DOCUMENT RESUME

ED 107 990 CE 004 203

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TITLE	An Analysis of the Typewriting Service Specialist Occupation.
INSTITUTION	Ohio State Dept. of Education, Columbus. Div. of Vocational Education.; Ohio State Univ., Columbus. Trade and Industrial Education Instructional Materials Lab.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	[75]
NOTE	57p.; For related documents, see CE 004 160-202, CE 004 204-206, CE 004 263-268, and CE 004 425-427
EDRS PRICE	MF-$0.76 HC-$3.32 PLUS POSTAGE
DESCRIPTORS	Communication Skills; *Equipment Maintenance; *Job Analysis; Knowledge Level; *Machine Repairmen; *Occupational Information; Office Machines; Safety; Service Occupations; Skill Analysis; Skill Development; Skilled Occupations; *Task Analysis; Task Performance; Work Attitudes

ABSTRACT

The general purpose of the occupational analysis is to provide workable, basic information dealing with the many and varied duties performed in the typewriter servicing occupation. The document opens with a brief introduction followed by a job description. The bulk of the document is presented in table form. Three duties are broken down into a number of tasks and for each task a two-page table is presented, showing on the first page: tools, equipment, materials, objects acted upon; performance knowledge (related also to decisions, cues and errors); safety--hazard; and on the second page: science; math--number systems; and communications (performance modes, examples, and skills and concepts). The duties are: maintaining and repairing typewriters, operating a parts department, and managing and supervising a service department. (BP)

Occupational Analysis

TYPEWRITER SERVICE SPECIALIST

Instructional Materials Laboratory
Trade and Industrial Education
The Ohio State University
5236

AN ANALYSIS OF THE TYPEWRITER SERVICING OCCUPATION

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Occupational Analysis
E.P.D.A. Sub Project 73402
June 1, 1973 to December 30, 1974
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The Instructional Materials Laboratory
Trade and Industrial Education
The Ohio State University

"The activity which is the subject of this report was supported in whole or in part by the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred."

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FOREWORD

The occupational analysis project was conducted by The Instructional Materials Laboratory, Trade and Industrial Education, The Ohio State University in conjunction with the State Department of Education, Division of Vocational Education pursuant to a grant from the U.S. Office of Education.

The Occupational Analysis project was proposed and conducted to train vocational educators in the techniques of making a comprehensive occupational analysis. Instructors were selected from Agriculture, Business, Distributive, Home Economics and Trade and Industrial Education to gain experience in developing analysis documents for sixty-one different occupations. Representatives from Business, Industry, Medicine, and Education were involved with the vocational instructors in conducting the analysis process.

The project was conducted in three phases. Phase one involved the planning and development of the project strategies. The analysis process was based on sound principles of learning and behavior. Phase two was the identification, selection and orientation of all participants. The training and workshop sessions constituted the third phase. Two-week workshops were held during which teams of vocational instructors conducted an analysis of the occupations in which they had employment experience. The instructors were assisted by both occupational consultants and subject matter specialists.

The project resulted in producing one hundred two trained vocational instructors capable of conducting and assisting in a comprehensive analysis of various occupations. Occupational analysis data were generated for sixty-one occupations. The analysis included a statement of the various tasks performed in each occupation. For each task the following items were identified: tools and equipment; procedural knowledge; safety knowledge; concepts and skills of mathematics, science and communication needed for successful performance in the occupation. The analysis data provided a basis for generating instructional materials, course outlines, student performance objectives, criterion measures as well as identifying specific supporting skills and knowledge in the academic subject areas.

PREFACE

The goal of this document is to describe the various tasks required of a typewriter service specialist. The scope of the analysis includes the tasks performed in both the customer's office and the repair shop. The duties are limited to maintaining and repairing typewriters and managing a repair shop. The analysis follows the tasks in the order in which they would generally be performed.

ACKNOWLEDGMENT

We wish to acknowledge the valuable assistance rendered by the following subject matter specialists. They provided input to the vocational instructors in identifying related skills and concepts of each respective subject matter area and served as training assistants in the analysis process during the two-week workshops.

Rollin M. Barber, Psychology
The Ohio State University
Columbus, Ohio

Jodi Beittel, Communications
Columbus, Ohio

Diana L. Buckeye, Mathematics
University of Michigan
Avon Lake, Ohio

Rick Fien, Chemistry
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David Porteous, Communications
University of Connecticut
Colchester, Connecticut

James A. Sherlock, Communications
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Jim VanArsdall, Mathematics
Worthington High School
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Lillian Yontz, Biology
The Ohio State University
Caldwell, Ohio

Acknowledgment is extended to the following I.M.L. staff members for their role in conducting the workshops; editing, revising, proofing and typing the analyses.

