time \_\_\_\_\_
4. How many secretarial or clerical support personnel are assigned to the work measurement program?  
Full Time \_\_\_\_\_ Part Time \_\_\_\_\_
5. What is the title of the highest ranking person among those counted in your response to question 3? \_\_\_\_\_
6. What is the title of the person to whom the supervisor of the work measurement program reports? \_\_\_\_\_
7. To which major department within the bank is the work measurement program assigned? \_\_\_\_\_
8. What is the size of your bank's total work force, including where applicable, all branch office personnel?  
Employees \_\_\_\_\_ Officers \_\_\_\_\_
9. How many employees and officers have at least some of their activities covered by work measurement standards?  
Employees \_\_\_\_\_ Officers \_\_\_\_\_
10. How many employees and officers not presently covered by work measurement standards do you plan to include in coverage in the foreseeable future? Employees \_\_\_\_\_ Officers \_\_\_\_\_
11. Does your bank, as a matter of policy, exempt from measurement:  
Supervisors? Yes \_\_\_\_\_ No \_\_\_\_\_  
Officers? Yes \_\_\_\_\_ No \_\_\_\_\_
12. If your bank is in a branch banking state, how many branches does it have? \_\_\_\_\_. How many of these branch offices are covered, to some extent, by work measurement standards? \_\_\_\_\_.
13. Did your bank employ a consultant to start the work measurement program? Yes \_\_\_\_\_ No \_\_\_\_\_. If yes, please indicate the firm used. \_\_\_\_\_.
14. If your answer to question 13 was yes, what, in your opinion, was the primary reason for your bank using a consultant? \_\_\_\_\_.
15. If your answer to question 13 was yes, how many consulting firms were considered? \_\_\_\_\_. On what basis was the selection of the firm employed made? \_\_\_\_\_.

16. Which of the following uses of work measurement data are actually made in your bank?
- Staff Reductions or Increases
  - Determine Future Manpower Needs
  - Justification of Overtime
  - Cost Standards
  - Pricing New Services
  - Expense Budget Preparation
  - Incentive Wages
  - Production Scheduling (within or Between Work Centers)
  - Performance Comparison (Between Work Centers)
  - Indication of Need for Methods Changes
  - Determine Need for Equipment and Other Facilities
  - Establishing Performance Objectives
  - Individual Employee Evaluation
  - Evaluation of Supervisors
  - Others (Specify) \_\_\_\_\_.
17. Do you prepare reports comparing actual time spent with the standard times for work centers? Yes \_\_\_ No \_\_\_. If yes, who prepares the report?
- Work Center Supervisor
  - Work Measurement Section
  - Other (Specify) \_\_\_\_\_.
18. What is the frequency of this report? \_\_\_\_\_.
18. What is the approximate number of staff reductions which have been achieved as a result of work measurement?
- Employees \_\_\_\_\_ Supervisors \_\_\_\_\_ Officers \_\_\_\_\_
19. Were these staff reductions achieved through:
- Discharge or Layoff
  - Normal Turnover
  - Transfer
  - Retirement
  - Other (Explain) \_\_\_\_\_.
20. What is the approximate number of time standards which have been established by your work measurement program? \_\_\_\_\_.
21. Approximately how many analyst man-months were expended in setting the standards enumerated in response to question 20? \_\_\_\_\_.
22. If your bank is in a branch banking state, do you:
- Develop common standards for application to central office as well as branch office functions?
  - Develop separate standards for branch offices?
  - Develop a combination of common and separate branch office standards?

23. Please check each function of your bank in which you have applied or plan to apply work measurement.
- Proof and Transit
  - Lock Box
  - Bookkeeping
  - Key Punching
  - Tabulating Machine Operations
  - Computer Operating
  - Tellers (Indicate Type) \_\_\_\_\_.
  - Check Filing
  - Print Shop
  - Mail Room
  - Statement Rendering
  - Stenography
  - Credit Investigation
  - Auditing
  - Loan and Discount Tellers
  - General Ledger Accounting
  - Charge Card Operations
  - Safe Deposit
  - Collections Department
  - Instalment Loans (Specify Areas Covered) \_\_\_\_\_.
  - Trust Department (Specify Areas Covered) \_\_\_\_\_.
  - Others (Specify Areas Covered) \_\_\_\_\_.
24. Which of the following work measurement techniques does your bank use? If more than one technique is used, indicate the approximate percentage use of each technique.
- Stop watch Time Study \_\_\_\_\_ %
  - Wrist Watch Time Study \_\_\_\_\_ %
  - Work Sampling \_\_\_\_\_ %
  - Self-Log Sheets \_\_\_\_\_ %
  - Short Interval Scheduling \_\_\_\_\_ %
  - Historical Records of Past Performance \_\_\_\_\_ %
  - Predetermined Time System \_\_\_\_\_ %
  - If predetermined, which one? \_\_\_\_\_.
25. If your bank uses a technique other than predetermined times, is a leveling factor applied to the raw time values obtained? Yes \_\_\_\_\_ No \_\_\_\_\_ If yes, is it: Pace Rating \_\_\_\_\_; Skill and Effort Rating \_\_\_\_\_; Other \_\_\_\_\_ (Explain) \_\_\_\_\_.
26. To what extent is methods and procedures analysis conducted before establishing work measurement standards?
- Detailed methods study conducted.
  - Obviously deficient methods corrected, but no detailed study conducted.
  - No methods study, assume present methods are acceptable.
27. In setting standards, what attention is given to the quality level of the work for which standards are being set?

