

APPENDIX I

GLOSSARY

ABOARD—In or on a ship, aircraft, or other means of transportation.

ABORT—To cut short or break off an action, operation, or procedure with an aircraft, guided missile, or the like, especially because of equipment failure; for example, to abort a mission.

A/C—Aircraft.

ACCELERATION—A change in the velocity of a body, or the rate of such change with respect to speed or direction.

ACCESSORY—A part, subassembly, or assembly designed for use in conjunction with or to supplement another assembly or unit; for example, the fuel control is an accessory for a turbojet engine.

ACTUATOR—A mechanism for moving or controlling something indirectly.

ADDITIVE—A substance added, in relatively small amounts, to improve another substance's physical properties or performance.

AERODYNAMICS—The science that deals with the motion of air and other gaseous fluids and the forces acting on bodies in motion relative to such fluids.

AFFF—Aqueous film-forming foam; also known as light water.

AFT—Towards the rear of the ship, aircraft, or other object.

AILERON—A movable control surface or device. One of a pair located in or attached to the wings on both sides of an aircraft. The primary purpose is to control the aircraft laterally or in a roll by creating unequal or opposing lifting forces on opposite sides of the aircraft.

AIMD—Aviation Intermediate Maintenance Department.

AIRFOIL—A structure or body, such as an aircraft wing or propeller blade, designed to provide lift/thrust when in motion relative to the surrounding air.

AIRSPEED—The speed of an aircraft, missile, rocket, or the like, relative to the air through which it flies.

ALLOY—A mixture with metallic properties composed of two or more elements, of which at least one is a metal.

ALTIMETER—An instrument for measuring altitude. It uses the change in atmospheric pressure with altitude to indicate the approximate elevation above a given point.

AMBIENT—Surrounding; adjacent to; next to. For example, ambient conditions are physical conditions of the immediate area, such as ambient temperature, ambient humidity, and ambient pressure

ANGLE OF ATTACK—The angle at which a body, such as an airfoil or fuselage, meets a flow or air.

ANNEAL—To heat and then cool.

ANNUNCIATOR—Electrically controlled signal board or indicator.

ANODIZE—To subject a metal to electrolytic action, as the anode of a cell, in order to coat it with a protective film.

ANTI-ICING—The prevention of ice formation upon an aircraft's surface or engines.

APEX—The uppermost point.

APRON—An area, ordinarily paved, for parking or handling aircraft.

ASCEND—To move or rise upward.

ASW—Antisubmarine warfare.

ATMOSPHERE—The body of air surrounding the earth. The atmospheric pressure at sea level is 14.7 pounds per square inch (psi).

ATTITUDE—The position or orientation of an aircraft, either in motion or at rest, as determined by the relationship between its axes and some reference line or plane or some fixed system of reference axes.

AUTOMATIC PARACHUTE RIPCORD RELEASE—A barometrically controlled device that mechanically or by explosive force actuates the parachute ripcord assembly and causes the parachute container to open at a preset altitude.

AUTOMATIC PILOT—A device or system that automatically controls the flight of an aircraft or guided missile.

AVGAS—Aviation gasoline for reciprocating engines.

AVIONICS—Electronics as applied to aviation.

AXIS—An imaginary line that passes through a body, about which the body rotates or may be assumed to rotate; for example, the horizontal axis, the lateral axis, and the longitudinal axis about which an aircraft rotates.

BERNOULLI'S PRINCIPLE—If a fluid flowing through a tube reaches a constriction, or narrowing of the tube, the velocity of fluid flowing through the constriction increases and the pressure decreases.

BRU—Bomb Rack Unit.

CAD—Cartridge Actuated Device.

CANOPY—A covering; for example, a cockpit canopy is a transparent covering for a cockpit.

CANTED DECK—The area of an aircraft carrier flight deck that is at an angle to the center line of the ship. The canted deck permits aircraft to be parked out of the way of landing aircraft.

CELSIUS—The temperature scale using the freezing point as zero and the boiling point as 100, with 100 equal divisions between, called degrees. A reading is usually written in the abbreviated form, for example, 75 °C. This scale was formerly known as the Centigrade scale, but was renamed Celsius in recognition of Andrew Celsius, the Swedish astronomer who devised the scale.

CHUTE—Abbreviated slang form of parachute.

CNO—Chief of Naval Operations.

COCKPIT—A compartment in the top of an aircraft fuselage for the pilot and other crew members.

COWLING—A removable cover or housing placed over or around an aircraft component or section, especially an engine.

DE-ICING—The breaking off or melting of ice from aircraft surfaces or fuel induction systems.

DENSITY—The weight per unit volume of a substance.

DESCENT—Relative to an aircraft, the downward movement, under control, from a higher to a lower altitude.

