

**Knowledge**

**Skills**

and

**Attributes**

for

**JAARS**

**Aviation Maintenance**

**Personnel**

# Knowledge & Skills

## 1. Troubleshooting

1.1. **Definition:** The ability to determine the cause of a problem using a systematic and analytical approach.

1.1.1. **Attribute Summary:** Able to think through, utilizing appropriate resources when necessary, and evaluate causes of defects in aircraft systems using a safe, logical common sense approach that will result in correct diagnosis of problems.

## 2. Aviation Maintenance Knowledge (A&P or equivalent)

2.1. **Definition:** Understanding what is required to maintain aircraft to an airworthy standard.

2.1.1. **Attribute Summary:** Demonstrates a basic knowledge of aircraft maintenance including general, airframe, and powerplant subject areas.

## 3. Knowledge and Use of Tools

3.1. **Definition:** Familiarity with and experience using tools required to perform aircraft maintenance.

3.1.1. **Attribute Summary:** Able to determine what tools and equipment are needed to properly maintain an aircraft to an airworthy standard and is proficient in their use.

## 4. Inspection

4.1. **Definition:** The ability to find faults while examining aircraft for airworthy condition.

4.1.1. **Attribute Summary:** Able to independently perform a one hundred hour / annual inspection of a typical high performance piston or turboprop single engine aircraft, and able to identify defects.

## 5. Reciprocating Engine

5.1. **Definition:** An understanding of the workings of an aircraft internal combustion engine and how to properly maintain it to an airworthy condition.

5.1.1. **Attribute Summary:** Understands the theory of operation of a reciprocating engine as found in high performance aircraft and knows the basics of engine operation, maintenance and inspection.

## 6. Turbine Engine

6.1. **Definition:** An understanding of the workings of an aircraft turbine engine and how to properly maintain it to an airworthy condition.

6.1.1. **Attribute Summary:** Understands the theory of operation of a turbine engine and knows the basics of engine operation, maintenance and inspection.

## 7. Engine Accessory Systems

7.1. **Definition:** Familiarity with and understanding of the theory and operation of components utilized on or with an aircraft engine and how to properly maintain them to an airworthy standard.

7.1.1. **Attribute Summary:** Knows the theory of operation of the basic accessory systems and can demonstrate how to remove, inspect, test, install, adjust and maintain them as appropriate.

## 8. Fuel Systems

8.1. **Definition:** Understanding and experience with both theory and operation of aircraft fuel systems and the components utilized in them.

8.1.1. **Attribute Summary:** Is familiar with the components utilized in a typical general aviation aircraft fuel system and can demonstrate how to remove, inspect, test, install, adjust and maintain them as appropriate.

## **9. Electrical**

9.1. **Definition:** Understanding and experience with both theory and operation of aircraft electrical systems and the components utilized in them.

9.1.1. **Attribute Summary:** Demonstrates a working knowledge of a typical electrical system found in general aviation aircraft and possesses the necessary troubleshooting skills to diagnose and correct common system malfunctions.

## **10. Sheet Metal**

10.1. **Definition:** Understanding and ability to plan and perform structural repair of aircraft using approved methods and practices.

10.1.1. **Attribute Summary:** Demonstrates the fundamental knowledge and hands on skills of sheet metal inspection, and fabrication practices and procedures to maintain and repair aircraft structures in an airworthy condition.

## **11. Knowledge and Use of Resources**

11.1. **Definition:** Awareness of and ability to use all means necessary to accomplish a task.

11.1.1. **Attribute Summary:** Able to effectively identify and use normally available technical resources such as manufacturer's manuals, bulletins, FAA Airworthiness Directives, and inspection aids.

## **12. Computer**

12.1. **Definition:** Good understanding and skill with electronic resources used in aircraft maintenance.

12.1.1. **Attribute Summary:** Is familiar with and can demonstrate working with the typical computer software programs used in record keeping of aircraft and is effective in using the internet as a resource. Is familiar with how OEM's (Original Equipment Manufacturer) along with the civil aviation authorities utilize the internet.

# Attributes (Supporting Observations)

## 1. Interpersonal Skills

1.1. **Definition:** Relates to all people appropriately.

1.1.1. **Attribute Summary:** Is caring, compatible, considerate, and sensitive. Takes time for and listens well to people. Has a pleasant personality and the ability to work with and relate well to a wide spectrum of people.

## 2. Mechanical Aptitude

2.1. **Definition:** Able to figure out and understand how mechanical things work.

2.1.1. **Attribute Summary:** Has perceptive insight of how mechanical things work.

## 3. Initiative

3.1. **Definition:** Looks for what needs to be done and does it; a self starter.

