



RAPID CITY REGIONAL
AIRPORT

VEHICLE OPERATORS TRAINING MANUAL
(PART 1: NON-MOVEMENT AREA)
(PART 2: MOVEMENT AREA)



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This Vehicle Operators Training Manual was
approved by the Rapid City Regional Airport
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Preface

Deviation to the Vehicle Operators Training Manual

A. DEVIATION

In an emergency situation requiring immediate action for the protection of life or property, deviation from this manual, to the extent required to meet the emergency, is authorized.

B. REPORT

In the event of a deviation, the deviator must submit a written report, to the Airport Executive Director, stating the nature, extent, and duration of the deviation.

Section 1: Airport Driving Rules and Regulations

1.1. **Authority for Implementation of Rules and Regulations.** The Rapid City Regional Airport (RCRA) operates under the authority of the City of Rapid City. City Ordinance has granted the Airport Executive Director (AED) the authority to make bylaws 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 AED. No persons are exempt from airport operating training requirements for operating a vehicle on the airside of an airport. Tenant organizations may be responsible for the dissemination of, accessibility to, and compliance with these rules and regulations by their employees.

These Rules and Regulations may be amended, changed, or modified by the AED, as necessary.

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. **Airport Operations Area (AOA)**—those areas which encompass the runways, taxiways and other areas of the airport utilized for taxing, takeoff, and landing of aircraft including aprons and parking areas, sometimes known as the “airside”.

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.

1.3.5. **Aircraft**—a device that is used or intended to be used for flight in the air.

1.3.6. **Airport**—Rapid City Regional Airport Facility, owned by the City of Rapid City and operated by the AED, including all improvements and equipment existing or to be developed.

1.3.7. **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.

1.3.8. **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 at RCRA is 125.85 MHz.

1.3.9. **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.

1.3.10. **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 trans-border flights.

1.3.11. **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.

1.3.12. **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.

1.3.13. **Ground Vehicle**—all conveyances, except aircraft, used on the ground to transport persons, cargo, fuel, or equipment.

1.3.14. **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.

1.3.15. **Jet Blast**—jet engine exhaust or propeller wash (thrust stream turbulence).

1.3.16. **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.

- 1.3.17. **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.
- 1.3.18. **Mobile Fueler**—a vehicle owned and/or operated by authorized agents to pump and dispense Jet A and 100 LL fuel at RCRA. This may include fuel tankers, in-to-plane fueling pumpers, and hydrant carts.
- 1.3.19. **Movement Area**—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. The “Light” road off the southeast end of Runway 14/32 is considered part of the Movement Area at Rapid City Regional Airport. All vehicles operating on a designated movement area must be identified and equipped with an amber beacon, a two-way radio and in contact with Ground Control or be escorted by a vehicle with a two-way radio in contact with the tower.
- 1.3.20. **Non-movement Areas**—taxiways, aprons, and other areas not under the control of air traffic or at airports without an operating airport traffic control tower. Vehicles operating in these areas are not required to be radio equipped or have special vehicle markings. Aircraft shall always be given the right of way.
- 1.3.21. **Operator**—any person who is in actual physical control of an aircraft or a motor vehicle.
- 1.3.22. **Owner**—a person who holds the legal title of an aircraft or a motor vehicle.
- 1.3.23. **Precision Object Free Zone (POFZ)**—a volume of airspace above an area beginning at the runway threshold, at the threshold elevation, and centered on the extended runway centerline. The POFZ is 200 feet long and 800 feet wide.
- 1.3.24. **Restricted Areas**—areas of the airport posted to prohibit or limit entry or access by the general public. All areas other than public areas. The Airport may, upon direction by the TSA or FAA, limit or close access to portions of the airport and airport perimeter at any time that it has been determined that changes or heightened security warrants such action.
- 1.3.25. **Runway**—a defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.
- 1.3.26. **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.
- 1.3.27. **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.
- 1.3.28. **Security Identification Display Area (SIDA)**—that area of the air carrier operations which requires identification media and strict measures to maintain security. At Rapid City Regional Airport the SIDA encompasses the airline parking areas at the passenger terminal and is indicated by a solid red line painted on the ramp.
- 1.3.29. **Taxiways**—those parts of the airside designated for the surface maneuvering of aircraft to and from the runways and aircraft parking areas.
- 1.3.30. **Taxiway Safety Area**—a defined surface surrounding the taxiway prepared or suitable for reducing the risk of damage to airplanes.
- 1.3.31. **Tie Down Area**—an area used for securing aircraft to the ground.
- 1.3.32. **Uncontrolled Airport**—an airport without an operating airport traffic control tower or when airport traffic control tower is not operating (Rapid City ATCT is closed from 2200-0600 daily).
- 1.3.33. **Vehicle**—All conveyances, except aircraft, used on the ground to transport persons, cargo or equipment.
- 1.3.34. **Vehicle Service Road**—a designated roadway for vehicles in a non-movement area.
- 1.3.35. **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 the AED 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.