DRAG—The force that tends to hold an aircraft back. Drag is caused by the disruption of the airflow about the wings, fuselage (body), and all protruding objects on the aircraft.

DYE MARKER—A substance that, when placed in water, spreads out and colors the water immediately to make a spot readily visible from the air.

EJECTION SEAT—An emergency escape seat for propelling an occupant out and away from the aircraft by means of an explosive charge or rocket motor.

ELEVATOR—As applied to aircraft, a control surface, usually hinged to a horizontal stabilizer, that is used to control the aircraft about its lateral axis. As applied to aircraft carriers, elevators are used to move aircraft between the flight deck and hangar deck.

EMERGENCY KIT—A standard soft pack, high-speed soft pack, special kit, or rigid seat survival kit containing a raft and survival equipment needed by an aircrewman in case of emergency.

EMPENNAGE—The tail section of an aircraft, including the stabilizing and control surfaces.

ENERGY—The ability or capacity to do work.

ETA—Estimated time of arrival.

FACE CURTAIN—A sheet of heavy fabric, installed above an ejection seat, that is pulled down to trigger the ejection seat and to protect the pilot or crew member's face against wind blast.

FAIRING—A part or structure that has a smooth, streamlined outline, used to cover a nonstreamlined object.

FLAP—The tendency of a blade to rise with high-lift demands as it tries to screw itself upward into the air.

FLASH POINT—The temperature at which a substance, such as oil or fuel, will give off a vapor that will flash or burn momentarily when ignited.

FLIGHT CONTROL MECHANISM—The linkage that connects the control(s) in the cockpit with the flight control surface(s).

FORCE—The action of one body on another tending to change the state of motion of a body acted upon. Force is usually expressed in pounds.

FRC—Fleet Readiness Center.

FUSELAGE—The main or central structure of an aircraft that carries the crew, passengers, or other load.

FUZE—A term used for the mechanical or electrical device that initiates detonation of an explosive at a desired time.

GBU—Guided Bomb Unit.

GORE—The portions of the canopy located between adjacent radial seams and the vent and skirt hem. It consists of cloth sections sewn together.

GPS—Global Positioning System.

GROMMET—A metal eye and washer used to reinforce a hole in material; for example, grommets on container side flaps.

GSE—Ground Support Equipment.

GUIDED WEAPON—A weapon whose course may be altered inflight by a guidance control unit.

HARM—High-speed, Antiradiation Missile.

HE—High Explosive.

HORSEPOWER—A unit of power equal to the power necessary to raise 33,000 pounds 1 foot in 1 minute.

HOVERING—Maintaining a position above a fixed spot on the ground. A helicopter has the ability to remain in one spot in the air with little or no movement in any direction.

HUMIDITY—Moisture or water vapor in the air.

HYDRAULICS—The branch of mechanics that deals with the action or use of liquids forced through tubes and orifices under pressure to operate various mechanics.

INERTIA—The tendency of a body at rest to remain at rest, and a body in motion to continue to move at a constant speed along a straight line, unless the body is acted upon in either case by an unbalanced force.

JDAM—Joint Direct Attack Munition.

JETTISON—To throw or dump overboard; for example, to drop or eject fuel, tanks, or gear from an aircraft to lighten the load for emergency action.

JSOW—Joint Standoff Weapon.

LAG—The tendency of rotor blades to remain at rest during acceleration.

LANDING GEAR—The components of an aircraft that support and provide mobility for the aircraft on land, water, or other surfaces.

LATERAL AXIS—The pivot point about which the aircraft pitches.

LAU—Launch Adapter Unit (aircraft installed launcher).

LAUNCH—To release or send forth. For example, to launch aircraft from an aircraft carrier.

LEAD—The tendency of rotor blades to remain in motion during deceleration.

LEADING EDGE—The forward edge of an airfoil that normally meets the air first.

LGB—Laser-Guided Bomb.

LGTR—Laser Guided Training Round.

LHA—Amphibious Assault Ship (General Purpose).

LHD—Amphibious Assault Ship (Multipurpose).

LIFT—The force that acts in an upward direction to support the aircraft in the air. It counteracts the effects of weight. Lift must be greater than or equal to weight if flight is to be sustained.

LOADING— An operation that installs or stores airborne weapons on or in an aircraft.

LONGERON— A main structural member that runs along the length of an airplane body to the fuselage.

LONGITUDINAL—The lengthwise dimension; for example, the longitudinal axis of an aircraft runs lengthwise from the nose to the tail.

LOX—Liquid oxygen.

MIM—Maintenance Instruction Manual.

MOD—Model or Modification.

MONOCOQUE—An aircraft structure in which the stressed outer skin carries all or a major portion of the torsional and bending stress.

MRC—Maintenance Requirements Card.

