

READING REGIONAL AIRPORT GROUND VEHICLE OPERATIONS TRAINING MANUAL

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Reading Regional Airport Ground Vehicle Operations Training Manual

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Section 1. Airport Driving Rules and Regulations Oct 2014

1.1. Authority for Implementation of Rules and Regulations. The Reading Regional Airport operates under the authority of the Reading Regional Airport Authority, which has granted the Airport Manager the authority to establish rules and regulations for the management and supervision of its airport affairs.

1.2. Applicability. This regulation applies to all users of, and persons on any portion of, the property owned or controlled by the Reading Regional Airport. No persons are exempt from airport operating training requirements for operating a vehicle on the airside of an airport. Tenant organizations shall be responsible for the dissemination of, accessibility to, and compliance with these rules and regulations by their employees.

It is the intent of the Reading Regional Airport to keep vehicular and pedestrian activity on the airside to a minimum. These Rules and Regulations may be amended, changed, or modified by the Reading Regional Airport as necessary. Vehicles shall be limited to those necessary to support aircraft services including emergency and maintenance of the airport facilities.

1.3. Definitions. The following terms are defined as indicated in this section for the purpose of this Ground Vehicle Operation Training Manual.

- 1.3.1. Accident**—a collision between one aircraft or vehicle and another aircraft, vehicle, person, or object that results in property damage, personal injury, or death.
- 1.3.2. Air Carrier Ramp**—a ramp for air carriers. Only authorized personnel and vehicles may operate on this ramp. Private vehicles and aircraft are prohibited from operating on it.
- 1.3.3. Airside**—those areas of an airport that support aircraft activities.
- 1.3.4. Airport Traffic Control Tower (ATCT)**—a service operated by an appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. **Note:** RDG/ATCT is in operations from 0600 until 0000 local time. During the hours the ATCT is not operational, the Common Traffic Advisory Frequency (CTAF, see 1.3.9) is used for all traffic movements at RDG including ground vehicles.
- 1.3.5. Aircraft**—a device that is used or intended to be used for flight in the air. Both helicopter and fixed wing aircraft operate from RDG.
- 1.3.6. Airport**— Airport Facility, owned and operated by the Reading Regional Airport, including all improvements and equipment existing or to be developed.
- 1.3.7. Airport Operations Area (AOA)**- the area located inside the airport perimeter fence that includes aprons, tie-down areas (Non-Movement Areas) as well as taxiways and runways (Movement Areas).
- 1.3.8. Apron or Ramp**—a defined area on an airport or heliport intended to accommodate aircraft for the purposes of parking, loading and unloading passengers or cargo, refueling, or maintenance.
- 1.3.9. Common Traffic Advisory Frequency (CTAF)**—radio frequency designed for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating ATCT or when the tower is closed. The CTAF may be a UNICOM, MULTICOM, FSS, or tower frequency and is identified in appropriate aeronautical publications. (See below

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for definitions of UNICOM, MULTICOM, and FSS.). **Note: RDG/ATCT is in operations from 0600 until 0000 local time. During the hours the ATCT is not operational, the Common Traffic Advisory Frequency (CTAF Frequency - 119.9) is used for all traffic movements at RDG including ground vehicles.**

- 1.3.10. Designated Trainer** – The Airport Manager shall designate one individual from each airside tenant/FBO to conduct ground vehicle training for their employees. The designated trainer will receive initial training from the airport operator and be required to attend annual recurrent training to ensure the GVOTM curriculum is being presented as outlined. Upon completion of this training the Designated Trainer will be responsible for training their employees in preparation for the written and practical test to obtain driving privileges at RDG. A record of each employee's initial and recurrent training shall be maintained by each airside tenant/ FBO and a copy of the Training Record form found on Page 21, shall be submitted to the Airport Manager along with the airport access ID badge application.
- 1.3.11. EMAS** – Engineered Material Arresting System - crushable concrete blocks located at the approach end of Rwy 31. This EMAS is designed as a Runway Safety Area (RSA) to stop an aircraft that is unable to stop while landing Rwy 13. **DO NOT** drive any vehicle on this EMAS bed as it will damage the blocks.
- 1.3.12. Fixed-Based Operator (FBO)**—a person, firm, or organization engaged in a business that provides a range of basic services to general aviation. Services may include the sale and dispensing of fuel, line services, aircraft parking and tie-down, pilot and passenger facilities, airframe and power plant maintenance, aircraft sales and rental, and pilot instruction.
- 1.3.13. Flight Service Station (FSS)**—air traffic facilities that provide pilot briefings, en route communications, and visual flight rules search and rescue services; assist lost aircraft and aircraft in emergency situations; relay air traffic control clearances; originate Notices to Airmen; broadcast aviation weather and National Airspace System information; receive and process instrument flight rules flight plans; and monitor NAVAIDS. In addition, at selected locations, FSSs provide En Route Flight Advisory Service (Flight Watch), take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flights.
- 1.3.14. Foreign Object Debris (FOD)**—debris that can cause damage to aircraft engines, tires, or skin from rocks, trash, or the actual debris found on runways, taxiways, and aprons.
- 1.3.15. General Aviation (GA)**—that portion of civil aviation that encompasses all facets of aviation except air carriers holding a certificate of public convenience and necessity.
- 1.3.16. Ground Vehicle**—all conveyances, except aircraft, used on the ground to transport persons, cargo, fuel, or equipment.
- 1.3.17. ILS Critical Area**—an area provided to protect the signals of the localizer and glide slope.
- 1.3.18. Incursion**—any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss separation with an aircraft taking off, intending to take off, landing, or intending to land.
- 1.3.19. Jet Blast**—jet engine exhaust or propeller wash (thrust stream turbulence).
- 1.3.20. Law Enforcement Officer (LEO)**—any person vested with police power of arrest under Federal, state, county, or city authority and identifiable by uniform, badge, and other indication of authority.

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- 1.3.21. Light Gun**—a hand-held, directional light-signaling device that emits a bright narrow beam of white, green, or red light, as selected by the tower controller. The color and type of light transmitted can be used to approve or disapprove anticipated pilot or vehicle actions where radio communication is not available. The light gun is used for controlling traffic operating in the vicinity of the airport and on the airport movement area.
- 1.3.22. Mobile Fueler**—a vehicle owned and/or operated by authorized agents to pump and dispense Jet A and 100 LL fuel at (AIRPORT). This may include fuel tankers, in-to-plane fueling pumpers, and hydrant carts.
- 1.3.23. Movement Area, Tier 1**—the runways, taxiways, and other areas of an airport that aircraft use for taxiing, takeoff, and landing, exclusive of loading ramps and parking areas, and that are under the control of an air traffic control tower.
- 1.3.24. MULTICOM**—a mobile service not open to public correspondence used to provide communications essential to conduct the activities being performed or directed from private aircraft.
- 1.3.25. Non-Movement, Tier 2 Areas**—taxiways, aprons, and other areas not under the control of air traffic or at airports without an operating airport traffic control tower.
- 1.3.26. Operator**—any person who is in actual physical control of an aircraft or a motor vehicle.
- 1.3.27. Owner**—a person who holds the legal title of an aircraft or a motor vehicle.
- 1.3.28. Recurrent Training** — is required every 12 calendar months in order to maintain access to the Airports Operations Area (AOA). This training is required for any personnel working in the movement and non-movement areas. Failure to receive annual recurrent training will result in revocation of access to the AOA.
- 1.3.29. Restricted Areas**—areas of the airport posted to prohibit or limit entry or access by the general public. All areas other than public areas.
- 1.3.30. Runway**—a defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.
- 1.3.31. Runway in Use or Active Runway**—any runway or runways currently being used for takeoff or landing. When multiple runways are used, they are all considered active runways.
- 1.3.32. Runway Safety Area**—a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.
- 1.3.33. Secured Area** —Based on the Transportation Security Administration (TSA) regulations as adopted in the Airport Security Plan, this is a sterile area located on the main terminal ramp for air carrier operations. The terminal apron Secured Area is outlined with a large white line. Only airport personnel who have received Secured Area ID Badges may enter this area during air carrier charter operations. The Secured Area is only active during air carrier charter operations on weekends or special occasions.
- 1.3.34. Taxiways**—those parts of the airside designated for the surface maneuvering of aircraft to and from the runways and aircraft parking areas.

