U.S. Office of Personnel Management
Office of Merit Systems Oversight and Effectiveness
Classification Appeal and FLSA Programs

Philadelphia Oversight Division
600 Arch Street, Room 3400
Philadelphia, PA 19106-1596

Job Grading Appeal Decision
Under section 5346 of title 5, United States Code

Appellant: [appellants' names]

Agency classification: Electronics Mechanic
WG-2604-11

Organization: Logistics Support
Army Aviation Support Facility #1
[state] Army National Guard
[state] National Guard
[location]

OPM decision: Electronics Mechanic
WG-2604-11

OPM decision number: C-2604-11-04

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Robert D. Hendler
Classification Appeals Officer

/s/ 9/5/00

_____
Date

As provided in section S7-8 of the *Operating Manual: Federal Wage System*, this decision constitutes a certificate that is mandatory and binding on all administrative, certifying, payroll, disbursing, and accounting officials of the government. There is no right of further appeal. This decision is subject to discretionary review only under conditions and time limits specified in section 532.705(f) of title 5, Code of Federal Regulations (address provided in the *Introduction to the Position Classification Standards*, appendix 4, section H).

Decision sent to:

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Introduction

On March 29, 2000, the San Francisco Oversight Division of the U.S. Office of Personnel Management (OPM) accepted a job grading appeal from [appellants' names]. The case was received by the Philadelphia Oversight Division for adjudication on May 11, 2000. They occupy two of three identical additional jobs graded as Electronics Mechanic, WG-2604-11. They believe the job should be graded as Electronic Integrated Systems Mechanic, WG-2610-12. They work in Logistics Support, Army Aviation Support Facility #1, [state] Army National Guard, [state] National Guard, [location]. We accepted and decided this appeal under section 5346 of title 5, United States Code.

General issues

The appellants believe that their position description (PD) of record (70128) incorrectly states that they work on partial systems and fails to show that they work on the UH-60L Blackhawk helicopter Automatic Flight Control System (AFCS), which they describe as an integrated system. The appellants believe that the Command Instrument System (CIS) is, to "a lesser extent," an integrated system. Because they work on complete integrated systems, they said that their activity's classifier had submitted an exception PD package to the National Guard Bureau Western Personnel Center. Despite what was described to them as an initial favorable response by the activity classifier, they were assigned to a new standard PD still allocated to the 2604 occupation.

During the June 9, 2000, telephone audit, the appellants stated that positions at other bases servicing Blackhawk helicopters are allocated to the 2610 occupation. The law requires our job grading decisions be based solely upon a comparison between the actual duties and responsibilities of the job and the appropriate job grading standards (JGS's). Other methods or factors of evaluation may not be used in the job grading process, e.g., comparison to other jobs that may or may not be graded correctly, such as the 2610 jobs cited by the appellants during the telephone audit.

Like OPM, the appellants' agency must classify jobs based on comparison to OPM's JGS's and guidelines. If the appellants consider the appealed job so similar to others that they warrant the same grading, they may pursue this matter by writing to their agency's human resources management headquarters. They should specify the precise organizational location, classification, duties and responsibilities of the jobs in question. If the jobs are found to be basically the same as the appealed job, or warrant similar application of the controlling JGS's, the agency must correct their grading to be consistent with this appeal decision. Otherwise, the agency should explain to the appellants the differences between the appealed job and the others.

A PD is the official record of the major duties and responsibilities assigned to a position by a responsible management official; i.e., a person with authority to assign work to a position. A position is the duties and responsibilities that make up the work performed by an employee. Job grading appeal regulations permit OPM to investigate or audit a job, and decide an appeal on the basis of the actual duties and responsibilities assigned by management and performed by the employee. An OPM appeal decision grades a real operating job, and not simply the PD.

Therefore, this decision is based on the actual work assigned to and performed by the appellants, sets aside any previous agency decision, and resolves the issue of PD accuracy.

On June 30, 2000, we conducted a follow up telephone audit with [appellant's name] to review his June 27, 2000, responses to a series of questions e-mailed to both appellants on June 20, 2000. We interviewed their immediate supervisor, [name], the Maintenance Officer, on July 14, 2000. In deciding this appeal, we fully considered the audit findings and all information of record furnished by the appellants and their activity. Based on the analysis that follows, we find that the PD of record contains the major duties and responsibilities assigned to and performed by the appellants, with the exceptions discussed below, and we incorporate it by reference into this decision.