1.5.2. Based on an evaluation of the circumstances or the severity of a particular incident or incidents, the AED reserves the exclusive right to assess any penalty it deems appropriate at any time to any individual authorized to operate a vehicle on the airside without regard to prior operating history.

1.5.3. The AED 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).

1.5.4. The following chart outlines possible actions. The AED reserves the right to impose any or all penalties listed below.

GROUP	1st Offense	2nd Offense	3rd Offense
Airport Employee	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written reprimand ▪ Suspend drivers permit 1 week 	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written reprimand ▪ 1 day work suspension 	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written reprimand ▪ 2-3 day work suspension ▪ Revoke permit
Tenant	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written warning to Employer 	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written warning to Employer ▪ Suspend drivers permit 1 week 	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written warning to Employer ▪ Suspend drivers permit 2 weeks
Contractor	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written Warning to Contractor ▪ Suspend Drivers Permit 1 week 	<ul style="list-style-type: none"> ▪ Recurrent training ▪ Written Warning to Contractor ▪ Suspend drivers permit 2 weeks 	<ul style="list-style-type: none"> ▪ Revoke Drivers Permit

1.6. The AED shall require any individual involved in a runway incursion or other vehicle incident to complete remedial airfield driver training.

1.7. **Driver Regulations on the Airside (movement and non-movement) of an Airport.**

1.7.1. **Vehicle Operator Requirements.**

1.7.1.1. All applicants must satisfactorily complete the applicable driver's training course before receiving airside driving privileges.

1.7.1.2. All applicants must pass a written test with a grade of at least 85 per cent (correctable to 100 per cent). If an applicant receives less than an 85 percent, they must restudy the Rapid City Regional Airport driver training manual before retaking the test. If failed a second time it is at the discretion of the AED to allow the applicant to retest a third time and grant driving privileges.

1.7.1.3. Applicants for movement area driving privileges shall be required to successfully complete an airside driving test administered by the AED or a designated representative. The same requirements as stated in paragraph 1.7.1.2 apply.

1.7.1.4. Initial training for **non-movement area** will consist of reading the Rapid City Regional Airport driver training manual, watching the ANTN Digicast Videos "Ramp Safety Series" lessons 1-3. classroom instruction of the AOA non-movement area PowerPoint and successfully completing an open-book written test. Recurrent training will consist of independent study of the drivers training manual, viewing of the FAA approved driver training video and successful completion of an open book written test. Recurrent training is required every two years. Transient Pilot's are allowed to operate their vehicle on the non-movement area. Only the transient pilot may operate the vehicle and must be in possession of a valid pilot's license and driver's license.

