

Position Classification Standard for Railroad Safety Series, GS-2121

Table of Contents

SERIES DEFINITION.....	2
COVERAGE.....	2
EXCLUSIONS.....	2
OCCUPATIONAL INFORMATION.....	3
TITLES.....	10
GRADING OF POSITIONS.....	10
GRADE CONVERSION TABLE.....	11
FACTOR LEVEL DESCRIPTIONS.....	11
FACTOR 1, KNOWLEDGE REQUIRED BY THE POSITION.....	11
FACTOR 2, SUPERVISORY CONTROLS.....	14
FACTOR 3, GUIDELINES.....	16
FACTOR 4, COMPLEXITY.....	18
FACTOR 5, SCOPE AND EFFECT.....	19
FACTOR 6, PERSONAL CONTACTS.....	20
FACTOR 7, PURPOSE OF CONTACTS.....	21
FACTOR 8, PHYSICAL DEMANDS.....	22
OPM BENCHMARK DESCRIPTIONS.....	23
RAILROAD SAFETY INSPECTOR GS-2121-05, BMK #1.....	23
RAILROAD SAFETY INSPECTOR GS-2121-07, BMK #1.....	26
RAILROAD SAFETY INSPECTOR (MOTIVE POWER AND EQUIPMENT) GS-2121-09, BMK #1.....	29
RAILROAD SAFETY INSPECTOR GS-2121-09, BMK #2.....	32
RAILROAD SAFETY INSPECTOR (MOTIVE POWER AND EQUIPMENT) GS-221-11, BMK #1.....	35
RAILROAD SAFETY INSPECTOR (HAZARDOUS MATERIALS) GS-2121-11, BMK #2.....	39
RAILROAD SAFETY INSPECTOR (TRACK) GS-2121-11, BMK #3.....	43
RAILROAD SAFETY INSPECTOR (SIGNALS AND TRAIN CONTROL) GS-2121-11, BMK #4.....	47
RAILROAD SAFETY SPECIALIST (MOTIVE POWER AND EQUIPMENT) GS-2121-12, BMK #1.....	51
RAILROAD SAFETY SPECIALIST GS-2121-12, BMK #2.....	55
RAILROAD SAFETY SPECIALIST (SIGNALS AND TRAIN CONTROL) GS-2121-12, BMK #3.....	60
RAILROAD ACCIDENT INVESTIGATOR GS-2121-12, BMK #4.....	64

SERIES DEFINITION

This series includes positions that are involved in developing, administering, or enforcing railroad safety standards and regulations or investigating and preventing railroad accidents. These positions require (1) broad knowledge of railroad operating practices and recordkeeping; (2) practical knowledge of methods used in the installation, maintenance, or manufacture of railroad equipment, signal systems, or track; (3) knowledge of safety practices applicable to the railroad industry and related laws, regulations, and standards; and (4) knowledge of the investigative techniques used in determining the cause of accidents.

COVERAGE

Positions in this series are concerned with making safety inspections of railroad equipment and facilities; investigating accidents and reports of unsafe conditions on railroad property; and performing other administrative, program development, or advisory functions requiring a knowledge of railroad safety practices. This series definition supersedes the Railroad Safety and Service Inspection Series, GS-2121, issued in February 1963. Those positions that involve regulation of the use, exchange, and distribution of freight cars and locomotives (i.e., "car service"), or other economic regulation of the railroads, will no longer be classified in this series.

EXCLUSIONS

1. Positions which require application of the principles of professional engineering and related mathematical and physical science concepts are classified in the appropriate series in the [Engineering and Architecture Group, GS-0800](#).
2. Positions that involve regulation of the use, exchange, and distribution of freight cars and locomotives, or other economic regulations of the railroads, should be classified in the [Transportation Industry Analysis Series, GS-2110](#), or other appropriate series.
3. Positions that are primarily concerned with the operation or maintenance of railroad equipment are classified and graded under the Federal Wage System. Also, those positions that involve inspecting repairs made by railroad laboring or craft workers to determine whether the *individual repairs* meet acceptable standards of operation and that *primarily require the application of trade, craft, or laboring skills and knowledge*, are classified and graded under the Federal Wage System. The inspectors included in this standard for the Railroad Safety Series may also inspect railroad repairs, but only to determine the overall safety of the railroad operation and to evaluate compliance with Federal safety standards. See the Occupational Information and Benchmarks within this standard for a more detailed description of the duties of the inspectors classified in this series.

OCCUPATIONAL INFORMATION

Most positions in this series can be divided into three general categories: (1) those concerned primarily with on-site inspection of railroad equipment, facilities, and operating practices for compliance with Federal safety standards and regulations; (2) those primarily involved in staff work related to policy and procedural development or program administration; and (3) those involved in investigating major railroad accidents to determine the probable cause and to make recommendations to prevent future occurrences.

Inspector positions

Regardless of the type(s) of railroad safety inspection work the employee performs, the duties of the position follow the same general pattern. At the full performance level, the inspector is usually assigned to territory covering from one to several States (depending upon the density of rail traffic in the area) and including several railroads of various sizes. Based on knowledge of railroad operations in the territory, the inspector plans an itinerary of regular inspections that will concentrate on those facilities with a history of problems.

When conducting routine inspections, the inspector:

- reviews repair or other records for conformance with safety regulations and reporting requirements;
- inspects and tests (or observes railroad employees test) selected pieces of equipment;
- observes work methods to see that employees are working in a safe manner and are performing required tests and inspection properly; and
- holds a closing meeting with railroad managers to discuss safety problems and to present a written notice of defects that must be repaired.

Besides conducting regular inspections, the inspector also:

- investigates complaints of unsafe conditions on railroad property;
- investigates accidents to determine if Federal laws and regulations were violated;
- promotes safety among railroad employees by participating in training programs and giving safety talks;
- evaluates requests from railroad officials to vary from Federal safety standards; and
- advises railroad managers, shippers, and manufacturers of railroad equipment on safety matters.

The goal of the railroad safety inspection program is to maintain voluntary compliance with Federal laws and regulations. However, when a railroad fails to correct reported defects or when the problems uncovered in a complaint investigation are severe, the inspector may submit a violation report to agency headquarters for prosecution. In those cases, the inspector may serve as a technical adviser to government attorneys during the negotiation of fines.

Though safety inspectors must have a general knowledge of all aspects of railroad operations, they usually specialize in one or more of the following areas of inspection work:

(1) *Track* -- There are several classes of track, each having a maximum allowable speed. Federal regulations set minimum standards for track geometry and track structure for each class. Track geometry includes the distance between rails (gage and alignment), cross-level, and the elevation of outer rails on curved track.

Deviations in track geometry are usually caused by problems in the underlying track structure which can include:

- the amount and distribution of ballast (material supporting the track);
- the condition and number of crossties; and
- the physical condition of rails and track assembly fittings (rail joints, spikes, tie plates).

Track standards also cover the maintenance of the track-related components of switches and the upkeep of track roadbed (i.e., proper drainage and control of vegetation).

(2) *Motive Power and Equipment* -- Both railroad cars and locomotives are subject to the following regulations:

- Equipment standards -- require periodic inspection and maintenance of running gear (wheels, axles, couplers, and attachments), underframes, and car bodies;
- Safety appliance standards -- give specifications for handbrakes, running boards, ladders, handholds, uncoupling levers, and related items;
- Power Brake Law -- contains instructions for the testing and maintenance of airbrake equipment systems; and
- Noise Emission Regulations -- contains procedures for the testing of total noise emitted by rail cars and locomotives to assure compliance with noise emission standards.

In addition, locomotives are subject to inspection in the following areas:

- Cab -- lights, whistles, sanders, and train control systems must be operational;

-- Electrical equipment -- wires must have adequate insulation; pantographs (the framework that extends to high voltage lines on electric locomotives) and related equipment must be properly insulated, grounded, and maintained;

-- Engine -- must be free from defects that could be a safety hazard (i.e., cause a fire or explosion) such as certain types of oil or fuel leaks; and

-- Boilers -- safety valves, rivets, staybolts, etc., must be maintained. There are different standards for boilers or steam powered locomotives ("historical trains") and for boilers used to produce heat on diesel, diesel-electric, or electric trains.

(3) *Signals and Train Control* -- The most common signal systems currently in use, in increasing order of complexity, are:

-- Automatic Block -- the train signals for each block (length of track) are activated by the movement of a train over the track circuit. These systems are normally used for continuous through sections of single or multiple track;

-- Interlocking -- In those areas where a great number of switches are found (terminals, yards), it is necessary to have the switches and their related signals controlled from a central point. In order to prevent collisions or derailments occurring as a result of human error, the various switches are interlocked in such a way that their movements can only occur in a predetermined order; and

-- Traffic control -- Train movements along several hundred miles of track are remotely controlled from a central point. This system combines aspects of the automatic block and interlocking systems.

All signal systems must operate on a "fail-safe" principle in that any breakdown in the system should cause a signal to display a more restrictive aspect or direction than it displayed previously, requiring the train to slow or stop. Such an aspect or signal takes the form of a specific configuration of lights or semaphores.

Each of the above systems can be supplemented by any of the following:

-- Cab signals -- display the same aspect within the engine cab as at the wayside;

-- Automatic train control -- controls the speed of the train in accordance with track conditions ahead; and

-- Automatic trainstop B stops the train when the engineer fails to respond to a signal, or in some other emergency.

Federal law requires that all plans to install or modify any of the above systems receive prior approval from the agency that administers railroad safety laws and regulations. A railroad safety inspector reviews blueprints or proposed signal systems to insure that they meet required

specifications. For example, the design of track circuits is checked to assure that a train within the block will always activate the proper signal and the placement of signals reviewed to assure that there is adequate braking distance between signals and switches.

Also, various components of signal and train control systems are subject to periodic inspection and testing to insure that they are functioning properly. Among the items checked are:

- < switch mechanisms;
- < interlocking machines;
- < signal aspects (lights or semaphores);
- < track circuits, including relays and insulated rail joints;
- < wires and cables; and related mechanical, electrical,
- < electronic, and pneumatic devices.

(4) *Hazardous Materials* -- Among the items classified as hazardous materials are explosives; compressed gases; flammable gases, liquids, and solids; poisonous gases, liquids, and solids; oxidizing materials; corrosives; and radioactive materials.

The Federal Government has established regulations for the handling of hazardous materials on all modes of transportation.

As applied to the railroad industry, these regulations cover the following:

- methods of loading and unloading, switching, and placement in trains of hazardous materials shipments;
- placarding (labeling) of shipments according to hazardous classification; and
- specifications for the manufacture, testing and retesting of hazardous materials containers (tank cars, barrels, boxes).

In addition, railroad safety inspectors have some responsibility for enforcing hazardous materials regulations among shippers, consignees, and freight forwarders using rail transportation including chemical plants, oil refineries, and explosive manufacturers. Inspectors observe loading and unloading procedures for such items as:

- density of compressed gases;
- maintenance and operation of safety valves, plugs, and vents on tank cars;
- blocking and bracing of hazardous materials containers in freight cars; and
- documentation of hazardous commodities on shipping papers (waybills).

(5) *Operating Practices* -- Each railroad has its own set of operating rules that require employees to do their work in a certain manner.

Operating rules must meet minimum standards set by Federal regulation, and will usually include instructions regarding:

- interpretation of signal aspects;
- speed on various sections of track;
- protection of work crews on open track;
- methods for inspection and testing of various pieces of equipment, such as airbrakes and switches; and
- use of safety equipment in certain sections of the yard (hard hats, goggles).

Safety inspectors observe railroad employees on the job to determine if the operating rules are adequate and if employees are receiving proper training in safe operating practices.

Also, operating records are checked to see that the railroad is in compliance with Federal laws regarding:

- maximum hours of service for certain groups of railroad employees;
- blue signal protection of workers;
- reporting of accidents meeting minimum criteria of damage and/or injury; and
- employee qualifications and testing.

Finally, railroad safety inspectors conduct on-site observations to determine railroad compliance with Federal regulations regarding safety procedures such as:

- blue signal protection of workers;
- rear end marking devices;
- radio communications; and
- protection of trains and locomotives.

Specialist positions

One category of specialist position for which benchmarks have been developed, is located at the regional level of the agency responsible for enforcing Federal safety laws and regulations. These specialists are nonsupervisory technical experts in specialized areas that correspond to those identified for inspector positions and are responsible for administering the regional program for that specialized area. Program administration involves such activities as assuring uniform interpretation of regulations and standards, balancing assignments across district lines to assure equitable workload and even coverage, identifying regional trends, initiating special studies and projects to combat regional problems, and maintaining continuous contact with top management of railroad carries located in regions to foster understanding of and cooperation with railroad safety programs and resolve widespread and recurrent problems.

As with the inspector positions, specialist positions follow a general pattern regardless of specialization and involve such functions as:

- technical program administration;
- expert advisory service to inspectors and railroad officials;
- investigation of complex accidents, complaints, and requests for waivers; and
- technical review of the work of inspectors in the corresponding specialization.

Specialists also participate with senior staff personnel in reviewing and evaluating new or proposed policies, procedures, and regulations or prototype equipment including signal systems, locomotives, cars, containers, or track components.

Investigator positions

Some positions in this series are located in a Federal agency that is responsible for investigating major accidents in all modes of transportation. Since the railroad accidents investigated often have many contributing causes, incumbents of these positions must know the interrelationships among the various railroad specializations discussed above.

Federal law provides guidelines for declaring a railroad accident "major" and thus requiring investigation by this agency. Those guidelines cover the dollar amount of damage to railroad and other property, numbers of fatalities, type of rail service involved, or unusual circumstances that could be of interest in, and contribute to, improving railroad safety. Investigations of the most sensational, catastrophic accidents are normally led by an investigator-in-charge from the headquarters with the field investigators participating as the chairpersons of functional teams. The investigation of all other railroad accidents is assigned to field investigators.

The investigation of major railroad accidents is likely to involve several complicating factors:

- pressures of public and private interests in the accident from local citizens, Congress, insurance companies, railroad organizations;

- the need for quick and valid selection of information to be released to the news media at the accident site;
- the natural confusion at the scene of an accident and the unintentional destruction of evidence by curious bystanders or work crews;
- contradictory statements among witnesses or reluctance to talk due to liability implications; and
- relationships with other Federal and State agencies that may be involved in the investigation.