3.1.1. **Attribute Summary:** Is self-motivated to address tasks and correct problems within appropriate parameters.

## 4. Teachable

4.1. **Definition:** Is willing to be taught.

4.1.1. **Attribute Summary:** Welcomes input and is willing to change in response to instruction without being defensive.

## 5. Hazardous Attitudes

5.1. **Definition:** Character traits that lead to dangerous behavior.

5.1.1. **Attribute Summary:** Does not possess either extreme of dangerous behaviors, but is balanced near the middle on the Extremes Table.

Extremes Table

Macho:	Aggressive	5	4	3	2	1	0	1	2	3	4	5	Timid
Anti-Authority:	Defiant	5	4	3	2	1	0	1	2	3	4	5	Conformist
Resignation:	Insistent	5	4	3	2	1	0	1	2	3	4	5	Yielding
Impulsivity:	Spontaneous	5	4	3	2	1	0	1	2	3	4	5	Pondering
Invulnerability:	Carefree	5	4	3	2	1	0	1	2	3	4	5	Fearful

## 6. Inquisitive / Professional Curiosity

6.1. **Definition:** An eagerness to learn coupled with a questioning, investigative manner.

6.1.1. **Attribute Summary:** Is appropriately driven to learn new skills or knowledge and investigate and probe for information until the right answers are found.

## 7. Aptitude for Learning

7.1. **Definition:** The ability to learn new skills and information.

7.1.1. **Attribute Summary:** Able to truly listen and learn as shown by modified behavior in areas being taught. It is evidenced by the change which results from specific instruction or coaching.

## **8. Assertiveness**

8.1. **Definition:** The ability to communicate one's position in a firm yet positive, respectful manner.

8.1.1. **Attribute Summary:** Is able to advocate for their view, idea, opinion, position, or concern about a maintenance issue in a way that facilitates good decision making.

## **9. Self-confidence**

9.1. **Definition:** A realistic assessment of one's knowledge and abilities.

9.1.1. **Attribute Summary:** Appropriately demonstrates self-assuredness in knowledge, abilities, and capability to accomplish given tasks.

## **10. Integrity**

10.1. **Definition:** Honesty and a firm adherence to a code or standard of high values and uprightness.

10.1.1. **Attribute Summary:** Is honest with himself and others and does what is right, even when alone.

## **11. Recognizes and functions within personal limits**

11.1. **Definition:** Awareness and acknowledgement of limitations and the ability to establish appropriate margins and consistently function within those margins.

11.1.1. **Attribute Summary:** Understands personal and safety limitations, establishes appropriately conservative boundaries, and respects them. Has the ability to say "no" to any violation of established boundaries.

## **12. Judgment**

12.1. **Definition:** The ability to make sound decisions by gathering, discerning and evaluating information.

12.1.1. **Attribute Summary:** Is able to accurately and appropriately evaluate a situation or course of action to ascertain the associated risks and benefits. Consistently chooses practical, safe solutions.

## **13. Adaptability**

13.1. **Definition:** The ability to adjust and change in response to changing circumstances.

13.1.1. **Attribute Summary:** Has the willingness and ability to adjust and make appropriate changes in their aviation activities and schedules.

## **14. Observant**

14.1. **Definition:** Perceptive alertness that enables one to make significant observations.

14.1.1. **Attribute Summary:** Is proficient in making detailed observations regarding aircraft maintenance. Has the ability to make relevant observations, noticing trends and anomalies.

## **15. Attention to Detail**

15.1. **Definition:** Accomplish duties in a careful, complete and precise manner.

15.1.1. **Attribute Summary:** Tasks are completed with quality workmanship.

## **16. Productive**

16.1. **Definition:** Completes tasks in a timely fashion.

16.1.1. **Attribute Summary:** Realizes not every task needs to be performed perfectly, but rather appropriately. Is able to perform to a set standard in a timely fashion.

**17. Stress Management (Performance Under Pressure)**

17.1. **Definition:** Carries out activities appropriately while responding to mental, emotional and physical demands.

17.1.1. **Attribute Summary:** Is able to prioritize time and workload to safely and effectively perform assigned tasks while remaining within personal limits. Takes charge of thoughts, emotions, schedule, environment, and effectively deals with problems.

**18. Self-Assessment**

18.1. **Definition:** Able to accurately appraise one's own personal skills and performance.

18.1.1. **Attribute Summary:** Is able to accurately assess one's personal strengths, limitations and weaknesses.

**19. Team member**

19.1. **Definition:** Able to work effectively in harmony with others.

19.1.1. **Attribute Summary:** Offers positive contributions to the team process and goals. Is willing to take responsibility for elements of the team's work, is committed to the success of the team, and does not emphasize his own individual achievements (shares the glory).