



STATE OF COLORADO

CLASS SERIES DESCRIPTION

August 1, 1994

COMPUTER OPERATIONS

G2A1IX TO G2A5XX AND H2B1XX

DESCRIPTION OF OCCUPATIONAL WORK

This class series uses five levels in the Administrative Services and Related Occupational Group and one level in the Professional Services Occupational Group. This series describes work in the operation, maintenance, and monitoring of computers and peripheral equipment in a data processing environment, including central mainframes, and mini-computer clusters. Work in this class series includes starting and restarting the system or network; setting up and troubleshooting equipment; and, executing jobs on the daily production schedule. It is the emphasis on the operation and maintenance of the system and its equipment that separates this class series from others involved in a data processing operation.

Included in this class series are positions responsible for supervising all the technical functions of a data processing operation, including quality assurance, data entry, networks, computer production control, customer support services, and computer operations. Operating managers plan and oversee all operational facets of the data processing program, monitor the use of allocated staff and operating expenses, and participate with higher levels of data processing management in planning budget requests and policies.

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COMPUTER OPERATOR INTERN

G2A1IX

CONCEPT OF CLASS

This class describes the entry level. Work is designed to train positions for a higher level in the class series. Although tasks are similar to those of the fully-operational level, assignments are structured and performed with direction and assistance from others. Positions carry out established work processes and operations by learning to apply and follow procedures, techniques, rules, and regulations. Once training

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has been completed, the position is to be moved to the next level. Positions should not remain in this class indefinitely.

COMPUTER OPERATOR I

G2A2TX

CONCEPT OF CLASS

This class describes the fully-operational computer operations technician. Positions in this class operate and monitor computer system equipment. Work includes responding to system messages; entering the correct commands to start or restart the system and its equipment; mounting tapes and monitoring runs; maintaining printers by loading, aligning, cleaning, un-jamming, and replacing ribbons; testing and maintaining work stations, tape drives, modems, and communication lines; updating daily logs of job flow and system problems or malfunctions; and, running system backups. Positions may also maintain inventories of data processing supplies and equipment.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the defined level, as described here. Within limits prescribed by the operation, choices involve selecting alternatives that affect the manner and speed with which tasks are carried out. For example, positions determine the methods and timing to efficiently complete assignments. These choices do not affect the standards or results of the operation itself because there is typically only one correct way to carry out the operation. For example, if the correct commands, protocols, and tapes are not used, the job may fail or the output will be incorrect. These alternatives include independent choice of such things as priority and personal preference for organizing and processing the work, proper tools or equipment, speed, and appropriate steps in the operation to apply. For example, within prescribed limits, positions prioritize print jobs and decide when to replace ribbons or report equipment problems. By nature, the data needed to make decisions can be numerous but are clear and understandable so logic is needed to apply the prescribed alternative. Positions can be taught what to do to carry out assignments and any deviation in the manner in which the work is performed does not change the end result of the operation.

Complexity -- The nature of, and need for, analysis and judgment is prescribed, as described here. Positions apply established, standard guidelines which cover work situations and alternatives. In this class, guidelines include standard operating procedures and protocols, manuals of commands and the meaning of system messages, production schedules, hardware and software manuals, copyrights, system configuration, procedures and lists for access authorization, and operating instructions. For example, if an error message requires a change in operating instructions or the sequence of operations, positions will first confer with others before continuing the job. Action taken is based on learned, specific guidelines that permit little deviation or change as the task is repeated. For example, positions in this class use defined and/or documented instructions and procedures which result in errors if not applied correctly. Any alternatives to choose from are clearly right or wrong at each step. For example, while there may be a number of established alternatives to choose from at any given point in the operation, if the incorrect routine or instructions are used, an error condition may result.

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Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions explain operating procedures and technical manuals to customers, gather facts to set up or validate access privileges, describe problems to programmers and repair technicians, clarify unclear operating procedures and instructions with the programmer, and instruct customers on the steps to follow to isolate and fix a malfunction that has been clearly identified and defined.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe for information when the nature and cause of the problem is unclear so the solution is not obvious.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

