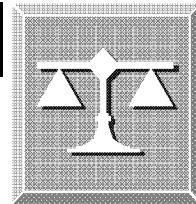


TS-45 October 1981

**Federal Wage System
Job Grading Standards**



WCPS-2 August 2002

**FEDERAL WAGE SYSTEM
JOB GRADING
STANDARD
FOR
OFFSET PRESS
OPERATING,
4417**



**Workforce Compensation
and Performance Service**



OFFSET PRESS OPERATING, 4417

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WORK COVERED

This standard is to be used for grading all nonsupervisory work involved in the setup, adjustment, operation, and operator maintenance of offset printing presses to produce a variety of single-color, two-color and multicolor printed materials such as manuals, reports, handbooks, pamphlets, maps and charts, and medical atlases.

The work requires knowledge of offset press operations, techniques, and processes, and a practical understanding of the relationship between offset press operating and other offset reproduction processes.

WORK NOT COVERED

This standard does not cover the following work:

- Makeready, adjustment, and operation of platen presses, flatbed cylinder and rotary letterpresses, and gravure presses. (See [Letterpress Operating Series, 4406](#), and [Intaglio Press Operating Series, 4454](#).)
- Setup, adjustment, and operation of sheet-fed duplicating equipment [small offset presses with a maximum sheet size not larger than 28 x 43 cm (11 x 17 inches)] to produce single-color line work when such work does not require masters or plates made from reusable contact negatives and/or positives prepared with a camera, the equipment is used in the same manner as copier/duplicating equipment, and the work is not part of a planned developmental or training program for offset press operators. Typically, such work is not performed where there are a substantial number of offset printing presses involved in a variety of printing operations. (See [Equipment Operator Series, GS-0350](#))

TITLES

Job graded by this standard that operate offset duplicating presses are to be titled *Offset Duplicating Press Operator*.

Job graded by this standard that operate offset printing presses are to be titled *Offset Press Operator*.

GRADE LEVELS

This standard describes five levels of nonsupervisory work (grades 7, 8, 9, 10, and 11). Depending on the nature of the work performed, any one of these grade levels may represent the highest nonsupervisory level or full performance level of offset press operating work generally found in Federal printing facilities.



However, this standard does not describe all possible grades at which jobs may be established in this occupation, or in any way limit the authority of agencies to assign work or particular duties to positions. If jobs differ substantially from the levels of skill, knowledge, and other work requirements of the grades described in this standard, they may warrant grading either above or below these grades, based on the application of sound job grading principles.

HELPER AND INTERMEDIATE JOBS

Under the Federal Wage System, the [Job Grading Standard for Trades Helper jobs](#) is used to grade helper jobs only in work situations in which the full performance level of nonsupervisory work is grade 9 or higher.

Similarly, the [standard for intermediate jobs](#) applies to jobs that are a part of a planned program of training and development of skills for advancement to a higher grade when the level of the target job is grade 9 or above. (In applying the Intermediate Job Grading Table, the grade to be used as the "journey level" is the grade of the full performance target job, as determined by application of this standard.)

NOTES TO USERS

There are several types and sizes of offset printing presses in use within Federal printing facilities. These presses are single-color, two-color, or multicolor presses, and some have the capability of printing both sides of the sheet through a single operation. Usually, each color on a multicolor press requires a separate complete printing unit (head) consisting of inking, plate, and impression mechanisms. For example, a two-color press would have two such units, and a five-color press would have five, etc. A perfecting press is one which prints both sides of the sheet in one pass through the press. Offset printing presses operate on the principle that grease and water repel one another. The actual printing process takes place in the following manner. An offset plate is attached to the plate cylinder. This cylinder rotates in contact with the dampening rollers, then the inking rollers. The dampeners wet the plate so the nonprinting area will repel ink (grease). The inked image is then transferred to the rubber blanket on the blanket cylinder. Paper is printed as it passes between the blanket and the impression cylinders.

Offset printing presses are generally designated according to sheet size, number of separate printing units, type of feed (i.e., web-fed, sheet-fed, or sheet-fed with a roll converter), and whether the press will print on one or both sides of the sheet through a single press operation. The equipment is further categorized into two distinct groups, duplicating presses and offset presses.

Duplicating presses (duplicators) are primarily designed for simplified operation so that personnel with relatively little training could operate them satisfactorily. However, the principles behind the duplicating press are similar or exactly the same as those of the larger and more complex offset presses, and when operated by a skilled press operator can produce printed material comparable in terms of quality to the larger offset presses.

Duplicating equipment represents the majority of the printing presses operated within the Federal Wage System. These presses are generally simpler to operate in terms of setups, adjustments, and quick changeovers. The controls are less complicated and makeready requirements are simpler. Duplicating presses range in size from 25 x 38cm (10" x 15") to 35 x 50 cm (14" x 20"). However, some press equipment with a sheet size of 38 x 45 cm (15" x 18") or 35 x 50 cm (14" x 20") may have complicated controls which are capable of precise adjustments. Equipment with these capabilities should be evaluated as an offset press and not as a duplicating press. Some duplicating presses are designed as tandem units, they have two printing units on the same frame and are serviced by the same feeding and delivery system. This arrangement is similar to that of a perfecter in that it permits printing on both sides of the sheet in a single operation. Some duplicating presses are equipped with automatic controls for operating the press and when fully equipped with these automatic features enable the operator to start, lower ink and water rollers, change plates, wash blanket, eject the master, and stop when the desired number of copies are produced, all from a central control panel. In addition, electrostatic platemakers and automatic sorters can be attached to some of these presses for greater efficiency. These in-line attachments may increase the complexity of the work; however, the increase in complexity would be minimal and would not affect the proper grade of the position.