Faith Justice	Research Associate
Sheila Nelson	Administrative Assistant
Marsha Opritza	Editorial Consultant
Rita Buccilla	Typist
Peg Bushelman	Typist
Carol Fausnaugh	Typist
Mindy Fausnaugh	Typist
Rita Hastings	Typist
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Patti Nye	Typist
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JOB DESCRIPTION

The participant endeavored in this book to describe the duties and tasks required of the personnel in a typewriter repair service department. The analysis covered the jobs of an in-shop service person, an outside service person, the parts manager, and the service manager. It must be noted that in a small service department, any one or all of these jobs may be combined.

Before becoming a qualified service person, it is necessary to serve an apprenticeship, the length of time depending on the rate of progress. During the apprenticeship, the nomenclature of parts must be learned plus the duties of an outside and in-shop service person. It is also customary to attend service training schools when experience and learning warrant it.

The duties of an in-shop service person are those of repairing a typewriter and factory rebuilding of a typewriter.

The duties of an outside service person are those of preventative maintenance and the repairing of a typewriter.

The duty of the parts manager is that of operating an efficient parts department.

The duties of a service manager include all those of an in-shop service person, an outside service person, the parts manager, plus that of management and supervision.

Duty A Maintaining and Repairing Typewriters

1 Meet with customer and locate typewriter
2 Diagnose the problem on a typewriter
3 Estimate cost on the repairing of a typewriter
4 Clean a typewriter by hand
5 Chemically clean a typewriter
6 Disassemble a typewriter according to sequence
7 Remove and replace worn parts on a typewriter
8 Lubricate a typewriter
9 Assemble a typewriter according to sequence
10 Adjust a typewriter according to sequence
11 Inspect the finished work on a typewriter
12 Paint and refinish a typewriter
13 Record necessary data on each typewriter repair

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(TASK STATEMENT) MEET WITH CUSTOMER AND LOCATE TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Business name card Identification card	Identify self and company State purpose of call Sign check-in roster, if required Comply with safety procedures (wearing hard hat, safety glasses, etc.) Locate typewriter Inquire as to nature of problem	Comply whth company policy Physical injury Poor customer relations
DECISIONS	**CUES**	**ERRORS**

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(TASK STATEMENT) MEET WITH CUSTOMER AND LOCATE TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Communicate pride in establishment Self-confidence Self-respect Self-reliance	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Writing Speaking	Signing roster Delivering oral introductions	Penmanship Persuasion and sales technique Gestures Dress Poise Clarity expression

(TASK STATEMENT) DIAGNOSE THE PROBLEM ON A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges	Remove cover plates Recognize specific malfunctions using logical sequence of operation and process of elimination Isolate problems	Proper procedure in checking wire terminals Proper handling of tools Shock [electr] Body injury
DECISIONS	**CUES**	**ERRORS**
Determine if parts are broken or mal-adjusted Determine the degree of wear on parts	Malfunctions Abnormal noise Binds No operation	Repeated breakdowns Lost time Bad customer relations

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ASK STATEMENT) DIAGNOSE THE PROBLEM ON A TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Decision making Accurate analysis	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Reading	Isolate problem Determine malfunctions	Description of mechanisms Process instructions
Feeling	Deteriorated grease Detection of roughness and binds	Tactile discrimination
Smelling	Heat buildup	Odor discrimination
Listening	Abnormal noise	Noise discrimination

(TASK STATEMENT) ESTIMATE COST ON THE REPAIRING OF A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges Auxiliary Part and Supplies High mortality parts [minimum of four parts each] Gallon of cleaning fluid (1) Ribbons (24) Pack of invoice orders (1) Portable air compressor (1) Adding machines	Remove cover plates Inspect machine Locate the problem Determine parts needed Fix the cost of those parts Determine number of hours needed for repair Determine if machine can be repaired in customer's office or must be taken into the shop Write total cost of repair, including tax, on estimate sheet Obtain customer's approval	

DECISIONS	CUES	ERRORS
Determine availability of parts Determine cost of parts Determine extent of repair needed	Age of machine Type and amount of usage	Inaccurate estimate Inability to obtain customer's approval