- 1.7.1.5. Initial training for **movement area** will consist of reading the Rapid City Regional Airport driver training manual, watching the FAA approved driver training video, classroom instruction of the AOA non-movement area/movement area PowerPoint and successfully completing an open-book written test. In addition, the member must receive, as a minimum, day time and night time movement area driving. Movement area training must stress airport familiarization and proper radio communications with tower. Lastly, a checkride must be completed by the Airport Executive Director or a designated representative. The person who performs the checkride cannot be the same person who conducted the training. Recurring training, as a minimum should consist of independent self-study, viewing the FAA approved movement area video, classroom instruction on the movement area PowerPoint and the successful completion of the non-movement/movement area open book test. Recurrent training will happen annually.
- 1.7.1.6. No vehicle shall be operated on the AOA unless the driver is authorized to operate the class of vehicle by an appropriate state-licensing agency or by the driver's employer through a company training / certification program.
- 1.7.1.7. 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.
- 1.7.1.8. No vehicle shall pass another ground vehicle in a designated vehicle roadway.
- 1.7.1.9. 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 25 feet from any wing or tail section.
- 1.7.1.10. 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.
- 1.7.1.11. No vehicle operator shall enter the airside unless authorized by AED or unless the vehicle is properly escorted.
- 1.7.1.12. No vehicle operator shall enter the movement area—
- 1.7.1.12.1. Without first obtaining permission of the AED and clearance from the ATCT to enter the movement area;
 - 1.7.1.12.2. Unless equipped with an operable two-way radio in communication with the ATCT; or
 - 1.7.1.12.3. Unless escorted by an AED vehicle and as long as the vehicle remains under the control of the escort vehicle.
 - 1.7.1.12.4. Unless equipped with a flashing amber light.
- 1.7.1.13. No person shall operate any motor vehicle that is in such physical or mechanical condition as to endanger persons or property or that the AED considers an endangerment.
- 1.7.1.14. No person shall—
- 1.7.1.14.1. Operate any vehicle that is overloaded or carrying more passengers than for which the vehicle was designed.
 - 1.7.1.14.2. Ride on the running board or stand up in the body of a moving vehicle.
 - 1.7.1.14.3. Ride with arms or legs protruding from the body of a vehicle except when the vehicle was designed for such use.
- 1.7.1.15. A vehicle guide person is required whenever the vision of the vehicle operator is restricted.
- 1.7.1.16. 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.
- 1.7.1.17. Container carriers and tugs shall tow no more carts, pods, or containers than are practical, under control, tracking properly, and safe.
- 1.7.1.18. When not serving aircraft or undertaking their intended functions, ramp vehicles and equipment shall be parked only in approved areas.
- 1.7.1.19. Vehicle operators shall not operate or park vehicles under any passenger loading bridge.
- 1.7.1.20. No person shall park a vehicle in an aircraft parking area, safety area, or grass area or in a manner that obstructs or interferes with operations in the aircraft movement area or apron area.
- 1.7.1.21. 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.
- 1.7.1.22. No person shall park a vehicle or equipment within 15 feet of a fire hydrant or in a manner that prohibits a vehicle from accessing the fire hydrant.

1.7.1.23. 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.

1.7.1.24. Each vehicle operator or pedestrian using an airport perimeter (security) gate shall ensure the gate closes behind the vehicle/operator prior to leaving the vicinity of the gate. The vehicle operator or person shall also ensure no unauthorized vehicles or persons gain access to the airside while the gate is open.

1.7.1.25. 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.

1.7.1.26. Vehicles shall not enter the movement area or cross runways unless the operator of the vehicle has received required training and authorization from the AED to operate on the movement area.

1.7.1.27. Whenever possible, all airport vehicles shall utilize the airport perimeter and service roads to transition between areas on the airport.

1.7.1.28. Each vehicle operator is responsible for the activities of each vehicle passenger on the airside of the airport.

1.7.2. **Vehicle Regulations.**

1.7.2.1. No vehicle shall be operated on the airside unless it has proper registration in accordance with the State of South Dakota or is a qualified off-road vehicle that is not normally operated on public streets, but has received the approval of the AED.