Offset presses are designed to produce the full range of single-color, two-color, and multicolor offset printing. Single-color, two-color, and multicolor offset presses are similar in design and identical in function. Multicolor offset presses have three or more printing units serviced by the same feeding and delivery system. The inking and dampening systems on these presses are complex and capable of precise adjustments. For example, on duplicating presses, the adjustment of pressure between the plate cylinder and blanket cylinder can be adjusted by simply loosening a lock screw and adjusting a disc encircling the impression lever. On an offset press, the bearers or bands on the ends of the cylinders, roll in contact with each other and maintain correct separation between cylinder surfaces during printing. This makes it necessary to pack or underlay the plate with several sheets of paper or plastic (of precise thickness) to bring their surfaces into proper contact. This packing or underlay also may be adjusted to compensate for paper stretch caused by humidity of the press room, or if required, by transferring some of the packing from the plate cylinder to the blanket cylinder, the placement of the image can be altered. Generally, the ability to make precise adjustments is significant when the registration and/or color balance specifications of the job are critical.

Work within this occupation is evaluated against two criteria. The first relates to the application of knowledge and responsibility in offset printing. This involves such things as inks, color, registration, trapping, etc. The second relates to the manipulative and mechanical skills involved in the operation of an offset printing press. Although both criteria contribute to make up the offset press operator job, they are not of equal value. Of the two criteria, the press operating knowledge and the responsibility required are more significant and contribute more to the final grade of the offset press operator. The manipulative and mechanical skills are best indicated by the complexity of the work and by the category and size of offset press. Both criteria interact with one another. In most instances a higher level requirement in knowledge and responsibility is associated with a higher level requirement in the other criteria which is reflected in the grade level of the job. For example, a requirement to print sharp and clear halftones (photographs) requires the press operator to make certain decisions concerning the mountain solution, ink coverage, and pressure between cylinders. In addition, it will also require finer mechanical

adjustments to the press (rate and extent of ink flow, water flow, cylinder adjustments for proper squeeze pressure), etc. The mechanical or press operating aspects of the occupation is clearly visible, while the application of knowledge is for the most part mental and can only be indirectly observed by evaluating the printed product.

Grade level determinations for jobs involved in the operation of offset printing presses are to be assessed on the basis of criteria contained in the Grading Plan section of this standard. Grade determinations are not based solely on the aspects and/or complexities of press equipment such as sheet size capacity, number of individual printing (units) heads, or the capability to print on both sides of a sheet during a single operation (perfecter or tandem). Consequently, the operation of a multicolor, perfecting, or tandem press is not in itself a grade determining factor.

The grade level criteria contained in this standard apply directly to those positions involved in the operation of sheet-fed offset printing presses.

GRADING PLAN

This standard is divided into two parts, Part I, The Evaluation System; and Part II, Example Job Descriptions. Part I provides guidance on the use of two factors and a grade determination chart to convert the factors into grade levels. The two factors are:

Factor I: Knowledge and Responsibility.

Factor II: Manipulative and Mechanical Skills.

Factor I consists of knowledge and responsibility. Of the two, knowledge must be evaluated indirectly since its application is through a mental process. It is not directly observable; it must be observed indirectly through an evaluation of the complexity and quality of the printed product. Factor I is divided into three levels: Level I --press operating jobs that are limited in terms of the scope of knowledge and responsibility necessary to produce printed materials at an acceptable level of quality; Level II -- press operating jobs that are broader in their scope of knowledge and responsibility and produce printed materials at high levels of quality; Level III -- press operating jobs which require the broadest scope of knowledge and responsibility and produce a variety of printed materials at the highest levels of quality.

Factor II consists of the manipulative and mechanical skills involved in the operation of offset printing presses which may range from simple to complex in terms of their setup, adjustment, and operating complexity. These skills relate directly to corresponding levels under Factor I of the evaluation system and, to a lesser extent, the category and sheet size capacity of the press. Factor II is divided into three levels: Levels A through C are described separately according to category and size of equipment.

The working conditions and/or physical effort involved in offset press operating jobs may affect press operator jobs only if they differ substantially from those conditions as described in the example job descriptions.

For the purposes of this standard, the first press operator on a five color press who, as a regular and recurring part of his or her job, leads three or more employees as a crew in the operation of the press is to be titled and evaluated as a leader. The second press operator on a five-color press represents the "full performance" work level and serves as the basis for evaluating the leader job on the press.

Part II provides guidance by presenting several example job descriptions that are illustrative of various full-performance levels in press operations and are correctly graded through the application of the two factors outlined in Part I. These examples are illustrative of typical press operating jobs found in various agencies and are presented as work examples for grading guidance alone. The examples do not in any way suggest or limit the authority of agencies to assign work or particular duties to jobs.

PART I. THE EVALUATION SYSTEM

Factor I. Knowledge and Responsibility

The first step is to determine which of the following levels of knowledge and responsibility is representative of the offset press operating job being evaluated in relation to the complexity and quality of work involved in certain printing processes.

Level I: The work requires a practical knowledge of various standardized setups, adjustments, maintenance, and operating procedures necessary to produce large solids, screen tints, halftones, line work and other similar single and two-color work with tolerances which may vary from loose (no registration) to visually close registration requirements (not requiring optical measurement) and good margin alignment on work which is "backed-up." In addition, the work requires the press operator to make decisions and take corrective action regarding the ink and water balance, cylinder pressure; sharpness of halftones, uniformity of color in large solids and screen tints, and registration and alignment requirements. The work is performed independently and is reviewed upon completion for adherence to job specifications and requirements.

Examples of press operating jobs which require this level of knowledge and responsibility include:

1. Offset Duplicating Press Operator (see example [job description No. 1](#)).
2. Offset Press Operator (see example [job description No. 3](#)).
3. Offset Press Operator (see example [job description No. 6](#)).

