

# WAGE GRADE CAREER PATH

WG 2610

## Electronic Integrated Systems Mechanic

This occupation covers nonsupervisory jobs involved in rebuilding, overhauling, installing, troubleshooting, repairing, modifying, calibrating, aligning, and maintaining integrated electronic systems, i.e., where the output of a number of sensor subsystems is integrated in a logic subsystem and the resultant used to modify the operation of the total system. Examples are: fire control, flight/landing control, automatic test equipment, flight simulators, bombing navigation, and electronic warfare or multiple integrated electronic systems composed of several of these systems which are closely interrelated and interdependent. This work requires knowledge of electronics principles involved in a number of applications such as radar, data processing, and data display and usually mechanical and hydraulic knowledges involved in operation of equipment such as control valves, gyros, turrets and mounts, and mechanical computing devices.

### Journeyman

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|  | 1 | Continue required on-the-job and formal classroom training required in Civilian Training Plan   |
|  | 2 | Complete task qualifications for current position   |
|  | 3 | Complete task certifications for current position   |
|  | 4 | Master common to complex work tasks. At grade 12, Electronic Integrated Systems Mechanics must have: Ability to repair, align, and adjust major integrated electronic systems such as inertial navigation system, automatic flight control, or fire control system. Extensive knowledge of electronic, pneumatic, hydraulic, and mechanical systems in order to understand and predict the progressive effects of malfunctions throughout the interrelated units, (e.g., trace an apparent operating error in the hydraulic controls of a gun mount back to the failure of a tactical computer to integrate yaw, pitch, azimuth, and velocity inputs) and to predict areas of technical difficulty in order to assist lower grade employees. Thorough knowledge of the application of electronic theories and practices to one or more complex integrated systems such as fire control, inertial navigation, or automatic landing control systems. Broad knowledge of such applications as radar, digital or analog computers, digital or cathode ray tube display devices, etc., and specific knowledge of the technology and practices which integrate these components into a total functional system. Knowledge of mathematics including algebra and basic trigonometric functions in order to adapt standard formulas to the specific requirements of the integrated system. Ability to follow drawings for integrated electronic systems such as radar navigation systems which integrate terrain information from the radar, pitch, roll, and turn rate, etc. from sensing devices and actuate control relays. Ability to trace the effect of a change in one subsystem to other integrated subsystems and determine which controls and devices must be changed or adjusted to compensate. Ability to diagnose and determine needed repairs for malfunctions in electronics systems such as weapons control where knowledge of the entire system is necessary to interpret error data and trace back through a number of units of the system to locate the deficiency.                   |
|  | 5 | Master common to complex work tasks. At Grade 13, Electronic Integrated Systems Mechanics must have: Ability to repair, overhaul, rebuild, align, and adjust complete multisystems such as the electronics package in a highly automated aircraft where target acquisition and tracking, weapons control, aircraft attitude control, navigation, and other complex functions are performed by numerous systems which are extensively interconnected with data feedback loops. Applies comprehensive knowledge of all major units of the complete multisystem, i.e., how they function independently, how they are interfaced in the integrated subsystems, and how the subsystems interact to achieve operating specifications. Able to determine proper sequence of operations and start point in sequential operations in order to pinpoint areas of malfunction. Extensive practical knowledge of the theories and practices of electromagnetic propagation, electronic circuits, computer theory, hydraulic or pneumatic control and power systems, and many other areas covering a wide range of system applications. Broad knowledge of the interactions among a number of closely integrated complex systems. Knowledge of mathematics, including trigonometry, to calculate power relationships, signal phasing, etc. Ability to interpret drawings for multisystem complexes such as the complete electronics package for an aircraft including numerous interconnections of signal paths both between and within individual subsystems of the multisystem complex. Ability to isolate malfunctions of complete multiple integrated systems consisting of closely interrelated fire control, bombing-navigation, flight control, countermeasures or similar systems and to determine the methods of repair where extremely complex relationships exist among numerous interconnected units and control circuits not only within the individual control systems but between them as well, requiring complete knowledge of all electronic, mechanical, and or optical systems and units. |
|  | 6 | Provide production support services   |
|  | 7 | Maintain successful to above average performance ratings  |

*This list is not all inclusive. For more information on your series, visit the OPM site below. Copy and paste the link in your browser.*

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