(ASK STATEMENT) ESTIMATE COST ON THE REPAIRING OF A TYPEWRITER

SCIENCE

Behavioral Science

Observation
Concentration
Mental alertness
Mental clarity

MATH – NUMBER SYSTEMS

Positive Rationals [decimals]
Fundamental Operations [calculation]
Addition, subtraction, and multiplication algorithm
Use of Numbers [without calculation]
Counting and Coding [parts-for cost reference]
Basic Arithmetic Skills and Concepts [discounts, etc.]
Changing % to fractions and fractions to %
Finding a % of a no. and what % one no. is of another
Rounding off decimals and whole numbers
Basic Measurement Skills and Concepts
Measurement: non-geometric
time
money
speed [example: feet per minute, R.P.M., etc.]
Reading: interpreting tables
[parts, cost, catalog, sales tax]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing	Inspecting machine	Visual analysis
Listening	Inspecting machine Obtaining customer's approval	Noise discrimination Recognize opinions
Touching	Inspecting machine	Tactile discrimination
Writing	Writing estimate	Penmanship Spelling
Speaking	Obtaining customer's approval	Terminology/General Vocabulary Clarity of expression Persuasion and sales technique

(TASK STATEMENT) CLEAN A TYPEWRITER BY HAND

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges Auxiliary Part and Supplies High mortality parts [minimum of four parts each] Gallon of cleaning fluid (1) Ribbons (24) Pack of invoice orders (1) Portable air compressor (1) Adding machines	Remove cover plates Blow out Brush out Wipe dirty residue off chrome parts Resurface rubber Install cover plates after adjusting sequence	Safety Keep chemicals in safe container Wipe amonia Wipe chemicals off parts Hazard Damaged desk tops Rust
DECISIONS	**CUES**	**ERRORS**
Determine the type of chemicals to use	Concentration of dirt Type of dirt	Sub-standard cleaning

TASK STATEMENT) CLEAN A TYPEWRITER BY HAND

SCIENCE	MATH – NUMBER SYSTEMS
Physical Chemical reaction Cleaning solution and solvent To grease plastic parts To paint Chemical polymerization of grease and oil Behavioral Attention Observation Concentration Mental clarity	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing Smelling	Cleanliness of machine Clean smell	Visual analysis Odor discrimination

(TASK STATEMENT) CHEMICALLY CLEAN A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes, solvents, rags Special wrenches and tools Alignment equipment Repair invoices Special gauges Standard Shop Equipment Cleaning machines and tanks Solvents and chemicals Abrasives Lathe Lights-work benches-elec. outlets Baking ovens Air compressor Welding equipment Hand tools Parts inventory Technical materials Storage ½'' electric drill	Blow out machine Clean type heads Clean off nicotine Treat dirt spots Put machine in cleaning machine Clean cover plates Resurface rubber Remove machine from cleaning machine Drip dry or blow dry Dip machine in rinse and remove Submerse in oil tank-drip dry and blow off Grease parts Assemble	Safety Safety hoods Rubber gloves Tool procedures Good wiring No chemical spills on floors Gentle movement of machine No horse play Flash point of chemicals Proper ratio of chemicals Proper usages of chemicals Hazard Chemicals in eye Skin rash Broken skin-cuts and bruises Electrical shock Slipping or damaged floor(body injury) Broken parts Machine destruction Fire

DECISIONS	CUES	ERRORS
Determine types of chemicals to use Determine type of cleaning method Determine amount of time in chemicals	Concentration of dirt Types of dirt Types of mechanical problems	Discolored platings Rubber bumpers distorted Plastic parts discolored

ASK STATEMENT) CHEMICALLY CLEAN A TYPEWRITER

SCIENCE

Physical

Chemical reaction
Chemical polymerization of grease and oil
Chemical corrosion

Behavioral

Grant appropriate regard for customer's unique needs
- Attention
- Observation
- Concentration
- Mental alertness
- Mental clarity
- Organization

MATH – NUMBER SYSTEMS

Whole Numbers

Ratio and proportion [mixing chemicals]

Measurement: non-geometric
- Time [length of time in chemicals]
- Liquid [measuring chemicals]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing	Plating of parts	Color discrimination
Reading	Chemical corrosion	Reading and comprehension of instructions
	Following instructions	

(TASK STATEMENT) DISASSEMBLE A TYPEWRITER ACCORDING TO SEQUENCE

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvent Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges	Remove cover plates and rubber Remove motor, wiring and controls, if electrical Remove carriage return clutch, if electric Remove power roll, if electric Remove carriage Remove segment Remove bottom rail Remove bichrome Remove escapement	Safety Proper use of tools Disconnect electricity Hazard Cuts on skin Electrical shock
DECISIONS	**CUES**	**ERRORS**