Level II: Work at this level requires a thorough knowledge of a variety of techniques employed in setups, adjustments, operations, and maintenance procedures to produce single-color, two-color, and multicolor work which includes line work, large solids, screen tints, halftones, and duotones with registration requirements which vary from close (not requiring optical measurement) to hairline registration (plus or minus .008 cm (003 inch) and good margin alignment on "backup" work. Also, the work requires that the offset press operator be responsible for the independent setup, adjustment, operation, and operational maintenance of the press, including uniformity of color in large solids, screen tints, and color balance in multicolor work, sharpness and clarity of halftones, and quality and registration requirements. The completed work is reviewed to assure that specific objectives such as quality and registration requirements have been achieved in compliance with instructions and established practices.

Examples of press operating jobs which require this level of knowledge and responsibility include:

1. Offset Duplicating Press Operator (see example [job description No. 2](#)).
2. Offset Press Operator (see example [job description No. 4](#)).
3. Offset Press Operator (see example [job description No. 7](#)).



Level III: Work at this level requires a comprehensive knowledge of a wide variety of techniques employed in offset press setups, adjustments, and operating procedures to produce multicolor and process color work which includes line, large solids, screen tints, and various halftones with critical color values and registration requirements ranging from hairline (plus or minus .008 cm (.003 inch) to critical tolerances (plus or minus .003 cm (.001 inch or finer). In addition, work at this level requires the offset press operator to be responsible for the independent setup, makeready, operation, operational maintenance, uniformity of color in halftones, solids and screen tints, precise color values (i.e., precise color values established and maintained through the use of an exact measuring instrument such as a reflective densitometer), sequence of colors to be printed, and registration and quality requirements. Completed work is checked for compliance with instructions, specification requirements, and trade practices.

Examples of press operating jobs which require this level of knowledge and responsibility include:

1. Offset Press Operator (see example [job description No. 5](#)).
2. Offset Press Operator (see example [job description No. 8](#)).

(See [Digest Vol. 7](#) for additional guidance on crediting Level III.)

Factor II. Manipulative and Mechanical Skills

The next step is to determine the degree of manipulative and mechanical skill required by the job in relationship to the size of the offset press and the complexity/quality of the printed product being produced. The different degrees of manipulative and mechanical skill are expressed in terms of the maximum sheet size capacity of the particular press operated and specific sublevels which relate the manipulative and mechanical skill to the complexity/quality level of the printed products produced.

Degree A. Equipment operated in this category are collectively referred to as "offset duplicating presses." The equipment is characterized by single lever operation and/or cylinder adjustment by dial or automatically without capability for packing (underlay) of blankets and precise variation of cylinder pressures. The typical range of maximum sheet sizes for equipment in this category is 25 x 38 cm (10" x 15") through 28 x 43 cm (11" x 17") and under certain circumstances 38 x 61 cm (15" x 18") and 35 x 50 cm (14" x 20") if the equipment lacks the capability for precise variation of cylinder pressure as described above.

Degree A(I). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirements under Level I of Factor I. The complexity/quality of the work produced requires that the offset duplicating press operator must be skilled in a variety of manipulative and mechanical procedures necessary to independently perform standardized setups, adjustments, and operating procedures on the equipment operated to produce single-and two-color work which include large solids, screen tints, line, and halftones with loose (no registration) to visually close registration requirements (requiring no optical measurement) and accurate margin alignment on work which is perfected or "backed-up" (printed on both sides in a single or double pass through the press). The operator must be skilled in making major adjustments in running different jobs, sheet sizes, and paper stock. The work at this level requires that the operator be skilled in the manipulation (approximate settings) of the press controls and adjustments (e.g., guides, forward rollers, cylinder adjustments, inking and dampening units, and plate adjustments) to insure that quality and registration requirements are met. In addition, the operator must be skilled in the routine maintenance (e.g., cleanup, lubrication, cleaning roller and blankets, replacement of blankets and dampening covers) and the minor repairs (e.g., replacing ductor rollers, form rollers and inking distributor rollers).

Degree A(II). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirement under Level II of Factor I. The complexity/quality of the work produced requires that the offset duplicating press operator must be skilled in a variety of difficult manipulative and mechanical procedures necessary to independently perform standardized setups, adjustments, and operations on the equipment operated to produce single-color, two-color, and multicolor work which include large solids, screen tints and symbols, line, duotones, and halftones with tolerances ranging from visually close (not requiring optical measurement) to hairline (plus or minus .008 cm (.003 inch) registration requirements and accurate margin alignment on work which is "backed-up" (printed on both sides in a single or double pass through the press). The operator must be skilled in making adjustments in running different jobs, sheet sizes, and paper stock. The work performed at



this level requires that the press operator be skilled in difficult manipulations (precise settings) of the press controls, settings and adjustments (e.g., front and side guides, forward rollers, cylinder pressure adjustments, inking and dampening units, and plate adjustments) to ensure that color consistency, quality, and registration requirements are met and maintained. In addition, the operator must be skilled in the maintenance and minor repairs of the equipment as indicated in Degree A(I).

Degree B. Offset printing presses in this category typically have a maximum sheet size capacity ranging from 43 x 55 (17" x 22") through 63 x 98 cm (25" x 39"). In addition, smaller presses [e.g., 35 x 50 cm (14" x 20")] that have and use the capability for precise variation of cylinder pressure as described in Degree A are included in this category.

Degree B(I). The manipulative and mechanical skill required in the operation of equipment at this degree relate directly to the knowledge requirements under Level I of Factor I. The complexity/quality of the material printed require that the offset press operator must be skilled in a variety of manipulative and mechanical procedures to perform standardized setups, adjustments, and operations on the equipment operated to produce single- and two-color work which include large solids, screen tints, line, and halftones with tolerances ranging from loose (no registration) to visually close (not requiring optical measurement) registration requirements and accurate margin alignment on work which is perfected or "backed-up" (printed on both sides through a single or double pass through the press). The press operator must be skilled in making major adjustments in running different jobs, sheet sizes, and paper stock (e.g., setting cylinder pressures, packing the plate cylinder(s) and adjusting the inking and dampening systems, and feedboard mechanism). The press operator must be skilled in the manipulation (approximate settings) of the press controls and adjustments (e.g., ink locks, guides, impression cylinder grippers, ink rollers, dampeners, timing the sheet to the front guides) to insure that the quality and registration requirements are met. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs on the press equipment operated (e.g., daily cleanup, scheduled lubrication, cleaning and/or replacement of blankets and dampening covers; replacing ductor rollers, and conveyor tapes).