- Assume quality level acceptable.  
 Establish specific standards of quality.  
 Build error correction time into time standards.  
 Provide for error correction as non-standard time.  
 No consideration given.
28. Are standards discussed with the affected work center supervisor as a part of the process of setting standards?  
 Yes \_\_\_\_\_ No \_\_\_\_\_.
29. After standards are set by the analyst, does he discuss them with the affected work center supervisor?  
 Yes \_\_\_\_\_ No \_\_\_\_\_.
30. Is the approval of the work center supervisor required before the work measurement standards are put into effect? Yes \_\_\_\_\_ No \_\_\_\_\_.
31. Who selects the bank departments which will be studied?  
 Work Measurement Supervisor  
 Work Measurement Analyst  
 Department heads request initial studies  
 Department heads request restudies  
 Consulting firm  
 Others (Explain) \_\_\_\_\_.
32. Do you have written policies and procedures to guide the operation of your work measurement program?  
 Yes \_\_\_\_\_ No \_\_\_\_\_.
33. At the outset of your program, did management establish, in writing, a specific set of goals or objectives for the work measurement program? Yes \_\_\_\_\_ No \_\_\_\_\_.
34. At the start of your work measurement program, how much effort was made to explain the program to the following groups?
- |                        | <u>Intensive</u> | <u>Moderate</u> | <u>Superficial</u> | <u>No Effort</u> |
|------------------------|------------------|-----------------|--------------------|------------------|
| Employees              | _____            | _____           | _____              | _____            |
| First line Supervisors | _____            | _____           | _____              | _____            |
| Middle Management      | _____            | _____           | _____              | _____            |
| Top Management         | _____            | _____           | _____              | _____            |
35. If you answered question 34 in the affirmative, indicate how this effort was made.
- |                        | <u>Letter or Memo</u> | <u>Group Meetings</u> | <u>Training Courses</u> | <u>Seminars</u> |
|------------------------|-----------------------|-----------------------|-------------------------|-----------------|
| Employees              | _____                 | _____                 | _____                   | _____           |
| First Line Supervisors | _____                 | _____                 | _____                   | _____           |
| Middle Management      | _____                 | _____                 | _____                   | _____           |
| Top Management         | _____                 | _____                 | _____                   | _____           |
36. What methods do you use for selecting work measurement analysts?  
 Aptitude Tests  
 Interviews  
 Other (Explain) \_\_\_\_\_.
37. What particular qualities or characteristics do you look for in a work measurement analyst? \_\_\_\_\_.

38. Do your analysts come from: Inside the bank \_\_\_\_\_. Outside the bank \_\_\_\_\_. From both \_\_\_\_\_. If they come from both, what is the approximate percentage from: Inside \_\_\_\_%; Outside \_\_\_\_%.
39. What kind and how much training is given to your work measurement analysts? \_\_\_\_\_.
40. What do you consider to be the three most critical problems encountered during the installation and operation of your work measurement program? a. \_\_\_\_\_.  
b. \_\_\_\_\_ c. \_\_\_\_\_.
41. What do you think was the basic reason for the problems encountered?  
 Wrong measurement technique  
 Inadequate advance planning  
 Inadequate top management support  
 Inadequate middle management support  
 Opposition from employees  
 Opposition from supervisors  
 Opposition from middle management  
 Inadequate indoctrination for supervisors and employees  
 Inadequate indoctrination for middle and top management  
 Other (Explain) \_\_\_\_\_.
42. What opinion do you think the following groups have of the work measurement program and the results it has produced?
- |                   | Excel-<br>lent | Good  | Fair  | Neutral | Disap-<br>pointed | Nega-<br>tive |
|-------------------|----------------|-------|-------|---------|-------------------|---------------|
| Employees         | _____          | _____ | _____ | _____   | _____             | _____         |
| Supervisors       | _____          | _____ | _____ | _____   | _____             | _____         |
| Middle Management | _____          | _____ | _____ | _____   | _____             | _____         |
| Top Management    | _____          | _____ | _____ | _____   | _____             | _____         |
43. With respect to your work measurement program, is it your management's current plan to:  
 Expand and extend coverage  
 Maintain present coverage only  
 Lessen coverage  
 Discontinue program
44. To what extent do middle and lower managers participate in setting performance goals for their respective departments or units? \_\_\_\_\_.  
 What work measurement information do they utilize in setting these goals? \_\_\_\_\_.
45. Title of person completing this questionnaire: \_\_\_\_\_.