TASK STATEMENT) DISASSEMBLE A TYPEWRITER ACCORDING TO SEQUENCE

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Attention Observation Concentration Mental alertness Mental clarity Organization	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Reading Writing	Comprehending written instructions Memo	Process instructions Memo format

(TASK STATEMENT) REMOVE AND REPLACE PARTS ON A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges Auxiliary Inventory of parts High mortality parts(minimum of four parts each) A gallon of cleaning fluid (1) Ribbons (24) Pack of invoice orders (1) Portable air compressor (1)	Remove cover plates Remove defective part of the assembly Repair defective part Clean part Lubricate Install part Adjust part Install cover plates	Safety Proper tool handling Good housekeeping Proper containers for chemicals Hazard Body injury Machine breakage Bad customer relations Soiling of customer furniture Spotting of customer furniture

DECISIONS	CUES	ERRORS
Determine if the part can be repaired or if it needs to be replaced	Amount of wear on part Cost of repairing versus cost of replacement	Repeat service calls Additional expense to customers Poor customer relations

TASK STATEMENT) REMOVE AND REPLACE WORN PARTS ON A TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Physical Simple machines used to gain mechanical advantage [levers, gears, pulleys] Centrifugal forces [clutches, brakes, drives] Inertia and momentum [clutches, brakes] Effects of friction on work processes and product quality [binds] Relationship of force to distortion in an elastic body [springs] Effect of heating and cooling on expansion of materials [rubber and springs] **Behavioral** Attention, observation, concentration Mental alertness, mental clarity	Whole numbers [positive] Use of numbers (without calculation) Coding (parts of numbers)

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing	Memory retention Color discrimination	Identifying broken parts Recognition of symbols on parts
Touching	Knowing proper adjustments	Adjusting Tolerance
Listening	Correct sound of properly running part	Proper installation and adjustment

(TASK STATEMENT) LUBRICATE A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Grease gun Aerosol oil cans Graphite	Repack the spring clutches, gears, and roller bearings with grease Spray with aerosol oil can Dust parts with graphite	Aerosol cans kept away from heat and flame Explosion

DECISIONS	CUES	ERRORS
Determine type of grease to use Determine amount of oil needed Determine when to use graphite	See if machine has oiled bearings Types of bearings, clutches, and gears Dryness of parts	Dry bearings Binds Timing would be off Oil on rubber bumper

TASK STATEMENT) LUBRICATE A TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Physical Chemical polymerization of grease and oil Behavioral Attention Observation Concentration Mental alertness Mental clarity	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing	Proper amount of oil on each part	Describing

(TASK STATEMENT) ASSEMBLE A TYPEWRITER ACCORDING TO SEQUENCE

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges	Install escapement Install bichrome Install bottom rail Install segment Install carriage Install power roll, if electric Install carriage return clutch, if electric Install motor, wiring, and controls, if electric Install cover plates and rubber	Safety Proper use of tools Proper electrical installation Hazard Cuts on skin Shorts and electrical shock
DECISIONS	**CUES**	**ERRORS**

ASK STATEMENT) ASSEMBLE A TYPEWRITER ACCORDING TO SEQUENCE

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Attention Concentration Observation Mental alertness Mental clarity Organization	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Reading	Comprehending written instructions and electrical schematics	Process instructions
Listening	Proper meshing of gears and parts	Noise discrimination

(TASK STATEMENT) ADJUST A TYPEWRITER ACCORDING TO SEQUENCE

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY - HAZARD
Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges	Adjust carriage to base Adjust line-space and paper feed Adjust ring and cylinder Adjust writing lines Adjust shift lock Adjust type bar trip Adjust escapement Adjust bichrome Adjust margins Adjust tabulators Adjust back-spacer Adjust space-bar Adjust ribbon drive Adjust alignment Adjust scales Adjust covers and panels	Safety Proper tool handling Hazard Cuts on skin

DECISIONS	CUES	ERRORS
Determine proper tension of springs Determine if rails are parallel Determine proper tolerances Determine amount of over throw Determine amount of banking and index Determine proper foreplay and after-play Determine if ribbon is reversing properly	Binds Uneven writing lines Uneven spacing Uneven margins Jumping tab stops Rough running carriage Piling of letters Holes in ribbon Light-printing letters Poor paper alignment Repeat spacing Bleeding of letters Uneven alignment of paper	Malfunctioning machine Poor customer relations