Job information

The appellants troubleshoot, inspect, install, maintain, overhaul, repair, and modify electronics and related systems on Blackhawk utility helicopters. Used for transportation, they are not equipped with weapons systems. The appellants work on the Heads Up Display (HUD) Sensor Subsystem, the pilot Night Vision System, Air Data Subsystem, a Doppler Navigation System, and a Global Positioning System, and a variety of navigation and communications radios. HUD monitors engine performance, attitude and compass.

The AFCS consists of the analog Stability Augmentation System (SAS) that helps keep the craft flying straight and live. The digital SAS 2 also computes for the Trim and Flight Path Stabilization (FPS) systems, and the Stabilator system. SAS 1 modifies sensor inputs, e.g., the #1 pitch rate gyro and the yaw rate gyro, and sends them to the SAS actuators (pitch, roll, and yaw). Once the actuators receive these inputs, they will move the flight controls and give aerodynamic feedback to the sensors. SAS 2 receives input from other sensors, e.g., air data transducer, collective stick position sensors #1 and #2, and the directional gyro synchro heading, and also receives control inputs. The SAS/FPS computer processes this information and provides outputs to pitch, roll, and yaw actuators and pitch, roll and yaw SAS actuators. In turn this provides mechanical inputs to the flight controls to the sensors. Besides aerodynamic feedback, there are feedback loops from the trim actuators and SAS actuators.

The Trim and FPS subsystems of the SAS 2 are turned on by the stabilator control. Any airflow or control induced change will be noticed by sensors and by actuator position potentiometers, will be fed to the computer for processing, and correction voltage will then be sent to the trim actuators. This is also true for all three-axis pitch, roll, and yaw. The reference is changed in response to trim changes by the pilot and copilot. The FPS does trim, but has more references to keep cruise flight attitude and heading by trim reference. The roll FPS command signal starts at the sensor #1 vertical gyro roll synchro output. The computer derives a roll rate signal from the changing proportional amplitude, which is summed, with the proportional signal. The resultant signal is compared with the trim position signal and the difference is applied to the roll trim actuator. The pitch/airspeed function controls the aircraft to maintain the desired speed. The #1 vertical pitch synchro output and the #2 stabilator amplifier pitch rate output are processed together in the computer and added to the airspeed transducer signal. The resultant signal is

compared to the pitch trim position signal and the difference is applied to the pitch trim actuator as the FPS pitch command signal.

At less than 60 knots, the FPS provides heading hold reference from the directional gyro synchro. When more than 60 knots, the FPS maintains aircraft attitude (pitch, roll, and yaw), airspeed, and coordinated turns. The yaw rate and heading proportional signals are added to the #1 collective sensor signal which compensates for collective to yaw cross feed. The gain of the position sensor signal is controlled by the #2 airspeed signal (air data transducer) to reduce the effect of cross feed at higher speeds. The resultant signal is compared with the yaw trim position sensor signal, and the difference is applied to the yaw trim actuator as a yaw FPS command signal.

The Stabilator system sensors are air data and airspeed transducers, collective stick position transducer, pitch rate gyro that is located in the #1 and #2 stabilator amplifiers, and the #1and #2 lateral accelerometers. In the automatic mode, each stabilator amplifier receives sensor signals that are processed to move the appropriate stabilator actuator. Feedback through the stabilator actuator position potentiometer is compared in each stabilator amplifier. An error signal is generated if the positions do not agree. Then the automatic mode will no longer work.

The CIS has its own microprocessor. It is linked to numerous systems on the aircraft, but does not have actuators that provide feedback. The CIS functions in three modes: heading, attitude, and navigation. For example, in the heading mode it computes incoming information and, if there is wind, it computes the rate of angle to rebank left or right to stay on the heading.

Series, title, and standard determination

The agency allocated the job as Electronics Mechanic, WG-2604 because the appellants' work does not involve or require "integration of all operable subsystems into a functional integrated system." The appellants believe that their work on the AFCS and, to a lesser extent, the CIS, requires the integration of all operable subsystems into functional integrated systems, and is covered by the 2610 occupation. Their rationale is that:

> the AFCS system we work on [as shown in Enclosure #12] displays 18 sensor subsystems, eight (8) actuators, and the SAS 2 digital logic system, which directly links the sensors to the actuators. The AFCS is a complete integrated system and requires a complete systems check to determine the location of the error. A complete systems check is required again *after* maintenance is performed to realign the system . . . . In other words, we work on the complete system twice, first to find the problem and second when we finish the repair, we have to tune up the entire system to insure it (the system) will operate correctly.

