Aviation Maintenance Fundamentals



Youth Apprenticeship

AVIATION MAINTENANCE FUNDAMENTALS

Aviation Maintenance Fundamentals youth apprentices gain various, high-demand aircraft maintenance skills. All youth apprentices must take the Aviation Maintenance Fundamentals the first year and can specialize in Airframe and Powerplant (A&P) or Avionics the second year. Apprentices must adhere to industry safety and security standards.

Length of Apprenticeship: One year. Youth apprentices can enter the Airframe and Powerplant (A&P) or Avionics youth apprenticeship for a second year.

REQUIRED COMPETENCIES

Youth apprentices must become proficient in both general employability and occupation-specific competencies. All of these, and examples of how each can be demonstrated, are found in the following pages. A total of 8 occupational competencies must be learned for this occupation. Employers may substitute out one of these and should write in the competency they are adding. Youth apprentices must be evaluated on these competencies at least two times each year of their apprenticeship.

Competencies

- 1. Follow safety procedures working around aircrafts/aircraft etiquette
- 2. Obtain required tools, equipment, and materials
- 3. Maintain work area
- 4. Operate tools and equipment safely
- 5. Use technical manuals and drawings (blueprint reading)
- 6. Perform preventative maintenance
- 7. Perform preflight aircraft service
- 8. Assist with basic wiring

POST-SECONDARY PATHWAY OPPORTUNITIES

There are several post-secondary pathway opportunities in this area. The -following is a partial list.

- Aviation Technician Powerplant
- Aviation Mechanic (Airframe)
- Information Technology (IT) Network (Avionics Technician)



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ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

YOUTH APPRENTICE INFORMATION

Youth Apprentice Name	
YA Coordinator	
YA Consortium	
School District	
SIGNATURES	
The On-the-Job Learning Performance Standar	ds Guide includes a list of competencies youth
apprentices learn through mentoring and train	· · · · · · · · · · · · · · · · · · ·
should be reviewed with the employer/mento	ors and School-Based or YA coordinators: This document r, school-based or YA coordinator on a regular basis with lan future steps to ensure completion of the required dinator, and the apprentice sign below.
	ployer/Mentor
1 st Evaluation (Required)	2 nd Evaluation (Required)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed
3 rd Evaluation (Optional)	4th Evaluation (Optional)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed

School-Based and/or YA Coordinator

1st Evaluation (Required)

2nd Evaluation (Required)

School-Based and/or YA Coordinator Signature	School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator	School-Based and/or YA Coordinator
School District or Organization	School District or Organization
Date Signed	Date Signed

3rd Evaluation (Optional)

4th Evaluation (Optional)

School-Based and/or YA Coordinator Signature	School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator	School-Based and/or YA Coordinator
School District or Organization	School District or Organization
Date Signed	Date Signed

Youth Apprentice

1st Evaluation (Required)

2nd Evaluation (Required)

Youth Apprentice Signature	Youth Apprentice Signature
Youth Apprentice	Youth Apprentice
School District / High School	School District / High School
Date Signed	Date Signed

3rd Evaluation (Optional)

4th Evaluation (Optional)

Youth Apprentice Signature	Youth Apprentice Signature
Youth Apprentice	Youth Apprentice
School District / High School	School District / High School
Date Signed	Date Signed

EMPLOYABILITY SKILLS (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

All youth apprentices must demonstrate the key employability skills listed below in order to complete the YA program. They do so by earning at least a "Meets Expectation" rating in each. **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

1	Working to Meet Expectations: Needs improvement; requires much assistance and supervision;
	rarely displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this
	behavior
3	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently
	displays this behavior

Employability Skills		Rati	ing	
	Year One Evaluation Rating			iting
Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
 Develops positive work relationships with others. Examples of qualities and habits that the employee might exhibit include Interacts with others with respect and in a non-judgmental manner Responds to others in an appropriate and non-offensive manner Helps co-workers and peers accomplish tasks or goals Applies problem-solving strategies to improve relations with others When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation 	☐ 1	☐ 1	☐ 1	☐ 1
	☐ 2	☐ 2	☐ 2	☐ 2
	☐ 3	☐ 3	☐ 3	☐ 3
 2. Communicates effectively with others Examples of qualities and habits that the employee might exhibit include Adjusts the communication approach for the target audience, purpose, and situation to maximize impact Organizes messages/information in a logical and helpful manner Speaks clearly and writes legibly Models behaviors to show active listening Applies what was read to actual practice Asks appropriate questions for clarity 	☐ 1	☐ 1	☐ 1	☐ 1
	☐ 2	☐ 2	☐ 2	☐ 2
	☐ 3	☐ 3	☐ 3	☐ 3
 3. Collaborates with others Examples of qualities and habits that the employee might exhibit include • Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities • Shares responsibility for collaborative work and decision making • Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise • Avoids contributing to an unproductive group conflict • Shares information and carries out responsibilities in a timely manner 	□ 1	□ 1	□ 1	□ 1
	□ 2	□ 2	□ 2	□ 2
	□ 3	□ 3	□ 3	□ 3