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- 1.3.35. **Tier 1** –Full AOA Movement Area access includes training curriculum including written and practical test.
 - 1.3.36. **Tier 2** – Non-Movement Area access only includes training curriculum but only written not practical test.
 - 1.3.37. **Tie Down Area**—an area used for securing aircraft to the ground.
 - 1.3.38. **Uncontrolled Airport**—an airport without an operating airport traffic control tower or when airport traffic control tower is not operating.
 - 1.3.39. **UNICOM**—a non-Federal communication facility that may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.
 - 1.3.40. **Vehicle Service Road**—a designated roadway for vehicles in a non-movement area.
 - 1.3.41. **Wake Turbulence**—phenomenon resulting from the passage of an aircraft through the atmosphere. The term includes vortices, thrust stream turbulence, jet blast, jet wash, propeller wash, and rotor wash both on the ground and in the air.
- 1.4. **Severability.** If any section, subsection, subdivision, paragraph, sentence, clause, or phrase of these Rules and Regulations or any part thereof is for any reason held to be unconstitutional, invalid, or ineffective by any court of competent jurisdiction or other competent agency, such decision will not affect the validity or effectiveness of the remaining portions of these Rules and Regulations.
- 1.5. **Violation of Rules—Penalties and Suspension of Driving Privileges.** Any person, who does not comply with any of the provisions of these Rules and Regulations, or any lawful order issued pursuant thereto, will be subject to progressive penalties for repeat violations. These penalties may include denied use of the Airport by (OPERATOR) in addition to the penalties described pursuant to Federal, state, or local authorities.
- 1.5.1. Penalties for failure to comply with the Airside Vehicular Traffic Regulations shall consist of written warnings, suspension of airside driving privileges, and/or revocation of airside driving privileges. Receipt of two (2) written warnings by an operator of a vehicle in any 12-month period will automatically result in suspension of airside driving privileges. Receipt of three (3) written warnings in any 12 month period will result in revocation of airside driving privileges.
 - 1.5.2. Based on an evaluation of the circumstances or the severity of a particular incident or incidents, the Reading Regional Airport Authority reserves the exclusive right to assess any of the above mentioned penalties it deems appropriate at any time to any individual authorized to operate a vehicle on the airside without regard to prior operating history.

Suspension of airside driving privileges shall be assessed based on severity of each incident and a review with the individual's supervisor/employer.
 - 1.5.3. The Reading Regional Airport Authority will provide a copy of all written warnings issued to an operator to the local manager of the company owning or in possession and control of the vehicle or vehicles involved in the violation(s).
- 1.6 **Remedial Training** – will be required by the Reading Regional Airport Authority of any individual involved in a runway incursion or other vehicle incident.

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1.7. Driver Regulations on the Airside of an Airport.

1.7.1. Vehicle Operator Requirements.

1. All applicants must satisfactorily complete the applicable driver's training class before receiving an airside authorization as well as annual recurrent training every 12 consecutive calendar months. Failure to complete 12 consecutive month recurrent training will result in revocation of AOA access. Upon receipt of updated recurrent training the individual's access will be re-instated.
2. All applicants (Movement, Tier 1 and Non- Movement, Tier 2 Areas) must pass the written test with a grade of at least 90 percent. Applicants who do not pass the written test may retake the test after additional study and a one (1) day period.
3. Applicants for Movement Area, Tier 1 driving privileges shall be required to successfully complete an airside practical test by a designated representative of the Reading Regional Airport. This will include recognition and knowledge of all airfield markings, signage, and communication procedures. Any applicant who fails the written and or practical test will not be issued and airport ID badge and will not be authorized to operate any vehicles on the AOA.
4. No vehicle shall be operated on the airside unless—
 - a. The driver is authorized to operate the class of vehicle by an appropriate state-licensing agency and has received the airport's Ground Vehicle Operations Training as outlined in this manual.
 - b. The driver properly displays an approved, airport-issued ID card.
5. No person operating or driving a vehicle on any aircraft ramp shall exceed a speed greater than 15 miles per hour. Factors including, but not limited to, weather and visibility shall be taken into consideration when determining safe operating speed.
6. No vehicle shall pass another ground vehicle in a designated vehicle roadway.
7. No vehicle shall pass between an aircraft and passenger terminal or passenger lane when the aircraft is parked at a gate position except those vehicles servicing the aircraft. All other vehicles must drive to the rear of the aircraft and shall pass no closer than 10 feet from any wing or tail section.
8. Moving aircraft and passengers enplaning or deplaning aircraft shall have the right-of-way at all times over vehicular traffic. Vehicle drivers must yield the right-of-way.
9. No vehicle operator shall enter the airside unless authorized by the Reading Regional Airport Authority, by issuance of a gate access card, or unless the vehicle is properly escorted. Note: Fuel vehicles, trash trucks, and contractor vehicles and operators must be escorted at all time while in the Airport Operations Area (AOA) as required by TSA regulation 1542 and FAA FAR 139 requirements.
10. No vehicle operator shall enter the movement area—
 - a. Without first obtaining clearance from the ATCT to enter the movement area;
 - b. Unless equipped with an operable two-way radio in communication with the ATCT;
or
 - c. Unless escorted by a Reading Regional Airport vehicle and as long as the vehicle remains under the control of the escort vehicle.

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11. No person shall operate any motor vehicle that is in such physical or mechanical condition as to endanger persons or property or that the Reading Regional Airport Authority considers an endangerment.
12. No person shall operate any vehicle in an unsafe manner as to allow injury to the operator, vehicle, or surrounding personnel and equipment.
13. A vehicle guide person is required whenever the vision of the vehicle operator is restricted.
14. No fuel truck shall be brought into, stored, or parked within 50 feet of a building. Fuel trucks must not be parked within 10 feet from other vehicles. Note: NFPA 407, Chapter 5 Section 5.18.
15. Container carriers and tugs shall tow no more carts, pods, or containers than are practical, under control, tracking properly, and safe.
16. When not serving aircraft or undertaking their intended functions, ramp vehicles and equipment shall be parked only in approved areas.
17. No person shall park a vehicle in an aircraft parking area, safety area, or in a manner that obstructs or interferes with operations in the aircraft movement area or apron area.
18. No person shall park, or leave unattended, vehicles or other equipment that interfere with the use of a facility by others or prevent movement or passage of aircraft, emergency vehicles, or other motor vehicles or equipment.
19. No person shall park a vehicle or equipment within 25 feet of a fire hydrant or in a manner that prohibits a vehicle from accessing the fire hydrant.
20. No person shall operate a vehicle or other equipment within the airside under the influence of alcohol or any drug that impairs, or may impair, the operator's abilities.
21. Each vehicle operator using an airport perimeter (security) gate shall ensure the gate closes behind the vehicle prior to leaving the vicinity of the gate. The vehicle operator shall also ensure no unauthorized vehicles or persons gain access to the airside while the gate is open.
22. Vehicle operators shall not operate vehicles in a reckless or careless manner. A reckless or careless manner is one that intentionally or through negligence threatens the life or safety of any person or threatens damage or destruction to property.
23. Vehicles shall not enter the movement area or cross runways unless the operator of the vehicle has received required training and authorization from the Reading Regional Airport Authority to operate on the movement area. Whenever possible, all airport vehicles shall utilize the airport perimeter and service roads to transition between areas on the airport. Drivers shall exercise the "hug the hangar" policy whenever possible.
24. Each vehicle operator is responsible for the actions of vehicle passengers on the airside of the airport.
25. All vehicle operators must maintain constant vigilance for helicopter operations and give way.

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1.7.2. Vehicle Regulations.