Railroad accidents are normally assigned to field investigators on a rotational basis. After a preliminary review of the circumstances, however, the investigator may request assistance from others with particular areas of expertise (signal systems, locomotives, etc.) and conduct the investigation using a team approach. Accident investigations require considerable judgment, tact, and creativity to develop the facts and organize them into a consistent report that reconstructs and explains the event. When conducting accident investigations, the investigator:

- examines train wreckage, track, signals, etc., for evidence of structural failure or equipment malfunction;
 - conducts or observes equipment tests, crash simulations, or reconstruction of components involved in the accident;
 - examines train orders, operating rules, and other records that may provide information about the cause of the accident;
 - determines the need and arranges for metallurgical or chemical analyses of wreckage;
 - questions witnesses at the scene or at public or deposition hearings;
 - as agency spokesperson, answers questions regarding the investigation from reporters and officials on the scene;
 - evaluates the adequacy of existing safety inspection laws and procedures in preventing similar accidents and, as necessary, recommends new legislation;
 - evaluates investigative products and techniques of contributing accident investigators from outside the agency and recommends changes; and
 - writes a report for agency release that includes findings as to the probable and contributing cause or causes of the accident and recommendations for preventing future occurrences.
- Differences between inspector and specialist positions and accident investigator positions*

As mentioned earlier, inspectors and specialists also become involved in accident investigations, but mainly to determine if a violation of existing safety regulations occurred or if inspection

procedures should be modified. The investigators are more concerned with the root causes of major accidents and will usually conduct more in-depth investigations including crash simulations, reconstruction of wreckage, and formal hearings. The recommendations of investigators usually range beyond Federal regulatory issues to include major modifications in the design of railroad equipment and facilities, revision of the standards for railroad operation issued by the Association of American Railroads, or adoption of emergency plans by railroads or communities.

TITLES

Railroad Safety Inspector is the basic title authorized for positions chiefly engaged in the enforcement of Federal safety regulations applicable to the railroad industry through periodic inspections, complaint investigations, advisory services to railroads, and related activities. The investigation of reportable accidents is a secondary part of these positions.

Railroad Accident Investigator is the title authorized for positions engaged chiefly in the investigation of major railroad accidents.

Railroad Safety Specialist is the title authorized for all other positions in this series that are primarily concerned with aspects of railroad safety other than conducting or supervising investigations or inspections (i.e., policy development or program administration).

The following parenthetical titles are authorized for Railroad Safety Inspector and Railroad Safety Specialist positions, GS-9 and above:

- Track
- Motive Power and Equipment
- Hazardous Materials
- Operating Practices
- Signals and Train Control

When a position involves work in two or more specializations, and none is paramount or the work is not appropriately described by any authorized specialization, the basic title will be used without parenthetical specialization. The basic title without a specialization should also be used when a determination has been made that: (1) it would be unreasonable or impractical to identify one specialization as the paramount requirement, or (2) the position is so unique that it cannot be included under one of the authorized specializations.

GRADING OF POSITIONS

Positions should be evaluated on a factor-by-factor basis using one or more of the benchmark descriptions, or the Factor Level Descriptions, or both. The fact that a benchmark description is not provided for a specialization at a certain grade level does not prevent placing a position in that specialization and grade. Similarly, the absence of a particular factor level in the Factor

Level Descriptions in this standard does not preclude the evaluation of a factor in a specific position at that level. The "[Introduction to the Position Classification Standards](#)" provides instructions for evaluating positions when individual factors clearly fall above or below the Factor Level Descriptions in this standard.

Supervisory positions should be evaluated by reference to the "[General Schedule Supervisory Guide](#)."

GRADE CONVERSION TABLE

Total points on all evaluation factors are converted to GS grade as follows:

GS Grade	Point Range
5	855-1100
6	1105-1350
7	1355-1600
8	1605-1850
9	1855-2100
10	2105-2350
11	2355-2750
12	2755-3150
13	3155-3600
14	3605-4050
15	4055- up

FACTOR LEVEL DESCRIPTIONS

FACTOR 1, KNOWLEDGE REQUIRED BY THE POSITION

Factor 1 measures the nature and extent of information or facts which the workers must understand to do acceptable work (e.g., steps, procedures, practices, rules, policies, theories, principles, and concepts) and the nature and extent of the skills needed to apply those knowledge. To be used as basis for selecting a level under this factor, a knowledge must be required and applied.

Level 1-5 -- 750 Points

- Knowledge (typically acquired through several years of railroad operating experience or its equivalent in education or training) of the general operations, record-keeping, terminology, and equipment used in the railroad industry. This knowledge serves as a foundation for intensive training in the principles and methodologies of railroad safety inspection and of standards as applied to various specialized types of railroad operations and allows the trainee to carry out

elementary and developmental assignments in the railroad safety program (e.g., measuring track geometry, inspecting wheels, obtaining railroad documents, and answering questions regarding clearcut safety regulations).

-- Knowledge of the basic safety practices and procedures applicable to the railroad industry including use of standard protective equipment; interpretation of signals, flags, and warning placards; and safe operating procedures around railroad facilities. This enables the employee to safely carry out assignments that are part of the railroad safety program.

-- Skill in oral and written communication to be able to interview railroad employees about work operations and safety conditions on railroad property, to answer questions about the railroad safety program, and to write reports and letters regarding safety inspections or investigations.

-- Skill in reading blueprints, specifications, and diagrams for mechanical and electrical systems to be able to understand and apply intensive training in the safety standards for and inspection of complex railroad equipment such as locomotive engines, track structures, power brake systems, and signal and train control systems.

Level 1-6 -- 950 Points

-- Practical knowledge of the general operations, equipment, and record-keeping employed in various types of railroad service (e.g., general freight, passenger, piggyback, bulk commodity). This includes knowledge of the operating problems of each type of service and of variations in organizational structure. The employee applies this knowledge to determine who is responsible for specific safety problems encountered during inspections and to detect irregularities in operating records and in statements made by witnesses during complaint or accident investigations.

-- Knowledge of the fundamentals of accident investigation as applied to the railroad industry including knowledge of site documentation, techniques for interviewing witnesses, basic legal aspects involved in conducting an investigation, post-accident testing of equipment, and the fundamental human factors that may be involved in accidents (e.g., effects of alcohol, drugs, monotony on response patterns). The employees apply this knowledge to investigate single employee fatalities on railroad property and to assist in the investigation of other reportable railroad accidents.

-- Knowledge of the broad safety standards and procedures applicable to all areas of the railroad industry (signals, track, motive power and equipment, operating practices, hazardous materials). The employee applies this knowledge to conduct safety inspections, to identify immediate hazards in any of the above areas, and to answer correspondence on a broad range of railroad safety issues.

-- Knowledge of the operating characteristics of, and Federal regulations and standards for, at least one of the following:

-- commonly used types of power brakes, locomotives, and railroad cars;

- signal and train control systems under general use;
- track and related components;
- railroad tank cars and other hazardous materials containers (plus practical knowledge of the basic chemical characteristics of, and safe handling procedures for, the various hazardous commodity classifications); or
- general operating practices of railroads which do not specifically fall within any other specialization.

This knowledge is applied to conduct safety inspections and investigations and to instruct railroad employees on proper maintenance of the equipment or operating practices to meet Federal safety standards.

Level 1-7 -- 1250 -- In addition to the knowledge described at level 1-6, either:

(1) In-depth knowledge of at least one of the following areas of railroad operations: motive power and equipment; signal and train control systems; track systems and related components; operating practices; or hazardous materials. This includes knowledge of the economic and operating considerations, as well as the safety and health concerns involved in designing, constructing, and maintaining the equipment used in the specialized areas, a thorough technical knowledge of the capabilities and limitations of that equipment under various standards governing the area. Employees specializing in hazardous materials must also have a practical knowledge of the reactions of hazardous commodities to various environmental conditions and of safe procedures for containing or controlling fires, explosions, or leaks of these materials.

AND

Broad knowledge of accident investigation techniques as applied to the railroad industry including structures investigation, evaluation and analysis of photographic evidence, and procedures involved in participating as a questioner or witness at formal hearings.

Employees must interrelate the above knowledge to determine the best method of obtaining compliance with Federal safety regulations under a variety of operating and environmental conditions, investigate railroad accidents to determine the probable cause and whether Federal regulations were violated, find practical solutions to unusual safety problems, evaluate the safety of new equipment or of proposals to vary from safety standards, or perform similar continuing or long-range projects.

OR

(2) Thorough knowledge of the principles and techniques involved in conducting in-depth accident investigations including relationship of equipment design factors to human response patterns, techniques for conducting crash simulations and reconstructions of wreckage, and techniques involved in conducting deposition hearings.

AND

Broad knowledge of all areas of the railroad industry including economic and practical operating considerations and comprehensive safety and health concerns. Under this option, knowledge of the interrelationships among the specialized areas of railroad operations and of the broad problems of the railroad industry is more important than in-depth, technical knowledge of a specific area of specialization.

Employees must interrelate the above knowledge to investigate major railroad accidents to determine the root cause or causes and suggest practical means of preventing similar accidents, assist in investigations of accidents involving other modes of transportation, evaluate trends in railroad accidents and suggest new ways to improve safety, or perform similar continuing or long-range projects.

FACTOR 2, SUPERVISORY CONTROLS

"Supervisory Controls" covers the nature and extent of direct or indirect controls exercised by the supervisor, the employee's responsibility, and the review of completed work. Controls are exercised by the supervisor in the way assignments are made, instructions are given to the employee, priorities and deadlines are set, and objectives and boundaries are defined. Responsibility of the employee depends upon the extent to which the employee is expected to develop the sequence and timing of various aspects of the work, to modify or recommend modification of instructions, and to participate in establishing priorities and defining objectives. The degree of review of completed work depends upon the nature and extent of the review, e.g., close and detailed review of each phase of the assignment; detailed review of the finished assignment; spot-check of finished work for accuracy; or review only for adherence to policy.

Level 2-1 -- 25 Points -- A supervisor or senior employee assigns specific tasks (e.g., measure track gage, check wheel flange) usually related to a total safety inspection or investigation. Detailed instructions are provided on the methods to be used in completing those tasks.

The employees carry out assignments as instructed. A senior employee is available nearby to provide advice in situations not directly covered in the original instructions. Measuring, data collection, and simple inspection tasks are spot-checked in progress; all written reports are reviewed in detail for accuracy and adherence to established form.

Level 2-2 -- 125 Points -- A supervisor or senior employee assigns portions of routine inspections, investigations, or other limited projects. General instructions are given on such

items as the number of cars or switches to be inspected, the line of questioning to be pursued with a witness, and priority of assignments. Employees prepare for and carry out recurring assignments according to established procedures and guidelines, usually without additional instruction. A supervisor or senior employee is available for advice if problems or situations not covered by instructions are encountered. New assignments are reviewed in detail for technical accuracy and conformance with established methods. As the supervisor is assured that an employee can perform a specific type of assignment competently, technical review of the work becomes less detailed.

Level 2-3 -- 275 Points -- Supervisors assign complete inspections, investigations, and other projects by indicating the expected end-product (written report, letter, conference) and by setting a target date for completion.

In accordance with previous training and agency practice, employees plan and carry out the successive steps needed to complete the assigned project (e.g., determine who at a railroad facility must be notified or interviewed, the methods of inspection to be used, and the type of documentation needed). When situations are encountered that do not have clear precedents, the supervisor is contacted for advice. Inspection reports, letter, and other complete work products are usually reviewed for conformance to established regulations and policy, and for the soundness of technical conclusions about safety. In the case of inspection work, this review must often take place after the report or defect notice has been submitted to railroad officials for action.

Level 2-4 -- 450 Points -- Supervisors typically assign employees a particular area of work for which they have continuing responsibility (e.g., conducting periodic inspections in an assigned territory, providing technical advisory service on difficult railroad safety problems, or leading major accident investigations). In consultation with the supervisor, employees establish parameters on various projects such as deadlines, priorities, or the depth of an investigation based on the objectives of the agency and on the resources available for travel, tests, and other items.

Based on knowledge of the railroad operations in question and general agency policy, employees determine the approach to be taken to gain compliance with Federal safety regulations or to conduct a major accident investigation. Since most inspections and investigations take place at sites far from the supervisor's workplace, the employees must resolve most problems on their own initiative. However, they are expected to file periodic reports summarizing the progress of major investigations or other projects and to inform the supervisor of potentially far-reaching problems (e.g., repeated failures of a certain type of railroad equipment).

Reports, notices, and other completed work products are usually considered technically sound, but are reviewed for their effectiveness in promoting railroad safety. Recommendations on controversial issues are reviewed in terms of their practicality and compatibility with other programs and policies of the agency.

FACTOR 3, GUIDELINES

This factor covers the nature of guidelines and the judgment needed to apply them. Guides used in General Schedule occupations include, for example: desk manuals, established procedures and policies, traditional practices, and reference materials such as dictionaries, style manuals, engineering handbooks, the pharmacopoeia, and the Federal Personnel Manual.

Individual jobs in different occupations vary in the specificity, applicability, and availability of the guidelines for performance of assignments. Consequently, the constraints and judgmental demands placed upon employees also vary. For example, the existence of specific instructions, procedures, and policies may limit the opportunity of the employee to make or recommend decisions or actions. However, in the absence of procedures or under broadly stated objectives, employees in some occupations may use considerable judgment in researching literature and developing new methods.

Guidelines should not be confused with the knowledge described under Factor 1, Knowledge Required by the Position. Guidelines either provide reference data or impose certain constraints on the use of knowledge.

Level 3-1 -- 25 Points -- Guidelines, such as the inspectors' manuals, provide specific instruction on how to measure track geometry, obtain routine documents, inspect uncomplicated equipment components (e.g., wheels), prepare inspection reports, and perform similar basic duties involved in an inspection or investigation.

Employees follow these guidelines closely unless a modification is approved by the supervisor or a senior employee.

Level 3-2 -- 125 Points -- Guidelines include inspectors' manuals and procedures; Federal safety laws, standards, and regulations that apply to the railroad industry; agency technical bulletins, directives, and precedent decisions; railroad operating rules; and blueprints and specifications for railroad equipment. Assignments receive prior screening to avoid issues for which guidelines and precedents are not directly applicable.

Employees exercise judgment during inspections and investigations to determine which regulations and procedures apply in a given situation, which established approach to use to obtain quick and continuing carrier compliance to standards and regulations, whether safety standards and regulations have been violated, and the seriousness of the violation. Employees contact their supervisor or a senior employee for advice when guidelines and precedents cannot be applied.

Level 3-3 -- 275 Points -- The guidelines are generally the same as those used in level 3-2. However, because employees carry out the full range of assignments and respond to a variety of highly technical and unusual problems, guidelines are not completely applicable to all situations and conditions encountered, tend to be general or vague, or may be in conflict with each other.

Employees exercise seasoned judgment in interpreting, adapting, and extending existing guidelines to respond to unique situations and problems encountered.

For example, the employees:

- adapt the hazardous materials regulations which apply generally to all modes of transportation to specific problems in the rail industry;
- adapt track standards which apply to specific track defects existing in isolation to various combinations of track conditions to determine whether the overall system is safe;
- evaluate petitions for waiver from portions of the safety standards;
- investigate railroad accidents to determine the degree of Federal safety regulatory compliance; or
- inspect prototype equipment for conformance with railroad safety regulations and standards.

Based on experience in adapting and interpreting these guidelines, employees recommend changes in the guidelines to improve the inspection or investigation process.

Level 3-4 -- 450 Points -- At this level, work regularly involves planning and conducting special programs and projects for which the only guidelines consist of broadly stated administrative policies and precedents or, in some cases, incomplete procedural manuals. Guidelines are of limited use or inadequate in dealing with particularly complex assignments such as:

- an investigation of a major railroad accident involving highly unusual circumstances, widespread public interest, multiple points of investigation, and little indication of the probable cause(s); or
- a study aimed at researching and analyzing regional railroad safety trends, evaluating the effectiveness of the program effort, and recommending changes to existing agency policies and practices.

