



STATE OF ALASKA
COMPETENCY SPECIFICATION

Occupational Group: LABOR, TRADES AND CRAFTS

CAREER AREA: MECHANIC P933X

Definition: Inspects, performs preventative maintenance, diagnoses equipment failure, and makes necessary repairs and modifications to engine powered machinery and support structures. May include design and fabrication of parts.

There are three fields, identified by AKPAY Code, as follows:

<u>Automotive 9331-xx</u>		<u>Rural ARFF P9332-xx</u>		<u>Aircraft 9336-xx</u>	
Sub-Journey	WG 56	Advanced Journey	WG 52	Sub-Journey	WG 56
Journey	WG 54			Journey	WG 54
Advanced Journey/Lead	WG 53			Advanced Journey/Lead	WG 53
Foreman I	WG 52			Foreman I	WG 52
Foreman II	WG 51			Foreman II	WG 51

Levels:

Competencies are the required knowledge, skills, abilities and work behavior demonstrated and required for the on-going essential functions of the job. Possession of competencies alone will *not* automatically advance an incumbent; rather the incumbent must demonstrate and use the competency in the on-going performance of *assigned* duties.

SUB-JOURNEY: Worker provides assistance to others by performing the more routine, non-specialized and repetitive tasks that do not require the more specialized skills. Basic tasks are performed independently and those of progressive difficulty are performed under direct supervision until proficiency is demonstrated.. The designation of Sub-journey does not infer that the work must be always in the company of another and/or higher level employee.

SUB-JOURNEY:

933x-56 This level assists higher level mechanics by performing routine, simple but essential maintenance tasks that do not require the skill or knowledge necessary to function at the Journey level. There is a low consequence of error. Provides basic work area clean up and maintenance as required. This level also may work under close supervision in the maintenance, repair and overhaul of light and heavy duty motorized equipment. Work may be limited to individual component replacements and requires application of learned and practiced skill.

JOURNEY: Worker is fully proficient. Work is performed independently, using standard

methods and techniques, and consists of assignments that are typical of the occupational field. Journey workers can use a variety of interrelated skills to independently complete work that conforms to industry standards. The work may require proof of competence, training or certification.

9331-54 This level independently inspects equipment; identifies actual or likely equipment failures; and performs necessary repairs including complex overhaul, rebuild and modification tasks. Some electronic diagnostic work is performed independently using judgment and specialized knowledge; typically this applies to light duty equipment.

LEAD: Worker performs the work and leads a group of other workers as defined by the collective bargaining unit contract, by directing and reviewing tasks. Lead worker assigns work; sets schedules and priorities; determines methods; provides training and instruction; evaluates and approves completed tasks.

933x-53 This level directs and reviews work of others, while helping on the most complex projects associated with light duty and automotive equipment; troubleshoots problems and ensures inventory control.

Or

ADVANCED JOURNEY: Work routinely requires the resolution of unusual, difficult or exceptional issues by developing or modifying approaches, methods or techniques.

933x-53 This level is the skilled journey, such as for aircraft, skilled heavy duty mechanic, or is required to perform computerized diagnostic mechanic duties and requires the application of a wide range of skills and independence of action in troubleshooting electronic/mechanical systems.

RURAL ARRF, ADVANCED JOURNEY: Performs work at FAA-certified rural airports, which also requires regular and recurring training in and demonstration of aircraft rescue and firefighting (ARFF) competencies.

P9332-52 In addition to performing skilled, advanced diagnostic and maintenance/repair work, this level performs regular and recurring ARFF duties at an FAA-certified rural airport whose staffing needs require performance of these duties as part of maintaining the airport's certification.

FOREMAN: Worker who acts as an intermediary between workers and management to organize, assign and directly supervise the work of a labor, trades and crafts occupational group. The worker is accountable for the quality and quantity of the work accomplished.

933x-52 **I** Oversees the work of three or more permanent employees at an equipment repair facility and participates in the work.

933x-51 **II** Organizes, assigns and oversees the work of a major repair facility, and acts as intermediary to management. Would perform the most complex mechanical functions at the duty station only during periods of staff shortage.

