

U.S. Office of Personnel Management
Division for Human Capital Leadership & Merit System Accountability
Classification Appeals Program

San Francisco Field Services Group
120 Howard Street, Room 760
San Francisco, CA 94105-0001

Classification Appeal Decision
Under section 5112 of title 5, United States Code

Appellant: [Name of appellant]

Agency classification: Mechanical Engineering Technician
GS-802-9

Organization: [Appellant's organization/location]
Department of the Air Force

OPM decision: Mechanical Engineering Technician
GS-802-9

OPM decision number: C-0802-09-43

Robert D. Hendler
Classification and Pay Claims
Program Manager

August 17, 2005
Date

As provided in section 511.612 of title 5, Code of Federal Regulations, this decision constitutes a certificate that is mandatory and binding on all administrative, certifying, payroll, disbursing, and accounting officials of the Government. The agency is responsible for reviewing its classification decisions for identical, similar, or related positions to ensure consistency with this decision. There is no right of further appeal. This decision is subject to discretionary review only under conditions and time limits specified in the *Introduction to the Position Classification Standards*, appendix 4, section G (address provided in appendix 4, section H).

Decision sent to:

[Name and address of appellant]

[Address of appellant's servicing human resources office]
Department of the Air Force

Director, Civilian Personnel Operations
HQ AFPC/DPC
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Introduction

On January 19, 2005, the San Francisco Field Services Group of the U. S. Office of Personnel Management (OPM) accepted a classification appeal from [name of appellant]. On February 9, 2005, we received the agency's administrative report. The appellant's position is currently classified as Mechanical Engineering Technician, GS-802-9, but he believes it should be graded at the GS-11 level. The appellant works in the [name of appellant's organization/location], Department of the Air Force. We have accepted and decided this appeal under section 5112 of title 5, United States Code (U.S.C.).

This appeal decision is based on a careful review of all information furnished by the appellant and his agency. In addition, to help decide the appeal we conducted separate telephone interviews with the appellant and his supervisor.

General issues

The appellant makes various statements about the classification review process conducted by his agency, and compares his work to other engineering technician positions at another Air Force installation but classified at a higher grade by his agency. By law, we must classify positions solely by comparing their current duties and responsibilities to OPM position classification standards and guidelines (5 U.S.C. 5106, 5107, and 5112). In adjudicating this appeal, our only concern is to make our own independent decision on the proper classification of his position. Since comparison to standards is the exclusive method for classifying positions, we cannot compare the appellant's position to others, which may or may not be classified properly, as a basis for deciding his appeal. Therefore, we have considered the appellant's statements only insofar as they are relevant to making that comparison. Because our decision sets aside any previous agency decision, the classification practices used by the appellant's agency in classifying his position are not germane to the classification appeal process.

The appellant's agency has primary responsibility for ensuring that its positions are classified consistently with OPM appeal decision. If the appellant considers his position so similar to others that they all warrant the same classification, he may pursue the matter by writing to his agency's human resources office. In doing so, he should specify the precise organizational location/installation, classification, duties, and responsibilities of the positions in question. If the positions are found to be basically the same as his, the agency must correct their classification to be consistent with this appeal decision. Otherwise, the agency should explain to him the differences between his position and the others.

Position information

Both the appellant and his supervisor have certified to the accuracy of the appellant's official position description (PD) Core Personnel Document [number], which is incorporated by reference into this decision. The purpose of his position is to provide practical design and engineering services using Computer Assisted Design (CAD), solid modeling, and level 2 Computer Numerical Control (CNC) programming (up to 5-axis machining) to develop and

fabricate a wide variety of training devices and other items in a specialty fabrication/model shop environment.

Using CAD, the appellant designs and fabricates scale models and training devices used in the training of space and missile crews and maintenance technicians attending schooling at the [name and location of school], and supports other tenant commands in designing and building devices, mockups and models. After completing the design aspects of a project (based on his own designs or customer provided specifications), the appellant generates CNC programs for a variety of numerically controlled machinery in the shop. In building items he employs c-axis contouring, polar interpolation, sub-spindle operations, simultaneous multiple work coordinate systems, fixed cycles, three dimensional complex and five-axis machine operations requiring three dimensional contouring and the simultaneous motion of three or more axes for parts production. He creates CNC programs utilizing Computer Aided Machining (CAM) systems, traditional programming techniques, and manual or CAD inputs. After programming, the appellant electronically or manually transfers G-Codes to machines and fabricates items needed using a wide variety of shop equipment and tools. In performing his assignments, the appellant also develops time and materials cost estimates and purchases materials needed to construct training devices and models.