COMPUTER OPERATOR II

G2A3XX

CONCEPT OF CLASS

This class describes the second-level computer operator in a data processing environment. While the environment, system operations, and its processes may remain defined, the complexity of the job is different. At this level, the guidelines and system limits allow for flexibility in adapting or combining numerous options, any of which could be correct, into different practical approaches or routines depending on the situation. Work includes such activities as testing programs before they are installed on the operating system; choosing program options or parameters; and troubleshooting problems that do not follow established patterns so the cause is not obvious and established protocols do not work. Included in this class are work leaders. Such positions are partially accountable for the work product of at least two full-time equivalent positions. Such work includes planning and assigning work, training and scheduling assigned workers, monitoring and reporting on the work unit's production and flow, and updating written operating procedures and guidelines used by staff to reflect changes. This class differs from the Computer Operator I on the Complexity factor and possibly on the Decision Making and Line/Staff Authority factor.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

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Decision Making -- The decisions regularly made are at the defined level, as described here. Within limits prescribed by the operation, choices involve selecting alternatives that affect the manner and speed with which tasks are carried out. For example, positions determine the methods and timing to efficiently complete assignments. These choices do not affect the standards or results of the operation itself because there is typically only one correct way to carry out the operation. For example, if the correct commands, protocols, and tapes are not used, the job may fail or the output will be incorrect. These alternatives include independent choice of such things as priority and personal preference for organizing and processing the work, proper tools or equipment, speed, and appropriate steps in the operation to apply. For example, within prescribed limits, positions prioritize print jobs and decide when to replace ribbons or report equipment problems. By nature, the data needed to make decisions can be numerous but are clear and understandable so logic is needed to apply the prescribed alternative. Positions can be taught what to do to carry out assignments and any deviation in the manner in which the work is performed does not change the end result of the operation. At this level, the environment, system operations, and its operations and processes remain defined and proceduralized.

OR

The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. For example, positions at this level determine internal working procedures, forms, and standards for the unit and rewrite operating manuals and instructions for staff. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. For example, within established operational processes, positions develop practical work plans and schedules used to accomplish the work of the unit. Choices are within a range of specified, acceptable standards, alternatives, and technical practices. For example, positions use established data processing security policies, procedures, and practices when authorizing physical and system access.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study workload, equipment and software resource usage, access needs, and scheduling information to determine what it means and how it fits together in order to get practical solutions in the form of work plans, operating manuals, and standards and priorities for the work unit. Guidelines in the form of standard operating procedures and policies, protocols, hardware and software manuals, copyrights, and instructions exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. For example, positions modify existing operating procedures and instructions for staff to accommodate system changes; and, establish workload priorities and standards which may change with production schedules at any given time. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

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Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions explain operating procedures and technical manuals to customers, set up or validate access privileges, describe problems to programmers and repair technicians, and clarify unclear operating procedures and instructions with the programmer.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe for information when the nature and cause of the problem is unclear so the solution is not obvious. Positions may investigate the possible misuse of equipment or violations of software copyrights to determine the validity and cause of the problem and make recommendations on a solution.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an individual contributor or work leader. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team.

OR

The direct field of influence the work of a position has on the organization is as a work leader or staff authority. The work leader is partially accountable for the work product of two or more full-time equivalent positions, including timeliness, correctness, and soundness. At least one of the subordinate positions must be in the same series or at a comparable conceptual level. Typical elements of direct control over other positions by a work leader include assigning tasks, monitoring progress and work flow, checking the product, scheduling work, and establishing work standards. The work leader provides input into supervisory decisions made at higher levels, including signing leave requests and approving work hours. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

COMPUTER OPERATIONS SUPERVISOR I

G2A4XX

CONCEPT OF CLASS

This class describes the first-level supervisor. In addition to the responsibilities performed in previous computer operations classes, positions in this class are responsible for the direct supervision of at least three full-time equivalent positions, including decisions that affect the pay, status, and tenure of subordinates. Work includes planning and projecting the unit's workload, training and scheduling assigned workers, monitoring and reporting on the work unit's production and flow, developing office procedures and standards, updating written operating procedures and guidelines used by staff to reflect changes, recording expenditures of operating funds, and preparing and signing documents to approve payments. This class differs from the Computer Operator II on the Line/Staff Authority factor.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