Degree B(II). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirement under Level II of Factor I. The complexity/quality of the work produced at this level require the offset press operator be skilled in a variety of difficult manipulative and mechanical procedures necessary to perform set ups and adjustments on the offset press to produce single-color, two-color, and multicolor work which includes large solids, screen tints and symbols, duotones, line, and halftones with tolerances ranging from visually close (not requiring optical measurement) to hairline [plus or minus .008 cm (.003 inch)] registration requirements and accurate margin alignment on work which is "backed-up" (printed on both sides in a single or double pass through the press). The operator must be skilled in making major adjustments on the press (e.g., to the cylinders, ink, dampener, feeder and delivery mechanisms) to run different jobs, sheet sizes, and paper stock. The work performed at this level requires that the press operator be skilled in making a variety of difficult manipulations (precise settings) of the press controls, settings and adjustments (e.g., timing the sheet to the front

guide, adjusting the front and side guides, packing, inking and dampening units) to insure that the color consistency, quality, and registration requirements are met and maintained. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs to the press equipment operated (e.g., daily cleanup, scheduled lubrications, cleaning and/or replacement of blankets and dampening covers, replacing ductor rollers, form rollers, and conveyor tapes).

Degree B (III). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirement under Level III of Factor I. The complexity/quality of the work printed at this level require that the offset press operator be skilled in a wide variety of complex manipulative and mechanical techniques necessary to perform set ups and adjustments on the press to produce single-color, two-color, and multicolor (four-color process and/or nonprocess) work which include large solids, screen tints and symbols, line and halftones with tolerances ranging from hairline [plus or minus .008 cm (.003 inch)] to critical [e.g., plus or minus .003 cm (.001 inch) or finer] registration requirements and accurate margin alignment on work which is "backed-up" (i.e., printed on both sides in a single or double pass through the press). The press operator must be skilled in making major adjustments on the press (e.g., to the cylinders, ink, dampener, feeder and delivery mechanisms) to run different jobs, inks, sheet sizes, and paper stock. The work performed at this level requires that the press operator be skilled in making complex manipulations (more exacting and precise settings) of the press controls, settings, and adjustments (e.g., adjusting head stops, or front guides, inking and dampening units, timing the sheet to the front guide) to insure that the critical color, quality, and registration requirements are met and maintained. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs to the press (e.g., daily cleanup, scheduled lubrication, cleaning and/or replacement of blankets and dampening covers, replacing ductor rollers, form rollers, conveyor tapes, and belts).

Degree C. Offset printing presses in this category have a maximum sheet size capacity ranging from 85 x 110 cm (34" x 44") through 108 x 150 cm (43" x 60") and larger. The equipment in this category is extremely large in comparison with the equipment in degree A or B. Consequently, the size of the equipment and the number of individual printing heads (i.e., two-, three-, and five-color presses) may require other worker(s) in addition to a "full performance" level offset press operator.

Degree C(I). The manipulative and mechanical skill required in the operation of equipment at this degree relate directly to the knowledge requirements under Level I of Factor I. The complexity/quality of the material printed require that the offset press operator must be skilled in a variety of manipulative and mechanical procedures to perform standardized set ups, adjustments, and operations on the equipment operated to produce single- and two-color work which include large solids, screen tints and symbols, line, and halftones with tolerances ranging from loose (no registration) to visually close (not requiring optical measurement) registration requirements and accurate margin alignment or work which is "backed-up" (i.e., printed on both sides through a single or double pass through the printing press). The press operator must be skilled in making major adjustments in running different jobs, sheet sizes, and paper stock (e.g., setting



cylinder pressures, packing blanket and plate cylinders, adjusting ink, dampening, and feedboard mechanisms). The press operator must be skilled in the manipulation and settings of the press controls and adjustments (e.g., ink locks, water stops, guides, cylinder grippers, inking and dampening rollers, paper buckle, and timing mechanisms) to insure that the quality and registration requirements are met and maintained. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs on the press equipment operated (e.g., daily clean up, scheduled lubrication, cleaning and/or replacement of blankets and dampening covers, ductor and form rollers).

Degree C(II). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirement under Level II of Factor I. The complexity/quality of the work produced at this level requires the offset press operator be skilled in a variety of difficult manipulative and mechanical procedures necessary to perform setups and adjustments on the offset press to produce single-, two-color, and multicolor work which includes large solids, screen tints and symbols, line and halftones with registration tolerances ranging from visually close (not requiring optical measurement) to hairline [plus or minus .008 cm (.003 inch)] and accurate margin alignment on work which is "backed-up" (i.e., printed on both sides in a single or double pass through the press). The operator must be skilled in making major adjustments on the press in running different jobs, sheet sizes, and paper stock (e.g., setting precise cylinder pressures through packing the blanket and/or plate cylinders, adjusting the inking system and feedboard settings). The work performed at this level requires that the press operator be skilled in making a variety of difficult manipulations (precise settings) of the press controls, settings, and adjustments (e.g., setting up separator for running board, timing the sheet to the front stops, adjusting side guides, inking and dampening systems) to insure that the color consistency, quality, and registration requirements are met and maintained. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs to the press equipment operated (e.g., daily lubrication, cleaning and/or replacement of blankets and dampening covers, replacing ductor rollers, form rollers, and conveyor tapes).