	Employability Skills		Rat	ing	
			One Eval	uation Ra	ating
	Competency and Rating Criteria	Initial	Mid	Mid	Final
			Year 1	Year 2	
4.	 Maintains composure under pressure Examples of qualities and habits that the employee might exhibit include Uses critical thinking to determine the best options or outcomes when faced with a challenging situation 	☐ 1 ☐ 2 ☐ 3			
	 Carries out assigned duties while under pressure Acts in a respectful, professional, and non-offensive manner while under pressure Applies stress management techniques to cope under pressure 				
5.	Demonstrates integrity Examples of qualities and habits that the employee might exhibit include Carries out responsibilities in an ethical, legal and confidential manner Responds to situations in a timely manner Takes personal responsibility to correct problems	☐ 1 ☐ 2 ☐ 3			
	 Models behaviors that demonstrate self-discipline, reliability, and dependability 				
6.	Performs quality work Examples of qualities and habits that the employee might exhibit include Carries out written and verbal directions accurately Completes work efficiently and effectively Performs calculations accurately Conserves resources, supplies, and materials to minimize costs and environmental impact Uses equipment, technology, and work strategies to improve workflow Applies problem-solving strategies to improve productivity Adheres to worksite regulations and practices	☐ 1 ☐ 2 ☐ 3			
7.	 Maintains an organized work area Provides quality goods or services (internal and external) Examples of qualities and habits that the employee might exhibit include Shows support for the organizational goals and principles by own personal actions Displays a respectful and professional image to customers Displays an enthusiastic attitude and desire to take care of customer needs Seeks out ways to increase customer satisfaction Produces goods to workplace specifications 	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3
8.	 Shows initiative and self-direction Examples of qualities and habits that the employee might exhibit include Prioritizes and carries out responsibilities without being told Responds with enthusiasm and flexibility to handle tasks that need immediate attention Reflects on any unsatisfactory outcome as an opportunity to learn Improves personal performance by doing something different or differently Analyzes how own actions impact the overall organization Supports own action with sound reasoning and principles Balances personal activities to minimize interference with work responsibilities 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□1 □2 □3

Employability Skills		Rating			
	Year One Evaluation Rating		iting		
Competency and Rating Criteria	Initial	Mid	Mid	Final	
		Year 1	Year 2		
 9. Adapts to change Examples of qualities and habits that the employee might exhibit include Shows flexibility and willingness to learn new skills for various job roles 		☐ 1 ☐ 2	☐ 1 ☐ 2	□1 □2	
 Uses problem-solving and critical-thinking skills to cope with changing circumstances Modifies own work behavior based on feedback, unsatisfactory outcomes, efficiency, and effectiveness Displays a "can do" attitude 	3	3	3	3	
 10. Demonstrates safety and security regulations and practices Examples of qualities and habits that the employee might exhibit include Follows personal safety requirements Maintains a safe work environment Demonstrates professional role in an emergency Follows security procedures Maintains confidentiality 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	
 11. Applies job-related technology, information, and media Examples of qualities and habits that the employee might exhibit include Applies technology effectively in the workplace Assesses and evaluates information on the job Assesses training manuals, website, and other media related to the job 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	
 12. Fulfills training or certification requirements for employment Examples of this requirement may include Participation in required career-related training and/or educational programs Passing certification tests to qualify for licensure and/or certification Participation in company training or orientation 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□1 □2 □3	
 13. Sets personal goals for improvement	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□ 1 □ 2 □ 3	

OCCUPATIONAL COMPETENCIES (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Youth apprentices must earn a rating of at least "MEETS EXPECTATIONS" in each competency by the conclusion of the apprenticeship. A total of 8 competencies, 7 must be from the list below. If necessary, employers can substitute one competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment. At least two evaluations are required each year of a youth apprenticeship. More columns are included below for those who choose to conduct more frequent reviews.