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Decision Making -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. For example, positions at this level determine internal working procedures, forms, and standards for the unit, rewrite operating manuals and instructions to reflect changes in operations, write reference manuals used by staff, and determine downtime for system maintenance. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. For example, within established operational processes, positions develop practical work plans and schedules used to accomplish the work of the unit. Choices are within a range of specified, acceptable standards, alternatives, and technical practices. For example, positions use established data processing security policies, procedures, and practices when authorizing physical and system access or use of new equipment and software.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study workload, equipment and software resource usage, access needs, and scheduling information to determine what it means and how it fits together in order to get practical solutions in the form of work plans, standards, priorities, and procedures for the work unit. Guidelines in the form of standard operating procedures and policies, protocols, hardware and software manuals, copyrights, and instructions exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. For example, positions modify existing operating procedures and instructions for staff to accommodate system changes; and, establish workload priorities, standards, and schedules which may change with production schedules at any given time. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions explain operating procedures and technical manuals to customers, gather facts to set up or validate access privileges, describe problems to programmers and repair technicians, and clarify unclear operating procedures and instructions with the programmer.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe for information when the nature and cause of the problem is unclear so the solution is not obvious. Positions may investigate the possible misuse of equipment or violations of software copyrights to determine the validity and cause of the problem and make recommendations on a solution.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as a unit supervisor. The unit supervisor is accountable, including signature authority, for actions and

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decisions that directly impact the pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be in the same series or at a comparable conceptual level, such as the Customer Support Coordinator II or Computer Production Coordinator II. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

COMPUTER OPERATIONS SUPERVISOR II

G2A5XX

CONCEPT OF CLASS

This class describes the second-level supervisor. In addition to the responsibilities performed in previous computer operations classes, positions in this class are responsible for supervising through at least two full-time equivalent unit supervisors, including decisions that affect the pay, status, and tenure of subordinates. Work includes planning and projecting the unit's workload, training and scheduling assigned workers, monitoring and reporting on the work unit's production and flow, developing office procedures and standards, updating written operating procedures and guidelines used by staff to reflect changes, recording expenditures of operating funds, and preparing and signing documents to approve payments.

FACTORS

Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. For example, positions at this level determine internal working procedures, forms, and standards for the unit, rewrite operating manuals and instructions to reflect changes in operations, write reference manuals used by staff, and determine downtime for system maintenance. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. For example, within established operational processes, positions develop practical work plans and schedules used to accomplish the work of the unit. Choices are within a range of specified, acceptable standards, alternatives, and technical practices. For example, positions use data processing security policies, procedures, and practices when authorizing physical and system access or use of new equipment and software.

Complexity -- The nature of, and need for, analysis and judgment is patterned, as described here. Positions study workload, equipment and software resource usage, access needs, and scheduling information to determine what it means and how it fits together in order to get practical solutions in the form of work plans, standards, priorities, and procedures for the work unit. Guidelines in the form of standard operating procedures and policies, protocols, hardware and software manuals, copyrights, and instructions exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. For example, positions modify existing operating procedures and instructions for staff to accommodate system

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changes; and, establish workload priorities, standards, and schedules which may change with production schedules at any given time. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of either of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual problems, errors, or complaints. For example, positions explain operating procedures and technical manuals to customers, gather facts to set up or validate access privileges, describe problems to programmers and repair technicians, and clarify unclear operating procedures and instructions with the programmer.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe for information when the nature and cause of the problem is unclear so the solution is not obvious. Positions may investigate the possible misuse of equipment or violations of software copyrights to determine the validity and cause of the problem and make recommendations on a solution.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as a second-level supervisor (manager). The second-level supervisor must be accountable for multiple units through the direct supervision of at least two subordinate Unit Supervisors; and, have signature authority for actions and decisions that directly impact pay, status, and tenure. At least one position supervised must be a Unit Supervisor in this class series; others may be in the Customer Support Coordinator III or a comparable supervisory level. Elements of formal supervision must include providing documentation to support corrective and disciplinary actions, second level signature on performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

COMPUTER OPERATIONS MANAGER

H2B1XX

CONCEPT OF CLASS

This class describes the manager of all operational facets in an agency's data processing program, including data entry, computer production control, customer support services, system security, and system or network operations. Positions in this class direct, plan, organize, schedule, and monitor operational functions. Work includes establishing operating hours for the center, developing performance standards for service delivery, monitoring the use of allocated staff and equipment in the various functions, participating with higher data processing management in long-range planning and budgeting as they affect operational functions.

FACTORS

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Allocation must be based on meeting all of the four factors as described below.

Decision Making -- The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. For example, within the limits of data processing standards, the agency's data processing resources, and the policies and objectives established by higher data processing managers, positions determine the processes for the operations aspect of the data processing environment, including establishing hours of center operation or customer access to the system, staffing levels, and operations and production procedures. The general pattern, program, or system exists but must be individualized. For example, the computer system and the data processing program exist and positions in this class determine schedules and plans for the operations aspect of the program and system. This individualization requires analysis of data that is complicated. For example, in developing the priorities for an installation/upgrade plan, positions in this class must consider the product needed, the cost, who and how many need it, whether to wait for new products ready for release in the near future, the impact of downtime on operations and other system customers, and the problems solved or created in relation to current hardware and software products. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. For example, positions apply data processing operations models, standards, and concepts in relation to adjusting for problems with the product installation/upgrade plans or implementing new production or scheduling methods. New processes or objectives require approval of higher management or the agency with authority and accountability for the program or system. For example, a new service or operation would require the approval of data processing management.