Degree C(III). The manipulative and mechanical skill required at this degree relate directly to the knowledge requirement under Level III of Factor I. The Complexity/quality of the work printed at this level require that the offset press operator be skilled in a wide variety of complex manipulative and mechanical techniques necessary to perform very precise and exact setups and adjustments on the press to produce single-, two-color, and multicolor (four color process and/or nonprocess) work which includes large solids, screen tints and symbols, line and halftones with registration tolerances ranging from hairline (plus or minus .003 inch) to critical (plus or minus .001 inch or finer) and accurate margin alignment on work which is "backed-up" (i.e., printed on both sides in a single or double pass through the press). The press operator must be skilled in making major adjustments on the press (e.g., in running different jobs, sheet sizes, and paper stock), setting very precise cylinder pressures through packing the blanket and/or plate cylinders, repositioning or changing strippers, adjusting inking and dampening systems, and resetting feedboard). The work performed at this level requires that the press operator be skilled in making complex manipulations (more exacting and



precise settings) of the press controls, settings, and adjustments (e.g., flushing front stops, adjusting head stops or front guides, timing the sheet to the front stops, adjusting side guides and the pressure on feed rolls) to ensure that critical color consistency (balance), quality, and registration requirements are met and maintained. In addition, the press operator must be skilled in the routine operational maintenance and minor repairs to the press (e.g., daily cleanup, scheduled lubrication, cleaning and/or replacement of blankets and dampening covers, replacing rollers, and conveyor tapes).

GRADE DETERMINATION CHART

After determining the proper level of knowledge and responsibility under Factor I, and the corresponding degree of manipulative and mechanical skills under Factor II, use the grade determination chart on the following page to arrive at the appropriate grade level for the job.

Factor One			
Level of Knowledge and Responsibility			
	I	II	III
Factor Two Degree of Manipulative and Mechanical Skill	C	9 C(I)	10 C(II)
	B	8 B(I)	9 B(II)
	A	7 A(I)	8 A(II)

PART II. EXAMPLE JOB DESCRIPTIONS

EXAMPLE JOB DESCRIPTION NO. 1

Offset Duplicating Press Operator, 4417-7

Duties

Sets up, adjusts, operates, and maintains an automated tandem offset duplicating press [28 x 43 cm (11" x 17") maximum sheet size] with an in-line sorter to print single- and two-color work which typically include large solids, screen tints, line, and halftones, with tolerances ranging from loose to visually close registration requirements (e.g., multiple page documents, forms, letter heads, notices, graphs, and instructional materials).

Skill and Knowledge

Determines press setup by reviewing the work order for the size and type of paper required; color of ink(s) to be used, and if printing is required on both sides of the sheet. Lays out job by separating plates or masters in proper sequence of backs and fronts and single pages, and then mounts the plates or masters in proper position and sequence. Loads paper feeder with specified paper stock and adjusts paper feeder, feed board, and in-line sorter to sort and collate the printed pages. Determines the proper fountain solution and ink required for the kind of plates or masters on the work to be run. Adjusts cylinders and regulates ink flow for roller coverage, and regulates flow of fountain solution to obtain proper ink/water balance. Operates the press to determine that the printing is centered, margins are straight, and that quality of the copy is acceptable. Makes necessary adjustments to improve the paper feed and travel, straightness of margins, centering of copy, and registration tolerances on overprints and two-color jobs.

Maintains constant attention during the operation of the equipment to prevent wrinkling or jamming of paper and to maintain the quality of the impression. Performs daily maintenance on the equipment such as cleanup of the duplicator and sorter; oiling or greasing of moving parts; tightening or replacement of bolts, and removal, cleaning, and replacement of rollers and blankets.

Responsibility

The operator is under the general supervision of a foreman who makes assignments in the form of written work orders or oral instructions. The operator is responsible for the independent setup, adjustment, operation, and operational maintenance of the equipment, and the quality of the printed material (i.e., halftones and letters must be clear, ink tones and large solids must be uniform and consistent, and registration requirements must be maintained). Completed work is occasionally spot checked for compliance with work order requirements.



Physical Effort

The operator stands, stoops, crouches, kneels, stretches, and bends while operating the duplicator and performing operational maintenance. Lifts and carries moderately heavy 18 kilograms (40 pounds) loads of paper and printing supplies. Work requires good hand and eye coordination to make adjustments during press operations.

Working Conditions

The work is performed indoors with adequate heat, light, and ventilation. The operator is exposed to skin irritations from chemical solutions and inks used in press operations, cuts and bruises to fingers during press operations, and silage from inks, chemicals, and grease. In addition, the operator is exposed to noises and unpleasant odors normally associated with press operations.

Factor Selection

Knowledge and Responsibility -- Level I
Manipulative and Mechanical Skill -- Degree A(I)
Grade Level -- 7

EXAMPLE JOB DESCRIPTION NO. 2

Offset Duplicating Press Operator, 4417-8

Duties

Sets up, adjusts, operates, and maintains a single-color, offset duplicating press (10" x 15" maximum sheet size) to print single-, two color and multicolor work which typically includes line, large solids, screen tints, and halftones with registration tolerances ranging from visually close to hairline. For example typical products include multiple page publications, newsletters, brochures, certificates, and technical reports including illustrations.

Skill and Knowledge

Reviews job specifications to determine press setup, materials needed, and color and sequence of inks to be run in multicolor work. Sets up and adjusts feed and delivery mechanism. Determines proper fountain solution required according to the type of plates or masters to be used. Adjusts cylinders and regulates ink flow for uniform coverage and regulates flow of fountain solution to maintain proper water/ink balance. Operates the press to determine that the copy is centered, color is uniform, and halftones and characters are sharp and clear. Makes necessary adjustments



4417-8**4417-8**

to improve the paper feed and travel to maintain registration requirements. Two-color and multicolor work requires that the inking system on a single-color duplicating press be thoroughly cleaned between different color ink runs, and that precise adjustments are made to the feed and delivery mechanisms to maintain registration tolerances during production runs.

Observes the operation of the equipment during run, making minor adjustments to maintain correct register of one color to another, and the quality of the impression.

Performs daily maintenance on the offset duplicating equipment such as lubrication, cleaning, replacement of blankets and rollers, and minor repairs.

