

AIRFRAME & POWERPLANT MECHANICS

GENERAL WORKBOOK

Written, Oral, and Practical

ALIGNS WITH

FAA-H-8083-30B & FAA-H-8083-30B-ATB

Airframe & Powerplant Mechanics General Handbook

by **Thomas Wild and Michael Leasure**



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PREFACE

This Student Workbook is designed as a companion to the Aviation Maintenance Mechanics General Handbook FAA-H-8083-30B and FAA-H-8083-30B-ATB. Each chapter of this workbook matches the equivalent chapter in the Handbook and contains study questions, exercises, and a final exam for that chapter. Each is designed to enhance your understanding of the material in the textbook and to better prepare you for success with your actual FAA written exams and later in your career as a professional aviation maintenance technician.

Each chapter of this Workbook is presented in 3 parts:

1. Study Aid Questions are fill in the blank, multiple choice, true or false, or matching formats designed to reinforce the most important concepts presented in the Handbook.
2. Knowledge Application Questions; giving you an opportunity to actually use the material presented in each chapter to solve common problems.
3. Final Chapter Exam, in multiple choice format designed to further reinforce your study skills and to be used by instructors as end of chapter exam and as an evaluation of your progress.

The answers to Sections A&B questions may be found in the back of this workbook and can so be used by students as a part of your personal study habits. The answers to Section C - Final Chapter Exams, are available only to instructors as part of the instructor support package for the H-8083 textbook series, thus preserving the value of the exam as a valid instructional tool.

Each page in this book is perforated allowing students to tear out and turn in assigned sections which may be given as homework or in-class exercises.

For further information about this Workbook, its corresponding Textbook, or to order additional copies in print or electronic format, please contact Aircraft Technical Book Company at (970) 726-5111, or email to orders@actechbooks.com, or visit our web site at www.actechbooks.com.

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Section A

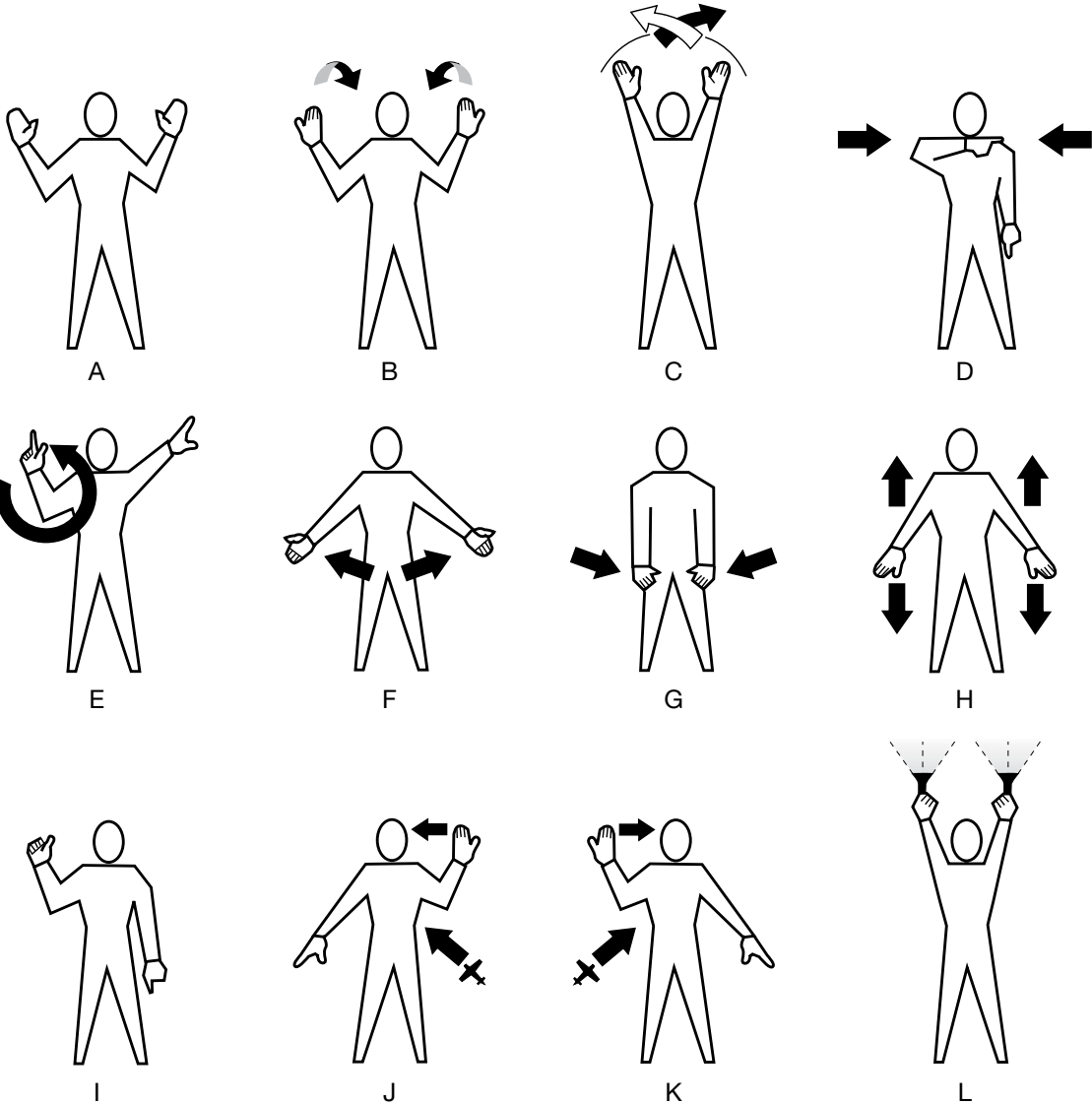
Study Aid Questions - Fill In The Blanks