1.7.2.2. All vehicles operated on the airside must have vehicle liability insurance, as required by the AED.

1.7.2.3. The AED must approve tenant vehicles operated on the movement and non-movement areas. These vehicles must display an airport-approved sticker or company logo that is at least 3 inches in height on the passenger and operator's doors.

1.7.2.4. Carts or pieces of equipment being towed or carried after darkness must have side and rear reflectors or rear lights.

1.7.2.5. No vehicle shall be permitted on the airside unless—

1.7.2.5.1. It is properly marked, as outlined in FAA Advisory Circular 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.

1.7.2.5.2. It is in sound mechanical condition with unobstructed forward and side vision from the driver's seat.

1.7.2.5.3. It has the appropriately rated and inspected fire extinguishers (service vehicles and fuel trucks).

1.7.2.5.4. It has operable headlamps and brake lights.

1.7.2.6. Vehicles operating on the movement area shall be equipped with operating amber rotating beacon or equivalent.

1.7.2.7. 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—

1.7.3.1. Immediately stop and remain at the scene of the accident.

1.7.3.2. Call 911 to report accident/injuries.

1.7.3.3. Render reasonable assistance, if capable, to any person injured in the accident.

1.7.3.4. Report the accident immediately to the AED before leaving the scene, if possible.

1.7.3.5. Provide and surrender the following to any responding AED personnel: name and address, airport identification card, state driver's license, and any information such personnel need to complete a motor vehicle accident report.

Section 2: Driving on the Non-Movement Areas

2.1. **Non-movement areas** include taxilanes, 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. Service roads
- 2.1.2. Cargo aprons
- 2.1.3. General aviation apron
- 2.1.4. Air carrier apron(s)

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

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

- 2.2.1. Vehicle drivers should—
 - 2.2.1.1. Never drive between safety cones or across delineated passenger walkways.
 - 2.2.1.2. Watch cockpit blind spots—pilots typically cannot see behind or below the aircraft.
 - 2.2.1.3. Avoid jet blast or prop wash, which can blow debris or overturn vehicles.
 - 2.2.1.4. Be aware of and avoid moving propellers that can cause damage, injury, or death.
 - 2.2.1.5. Be aware of other vehicle movements—you may not hear them approaching due to aircraft engine noise.
 - 2.2.1.6. Yield to aircraft, passengers, and emergency vehicles, which ALWAYS have the right-of-way on any portion of the airport.

2.2.2. When traveling on the apron, always use designated vehicle service roads. When traveling between the SIDA area ramp and General Aviation ramp, as well as on the General Aviation ramp, all vehicles should use the designated vehicle driving lane. This lane is depicted by two solid, continuous white lines with dashed white lines running down the middle. Vehicle stop bars are also painted along this roadway. These large white rectangles represent a point on the vehicle driving lane where vehicle operators must stop and ensure no other vehicle or aircraft traffic is approaching before proceeding on. Driving outside this designated vehicle lane is allowed when necessary. However, the vehicle operator is required to use the most direct route back to the vehicle driving lane when the need to be outside this designated area is no longer required. 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.

2.3. **Jet Blast.** Parked aircraft may still have their engines running, so be aware of the hazards of jet blast or prop wash, which may overturn vehicles.

- 2.3.1. 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.
- 2.3.2. A pilot's ability to maneuver quickly on the ground is limited. 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. Propellers and jet engines can cause significant damage and injury to personnel.

2.3.3. The vehicle operator shall maintain a distance of at least 200 feet BEHIND most aircraft with engines running (or about to be started). BEHIND heavy aircraft (such as Airbus 319/320) with engines running the vehicle operator shall maintain a distance of at least 800 feet.