Please return completed questionnaire to:

DONALD L. CARUTH  
 DIVISION OF MANAGEMENT  
 SCHOOL OF BUSINESS ADMINISTRATION  
 NORTH TEXAS STATE UNIVERSITY  
 DENTON, TEXAS

TABLE LXII

## TITLE OF PERSON COMPLETING QUESTIONNAIRE

(107 banks replying to this particular question)

Title of Person	Number of Responses	Per Cent of Responses
Vice president or higher	23	21.49
Assistant vice president	15	14.02
Assistant cashier	7	6.54
Assistant controller	7	6.54
Systems, methods, or work measurement officer	9	8.41
Other officers	17	15.89
Manager or supervisor	15	14.02
Analyst	4	3.74
All others	10	9.35
Total	107	100.00

TABLE LXIII

## NUMBER OF STAFF REDUCTIONS ACHIEVED THROUGH WORK MEASUREMENT

(75 banks replying to this particular question)

Personnel Category	Number of Reductions	Per Cent of Total Reductions
Employees	7,028	98.01
Supervisors	89	1.24
Officers	54	.75
Total	7,171	100.00

TABLE LXIV

NUMBER OF STANDARDS ESTABLISHED BY  
WORK MEASUREMENT PROGRAMS

Number of Banks Replying	Total Number of Standards Established
80. . . . .	196,337

TABLE LXV

NUMBER OF MAN-MONTHS EXPENDED IN ESTABLISHING  
WORK MEASUREMENT STANDARDS

Number of Banks Replying	Number of Man- Months Expended
80. . . . .	14,485

TABLE LXVI

COMPARISON OF NUMBER OF STANDARDS SET AND  
MAN-MONTHS EXPENDED IN SETTING STANDARDS

(72 banks replying to this  
particular question)\*

Number of Standards Set	Number of Man- Months Expended
191,476. . . . .	13,777

\*Only banks replying to questions twenty and twenty-one on the questionnaire are included in this tabulation.

TABLE LXVII

EXTENT TO WHICH MIDDLE AND LOWER MANAGERS  
PARTICIPATE IN SETTING PERFORMANCE GOALS

(97 banks replying to this  
particular question)

Extent of Participation	Number of Responses	Per Cent of Responses
Complete	7	7.22
Considerable	22	22.68
Moderate	29	29.90
Very Little	11	11.34
None	28	28.86
Total	97	100.00

TABLE LXVIII

WORK MEASUREMENT INFORMATION UTILIZED BY  
MANAGERS IN SETTING PERFORMANCE GOALS

(64 banks replying to this  
particular question)

Information Used	Number of Responses	Per Cent of Responses
Monthly or weekly performance reports	31	48.44
Staffing requirements	5	7.81
Time standards	5	7.81
Other	12	18.75
Very little	3	4.69
None	8	12.50
Total	64	100.00



## BASIC INTERVIEW GUIDE

1. How did your bank first become interested in work measurement?
2. Who was responsible for initiating this interest?
3. After your bank became interested in work measurement, to whom was the responsibility for organizing and implementing the program delegated?
4. At the start of your program, what specific goals did top management establish for the work measurement program?
5. What policies did top management establish to guide the operation of the work measurement program?
6. Were these goals and policies stated in writing? Were they communicated to managers, supervisors, and employees?
7. Did your bank retain a consultant to implement the program? If so, what do you think were the basic reasons for using a consultant?
8. If a consultant was not retained, what do you think were the basic reasons for not using this type of assistance?
9. How many consulting firms were considered? What was the basis for selecting the firm retained?
10. How do you select your work measurement analysts? What characteristics do you seek in an analyst?
11. What is the nature and extent of the training given to your analysts?
12. Which work measurement techniques do you use? Why do you use these techniques?
13. Which activities or functional areas have been measured? Which activities or functional areas do you plan to measure?
14. Where is your work measurement program located within the organization?
15. Describe the procedure used in a typical work measurement study. To what extent does the procedure used in measuring central office activities differ from that followed in measuring branch office activities?
16. How is the information provided by work measurement being used in your bank? What future uses of work measurement information do you anticipate?
17. What problems were encountered during the installation of your work measurement program?
18. What problems have been experienced during the day-to-day operation of the work measurement program?
19. What do you think were the basic reasons for the problems encountered?
20. Do you think that there is any relationship between the work measurement techniques used in a program and the success of the program?

21. Do you think that there is any relationship between the success of a work measurement program and the organizational location of the work measurement function?
22. Based upon your bank's experience in work measurement, what do you think are some of the factors that contribute to the success of a work measurement program?

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