(TASK STATEMENT) ADJUST A TYPEWRITER ACCORDING TO SEQUENCE

SCIENCE	MATH -- NUMBER SYSTEMS
Physical Simple machines used to gain mechanical advantage [levers, gears, pulleys] Centrifugal forces [clutches] Inertia and momentum [clutches and brakes] Effects of friction on work processes and product quality [binds] Relationship of force to distortion [springs] Effect of heating and cooling on expansion of materials [rubber and springs] Behavioral Attention Observation Concentration Mental alertness Mental clarity Organization	Whole numbers Use of Numbers [without calculation] Counting [counting spaces]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Listening Feeling	Proper operation of parts Proper operation of carriage	Detection of binds Detection of roughness and binds

(TASK STATEMENT)

INSPECT THE FINISHED WORK ON A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY -- HAZARD
Typing paper	Evaluate functions and operations Evaluate general appearance of machine Evaluate lubrication Obtain customer's evaluation of machine	Safety Good housekeeping Hazard Soiling of customer furniture
DECISIONS	**CUES**	**ERRORS**
Determine if machine passes standard of quality	Malfunctions Finger prints on cover	Poor customer relations Repeat service calls

(TASK STATEMENT) INSPECT THE FINISHED WORK ON A TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Work input, work output, friction, and efficiency in simple machine [motor and gears]	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing Listening Touching	Inspecting standard of quality Abnormal noises Testing machine operations	Visual analysis of machine Noise discrimination Tactile discrimination

(TASK STATEMENT) PAINT AND REFINISH A TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Electric sander Sand paper Paint Primer Cleaning chemicals Rags Air compressor Baking oven Spray gun	Remove necessary parts Clean all surfaces to be painted Sand rough spots out Reclean Prime surface Spray final coat Bake in oven Cure paint	Safety Ventilation No smoking Proper pressure Keep aerosol cans from heat Hazard Respiration problems Fire Ruined spray gun Blow up or explosion

DECISIONS	CUES	ERRORS
Determine color Determine type of finish Determine type of paint Determine type of spray equipment to be used Determine consistency of paint	Type of surface to be painted on Use of machine Age of machine	Running of paint

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(TASK STATEMENT) PAINT AND REFINISH A TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Physical Effect of heat on texture of paint Behavioral Attention Observation Concentration Mental alertness Mental clarity Organization	Positive Whole Numbers Measurement: non-geometric time [baking] temperature [baking]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Touching Viewing	Inspecting for smooth surface Inspecting degree of smoothness	Tactile discrimination Visual analysis

(TASK STATEMENT) RECORD THE NECESSARY DATA ON EACH TYPEWRITER REPAIR

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Pen and pencil Card file and cards Index system File cabinet Invoice forms Daily production sheet	Record machine serial number Record age of machine Record customer's name, address, no. Record general condition of machine Record whether machine is leased or owned Record schedule of servicing Record name of service personnel doing work Record type of service being done Record parts and supplies used Record price of parts Record total bill Record guarantee dates Record date of payment File records	Safety Fireproof files Duplicate records Hazard Lost records
DECISIONS	**CUES**	**ERRORS**
Decide if replacement recommendation should be sent to Sales Department	Age and wear on machine	Loss of sale of machine

TASK STATEMENT) RECORD THE NECESSARY DATA ON EACH TYPEWRITER REPAIR

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Organization Mental clarity Mental alertness Concentration	Positive Rational Numbers [decimals] Fundamental Operations [calculation] Addition algorithm Subtraction algorithm Multiplication algorithm Division algorithm Use of Numbers [without calculation] Counting Indexing Coding [Recording and filing]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Writing	Filling out reports	Penmanship Spelling Memo format Description reports Terminology/General Vocabulary Clarity of expression Classification Recognition of symbols, codes, and serial numbers
Viewing	Recording serial number	

Duty B Operating A Parts Department

1 Maintain a complete parts and supply inventory in service department
2 Ship and receive parts and supplies
3 Maintain complete library of parts catalogues and service manuals

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(TASK STATEMENT) MAINTAIN A COMPLETE PARTS AND SUPPLY INVENTORY IN SERVICE DEPARTMENT

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Parts cabinets File cabinets Card file Order forms Storage cabinets	Catalogue all parts Operate parts-in-parts-out system Order parts and supplies Cross reference parts File orders Store supplies	
DECISIONS	**CUES**	**ERRORS**
Determine high mortality parts Determine type of card system for parts-in and parts-out	Inability to find parts Depletion of parts	Slow down of production

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TASK STATEMENT) MAINTAIN A COMPLETE PARTS AND SUPPLY INVENTORY IN SERVICE DEPARTMENT

