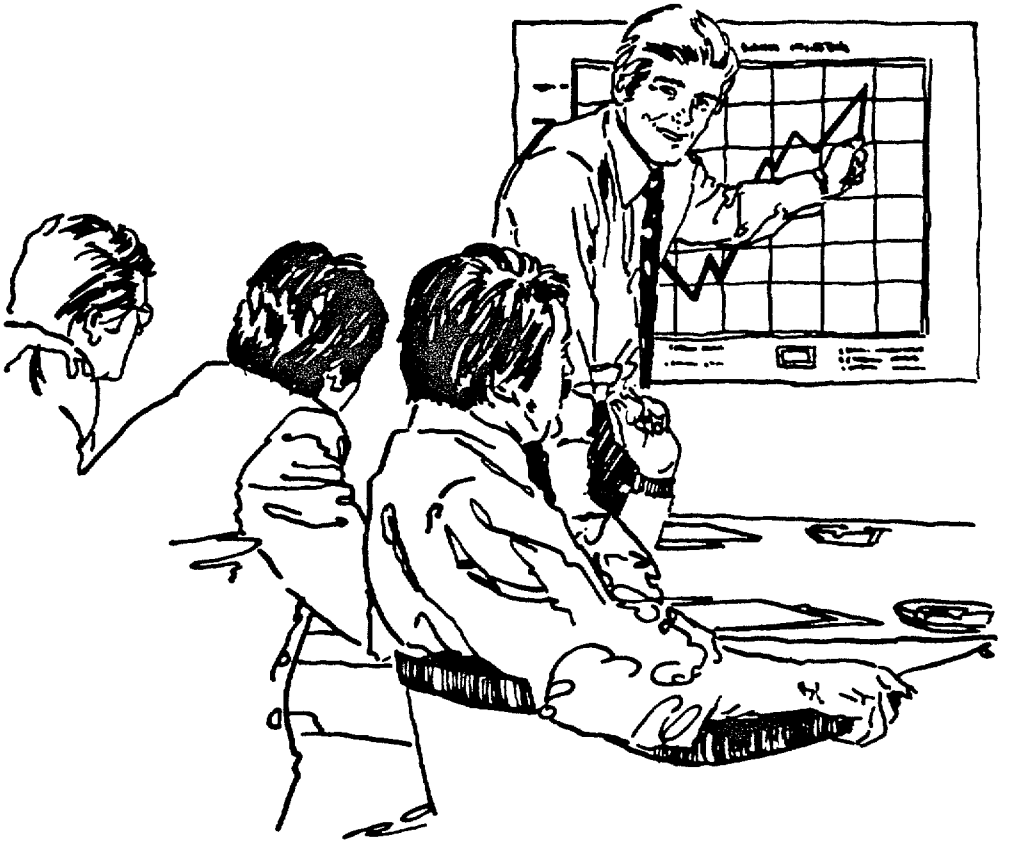
AUDIT STANDARDS
SUPPLEMENT
SERIES NO. 8

090877

HOW AUDITORS DEVELOP FINDINGS

CASE STUDY

INCREASING THE PRODUCTIVITY OF CITY WATER METER READERS



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AUDIT STANDARDS
SUPPLEMENT
SERIES NO. 8

Case Study

HOW AUDITORS DEVELOP FINDINGS

Increasing the Productivity

of City Water Meter Readers

BY

THE COMPTROLLER GENERAL

OF THE UNITED STATES

FOREWORD

This booklet is a supplement to "Standards for Audit of Government Organizations, Programs, Activities & Functions" issued by the Comptroller General in June 1972. It has two purposes--(1) to show how auditing can contribute to improved economy and efficiency and thus save money for the organizations being audited, and (2) to show how auditors may obtain specific criteria to gauge the efficiency of existing practices.

An audit finding can be divided into what we call building blocks. These are shown on page vi. This is a useful technique to demonstrate the type of information that needs to be accumulated for economy and efficiency and program results audits, to present a convincing case that has all the information a lay reader needs to understand the finding and its importance. The illustrative case shown here is based on an audit by a State audit organization. We believe it demonstrates very well how an audit of this type can produce great savings and thus pay for itself many times over.