1. Keeping hangars, shop, and the flight-line _____ and _____ is essential to safety and efficient maintenance.
2. _____ and _____ should watch for their own safety and for the safety of others working around them.
3. Three pieces of protective safety gear which should always be used when working around electricity are: _____, _____, and _____.
4. Anytime current flows, a byproduct of that flow is _____.
5. Ensure that all power cords, wires, and lines are free of _____ and _____ which can damage the wire.
6. When inflating tires on any type of aircraft wheels, _____ should always be used.
7. _____ are very important to shop safety and making shop personnel aware of safety risks of certain materials.
8. The _____ are a more detailed version of the chemical safety issues.
9. The National Fire Protection Association (NFPA), for commercial purposes, has classified fires into three basic types: _____, _____, and _____.
10. When using _____, make sure you have the correct type for the fire.
11. _____ is any damage caused by any loose object to aircraft, personnel, or equipment.
12. When approaching a helicopter while the blades are turning, observe the rotor-head and blades to see if they are _____.
13. Before starting an aircraft engine make sure that no property damage or personal injury will occur from the _____ or _____.
14. While touching a _____, always assume that the ignition is on.
15. Unlike _____ engine aircraft, the turbojet-powered aircraft does not require a preflight run-up unless it is necessary to investigate a suspected malfunction.

SAFETY, GROUND OPERATIONS, AND SERVICING

Section B Knowledge Application Questions

Fill In The Blanks: Identify these standard FAA hand taxi signals below.



A. _____
B. _____
C. _____
D. _____

E. _____
F. _____
G. _____
H. _____

I. _____
J. _____
K. _____
L. _____

SAFETY, GROUND OPERATIONS, AND SERVICING

Section B Short Answers

1. Why should human factors be introduced to aircraft maintenance personnel?
2. What should be done if a coworker is working unsafely?
3. What should the technician have to deal safely with electricity?
4. What is the main purpose of grinders?
5. What is the key to fire safety?
6. What three things are needed to create fire?
7. Why are water extinguishers the best type to use on Class A fires?
8. Carbon dioxide (CO₂) extinguishers are used for Class A, B, and C fires. How do they put out the fire?
9. What should a ramp technician keep in mind as aircraft taxi in his area of work?
10. Why should an aircraft be tied down after each flight?

SAFETY, GROUND OPERATIONS, AND SERVICING

Section C

Final Chapter Exam - Multiple Choice

1. The color of 100LL fuel is _____
 A. blue.
 B. colorless or straw.
 C. red.
2. What must accompany fuel vaporization?
 A. Absorption of heat.
 B. Decrease in vapor pressure.
 C. Reduction in volume.
3. A fuel that vaporizes too readily may cause _____
 A. hard starting.
 B. detonation.
 C. vapor lock.
4. The main differences between grades 100 and 100LL fuel are _____
 A. volatility and lead content.
 B. volatility, lead content, and color.
 C. lead content and color.
5. Tetraethyl lead is added to aviation gasoline to _____
 A. retard the formation of corrosives.
 B. improve the gasoline's performance in the engine.
 C. dissolve the moisture in the gasoline.
6. How are aviation fuels, which possess greater antiknock qualities than 100 octane, classified?
 A. According to the milliliters of lead.
 B. By reference to normal heptane.
 C. By performance numbers.
7. What effect, if any, will aviation gasoline mixed with jet fuel have on a turbine engine?
 A. No appreciable effect.
 B. The tetraethyl lead in the gasoline forms deposits on the turbine blades.
 C. The tetraethyl lead in the gasoline forms deposits on the compressor blades.
8. When towing a large aircraft _____
 A. a person should be in the cockpit to watch for obstructions.
 B. persons should be stationed at the nose, each wingtip, and the empennage at all times.
 C. a person should be in the cockpit to operate the brakes.
9. When first starting to move an aircraft while taxiing, it is important to always _____
 A. test the brakes.
 B. closely monitor the instruments.
 C. notify the control tower.
10. When taxiing an airplane with a quartering tailwind, the elevators and _____
 A. upwind aileron should be held in the up position.
 B. upwind aileron should be held in the down position.
 C. both ailerons should be kept in the neutral position.
11. A person should approach or leave a helicopter in the pilot's field of vision whenever the engine is running in order to avoid _____
 A. the tail rotor.
 B. the main rotor.
 C. blowing dust or debris caused by rotor downwash.