

**THE PRESENT TECHNICAL
CONDITION OF THE STEEL
INDUSTRY OF THE UNITED
STATES, PP. 345-421**

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The Present Technical Condition of the Steel Industry of the United States, pp. 345-421 by
Phineas Barnes

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PHINEAS BARNES

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UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL DIRECTOR

THE PRESENT TECHNICAL CONDITION

OF THE

STEEL INDUSTRY

OF THE

UNITED STATES

BY

PHINEAS BARNES



WASHINGTON
GOVERNMENT PRINTING OFFICE
1885

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial reporting and compliance with regulatory requirements. The text notes that incomplete or inaccurate records can lead to significant legal and financial consequences for the organization.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the importance of using reliable and validated data sources to ensure the accuracy and integrity of the information. The text also discusses the challenges associated with data collection, such as ensuring data privacy and security, and the need for robust data management systems to handle large volumes of information.

3. The third part of the document focuses on the analysis and interpretation of the collected data. It describes the various statistical and analytical techniques used to identify trends, patterns, and correlations within the data. The text emphasizes the importance of using appropriate statistical methods and interpreting the results in the context of the specific research objectives and the underlying data characteristics.

4. The fourth part of the document discusses the implications and applications of the findings. It highlights the practical value of the research and the potential for using the insights gained to inform decision-making and improve organizational performance. The text also notes the importance of communicating the findings effectively to the relevant stakeholders and ensuring that the information is used responsibly and ethically.

5. The final part of the document provides a summary of the key findings and conclusions. It reiterates the importance of accurate record-keeping, reliable data collection, and thorough analysis in achieving the research objectives. The text concludes by emphasizing the need for ongoing monitoring and evaluation to ensure the continued relevance and effectiveness of the data collection and analysis process.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in the context of public administration and financial management. The text highlights that records should be maintained in a clear, organized, and accessible manner, ensuring that all relevant information is captured and preserved for future reference.

2. The second part of the document addresses the challenges associated with record-keeping, such as the volume of data, the complexity of information, and the risk of data loss or corruption. It suggests that implementing robust data management systems and protocols can help mitigate these risks and ensure the integrity and security of the records. Additionally, the text stresses the importance of regular audits and reviews to verify the accuracy and completeness of the data.

3. The third part of the document focuses on the role of technology in enhancing record-keeping processes. It discusses how digital tools and software solutions can streamline data collection, storage, and retrieval, making the process more efficient and less prone to human error. The text also mentions the importance of ensuring that these technologies are secure and compliant with relevant regulations and standards.

4. The fourth part of the document discusses the importance of training and education for staff involved in record-keeping. It emphasizes that personnel should be equipped with the necessary skills and knowledge to handle data effectively and responsibly. This includes understanding the importance of data privacy, security, and the proper use of record-keeping systems. Regular training and updates are recommended to keep staff informed of the latest best practices and technological advancements.

5. The fifth part of the document concludes by summarizing the key points and reiterating the overall importance of maintaining accurate and reliable records. It states that effective record-keeping is not only a legal requirement but also a fundamental aspect of good governance and organizational performance. The text encourages all stakeholders to take a proactive approach to record-keeping, ensuring that all data is captured, stored, and managed in a way that supports the organization's goals and objectives.

LETTER OF TRANSMITTAL.

UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF MINING STATISTICS,
Washington, D. C., July 25, 1885.

SIR: I have the honor to transmit herewith a paper by Mr. Phineas Barnes on The Present Technical Condition of the Steel Industry of the United States. This paper is supplementary to the report of this division entitled "Mineral Resources of the United States, 1883 and 1884." Mr. Barnes, in this essay, gives a general view of existing conditions and practice, which is of special interest at the present moment in view of the rapidly advancing strides made by the important industry under discussion.

Very respectfully, your obedient servant,

ALBERT WILLIAMS, JR.,
Geologist in Charge.

Hon. J. W. POWELL,
Director United States Geological Survey.

The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial reporting. The text outlines the various methods used to collect and analyze data, highlighting the need for consistency and precision in all measurements.

The second section details the specific procedures followed during the study, including the selection of participants and the design of the experiments. It describes how the data was collected over a period of several weeks, ensuring that all conditions were controlled and standardized. The results of the initial analysis are presented, showing a clear trend in the data that supports the hypotheses being tested.

The final part of the document discusses the implications of the findings and suggests areas for further research. It concludes that the study has provided valuable insights into the relationship between the variables being studied, and that these findings have important practical applications. The authors express their gratitude to the funding agencies and the research team for their support and contributions throughout the project.

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THE PRESENT TECHNICAL CONDITION OF THE STEEL INDUSTRY OF THE UNITED STATES.

By PHINEAS BARNES.

INTRODUCTORY.

Any general statements concerning the technology of the steel industry of the United States should comprise a description of the raw materials, including fuels, which are used in connection with it; the processes of manufacture to which these materials are subjected, including the machinery and apparatus; and also the uses for which the metal is employed, including the tests by which its fitness for these purposes is determined and actually measured. Such general statements if extended sufficiently to cover only an approximate detail would necessarily be lengthy, and at best could do only scant justice to the painstaking labor and study which have been expended upon the development of the manufacture of steel at every stage of its progress and during many years past. It is needful therefore in this paper that the simplest outlines only of the whole advance in this department of metallurgy should be sketched, and that the endless detail, however important, of the remote past should be neglected in favor of the costly efforts to promote the art at the present day by a reduction of the cost of manufacture and the widening of the fields of the actual use of the metal. It should also be clearly understood that wide differences exist, some being apparently irreconcilable, between men of extended and trustworthy experience, in respect to materials, methods, and tests of finished product. Hence any brief description must be confined in large part to the useful details upon which agreement is general, and must seek to indicate the limits, more or less wide, between which these opposing views are held. In the important matter of analyses of materials, at various degrees of advancement, no general attempt can be made to strike an average of a series that shall be useful as compared with the statement of one or more analyses which shall present, either singly or in comparison, the current determination in actual business of some analyst of trustworthy reputation. It should be remembered that the managers or the melters of steel works are governed in their use of their materials not alone by the apparent indication of this or that analysis, but also by the preference which may for the moment be based