Responsibility

The operator is responsible for the independent setup, adjustment, operation, and operational maintenance of the equipment. In addition, the operator is responsible for the registration and quality of the impression (i.e., good overall appearance, accurate registration, crisp halftones, sharp characters, and uniform and consistent colors). This includes mixing inks and fountain solutions, and making adjustments during press operation to maintain the copy quality. The work is printed in accordance with job order specifications or oral instructions. The completed work is spot checked by the press foreman.

Physical Effort

The work requires prolonged standing, bending, stretching, and reaching during operation and operational maintenance of the equipment. The operator must frequently lift and carry moderately heavy 20 kilograms (40 pounds) loads of printing supplies and paper. Work requires frequent hand-arm movement, and good hand and eye coordination when precise adjustments are made during press operations.

Working Conditions

The work is performed indoors with adequate heat, light, and ventilation. The operator is exposed to skin irritations from chemical solutions and inks used in press operations, cuts and bruises to fingers during press operations, and silage from inks, chemicals, and grease. In addition, the operator is exposed to noises and unpleasant odors normally associated with press operations.

Factor Selection

Knowledge and Responsibility -- Level II
Manipulative and Mechanical Skill -- Degree A(II)
Grade Level -- 8

*EXAMPLE JOB DESCRIPTION NO. 3***Offset Press Operator, 4417-8***Duties*

Sets up, adjusts, operates and maintains a single-color offset press [55 x 73 cm (22" x 29") maximum sheet size] to print single- and two-color work which typically includes large solids, screen tints, line, and halftones with tolerance requirements ranging from loose to visually close registration (e.g., multipaged publications which frequently contain illustrations, halftones, and graphs).

Skill and Knowledge

Reviews requisitions to determine job specifications (i.e., number of copies, type and size of paper stock, colors of ink, registration tolerances, and whether printing is to be on one or both sides). Prepares press for operation by loading stock in the feeder and making necessary adjustments to the feeder and feedboard (e.g., adjusts suction and blast, front and side guides, and the timing of the sheet to the head stops), checks that the fountain etch solution is within the proper pH range, adjusts water and ink fountain controls to obtain water/ink balance necessary for good printing quality, sets dampening mechanism for proper contact to plate and vibrator roller, and adjusts form rollers. Inspects plate for defects. Mounts and aligns the printing plate after measuring with a micrometer the plate and blanket to determine the amount of packing necessary to obtain the proper printing pressure to allow for the thickness of the stock being run. Operates press to pull a lay sheet and inspects for misregister, uniformity of impression, ink coverage, and other elements of quality; adjusts press to correct deficiencies.

Checks work during press run for mechanical malfunctions, chemical problems, correct registration, alignment, and quality of the impression.

Performs daily and periodic operator maintenance including oiling, greasing, cleaning, and minor parts replacement.

Responsibility

Works under the direction of the pressroom foreman who makes assignments in the form of written work orders or oral instructions. Receives technical assistance only in unusual situations. Completed work is reviewed by foreman for compliance with work order requirements. Makes independent decisions regarding press setups, adjustments, and operating procedures to maintain the quality of impression and the work order requirements.



4417-8**4417-8***Physical Effort*

Prolonged standing, bending, reaching, and walking occurs; must climb upon press to make some adjustments, clear jams, clean ink fountains, press rollers, etc. Frequently lifts paper stock and printing supplies that weigh up to 23 kilograms (50 pounds).

Working Conditions

The work is performed indoors with adequate heat, light, and ventilation. The operator is exposed to skin irritations from chemical solutions and inks used in press operations, cuts and bruises to fingers during press operations, and silage from inks, chemicals, and grease. In addition, the operator is exposed to noises and unpleasant odors normally associated with press operations.

Factor Selection

Knowledge and Responsibility -- Level I
Manipulative and Mechanical Skill -- Degree B(I)
Grade Level -- 8

*EXAMPLE JOB DESCRIPTION NO. 4***Offset Press Operator, 4417-9***Duties*

Sets-up, adjusts, operates, and maintains a single-color offset press (19" x 25" maximum sheet size) to print single-color, two-color, and multicolor work which typically include large solids, screen tints, duotones, line, and halftones with registration requirements that range from visually close to hairline. For example, typical products may include graphs, brochures, texts, and technical reports.

Skill and Knowledge

Determines size and type of paper stock, colors of ink, their sequence of application, the number of passes through the press, whether printing is to be on both sides, and any special setups which may be required. Performs setups according to the weight, size, and type of paper stock to be run. Makes precise adjustments to feeder, friction wheels, slow down wheels, caliper, guides, air, and vacuum pressure. Measures plate and blanket with a micrometer to determine the packing required in order to obtain the proper printing pressure to allow for the thickness of the plate, blanket, and the stock being run. Installs plate and blanket with proper packing on respective cylinders. Adjusts ink and water



4417-9**4417-9**

fountain controls to obtain proper balance. Checks the pH fountain solution and adjusts as necessary. Adds varnishes, driers, and extenders in ink when required for individual job specifications. Sets dampening mechanism and adjusts form and oscillator rollers. Checks cylinder pressures. Operates press to pull a lay sheet and inspects for uniformity of impression, ink coverage and color tone, and misregister. Performs precise adjustments to correct quality deficiencies.

Performs daily and periodic operator maintenance including oiling, deglazing, cleaning, and minor parts replacement.

Responsibility

The press operator works under the general supervision of the pressroom foreman and receives assignments from the foreman in the form of oral instructions or written work orders. The press operator makes independent decisions regarding press setups, adjustments, and operating procedures to establish and maintain registration and quality requirements according to the work order specifications. Completed work is spot checked by the foreman for compliance with job specifications, overall acceptability, and established practices.

Physical Effort

Prolonged standing, bending, reaching, and walking occurs; must climb upon press to make some adjustments, clear jams, clean ink fountains, press rollers, etc. Frequently lifts paper stock and printing supplies that weigh up to 20 kilograms (40 pounds), and occasionally, materials weighing in excess of 23 kilograms (50 pounds).