1. No vehicle shall be operated on the airside unless it has proper registration in the (STATE) or is a qualified off-road vehicle that is not normally operated on public streets but has received the approval of the Reading Regional Airport Authority.
2. All vehicles operated on the airside must have vehicle liability insurance, as required by the Reading Regional Airport Authority.
3. The Reading Regional Airport Authority must approve tenant vehicles operated on the movement and non-movement areas. These vehicles must display a company logo on the passenger and operator's doors.
4. Carts or pieces of equipment being towed or carried after darkness must have side and rear reflectors or rear lights.
5. No vehicle shall be permitted on the airside unless—
 - a. It is properly marked, as outlined in FAA Advisory Circular 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.
 - b. It is in sound mechanical condition with unobstructed forward and side vision from the driver's seat.
 - c. It has the appropriately rated and inspected fire extinguishers (service vehicles and fuel trucks).
 - d. It has operable headlamps and brake lights.
6. Vehicles operating on the movement area shall be equipped with operating amber rotating beacon and an orange & white Airport Safety flag. Exemptions to the flag requirement would be fuel trucks, tugs, ARFF vehicles, and airport snow equipment.
7. All aircraft refueling vehicles and any other vehicle 8-foot or more in width shall be equipped with a flashing amber beacon and flashing front, tail, and clearance lights that are activated at all times when operating on the airside.

1.7.3. Vehicular Accidents. Operators of vehicles involved in an accident on the airport that results in injury to a person or damage to an aircraft, airport property, or another vehicle shall—

1. Immediately stop and remain at the scene of the accident.
2. Render reasonable assistance, if capable, to any person injured in the accident.
3. Report the accident immediately to the Reading Regional Airport Authority before leaving the scene, if possible.
4. Provide and surrender the following to any responding the Reading Regional Airport Authority personnel: name and address, airport identification card, state driver's license, and any information such personnel need to complete a motor vehicle accident report.

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Section 2. Driving on the Non-Movement Areas (Tier 2)

2.1. Non-movement, Tier 2 areas include taxiways, aprons, and other areas **not** under control of the ATCT. Anyone authorized to operate a motorized vehicle on the airside may do so on the non-movement areas without being in positive radio contact with the ATCT. These areas include—

2.1.1. General Aviation Aprons

2.1.2. Terminal Apron

2.2. Driving. Operating within the ramp areas requires the vehicle driver to exercise extreme caution as aircraft, fixed wing and helicopter, are always moving, aircraft passengers may be walking from an aircraft to the gate, and noise levels are high.

Vehicle drivers should—

2.2.1. Never drive between safety cones or across delineated passenger walkways.

2.2.2. Watch cockpit blind spots—pilots typically cannot see behind or below the aircraft.

2.2.3. Avoid jet blast or prop wash, which can blow debris or overturn vehicles.

2.2.4. Be aware and avoid moving propellers that can cause damage, injury, or death.

2.2.5. Be aware of other vehicle movements—you may not hear them approaching due to aircraft engine noise.

2.2.6. Yield to aircraft, passengers, and emergency vehicles, which ALWAYS have the right-of-way on any portion of the airport.

When traveling on the apron, always use designated vehicle service roads. Driving close to buildings, around vehicles, or aircraft is prohibited. This policy helps to establish a predictable order to vehicle movements in congested areas and helps to ensure their visibility to aircraft and other vehicles.

Parked aircraft may still have their engines running, so be aware of the hazards of jet blast or prop wash, which may overturn vehicles. Before an aircraft engine is started, the aircraft's red flashing beacons must be on. In some instances, propellers and engine spinners are marked to indicate when the engine is operating. A pilot's ability to maneuver quickly on the ground is limited. Propellers, rotor blades, and jet engines can cause significant damage and injury to personnel. In addition, cockpit visibility prohibits the pilot from seeing under the nose or behind the aircraft and limits the pilot's ability to avoid ground vehicles.

2.2. Night time and Poor Weather Driving Conditions. Poor weather conditions (snow, fog, rain, etc.) might obscure visual cues, roadway markings, and airport signs. Vehicle operators should remain vigilant of their surroundings and operating boundaries. Watch out for snow removal equipment and aircraft operating in the vicinity under low-visibility conditions. There are additional risks present under these conditions.

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Section 3. Driving on the Movement, Tier 1 Areas

Drivers who are authorized to drive on the movement area require more training and vigilance since there are dangers associated with this area that are not present on non-movement areas. In addition to the principals for driving on the non-movement area, drivers who have access to the movement area must be cognizant of the meaning of airfield signs, markings, and lighting configurations. Additionally, they must be able to communicate with air traffic control (ATC) and be able to follow ATC directions.

3.1. ATCT Control. Movement areas are defined as the runways, taxiways, and other areas of the airport that are used for taxiing, hover taxiing, air taxiing, and takeoff and landing of aircraft, exclusive of loading ramps and aircraft parking areas. Movement areas are considered “positive control,” meaning that all vehicle operators will need permission from ATC before entering the area

3.2. Authorized Vehicles. Only those vehicles necessary for airport operations may enter a movement area. Exceptions may include the Reading Regional Airport Authority-authorized vehicles with appropriately trained personnel.

3.3. Taxiways.

3.3.1. Designations. Aircraft use taxiways to move to and from the aprons and the runways. Taxiways are designated by letters or by a letter/number combination such as A, B, G2, or B3. (See Airport Diagram on page 20)

3.3.2. Lighting. Taxiways are lighted with **blue** edge lighting with the exception of Taxiway E which has reflectors along the edges.

3.3.3. Signs. The signs used on taxiways are direction, destination, location, and taxiway ending marker signs.

Direction and Designation Signs have **black lettering** and a **directional arrow** or **arrows** on a **yellow background**. The arrow indicates the direction to that taxiway, runway, or destination.



Taxiway Directional Sign

Location Signs have **yellow lettering** on a **black background**. The location sign below indicates that the operator of the vehicle/equipment is located on the named taxiway or runway.



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Runway Safety Area/Object Free Zone (OFZ) and Runway Approach Area Boundary Signs, when required, identify the boundary of the runway safety area/OFZ or the runway approach area to the pilot and vehicle operator. The driver can use these signs to identify when the vehicle is clear of the runway environment. It has a **black inscription** that depicts the hold line marking on a **yellow background**.

Runway Safety Area/OFZ and Runway Approach Boundary Sign



- 3.3.4. Markings.** Pavement markings on taxiways are always **yellow**. The taxiway centerline is painted on all taxiways. On the edges of some taxiways, there is a solid, double yellow line or double-dashed line. If pavements are usable on both sides of the line, the lines will be dashed; if not, the lines will be solid.

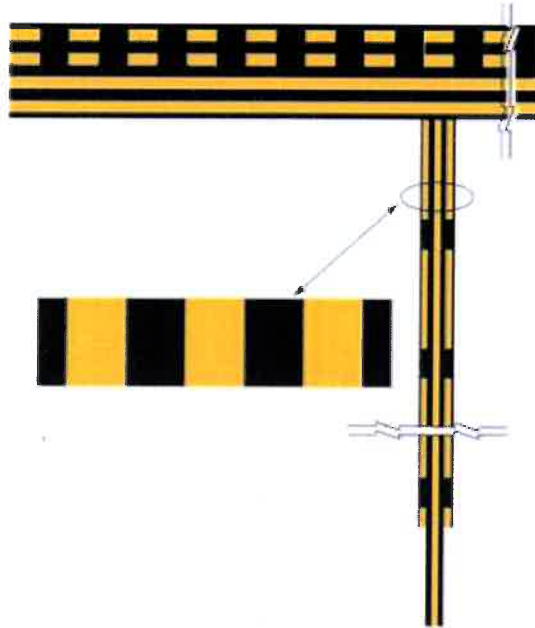
Runway Holding Position Markings are located across each taxiway that leads directly onto a runway. These markings are made up of **two solid lines** and **two broken yellow lines** and denote runway holding position markings. These markings are always co-located with a Runway Holding Position Sign. A vehicle operator must not cross from the solid-line side of the marking without first obtaining clearance.



Runway Holding Position Marking

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Enhanced Taxiway Centerline Markings may be present at some airports, and will appear before a runway hold line, as illustrated below. These markings are intended to serve as an additional warning to flight crews that they are approaching the runway.