We have not identified the State auditor or the organization audited to keep undue attention and potential criticism from the organization and its employees.

Under the Comptroller General's standards, a broad-scope audit includes the three following elements.

1. Financial and compliance--determines whether (1) financial operations are properly conducted, (2) the financial reports of an audited entity are presented fairly, and (3) the entity has complied with applicable laws and regulations.

2. Economy and efficiency--determines whether the entity is managing or using its resources, such as personnel, property, and space, economically and efficiently and if not, why. Any inadequacies in management information systems, administrative procedures, or organizational structure should be shown.

3. Program results--determines whether (1) the desired results or benefits are being achieved, (2) the objectives established by the legislature or other authorizing body are

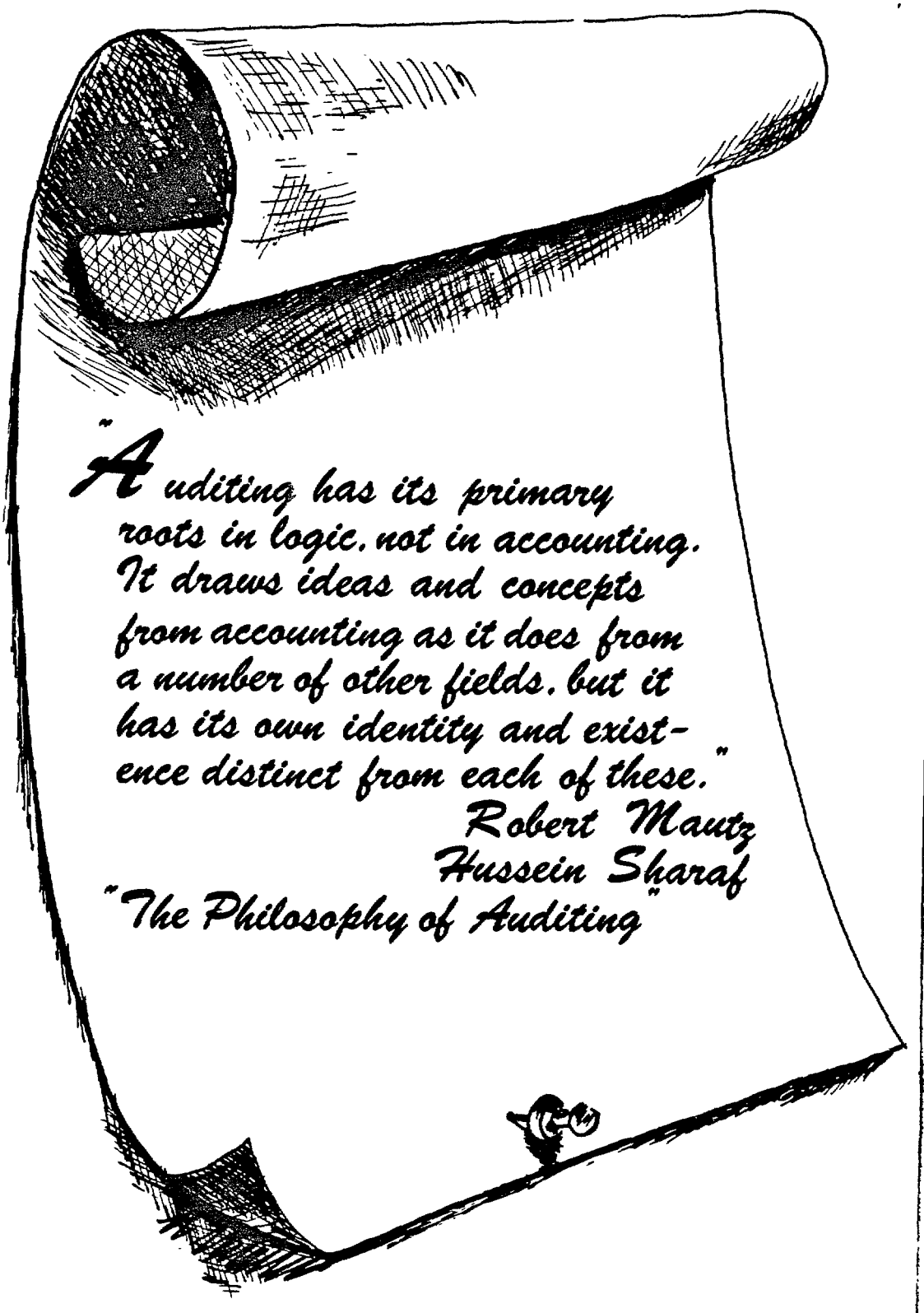
being met, and (3) the agency has considered more economical alternatives which might yield desired results.