MSDS—Material Safety Data Sheet.

MULTI-CLIMATE PROTECTION SYSTEM (MCPS)—A modular garment system composed of 12 pieces that can be mixed and matched to form 6 different individual layers. The garment system can be worn in conjunction with flight suits and aviation flight equipment in a broad range of climate conditions by adding or removing layers that provide flame resistance, moisture management, thermal wind, and water protection.

NACELLE—A streamlined structure, housing, or compartment on an aircraft; for example, a housing for an engine.

NAMP—The Naval Aviation Maintenance Program.

NAS—Naval air station.

NATO—North Atlantic Treaty Organization.

NATOPS—Naval Air Training and Operating Procedures Standardization.

NBC—Nuclear Biological Chemical.

NEWTON'S FIRST LAW OF MOTION—According to Newton's first law of motion (inertia), an object at rest will remain at rest, or an object in motion will continue in motion at the same speed and in the same direction, until an outside force acts on it. For an aircraft to taxi or fly, a force must be applied to it. It will remain at rest without an outside force. Once the aircraft is moving, another force must act on it to bring it to a stop. It will continue in motion without an outside force. This willingness of an object to remain at rest or to continue in motion is referred to as inertia.

NEWTON'S SECOND LAW OF MOTION—The second law of motion (force) states that if an object moving with uniform speed is acted upon by an external force, the change of motion (acceleration) will be directly proportional to the amount of force and inversely proportional to the mass of the object being moved. The motion will take place in the direction in which the force acts. Simply stated, this means that an object being pushed by 10 pounds of force will travel faster than it would if it were pushed by 5 pounds of force. A heavier object will accelerate more slowly than a lighter object when an equal force is applied.

NEWTON'S THIRD LAW OF MOTION—The third law of motion (action and reaction) states that for every action (force) there is an equal and opposite reaction (force). This law can be demonstrated with a balloon. If you inflate a balloon with air and release it

without securing the neck, as the air is expelled the balloon moves in the opposite direction of the air rushing out of it.

OAT—Outside air temperature.

PARACHUTE—A device that offers resistance to the air, thereby decreasing the velocity of a descending body to permit landing at a suitable rate of descent.

PARACHUTE ASSEMBLY—A complete parachute, including the canopy assembly, container assembly, harness assembly, and riser/lift web assembly.

PITCH—The rotational movement of an aircraft about its lateral axis. Pitch can best be described as the up and down motion of the nose of the aircraft.

PRESSURE—The amount of force distributed over each unit of area. Pressure is expressed in pounds per square inch (psi).

PYLON—A structure or strut that supports an engine pod, external tank, etc., on an aircraft.

RADAR—A device that uses reflected radio waves for the detection of objects.

RADOME—A dome housing for a radar antenna on an aircraft.

RAMAIR—Air forced into an air intake or duct by the motion of the intake or duct through the air.

RATE OF DESCENT—The speed that a parachute descends through the air. The rate varies according to atmospheric pressure, weight of load, movement of air (updraft and down draft), and the size, design, and condition of canopy.

RESCUE NET—A net that resembles a conically shaped birdcage with an opening on one side. The net weighs approximately 20 pounds and is bright yellow for high visibility.

RESCUE SEAT—A buoyant aluminum device consisting of a hollow flotation chamber and a three-pronged seat with prongs 120 degrees apart.

RESCUE STROP—A device used to assist personnel performing rescue work from a helicopter over water or land. Also known as the horse collar and rescue sling.

RESERVE PARACHUTE—A chest-type parachute attached to the harness of a training or test parachute in addition to the back type. It has no pilot parachute. It is used in case the main parachute fails to open properly or sustains damage that will cause an unsafe rate of descent.

RPM—Revolutions per minute.

RUDDER—An upright control surface that is deflected to control yawing movement about the vertical axis of an aircraft.

SAR—Search and Rescue.

SE—Support equipment. All of the equipment on the ground needed to support aircraft in a state of readiness for flight.

SELECTOR VALVE—A valve used to control the flow of fluid to a particular mechanism, as in a hydraulic system.

SERVICING—The refilling of an aircraft with consumables such as fuel, oil, and compressed gases to predetermined levels, pressures, quantities, or weights.

SLAM-ER—Stand-off Land Attack Missile – Expanded Response.

SLIPSTREAM—The stream of air driven backward by a rotating propeller.

SPECIFIC GRAVITY—The ratio of the weight of a given volume of a substance to the weight of an equal volume of some standard substance, such as water.

STRUT—A type of supporting brace; a rigid member or assembly that bears compression loads, tension loads, or both, such as a landing gear to transmit the load from the fuselage of the aircraft.

TAB—A small auxiliary airfoil set into the trailing edge of an aircraft control surface and used to trim, to move, or to assist in moving the larger surface.