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

2.5. **Bird Strikes, Wildlife and Trash.** Trash that is not properly disposed of may become FOD or may become a bird attractant and eventually cause bird strikes. Besides food, shiny objects and other items may attract birds to an area. Do not feed birds, or other wildlife, on the airport property and do not leave items in the back of a vehicle which could attract a bird or other wildlife. Notify the Airport or your supervisor if you see scattered FOD, concentrated bird activity, any wildlife on the Airport or persons feeding wildlife/birds. Wildlife and Bird Strikes are a very serious matter at airports around the world and cause many fatal crashes each year.

RAPID CITY REGIONAL AIRPORT VEHICLE OPERATORS TRAINING MANUAL (PART 2: MOVEMENT AREA)



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<http://www.rapairport.org>

This Vehicle Operators Training Manual was
approved by the Rapid City Regional Airport
Executive Director on 09 AUG 2014

Section 1: Refer to the non-movement driver training manual (part 1 of this manual) for definitions.

Section 2: Is the non-movement portion of this manual.

Section 3: Driving on the Movement 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 rules 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 and maintenance may enter a movement area. Therefore, fuel trucks, airline service vehicles, tugs, catering trucks, and other nonessential vehicles should not be permitted to enter these areas. Exceptions may include (AIRPORT OPERATOR)-authorized vehicles with appropriately trained personnel. Airport Operations/Maintenance shall coordinate all other vehicle operations within the movement areas such as construction vehicles, painting equipment etc.

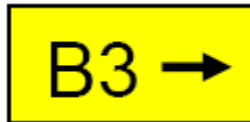
3.3. Taxiways.

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 Airfield Diagram, section 6, page 14)

3.3.2. **Lighting.** Taxiways are lighted with **blue** edge lighting and/or reflectors. Some taxiways are also lighted with **green** in-paved, centerline lighting. (see Lighting Diagram, section 6, page 21)

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.



Taxiway Location Sign

3.3.4. Markings.

Pavement markings on a taxiway are yellow. All taxiways have centerline markings and runway holding position markings whenever they intersect a runway. Taxiway edge markings are installed wherever there is a need to separate the taxiway from a pavement that is not intended for aircraft use or to delineate the edge of the taxiway that is not otherwise clearly visible.

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.



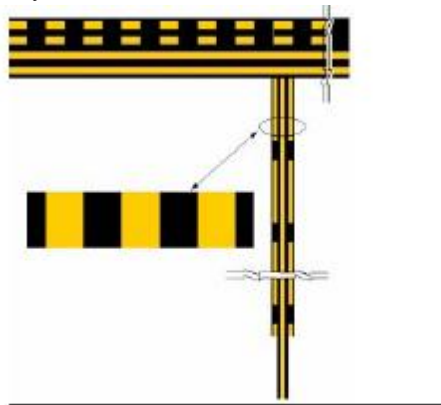
Runway Holding Position Marking

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

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

Instrument Landing System (ILS) Critical Area The ILS critical area must remain clear, especially in inclement weather. If a vehicle proceeds past this ILS critical area signs, it might cause a false signal to be transmitted to the landing aircraft and cause the system to shutdown.

3.4. Runways.

3.4.1. **Designations.** Runways are areas where aircraft land and take off. Runways are always designated by a number such as 14 or 32. The number indicates the compass heading of the runway. An aircraft taking off on runway 14 is headed 140 degrees.

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 Centerline Lights are **white** except for the last 3,000 feet of the runway, where they begin to alternate **red** and **white**. For the last 1,000 feet of runway the centerline lights are all **red**.

Runway Touchdown Zone Lights are **white**.

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

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.



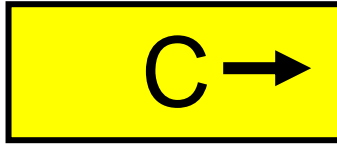
Approach Sign

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 Sign

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

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 holdlines for a specific operation known as land and hold short.

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 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:

- "Rapid City ground control; this is Maintenance 10 at Gulf 2. Request permission on all taxiways for a pavement inspection."
- "Rapid City ground control; this is Airport 2 on Taxiway Alpha. Request clearance on runway 14 for a light inspection."