Complexity -- The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of production, scheduling, and service delivery models, concepts, and principles in order to tailor them to develop a different approach or tactical plan to fit specific circumstances. For example, positions in this class apply these models and concepts when establishing system installation/upgrade plans or creating operations and production manuals. While general policy, precedent, or non-specific practices exist, they are inadequate so they are relevant only through approximation or analogy. For example, within data processing program policies and goals and the system itself, positions draw analogies from current practice and models to develop new production or scheduling methods. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies. For example, a position in this class tailors existing guidelines, plans, services, and overall performance standards when adjusting production and scheduling methods and general priorities to accommodate changes in the environment.

Purpose of Contact -- Regular work contacts with others outside the supervisory chain, regardless of the method of communication, are for the purpose of any of the following:

Exchanging or collecting information with contacts. This involves giving learned information that is readily understandable by the recipient or collecting factual information in order to solve factual

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problems, errors, or complaints. For example, positions explain operating procedures and technical manuals to customers, gather facts to set up or validate access privileges, and describe problems to programmers and repair technicians.

Detecting, discovering, exposing information, problems, violations or failures by interviewing or investigating where the issues or results of the contact are not known ahead of time. For example, positions probe for information when the nature and cause of the problem is unclear so the solution is not obvious. Positions may investigate the possible misuse of equipment or violations of software copyrights to determine the validity and cause of the problem and its solution.

Clarifying underlying rationale, intent, and motive by educating others on unfamiliar concepts and theories or marketing a product or service. This goes beyond what has been learned in training or repeating information that is available in another format.

Line/Staff Authority -- The direct field of influence the work of a position has on the organization is as an operating manager (unit supervisor or manager). The operating manager is accountable, including signature authority, for actions and decisions that directly impact the pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be in the same series, the Computer Operations Supervisor II, or at a comparable conceptual level. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

OR

Some operating managers are accountable for multiple units through the direct supervision of at least two subordinate Unit Supervisors; and, have signature authority for actions and decisions that directly impact pay, status, and tenure. Elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, second-level signature on performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

ENTRANCE REQUIREMENTS

Minimum entry requirements and general competencies for classes in this series are contained in the State of Colorado Department of Personnel web site.

For purposes of the Americans with Disabilities Act, the essential functions of specific positions are identified in the position description questionnaires and job analyses.

CLASS SERIES HISTORY

Revised 8/1/94 (KKF). Adjust factors in Computer Operations Manager (H2B1).

Effective 9/1/93 (KKF). Job Evaluation System Revision project. Published as proposed 4/26/93.

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Revised 1/1/92. Changed relationship on Operations Manager III (2728) and Customer Relations/Quality Control Manager (A2794).

Revised 8/1/83. Changed minimum requirements (substitution) on Operations Managers (A2746-A2748).

Revised 7/1/81. Changed relationship on Customer Relations/Quality Control Manager (2794).

Revised 7/1/80. Changed grade on Operations Supervisor I (A2744).

Revised 7/1/79. Changed minimum requirements (substitution) on Customer Relations/Quality Control Manager (2794).

Created 7/1/78. Customer Relations/Quality Control Manager (A2794).

Created 1/1/75. Computer Operator A & B (A2732-A2733), Senior Computer Operator (A2734), Principle (A2735), Computer Supervisor I & II (A2736-2737), Operations Supervisor I & II (A2744-2745), Operations Manager I through III (A2746-2748).

SUMMARY OF FACTOR RATINGS

Class Level	Decision Making	Complexity	Purpose of Contact	Line/Staff Authority
Computer Operator Intern	na	na	na	na
Computer Operator I	Defined	Prescribed	Exchange or Detect	Indiv. Contributor
Computer Operator II	Defined or Operational	Patterned	Exchange or Detect	Indiv. Contributor or Work Leader
Computer Operations Supv I	Operational	Patterned	Exchange or Detect	Unit Supervisor
Computer Operations Supv II	Operational	Patterned	Exchange or Detect	Manager
Computer Operations Manager	Process	Formulative	Exchange, Detect, or Clarify	Unit Supervisor or Manager