TD—Target Detector.

TENSION—A force or pressure that exerts a pull or resistance.

THRUST—The forward-direction pushing or pulling force developed by an aircraft engine or rocket engine.

TORQUE—A turning or twisting force.

TOW—Tube Launched Optically Tracked Wire Guided Missile.

TRAILING EDGE—The aft edge of an airfoil. The edge over which the airflow normally passes last.

VELOCITY—The rate of motion in a particular direction.

VERTICAL AXIS—The axis that runs from the top to the bottom of an aircraft. It runs perpendicular to both the roll and pitch axes. The movement associated with this axis is yaw.

VISCOSITY—The internal resistance of a liquid that tends to prevent it from flowing.

WAVE OFF—An act or instance of refusing an aircraft permission to land in an approach, requiring another attempt. Also, the signal given an aircraft in such refusal.

WEIGHT—The force of gravity acting downward on the aircraft and everything in the aircraft, such as crew, fuel, and cargo.

YAW—The rotational movement of an aircraft about its vertical axis. Yaw is best described as the change in aircraft heading to the right or left of the primary direction of an aircraft.

APPENDIX II

REFERENCES

NOTE

Although the following references were current when this NRTC was published, their continued currency cannot be assured. When consulting these references, keep in mind that they may have been revised to reflect new technology or revised methods, practices, or procedures; therefore, you need to ensure that you are studying the latest references.

If you find an incorrect or obsolete reference, please use the Rate Training Manual User Update Form provided at the end of each chapter to contact the CNATT Rate Training Manager.

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Basic Military Requirements, NAVEDTRA 14325, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, February 2002.

United States Naval Aviation 1910-1995, Naval Historical Center, Department of the Navy, Washington, DC, 1997.

United States Naval Aviation 1996-2011, Naval Historical Center, Department of the Navy, Washington, DC, 2011.

Manual of Navy Enlisted Manpower and Personnel Classification and Occupational Standards, NAVPERS 18068-F, Department of the Navy, Bureau of Naval Personnel, Washington, DC, July 2012.

Chapter 2

Basic Military Requirements, NAVEDTRA 14325, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, February 2002.

Naval Aviation Maintenance Program (NAMPS), COMNAVAIRFORINST 4790.2 series, Naval Air Systems Command, Patuxent River, MD, May 2012.

Aviation Maintenance Ratings, NAVEDTRA 14022, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, November 2003.

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United States Naval Aviation 1910-1995, Naval Historical Center, Department of the Navy, Washington, DC, 1997.

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Fundamentals of Aviation and Space Technology, Institute of Aviation, University of Illinois, Savoy, IL, 1974.

Chapter 4

Aviation Structural Mechanic (AM), NAVEDTRA 14315A, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, March 2011.

General Manual for Structural Repair, NAVAIR 01-1A-1, Naval Air Technical Services Facility, Philadelphia, PA, November 2006.

Chapter 5

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Chapter 6

Aviation Structural Mechanic (AM), NAVEDTRA 14315A, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, March 2011.

Chapter 7

Aviation Machinist's Mate 3 & 2, NAVEDTRA 14008, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, January 2004.

Chapter 8

Aviation Electrician's Mate (AE), NAVEDTRA 14009A, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, March 2011.

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Chapter 9

Aviation Ordnanceman, NAVEDTRA 14313A, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, March 2011.

Chapter 10

Aviation Support Equipment Technician (AS), NAVEDTRA 14329, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, July 2002.

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Chapter 11

Aviation Boatswain's Mate H, NAVEDTRA 14353, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, November 2003.

Aviation Maintenance Ratings, NAVEDTRA 14022, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, November 2003.

Aircraft Signals, NATOPS Manual, NAVAIR 00-80T-113, Naval Air Systems Command, December 2001.

CV NATOPS Manual, NAVAIR 00-80T-105, Naval Air Systems Command, May 2007.

LHD/LHA/LPD NATOPS Manual, NAVAIR 00-80T-106, Naval Air Systems Command, May 2009. *CVN FLIGHT/HANGAR DECK NATOPS Manual*, NAVAIR 00-80T-120, Naval Air Systems Command, December 2010.

Chapter 12

Aircrew Survival Equipmentman (PR), NAVEDTRA 14218A, Naval Education and Training Program Management Support Activity, Pensacola, FL, January 2012.