Employees exercise considerable initiative, resourcefulness, and judgment in developing innovative ways of obtaining data to determine the cause(s) of an accident and to recommend corrective action(s) or in devising sources of information to evaluate industrywide trends and patterns in railroad safety and propose new regulations and standards.

Level 3-5 -- 650 Points -- Guidelines are the nonspecific, often new, legislation that applies to railroad safety and broad policy statements of the agency.

At this level, employees interpret such legislation in order to develop technical bulletins, manuals, and agency implementing instructions to be applied by field employees nationwide in

conducting railroad safety inspections or accident investigations. These employees are usually recognized as the agency's technical authorities in the development and interpretation of guidelines for a specialized area of inspection (e.g., track, hazardous materials) or for the accident investigation process.

FACTOR 4, COMPLEXITY

This factor covers the nature, number, variety, and intricacy of tasks, steps, processes, or methods in the work performed; the difficulty in identifying what needs to be done; and the difficulty and originality involved in performing the work.

Level 4-2 -- 75 Points -- Assignments consist of a number of related measuring, data collecting, and report writing duties.

The decision as to whether or not a given item passes inspection or is acceptable is usually determined by measurement or simple visual observation. The choices to be made involve differences among a few easily recognizable situations.

Actions to be taken differ in such things as the source of various documents, the type of report form to be used, or other differences of a factual nature.

Level 4-3 -- 150 Points -- Assignments consist of defined portions of safety inspections, complaint investigations, and accident investigations or other limited projects involving one or more areas of railroad operations. The method of gathering data and the documentation required vary depending upon the type of inspection or investigation being made, past history of cooperation at a particular facility, and whether or not legal action has been planned.

Employees analyze the interaction between the individual items inspected to determine if an area of railroad operation is safe or if immediate action must be taken to correct a hazard.

Level 4-4 -- 225 Points -- Employees carry out a wide variety of independent and continuing assignments, usually in a specialized area of railroad safety such as hazardous materials or motive power and equipment, in an assigned territory.

While at the 4-3 level, the employees must determine the best methods of achieving a specific end-product that has been selected by senior employees (e.g., a defect notice, safety talk to railroad employees, a report on the results of post-accident tests of stopping distances). At this level, the employees themselves determine what these end-products will be within the framework of more general, continuing assignments (e.g., responsibility for the enforcement of track standards in an assigned territory). Therefore, in each situation, employees must consider a unique combination of factors in order to determine the best approach to solve railroad safety problems or to gain compliance with Federal safety standards. Among these factors are environmental effects on equipment or operations; past history of accidents, complaints, or

violations at a particular facility or under similar circumstances; and the practical economic or operating problems of various segments of the railroad industry. Accident and complaint investigations at this level often involve conflicting statements from witnesses, incomplete records, and unusual equipment or operations.

The work requires adapting inspection and investigation techniques to accommodate unique factors encountered and considerable advance planning to develop an itinerary of inspections and investigations that will provide maximum coverage of the facilities in the territory or to develop an orderly sequence of steps in an accident investigation that will provide full coverage of all possible causes.

Level 4-5 -- 325 Points -- Employees lead in-depth investigations of major railroad accidents or serve as Regional experts in a railroad safety specialization with responsibility for administering the assigned safety specialization program and resolving the most complex problems and issues in that area.

Decisions regarding what needs to be done are complicated by such factors as:

- unknown safety implications or lack of appropriate inspection or investigation procedures for new types of equipment;
- persistent health and safety hazards for which new and innovative, yet practical solutions are needed;
- lack of information to determine the cause of major accidents due to multiple fatalities among the railroad crew and/ or extensive damage to the equipment and structures involved; or
- changes in program emphasis, direction, or resource levels requiring continuing adjustment and evaluation of program needs and accomplishments.

The work requires originating inspection or investigation techniques, developing new information regarding trends and critical problems in railroad safety, or establishing criteria to administer and evaluate the Regional program in a specialized area of railroad safety.

FACTOR 5, SCOPE AND EFFECT

Scope and effect covers the relationship between the nature of the work, i.e., the purpose, breadth, and depth of the assignment, and the effect of work products or services, both within and outside the organization.

In General Schedule occupations, effect measures such things as whether the work output facilitates the work of others, provides timely services of a personal nature, or impacts on the adequacy of research conclusions. The concept of effect alone does not provide sufficient information to properly understand and evaluate the impact of the position. The scope of the

work completes the picture, allowing consistent evaluations. Only the effect of properly performed work is to be considered.

Level 5-1 -- 25 Points -- Employees perform routine measuring, data collection, and other minor operations which are part of a safety inspection or investigation.

The assignments are given primarily for training purposes, but they also have the effect of relieving senior employees of some of the routine aspects of their work.

Level 5-2 -- 75 Points -- Employees perform defined segments of complete safety inspections, complaint investigations, and other projects.

The results of their work provide preliminary information about certain safety conditions and are used as a basis for further decisions and actions by other employees.

Level 5-3 -- 150 Points -- Employees perform complete inspections, accident investigations, and other assignments that involve a variety of railroad safety problems and issues. Most problems can be resolved using established methods.

Inspections and investigations are conducted to identify safety hazards that railroad management is obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, equipment or track can be taken out of service until repairs are made or the hazard is eliminated in some way. The work has impact on the specific safety conditions at the railroads with which the employees are directly involved.

Level 5-4 -- 225 Points -- Employees conduct special studies and investigations of the most controversial problems and issues in the railroad safety program, lead in-depth investigations of major railroad accidents, or evaluate the effectiveness of various parts of the railroad safety inspection program.

Because these employees determine the acceptability of new or unusual equipment or operations, find solutions to persistent safety problems, and recommend changes in Federal safety standards or regulations, their work has impact on major operations of the railroad industry and often serves as a precedent for future agency policies.

FACTOR 6, PERSONAL CONTACTS

This factor includes face-to-face contacts and telephone and radio dialogue with persons not in the supervisory chain. (NOTE: Personal contacts with supervisors are covered under Factor 2, Supervisory Controls.) Levels described under this factor are based on what is required to make the initial contact, the difficulty of communicating with those contacted, and the setting in which the contact takes place (e.g., the degree to which the employee and those contacted recognize their relative roles and authorities).

Above the lowest level, points should be credited under this factor only for contacts which are essential for successful performance of the work and which have a demonstrable impact on the difficulty and responsibility of the work performed.

The relationship between Factors 6 and 7 presumes that the same contacts will be evaluated for both factors. Therefore, use the personal contacts which serve as the basis for the level selected for Factor 7 as the basis for selecting a level for Factor 6.

Level 6-2 -- 25 Points -- Most personal contacts are with employees throughout the agency (e.g., railroad safety instructors, inspectors from other field offices or headquarters) and with railroad employees, managers, and members of the general public who have been informed of the employee's role by a senior employee or who have telephoned the agency for information.

Level 6-3 -- 60 Points -- Personal contacts are mostly with persons involved directly or indirectly in the railroad industry at all levels, including railroad craft employees, union representatives, Division Superintendents, Vice-Presidents of Operations, State inspectors, freight forwarders, managers of equipment manufacturing plants, and traffic managers. While conducting complaint or accident investigations, contacts can also include State and local police and fire officials, citizen's groups, representatives of the news media, and insurance investigators. Due to the nature of the work, these contacts are not established on a routine basis and can occur at various railroad or shipper facilities, accidents sites, and in other relatively unstructured settings.

FACTOR 7, PURPOSE OF CONTACTS

In General Schedule occupations, purpose of personal contacts ranges from factual exchanges of information to situations involving significant or controversial issues and differing viewpoints, goals, or objectives. The personal contacts which serve as the basis for the level selected for this factor must be the same as the contacts which are the basis for the level selected for Factor 6.

Level 7-1 -- 20 Points -- The purpose is to exchange factual information related to railroad safety inspections or investigations (e.g., obtaining information on the location of specific records or equipment, reporting on the results of tests or measurements, explaining how to perform an equipment test).

Level 7-2 -- 50 Points -- The purpose of contacts is to plan work assignments during a complete railroad safety inspection or investigation or to resolve minor problems or misunderstandings regarding Federal regulations with managers and other railroad employees who are basically cooperative. Assignments are screened to avoid controversial issues or independent contact with uncooperative or fearful individuals.

Level 7-3 -- 120 Points -- The purpose of contacts is to gain compliance with Federal railroad safety regulations or to interview witnesses regarding the circumstances surrounding an accident or a reported unsafe condition on railroad property. At this level, employees may receive

assignments involving controversial regulations that are a source of disagreement among the agency, railroad managers, and union officials. Railroad officials or plant managers contacted are sometimes uncooperative and skeptical about the worth of Federal safety programs. Witnesses are often unwilling to talk due to fear of reprisal or reluctance to be involved in possible legal action. The employees must use tact, persuasiveness, and technical expertise to gain the confidence of these contacts and resolve disagreements in the best interests of railroad safety.

FACTOR 8, PHYSICAL DEMANDS

The "Physical Demands" factor covers the requirements and physical demands placed on the employee by the work assignment. This includes physical characteristics and abilities (e.g., specific agility and dexterity requirements) and the physical exertion involved in the work (e.g., climbing, lifting, pushing, balancing, stooping, kneeling, crouching, crawling, or reaching). To some extent the frequency or intensity of physical exertion must also be considered (e.g., a job requiring prolonged standing involves more physical exertion than a job requiring intermittent standing).

NOTE: Regulations governing pay for irregular or intermittent duty involving unusual physical hardship or hazard are in chapter 550, Federal Personnel Manual.

Level 8-1 -- 5 Points -- The work is primarily sedentary. The employees may occasionally visit railroad yards, equipment manufacturing plants, or accident sites where they do considerable walking and bending, but these situations do not occur frequently enough to warrant consideration.

Level 8-2 -- 20 Points -- The work regularly requires long periods of walking around railroad yards, industrial plants, track roadbed, or accident sites and frequent bending, crouching, and stretching to inspect wreckage, track, or equipment. Also, the employees must often climb steep embankments around track roadbeds and ladders on railroad cars, loading platforms, or signal masts.

FACTOR 9, WORK ENVIRONMENT

The "Work Environment" factor considers the risks and discomforts in the employee's physical surroundings or the nature of the work assigned and the safety regulations required. Although the use of safety precautions can practically eliminate a certain danger or discomfort, such situations typically place additional demands upon the employee in carrying out safety regulations and techniques.

NOTE: Regulations governing pay for irregular or intermittent duty involving unusual physical hardship or hazard are in chapter 550, Federal Personnel Manual.

Level 9-1 -- 5 Points -- The work environment is normally that of a typical office where there is adequate heating, lighting, and ventilation.

Level 9-2 -- 20 Points -- The work of the position requires exposure to railroad tracks, yards, equipment manufacturing plants, or repair shops where there is noise, dust, grease, and moving railroad cars and machinery. Employees usually wear hardhats, safety shoes, and, in some areas, goggles or other protective equipment. During inspections or investigations, the employees are exposed to a variety of weather conditions and other environmental discomforts (e.g., snow, rain, temperature extremes, swampy or mountainous areas).

Level 9-3 -- 50 Points -- At this level, the work involves exposure to potentially dangerous situations which require the employee to exercise great caution and judgment. This includes work situations such as the following:

- Inspecting freight cars or track in large classification yards where cars are rolling freely onto tracks adjacent to or on the line being inspected. The employees must be constantly alert for wide loads, derailments, and unsafe operating practices by railroad crews involved in moving cars within the yards;
- Inspecting hazardous materials shipments being loaded and unloaded at railroad yards and industrial plants or investigating accidents involving hazardous materials where poisonous, explosive, or highly flammable commodities could be leaking from containers or suddenly ignited by improper or careless handling requiring constant awareness of potential dangers and protective measures to combat them; or
- Conducting inspections or investigations in electrified territory requiring constant care and vigilance to avoid contact with high voltage apparatus.

OPM BENCHMARK DESCRIPTIONS

RAILROAD SAFETY INSPECTOR GS-2121-05, BMK #1

Duties

The incumbent is a trainee inspector for the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry.

- Receives classroom and on-the-job training in the areas of:
 - the application of Federal safety standards and regulations to railroad operating practices, recordkeeping, and equipment;
 - basic inspection and testing techniques for safety appliances, track geometry, switches, and other components of railroad equipment and operations; and
 - the functions and operations of the agency.

- Assists higher graded inspectors by performing specific tasks such as:
- obtaining routine documents such as train consists and timetables;
- taking measurements of track gage and cross-level, checking wheel flange and timing relays, and performing other routine tasks;
- sketching or photographing defective equipment; and
- preparing segments of routine inspection or other reports.

Factor 1. Knowledge Required by the Position -- Level 1 -- 750 Points

- Knowledge of the general operations, recordkeeping, terminology,, and equipment used in the railroad industry;
- Knowledge of basic safety practices and procedures applicable to the railroad industry;
- Skill in oral and written communications;
- Skill in reading blueprints, specifications, and diagrams for mechanical and electrical systems; and
- Ability to apply the above knowledge and skills in receiving intensive training in railroad safety standards and inspector principles and techniques and in performing elementary tasks safely in the railroad environment.

Factor 2. Supervisory controls -- Level 2-1 -- 25 Points

Specific instructions are provided on the inspection tasks to be accomplished and the methods to be used. A supervisor or senior inspector is available to provide immediate advice in situations not covered by the original instructions. Simple inspection or measurement tasks are spot-checked, but all inspection report segments prepared by the trainee are reviewed in detail for accuracy and adherence to established form.

Factor 3. Guidelines -- Level 3-1 -- 25 Points

The inspectors' manuals provide specific instruction on the measurements to be taken, tasks to be performed, and the manner of completing segments of routine inspection report forms. Follows the manuals' requirements closely unless a modification is approved by the supervisor.

Factor 4. Complexity -- Level 4-2 -- 75 Points

Assignments consist of a number of routine measuring, data collecting, and report writing duties in several areas of railroad operations. The decision as to whether a given item passes inspection is determined by measurement or simple visual observation. The kind of measurement taken, document obtained, or report prepared depends on the specialization involved and the action being taken or contemplated.

Factor 5. Scope and Effect -- Level 5-1 -- 25 Points

The work involves some of the more routine measuring, data collecting, and report writing tasks associated with a complete safety inspection or investigation. The work is done primarily for training purposes, but also to assist senior inspectors in the performance of their duties.

Factor 6. Personal Contacts -- Level 6-2 -- 25 Points

Personal contacts are mostly with other inspectors and employees throughout the agency. Contacts with railroad employees and managers usually occur in the presence of a senior inspector who introduces the trainee and explains the purpose of the visit.

