

**INSTRUCTIONAL MULTI - PURPOSE BAND SAW MACHINE:
A TECHNICAL FEASIBILITY STUDY**

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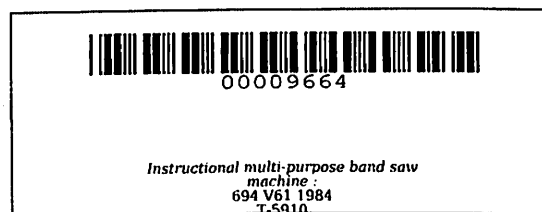
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✓ INSTRUCTIONAL MULTI-PURPOSE BAND SAW MACHINE:
A TECHNICAL FEASIBILITY STUDY

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ABSTRACT

The main purpose of this study "Instructional Multi-Purpose Band Saw Machine: A Technical Feasibility Study" was to find out the feasibility to design, construct, and demonstrate the use of a band saw machine for instructional purposes in carpentry utilizing mostly wooden parts and a minimum of metal parts. Specifically, it aims to:

1. design, and construct an instructional multi-purpose band saw machine.
2. demonstrate how it operates or functions.
3. test the functionality of the constructed machine.

It is hoped that this study would help solve the problem of inadequacy of instructional materials in most schools.

The instructional multi-purpose band saw machine is made up of eight major parts, namely: 1) Framework, 2) Tension and Tilting Mechanism, 3) Table, 4) Wheel, 5) Saw Guides, 6) Guards, 7) Pulley, 8) Motor. The bill of materials, tools and equipment needed, detailed drawing of the parts, and procedure for the construction were included for easy understanding of the study. The time element involved in the construction was given with the aid of Gantt Chart and Network Logic (CPM diagram). It took thirty four days to finish the instructional multi-

purpose band saw machine, with a total cost of ₱9,280.26 including labor and materials.

The instructional multi-purpose band saw machine was tried out using the suggested operations such as cutting curves, multiple cutting, etc. to determine the defects. The identified defects were corrected to further improve the functionality of the machine.

For its capabilities, the machine is generally used for cutting outside outline of the work. Capabilities are measured in terms of wheel diameter. For this machine, the maximum horizontal cut is 26 cm. and the maximum vertical cut is 18 cm.

The findings show that instructional multi-purpose band saw machine can be designed and constructed out of locally available materials. All the suggested operations in this study such as straight sawing, cutting curves, cutting circles, cutting combination curves, cutting circular rails, and multiple cutting were performed using the instructional multi-purpose band saw machine. Satisfactory results manifested that the instructional multi-purpose band saw machine is functional.

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Chapter I

INTRODUCTION

A. Origin and Justification of the Study:

One of the components of the delivery system in education is the equipment needed for instruction. Its importance is greatly emphasized in vocational institutions where acquirement of skills is of great significance. However, based on studies conducted, the vocational schools are defficient on this aspect of the educational delivery system. This is borne out by the dissertation of Salas (1973).

In his dissertation, "Vocational-Technical Curricula: A Proposal" he concluded that the shop facilities of the schools are inadequate and many of them are obsolete and that supplies and materials are lacking.

The Mariano Marcos State University-Institute of Technology is one of the institutions where lack of equipment is a problem. The difficulty in meeting this problem lies in the cost of equipment which are mostly imported. Today the cost of equipment is so prohibitive that many schools can not afford to acquire these items.

Experts in the field of educational technology believe that the best solution to this problem is the improvisation of equipment making use of locally available and inexpensive materials. At this time of economic