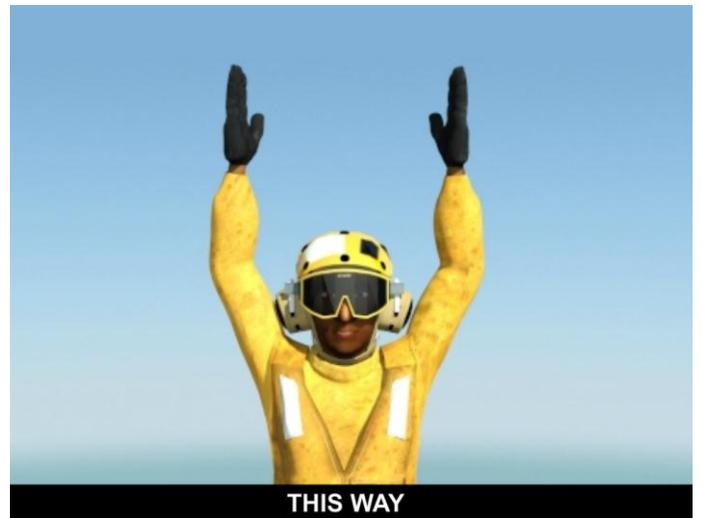
Chapter 13

Aviation Boatswain's Mate H, NAVEDTRA 14353, Naval Education and Training Professional Development and Technology Center (NETPDTC), Pensacola, FL, November 2003.

Aircraft Firefighting and Rescue Manual, NATOPS, U.S. Navy, NAVAIR 00-80R-14, Naval Sea Systems Command, May 2011.

APPENDIX III

HAND SIGNALS







URNS WHILE BACKING (TAIL TO RIGHT)



LEARANCE FOR PERSONNEL TO APPROACH AIRCRAFT



PERSONNEL APPROACHING THE AIRCRAFT



INSERT CHOCKS



REMOVE CHOCKS



INSTALL DOWN LOCKS/UNDERCARRIAGE PINS



REMOVE DOWN LOCKS/UNDERCARRIAGE PINS



CONNECT GROUND ELECTRICAL POWER SUPPLY



DISCONNECT GROUND ELECTRICAL POWER SUPPLY



START ENGINE(S)



SLOW DOWN ENGINE(S) ON INDICATED SIDE



CUT ENGINE(S)





CLOSE WEAPON BAY(S) DOOR(S)



TAKE OFF



FIRE



ENGAGE NOSEGEAR STEERING



DISENGAGE NOSEGEAR STEERING



LOWER WING FLAPS



RAISE WING FLAPS



DOWN HOOK



UP HOOK



OPEN AIR BRAKES



CLOSE AIR BRAKES



TILLER BAR/STEERING ARM IN PLACE



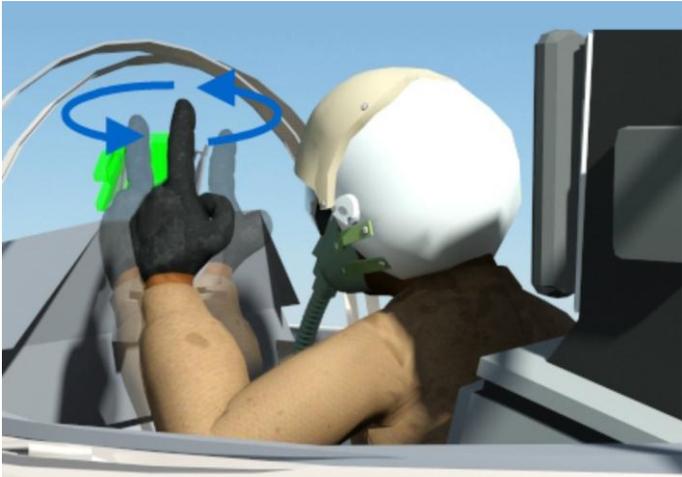
REMOVE TIEDOWNS (director)



INSTALL TIEDOWNS (director)



TIEDOWNS IN PLACE (director)



ENGINE RUNUP (pilot)



HOT BRAKES



BRAKE FAILURE (tailhook equipped aircraft) (pilot)