Factor 7. Purpose of Contacts -- Level 7-1 -- 20 Points

The purpose of contacts is to exchange information on the results of tests or inspections, the location of specific pieces of equipment or records, and similar factual material.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky surfaces around railroad yards; frequent bending and stretching to inspect railroad cars, measure track geometry, etc.; and occasional climbing of ladders on freight cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-2 -- 20 Points

Most of the inspection work takes place at railroad switching yards and repair facilities where the employee is exposed to dust and grease from the trains, moving equipment on several tracks, and a variety of weather conditions including snow, rain, and below freezing temperatures. The employee wears safety shoes and a hardhat in most areas and goggles in some types of repair shops. As a trainee, the employee is always accompanied by a senior inspector who looks out for the trainee's safety and tries to assure that the employee is not exposed to the most dangerous aspects of railroad inspection work.

TOTAL POINTS -- 985

RAILROAD SAFETY INSPECTOR GS-2121-07, BMK #1

Duties

The incumbent works for the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry.

-- Based on general knowledge of railroad safety practices and basic inspection techniques, the inspector receives in-depth classroom and on-the-job training in such areas as:

-- the specialized operations, equipment and recordkeeping of various types of railroad service, and the unique problems of each type of service as related to railroad safety;

-- the fundamentals of railroad accident investigation;

-- Federal safety standards for locomotive engines, airbrakes, track structure, signal and train control systems, or other complete electrical or mechanical systems used by the railroad; and

-- inspection of shipper facilities for proper loading of hazardous materials.

-- Performs limited portions of inspections, complaint investigations, and accident investigations such as:

-- inspecting a group of freight cars for safety appliance defects;

-- interviewing minor witnesses and, as necessary, taking signed statements;

-- checking hazardous materials shipments for proper placarding and placement in the train;

-- conducting routine reviews of personal injury, hours of service, or repair records for compliance with Federal regulations;

-- observing required switch tests and inspecting switch mechanisms for proper maintenance; and

-- preparing complete inspection and complaint reports or portions of accident reports (for example, preparing diagrams of the accident site).

-- Answers routine inquiries from railroad employees and the general public regarding Federal safety regulations and reporting procedures.

Factor 1. Knowledge Required by the Position -- Level 1-5 -- 750 Points

-- Knowledge of the general operations, recordkeeping, terminology, and equipment used in the railroad industry;

- Knowledge of basic safety practices and procedures applicable to the railroad industry;
- Knowledge of basic inspection principles, techniques, and procedures and of regulations and standards governing specific portions of railroad operations;
- Skill in oral and written communications;
- Skill in reading blueprints, specifications, and diagrams for mechanical and electrical systems; and
- Ability to apply above knowledge and skills in receiving intensive training in conducting inspections and investigations and in railroad safety standards and regulations; responding to inquiries regarding the railroad safety program; and conducting specific portions of safety inspections.

Factor 2. Supervisory Controls -- Level 2-2 -- 125 Points

The supervisor or a senior inspector assigns portions of total inspections to be carried out according to general instructions.

Performs most assignments independently, but a senior inspector is available in a nearby part of the yard or facility for advice if unusual situations are encountered.

All new inspection and report-writing assignments are reviewed in detail for technical accuracy until the supervisor is assured that the employee can perform a particular type of assignment competently.

Factor 3. Guidelines -- Level 3-2 -- 125 Points

Guidelines include the inspectors' manuals, books of operating rules issued by the railroads, manufacturers' specifications for railroad equipment, and various Federal safety laws and standards that apply to the railroad industry including the Railroad Safety Act, Hazardous Materials Regulations, and the Safety Appliance Act.

Determines which regulations apply and which of several established procedures are the most suitable for a given assignment. When unable to apply the established guidelines, requests advice from the senior inspector at the worksite.

Factor 4. Complexity -- Level 4-3 -- 150 Points

Assignments consist of specific portions of safety inspections, complaint investigations, and accident investigations involving all five areas of railroad operations (i.e., track, motive power and equipment, hazardous materials, signals and train controls, operating practices).

The methods of gathering data and the documentation required vary depending upon the type of inspection being made, past history of cooperation at a particular facility, and whether legal action has been planned.

Begins to see relationships among the individual items inspected to determine the overall safety of a railroad operation.

Factor 5. Scope and Effect -- Level 5-2 -- 75 Points

Performs defined segments of safety inspections, complaint investigations, and accident investigations. Findings and reports provide preliminary information about certain safety conditions at a railroad facility and are used as a basis for further investigation, decisions, and actions by a senior inspector.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Personal contacts are with railroad employees, managers, and union representatives at a variety of railroad facilities in the Region. These contacts take place during inspections and complaint investigations and, therefore, are not established on a routine basis.

Factor 7. Purpose of Contacts -- Level 7-2 -- 50 Points

The purpose of contacts is to gain voluntary compliance with Federal safety regulations that are applicable to the railroad industry. During inspections and investigations, questions railroad employees about safety conditions at the facility. Answers questions about Federal regulations and attempts to resolve minor problems and misunderstandings. Railroad officials and employees are generally cooperative in resolving safety problems and correcting deficiencies.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky surfaces around railroad yards, frequent bending and stretching to inspect freight cars and switches, and frequent climbing of ladders on freight cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

A large part of the inspector's time is spent checking freight cars and hazardous materials tank cars in large railroad classification yards. Cars roll freely down an embankment onto the tracks adjacent to the one being inspected. There is always the danger of derailments. The inspector must also be alert for wide loads and, if necessary, drop to the ground on the narrow walkway between tracks. The work requires exposure to poisonous, explosive, and other hazardous

shipments that could be leaking from containers or suddenly ignited by improper or careless handling requiring that the inspector be constantly alert to potential dangers.

TOTAL POINTS -- 1405

**RAILROAD SAFETY INSPECTOR (MOTIVE POWER AND EQUIPMENT)
GS-2121-09, BMK #1**

Duties

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Performs a variety of routine inspections, investigations, and other assignments in the area of motive power and equipment.

-- Inspects a group of freight cars in a railroad yard for compliance with safety appliance and equipment standards and prepares a written notice of defects to be repaired.

-- Inspects one or more components of locomotives for safety defects (e.g., engine, electrical system, brakes, running gear, steam generator) and prepares defect notices.

-- Conducts follow-up inspections to see that required repairs have been made.

-- Instructs railroad employees on the proper testing and maintenance of various types of air brakes.

-- Conducts noise emission tests on locomotives and cabooses.

-- Investigates single employee fatalities on railroad property involving moving equipment and prepares a written report.

-- Investigates complaints of unsafe working conditions in equipment repair shops and locomotive cabs.

-- Assists higher-graded inspectors in investigating derailments, collisions, or other accidents and gathering documentation for prosecution of railroads that continually refuse to repair defective equipment ("violation work").

-- Receives, as necessary, additional classroom and on-the-job training in locomotive inspection, accident investigation, and the inspection of new types of air brakes and other railroad equipment.

Factor 1. Knowledge Required by the Position -- Level 1-6 -- 950 Points

- Knowledge of the broad safety practices and procedures applicable to the railroad industry;
- Practical knowledge of the operations, equipment, and recordkeeping used in different types of railroad service;
- Knowledge of the operating characteristics of, and Federal regulations and standards for, commonly used types of power brakes, locomotives, railroad cars, and safety appliances;
- Knowledge of the fundamentals of accident investigation as applied to the railroad industry; and
- Skill in applying the above knowledge to conduct inspections and investigations, to instruct railroad employees on regulations and standards and proper maintenance to meet standards, and to answer correspondence on a broad range of railroad safety issues.

Factor 2. Supervisory Controls -- Level 2-3 -- 275 Points

The supervisor assigns inspections, investigations, and other work by indicating the expected end-product (written report, letter, conference) and by setting a target-date for completion.

In accordance with previous training and agency practice, the inspector decides who at the railroad must be notified or interviewed and determines what methods of inspection and types of documentation will be needed to complete the assigned project.

Inspection reports, defect notices, letters, and other work products are usually reviewed for conformance to established regulations and policy and for the soundness of technical conclusions about safety issues. Due to the nature of inspection work, this review must often take place after the report or defect notice has been submitted to railroad officials for action.

Factor 3. Guidelines -- Level 3-2 -- 125 Points

Guidelines include the inspectors' manuals; books of operating rules issued by the railroads; manufacturers' specifications and blueprints for airbrakes, locomotive engines, and other railroad equipment; and the various Federal safety laws and regulations that apply to the railroad industry including the Railroad Safety Act, the Locomotive Inspection Act, and the Railroad Noise Emission Standards.

Exercises judgment during inspections and investigations to determine which regulations and procedures apply in a given situation and whether the regulations have been violated. Contacts the supervisor or senior inspector for advice on problems where guidelines and precedents do not seem applicable.

Factor 4. Complexity -- Level 4-3 -- 150 Points

Assignments consist of complete safety inspections and limited complaint and accident investigations involving motive power and equipment.

The methods of gathering data and the documentation required vary depending upon the type of inspection being made (freight cars, locomotive, noise emission), past history of cooperation at a particular facility, and whether legal action has been planned.

Analyzes the interaction among the individual items inspected to determine if an area of railroad operation is safe or if immediate action must be taken to correct a hazard.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs various routine safety inspections and limited complaint and accident investigations.

Inspections and investigations are conducted to identify safety hazards that railroad management is obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, railroad cars and locomotives may be taken out of service until repairs are made.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Most personal contacts are with railroad employees, managers, and union officials at various railroad facilities throughout the District. These contacts take place during inspections, accident investigations, and complaint investigations and, therefore, are not established on a regular or routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal safety regulations applicable to the railroad industry. While investigating complaints of unsafe conditions and employee fatalities, the inspector must often interview witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action. Also, the inspector can become involved in disagreements between railroad managers and union representatives regarding the existence of safety problems or the speed with which defects should be corrected. In those cases, tact and persuasiveness are required to reach a solution acceptable to both sides.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky surfaces around railroad yards; frequent bending, crouching, and stretching to inspect railroad cars and locomotives; and frequent climbing of ladders on cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

A large part of the inspector's time is spent inspecting freight cars and locomotives in large railroad classification yards. Cars roll freely down an embankment onto tracks adjacent to the one being inspected. There is always the danger of derailments that could cause several cars to fall over. The inspector must constantly be alert for wide loads and, if necessary, drop to the ground on the narrow walkway between tracks. Work requires exposure to cars loaded with poisonous, explosive, or other hazardous material that could be leaking from containers or suddenly ignited by improper or careless handling requiring the inspector be constantly alert to potential dangers.

TOTAL POINTS -- 1900

RAILROAD SAFETY INSPECTOR GS-2121-09, BMK #2*Duties*

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Performs various routine inspections, investigations, and other duties concerned with railroad operating practices and the handling of hazardous materials.

- Inspects all phases of hazardous materials handling in a trainyard including placarding, containerization, and placement in trains and checks tank cars for compliance with equipment and safety appliance standards.
- Investigates carrier compliance with Federal regulations and standards in the areas of hours of service, accident reporting, blue signal protection of workmen, rear end marking devices, radio communication, and railroad employee qualifications and testing.
- Evaluates railroad operating rules for adequacy from a safety standpoint under various operating conditions; investigates complaints of unsafe conditions or violations of Federal regulations and standards and, as necessary, collects documentation for prosecution.
- Investigates single employee fatalities on railroad property to determine probable cause and prepares written report;
- Gives safety talks to railroad employees to explain new safety rules or to review safe operating practices.
- Assists higher-graded inspectors who are investigating reportable railroad accidents, especially those involving hazardous materials or controversial operating rules, and inspecting shipper facilities for proper loading and documentation of hazardous materials being shipped by rail.
- Receives, as necessary, additional classroom and on-the-job training in accident investigation, the properties of hazardous materials, and new types of railroad equipment used to transport hazardous materials.

Factor 1. Knowledge Required by the Position -- Level 1-6 -- 950 Points

- Knowledge of the broad safety practices and procedures applicable to the railroad industry;
- Knowledge of Federal regulations and standards governing the shipment of hazardous materials by rail and railroad tank cars and other hazardous materials containers;
- Knowledge of the basic chemical characteristics of and safe handling procedures for the various common hazardous commodity classifications;
- Knowledge of general operating policies, practices, and problems of railroad common carriers and the Federal regulations and standards governing these areas;
- Knowledge of the fundamentals of accident investigation as applied to the railroad industry; and
- Skill in applying the above knowledge to conduct inspections and investigations, to instruct railroad employees on regulations and standards, and to answer correspondence on a broad range of railroad safety issues.

Factor 2. Supervisory Controls -- Level 2-3 -- 275 Points

The supervisor assigns inspections, investigations, and other work by indicating the expected end-product (written report, letter, conference) and by setting a target date for completion.

In accordance with previous training and agency practice, the incumbent decides who at the railroad must be notified or interviewed and determines what methods of inspection and types of documentation will be needed to complete the assigned project.

Inspection reports, letters, and other work products are usually reviewed for conformance to establish regulations and policy and for the soundness of technical conclusions about safety issues. Due to the nature of inspection work, this review must often take place after the report has been submitted to railroad officials for action.

Factor 3. Guidelines -- Level 3-2 -- 125 Points

Guidelines include the inspectors' manuals; books of operating rules issued by the railroads; chemical dictionaries; manufacturers' specifications and blueprints for tank cars and related equipment; and the various Federal safety laws and regulations that apply to the railroad industry such as the Hazardous Materials Regulations, the Hours of Service Act, and the Railroad Safety Act.

Exercises judgment during inspections and investigations to determine which regulations and procedures apply in a given situation and whether the regulations have been violated. Contacts supervisor or senior inspector for advice on problems where guidelines and precedents do not seem applicable.

Factor 4. Complexity -- Level 4-3 -- 150 Points

Assignments consist of complete safety inspections and limited accident investigations involving railroad operating practices and hazardous materials.

The methods of gathering data and the documentation required vary depending upon the type of inspection or investigation being made, past history of cooperation at a particular facility, and whether legal action has been planned.

Analyzes the interaction among the individual items inspected to determine if an area of railroad operation is safe or if immediate action must be taken to correct a hazard.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs various routine safety inspections and limited complaint and accident investigations.

Inspections and investigations are conducted to identify safety hazards that railroad management is obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, may recommend the issuance of an emergency order restricting the movement of certain commodities or the use of a specific type of equipment.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Personal contacts are with railroad employees, managers, and union officials at various railroad facilities and with workers and traffic managers at industrial plants involved in the shipment of hazardous materials. These contacts take place during inspections, accident investigations, and complaint investigations and are not, therefore, established on a routine or regular basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal safety regulations applicable to the railroad industry. While investigating complaints of unsafe conditions and employee fatalities, the inspector must often interview witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action. Also, the inspector can become involved in disagreements between railroad managers and union representatives regarding the existence of safety problems or the speed with which defects should be corrected. In those cases, tact and persuasiveness are required to reach a solution acceptable to both sides.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky surfaces around railroad yards; frequent bending, crouching, and stretching to inspect tank cars; and frequent climbing of ladders on tank cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

While inspecting hazardous materials shipments, the inspector is frequently exposed to poisonous, explosive, and highly flammable commodities that could be leaking from containers or suddenly ignited by improper handling. The inspector must be constantly alert to potential dangers and to protective measures necessary to combat them.