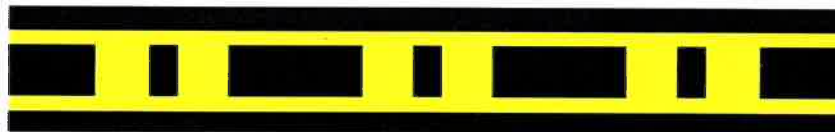
Enhanced Taxiway Centerline Markings

Non-Movement Area Boundary Markings consist of **two yellow lines** (one solid and one dashed). The solid line is located on the non-movement area side, while the dashed yellow line is located on the movement area side. A vehicle operator is not to cross from the solid-line side without first contacting the ATCT and obtaining a clearance to operate on the movement area.



Non-Movement Area Boundary Marking

Instrument Landing System (ILS) Critical Area Holding Position Markings are comprised of **two parallel yellow lines** with lines running perpendicular between the two parallel yellow lines. These markings identify the location on a taxiway where an aircraft or vehicle is to stop when it does not have clearance to enter ILS critical areas. The ILS critical area must remain clear, especially in inclement weather. If a vehicle proceeds past this ILS marking, it might cause a false signal to be transmitted to the landing aircraft.



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3.4. Runways (Rwy 18/36 and Rwy 13/31).

3.4.1. Designations. Runways are areas where aircraft land and take off. Runways are always designated by a number such as 13 or 31. The number indicates the compass heading of the runway. An aircraft taking off on runway 13 is headed 130 degrees. Runways at RDG include Rwy 18/36 and Rwy 13/31

3.4.2. Lighting. Runways are lighted with a variety of colored lights.

Runway Edge-lights are **white**. **If the runway has an instrument approach**, the last 2,000 feet of the runway will be **yellow** in color.

Runway End/Threshold Lights are split lenses that are **red/green**.

3.4.3. Signs.

Mandatory Holding Position Signs for Runways have **white numbering/lettering** on a **red background with a white border**. These are located at each entrance to a runway and at the edge of the runway safety area/obstacle-free zone and are co-located with runway holding position markings. **Do not proceed beyond these signs until clearance is given by the ATCT to enter onto the runway.**



Runway Hold Sign

Instrument Landing System (ILS) Holding Position Signs have **white letters** on a **red background with a white border**. These signs tell pilots and vehicle operators where to stop to avoid interrupting a type of navigational signal used by landing aircraft. This is a critical area, and a vehicle/equipment operator must remain clear of it. If a vehicle proceeds pass this microwave landing system/ILS marking, it may cause a false signal to be transmitted to the landing aircraft.



ILS Hold Sign

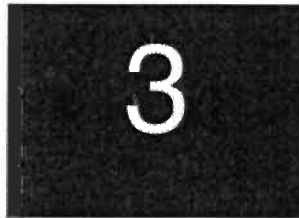
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Holding Position Signs for Runway Approach Areas. The inscription on a sign for a runway approach area is the associated runway designation followed by a dash and the abbreviation APCH for approach. This sign has **white numbering** on a **red background** with a **white border**. The sign is installed on taxiways located in approach areas where an aircraft on a taxiway would either cross through the runway safety area or penetrate the airspace required for the approach or departure runway.



Approach Sign

Runway Distance Remaining Signs provide distance remaining information to pilots during takeoff and landing operations. They have **white numbering** on a **black background**. The number on the sign provides the remaining runway length in **1,000-foot increments**.



Runway Distance Remaining Signs

Runway Exit Sign is a destination sign located prior to the runway/taxiway intersection on the side and in the direction of the runway where the aircraft is expected to exit. This sign has **black lettering** and a **directional arrow** on a **yellow background**.

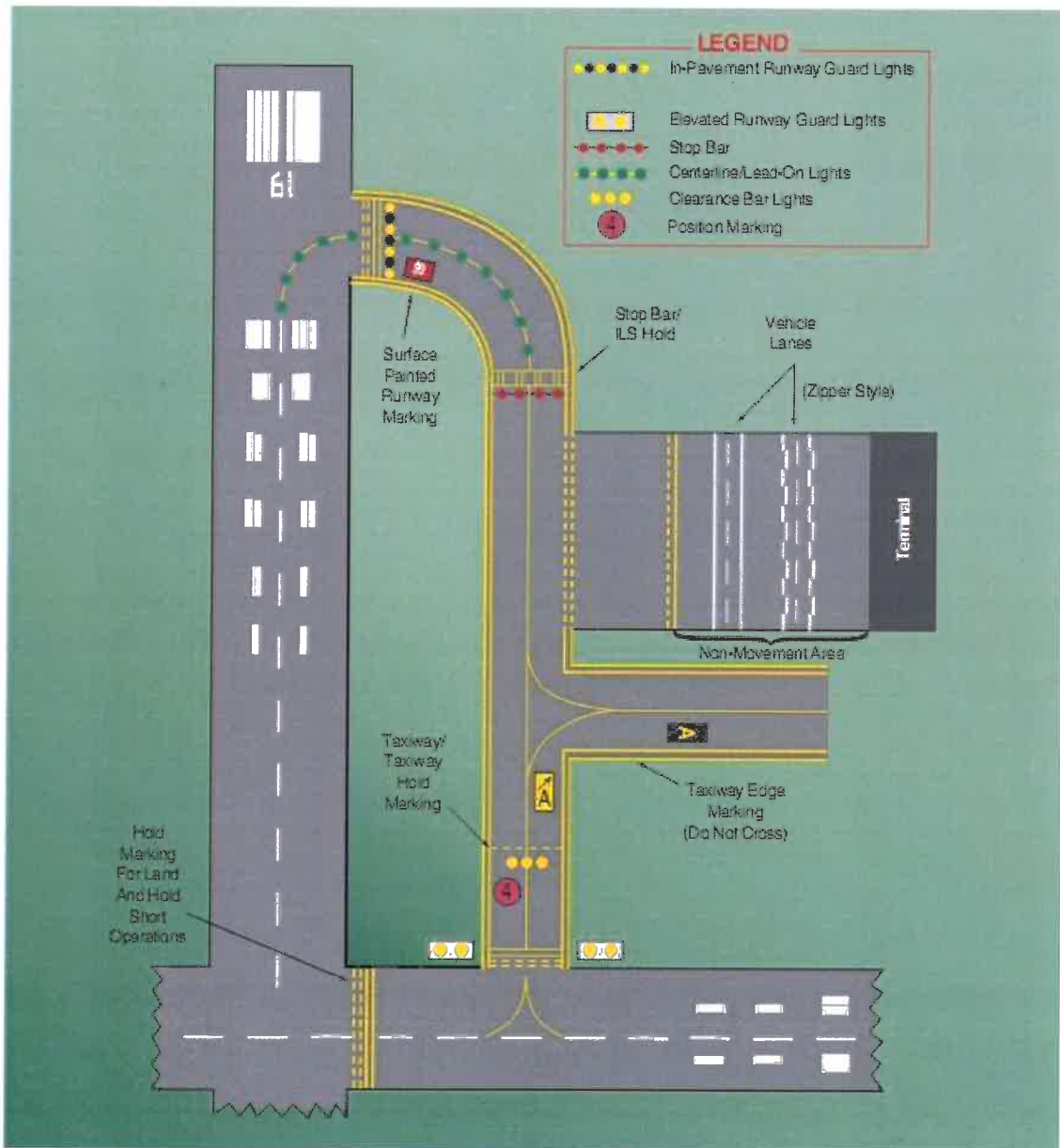


Runway Exit Sign

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3.4.4. Markings.

Pavement markings on a runway are white. Runway Threshold Markings and Runway Threshold Bars, Runway Aiming Point Markings, Runway Designation Markings, Runway Touchdown Zone Markings, Runway Centerline Markings, Runway Side Stripes, and Displaced Threshold Markings are white. The only nonwhite lines on a runway are yellow lead-in/-off lines that extend from the runway centerline and hold lines for a specific operation known as land and hold short.