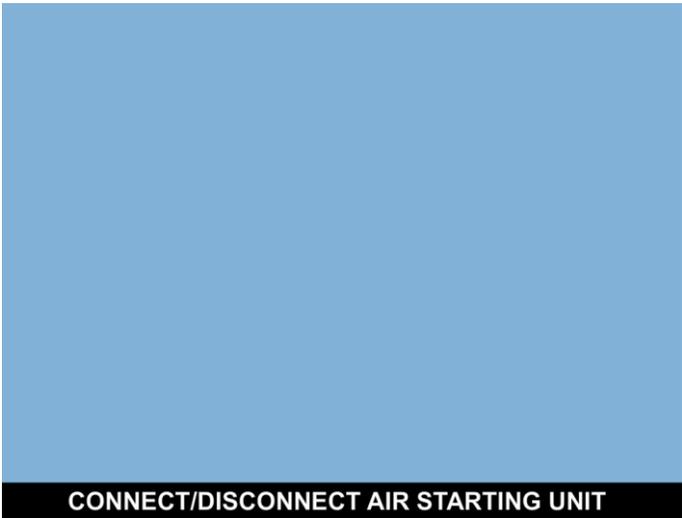
LIGHTS



I HAVE COMMAND



OPEN COWL FLAPS



CONNECT/DISCONNECT AIR STARTING UNIT



START AIRCRAFT AUXILIARY POWER UNIT



STOP AIRCRAFT AUXILIARY POWER UNIT



GROUND REFUELING ALL TANKS, NO EXTERNAL POWER



GROUND REFUELING, INTERNAL TANKS ONLY, NO EXTERNAL POWER



EXTEND/RETRACT AIR REFUELING PROBE OR RAM AIR TURBINE



NEED AIRCRAFT STARTING UNIT

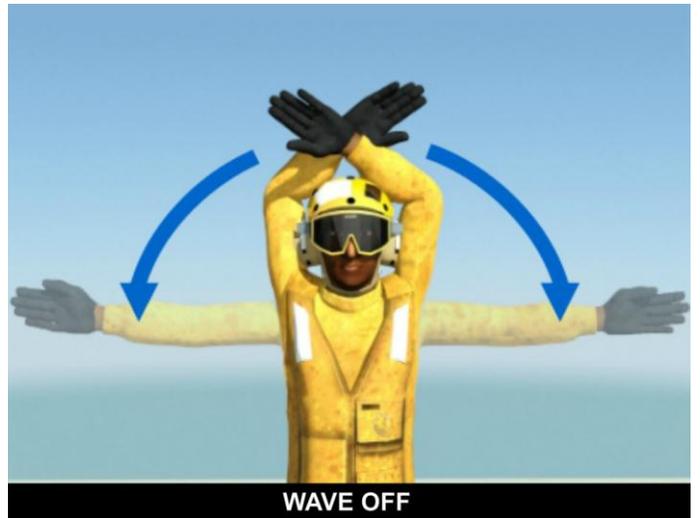
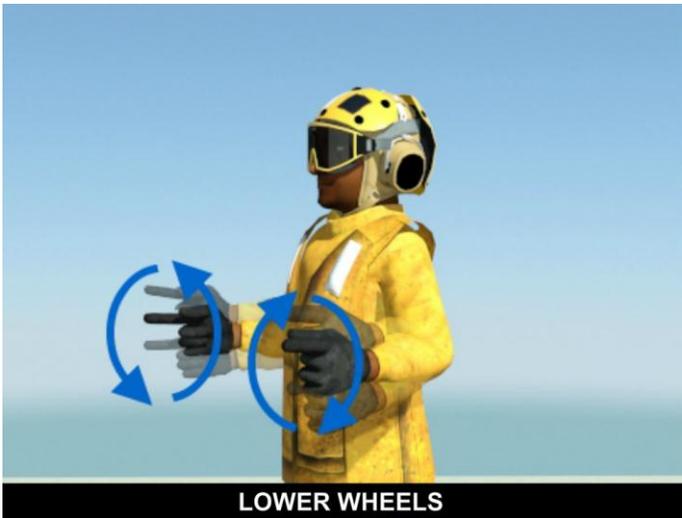


FUEL DISCHARGE DURING START



AIR WATER INJECTION (AV-8)







LAND



DROOP STOPS OUT



DROOP STOPS IN



REMOVE BLADE TIEDOWNS



ENGAGE ROTOR(S)



HOOK UP LOAD



RELEASE LOAD



LOAD HAS NOT BEEN RELEASED



WINCH UP



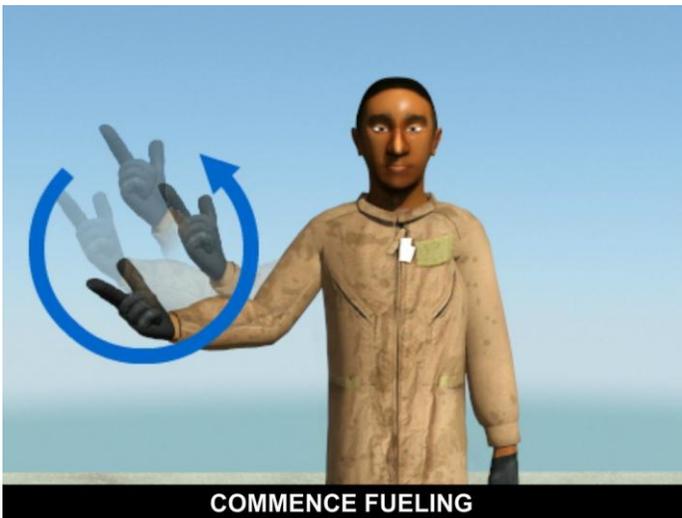
WINCH DOWN



CUT CABLE



SPREAD PYLON





DESIRE TO MOVE OVER DECK AND RETURN HOSE



EXECUTE EMERGENCY BREAKAWAY



READY TO START ENGINE (pilot)