For simplicity, the illustration used in this booklet deals only with the second element.

The auditors in the situation described in the booklet faced a problem frequently encountered in audits. The organization under audit had no real criteria for evaluating the operation's efficiency. As is often the case the auditors turned to other organizations performing similar functions to find out what their efficiency rate was to see if that rate could be applied. It worked. By using the other organizations' data, they were able to demonstrate that the efficiency of the organization under audit could be improved. This technique is one frequently used in economy and efficiency audits when good measurement criteria is not being used by management.

This case study also demonstrates how broad-scope auditing can be applied at the city level. Much of the existing literature on this subject relates to the national or State level and the auditing techniques applied to city problems are not always as clear as they are in this case.

Comptroller General
of the United States



"Auditing has its primary roots in logic, not in accounting. It draws ideas and concepts from accounting as it does from a number of other fields, but it has its own identity and existence distinct from each of these."

Robert Mautz
Hussein Sharaf
"The Philosophy of Auditing"

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BUILDING BLOCKS OF AN AUDIT FINDING

Building blocks	*Definition*
Authority	Legal and administrative authority to conduct the activity under audit.
Goal	What the activity under audit is trying to achieve.
Condition	Extent to which goals are being achieved.
Effect	Beneficial results from achieving goals or the loss in dollars or in effectiveness caused by failing to meet goals.
Procedures or practices	Established ways for doing things to attain the prescribed goals.
Underlying cause	Reasons why procedures or practices were effective if goals are being achieved or the reasons why they were ineffective if goals are not being achieved.
Conclusion	Reasons why auditors believe changes in procedures or practices are necessary to achieve desired goals.
Recommendation	Steps that should be taken to make the changes needed to achieve desired goals.

INTRODUCTION

The findings resulting from economy and efficiency and program results audits have certain common structural characteristics which can be regarded as the building blocks from which a fully developed audit finding is made. These are shown and defined on the adjacent page. Recognition of these characteristics can help auditors perform more efficiently by enabling them to restrict work to essential matters. Understanding these characteristics will also enable them to outline their report quickly and thus help them to write it faster and more logically.

These building block characteristics are generally recognized as constituting the basic elements of an audit finding; however, different terminology is sometimes used to describe them. The terms and definitions used here were gleaned from several sources--primarily from General Accounting Office publications.

In the following pages a detailed explanation is given of each building block; its application is then illustrated by showing what information was actually collected and reported by the State auditors. To facilitate direct visual comparison, the characteristics of each building block are shown successively on the left-hand page and corresponding illustrative information from the auditors' report is shown on the adjacent right-hand page.

AUTHORITY

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

One of the first steps in any audit is finding out who authorized the program or activity being audited and the organizational arrangements for carrying out the various responsibilities. This authority may come from a law, a resolution from an authoritative body, a directive from management, or another similar source. In government it will usually be in written form, but it may be oral. Research of appropriate legislative history will frequently be required to identify what was authorized or intended to be accomplished.

The auditor needs the authorization data in order to evaluate whether the audited program or activity is being conducted within the bounds of the given authority. Information on the organizational arrangements and management responsibilities for carrying out this authority is needed to decide how and where to conduct the audit, and to evaluate if the arrangements will get the job done in an efficient and effective manner.

When reporting audit findings, it is important to describe the nature and size of the activity or program being audited and the organizational arrangements for carrying out the authority. It is also essential for the auditor to disclose the scope of the audit. This will help the reader to better understand and gain a proper perspective of the findings in relation to the total program.