Essential Core Competencies: "Common or typical" to the career area and required for all levels as appropriate to the specific position. *These are included in the position description and performance evaluation review process.*

SUB-JOURNEY level workers will be required to meet the following

TO:

- have the aptitude to develop, practice and use needed skills and work behaviors
- apply verbal and written instructions to individual and grouped tasks
- perform routine tasks with consistent results
- recognize situations requiring additional supervision or instruction in order to request assistance
- apply acquired skills, knowledge and abilities to new tasks
- learn proper usage and care of tools and equipment of the trade or craft

Mechanic

CORE = Sub-journey 933x- 56

Knowledge of

- current safety practices, repair techniques and terminology
- the vocabulary needed to read and interpret technical manuals and regulations
- lubrication requirements

Ability to

- retrieve, read and apply O.S.H.A. guidelines
- retrieve, read and apply information from technical manuals, computers and microfiche
- select and use proper tools
- maintain, and repair shop tools and equipment
- use lubrication equipment
- recognize wear points
- understand oral and written instructions in English
- perform work accurately, safely, thoroughly and efficiently
- use digital volt ohm meter

Skill in

- maintaining clean and safe work and tool area
- use of standard shop tools and procedures

Willingness to

- attend and pass factory authorized schools on specific vehicle, equipment or aircraft
apply acquired training to specific problems

Essential Technical Competencies related to the occupational field specifically:

These are included in the position description and performance evaluation review process.

JOURNEY level workers will be required to meet the following

TO:

- have the required skills to handle difficult problems encountered
- have comprehensive knowledge of the subject or occupational area
- use judgment in determining actions
- exercise independence in determining actions
- plan and lay out work (i.e. determine how to do one's own work)
- make appropriate choice among alternatives
- complete work with only limited instruction and/or little or no advice
- proceed with work without having results or products generally reviewed in progress

Mechanic Journey 933X-54
in addition

Knowledge of the following mechanical systems:

- air conditioning
- hydraulic
- electronic and electrical
- reciprocating and turbine powerplant
- brake and related systems
- steering

Knowledge of

- functions and limitations of equipment systems
- technical advances in equipment systems
- technical manuals and service handbooks
- standards and codes used in inspections
- general provision for purchasing, supplies and inventory

Ability to

- perform basic cutting and welding
- select and operate repair equipment
- select and order appropriate parts and materials
- post updates to technical manuals
- recognize problems or potential problems
- prioritize order of diagnostic steps
- retrieve information from computer files or shop manuals

Skill in

- diagnosis of equipment failure and effecting repair
- use of precision tools and diagnostic equipment

ABOVE JOURNEY / ADVANCED level worker encompasses in addition the requirement

TO:

- complete unusually difficult work
- adapt and modify procedures, operations or processes required to complete the work
- work in absence of available or applicable guidelines
- consistently apply skills of a higher level of difficulty required

[] **Mechanic Advanced Journey 9331-53 Automotive**
in addition

Knowledge of the following systems in order to diagnose, maintain, repair and modify:

- drive trains
- suspension systems
- emissions

Knowledge of:

- techniques and procedures of light duty automotive equipment maintenance and repair using electronic diagnostic equipment
- techniques and procedures of heavy equipment maintenance and repair using electronic diagnostic equipment
- aircraft rescue and firefighting (ARFF) practices while at an airport duty station
- federal regulations regarding performance standards and specifications of ARFF equipment while at an airport duty station
- state and federal regulations regarding commercial vehicles

Ability to

- retrieve information from computer programs, CD ROMs, etc.
- ensure computer chips function properly
- ensure computer calibrations are adjusted properly
- make repairs to vehicle bodies and frames
- apply municipal requirements for Inspection and maintenance (IM) of vehicles
- learn and provide snow removal seasonally as called upon
- overhaul engines (types vary with duty station)
- prioritize inspection steps
- select and properly operate diagnostic equipment
- use precision measuring instruments
- apply electronic analysis to equipment problem diagnoses
- manipulate tools in confined spaces

[] **Mechanic Advanced Journey 9336-53 Aircraft**
in addition:

Knowledge of the following in order to adhere to airworthiness and safety standards:

- avionics
- FAA regulations, air worthiness directives and aircraft type certification
- scope and detail of FAR 43 appendix D
- scope and detail of manufacturer inspection check list
- laws, rules, codes, and regulatory guides used in making modifications
- aircraft instrumentation
- air systems
- vacuum and pressure systems
- de-icing
- landing gear (skis, floats, wheels)
- propellers
- rotor systems
- airframe, including dope and fabric repair, paint and refinishing materials and process
- de-icing equipment
- sheet metal layout and fabrication
- types of corrosion and corrosion control methods
- Non Destructive Testing (NDT) techniques