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Section 4. Communications

4.1. Any vehicle driving on the **movement areas (runways and taxiways) must** be in contact with the ATCT or capable of monitoring and transmitting on the CTAF. Vehicle operators must always monitor the appropriate radio frequency when in the movement areas on controlled airports. Permission must be requested and clearance given prior to driving on a movement area. A vehicle that is equipped with a radio may escort vehicles without radios. When a movement area is closed for construction, vehicles may traverse that area without ATCT contact but must be escorted if their travels require them to cross an active movement area.

4.2. The ATCT controller may use separate or common radio frequency to control all ground traffic, vehicle and aircraft, on the movement areas. The frequency is only to be used to get clearance onto and off the movement areas. When the ATCT is closed, the CTAF (119.9) should be used to announce a driver's intentions when operating within the movement area.

4.3. Phraseology. Vehicle operators must contact the ATCT ground controller each and every time they proceed onto or leave the movement area. When proceeding onto a movement area, vehicle operators must tell the controller three things: **WHO you are, WHERE you are, and WHAT your intentions are.** Vehicle operators must always acknowledge all communications so ground control and other persons know that the message was received. **Vehicle operators must always give aircraft and ground control transmissions priority unless an emergency exists.** Very high frequency frequencies are for the primary use of aircraft and ATCT personnel. Some typical transmissions are as follows:

- Reading ground control, this is Airport 3 at Terminal Apron. Request permission on all taxiways for a pavement inspection.”
- Reading ground control, this is Airport 3 at Taxiway Alpha. Request clearance south on runway 36 for a light inspection.”

Reply transmissions may be brief, such as—

- ATCT: “Airport 3, hold short of runway 13.”
- Driver: “Airport 3 holding short of runway 13.”
- ATCT: “Airport 3 cleared south on runway 36.”
“Please expedite, landing aircraft on a 10 mile final for runway 13.”
- Driver: “Airport 3 cleared south on runway 36, will expedite.”
- Driver: “Ground control, Airport 3 is clear of runway 36.

* If you are unsure what the controller has said, or if you don't understand an instruction, you should ask the controller to “Say Again” and repeat the instructions. Good communications only occur when each party knows and understands what the other is saying.

* Vehicle operators shall **read-back** all runway crossing clearance and make a visual check in both directions prior to crossing any runway

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4.4. Common Use Phrases.

What Is Said:	What It Means:
Acknowledge	Let me know you have received and understand this message.
Advise Intentions	Let me know what you plan to do.
Affirmative	Yes.
Correction	An error has been made in the transmission, and the correct version follows.
Go Ahead	Proceed with your message only.
Hold/Hold Short	Phrase used during ground operations to keep a vehicle or aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control.
How do you hear me?	Question relating to the quality of the transmission or to determine how well the transmission is being received.
Immediately or without delay	Phrase used by ATC when such action compliance is required to avoid an imminent situation.
Negative	"No" or "permission not granted" or "that is not correct."
Out	The radio conversation is ended, and no response is expected.
Over	My radio transmission is ended, and I expect a response.
Read Back	Repeat my message to me.
Roger	I have received all of your last transmission.
Stand By	Means the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in "stand by for clearance." The caller should reestablish contact if a delay is lengthy.
Unable	Indicates inability to comply with a specific instruction, request, or clearance.
Verify	Request confirmation of information.
Wilco	I have received your message, understand it, and will comply with it.

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4.5. Phonetic Aviation Alphabet. Because some letters have similar sounds, like B and P, the international aviation industry uses the following words to reduce confusion. For example; Taxiway B would be referred to as Taxiway Bravo on the radio.

A	ALFA	N	NOVEMBER
B	BRAVO	O	OSCAR
C	CHARLIE	P	PAPA
D	DELTA	Q	QUEBEC
E	ECHO	R	ROMEO
F	FOX-TROT	S	SIERRA
G	GOLF	T	TANGO
H	HOTEL	U	UNIFORM
I	INDIA	V	VICTOR
J	JULIET	W	WHISKEY
K	KILO	X	X-RAY
L	LIMA	Y	YANKEE
M	MIKE	Z	ZULU

4.6. ATCT Light Gun Signals. Air traffic controllers have a backup system for communicating with aircraft or ground vehicles if their radios stop working. The controller has a light gun in the tower that can send out different colored lights to tell the pilot or driver what to do. If a vehicle operator experiences a radio failure on a runway or taxiway, the operator should vacate the runway as quickly and safely as possible and contact the ATCT by other means, such as a cellular telephone, and advise the ATCT of the situation. If this is not practical, then the driver, after vacating the runway, should turn the vehicle toward the tower and start flashing the vehicle headlights and wait for the controller to signal with the light gun.

Light gun signals, and their meaning, are as follows:

Steady Green	OK to cross runway or taxiway.
Steady Red	STOP!
Flashing Red	Move off the runway or taxiway.
Flashing White	Go back to where you started.
Alternating Red and Green	Use extreme caution.

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4.7. Safety. The FAA defines runway incursion as “Any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off or intending to take off, landing, or intending to land.”

Runway incursions are primarily caused by error in one or more of the following areas:

- Pilot/ground vehicle/controller communications
- Airport familiarity
- Loss of situational awareness

An example of an incursion is a vehicle at an airport with an operating ATCT straying onto a runway in front of an aircraft causing the pilot to take an action to avoid a collision.

When driving on the airfield, vehicle operators need to always be aware of their location and the meaning of all pavement markings, lights, and signs. When on the aprons and taxiways, stay away and steer clear of aircraft. **Aircraft always have the right-of-way.**

NOTE: Any individual involved in a runway incursion shall receive remedial airfield driver’s training given by authorized personnel.

Section 5. Emergency Response / Mutual Aid

5.1 During any airport emergency ground vehicles shall yield the right-of way to all Aircraft Rescue and Fire Fighting (ARFF) Vehicles as well as any Mutual Aid Emergency vehicles.

5.2 Staging Areas for Mutual Aid Emergency vehicles is located at Security Access Gate #3 adjacent to the South T-hangars. Mutual Aid vehicles shall remain in this area until escorted by Airport ARFF/ Operations personnel.

Section 6. Snow Removal Operations

6.1 During snow removal operations extreme caution is advised for all ground vehicle operators due to limited visibility of snow removal equipment. Snow plow operators must remain vigilant and aware of all aircraft and ground vehicle movement.

6.2 All contract snow removal service providers must meet the training, vehicle and authorization requirements as outlined in the GVOTM. Contractors are restricted to operate on apron and non-movement areas only.

Section 7. Contractors

7.1 All contractors working inside the AOA fence must receive GVOT prior to commencing work. The level of training required shall be based on the area or operations, type, and duration of work being performed. Contractors must be aware of airfield conditions and any unique circumstances associated with RDG airport prior to accessing the AOA. Any questions or concern shall be directed to the Airport Manager.

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7.2 Advisory Circular 150/5370-2 (or current edition), *Operational Safety On Airports During Construction* shall be referenced and a copy provided to each contractor during the preconstruction meeting. A safety meeting shall be conducted weekly between the contractor, airport engineer and airport personnel as part of the project safety plan.

7.3 Construction vehicles shall comply with Section 1.7.2 Vehicle Regulations.

Section 8. Airside Tenant's Responsibilities

8.1 Airside tenants shall notify the RRAA prior to commencing any construction activities on AOA. A point of contact shall be designated to oversee the contractor's operations.

8.2 Each airside tenant shall be responsible to ensure contractors, suppliers, or any other persons do not enter the AOA unless authorized and appropriately escorted.