Working Conditions

The work is performed indoors with adequate heat, light, and ventilation. The operator is exposed to skin irritations from chemical solutions and inks used in press operations, cuts and bruises to fingers during press operations, and silage from inks, chemicals, and grease. In addition, the operator is exposed to noises and unpleasant odors normally associated with press operations.

Factor Selection

Knowledge and Responsibility -- Level II
Manipulative and Mechanical Skill -- Degree B(II)

Grade Level -- 9



*EXAMPLE JOB DESCRIPTION NO. 5***Offset Press Operator, 4417-10***Duties*

Sets-up, adjusts, operates, and maintains a single-color offset press [48 x 63 cm (19" x 25") maximum sheet size] to print single-color, two-color, and multicolor (four-color process) work which includes large solids, screen tints, line, and halftones with critical color values and registration requirements ranging from hairline to critical. Typical products include multipaged publications which frequently contain halftones, text, medical illustrations, and graphs (e.g., medical atlases).

Skill and Knowledge

Determines the press setup according to the imposition of the run (sheetwise or work and turn), the size and thickness of the paper stock, the thickness of the offset plate, and the sequence in which different color inks are to be printed. Performs a variety of setups and adjustments according to the work to be printed. Examines offset plates for imperfections and checks for correct positioning of images on color plates. Mixes fountain solution to obtain proper pH (indicates alkaline-acid levels) and maintains proper percentage of alcohol in fountain solution. Measures blanket, plate, and paper with a micrometer to determine plate packing necessary to obtain the proper "squeeze" (printing pressure). Installs plate with required packing and adjusts plate tension on cylinder. Loads paper in feeder and adjusts feeder and delivery mechanism for proper press operation. Checks sheet timing to head stops. Adjusts fountain controls to obtain proper water/ink balance. Sets dampening mechanism for proper contact and adjusts rollers. Operates press to "pull" lay sheet and inspect for misregister, uniformity of impression, color tone (fidelity), and other elements of quality. Makes necessary color corrections and/or press adjustments prior to production run to meet and maintain the quality specifications of the work.

Cleans, lubricates, and maintains the press, making minor repairs and replacing worn or broken parts as required. Performs periodic maintenance recommended by the manufacturer.

Responsibility

The press operator receives general supervision from the plant supervisor, consisting of work assignments in the form of written work orders and oral instructions. The press operator makes independent decisions based on craft practices to determine press operating procedures to establish and maintain critical registration and color requirements according to work order specifications. Completed work is reviewed by the plant supervisor for overall acceptability and color fidelity to original material.



4417-10**4417-10***Physical Effort*

Prolonged standing, bending, reaching, and walking occurs; must climb upon press to make some adjustments, clear jams, clean ink fountains, press rollers, etc. Frequently lifts paper stock and printing supplies that weigh up to 23 kilograms (50 pounds).

Working Conditions

The work is performed indoors with adequate heat, light, and ventilation. The operator is exposed to skin irritations from chemical solutions and inks used in press operations, cuts and bruises to fingers during press operations, and silage from inks, chemicals, and grease. In addition, the operator is exposed to noises and unpleasant odors and fumes normally associated with press operations.

Factor Selection

Knowledge and Responsibility -- Level III
Manipulative and Mechanical Skill -- Degree B(III)
Grade Level -- 10

*EXAMPLE JOB DESCRIPTION NO. 6***Offset Press Operator, 4417-9***Duties*

Sets-up, adjusts, operates, and maintains a single-color offset press [88 x 113 cm (35" x 45") maximum sheet size] to print single- and two-color work involving large solids, tint screens, line, and halftones with loose to close registration requirements (e.g., training manuals and technical reports).

Skill and Knowledge

Determines press setups according to specifications and requirements in work orders. Performs setups according to type and weight of paper stock and how the work is to be run (e.g., work and turn, work and tumble). Makes necessary adjustments to feed mechanism (e.g., levels stockpile, sets up separator, adjusts pickup, air and vacuum pressures), feedboard (e.g., adjusts sheet guides, front stops, side guides and sets fast sheet and multiple sheet detectors, and times sheet to front stops). Mixes fountain solution from concentrated stock etch and gum arabic to proper pH values. Add varnishes, driers, and extenders to inks to meet individual job specifications. Determines amount of under packing necessary after measuring the thickness of the plate,



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blanket, and paper stock with a micrometer. Inspects plate for obvious defects. Installs and aligns plate with proper packing. Adjusts delivery mechanism (e.g., rear and side joggers) operates press, pulls a "lay sheet," and checks for uniformity of impression, misregister, and overall quality; adjusts press to correct for deficiencies and ensure printing of an acceptable and approved quality.

Inspects press operation to maintain quality of impression, registration requirements, prevent paper wrinkles, and to prevent or correct mechanical or chemical difficulties.

Performs daily and periodic operator maintenance by oiling, greasing, cleaning cylinder surfaces, and minor parts replacement.

Responsibility

Receives general supervision from the pressroom foreman, consisting of work assignments in the form of written work orders and verbal instructions. Makes independent decisions regarding press setups, adjustments, and operating procedures according to accepted practices and established procedures. Completed work is spot checked for compliance with work order requirements, instructions, and trade practices.

Physical Effort

The work requires climbing and prolonged standing, stretching, bending, and reaching during the operation and maintenance of the press. The operator must frequently lift and carry supplies weighing from 14 to 23 kilograms (30 to 50 pounds) and, occasionally, materials weighing up to 34 kilograms (75 pounds). The work requires good vision and good hand and eye coordination.

Working Conditions

The work is performed in a shop which is well lighted and heated but extremely noisy. The press operator is exposed to skin irritations and unpleasant odors and fumes from inks, solvents, acids, and other chemicals normally associated with pressroom operations. Also, the press operator is exposed to hazards from moving parts on the press and possible cuts from paper edges.