Ability to

- read and create schematics and diagrams
- design and build modifications for existing systems
- incorporate modifications into existing systems
- make repairs to propeller assemblies
- make repairs to rotor systems
- prioritize inspection steps
- properly lay out, cut, shape, and fasten sheet metal to airframe
- select and properly operate diagnostic equipment
- describe in written format, modifications performed

Skill in

- making technical inspections to identify potential problems
- forming and riveting sheet metal
- making fine adjustments (e.g., timing, synchronization, and control settings)
- manual dexterity to sew wing fabric materials and rib stitching

[] **Mechanic Advanced Journey** 9332-52 *Rural ARFF*
in addition

To those competencies cited for the Automotive, Advanced Journey, above and with the additional ability to

- perform ARFF stand-by duties, complete annual ARFF certification and medical evaluation/fit test requirements, participate in ARFF training at station level, and maintain ARFF personal and crew equipment in support of 14 CFR Part 139 to fight fires and perform as an incident commander in the event of an aircraft accident with the potential for mass casualties (i.e., more than 100)

LEAD WORKER will be required

TO:

- assign, monitor, train and evaluate daily tasks
- make decisions and set and balance priorities
- coordinate tasks of others and work efficiently
- ensure adherence to work schedules, quality standards, safety and security rules
- give clear instructions
- recommend appropriate solutions to difficult situations
- motivate others

Mechanic Lead 933X-53
in addition

Ability to:

- work in an efficient manner
- ensure adequacy of resources, equipment, tools available to do the work
- recommend alternative solutions to problems encountered.

FOREMAN in addition will be required

TO:

- apply knowledge of individual and team behavior to the workplace
- display knowledge of supervisory principals and methods in dealing with employees
- utilize knowledge of best practices to maximize staff potential
- plan and manage resources to meet quality and quantity goals
- coach, mentor and counsel staff to meet competencies
- formulate training plans

Mechanic Foreman I 933x-52
in addition

Ability to

- maintain and impart knowledge of current developments
- apply creative solutions of problems

Mechanic Foreman II 933x -51
in addition

Those cited above to a greater degree, and with knowledge of

- common organization and business practices to oversee a large facility

Special Requirements: Certificates and Licenses

AUTOMOTIVE: 9331-XX

- Alaska Commercial Driver License (CDL)
 - Class "A" Class "B" Class "C"
 - Air Brakes
 - Hazardous Materials
 - Tanker Vehicle
- Vehicle emissions Inspection/Maintenance (IM) certificate
- Certified in First Aid and CPR
- Welding Certificate
- Must be willing to participate in random drug testing program
- Other:

RURAL ARFF: 9332-52

- Alaska Commercial Driver License (CDL)
 - Class "A" Class "B" Class "C"
 - Air Brakes
 - Hazardous Materials
 - Tanker Vehicle
- Vehicle emissions Inspection/Maintenance (IM) certificate
- Certified in First Aid and CPR
- Welding Certificate
- ARFF Certification
- Emergency Trauma Technician Certification
- Must be willing to participate in random drug testing program
- Other:

AIRCRAFT: 9332-XX

- Alaska Driver License
- Current FAA inspection authorization
- FAA Airframe and Powerplant Technician license
- Welding certificate
- Painting certificate
- Other:

Environmental Hazards and Physical Requirements:

Exposure to

- loud noises
- toxic and corrosive chemicals and hazardous substances
- close proximity to moving machinery, belt drives, heavy equipment, moving aircraft
- propellers, overhead cranes and other equipment , often in a confined area
- potential or falling heavy objects or tools (from lifts, etc.)
- toxic fumes
- excessive dust
- crawling and working in cramped, confined spaces
- potential for heavy lifting

inclement weather

Equipment:

TYPES:

- computerized diagnostic equipment
- cutting and welding tools
- diagnostic and test devices
- general shop equipment
- hand tools
- hydraulic and power driven equipment
- machining and lathe tools
- paint sprayers
- personal protective equipment
- pneumatic powered equipment
- power tools
- precision measuring tools
- tools specific to aircraft
- tow truck
- ARFF vehicle
- self contained breathing apparatus

Orig: LTC Study 07/01/99

Previous history: Class codes P9321-51; P9322-52; P9323-53; P9324-54
P9327-57; P9363-53; P9563-53