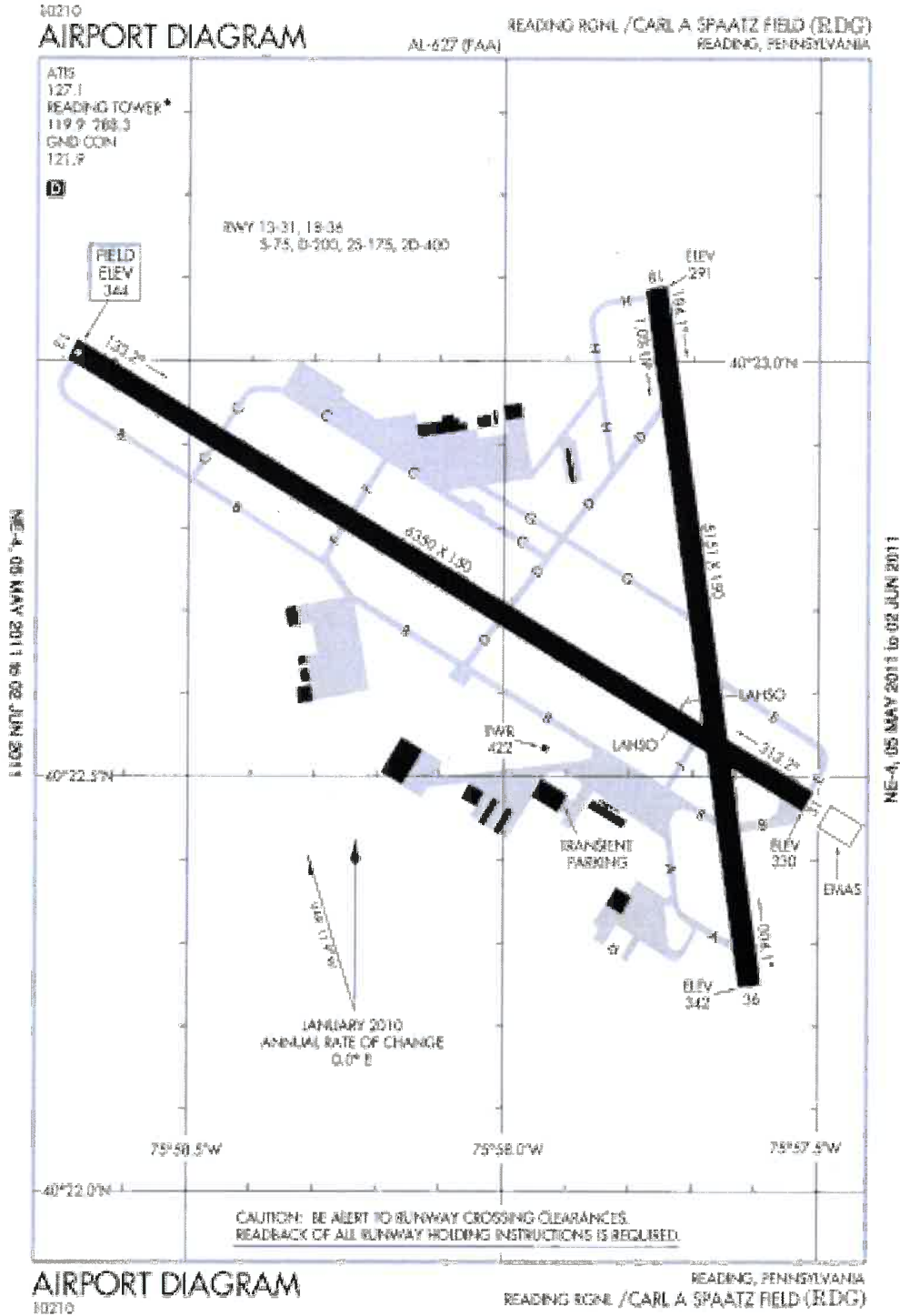
8.3 Airside tenants are responsible for escorting any and all vehicles onto the ramp areas. Escorting means a trained individual employed by the tenant shall remain with the guests and vehicles as they enter the AOA, while they are positioned on the AOA, and when until they leave the AOA. Vehicles entering the AOA under escort are the responsibility of the airside tenant. This includes Fuel or delivery trucks, trash collectors, or any other vehicles accessing the ramp area as authorized by the airside tenant. When accessing the movement area always notify ATCT that you are a "party of two" so ATC is aware you are escorting another vehicle. Remember as an escort you have a responsibility to ensure everyone's safety while in the AOA.

8.4 Each Airside Tenants shall assign one individual as the **Designated Trainer** to provide training to other company employees as outlined in the GVOTM. This Designated Trainer shall receive annual recurrent training by the airport staff to ensure proper implementation of the GVOTM is being provided to all employees. It shall be the tenant's responsibility to ensure that all employees have received initial and recurrent training. A copy of the GVOTM training record for individual training shall remain on file with each airside tenant and a copy shall be forwarded to the Airport Manager's office for the files.

8.5 Failure to provide training as outlined in the GVOTM shall result in the suspension of the Designated Trainer privileges.

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Reading Regional Airport



READING REGIONAL AIRPORT

GROUND VEHICLE OPERATIONS & TAXIING OR TOWING AN AIRCRAFT FAMILIARIZATION PROGRAM TRAINING RECORD

Employee's Name: _____

Employee's Position: _____

Company Name: _____

Driver's License State and Number: _____

Driver's License Expiration Date: _____

I agree to abide by all rules and regulations prescribed for the operations of a vehicle within the airport operations area.

Vehicle Operator: As of this time, I certify that I hold a current and valid driver's license. If for any reason my license becomes invalid, I will notify the Reading regional Airport immediately.

Anyone Taxiing or Towing an Aircraft: I certify that I hold a current and valid FAA A&P certificate, are authorized by my maintenance facility or operator to taxi or tow their aircraft and trained by my company to start, run, and taxi or tow that particular type of aircraft. Further, the operator will ensure that during an aircraft towing operation, a trained person or pilot will attend the aircraft controls during the operation. Operations with a "Towbarless tractor", with maximum gross weight of 12,500 pounds or greater, there will be a trained person in the cockpit that can stop the aircraft if the tow bar breaks. If for any reason my company authorization becomes invalid, I will notify the Reading Regional Airport immediately.

Sign your name and indicate today's date below:

Name: _____ Date: _____

PERMITTED VEHICLE OPERATING AREAS

Non-Movement Area, Tier 2

Movement Area, Tier 1

I certify that the above named individual has satisfactorily completed the Driver and Taxiing or Towing an Aircraft Training Program.

Instructor's Signature: _____

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APPENDIX A

GROUND VEHICLE ACCESS PROGRAM TRAINING CURRICULUM

NOTE: The purpose of the Ground Vehicle Access Program Training Curriculum is to provide airport operators with a comprehensive list of training topics for educating vehicle operators who may have access to the airside of an airport.

The purpose of a training program is to provide vehicle operators with the level of training necessary for their positions so they are capable of operating safely on the airside of an airport. The following items are included in the training for RDG.

1. Various on airfield aircraft navigation aids
2. Applicable airport rules, regulations, or procedures pertaining to vehicle operations
3. Airport layout, including designation of runways and taxiways
4. Boundaries of movement areas
5. Interpretation and color coding of airfield signs, pavement markings, and lighting
6. Location and understanding of critical areas associated with instrument landing system (ILS).
7. Proper terminology (including phonetic alphabet) and procedures for radio communications with the airport traffic control tower (ATCT) including "Read Back" procedures.
8. ATCT light gun signals
9. Emergency response vehicle procedures
10. Dangers associated with jet blast and prop wash
11. Traffic patterns associated with each runway (left or right) and location of each leg; i.e., downwind, base, final, and crosswind
12. Maintaining Situational Awareness
13. Vehicle requirements for movement areas i.e. lights, flags, markings.
14. Recurrent training requirements i.e. 12 consecutive months, revocation policy, and re-instatement procedures.
15. Vehicle Pedestrian Deviations to include "lessons learned" from previous incidents over the past 5 years and consequences associated with violations.

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AREAS OF TRAINING

All Drivers should have training in the following areas:

1. Discussion of Runway Incursions, Airfield Safety, and Security
Training Outcome(s) – Trainee should be able to define a runway incursion and explain the benefits of airfield safety/security.
2. Definitions and Terms
Training Outcome(s) – Trainee should be knowledgeable of the terms used on an airport.
3. Vehicle Operating Requirements
 - a. Authorized Vehicles and Vehicle Identification
 - b. Vehicle Lighting
 - c. Vehicle Insurance
 - d. Vehicle Inspection
 - e. Vehicle Parking
 - f. Accident Reporting
 - g. Perimeter Roadways
 - h. Aircraft Lighting
4. Rules and Regulations
 - a. Review
 - b. Noncompliance/PenaltiesTraining Outcome(s) – Trainee should be knowledgeable of ground vehicle rules and regulations.
5. Testing
 - a. Written Test

Training Outcome(s) – Trainee should be able to pass a written examination with a minimum score of 80 percent

In addition to items 1–5, instruction for drivers authorized to drive on the movement area should also include those subject areas identified under Airport Familiarization and Communications.