TOTAL POINTS -- 1900

**RAILROAD SAFETY INSPECTOR (MOTIVE POWER AND EQUIPMENT)
GS-221-11, BMK #1**

Duties

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Enforces and promotes safety standards and regulations concerned with motive power and equipment on all common carrier railroads within an assigned territory.

-- Plans and carries out an itinerary of periodic inspections that provides maximum coverage of the railroad cars and locomotives in the territory, concentrating inspection activities on those carriers which have a high incidence of accidents, complaints, or violations. Inspects and observes tests of railroad rolling stock and related appurtenances to determine compliance with applicable laws, rules, regulations, emergency orders, and standards. Prepares inspection reports identifying defects or violations and provides all supporting documentation required to assure successful prosecution.

-- Investigates complaints from railroad employees, union officials, and the general public regarding unsafe or unhealthy conditions on railroad property. Attempts to resolve complaints informally, especially if no applicable regulation exists. Prepares report of findings and recommendations for corrective action including defect or violation notices, as appropriate.

-- Evaluates railroad petitions for waivers from portions of Federal safety standards. Makes recommendations to approve or reject petitions and provides supporting documentation.

-- Maintains familiarity with motive power and equipment conditions in assigned territory. Confers with carrier personnel and labor unions to promote cooperation in the improvement of

railroad safety. Interprets new regulations for railroad officials, employees, and unions. Identifies the need for and conducts safety meetings and training sessions for railroad employees.

-- Inspects new or prototype equipment to assure that it meets Federal safety requirements.

Inspects equipment repair facilities to determine if equipment is being properly tested, repaired, and maintained by the carrier. Prior to or during assembly and installation at manufacturers' plants and railroad facilities, inspects and observes tests of components of railroad rolling equipment to determine whether such parts are suitable for the service intended.

-- Investigates independently or as part of a team derailments, collisions, and other accidents and incidents. Witnesses equipment-related tests, examines pertinent operating documents, and questions employees and witnesses to develop all the facts. Determines probable cause of the accident or incident and whether Federal regulations were violated. Develops comprehensive report which outlines the findings.

-- Trains and works with State inspectors involved in the enforcement of Federal freight car safety standards under State participation programs within the assigned territory.

-- Uses decibel meter to take noise reading on locomotives and cabooses and applies EPA standards to determine if noise levels are within acceptable levels.

-- Maintains awareness of new types of airbrakes, locomotives, railroad cars, and inspection techniques through periodic training sessions, contacts with manufacturers and carriers, and review of current literature.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

In addition to broad knowledge of the safety practices and procedures applicable to all areas of the railroad industry:

-- Thorough knowledge of the economic and practical operating considerations, as well as the safety concerns involved in selecting railroad equipment and in developing repair capabilities suitable for use by various railroad systems;

-- Thorough technical knowledge of the capabilities and limitations of a wide variety of power brake systems, locomotive engines, railroad car types, and their related mechanical and electrical components under various environmental conditions;

-- Thorough knowledge of the Federal regulations and standards governing carrier maintenance and repair of motive power and equipment and of the methods and techniques of inspection of rolling stock;

-- Broad knowledge of accident investigation techniques as applied to the railroad industry; and

-- Skill to apply the above knowledge to: (1) determine the best method of obtaining compliance with Federal motive power and equipment regulations at railroad facilities in an assigned

territory; and (2) investigate accidents and incidents to determine probable cause and whether Federal regulations were violated.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

The supervisor assigns the inspector overall responsibility for conducting periodic inspections in a specific geographical area. In consultation with the supervisor, establishes deadlines and general parameters for other projects as they occur in the territory (complaint or accident investigations).

Based on knowledge of the railroads in the territory and on general agency policy, determines the best method of gaining compliance with safety regulations in each situation: informal discussion, defect notice, violation report, or immediate removal of equipment from service. Keeps other inspectors informed of any safety problems found in their areas of inspection (track, signals, etc.) and, in the case of interrelated safety problems, coordinates the enforcement activity with them.

Reports, notices, and other work products are reviewed for their effectiveness in promoting safety in the territory. Controversial findings or actions proposed by the inspector are reviewed for possible impact on agency enforcement programs and policies.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include the inspectors' manuals; books of operating rules issued by the railroads; manufacturers' specifications and blueprints for airbrakes, locomotive engines, and other railroad equipment; and the various Federal safety laws and regulations that apply to the railroad industry including the Railroad Safety Act, the Locomotive Inspection Act, Freight Car Safety Standards, and Noise Emission Standards.

Interprets and adapts guidelines to fit a variety of problems and unique situations encountered at railroad facilities throughout the territory. For example, inspects new locomotives and other rolling stock for conformance to railroad safety standards and procedures.

Factor 4. Complexity -- Level 4-4 -- 225 Points

Enforces and promotes Federal standards concerned with motive power and equipment at a variety of railroad facilities in an assigned geographical territory.

At each facility, a unique combination of factors must be considered in determining the best approach to solving safety problems and to gaining compliance with Federal regulations. Among these factors are:

- past history of accidents, complaints, or violations at the facility;
- availability and quality of equipment repair facilities in the area;

- degree of cooperation of railroad officials and their attitude toward railroad safety programs;
- incomplete or missing carrier records;
- variations in the design or construction of railroad rolling stock;
- need to coordinate inspection and violation work with inspectors in other specializations.

Investigation of accidents and complaints of health and safety hazards involve conflicting statements from witnesses and unusual equipment or operations.

Work requires planning inspection and investigation schedules to cover all assigned motive power and equipment facilities, complaints, and incidents and adapting inspection and investigation techniques to accommodate unique circumstances or unusual equipment encountered during inspections and investigations.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs a variety of safety inspections and complaint and accident investigations at railroad facilities in an assigned territory.

Inspections and investigations are conducted to identify safety hazards that railroad management is obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, railroad cars and locomotives may be taken out of service until repairs are made.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with railroad employees, managers, equipment manufacturers, and union officials at various railroad facilities throughout assigned territory. These contacts take place during inspections, accident investigations, and complaint investigations and, therefore, are not established on a regular or routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal safety regulations applicable to the railroad industry. While investigating complaints of unsafe conditions and accidents, the inspector must frequently interview witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action.

Also, the inspector often becomes involved in disagreements between railroad managers and union representatives regarding the existence of safety problems or the speed with which defects should be corrected. In those cases, tact and persuasiveness are required to reach a solution acceptable to both sides

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky and uneven surfaces around railroad yards, repair tracks, and accident sites; frequent bending, crouching and stretching to inspect railroad cars and locomotives; and frequent climbing of ladders on cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

A significant part of the inspector's time is spent inspecting freight cars and locomotives in large railroad classification yards. Cars roll freely down an embankment onto tracks adjacent to the one being occupied. There is always danger of derailments and the inspector must be alert for wide loads and, if necessary, drop to the ground on the narrow walkway between tracks. The inspector is exposed to a variety of adverse weather conditions and other environmental discomforts, especially during accident and complaint investigations. The work requires exposure to cars loaded with poisonous, explosive, or other hazardous material that could be leaking from containers or suddenly ignited by improper or careless handling requiring constant awareness of potential dangers.

TOTAL POINTS -- 2600

RAILROAD SAFETY INSPECTOR (HAZARDOUS MATERIALS) GS-2121-11, BMK #2

Duties

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Promotes and enforces standards and regulations concerned with the shipment of hazardous materials by rail within an assigned territory.

-- Plans and carries out an itinerary of periodic inspections of the handling of hazardous materials at rail facilities, industries using rail transportation, shippers, consignees, and freight forwarders. This involves inspecting such things as:

- loading, unloading, and documentation procedures;
- packaging, marking, and labeling of hazardous materials shipments;
- railcars for compliance with equipment and safety appliance standards;
- containers for compliance with regulations concerning their construction, testing and retesting;
- switching and movement of cars in railyards; and

- placement and placarding of hazardous materials cars in trains.
- Prepares reports of findings including violation reports with all pertinent documentation to assure successful prosecution in both civil and criminal cases.
- Investigates complaints from railroad employees, unions, and the general public concerning unsafe practices in the transportation of hazardous materials. Interviews witnesses and examines pertinent documentation. Prepares reports of findings with appropriate recommendations for action.
- Investigates, independently or as part of a team, reportable accidents and incidents involving hazardous materials. Determines probable cause and whether Federal regulations were violated. Develops report which outlines findings.
- Observes new methods of packaging, testing, and shipping hazardous materials to ensure that they meet Federal regulations. Reviews blueprints, specifications, and test models of railcars and other hazardous materials containers to ensure that they meet Federal requirements. Reports findings and makes recommendations for acceptance, rejection, or modification of methods and equipment.
- Maintains familiarity with hazardous materials conditions in assigned territory. Confers with carrier personnel, labor unions, shippers and consignees to assure uniform interpretation of regulations and promote cooperation in the improvement of railroad safety. Interprets new regulations and conducts training courses as necessary.
- Advises industry, local and State authorities, and other interested parties of current hazardous materials regulations. As requested, conducts safety meetings and training sessions for firemen and other emergency responsive groups regarding the proper handling of hazardous materials incidents and accidents.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

In addition to broad knowledge of the safety practices and procedures applicable to all areas of the railroad industry:

- Thorough knowledge of the economic and practical operating considerations, as well as the safety concerns involved in developing handling procedures and selecting containerization for hazardous materials being shipped by rail;
- Thorough knowledge of the classes and hazards of principal commodities shipped in the territory, specifications and characteristics of prescribed containers, the general movement of hazardous material via rail in the territory, and carrier operating practices and procedures in the transport of hazardous materials. A practical knowledge of typical reactions of a wide variety of hazardous materials to various environmental conditions and safe procedures for containing or controlling fires, explosions, or leaks of these materials;

- Thorough knowledge of the Federal regulations and standards governing the shipment of hazardous materials by rail;
- Broad knowledge of accident investigation techniques as applied to the railroad industry; and
- Skill to apply the above knowledge to: (1) determine the best method of obtaining compliance with Federal hazardous material regulations at railroad and shippers' facilities in an assigned territory; and (2) investigate reportable accidents and incidents to determine probable cause and whether Federal regulations were violated.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

The supervisor assigns the inspector overall responsibility for conducting periodic inspections in a specific geographical area. In consultation with the supervisor, establishes deadlines and general parameters for other projects as they occur in the territory (complaint or accident investigations).

Based on knowledge of the railroads in the territory and on general agency policy, determines the best method of gaining compliance with safety regulations in each situation: informal discussion, written notice, recommendation for prosecution or emergency order, etc. Keeps other inspectors informed of any safety problems found in their areas of inspection (track, motive power and equipment, etc.) and, in the case of interrelated safety problems, coordinates the enforcement activity with them.

Reports, notices, and other work products are reviewed for their effectiveness in promoting safety in the territory. Controversial findings or actions proposed by the inspector are reviewed for possible impact on agency enforcement programs and policies.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include inspectors' manuals; books of operating rules issued by the railroads; chemical dictionaries; manufacturers' specifications and blueprints for tank cars and related equipment; and the various Federal safety laws and regulations that apply to the railroad industry, especially the Hazardous Materials Regulations, the Railroad Safety Act, and the Freight Car Safety Standards.

Interprets and adapts guidelines to fit a variety of problems and unique situations encountered at railroad, shipping, and container manufacturing facilities throughout the territory. For example, most of the Hazardous Materials Regulations apply generally to all modes of transportation, and the inspector must adapt them to specific problems in the rail industry. Also, the regulations are constantly changing in their interpretation to cope with new commodities coming on the market and new hazards being uncovered.

Factor 4. Complexity -- Level 4-4 -- 225 Points

Enforces and promotes Federal standards concerned with the transportation of hazardous materials at a variety of railroad, shipping, and manufacturing facilities in an assigned geographical territory.

At each facility, a unique combination of factors must be considered in determining the best approach to solving safety problems and to gaining compliance with Federal regulations relating to hazardous materials. Among these factors are:

- number and variety of hazardous materials, their properties in isolation and combined with other materials, and the impact of environmental conditions on them;
- past history of accidents, complaints, or violations at a facility, and the attitude of management toward the safety program;
- the number and variety of facilities to be inspected (freight forwarder, industry, railroad) and the extent of the inspectors' enforcement authority;
- the need to coordinate inspection and violation work with inspectors in other specializations; and
- the need to interface with other modes of transportation and differences in regulations governing the shipment of hazardous materials among the modes of transportation.

Investigation of accidents and complaints of health and safety hazards involves conflicting statements from witnesses, incomplete records, and unusual equipment or operations.

Work requires planning inspection and investigation schedules to cover all assigned hazardous materials facilities, complaints, and incidents and adapting inspection and investigation techniques to accommodate new hazardous materials containers or procedures encountered during inspections and investigations.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs a variety of safety inspections and complaint and accident investigations at railroad, shipping, and manufacturing facilities in an assigned territory. Inspections and investigations are conducted to identify safety hazards that managers are obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, may recommend the issuance of an emergency order restricting the movement of certain commodities or the use of a specific type of equipment.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Personal contacts are with railroad employees, managers, and union officials at various railroad facilities and with general managers and employees of the traffic departments of plants involved

in the shipment of hazardous materials. Other contacts can involve citizens who are lodging complaints about unsafe railroad conditions or who are witnesses to railroad accidents. Such contacts are usually not established on a regular or routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal regulations concerning the shipment of hazardous materials by rail. Since managers of industrial plants and freight forwarders are frequently skeptical of the agency's authority to regulate their activity, employs tact and persuasiveness to obtain their cooperation. While investigating complaints of unsafe conditions and accidents, interviews witnesses who may be unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky surfaces around railroad yards and industrial facilities; frequent bending, crouching, and stretching to inspect tank cars; and frequent climbing of ladders on tank cars and of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

While inspecting shipments of hazardous materials at railroad yards, industrial plants, and freight forwarders, the inspector is frequently exposed to poisonous, explosive, and highly flammable commodities that could be leaking from their containers or suddenly ignited by improper handling requiring constant awareness of potential dangers and protective measures to combat them.

TOTAL POINTS -- 2600

RAILROAD SAFETY INSPECTOR (TRACK) GS-2121-11, BMK #3

Duties

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Promotes and enforces standards and regulations concerned with the maintenance of track and related structures for common carrier railroads within an assigned territory.

-- Plans and carries out an itinerary of periodic inspections that provides maximum coverage of the track systems in the territory. Inspections are conducted by walking or using motor cars, high-rail vehicles, locomotives, and track geometry and defect test cars to identify deviations in cross-level, gage, profile, and alignment and locate internal rail flaws. Prepares track inspection reports identifying necessary corrective action. Conducts follow-up inspections and, as appropriate, prepares violation reports including all documentation to assure successful prosecution.