ILLUSTRATION – FROM AUDITORS REPORT

The city charter provides that the Environmental Protection Administration shall have charge and control over operating the city water supply and sewage system. Under its jurisdiction the Department of Water Resources is responsible for carrying out the related administrative functions. Within the Department of Water Resources, the Bureau of Water Register manages all activities incident to using and selling water from the city supply system and enforcing the sewer-rent law.

To accomplish its assigned duties, the Bureau of Water Register has an office in each of the city's administrative units. Each unit office is divided into clerical and inspection divisions under a Chief Inspector. The clerical division deals with matters relating to the water billings. The inspection division is concerned with reading meters and other field investigations. During the year under review the Bureau of Water Register was authorized to have 456 full-time employees and had budgeted $3.7 million for personal services. Billings in the previous year for water use and sewer rental were $151.6 million.

The State auditor's examination was concentrated at two of the unit offices. Supplementary checks and inquiries were made at the Bureau headquarters and other appropriate unit offices. One audit objective (the one being highlighted here) was to determine whether meter readings for water billings could be performed more efficiently.

GOAL

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

■The goal of the program or activity being audited is a basic element of an audit finding. Since the other elements of a finding deal with achieving the goals, the whole finding is linked together by the goals. Accordingly, it is imperative that the goal(s) be identified before detailed audit work begins.

Goals for an economy and efficiency audit are generally implied. It is usually expected that an organization will practice economy and efficiency in doing the job and achieving its other objectives. Since conservation in using authorized resources becomes a goal in itself, the auditors must identify a valid standard or criteria for measuring whether the resources used were reasonable in relation to the job to be done.

Where the organization has developed and/or is using a performance standard to measure efficiency, auditors need to evaluate if it is appropriate and reasonable. If in the auditors judgment the standard or criteria being used is not appropriate or reasonable, or if one is not being used, the auditors should try to develop a standard. Such a standard should be discussed with agency management to assess its validity and reasonableness.

In reporting on this type of finding, the auditor should clearly disclose the standard or criteria used to assess efficiency and economy. In this regard, the auditor must assume the burden and obligation for convincing the reader of the validity and reasonableness of the criterion or standard used in supporting a finding.

ILLUSTRATION – FROM AUDITORS REPORT

Since the audit was concerned with the efficiency and economy of conducting meter readings, the goal was to read enough meters each day to keep costs at a reasonable level.

The Bureau of Water Register had translated this goal into numerical terms by establishing a city-wide standard that provides for reading an average of 42 meters a day. This standard was developed in the early 1950s based on available statistics of work experience. At the time of this audit it had not been updated.

To evaluate the reasonableness of the Bureau's standard, the State auditors contacted three private utility companies providing water, gas, and electricity, to obtain information concerning their meter reading procedures and their meter readers' productivity. The auditors also accompanied two city meter inspectors on tours and made unannounced field observations to establish the time inspectors actually took to complete their tours.

CONDITION

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

■The term "condition" is used to denote "what is"--it describes what an auditor observes as to the extent specified goals are being achieved. "Observe" is used in a broad sense to include what the auditor discerns through physical observation, scheduling, analysis, and other techniques. The auditor may find one of five situations.

■Goals are being achieved satisfactorily.

■Goals are not being achieved.

■Goals are being achieved partially.

■Goals have not been quantified and/or standards have not been developed.

■Goals are inappropriate.

The first step in developing a finding is taken when the auditor identifies that a goal or standard has not been established, or that a difference exists between what is being achieved and what should or could be.

The statement of condition is the heart of the auditor's report because it tells the reader whether or not management is achieving its goals. If the goals are not being achieved, the condition alerts the reader to the changes needed to bring performance more in line with program goals. Where goals are inappropriate or have not been quantified, the condition points out the need for a revised goal and perhaps for changes in procedures to achieve it, or of the need for a goal or standard to measure performance.

ILLUSTRATION – FROM AUDITORS REPORT

The performance level of the city's water meter inspectors was less than one-half that of a private water supply company involved in almost identical work. Even though the city's meter inspectors were extremely inefficient when measured by external standards, the information available to management indicated that the meter inspectors were reasonably efficient because they were generally achieving the prescribed city-wide productivity standard. The staff of the private water company made an average of 100 readings a day compared with 37 a day for the city meter inspectors. The gas and electric companies reported an even higher average of readings a day and all three private companies reported a lower rate of nonreadings due to locked buildings. This is important because one way of speeding up a meter reading tour is to report several locked buildings.