Reply transmissions may be brief, such as—

- ATCT: "Airport 2 hold short of runway 14."
- Driver: "Airport 2 holding short of runway 14."
- ATCT: "Airport 2 cleared on runway 14. Please expedite, landing aircraft on a 10 mile final for runway 14."
- Driver: "Airport 2 cleared south on runway 14, will expedite."
- Driver: "Ground, Airport 2 is clear of runway 14 at Alpha 7."

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

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.

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	ALPHA (AL-FAH)	N	NOVEMBER (NO-VEM-BER)	0	Zero (ZEE-RO)
B	BRAVO (BRAH-VOH)	O	OSCAR (OSS-KAH)	1	One (WUN)
C	CHARLIE (CHAR-LEE)	P	PAPA (PAH-PAH)	2	Two (TOO)
D	DELTA (DELL-TAH)	Q	QUEBEC (KEH-BECK)	3	Three (TREE)
E	ECHO (ECK-OH)	R	ROMEO (ROW-ME-OH)	4	Four (FOW-ER)
F	FOXTROT (FOKS-TROT)	S	SIERRA (SEE-AIR-RAH)	5	Five (FIFE)
G	GOLF (GOLF)	T	TANGO (TANG-GO)	6	Six (SIX)
H	HOTEL (HOH-TEL)	U	UNIFORM (YOU-NEE-FORM)	7	Seven (SEV-EN)
I	INDIA (IN-DEE-AH)	V	VICTOR (VIK-TEH)	8	Eight (AIT)
J	JULIET (JEW-LEE-ETT)	W	WHISKEY (WISS-KEY)	9	Nine (NIN-ER)
K	KILO (KEY-LOH)	X	X-RAY (ECKS-RAY)		
L	LIMA (LEE-MAH)	Y	YANKEE (YANG-KEY)		
M	MIKE (MIKE)	Z	ZULU (ZOO-LOO)		

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.	

4.7. Safety. The FAA defines runway incursion as “**Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take off of aircraft.**” 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 necessary, runway crossing should occur at the departure runway end rather than the midpoint. In the event of a runway incursion, an aircraft would have more time and runway length to react if the vehicle incursion is at the end of the runway.

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 should receive remedial airfield driver’s training given by the Airport Management.

NOTE: See section 6 of this manual for an overview of the RCRA's runway and taxiway system. For a complete description of RCRA's runway and taxiway identification system, see exhibit 13 (Airfield Signage and Marking Plan) of the RCRA certification manual.

4.8. Vehicle Breakdowns

4.8.1. If your vehicle breaks down in a non-movement area, get someone’s attention and notify your supervisor immediately to provide assistance.

4.8.1.1. If any mandatory safety equipment on the vehicle fails, such as headlights for night operations, rotating beacon for movement area operations, or vehicle brakes, notify your supervisor and remove the vehicle from service.

4.8.1.2. Never continue to use a vehicle with inoperative safety devices.

4.8.2. If the breakdown occurs on the movement area, you must notify the controller immediately.

4.8.2.1. Attempt to remove the vehicle to the edge of the taxiway to allow aircraft and other vehicles to pass you if possible.

4.8.2.2. Notify your supervisor by company radio or wireless phone so that the vehicle can be cleared to a non-movement area as soon as possible.

4.8.2.3. Do not abandon your vehicle on the movement area! If your radio fails, orient your vehicle towards the control tower and watch for light gun signals.

Section 5: General Information about Aircraft Operations

5.1. Tower Controlled Airports – Air Traffic Control Tower (ATCT)

5.1.1. When operating in the Rapid City Regional Airport traffic area, control is exercised by the ATCT. Pilots are required to maintain two-way radio contact with the tower while operating within the airport traffic area unless the tower authorizes otherwise.

5.1.2. The following terminology for the various components of a traffic pattern is the standard for use by control towers and pilots: (refer to exhibit on page 15 for additional detail)

5.1.2.1. **Upwind leg:** a flight path parallel to the landing runway in the direction of landing.