- Investigates complaints from railroad employees, the general public, unions, or State or local governments regarding unsafe track conditions. Interviews complainants and railroad officials and inspects track conditions. Prepares report of findings, citing defects or violations as appropriate. Where no defect was found, explains the circumstances to the complainant to assure a clear understanding of why no action was taken.
- Maintains familiarity with track conditions in assigned territory. Confers with carrier personnel and labor unions to promote cooperation in and understanding of the railroad safety program. Interprets regulations for railroad officials, employees, and unions. Identifies the need for and conducts safety meetings and training sessions to explain Federal requirements and standards.
- Conducts investigations of railroad accidents and employee fatalities. Makes onsite inspection of condition of track structures and related components, interviews employees and witnesses, witnesses or arranges for track-related tests, and examines pertinent railroad documents and records. Prepares written report outlining findings, identifying probable cause, and citing Federal regulations which were violated.
- Participates in the training of State employed candidates for acceptance into the State Participation Program for track inspection. Evaluates the progress of the candidates and prepares written evaluation report.
- Participates in evaluating State requests for Federal aid to upgrade low density rail lines. Monitors the progress of repair work after aid has been granted.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

In addition to broad knowledge of the safety practices and procedures applicable to all areas of the railroad industry:

- Thorough knowledge of the economic and practical operating considerations, as well as the safety concerns involved in designing, constructing, and maintaining track systems;
- Thorough technical knowledge of the capabilities and limitations of the materials used in track construction under different environmental conditions (e.g., the effect of various ballast materials on drainage of the roadbed, the expansion and movement of different types of rail under various weather conditions);
- Thorough knowledge of the Federal regulations and standards governing track structures and related components and of the combinations of various track conditions which constitute hazardous conditions;
- Broad knowledge of accident investigation techniques as applied to the railroad industry; and
- Skill to apply the above knowledge to: (1) determine the best method of obtaining compliance with Federal track standards on all railroad lines in an assigned territory; and (2) investigate reported accidents to determine probable cause and whether Federal regulations were violated.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

The supervisor assigns the inspector overall responsibility for conducting periodic inspections in a specific geographical area. In consultation with the supervisor, establishes deadlines and general parameters for other projects as they occur in the territory (complaint or accident investigations, etc.).

Based on knowledge of the railroads in the territory and on general agency policy, determines the best method of gaining compliance with safety regulations in each situation: informal discussion, defect notice, violation, Slow Order. Keeps other inspectors informed of any safety problems found in their areas of inspection (signals, motive power and equipment, etc.) and, in the case of interrelated safety problems, coordinates the enforcement activity with them.

Reports, notices, and other products are reviewed for their effectiveness in promoting safety in the territory. Controversial findings or actions proposed by the inspector are reviewed for possible impact on agency enforcement programs and policies.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include the inspectors' manuals; books of operating rules issued by the railroads; track layout plans; and the various Federal safety laws and regulations that apply to the railroad industry, especially the Railroad Safety Act, the Accident Reports Act, and the Track Standards.

Interprets and adapts guidelines to fit a variety of problems and unique situations encountered throughout the territory. For example, the Track Standards apply to specific track conditions existing in isolation (e.g., insufficient ballast, corroded rail). The inspector must apply judgment, however, in determining when a combination of track conditions, none of which individually amounts to a deviation from the requirements, results in an unsafe condition that must be corrected.

Factor 4. Complexity -- Level 4-4 -- 225 Points

Enforces and promoted Federal track safety standards on all common carrier railroads in an assigned geographical territory.

At each facility, a unique combination of factors must be considered in determining the best approach to solving safety problems and to gaining compliance with Federal track standards. Among these factors are:

- Past history of accidents, complaints, or violations on a section of track;
- Need to coordinate inspection and violation work with inspectors of other specializations;
- Combinations of poor conditions, none of which constitutes a defect, but which together constitute a safety hazard;

- The weight, frequency, and condition of repair of typical rolling stock using that line of track;
- Environmental factors, such as temperature range, poor drainage in lowland areas, or the special hazards of mountain railroading.

Investigation of accidents and complaints of safety hazards involves conflicting statements from witnesses, incomplete records, and unusual equipment or operations.

Work requires planning inspection and investigation schedules to cover assigned geographic territory and complaints of unsafe track conditions, assuring maximum coverage of track used by passenger trains or for the regular transport of hazardous materials. Adapts inspection and investigation techniques to accommodate new track design and construction encountered during inspections and investigations.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs a variety of safety inspections and complaint and accident investigations on all common carrier railroads in an assigned territory.

Inspections and investigations are conducted to identify safety hazards that managers are obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, may issue a Slow Order, lowering the speed on a section of track to as little as 10 mph, or recommend that the track be taken out of service until repairs are made.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with railroad employees, managers, and union officials at various railroad facilities, and with State track inspectors. Other contacts involve citizens or State and local government officials who are lodging complaints about unsafe railroad conditions or who are witnesses to railroad accidents. Such contacts are usually not established on a routine or regular basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal track safety standards applicable to the railroad industry. While investigating complaints of unsafe conditions and accidents, the inspector must frequently interview witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action. Also, the inspector often becomes involved in disagreements among railroad managers, union representatives, and public organizations regarding the existence of safety problems or the speed with which defects should be corrected. In those cases, tact and persuasiveness are required to reach a solution acceptable to all sides.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky and uneven surfaces around railroad tracks and accident sites, frequent bending and crouching to measure track geometry and inspect track defects, and frequent climbing of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

Most inspection work takes place along railroad tracks and yards where the employee must be alert for high speed trains and rolling cars and avoid getting caught in switches and other moving parts. While conducting accident investigations, the employee is exposed to a variety of weather conditions and other environmental discomforts and to poisonous, explosive, or other hazardous material that could be leaking from containers or suddenly ignited by improper or careless handling requiring constant awareness of potential dangers.

TOTAL POINTS -- 2600

**RAILROAD SAFETY INSPECTOR (SIGNALS AND TRAIN CONTROL)
GS-2121-11, BMK #4**

Duties

The incumbent is assigned to a District Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Promotes and enforces safety standards and regulations concerned with signal and train control systems and related components within an assigned territory.

-- Plans and carries out an itinerary of periodic inspections of all signal and train control systems in the territory to assure that they are properly installed, operated, tested, and maintained. This involves inspecting and observing tests of signals and train controls and related components to determine their safety and compliance with applicable laws, regulations, rules, and standards. Based on inspection findings, develops and submits defect or violation reports.

-- Investigates complaints from railroad employees, union officials, and the general public regarding unsafe or hazardous signal and train control conditions (e.g., false proceeds). When conditions warrant, submits violation reports with all supporting documentation to assure successful prosecution. Investigates complaints concerning the malfunction of highway crossing protection under the broad purview of the Railroad Safety Act of 1970, and recommends necessary corrective action.

-- Evaluates railroad applications to install, modify, or remove portions of a signal or train control system (e.g., redesign several miles of automatic block signals). Makes recommendations for approval, rejection, or modification of the plan. Assists the Regional Specialist in evaluating the most complex applications by analyzing portions thereof and making

preliminary recommendations. Reviews and evaluates carrier applications for waiver of requirements of Federal regulations and standards applicable to signal systems. Makes recommendations to approve or reject applications.

B Confers regularly with railroad management and labor officials to keep abreast of all signal and train control developments in assigned territory. Promotes understanding of and cooperation in the railroad safety program. Interprets regulations for railroad officials, employees, and unions. Identifies the need for and conducts safety meetings and training sessions to explain Federal requirements and standards. Assists railroad employees in the review of specifications and plans for developing and adapting signal and train control systems to assure consistency with Federal regulations and standards.

-- Investigates, independently or as part of a team, reportable collisions, derailments, employee fatalities, and other accidents, especially those involving possible signal or train control failure. Investigates the highway crossing protection equipment when the accident involves train and vehicle collision. Conducts on-site examination and testing of signal systems and components and signal circuit plans to determine compliance with applicable safety rules and regulations. Submits report of findings.

-- Assists Regional Specialist in the evaluation of new state-of-the-art signal equipment. Inspects and observes tests of the equipment and recommends acceptance or prohibition of such equipment.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

In addition to broad knowledge of the safety practices and procedures applicable to all areas of the railroad industry:

-- Thorough knowledge of the economic and practical operating considerations as well as the safety concerns involved in designing, constructing, and maintaining signal and train control systems;

B Thorough technical knowledge of the capabilities and limitations of the mechanical, electrical, electronic, and pneumatic components of signal and train control systems and how they are affected by various environmental conditions;

-- Thorough knowledge of the Federal regulations and standards governing design, installation, operation, testing, and maintenance of signal and train control systems and related components and of methods and techniques of inspection;

-- Broad knowledge of locomotive braking systems, both air and dynamic, to establish the interface between the wayside signal and the train stopping or speed control system used on the locomotive and to determine safe stopping distances;

-- Broad knowledge of accident investigation techniques as applied to the railroad industry; and

-- Skill in applying the above knowledge to: (1) determine the best method of obtaining compliance with Federal signal and train control regulations on all railroads in the assigned territory; and (2) investigate incidents and reportable accidents to determine probable cause and whether Federal regulations were violated.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

The supervisor assigns the inspector overall responsibility for conducting periodic inspections in a specific geographical area. In consultation with the supervisor, establishes deadlines and general parameters for other projects as they occur in the territory (complaint or accident investigations).

Based on knowledge of the railroads in the territory and on general agency policy, determines the best method of gaining compliance with safety regulations in each situation: informal discussion, defect notice, or violation report. Keeps other inspectors informed of any safety problems found in their areas of inspection (track, motive power and equipment, etc.) and, in the case of interrelated safety problems, coordinates the enforcement activity with them.

Reports, notices, and other work products are reviewed for their effectiveness in promoting safety in the territory. Controversial findings or actions proposed by the inspector are reviewed for possible impact on agency enforcement programs and policies.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include the inspectors' manuals; books of operating rules issued by the railroads; manufacturers' specifications and blueprints for signal and train control systems and components; track layout plans; and the various Federal safety standards that apply to the railroad industry, especially the Railroad Safety Act, the Signal Inspection Act, the Accident Reports Act, and sections of the Track Standards.

Interprets and adapts the guidelines to fit a variety of problems and situations encountered at railroad facilities throughout the territory. For example, each signal system presents a unique combination of track circuits, lights, switches, interlocking and other control apparatus, and the inspector must determine if any given signal configuration meets minimum safety standards or if requested waivers would jeopardize a safe operating environment.

Factor 4. Complexity -- Level 4-4 -- 225 Points

Enforces and promotes Federal standards concerned with signals and train control at a variety of railroad facilities in an assigned geographical territory.

At each facility, a unique combination of factors must be considered in determining the best approach to solve safety problems and gain compliance with Federal signal and train control regulations. Among these factors are:

-- variations in signal systems, nomenclature, physical layout of track, circuit design, type of rail service, stopping distances required by trains, and operating practices among the carriers;

-- impact of environmental factors on signal and train control components (e.g., power distribution systems, cathodic protection of underground pipelines, electric locomotive propulsion ground current return systems);

-- need to coordinate inspection and violation work with inspectors of other specializations (e.g., track, motive power and equipment);

-- incomplete or missing carrier records.

Investigation of accidents and complaints of safety hazards involves conflicting statements from witnesses and unusual equipment or operations.

Work requires planning inspection and investigation schedules to cover assigned facilities, complaints, and incidents (e.g., false proceeds) and adapting inspection and investigation techniques to accommodate new signal and train control equipment and configurations encountered during inspections and investigations.

Factor 5. Scope and Effect -- Level 5-3 -- 150 Points

Performs a variety of safety inspections and complaint and accident investigations at railroad facilities in an assigned territory. Inspections and investigations are conducted to identify safety hazards that railroad management is obligated to correct within a reasonable period of time. If safety hazards pose an immediate danger, railroad equipment may be taken out of service by the railroad until repairs are made.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with railroad employees, managers, and union officials at various railroad facilities or manufacturers' representatives. Other contacts can involve citizens who are lodging complaints about unsafe railroad conditions or who are witnesses to railroad accidents. Such contacts take place during inspections, complaint investigations, and accident investigations, and do not, therefore, occur on a routine or regular basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal safety regulations applicable to the railroad industry. While investigating complaints of unsafe conditions and accidents, the inspector must frequently interview witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action. Also, the inspector may become involved in disagreements between railroad managers and union representatives regarding the existence of safety problems or the speed with which defects should be corrected. In those cases, tact and persuasiveness are required to reach a solution acceptable to both sides.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky and uneven surfaces around railroad tracks and accident sites, frequent bending and crouching to inspect switches and signals, and occasional climbing of signal masts to inspect overhead signals or of embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

On-site inspection and investigation work usually takes place along railroad tracks where the employee must be alert for trains and avoid getting caught in switches and other moving parts. Inspections and tests can involve signal power lines and protective apparatus energized at voltages up to 6,600 volts, third rail propulsion at voltages of 600 volts dc, and catenary systems with voltages of 11,000 volts which require constant care and vigilance. While conducting inspections and accident investigations, may be exposed to a variety of weather conditions and poisonous, explosive, or other hazardous material that could be leaking from containers or suddenly ignited by improper or careless handling, requiring the inspector to exercise great caution and judgment.

TOTAL POINTS -- 2600

**RAILROAD SAFETY SPECIALIST (MOTIVE POWER AND EQUIPMENT)
GS-2121-12, BMK #1**

Duties

The incumbent is assigned to a Regional Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Serves as the Region's safety expert on motive power and equipment.

-- Administers the Regional motive power and equipment program. Provides uniform interpretation and application of laws, orders, rules, and regulations pertaining to motive power and equipment, air brake tests, and noise emission. Keeps motive power and equipment inspectors advised of changes in regulations and standards and new technical developments in motive power and equipment. Makes continuing evaluations of the inspection territories and recommends changes in territories assigned to inspectors to assure effective and equitable work distribution. Reviews inspection schedules and accomplishments to assure that the frequency and priority of inspections at carrier locations in the Region are realistic and well-balanced. Reviews inspection and complaint reports to identify trends in Regional safety and persistent health and safety hazards and initiates special studies and enforcement programs to address these problems and develop solutions. Represents the agency in contacts with top railroad officials to assure understanding of program methods and objectives and to resolve widespread and/or recurring safety problems in the Region. Keeps headquarters advised of unique problems, practices, and activities occurring in the Region.

-- Provides technical guidance and direction in the interpretation of various laws, orders, rules, and regulations promulgated by the agency in the motive power and equipment area. Reviews technical reports including inspection, investigation, employee fatality, waiver, accident, and violation reports submitted by field inspectors to assure proper content, adequacy of inspection and reporting procedures, and proper documentation. Periodically accompanies inspectors on field visits to observe inspection methods and techniques and provide onsite guidance and advice. Assures that all inspectors in the specialization are fully trained and technically competent.

-- Evaluates the background, knowledge, and technical proficiency of candidates for state inspector positions in the State Participation Program. The evaluation includes written and practical examination and on-site testing of technical proficiency in the enforcement of the Federal Freight Car Safety Standards. Maintains liaison with State regulatory agencies and monitors State inspection activities to assure compliance with Federal laws and regulations.

-- Coordinates the investigation of serious train accidents involving motive power and equipment and the preparation of the report with input from inspectors assigned to the investigation. On occasion, leads teams investigating major accidents in the Region or participates as the team's motive power and equipment expert. Testifies at hearings regarding the results of equipment tests or inspections carried out at the accident site. Evaluates probable cause to determine whether Federal regulations have been violated and if there is a need for additional regulations. Makes appropriate recommendations to headquarters.