The city meter reading statistics were somewhat overstated. When inspectors are assigned in pairs, one meter reading is counted as two. The distortion was not significant at one city unit audited. But at the other, 25 percent of the readings for a 6-month period preceeding the audit were team readings. This distortion is progressive since use of team readings has increased each year. Team reading has increased because meter inspectors are apprehensive about going into certain areas alone.

The auditors' field observations showed that some city meter inspectors were completing their assigned work in approximately one-half the normal workday and then apparently going home. The auditors were told by the occupant of the last scheduled stop of one inspector that the inspector had left at 1:30 p.m., not 4:00 p.m., as he had reported. In other checks the auditors were told that inspectors had reached their last stop before 1:00 p.m., and as early as 11:30 a.m. The auditors also noted that meter inspectors' performance reports were sometimes incomplete and erroneous.

EFFECT

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

Effect represents the end result of the condition the auditor finds, and can be either beneficial or undesirable. Effect is the element used to convince management that its policies are working out well and its goals are being achieved, or that its goals are not being achieved and something needs to be done.

In economy and efficiency findings, effect is usually measured in dollars. For example, agency X spent $67,000 for items it did not need. Effect is the convincer and as such, is indispensable in an audit finding. If the effect is not shown in the report or if it is insignificant, the odds are not good that management will take the action needed to correct the condition.

ILLUSTRATION – FROM AUDITORS REPORT

The financial consequences of the low productivity of the city water meter inspectors are considerable. For example, if the meter inspection staff's productivity at one of the city units audited was to be doubled regarding meter reading, about 7 to 8 staff-years of labor costs (approximately $70,000 to $80,000 annually) could be saved in that unit alone. This time could be used either to reduce staff or to redeploy employees to understaffed work sections. Similar savings for all the city units could produce cost savings (including payroll fringe costs) of approximately $400,000 annually.

PROCEDURES OR PRACTICES

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

■Procedures or practices are the established ways for doing things to attain the prescribed goals. They go hand-in-glove with the organizational arrangements for getting the job done. Procedures are guides that are clearly spelled out by management, usually in writing. Practices are the way things are done. In some cases only practices exist because the way things are intended to be done has not been put into writing.

The auditors' job is to determine:

- ■whether the established procedures and practices are consistent with and will lead to achieving the desired goals;
- ■if established procedures are being followed (the most common weakness is that they are not); and
- ■whether the procedures and practices are complete–if they include all the steps necessary to get the job done economically and well.

Identifying the procedures and practices is very important because it is not possible to determine why the goals are not being achieved without knowing what is supposed to be done and what is being done. Accordingly, knowledge of the procedures and practices is essential to determine the underlying cause and to formulate a sound recommendation for corrective action.

Reading about procedures and practices is not the most interesting part of a management audit. Thus, the audit report should include only the pertinent details. If the report does not discuss what procedures have been established and what practices are being followed, the reader will undoubtedly have a hard time understanding why things went wrong and being convinced that the auditors' recommendations are reasonable and, if acted on, will alleviate the problem.

ILLUSTRATION 1 FROM AUDITORS REPORT

In accordance with Bureau practices, city meter inspectors report to their unit office in the morning to pick up their assigned work for that day. They generally leave the office within 15 minutes. From that time on they are basically on their own, subject only to a nominal degree of direct field supervision. After completing the assigned work, meter inspectors are permitted to go home without reporting back to the office. They are, however, required to prepare a daily performance report of their activities showing, among other things, the number of premises visited, meters read, arrival time at the first premises, and the time of leaving the last.

Reports comparing actual performance figures on meters read, with the citywide standard, were provided to the Bureau's top management for measuring the city's meter inspectors' efficiency. The reports were prepared monthly and were compiled into quarterly summaries.

Unit supervisors (at the two offices audited) were unaware of the standards and were not provided with reports for measuring their meter inspectors' performance. Instead, unit supervisors gaged productivity on the basis of experience, but they had no reference by which to gage the validity of their experience.