6. Airport Familiarization
 - a. Runway Configuration/Safety Areas (Rwys 13/31 & 18/36)
 - b. Taxiway Configurations/Safety Areas
 - c. Movement Areas and Non- Movement Areas
 - d. Confusing Areas

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- e. Airport Lighting
 - (1) Runways -Edge Lights, Touchdown zone, Threshold, and Approach lights
 - (2) Taxiways - Edge Lights
- f. Airfield Signage

Runway Position holding signs, Taxiway location signs, ILS critical area signs, Direction signs, and Distance remaining signs. Review approved Airport Signage Plan as part of the training.
- g. Airfield Markings
 - (1) Runways – Centerline, Edge Runway ID numbers, Threshold, and Hold Short line markings
 - (2) Taxiways – Hold Lines, ILS hold lines, Centerline, and Edge markings
 - (3) ILS Critical Areas
 - (4) Non-Movement Area Boundary Markings
- h. Airport NAVAIDS and Visual Approach Aids – Locations and Non-interference

Training Outcomes – trainee should be able to label all critical parts on the airport and explain the purpose of all markings, lighting, and signs on the airfield. See **Appendix 1-A, Airfield Layout Quiz and Appendix 1-B, Answer Sheet.**

7. Communications

- a. Ground Vehicle Communications
 - (1) Radio Frequencies – Ground Control 121.9, Tower 119.9, ATIS 127.1, CTAF 119.9
 - (2) Procedural Words and Phrases
- b. Aviation Phonetic Alphabet
- c. Aviation Terminology
- d. Procedures for Contacting the ATCT
- e. Airfield Communications using CTAF during time RDG / ATCT is closed
- f. Light Gun Signals -- Description of light gun signals and how to signal the tower

Training Outcome – Trainee should be able to adequately send and receive radio messages.

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The following are examples of signs and markings found at RDG.



Surface painted hold sign on Txy A at Rwy 36 approach



Surface painted hold sign on Txy F and Rwy 13/31



Hold sign on Txy F between Rwy 13/31 and Txy B

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Surface painted hold sign on Txy B at Rwy 18/36



Stop sign adjacent to Rwy 13 ILS



Hold sign on Txy A at Rwy 36

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Directional sign on Txy B



Non-Movement Area boundary line at East Apron and Txy A



Chevron on EMAS bed at approach end of Rwy 31

Note: Remain clear of the EMAS at all times.

This crushable concrete will **NOT** bear the weight of an aircraft or vehicle

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Double HOLD lines on Txy B between Rwy 31 and 36
Note: Make sure you are located at the proper hold line!



New enhance taxiway centerlines associated with runway hold lines
located on Txy D at intersection of Txy C and Rwy 31

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Taxiway directional sign located on Txy A



Non-Movement Area boundary line located on north apron at Txy G



Taxiway lead-in line and Threshold bars located at Rwy 31 approach end

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Runway 18/36 hold lines located on Rwy 13 at Txy J and Rwy 18/36 intersection. These would also be used as Rwy 13 "Land and Hold Short" lines for landing aircraft



Rwy 18/36 hold line and associated hold sign located on Rwy 13



Runway edge lines locate on Rwy 31 at Txy D

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Rwy 31 Precision markings

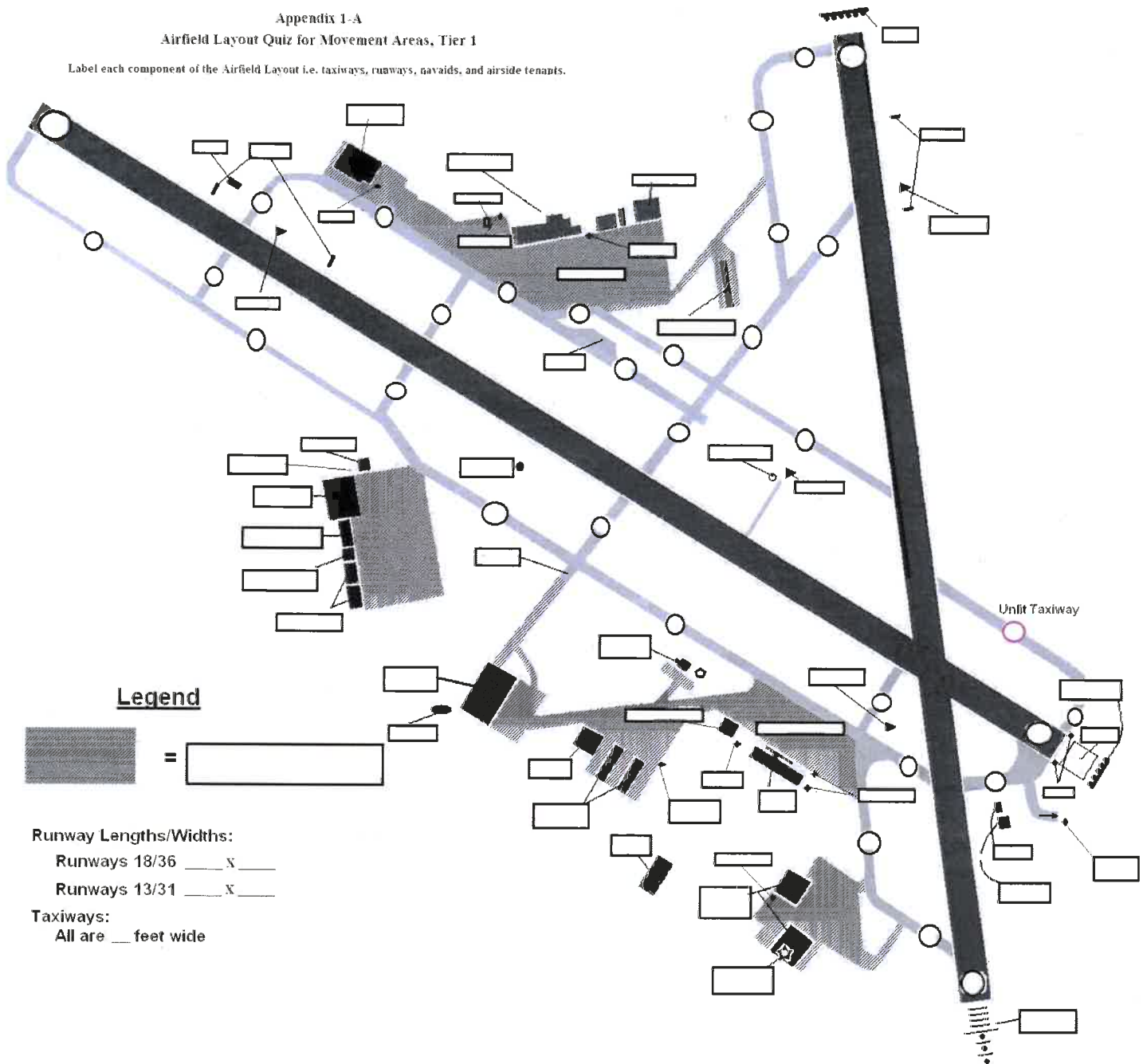


Rwy 31 with EMAS and chevrons

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Appendix 1-A Airfield Layout Quiz for Movement Areas, Tier 1

Label each component of the Airfield Layout i.e. taxiways, runways, nav aids, and airside tenants.