READY TO ENGAGE ROTORS (pilot)



READY TO ENGAGE ROTORS (LSE)



READY FOR TAKEOFF (pilot)



READY FOR TAKEOFF (LSE)



REMOVE TIEDOWNS (LSE)



REMOVE CHOCKS AND TIEDOWNS (pilot)



INSERT CHOCKS AND TIEDOWNS (pilot)



TIEDOWNS REMOVED (deck crew)



INSTALL TIEDOWNS (LSE)



DISENGAGE ROTORS (LSE)



HOOK NOT DOWN/UP



SWING TAIL LEFT



SWING TAIL RIGHT



HOLD POSITION



ANTENNA IN DOWN POSITION

APPENDIX IV

Answers to End of Chapter Questions

Chapter 1 – Mission and History of Naval Aviation

| | |
|------|---|
| 1-1. | A |
| 1-2. | C |
| 1-3. | C |
| 1-4. | A |
| 1-5. | D |

| | |
|-------|---|
| 1-6. | B |
| 1-7. | D |
| 1-8. | C |
| 1-9. | A |
| 1-10. | B |

| | |
|-------|---|
| 1-11. | D |
| 1-12. | B |
| 1-13. | C |
| 1-14. | C |
| 1-15. | A |

Chapter 2 – Organization of Naval Aviation

| | |
|-------|---|
| 2-1. | A |
| 2-2. | C |
| 2-3. | C |
| 2-4. | B |
| 2-5. | D |
| 2-6. | B |
| 2-7. | B |
| 2-8. | A |
| 2-9. | A |
| 2-10. | D |
| 2-11. | C |
| 2-12. | B |
| 2-13. | A |

| | |
|-------|---|
| 2-14. | D |
| 2-15. | C |
| 2-16. | B |
| 2-17. | D |
| 2-18. | C |
| 2-19. | A |
| 2-20. | D |
| 2-21. | B |
| 2-22. | D |
| 2-23. | C |
| 2-24. | C |
| 2-25. | A |
| 2-26. | C |

| | |
|-------|---|
| 2-27. | D |
| 2-28. | B |
| 2-29. | B |
| 2-30. | C |
| 2-31. | C |
| 2-32. | D |
| 2-33. | A |
| 2-34. | B |
| 2-35. | D |
| 2-36. | C |
| 2-37. | B |
| 2-38. | A |
| 2-39. | A |

Chapter 3 – Principles of Flight

| | |
|------|---|
| 3-1. | C |
| 3-2. | B |
| 3-3. | A |
| 3-4. | D |
| 3-5. | C |
| 3-6. | D |
| 3-7. | B |

| | |
|-------|---|
| 3-8. | A |
| 3-9. | B |
| 3-10. | C |
| 3-11. | D |
| 3-12. | A |
| 3-13. | D |
| 3-14. | B |

| | |
|-------|---|
| 3-15. | A |
| 3-16. | B |
| 3-17. | A |
| 3-18. | B |
| 3-19. | A |
| 3-20. | C |

Chapter 4 – Aircraft Basic Construction

| | |
|------|---|
| 4-1. | D |
| 4-2. | D |
| 4-3. | C |

| | |
|------|---|
| 4-4. | C |
| 4-5. | B |
| 4-6. | A |

| | |
|------|---|
| 4-7. | A |
| 4-8. | C |
| 4-9. | D |

Chapter 5 – General Aircraft Maintenance

| | |
|-------|---|
| 5-1. | B |
| 5-2. | D |
| 5-3. | D |
| 5-4. | B |
| 5-5. | C |
| 5-6. | D |
| 5-7. | A |
| 5-8. | D |
| 5-9. | A |
| 5-10. | D |
| 5-11. | B |

| | |
|-------|---|
| 5-12. | D |
| 5-13. | C |
| 5-14. | B |
| 5-15. | B |
| 5-16. | D |
| 5-17. | D |
| 5-18. | C |
| 5-19. | B |
| 5-20. | D |
| 5-21. | A |
| 5-22. | A |

| | |
|-------|---|
| 5-23. | A |
| 5-24. | B |
| 5-25. | A |
| 5-26. | B |
| 5-27. | C |
| 5-28. | D |
| 5-29. | B |
| 5-30. | C |
| 5-31. | A |
| 5-32. | C |