UNDERLYING CAUSE

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

■The underlying cause is the element of the audit finding that explains the reason things have gone awry. As such it forms the basis for a sound recommendation because it is what must be corrected to prevent recurrence of the adverse effects which the auditor is reporting. An unsatisfactory condition in economy and efficiency audits will usually result from procedural weaknesses.

Developing the underlying cause requires a good bit of judgment by the auditor. He must pursue the matter through the chain of events until he can identify what it is that is causing the problem and can make a practical recommendation for correcting it. At this point the specific procedure or practice which is inappropriate, incomplete, or not being followed should have been identified.

If it is found that the procedure is inappropriate, the auditors must clearly demonstrate that the alternative procedure(s) they are recommending will reduce waste or get the job done more efficiently. A good way of doing this is to compare the procedures of the audited activity with those of another organization doing similar work more efficiently and economically.

ILLUSTRATION — FROM AUDITORS REPORT

The Bureau of Water Register's system for measuring labor productivity was poorly developed, with standards geared to inefficient performance. Further, the system's monitoring was not adequate to insure factual reporting. Inadequate employee supervision also contributed to relatively low employee performance.

The city-wide standard had not been updated to reflect reasonable performance levels and did not reflect individual unit characteristics that would affect performance norms. For example, one of the units audited was largely commercial with little travel while the other was primarily residential spread over a larger area. The auditors were told by representatives from the city's largest private utility company that its performance standards were set on a zone basis. In view of the individual unit characteristics a city-wide standard is not a valid and meaningful management tool.

Field supervision of city meter inspectors was practically nonexistent. The auditors observed that unit supervisors remained primarily in the office doing clerical work and answering telephone inquiries. In contrast, the private gas utility operating in the same city areas closely supervised field performance. Moreover, the two city units audited had more supervisors in relation to the number of meter inspectors than the gas utility company.

The auditors also observed at one unit audited that the meter readers entered a time for their last reading on the daily performance report as required by Bureau instructions but that the times varied greatly from the times the auditors established for their departures. At the other unit, contrary to the Bureau's instructions, no time was entered on the required reports.

CONCLUSION

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

■The conclusion should persuade management of the need for a change in procedures or practices to bring about desired goals. It should be supported by, and not be a recitation of, the facts cited previously in the report. Usually, it is appropriate to point out that the situation is correctable and that the cost of correcting it is not as great as the benefits to be obtained. If the auditor is satisfied with the corrective actions already taken, this should be made clear.

ILLUSTRATION – FROM AUDITORS REPORT

These findings led the auditors to conclude that the Bureau's productivity standards were unrealistically low and that large savings ($400,000 a year) could be obtained through better supervision of field activities and adoption of more realistic performance standards. The greater number of readings (nearly three times the meters read by city inspectors) obtained by the private water supply company used for comparison is due to meager city productivity standards and the lack of supervision and control over the city inspectors rather than to any great difference in the work performed. These findings also point out the need for intensive field supervision and supplementary checks to identify falsified time reporting by inspectors.

RECOMMENDATION

EXPLANATION – BUILDING BLOCK CHARACTERISTICS

Recommendations represent the auditor's considered opinion and reflect his or her knowledge of and judgment on the matter being audited. They should be designed to rectify conditions needing improvement--to correct the basic causes of the deficiencies and to obtain recovery or other adjustment of specific instances identified.

Reports should include appropriate recommendations or suggested alternative courses of action whenever the audit work indicates that legislative or management action is needed to correct deficiencies. To be of maximum usefulness, the recommendations should be positive in nature, as specific as possible, and identify who is expected to act on them. If the recommended action is one the auditor believes should be acted on promptly, the consequences of delay (continued loss or waste of money) should be clearly stated.

ILLUSTRATION – FROM AUDITORS REPORT

■ The Bureau of Water Register should:

1. Revise its productivity standards to reflect realistic performance expectations, considering the conditions in each subdivision.

■ Each unit's Chief Inspector should take appropriate action to insure that:

1. Supervisory personnel spend more of their time in the field with inspectors and conduct unannounced observations of inspectors' performance. Supervisors should also be required to file weekly reports of their field activities.

2. Appropriate disciplinary action is initiated against those employees submitting false performance reports.

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