Factor Selection

Knowledge and Responsibility -- Level I
Manipulative and Mechanical Skill -- Degree C(I)
Grade Level -- 9



*EXAMPLE JOB DESCRIPTION NO. 7***Offset Press Operator, 4417-10***Duties*

Sets-up, adjusts, operates, and maintains a two-color offset press [105 x150 cm (42" x 60") maximum sheet size] to print two-color and multicolor maps and charts involving line work, screen tints, and halftones in various color combinations with registration requirements ranging from close to hairline with precise color values.

Overprints corrections and additional information onto previously printed but unissued maps and charts.

Directs the activities of two press helpers in setting up and operating the press.

Skill and Knowledge

Reviews job specifications for feature coverage, color, and registration requirements to determine the press setup and the sequence of colors to be printed. Performs setups and makereadies (adjustments). Adjusts and loads feed mechanism. Performs precise adjustments to registering mechanisms. Measures stock, blanket, and plate with a micrometer to determine the amount of packing necessary. Checks press plates to determine that they are in running condition and will yield quality images. Installs plates and blankets with proper packing; interchanges packing sheets between blankets and plate cylinders to achieve precise print size. Adjusts positioning of cylinders for exact alignment. Mixes inks to obtain proper color and adds varnishes and driers as required. Mixes solutions for water fountains. Adjusts ink fountains for proper ink coverage to maintain quality printing. Sets dampening mechanism. Checks and adjusts as necessary the pressure between plates, blankets, and impression cylinders. Pulls proof copy to inspect for misregister and imperfections. Makes necessary adjustments to ensure printing of an acceptable quality as required in the work order specifications.

Inspects printed sheets at frequent intervals during press run for accuracy of register and proper color. Makes adjustments as necessary. Maintains press by oiling and greasing, cleaning cylinder surfaces, making minor repairs, and replacing broken and worn parts as required.

Responsibility

Works independently under general supervision of the printing press foreman who issues work assignments in the form of written work orders. Receives advice and guidance on unusually complex technical problems (i.e., difficult registration or in obtaining desired shade of color).

Proof copies are frequently pulled and checked by a quality control inspector during the press run for technical adequacy, accuracy, and conformance with established standards and adherence to job specifications.

4417-10**4417-10***Physical Effort*

The work requires climbing and prolonged standing, stretching, bending, and reaching during the operation and maintenance of the press. The operator must frequently lift and carry supplies weighing from 14 to 23 kilograms (30 to 50 pounds) and, occasionally, materials weighing up to 34 kilograms (75 pounds). The work requires good vision and good hand and eye coordination.

Working Conditions

The work is performed in a shop which is well lighted and heated but extremely noisy. The press operator is exposed to skin irritations and unpleasant odors and fumes from inks, solvents, acids, and other chemicals normally associated with press room operations. Also, the press operator is exposed to hazards from moving parts on the press and possible cuts from paper edges.

Factor Selection

Knowledge and Responsibility -- Level II
Manipulative and Mechanical Skill -- Degree C(II)
Grade Level -- 10

*EXAMPLE JOB DESCRIPTION NO. 8***Offset Press Operator, 4417-11 (Second Press Operator)***Duties*

Serves as second press operator on a five-color offset press [105 x 150 cm (42" x 60") maximum sheet size] and performs or assists in setups, adjustments, operation, and maintenance of the press to print multicolor maps and charts involving line, screen tints, and halftones in various color combinations with hairline to critical registration requirements, and very exacting and precise maintenance of color values. As required, directs the activities of a lower graded press operator and two helpers in the setup, adjustment, operation, and maintenance of the press.

Skill and Knowledge

Reviews job specifications for color, feature coverage, and registration requirements to determine press setup, color sequence, and material requirements. Performs all makeready tasks, setups, and adjustments to the press including inspecting of the printing plates. Adjusts continuous feeder and delivery mechanisms. Determines the amount of packing necessary to obtain proper printing pressures. Installs plates and blankets with correct packing. Adjusts cylinder for proper pressure and alignment.



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Mixes solutions for water fountains and adjusts electronic dampening system and other automatic attachments of various types. Mixes inks to achieve required color value and determines when ink additives are necessary. Adjusts ink mechanisms for proper color coverage. Determines adjustments necessary to the press to compensate for variations due to material, chemical, or mechanical problems. Performs precise and very exacting adjustments to achieve and maintain critical tolerances (e.g., adjusting front stops to compensate for paper stock bowing in or out; altering the amount of packing in specific areas under the plates/blankets to establish and hold critical registration requirements). Pulls proof sheet to inspect for color balance, misregister, and other quality imperfections, and makes necessary adjustments. Maintains lithographic quality, color uniformity, and register control throughout the production run.

Maintains and inspects printed sheets at frequent intervals during press run for accuracy of register and proper color. Makes adjustments as necessary. Maintains press by oiling and greasing, cleaning cylinder surfaces, making minor repairs and replacing broken and worn parts as required.

Responsibility

As second press operator, works under the technical supervision of the lead press operator who makes oral assignments. Receives advice and guidance on unusual registration and/or color problems. Work is reviewed closely while in progress and upon completion. Exercises initiative and judgment to ensure quality and consistency in accordance with general directions from the lead press operator.

Physical Effort

The work requires climbing and prolonged standing, stretching, bending, and reaching during the operation and maintenance of the press. The operator must frequently lift and carry supplies weighing from 14 to 23 kilograms (30 to 50 pounds) and, occasionally, materials weighing up to 34 kilograms (75 pounds). The work requires good vision and good hand and eye coordination.

Working Conditions

The work is performed in a shop which is well lighted and heated but extremely noisy. The press operator is exposed to skin irritations and unpleasant odors/fumes from inks, solvents, acids, and other chemicals normally associated with pressroom operations. Also, the press operator is exposed to hazards from moving parts on the press and cuts from paper edges.

Factor Selection

Knowledge and Responsibility -- Level III
Manipulative and Mechanical Skill -- Degree C(III)
Grade Level -- 11