SCIENCE	MATH – NUMBER SYSTEMS
Physical Chemical deterioration Behavioral Concentration Mental alertness Mental clarity Organization	Positive Rational [decimal] Fundamental Operations [calculation] Addition, Subtraction, Multiplication Algorithm Use of Numbers [without calculation] Counting, indexing, and coding [parts catalog] Basic Arithmetic Skills and Concepts Finding a percent of a number and what percent one number is of another Rounding off decimals and whole numbers Reading: Interpreting tables [parts price catalog] Basic Measurement Skills and Concepts Measurement: non-geometric [money]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Writing	Cataloging and ordering	Penmanship Spelling Classification Description Reports [informational] Business letters Terminology/General Vocabulary Clarity of expression Visual analysis
Viewing	Checking inventory	

(TASK STATEMENT) SHIP AND RECEIVE PARTS AND SUPPLIES

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Scales Postage meter Package wrapping Sealing tape Shipping container Tape machine	Pack rubber and parts to be sent back Insert shipping order Address package Properly wrap and seal package Weigh package Calculate and affix postage shipping rates Send package Sign for receipt of package Justify order with merchandise received Notify company of shortages and damaged merchandise Justify billing charges	Safety Proper packaging Hazard Damaged merchandise

DECISIONS	CUES	ERRORS
Determine method of shipping Determine type of packing Determine degree of damage Determine classification of freight	Weight Shipping rates Content of package Damaged containers Distance being sent	Damaged merchandise Excessive rates

ASK STATEMENT) SHIP AND RECEIVE PARTS AND SUPPLIES

SCIENCE

Physical

Chemical deterioration

Behavioral

Attention
Concentration
Mental alertness
Mental clarity
Organization

MATH – NUMBER SYSTEMS

Positive Rational [decimals]

Fundamental Operations [calculation]
Addition algorithm
Subtraction algorithm
Multiplication algorithm
Division algorithm

[figuring postage and weights]

Basic Measurement Skills and Concepts
Measurement: non-geometric
Weight [weighing packages]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Viewing Reading Writing	Weighing packages Rates, weights, orders, and b... Weights, addresses	Memory Comprehension Detail inference Penmanship Spelling

(TASK STATEMENT) MAINTAIN COMPLETE LIBRARY OF PARTS CATALOGUES AND SERVICE MANUALS

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Parts catalogues Service manuals Shelfing units Catologing system	Catalogue manuals for parts and service Obtain and catalogue all price changes and revisions	

DECISIONS	CUES	ERRORS
Decide filing system	Inability to find needed material	Inefficient system

ASK STATEMENT) MAINTAIN COMPLETE LIBRARY OF PARTS CATALOGUES AND SERVICE MANUALS

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Concentration Mental alertness Organization	Cataloging Manuals Use of Numbers [without calculation] Coding Indexing Ordering

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Reading	Revisions and changes	Comprehension Informational reports Terminology Process Instructions
Writing	Obtaining revisions and changes	Penmanship Spelling Description Business letters
Viewing	Cataloging	Terminology/General Vocabulary Memory Recognition of symbols, codes, emblems

Duty C Managing and Supervising A Service Department

1 Hire typewriter service personnel and apprentices
2 Dismiss an employee
3 Maintain a standard of quality and production control in service department
4 Maintain good customer relations in service department
5 Advertise and promote service on typewriter
6 Maintain an apprentice training program in service department

(TASK STATEMENT) HIRE TYPEWRITER SERVICE PERSONNEL AND APPRENTICES

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Application forms Written test forms Typewriter Standard Tool Kit Cleaning brushes Cleaning solvents Cleaning rags Special wrenches and tools Alignment equipment Repair invoices Special gauges	Interview applicant Give written tests Give skill tests Grade tests Contact references Evaluate applicants Discuss job expectations, working hours, salary, and plant environment, and possibilities of advancement	
DECISIONS	**CUES**	**ERRORS**
Determine mechanical aptitude Determine dependability Determine honesty Determine personal appearance	No dexterity Distortion of facts in interview and on application Promptness in appearing for interview Untidy appearance	Incompetent personnel Poor service Customer complaints

TASK STATEMENT) HIRE TYPEWRITER SERVICE PERSONNEL AND APPRENTICES

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Exhibit capacity to ascertain personal qualities [skills, knowledge, character, flexibility, and learning capacity] Exhibit capacity to foster trust Exhibit capacity to accurately reflect plant environment and job expectations	Positive Rational [decimal] Fundamental Operations [calculation] Addition algorithm Subtraction algorithm Multiplication algorithm Division algorithm Reading and Interpreting Charts [salary, fringe benefits] Percents/Rates [test analysis] Basic Measurement Skills and Concepts Measurement: non-geometric money