Chapter 6 – Aircraft Hardware

| | |
|------|---|
| 6-1. | D |
| 6-2. | A |
| 6-3. | A |
| 6-4. | B |

| | |
|------|---|
| 6-5. | D |
| 6-6. | C |
| 6-7. | C |
| 6-8. | A |

| | |
|-------|---|
| 6-9. | A |
| 6-10. | A |
| 6-11. | B |

Chapter 7 – Aircraft Power Plants

| | |
|------|---|
| 7-1. | B |
| 7-2. | C |
| 7-3. | A |
| 7-4. | D |
| 7-5. | B |
| 7-6. | C |
| 7-7. | A |

| | |
|-------|---|
| 7-8. | D |
| 7-9. | C |
| 7-10. | B |
| 7-11. | B |
| 7-12. | C |
| 7-13. | B |
| 7-14. | A |

| | |
|-------|---|
| 7-15. | D |
| 7-16. | B |
| 7-17. | D |
| 7-18. | A |
| 7-19. | B |
| 7-20. | B |

Chapter 8 – Aircraft Avionics

| | |
|------|---|
| 8-1. | D |
| 8-2. | A |
| 8-3. | A |
| 8-4. | C |
| 8-5. | B |
| 8-6. | C |

| | |
|-------|---|
| 8-7. | B |
| 8-8. | B |
| 8-9. | D |
| 8-10. | C |
| 8-11. | A |
| 8-12. | C |

| | |
|-------|---|
| 8-13. | B |
| 8-14. | A |
| 8-15. | C |
| 8-16. | B |
| 8-17. | D |
| 8-18. | C |

Chapter 9 – Aircraft Ordnance

| | |
|-------|---|
| 9-1. | C |
| 9-2. | D |
| 9-3. | B |
| 9-4. | D |
| 9-5. | B |
| 9-6. | A |
| 9-7. | C |
| 9-8. | C |
| 9-9. | D |
| 9-10. | D |
| 9-11. | A |

| | |
|-------|---|
| 9-12. | B |
| 9-13. | A |
| 9-14. | D |
| 9-15. | A |
| 9-16. | A |
| 9-17. | A |
| 9-18. | B |
| 9-19. | D |
| 9-20. | B |
| 9-21. | A |
| 9-22. | B |

| | |
|-------|---|
| 9-23. | C |
| 9-24. | B |
| 9-25. | C |
| 9-26. | C |
| 9-27. | B |
| 9-28. | A |
| 9-29. | C |
| 9-30. | B |
| 9-31. | D |
| 9-32. | B |
| 9-33. | C |

Chapter 10 – Support Equipment

| | |
|-------|---|
| 10-1. | B |
| 10-2. | C |
| 10-3. | D |
| 10-4. | B |

| | |
|-------|---|
| 10-5. | C |
| 10-6. | A |
| 10-7. | C |
| 10-8. | D |

| | |
|--------|---|
| 10-9. | D |
| 10-10. | A |
| 10-11. | B |
| 10-12. | B |

Chapter 11 – Line Operations and Safety

| | |
|-------|---|
| 11-1. | A |
| 11-2. | C |
| 11-3. | B |
| 11-4. | D |
| 11-5. | A |
| 11-6. | C |
| 11-7. | A |
| 11-8. | D |
| 11-9. | B |

| | |
|--------|---|
| 11-10. | D |
| 11-11. | B |
| 11-12. | A |
| 11-13. | C |
| 11-14. | A |
| 11-15. | D |
| 11-16. | D |
| 11-17. | A |
| 11-18. | B |

| | |
|--------|---|
| 11-19. | B |
| 11-20. | B |
| 11-21. | C |
| 11-22. | D |
| 11-23. | C |
| 11-24. | D |
| 11-25. | B |

Chapter 12 – Aircrew Survival Equipment

| | |
|-------|---|
| 12-1. | A |
| 12-2. | D |
| 12-3. | B |
| 12-4. | D |
| 12-5. | D |

| | |
|--------|---|
| 12-6. | B |
| 12-7. | B |
| 12-8. | A |
| 12-9. | A |
| 12-10. | D |

| | |
|--------|---|
| 12-11. | B |
| 12-12. | A |
| 12-13. | C |
| 12-14. | B |
| 12-15. | D |

Chapter 13 – Crash Rescue and Firefighting

| | |
|-------|---|
| 13-1. | A |
| 13-2. | C |
| 13-3. | B |
| 13-4. | D |
| 13-5. | B |
| 13-6. | B |
| 13-7. | D |

| | |
|--------|---|
| 13-8. | C |
| 13-9. | B |
| 13-10. | C |
| 13-11. | C |
| 13-12. | D |
| 13-13. | A |
| 13-14. | A |

| | |
|--------|---|
| 13-15. | C |
| 13-16. | A |
| 13-17. | D |
| 13-18. | B |
| 13-19. | B |
| 13-20. | D |