5.1.2.2. **Crosswind leg:** a flight path at right angles to the landing runway off its departure end.

5.1.2.3. **Downwind leg:** a flight path parallel to the landing runway in the opposite direction of landing.

5.1.2.4. **Base leg:** a flight path at right angles to the landing runway off the approach end and extending from the downwind leg to the intersection of the extended runway centerline.

5.1.2.5. **Final approach:** a flight path toward and in the direction of the landing along the extended runway centerline. Usually a descending profile from the base leg to the approach end of the runway.

5.1.2.6. Aircraft usually land and takeoff into the wind.

5.1.2.7. Additional terms:

5.1.2.7.1. **Short Final**—An aircraft announcement indicating its position as nearing the airport boundary for landing.

5.1.2.7.2. **Touch and Go Landing**—A landing followed by immediate application of power to takeoff again without bringing the aircraft to a complete stop.

5.2. Uncontrolled Airport Operations (RAP ATCT is closed from 2200 to 0600 every day)

5.2.1. The airport is “uncontrolled” during the 8-hour period the ATCT is closed, the vehicle operator is responsible for rules and regulations of the airport and for clearing taxiways and runways

5.2.2. Vehicle operators must watch, listen, and communicate to ensure safe airfield operations

5.2.2.1. Familiarize yourself with the airport diagram before leaving the parking spot

5.2.2.2. Use the radio to make your position and intentions known

5.2.2.3. Use the radio to listen to other traffic; be aware of aircraft positions on the ground and in the traffic pattern

5.2.2.4. Clear yourself visually prior to departing the ramp, along the taxiways, and prior to entering the active runway. If you see an aircraft approaching the runway to land when you are waiting to cross the same runway, you should hold short of the runway until the aircraft is past the point at which you will cross the runway, and then proceed when it is safe.

5.3. Jet Blast

5.3.1. Jet engines can generate hurricane-level exhaust forces approaching 100 mph for more than 200 feet behind the aircraft

5.3.1.1. Almost half of reported jet blast incidents occurred on taxiways, in run-up areas, and adjacent to or on runways--all relatively uncongested airport areas. The other half occurred on ramps, where many more such incidents might be expected because of close aircraft parking and tight maneuvering conditions;

5.3.1.2. Incidents of jet blast damage that occurred on ramps were invariably associated with sharp turns of the aircraft during an engines-on pushback, power-back, taxi-out, or taxi into a gate. Use of a tug or tractor did not prevent such incidents if the aircraft was turned sharply during the pushback or taxi-in maneuver;

5.3.1.3. Eighty-five percent of the damage inflicted by jet blast was to other aircraft. Eleven percent of the damage incidents involved building structures, objects, or vehicles. Injuries to people accounted for four percent of the jet blast damage total.

5.3.2. Always be aware of jet blast hazard when near an aircraft that is initiating or performing an engine run-up; such as powering out of a gate or making a tight turn

5.4. **Foreign Object Debris** (or Damage) (FOD)

5.4.1. A jet engine can ingest trash and other debris into the engine, causing extensive damage. If an engine ingests an object, during the take-off phase of operation, the result may be catastrophic if the engine fails or flies apart.

5.4.2. Trash on a movement area may also puncture tires, dent or puncture wings, or damage other parts of an aircraft. Also, waste and loose materials might attract birds and other wildlife.