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Speaking	Interviewing	Terminology/General Vocabulary Appropriate diction Clarity of expression Denotative, Connotative words Discriminative facts from non-facts Recognize opinions Describing
Listening	Interviewing	
Viewing	Interviewing	

(TASK STATEMENT) DISMISS AN EMPLOYEE

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Warning slips Dismissal slips	Evaluate performance and attendance records Council employee Give written warning slip Issue probationary lay-off Conduct additional counseling sessions Issue final dismissal	

DECISIONS	CUES	ERRORS
Determine degree of imcompetence	Health Sub-standard work Attitude	Minimum production Anxiety and tension among employees

8th

TASK STATEMENT) DISMISS AN EMPLOYEE

SCIENCE

Behavioral

Exhibit capacity to engender clear statement of rationale

Exhibit capacity to listen openly and attentively (without bias) in this communicative process

Exhibit qualities of tact, poise, consideration, graciousness, and imagination

MATH – NUMBER SYSTEMS

Positive Rationals [decimals]

Fundamental Operations [without calculation]

Addition algorithm
Subtraction algorithm
Multiplication algorithm
Division algorithm

Basic Measurement Skills and Concepts
Measurement: geometric
money

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Speaking	Counceling	Terminology/General Vocabulary Appropriate Diction Implying, enunciation, poise Clarity of expression Denotative, connotative words
Writing	Writing warning and dismissal slips	Penmanship Spelling Reports (informational) Appropriate Diction Clarity of expression
Listening	Counseling sessions	Denotative, connotative words Opinions-facts from non-facts

(TASK STATEMENT) MAINTAIN A STANDARD QUALITY AND PRODUCTION CONTROL IN SERVICE DEPARTMENT

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY -- HAZARD
Production report forms File of repeat service calls File of complaints Financial report forms Standard Shop Equipment Cleaning machines and tanks Solvents and chemicals Abrasives Lathe Lights, work benches, elec. outlets Baking ovens Air compressor Welding equipment Hand tools Parts inventory Technical materials	Compile daily and monthly production reports Evaluate repeat service calls Evaluate complaints Compile and evaluate customer evaluation cards Evaluate monthly financial report as per profit loss Evaluate equipment Evaluate quality of each employees work Evaluate employees relations Conduct periodic staff meetings	Properly operating equipment Bodily injury Decreased production
DECISIONS	**CUES**	**ERRORS**
Determine validity of a complaint Counsel or eliminate non-production employees Decide whether to up-date equipment Determine cause of dissension	Nature of complaint Condition of equipment Attitudes of employees General working conditions	Sub-standards of quality and production

TASK STATEMENT) MAINTAIN A STANDARD OF QUALITY AND PRODUCTION CONTROL IN SERVICE DEPARTMENT

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Distribute personnel with regard to leadership qualities and experiences for optimum team performance Grant conscious attention to smoothly flowing team work Maintain regard for differentiating views on maximum efficiency of the operations Communicate pride in establishment Comfort Safety Physical, emotional, and intellectual health Movement from tension to relaxation and vice versa Organization	Positive Rationals [decimals] Fundamental Operations [calculation] Addition algorithm Subtraction algorithm Multiplication algorithm Division algorithm Use of Numbers [without calculation] Counting Percent-profit margin Rate, ratio, proportion [comparison to output to income] Reading and interpreting charts and graphs [output; production costs]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Reading	Compiling reports	Comprehension, detail inference, informational reports, recommendation reports, progress reports
Writing	Compiling reports	Penmanship, spelling, description, reports, terminology/vocabulary, clarity of expression, logic
Viewing	Employee relations, evaluating shop equipment	Visual analysis, memory, describing, logic
Speaking	Conducting staff meetings	Terminology/vocabulary, logic, poise, clarity of expression, persuasion and sales technique
Listening	Conducting staff meetings and evaluating employee relations	Logic, note-taking, concentration, Opinions, facts from non-facts

(TASK STATEMENT) MAINTAIN GOOD CUSTOMER RELATIONS IN SERVICE DEPARTMENT

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Telephone Automobile Stationery Typewriter Copy machine	Perform quick, dependable, and thorough service Uphold policies of honesty, trust, and friendliness Handle all complaints with open-mindedness, courtesy, and fairness Use proper paper telephone technique Generate confidence and pride in establishment Send reminders of guarantee expiration Make periodic good-will visits to customer's office Provide customer's with service-evaluation cards Send yule-tide greetings	

DECISIONS	CUES	ERRORS
Determine parties at fault in complaint Determine frequency of good-will calls	Irritability of customer Sub-standard work on part of employee Distortion of facts	Loss of customer Bad reputation