-- Reviews blueprints, specifications, and test models of prototype railroad cars and locomotives to assure that they meet existing Federal regulations.

-- Composes correspondence relative to motive power and equipment matters including complaint close-out letters, responses to requests for information on regulations or standards, and reports on special studies or investigations conducted in the Region.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

-- Thorough knowledge of the economic and practical operating considerations as well as the safety concerns involved in selecting railroad equipment and in developing repair capabilities suitable for use by various railroad systems;

-- Thorough technical knowledge of the capabilities and limitations of a wide variety of power brake systems, locomotive engines, railroad car types, and their related mechanical and electrical components under various environmental conditions;

-- Thorough knowledge of the policies, programs, precedents, and practices of the agency as they relate to the motive power and equipment specialization and of the issues and problems in railroad safety that are of particular concern;

-- Broad knowledge of accident investigation techniques as applied to the railroad industry; and

-- Skill in applying the above knowledge to: (1) administer the Regional motive power and equipment program; (2) find practical solutions to the most persistent motive power and equipment safety problems in the Region or those resulting from new equipment and regulations; (3) provide technical advice and guidance to inspectors and railroad officials; and (4) lead teams investigating major accidents to determine regulatory compliance and the need for modification of inspection techniques or regulations.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

Has continuing responsibility for providing technical advice and guidance in the area of motive power and equipment and for administering the Regional motive power and equipment program. Receives most assignments in the form of petitions for waiver, complaint letters, accident notifications, and requests for technical advice and assistance directly from railroad officials, manufacturers, and inspectors. In consultation with the supervisor, establishes priorities or other parameters for certain projects.

Based on knowledge of the railroads in the Region and general agency policy, plans and carries out assignments independently, coordinating special studies and accident investigations with inspectors and investigators, railroads, other government agencies, and manufacturers.

Much of the work involves providing on-the-spot technical advice to inspectors, railroad officials, and manufacturers which does not lend itself to supervisory review. Accident reports and other work products are usually considered technically sound. Controversial actions proposed by the employee are reviewed for their practicality and potential effectiveness in promoting railroad safety.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include agency policy memoranda; manufacturers' specifications and blueprints for airbrakes, locomotive engines, and other railroad equipment; and the various safety laws and regulations that apply to the railroad industry, especially the Locomotive Inspection Act, Freight Car Safety Standards, the Power Brake Law, the Safety Appliance Act, and Railroad Noise Emission Standards.

As the Regional expert on motive power and equipment, the employee uses initiative, resourcefulness, and judgment to handle new or unusual situations not covered by the guidelines or to develop new information on a problem or issue in railroad safety for which new standards and regulations are then developed. For example, investigates major accidents involving unique circumstances that could not be anticipated in written guidelines or participates on agency wide committees to develop new or modified motive power and equipment regulations and inspection procedures.

Factor 4. Complexity -- Level 4-5 -- 325 Points

Serves as Regional expert on motive power and equipment with responsibility for administering the Regional motive power and equipment program and resolving the most complex motive power and equipment problems and issues.

The work is complicated by such factors as:

- unknown safety implications or lack of appropriate inspection procedures or regulations for new or unusual locomotives, tank cars, or other rolling stock or safety conditions existing in equipment repair facilities;
- need to focus Regional activities on specific carrier, facility, or equipment problems requiring reallocation of resources and evaluation of program direction and accomplishment;
- need to develop solutions to widespread, controversial, and persistent equipment safety hazards which will not place unreasonable fiscal or operational demands on the railroad industry.

The work requires developing new inspection techniques for prototype locomotives and tank cars, identifying trends in Regional motive power and equipment safety, and establishing performance criteria by which the Regional motive power and equipment program is evaluated.

Factor 5. Scope and Effect -- Level 5-4 -- 225 Points

Conducts special inspections and investigations in the area of motive power and equipment that involve new or controversial issues.

Decisions regarding the safety of railroad equipment or facilities can have a profound impact on the operations of several railroads or equipment manufacturers and may serve as a nationwide precedent. Reports may become the basis of new regulations and enforcement procedures for the entire agency.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Most contacts are with persons involved in the railroad industry at various levels including Division Superintendents, Presidents and Vice Presidents of Operations, various department heads, and union officials. Contacts also include managers of equipment manufacturing plants, investigators from other Federal and State agencies, and State and local officials at the site of an accident. These contacts often involve unusual or critical railroad safety problems and, thus, are not established on a regular or routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to obtain compliance with Federal motive power and equipment standards that may be controversial in their interpretation or place substantial financial hardship

on a particular railroad operation. Attempts to resolve safety problems with railroad managers who are known to be uncooperative. Uses tact, persuasiveness, and technical expertise in correcting serious hazards and resolving problems in the best interest of railroad safety.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

The work requires long periods of walking on rocky and uneven surfaces around railroad yards and repair tracks, industrial plants and accident sites; frequent bending, crouching, and stretching to inspect equipment or wreckage; and climbing of ladders on railroad cars and over embankments and wreckage at accident sites.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

Inspection and investigation work occurs at railroad car rebuild facilities, manufacturing plants, and large classification yards where the employee is exposed to freely rolling cars, moving machinery, and a high level of noise. During accident investigations, the employee is exposed to a variety of adverse weather conditions and other environmental discomforts. The work requires exposure to cars loaded with poisonous, explosive, or other hazardous material that could be leaking from containers or suddenly ignited by improper or careless handling requiring constant awareness of potential dangers.

TOTAL POINTS -- 2775

RAILROAD SAFETY SPECIALIST GS-2121-12, BMK #2

Duties

The incumbent is assigned to a Regional Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Serves as the Region's safety expert in hazardous materials and operating practices.

-- Administers the Regional hazardous materials and operating practices programs. Provides uniform interpretation and application of laws, orders, rules, and regulations pertaining to these areas. Keeps inspectors advised of changes in regulations and standards, new programs, and technical developments. Makes continuing evaluations of the inspection territories and recommends changes in areas assigned to inspectors to assure effective and equitable work distribution. Reviews inspection schedules and accomplishments to assure that the frequency and priority of inspections at carrier and other locations in the Region are realistic and well-balanced. Review inspection and complaint reports to identify trends in Regional safety and persistent health and safety hazards and initiates special studies and enforcement programs to address the problems and develop solutions. Represents the agency in contacts with top railroad and shipping officials to assure understanding of program objectives and methods and to resolve widespread and/or recurring safety problems in the Region. Keeps headquarters advised of unique problems, practices, and activities occurring in the Region.

-- Provides technical guidance and direction in the interpretation of various laws, orders, rules, and regulations promulgated in the hazardous materials and operating practices areas. Reviews technical reports including inspection, investigation, employee fatality, waiver, accident, and violation reports submitted by inspectors to assure proper content, adequacy of inspection and reporting procedures, and proper documentation. Periodically accompanies inspectors on field visits to observe inspection methods and techniques and provide on-site guidance and advice. Assures that all inspectors are fully trained and technically competent.

-- Coordinates the investigation of serious train accidents involving hazardous materials or possible violations of operating practices and rules. Directs the preparation of the accident report with input from inspectors assigned to the investigation. On occasion, leads teams investigating major accidents in the Region or participates as the team's operating practices or hazardous materials expert. Testifies at hearings regarding the findings of on-site or other inspections. Evaluates probable cause to determine if Federal regulations have been violated and if there is a need for additional regulations. Makes appropriate recommendations to headquarters.

-- Directs the investigation and resolution of complex complaints received from railroad employees, unions, or the general public. In many cases, complaints can involve areas for which no Federal regulations exist or for which other agencies are responsible. Assures that all complaints which identify a valid safety or health hazard are resolved using whatever authority is required, including that of State or local governments or other Federal agencies.

-- Confers with car builders and container manufacturers on the construction of tank cars and other hazardous materials containers to ensure that they meet with specifications and existing Federal regulations. Reviews changes in railroad operating rules to assure conformance with Federal requirements.

-- Composes correspondence relative to hazardous materials or operating practices including complaint close-out letters, responses to requests for information on regulations or standards, and reports on special studies or investigations conducted in the Region.

-- Conducts meetings and training seminars for State and local authorities on safe procedures for handling railroad accidents and incidents involving hazardous materials. Represents the agency on Regional committees to standardize hazardous materials enforcement policies across all modes of transportation.

Factor 1. Knowledge Required -- Level 1-7 -- 1250 Points

-- Thorough knowledge of the economic and practical operating considerations as well as the safety concerns involved in developing methods for the packaging and shipment of hazardous materials by rail and in developing and administering procedures and rules to assure the safe operation of a railroad;

-- Thorough knowledge of the classes and hazards of the principal hazardous materials shipped in the Region, specifications and characteristics of prescribed containers, the general movement

of hazardous materials via rail, and carrier operating practices and procedures in their transport. A practical knowledge of typical reactions of a wide variety of hazardous materials to various environmental conditions and safe procedures for containing or controlling fires, explosions, or leaks of these materials;

-- Thorough knowledge of the operations, equipment, and record keeping practices used by the various carriers for different types of rail services and the areas of responsibility and authority of the various railroad officials;

-- Thorough knowledge of the Federal regulations and standards governing the shipment of hazardous materials and the safety and health concerns related to the operation of a railroad;

-- Broad knowledge of accident investigation techniques as applied to the railroad industry; and

-- Skill in applying the above knowledge, to: (1) administer the Regional hazardous materials and operating practices programs; (2) find practical solutions to the most persistent operating and hazardous materials problems in the Region, or those resulting from new regulations, equipment, or operations; (3) provide technical advice and guidance to inspectors, railroad officials, and State and local governments; and (4) lead teams investigating major accidents to determine regulatory compliance and the need for modification of inspection techniques or regulations.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

Has continuing responsibility for providing technical advice and guidance regarding the shipment of hazardous materials by rail and operating practices and for administering these Regional programs. Receives most assignments in the form of accident notifications, petitions for waiver, and requests for technical advice and assistance directly from railroad officials, manufacturers, and inspectors. In consultation with the supervisor, establishes priorities or other parameters for certain projects.

Based on knowledge of the railroads in the Region and general agency policy, plans and carries out assignments independently, coordinating special projects and accident investigations with inspectors and investigators, other government agencies, shippers and manufacturers.

Much of the work involves providing on-the-spot technical advice to inspectors, railroad officials, and shippers which does not lend itself to supervisory review. Accident reports and other work products are usually considered technically sound. Controversial actions proposed by the employee are reviewed for their practicality and potential effectiveness in promoting railroad safety.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include agency memoranda; chemical dictionaries; manufacturers' specifications and blueprints for tank cars and related equipment; railroad books of operating rules; and the various safety laws and regulations that apply to the railroad industry, especially the Hazardous Materials Regulations, the Railroad Safety Act, the Freight Car Safety Standards, and portions of the Code of Federal Regulations pertaining to blue signal protection, rear end marking devices, and radio communication.

As the Regional expert on operating practices and hazardous materials, the employee uses initiative, resourcefulness, and judgment to handle new or unusual situations not covered by the guidelines or to develop new information on a problem or issue in railroad safety for which new standards and regulations are then developed. For example, investigates major accidents involving unique circumstances that could not be anticipated in written guidelines or participates on agency wide committees to develop new or modified operating practices or hazardous materials regulations.

Factor 4. Complexity -- Level 4-5 -- 325 Points

Serves as Regional expert on hazardous materials and operating practices with responsibility for administering the Regional hazardous materials and operating practices programs and resolving the most complex problems and issues in the areas.

The work is complicated by such factors as:

- unknown safety and health implications of new hazardous commodities or the lack of appropriate inspection procedures for new or unusual tank cars and containers;
- the need to develop solutions to widespread, controversial, and persistent hazardous materials and operating practices safety hazards which will not place unreasonable fiscal or operational demands on the industry; and
- the need to adjust Regional activities and resources to accommodate fluctuating workloads, investigation of emergency or extremely hazardous conditions, or implement new program and policy directives.

The work requires developing inspection techniques for prototype containers and new hazardous materials, identifying trends in Regional hazardous materials and operating practices safety, and establishing performance criteria by which the Regional hazardous materials and operating practices programs are evaluated.

Factor 5. Scope and Effect -- Level 5-4 -- 225 Points

Conducts special inspections and investigations in the areas of hazardous materials or operating practices that involve new or controversial issues.

Decisions regarding the safety of hazardous materials containers or operating practices can have a profound impact on the operations of individual railroads, major shippers, or equipment manufacturers and may serve as a nationwide precedent. Reports may result in new regulations and enforcement procedures for the entire agency.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with persons involved in the railroad industry at various levels including Division Superintendents, Vice-Presidents of Operations, and union officials; with industrial plant managers; and with hazardous materials specialists from agencies regulating other modes of transportation. During accident investigations, contacts also include investigators from other Federal and State agencies and State and local police and fire officials. These contacts often involve unusual or critical safety problems and, thus, are not established on a regular or routine basis.

Factor 7. Purpose of Contact -- Level 7-3 -- 120 Points

The purpose of contacts is to obtain compliance with Federal hazardous materials and operating practices regulations that may be controversial in their interpretation or require major changes in the operations of railroads or shippers. Attempts to resolve safety problems with railroad managers and shippers who are known to be uncooperative. Uses tact, persuasiveness, and technical expertise in correcting serious hazards and resolving problems in the best interest of railroad safety.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

Inspection and investigation work requires long periods of walking on rocky surfaces around railroad yards and industrial facilities; frequent bending, crouching, and stretching to inspect tank cars; and frequent climbing of ladders on tank cars and on loading platforms.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

While inspecting shipments of hazardous materials at railroad yards and industrial facilities and investigating accidents, the inspector is exposed to poisonous, explosive, and highly flammable commodities that could be leaking from containers or suddenly ignited by improper handling. The inspector must constantly be aware of potential dangers and protective measures to combat them.

TOTAL POINTS -- 2775

RAILROAD SAFETY SPECIALIST (SIGNALS AND TRAIN CONTROL) GS-2121-12, BMK #3

Duties

The incumbent is assigned to a Regional Office of the agency that administers and enforces Federal safety laws and regulations that apply to the railroad industry. Serves as the Region's safety expert on signals and train control.

-- Administers the Regional signal and train control program. Provides uniform interpretation and application of laws, orders, rules, and regulations pertaining to signals and train control and related components. Keeps signal and train control inspectors advised of changes in regulations and standards and new technical developments in the specialization. Makes continuing evaluations of the inspection territories and recommends changes in territories assigned to inspectors to assure effective and equitable work distribution. Reviews inspection schedules and accomplishments to assure that the frequency and priority of inspections at carrier locations in the Region are realistic and well-balanced. Reviews inspection and complaint reports to identify trends in Regional safety and persistent health and safety hazards and initiates special studies and enforcement programs to address these problems and develop solutions. Represents the agency in contacts with top railroad officials to assure understanding of program methods and objectives and to resolve widespread and/or recurring safety problems in the Region. Keeps headquarters advised of unique problems, practices, and activities occurring in the Region.