The results of our interviews and other material of record furnish more information about the appellant's duties and responsibilities and how they are performed.

Series, title, and standard determination

The appellant's agency has classified his position in the Engineering Technician Series, GS-802, titling it Mechanical Engineering Technician, and the appellant does not disagree. We concur with the agency's determination of title and series. The classification standard for the GS-802 series contains relevant grade level criteria for positions in that series and therefore must be used to evaluate the grade of the appellant's position.

Grade determination

The GS-802 standard uses two classification factors: *Nature of assignment* and *Level of responsibility*. *Nature of assignment* measures the scope and difficult of the project and the skills and knowledge required to complete the assignment. *Level of responsibility* considers the nature and purpose of person-to-person work relationships, and supervision received in terms of intensity of review of work as well as guidance received during the course of the work cycle. Our evaluation with respect to these two factors follows.

Nature of assignment

At the GS-9 level, engineering technicians typically perform a variety of work relating to the area of specialization that requires the application of a considerable number of different basic but established methods, procedures, and techniques. Assignments usually involve independent responsibility for planning and conducting a block of work which is a complete conventional project of relatively limited scope, or a portion of a larger and more diverse project.

Assignments require study, analysis, and consideration of several possible course of action, techniques, general layouts, or designs, and selection of the most appropriate. They generally require consideration of numerous precedents and some adaptation of previous plans or techniques. Often changes or deviations must be made during progress of an assignment to incorporate additional factors requested after commencement of the project or to adjust to findings and conclusions which could not be predicted accurately in the original plans. Assignments at the GS-9 level typically require coordination of several parts, each requiring independent analysis and solution. If a phase of the work is performed by other personnel, the engineering technician reviews and integrates it with his/her own work.

The third illustrative assignment at the GS-9 grade level in the GS-802 standard discusses positions that develop items of equipment of moderate novelty and complexity; i.e., without critical performance requirements which are difficult to satisfy, such as engine parts, research instruments, test devices, or prototype ordnance components. Professional engineers and scientists furnish information concerning purpose of equipment, basic requirements of form, size, weight, structure, and performance, and pertinent technical data, and suggest possible design approaches when not evident from requirements. GS-9 engineering technicians search for and study available information and precedent designs and develop design approaches. They make a number of alternative scale layouts to determine feasibility of component location or construction details, whether components of required dimensions will fit into available space, and whether moving elements will clear adjacent ones. The GS-9 engineering technician exercises considerable ingenuity in developing arrangements; in designing supporting members of mechanical movements, and in adapting available components and materials. They select the best of several possible design layouts, and apply knowledge of accepted construction details, shop production, materials usage, agency requirements, and design practice. Illustrative duties at this level include calculating loads, structural strength, sizes, weights, clearances, dimensional fits, and other aspects in accordance with standard formulas, criteria, and handbook tables.

The fourth illustrative assignment at the GS-9 level in the GS-802 standard discusses technicians who check and analyze detail and assembly drawings of moderately complex items of equipment of conventional design to determine whether the design and drawings are complete and correct and whether designs conform to production requirements. The technician checks for proper tolerances, clearances, fits, finishes, materials, and dimensions. He/she performs computations and makes layouts to determine relative positions of components of intricate mechanisms. The technician ascertains that all information needed for production is provided in accordance with appropriate design and drafting standards, and checks for available parts and materials. The technician also develops and recommends modification of fabrication details to facilitate production and performs final detailed review of drawings and recommends release for production.