(TASK STATEMENT) MAINTAIN GOOD CUSTOMER RELATIONS IN SERVICE DEPARTMENT

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Maintain capacity to foster trust Maintain capacity to foster confidentiality Maintain capacity to foster cooperation Maintain capacity to foster integrity Maintain capacity to function efficiently when encountering fast changing, multiple, personal, or situations variable Exhibit qualities of self-confidence, self-control, self-reliance, and adaptability Grant appropriate regard for customer's personal space and convenience Grant appropriate regard for customer's unique needs	

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Speaking	Talking with customer	Terminology/General Vocabulary Appropriate Diction, implying, enunciation, clarity of expression, logic, gestures, dress, facial and body features, poise
Listening	Talking to customer	Discriminate facts from non-facts Recognize opinions Concentration
Writing	Sending cards and greetings Guarantee expiration reminders	Penmanship Spelling Description Business letters Terminology/General Vocabulary Clarity of expression

(TASK STATEMENT) ADVERTISE AND PROMOTE SERVICE ON TYPEWRITER

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Posters Radio Television Stationery Newspaper Post cards Contract forms Telephone Files on previous repair customers	Sell preventative-maintenance contracts Contact previous customers Operate periodic repair clinics and sales Make attractive formats for radio, T.V. and newspaper Display attractive posters Send direct-mail post cards	
DECISIONS	**CUES**	**ERRORS**

TASK STATEMENT) ADVERTISE AND PROMOTE SERVICE ON TYPEWRITER

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Attention Mental alertness Mental clarity Organization	Positive Rationals [decimals] Fundamental Operations [calculation] Addition algorithm Subtraction algorithm Multiplication algorithm Figuring maintenance contracts Basic Arithmetic Skills and Concepts Finding a % of a no. and what % one no. is of another [figuring how much money saved by buying contracts] Ratio and proportion [making formats and posters] Rounding off decimals and whole numbers [figuring contracts]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Speaking	Contacting customers	Terminology/General Vocabulary Appropriate Diction Enunciation Clarity of expression Persuasion and sales technique Logic Gestures Dress, facial and body features Poise
Writing	Making posters and formats and contacting previous customers	Penmanship, spelling, business letters Memo format, Persuasion Classification, appropriate diction Description, Terminology/Vocabulary Clarity of expression,

(TASK STATEMENT) MAINTAIN AN APPRENTICE TRAINING PROGRAM IN SERVICE DEPARTMENT

TOOLS, EQUIPMENT, MATERIALS, OBJECTS ACTED UPON	PERFORMANCE KNOWLEDGE	SAFETY – HAZARD
Service manuals, parts manual Typewriters Service-Training Schools Test forms Production report forms Standard Tool Kit Cleaning brushes, solvents, and rag Special wrenches and tools Alignment equipment Repair invoices Special gauges Standard Shop Equipment Cleaning machines and tanks Solvents and chemicals Abrasives Lathe Lights, work benches, elec. outlets Baking ovens, air compressor Welding equipment, handtools Technical materials Parts inventory	Teach delivery techniques Teach nomenclature and numbers of parts Teach duties of preventative maintenance, repairing, and factory rebuilding of typewriters Schedule service-training school Conduct periodic testing and evaluation	Proper use of equipment Bodily injury

DECISIONS	CUES	ERRORS
Determine methods of teaching Determine reasonable rate of progress Determine when ready for school	Initiative Performance	Tension Loss of confidence Poorly trained apprentice Loss of time of money in training and schooling

(TASK STATEMENT) MAINTAIN AN APPRENTICE TRAINING PROGRAM IN SERVICE DEPARTMENT

SCIENCE	MATH – NUMBER SYSTEMS
Behavioral Maintain capacity to foster trust Maintain capacity to foster confidentiality Maintain capacity to foster cooperation Maintain capacity to generate integrity	Positive Whole Numbers Use of Numbers [without calculation] Coding [parts numbers] Fundamental Operations [calculation] Addition algorithm Subtraction algorithm Multiplication algorithm Division algorithm [grading tests] Basic Arithmetic Skills and Concepts Finding a % of a no. and what % one no. is of another [grading tests]

COMMUNICATIONS

PERFORMANCE MODES	EXAMPLES	SKILLS/CONCEPTS
Speaking	Teaching	Terminology/General Vocabulary Clarity of expression Logic Denotative, connotative words
Reading	Teaching	Description of mechanism
Writing	Teaching	Progress reports
Listening	Teaching	Recognize opinions
	Testing	Noise discrimination[machine]
Viewing	Teaching	Visual analysis Describing