The 2604 JGS covers fabricating, overhauling, modifying, installing, troubleshooting, repairing, and maintaining ground, airborne, and marine electronic equipment, such as: radio; radar; sonar; cryptographic; satellite; microwave; micro computers and peripherals; laser; infrared; industrial x-ray; marine, aeronautical, and space navigation aid; TV receiver; surveillance; and similar devices. The work requires knowledge of electronic principles; the ability to recognize improper

operation, locate the cause, and determine the best method to correct the defect; and the skill to disassemble, assemble, and adjust electronic equipment. The work includes using both manual and automated test equipment, and may require the use of a personal computer and numerous software packages to program or realign various components or systems, download information, and detect equipment deficiencies.

At the higher grades, electronic mechanics work on complex electronics equipment and a complete operational system(s) consisting of numerous complex integral components which require knowledge of a wide range of electronics principles and practices. Typical equipment includes computerized avionics/airborne navigation systems, target identification (IFF) transponders, autopilots, TACAN, radar altimeters, and other avionics equipment. For example, grade 11 electronic mechanics apply electronic principles such as circuit elements, digital logic, microprocessors, core memory, interface circuits, digital data transmission, microwave, antennas, signal behavior, amplification, and display. They use this knowledge to troubleshoot, install, repair and maintain malfunctions in complex electronic systems where circuit theory must be used to understand the operation of individual circuits, and the possible interaction of other circuits which create a malfunction.

The 2610 JGS (1972), the 2604 JGS (1997), and the Introduction to the Electronic Equipment Installation and Maintenance Family 2600 (1981) must be read together. The 2604 JGS covers equipment and systems that use digital microprocessors. The systems have linear system flow in which the signal moves from the input to the output without significant deviation or feedback looping. As discussed in the 2600 JGS, this includes an autopilot system:

> which detects minute error signals from a stable platform and amplifies these to drive aileron or elevator servos in which the amount of displacement of the control surface is proportional to the amount of the error signal. This is a simple linear system. The addition of some control inputs to allow turns, climbs, etc., would not change the basic linear signal flow of an error sensing system. Such a system is covered by the Electronics Mechanic Series, 2604.

The AFCS is this type of system. The compensating changes sent to the actuators from sensor signal flow are proportional to the amount of error signal. This also is true of return signals that show the compensating changes that were made in response to the signal. The linear nature of the system is exemplified by the AFCS automatic mode when feedback through the stabilator actuator position potentiometer is compared in each stabilator amplifier. Unlike a fully integrated electronic system covered by the 2610 JGS, the automatic mode will no longer work when an error signal is generated if the positions do not agree. In contrast, a 2610 integrated system would process this information and use it to change actuator operation, and use continuous feedback to monitor and further modify system operation. The appellants' provided the rationale that the "AFCS has sensors that send (primarily non-linear) signals to the logic system, directly stimulating the actuators and causing feedback loops. Feedback loops send information back to the logic system to insure proper signals were sent both in terms of magnitude and direction. If necessary that feedback will modify future signals to the actuator." Based on the description of an integrated system in the 2610 JGS, we do not agree.

The level of maintenance and repair performed by the appellants also precludes coverage by the 2610 JGS. Program instructions; authorized tools, parts, and components; and program goals to limit aircraft down time limit the work the appellants perform. For example, the appellants are not permitted to work on the SAS/FPS computer, the CIS processor, or other equivalent equipment below the major component level. Basic 2610 JGS coverage requires full system maintenance and repair so that errors can be isolated down to their origin; i.e., "determine the type and location of malfunction and perform the repairs or turn the defective sub-systems over to lower graded employees for repair." Therefore, the appealed job is excluded from the 2610 occupation.