-- Provides technical guidance and direction in the interpretation of various laws, orders, rules, and regulations governing signal and train control systems. Reviews technical reports submitted by inspectors including regular inspection, employee fatality, accident violation, false proceeds, application for change, and waivers for content, adequacy of inspection and reporting procedures, and proper documentation. Periodically accompanies inspectors on field visits to observe inspection methods and techniques and provide on-site guidance and advice. Assures that all inspectors in the specialization are fully trained and technically competent.

-- Coordinates the investigation of serious train accidents involving signals and/or train control and the preparation of the report with input from inspectors assigned to the investigation. On occasion, leads teams investigating major accidents in the Region or participates as the team's signal and train control expert. Testifies at hearings regarding the results of signal tests or inspections carried out at the accident site. Evaluates probable cause to determine if Federal regulations have been violated and if there is a need for additional regulations. Makes appropriate recommendations to headquarters.

-- Evaluates railroads' requests to install or modify major portions of a signal or train control systems to assure that Federal safety standards will be met and determine that the proposed change will provide adequate protection for existing train operations. Makes recommendations to approve, reject, or modify the plan.

-- Represents the Region on agency wide committees to develop new or modified signal and train control regulations or related operating rules.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

- Thorough knowledge of the economic and practical operating considerations as well as the safety concerns involved in designing, constructing, and maintaining signal and train control systems and related components;
- Thorough technical knowledge of the capabilities and limitations of the various mechanical, electrical, electronic, and pneumatic components of signal and train control systems and the effect of various environmental conditions on them;
- Thorough knowledge of the policies, programs, precedents, and practices of the agency as they relate to signals and train control and of the issues and problems related thereto that are of particular concern to the agency;
- A broad knowledge of locomotive braking systems, both air and dynamic, to establish the interface between the wayside signal and the train stopping or speed control system used on the locomotive in order to determine safe stopping distances;
- Broad knowledge of accident investigation techniques as applied to the railroad industry; and
- Skill in applying the above knowledge to: (1) administer the Regional signal and train control program; (2) find practical solutions to the most persistent signal and train control problems in the Region or those resulting from new equipment, systems, or regulations; (3) provide technical advice and guidance to inspectors and railroad officials; and (4) lead teams investigating major accidents to determine the probable cause and the need for modification of inspection techniques or regulations.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

Has continuing responsibility for providing technical advice and guidance in the area of signal and train control systems and for administering the Regional program in the assigned specialization. Receives most assignments in the form of accident notifications, petitions to modify signal systems, and requests for technical advice and assistance directly from railroad officials, equipment manufacturers, and inspectors. In consultation with the supervisor, establishes priorities or other parameters for certain projects.

Based on knowledge of the railroads in the Region and general agency policy, plans and carries out assignments independently, coordinating special studies and accident investigations with inspectors, investigators, other government agencies, manufacturers, and the railroads.

Much of the work involves providing on-the-spot technical advice to inspectors, railroad officials, and others which does not lend itself to supervisory review. Accident reports, recommendations regarding proposed signal changes, and other work products are usually considered technically sound. Controversial actions proposed by the employee are reviewed for their practicality and potential effectiveness in promoting railroad safety.

Factor 3. Guidelines -- Level 3-3 -- 275 Points

Guidelines include agency policy memoranda; manufacturers' specifications and blueprints for signal and train control components; track layout plans; books of operating rules issued by the railroads; and the various Federal safety laws and regulations that apply to the railroad industry, especially the Signal Inspection Act, portions of the Track Standards, the Accident Reports Act, and the Railroad Safety Act.

As the Regional expert on signals and train control, the employee uses initiative, resourcefulness, and judgment to handle new or unusual situations not covered by the guidelines or to develop new information on a problem or issue in railroad safety for which new standards and regulations are then developed. For example, investigates major accidents involving unique signaling equipment or participates on agency wide committees to develop new or modified signal and train control standards and regulations.

Factor 4. Complexity -- Level 4-5 -- 325 Points

Serves as Regional expert on signal and train controls with responsibility for administering the Regional signal and train control program and resolving the most complex problems and issues in that area.

The work is complicated by such factors as:

-- unique configurations of signal and train control systems, the impact of technological change on the development and design of signal and train control systems, and unknown safety implications or lack of appropriate inspection procedures for new or unusual signal and train control equipment;

-- the need to focus Regional activities on specific carrier, facility, or equipment problems requiring reallocation of resources and evaluation of program direction and accomplishments; and

-- the need to develop solutions to widespread, controversial, and persistent equipment safety hazards which will not place unreasonable fiscal or operational demands on the railroad industry.

The work requires developing new inspection and testing techniques for unique or prototype signal and train control equipment, identifying trends and critical problems in Regional signal safety, and establishing criteria by which the Regional signal train control program is evaluated.

Factor 5. Scope and Effect -- Level 5-4 -- 225 Points

Conducts special inspections and investigations in the area of signals and train control that involve new or controversial issues.

Decisions regarding the safety of proposed signal plans or their associated operating rules can have a profound impact on the operations of individual railroads and may serve as a nationwide precedent. Reports may become the basis of new regulations and enforcement procedures for the entire agency.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with persons involved in the railroad industry at various levels including Division Superintendents, Vice-Presidents of Operations, and union officials, and with managers of signal manufacturing plants. During accident investigations, contacts also include investigators from other Federal and State agencies and State and local public officials. These contacts often involve unusual or critical safety problems, and, thus, are not established on a routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The purpose of contacts is to maintain compliance with Federal signal and train control regulations that may be controversial in their interpretation. While investigating major accidents, often interviews witnesses who are unwilling to talk because of fear of reprisal or reluctance to be involved in possible legal action. Attempts to resolve persistent safety problems with railroad managers who are known to be uncooperative or resolve intra-or inter-carrier conflicts as to the location of responsibility for the repair and maintenance of signal and train control systems and related components. Uses tact, persuasiveness, and technical expertise in correcting serious hazards and resolving problems in the best interest of railroad safety.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

Conducting accident investigations or on-site inspections relative to a proposed signal modification plan requires long periods of walking on rocky and uneven surfaces around railroad tracks; occasional bending and crouching to inspect signals, switches, and wreckage; and some climbing of signal ladders and embankments around track roadbeds.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

On-site inspection and investigation work usually takes place along railroad tracks where the employee must be alert for trains and avoid getting caught in switches and other moving parts. Inspections and tests can involve signal power lines and protective apparatus energized at voltages up to 6,600 volts, third rail propulsion at voltages of 600 volts dc, and catenary systems with voltage of 11,000 volts requiring constant care and vigilance to avoid contact. While conducting inspections and accident investigations, may be exposed to a variety of weather conditions and poisonous, explosive, or other hazardous material that could be leaking from

containers or suddenly ignited by improper or careless handling requiring awareness of potential dangers.

TOTAL POINTS -- 2775

RAILROAD ACCIDENT INVESTIGATOR GS-2121-12, BMK #4

Duties

The incumbent works in a field office of the agency that is responsible for investigating major accidents on all modes of transportation.

-- Investigates rail transportation accidents that meet the legal criteria for being declared "major" and are thus subject to investigation by the agency. Rail systems covered include common carrier passenger and freight railroads and urban mass transportation lines (e.g., subway and elevated systems).

-- Leads investigation teams composed of other agency employees, railroad safety inspectors, railroad officials, manufacturers representatives, State and local government officials, etc.; determines areas to be investigated and tests and interviews to be conducted; serves as spokesperson for the agency to the public and media at the accident site.

-- Using a variety of investigative techniques, gathers and develops technical and regulatory accident evidence relating to any or all phases of railroad operations and equipment; analyzes data to determine what factors may have contributed to the cause of the accident; and determines the adherence to and adequacy of railroad safety regulations.

-- Arranges for the acquisition of additional accident evidence through deposition sessions; interviews witnesses and questions industry officials to determine circumstances leading to and surrounding the accident.

-- Evaluates the adequacy and completeness of investigative techniques and products; writes final reports detailing the circumstances surrounding the accident and the probable and contributing cause or causes; and proposes recommendations to prevent future occurrences.

-- In the investigation of the most severe or catastrophic railroad accidents, serves as the chairperson of an investigative team organized under the auspices of the investigator-in-charge. Conducts an intensive, in-depth investigation into assigned area, coordinates work of other investigative personnel assigned to the team, and prepares and coordinates the final report outlining findings and conclusions and recommending corrective action. Serves as expert witness and panel member in assigned area during public hearings.

-- Conducts or participates in special studies or projects to improve railroad safety in the region; evaluates patterns of railroad accidents and prepares reports recommending changes in Federal laws or enforcement techniques.

-- Leads or assists on teams investigating intermodal accidents (e.g., a highway grade crossing collision between a train and a bus); assists on teams investigating accidents on other modes of transportation (e.g., highway, air) by interviewing witnesses, assisting in crash simulations and reconstruction of wreckage, or performing similar duties.

Factor 1. Knowledge Required by the Position -- Level 1-7 -- 1250 Points

In addition to a broad knowledge of safety principles and practices applicable to all areas of the railroad industry:

-- Broad knowledge of all phases of the railroad industry and their interrelationships including signal and train control systems, track and related structures, motive power and equipment, operating practices, and hazardous materials. This includes knowledge of the economic and operating considerations involved in designing, constructing, and maintaining equipment and thorough technical knowledge of the capabilities and limitations of that equipment under various environmental conditions;

-- Thorough knowledge of techniques required to conduct in-depth accident investigations including interviewing techniques, crash simulations, reconstruction of wreckage, formal hearing procedures, laboratory testing procedures, and records searches; and

-- Skill to apply the above knowledge to (1) investigate major railroad accidents to determine the root cause or causes; (2) prepare comprehensive factual and analytical reports of accidents investigated and recommend practical means of preventing similar occurrences; (3) assist in investigating accidents involving other modes of transportation; and (4) evaluate regional trends in railroad safety and investigative techniques of other agencies and recommend ways to improve overall effectiveness.

Factor 2. Supervisory Controls -- Level 2-4 -- 450 Points

Railroad accident investigations are usually assigned on a rotational basis as they occur in the geographic area covered by the field office. When not conducting a full-time investigation, the incumbent conducts studies of railroad operations or types of equipment that appear to be a major cause of accidents in the area. The supervisor may establish certain parameters on investigations or other projects based on the overall objectives of the agency and on resources available for tests, crash simulations, travel, etc.

Based on knowledge of the railroad industry, accident investigation techniques, and general agency policy, plans and carries out investigations and other projects independently, coordinating the work with inspectors from other Federal agencies, State and local government, and railroad officials.

At the accident site, the inspector makes many technical decisions that do not lend themselves to supervisory review (e.g., wreckage to be saved and tested, persons to be interviewed,

information to be released to insurance investigators). Accident reports and other work products are usually considered technically sound. Recommendations to improve railroad safety are reviewed for their potential effectiveness and practicality.

Factor 3. Guidelines -- Level 3-4 -- 450 Points

Guidelines include agency policy memoranda and broad, general guidance on the methods and techniques for conducting accident investigations. Books of operating rules issued by the railroads, specifications and blueprints for locomotives and other railroad equipment, track layout plans, and the standards and regulations pertaining to railroad safety that have been established by Federal and State governments and the Association of American Railroads are available as reference material but do not constitute guidelines for performing the work.

Agency policy memoranda provide only general guidance on certain actions that may be required during the course of an accident investigation (e.g., conduct of deposition hearings, use of private laboratories for tests). However, each major accident involves a unique set of circumstances that cannot be anticipated in written guidelines. Uses initiative in developing new sources of information regarding the cause of an accident when traditional methods are not usable or produce inconclusive results. Researches trends in railroad accidents and proposes new solutions to persistent safety problems.

Factor 4. Complexity -- Level 4-5 -- 325 Points

Conducts in-depth investigations of major accidents involving a variety of rail operations (e.g., freight, passenger, rapid transit) and contributing circumstances in order to determine the root cause and to find practical solutions to prevent future occurrences.

Projects are typically complicated by such factors as:

- lack of information from which to determine the cause of an accident due to multiple fatalities among the train crew, unintentional destruction of evidence, reluctance of crew or witnesses to testify as to events surrounding the accident, or extensive damage to equipment;

- initial confusion at the accident site and pressure to work quickly in identifying factors essential to the investigation (e.g., individuals to be interviewed, equipment to be tested) to allow removal of wreckage and reply to inquiries from the media and other sources concerning the accident;

- coordination of investigative efforts of representatives of many and varied organizations whose purposes are often conflicting such as railroad officials, manufacturers representatives, State and local government officials, representatives of other Federal agencies, insurance investigators, attorneys; and

- the involvement of new technology (e.g., new types of rapid rail systems, hazardous commodities, computerized signal and train control systems) for which there is little historical information regarding safety worthiness, capabilities, and limitations.

Accident investigations result in identifying critical safety problems and recommending new safety criteria or innovative inspection or investigation techniques.

Factor 5. Scope and Effect -- Level 5-4 -- 225 Points

Conducts in-depth investigations of major railroad accidents and evaluates the effectiveness of railroad safety programs in preventing similar occurrences.

Reports regarding the probable and contributing cause or causes of major accidents have a wide circulation in the news media and in the transportation industry and may uncover information sensitive or detrimental to the government, railroad, manufacturers, or individuals involved. The conclusions reached in these reports can have a great impact on the outcome of lawsuits filed in connection with the accident and on the operations and economic status of the railroad involved. Recommendations often become the basis of new safety regulations or laws and lead to major design changes in railroad equipment.

Factor 6. Personal Contacts -- Level 6-3 -- 60 Points

Contacts are with persons involved in the railroad industry at various levels including top level railroad officials, railroad employees, and union officials; investigators and inspectors from other Federal and State agencies; State and local officials; and representatives of the news media. These contacts usually occur during accident investigations and involve critical or unusual safety problems and, thus, are not established on a routine basis.

Factor 7. Purpose of Contacts -- Level 7-3 -- 120 Points

The main purpose of contacts is to obtain information which may be helpful in determining the cause of major accidents and to effect corrective action. The investigator must establish rapport with witnesses, especially railroad employees, who may be reluctant to talk because of liability implications or fear of reprisal. Also exercises tact in answering questions from news media and attorneys at the accident site. Maintains a balance between releasing factual information regarding the investigation and withholding premature opinions about the probable cause that might unfairly harm the railroad or individuals involved in the accident.

Factor 8. Physical Demands -- Level 8-2 -- 20 Points

While conducting accident investigations or other factfinding projects, the work requires long periods of walking on rocky and uneven surfaces around railroad yards and accident sites; frequent bending, crouching and stretching to inspect wreckage, track, or railroad equipment; and some climbing over embankments and wreckage.

Factor 9. Work Environment -- Level 9-3 -- 50 Points

On-site investigation and factfinding work usually takes place along railroad tracks where the employee must be alert for trains and the movement of wreckage by repair crews. While

conducting accident investigations, the employee may be exposed to a variety of weather conditions and other environmental discomforts imposed by the site of the wreckage or to poisonous, explosive, or other hazardous material that may be leaking from containers or suddenly ignited if improperly or carelessly handled. The investigator must be constantly aware of potential dangers and protective measures to combat them.

TOTAL POINTS -- 2950