GS-11 level engineering technicians perform work of broad scope and complexity that requires application of demonstrated ability to interpret, select, adapt, and apply many guidelines, precedents, and engineering principles and practices which relate to the area of specialization; and some knowledge of related scientific and engineering fields. They plan and accomplish complete projects or studies of conventional nature, and are typically confronted with a variety of complex problems in which considerable judgment is needed to make sound engineering

compromises and decisions. Other related interests must often be considered, entailing frequent coordinative action with personnel in the fields concerned. Because of the scope and complexity of the assignments, initiative and sound judgment is needed in planning and coordinating phases of assignments and in selecting from several alternatives to arrive at acceptable engineering compromises. Illustrative assignments at the GS-11 grade level include positions that prepare designs and specifications for various utility systems that are so complex or non-conventional that precedents are not directly applicable; or plan the approach and conduct various experimental projects to develop electrical circuits equipment or breadboards of systems which have difficult performance requirements, and mandate use of techniques or components in combinations or applications differing from previous usage.

The appellant's position meets the GS-9 grade level, but falls short of the GS-11 grade level. Like the GS-9 grade level, the appellant applies a number of different basic but established practical engineering and design methods, procedures and techniques in designing and fabricating a variety of scale models and training devices,. For example, he employs established CAD software to create three dimensional images to visualize the final model and its relationship to its component parts, leading to an exact graphic presentation of the complete assembly. Typical of GS-9 grade level work, he used this standard CAD software to create standing training models for use in the classroom for the task of installing and adjusting the access ladder in the Minuteman III missile launch facility, and for training the task of mounting the upper umbilical to the Missile Guidance Set of the Minuteman III.

The appellant also employs the standard practice of "reverse engineering" to re-create missile components, assemblies, or parts that are no longer commercially manufactured or available from factory inventories. This practice essentially involves copying the engineering specifications from a piece of existing equipment and then building an exact replica. For example, he was able to acquire an old Missile Guidance Set (MGS) from a local organization to serve as a model to re-create and build a replica of the MGS so that missile crews could be trained on how to properly install and test the MGS on a live missile. Precise measurements were taken from the original MGS, and using CAD techniques the appellant "reverse engineered" the specifications in order to build the mechanical aspects for classroom presentation.

He used reverse engineering to build thirty bore site blocks used to mount cameras to the tracking mounts for filming every missile launch at the installation. Using an old, original block from 1958, the appellant employed CAD to develop a graphic rendering based on the specifications from the original model, and then used CNC and CAM processes to build the new blocks. He used these processes to build clamp support blocks and an umbilical spanner tool from actual old sample parts provided by the client. The appellant also built a four foot high cut-away scale model of the Minuteman III missile, and a mock-up missile launch facility/silo (110 inches tall by 36 inches wide) used for classroom training of missile maintenance crews. To create these two items, the appellant took measurements of the actual launch facility, its components, and missile. Using CAD software, the appellant scaled them down to the appropriate size and built them using CNC machining with a variety of materials. Although many of the appellant's projects are one-of-a-kind because they are developed for training

purposes, like the GS-9 grade level they are of limited scope and employ conventional engineering practices and design techniques.

The appellant's work projects favorably compare to two of the illustrative assignments at the GS-9 level. Similar to the third illustration in the GS-802 standard, the appellant designs and builds items of moderate novelty and complexity, e.g., scale models and training devices, which do not have critical performance requirements. While models and training devices are designed and built to exact specifications, they do not have highly demanding performance requirements, and many are non-operational because they are used as teaching aids to perform certain missile maintenance tasks. Like the illustrative assignment, the appellant searches for and studies available information, including older but existing equipment when preparing to build a particular item, and uses CAD to develop the design approach. Using CAD, he makes several alternative layouts to various scales to determine proper dimensions, feasibility of placement and clearances, construction details, and applies comprehensive knowledge of materials usage and shop production practices and techniques.

The appellant's application of "reverse engineering" practices is similar to the fourth illustrative assignment at the GS-9 grade level. When working with existing but outdated parts or devices, he determines whether design conforms to the requirements and limitations of production, and takes precise measurements, checking for proper tolerances, clearances, fits, materials, dimensions, and placement of components, so that the re-built item, e.g., MGS, is designed and constructed as an exact replica of the original. He also checks that available materials and standard parts are used so far as practicable, e.g., nickel steel alloy, extruded plastics, and develops and recommends modifications of fabrication details to facilitate production. He performs final detailed review of designs, and follows through with actual production.