A majority of the appellants' work is covered by the Aircraft Electrician, 2892 JGS. This JGS covers installing, troubleshooting, adjusting, testing, modifying, calibrating, and repairing aircraft electrical systems and equipment on board conventional and non-conventional aircraft such as electrical power control and distribution systems, lighting systems, refueling and fuel quantity indicating systems, electrical warning, controlling, and actuating circuits, and tying-in power and control circuits for functional systems, such as hydraulics, armament, radar, engines, and fire suppression. The appellants' replacing of pedal and other switches and related electrical components is covered by this JGS. Their replacing of cyclic slew spring and trigger, and other mechanical equipment is covered by the Aircraft Mechanic, 8852 JGS.

The record shows that the appellants' 2604 work is the highest graded work that they perform on a regular and recurring basis for a sufficient amount of the time to control the grading of their jobs. Therefore, the appealed job is allocated as Electronics Mechanic, WG-2604, and that JGS must be used for grade determination.

Grade determination

The appellants' rationale recognizes that their work does not meet the grade 12 level in the 2604 JGS: "The DOD decision (Enclosure #10) evaluated our current grade against the WG-**2604**-12 comparison. We agree that we do not work on research and development systems." Therefore, we will address the grade determination criteria briefly. The JGS uses four factors to determine grade level: Skill and Knowledge; Responsibility; Physical Effort; and, Working Conditions.

Skill and Knowledge

The appellants' work meets the grade 11 level. As at that level, they apply a comprehensive knowledge of operating electronic principles such as circuit elements, digital logic, microprocessors, core memory, interface circuits, digital data transmission, microwave, antennas, signal behavior, amplification, and display. They apply this knowledge to troubleshoot, install, repair and maintain malfunctions in complex electronic systems where circuit theory must be used to understand the operation of individual circuits, and the possible interaction of other circuits that create a malfunction. In providing full AFCS system support, they must understand the interaction of a number of complex, interrelated circuits to determine the cause of a malfunction and the interaction of factors such as ambient temperature and the power and duration of the signal input, which together cause it to fail.

A major portion of their repair work does not meet the grade 11 level, e.g., pulling and replacing defective components and assembles. However, the need to minimize aircraft down-time requires the appellants to regularly apply the full range of knowledge and skill typical of the grade 11 level in tracing malfunctions down to the part level in some equipment with complex circuitry.

Typical of some grade 11 electronics mechanics, they apply an extensive knowledge of electromechanical servo systems, pneumatics, hydraulics, and mechanical and electric motor systems for aircraft. They have skill in interpreting complex drawings, specifications, and schematics of complete systems to recognize the function and interconnections of the various assemblies and troubleshoot the system from the schematic, following signal paths through a complex path of interconnections of components, assemblies, subassemblies, and connecting cable harnesses. They have skill to modify systems by adding, altering, or removing components in order to standardize or alter the purpose of the equipment or to incorporate new features developed since the equipment was manufactured.

As recognized by the appellants in the appeal record, they do not work on or apply the knowledge and skill necessary to support complex prototype or equivalent systems found at the grade 12 level. Therefore, this factor is credited at the grade 11 level.

Responsibility

As at the grade 11 level, the appellants receive work assignments primarily based on scheduled maintenance plans and procedures. They must respond to aircraft failures to return the aircraft to flight ready condition. While guidelines such as drawings, technical orders, manufacturers' specifications, schematics, and block diagrams are usually available, they are often vague or incomplete, and the mechanics may be required to identify and calculate the missing information. Typical of this grade level, they make more independent judgments and decisions regarding methods and procedures for completing assignments that may involve extending the use of conventional test equipment, and improvising fault analysis, repair, and alignment techniques. They are responsible for understanding the effect that particular repairs will have on the related integral components of the equipment serviced.

As at the grade 11 level, the appellants are also responsible for making further tests and alignments to insure that the completed equipment is aligned and functioning properly, e.g., assuring that the complete AFCS is fully functional. Facility aircraft inspectors verify that the correct procedures were used, all systems are back in flying condition, and the aircraft is secure for flight. A Sikorsky technical representative is available for advice and assistance. As at that level, they must keep abreast of technological changes in the occupation.

As recognized by the appellants in the appeal record, they do not work on or have the responsibility to apply the greater level and judgment and responsibility to the systems found at the grade 12 level. Therefore, this factor is credited at the grade 11 level.

Working Conditions and *Physical Effort* are the same at all grades level. Because they do not have grade level impact, and the appellants' work meets the levels described in the JGS, we will credit both factors as being met and will not address them further.

Decision

The appealed job is properly graded as Electronics Mechanic, WG-2604-11.