Legend

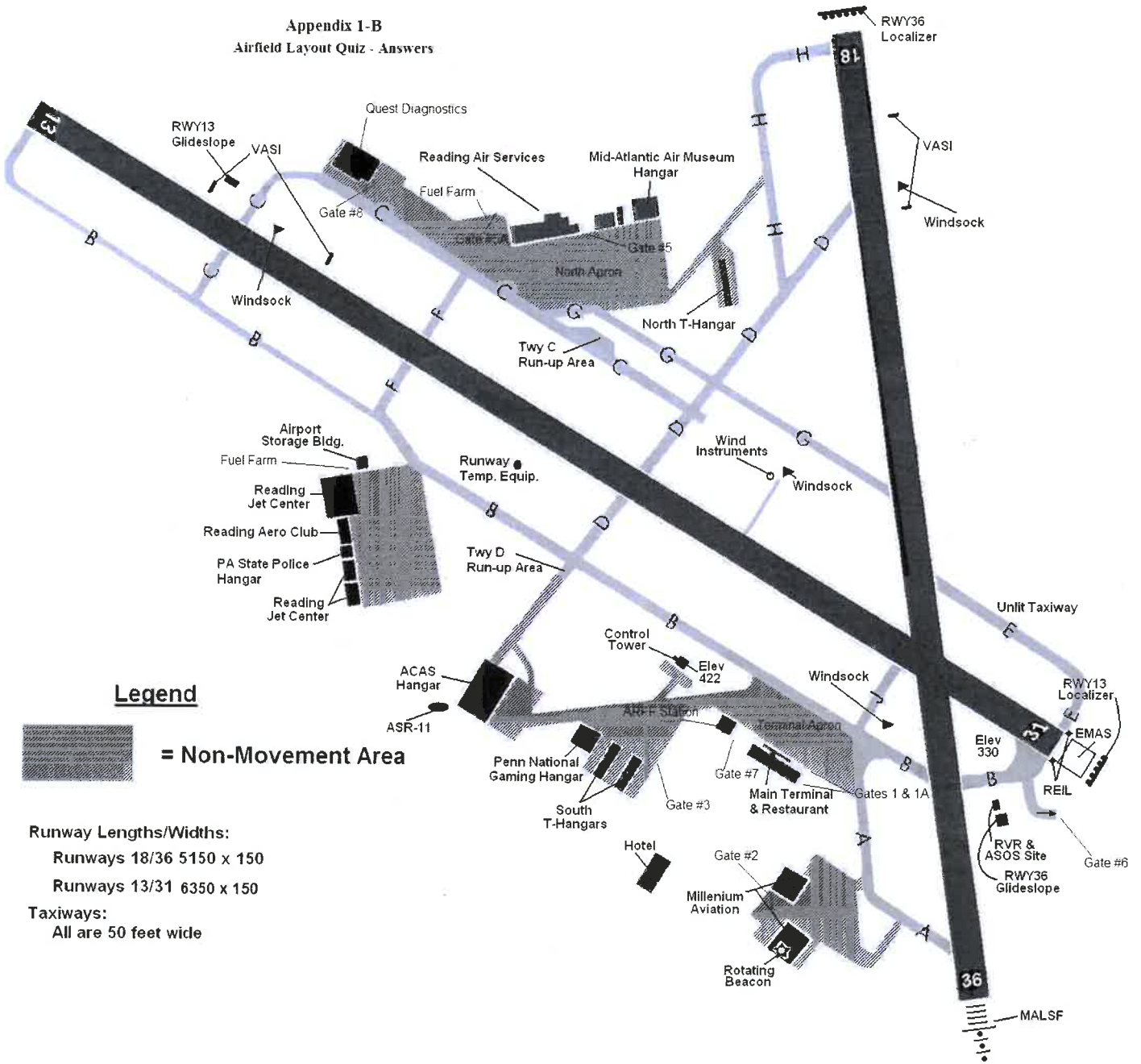


Runway Lengths/Widths:
 Runways 18/36 ____ x ____
 Runways 13/31 ____ x ____
 Taxiways:
 All are ____ feet wide

NOTE: The practical test will require applicants to identify airfield markings and signs while demonstrating proper radio procedures and navigate safely with ATC instructions to a designated area on the airport. Not all items must be identified on this layout. However applicants must demonstrate general knowledge of the facility locations and runway/taxiway identifications to pass the practical test. Proper radio communications and implementing ATC directions is a must!

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Appendix 1-B Airfield Layout Quiz - Answers



Note: Do not distribute answer sheet with Airfield Layout Quiz

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Appendix 2

**Reading Regional Airport
Written Exam (Updated 09/22/14)
Airport Operations Area Training**

1. What color are taxiway edge lights? _____
2. How often must recurrent training be completed?
 - a. One a year
 - b. Every 6 months
 - C. Every 12 consecutive calendar months
3. What is required for someone to work or operate a vehicle on the AOA?

4. An escort is not required for deliveries made inside the fence on the apron areas.
 - a. True
 - b. False
5. What is required in addition to this written test to receive authorization to operate a vehicle on the movement areas under Tier 1?
 - a. A physical is required
 - b. A practical test to demonstrate GVOT procedures.
 - c. A letter from your employer.
6. What frequency shall be used for clearance to drive on a taxiway or runway? _____
7. What color are runway markings, i.e. centerline, edge, threshold markings?

8. What does this sign represent? (Circle correct answer)
 - a. Taxiway edge line
 - b. Movement area line
 - c. Runway hold line



9. Aircraft always have the “right-of-way” over vehicle operations.
 - a. True
 - b. False

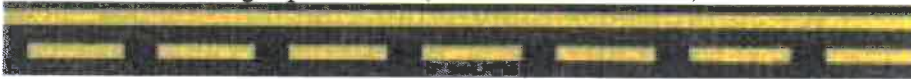
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10. What vehicle equipment is required to operate on movement areas?
(circle all that apply)

- a. Amber beacon
- b. Roll bar
- c. Orange & white safety flag
- d. Backup alarm
- e. Company logo indentifying vehicle
- f. Two-way radio for ATCT

11. What is Reading Airport's CTAF frequency? _____

12. What does this marking represent? (Circle correct answer)



- a. Taxiway edge line b. Movement Area boundary c. ILS critical area

13. Which side of the above marking line must a vehicle be located if it has NOT received ATCT clearance? a. Solid line b. Dashed line

14. Delivery vehicles may operate on ramps areas as long as drivers have been briefed.
a. True b. False

15. Upon entering any airport security access gate, the vehicle operator may allow the following vehicle to enter as long as the driver waves his access badge. a. True b. False

16. Vehicle operators exiting the AOA do not need to wait at the gate until it closes.
a. True b. False

17. While driving across a ramp a vehicle operator notices an aircraft begin to move. What should the driver do? _____

18. Can an individual's privileges to operate a vehicle on the AOA be suspended or revoked by the Reading Regional Airport? a. Yes b. No

19. What does this sign represent? (Circle correct answer)



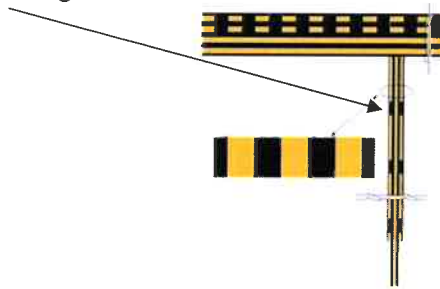
- a. Runway Distance Remaining sign b. Taxiway location sign c. Runway Hold sign

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20. What does this sign represent? (Circle correct answer)



- a. Taxiway location sign b. Taxiway directions sign c. Taxiway hold sign
21. What is required by you if ATC asks you to hold your position while requesting clearance to cross a runway or taxiway?
- a. Nothing, just wait for clearance b. Read back ATC's instructions c. Turn on your lights
22. If you do not understand a controller's instruction what should you do?
- a. Ask ATC to "say again" b. Proceed using best judgment c. Flash your vehicle lights
23. Escorts are responsible for their guests the entire time they are on the airfield.
- a. True b. False c. Only if it the FBO requires it.
24. What are these markings called?



- a. Enhanced taxiway centerline markings b. ILS critical Area markings c. Movement area markings
25. If you allow someone onto the airfield through a security gate you automatically become their escort. a. True b. False c. Depending on the circumstances

Date: _____ Signature: _____

Note: Applicants must pass with a minimum of 90% to receive driving privileges and an airport ID access badge.