The appellant's position does not meet the GS-11 grade level. Unlike that level, the scope and complexity of his assignments do not require interpreting, selecting and applying many guidelines, precedents, and related engineering and scientific fields. In contrast to the GS-11 grade level, when designing and building scale models and training devices, he applies standard engineering methods and techniques including the use of CAD software, CNC programs and CAM systems. While the appellant accomplishes complete projects, he is not confronted with a variety of complex problems requiring the application of considerable judgment to the degree described at the GS-11 level. Because the appellant's projects are narrower in scope than envisioned at the GS-11 level, they do not have phases requiring planning and coordination to the extent intended at that level. Complications in project design resulting from the age of client furnished equipment and samples does not compensate for the lack of scope in projects. In contrast to the illustrative work assignments at the GS-11 level, his work is not comparable to the broad tasks of preparing designs and specifications for various utility systems where the projects are so complex and non-conventional that precedents and design features are not directly applicable. Additionally, he is not involved in assignments involving planning the approach and details for experimental projects.

Level of responsibility

At the GS-9 grade level, the supervisor outlines the requirements of assignments, providing information on any related work being performed, and furnishes general instructions as to the scope of objectives, time limitations, priorities, and similar aspects. The supervisor is available for consultation and advice where significant deviations from standard engineering practices must be made and the supervisor gives more detailed instructions when distinctly new criteria or new techniques are involved. The supervisor observes the work for progress and for coordination with work performed by other employees or other sections, and for adherence to completion and cost schedules. Standard methods employed are seldom reviewed. The supervisor reviews the work for adequacy and for conformance with established policies, precedents and sound engineering concepts and usage. Personal work contacts at the GS-9 grade level are primarily made to resolve mutual problems and coordinate the work with that of personnel in related activities. Some contacts are made with using agencies for which work is done. Contacts are made to clear up doubtful points, to consider recommendations for acceptable substitutes, and to promote adherence to agency standards and concepts of good engineering.

At the GS-11 grade level, the engineering technician has considerable freedom in planning work and carrying out assignments. The supervisor makes assignments in terms of the major objectives, providing background information and advice on specific unusual problems which are anticipated or on matters requiring coordination with other groups. Unusual or controversial problems may be discussed with the supervisor, but technical supervisory assistance is infrequently sought or required. The supervisor is informally advised regarding progress but there is little review during progress of typical assignments. Completed work in the form of recommendations, plans, designs, reports, or correspondence is reviewed for general adequacy, conformity to purpose of the assignment, and sound engineering judgment. GS-11 technicians make contacts similar to those at lower grade levels, but they tend to be more extensive because of the increased scope of GS-11 grade level assignments. Although these contacts are made without close supervision, GS-11 technicians generally discuss with the supervisor the approach to be taken.

The appellant's level of responsibility fully meets the GS-9 level and, in some limited aspects, exceeds that level. Similar to the GS-9 level, the supervisor defines overall project objectives and requirements, establishes time limitations and priorities, outlines any special technical requirements, and establishes shop operating procedures. However, like the GS-11 level, the appellant works independently when carrying out projects, and technical supervisory assistance is neither sought nor required. The appellant independently determines the best design approach, materials, and sequence of operations required to deliver a quality product. Similar to the GS-11 grade level, his work is reviewed for general adequacy, compliance with the purpose of the assignment and work request from the client, efficient use of time and materials, and sound engineering judgment. The appellant's personal work contacts favorably compare to the GS-9 grade level. Like that level, he meets with a variety of clients and shop staff (e.g., trainers, missile maintenance personnel, representatives from the alert wings), to define the scope of their

requested projects, clear up doubtful points, to discuss substitutes in materials, and promote good engineering concepts.

While the appellant's level of responsibility has some similarities to the GS-11 grade level criteria, careful reading of the engineering technician standard and other OPM guidelines indicates that for a person's level of responsibility to truly meet the higher level, those responsibilities must be exercised within the context of GS-11 grade level assignments. Because the appellant's assignments meet but do not exceed the GS-9 grade level, the circumscribed nature of his assignments do not require or permit him to exercise the level of judgment and responsibility found at the GS-11 grade level for this factor.

Summary

By application of the grading criteria in the GS-802 standard, both factors equate to the GS-9 grade level. Therefore, the position is graded at that level.

Decision

The appellant's position is properly classified as Mechanical Engineering Technician, GS-802-9.