1	Working to Meet Expectations: Needs improvement; requires much assistance and supervision;
	rarely displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this
	behavior
3	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently
	displays this behavior

Occupational Competencies		Rati	ing			
Competency and Rating Criteria		Evaluation Minimum Rating of 2 EACH Check Rating				
	Initial	Mid Year 1	Mid Year 2	Final		
 Follow safety procedures working around aircrafts/aircraft etiquette assess general work area safety wear proper Personal Protective Equipment (PPE) identify unsafe work area elements assess aircraft support safety identify trip hazards identify fluid leaks on surfaces walk in safe areas/identify security areas report safety concerns/violations to supervisor document use and/or maintenance follow Federal Aviation Administration (FAA) regulations and technical documents 	☐ 1 ☐ 2 ☐ 3	□1 □2 □3	□ 1 □ 2 □ 3	□1 □2 □3		
 Obtain required tools, equipment, and materials determine procedure to be completed select required tools, equipment, and materials follow tool/equipment checkout procedures verify tool/equipment is current for preventative maintenance and/or calibration use tool for intended purpose 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3		

	Occupational Competencies		Rat	ing	
	· · · · · · · · · · · · · · · · · · ·		Evalu	ation	
		Minii		ing of 2 E	ACH
	Competency and Rating Criteria		Check I		
		Initial	Mid Year 1	Mid Year 2	Final
3.	Maintain work area	□1			□1
	retrieve manuals				
	organize tools	= -			
	sweep work area	∐3		3	
	put equipment away				
	clean work area				
	 dispose of garbage and recyclables 				
	 return tools to proper location 				
	 notify supervisor of safety concerns or violations 				
	complete service documentation				
4.	Operate tools and equipment safely	□ 1	□ 1	□ 1	□ 1
"	operate only equipment trained on				
	 verify tool/equipment is available for use and in working order 	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	 select safety equipment and personal protective equipment (PPE) 			3	3
	operate tool/equipment appropriate for the job task				
	operate tool/equipment without modification				
	 monitor tool/equipment for safe operation while operating 				
	 shut down equipment when task is complete 				
	 notify employer if tool/equipment not operating as expected 				
	document use and/or maintenance				
5.	Use technical manuals and drawings (blueprint reading)	□ 1	□ 1	1	1
	a cases electronic data system	□ 2	□ 2	□ 2	□ 2
	access electronic data systemselect appropriate maintenance manual	□ 3	□ 3	□3	□ 3
	obtain equipment and materials needed			_	
	follow safety and service procedures				
	identify work instructions for task				
	identify work instructions for task identify tools for work task on manual/drawing				
	identify job/task specifications				
	adhere to all maintenance regulations				
	adhere to an mannerance regulations				

Occupational Competencies	Rating			
	Evaluation Minimum Rating of 2 EACH Check Rating			
Competency and Rating Criteria				
	Initial	Mid	Mid	Final
	iiiiciai	Year 1	Year 2	Tillai
6. Perform preventative maintenance	□ 1	□ 1	□ 1	□ 1
obtain equipment and materials needed	□ 2	□ 2	☐ 2	□ 2
follow safety and service procedures	□3	□3	□3	Пз
remove aircraft panels				_
aid changing aircraft oil replace wheel hearings				
replace wheel bearings shock safety wires.				
check safety wires increase months				
• inspect ports				
change spark plugs change spark plugs				
change batteries				
• change lightbulbs				
change air filters				
service struts				
cleanup work area				
return tools to proper location				
complete service documentation				
7. Doufows weelight circust comics				
7. Perform preflight aircraft service	∐ 1		∐ 1	∐ 1
obtain equipment and materials needed	2	□ 2	☐ 2	□ 2
follow safety and service procedures	□ 3	☐ 3	□ 3	☐ 3
• check fuel				
• fuel aircraft				
check oil levels				
check oxygen levels				
check tire pressure				
check light function				
clean windshield				
clean exterior of aircraft				
perform visual inspection of brakes				
 perform visual inspection of wheels and tires 				
inspect exterior surfaces for corrosion				
select proper cleaning solution for different materials				
dispose of used hazardous materials				
assist de-icing an aircraft				
 assist safe movement of aircraft (wing walking) 				
cleanup work area				
return tools to proper location				
complete service documentation				

Occupational Competencies	Rating			
·	Evaluation			
	Minimum Rating of 2 EACH			
Competency and Rating Criteria	Check Rating			
, , , , , , , ,	Mid Mid			
	Initial	Year 1	Year 2	Final
8. Assist with basic wiring	1	<u> </u>	1	□ 1
obtain equipment and materials needed	_			=
	□ 2	<u> </u>	2	2
follow safety and service procedures	☐ 3	☐ 3	☐ 3	☐ 3
 interpret wiring diagrams 				
use a multimeter				
 identify pins, connectors, and wire numbers 				
identify faulty wiring				
 assist with repair of wiring 				
 install and secure wire harnesses 				
clean parts				
cleanup work area				
return tools to proper location				
complete service documentation				
Competency Substitute (if you replaced a competency above, note the	1	□ 1	□1	
competency and rating)				_
competency and rating,	□ 2	2	☐ 2	□ 2
	3	3	3	3
Comments:				

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