5.4.3. Rocks can also be a serious problem.

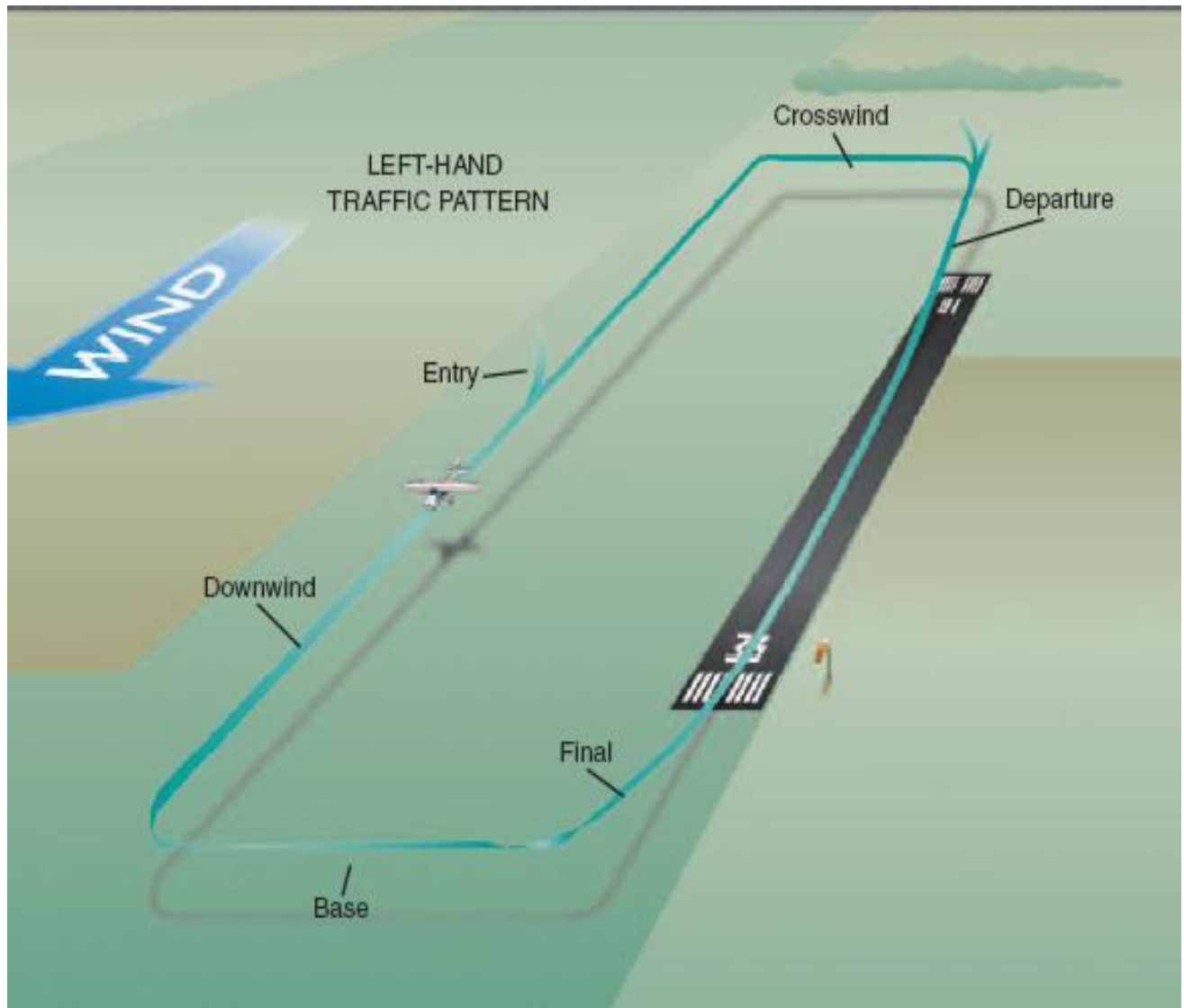
5.4.3.1. A rock sucked into a jet engine can shred turbine blades in a matter of seconds.

5.4.3.2. A rock striking a propeller can cause severe damage to the propeller. If a propeller at a high velocity launches a rock, it can gravely injure anyone unlucky enough to be in its path.

5.4.4. Vehicle drivers can do their part to prevent FOD by examining vehicle tires for soil and mud deposits under a vehicle that can contaminate the aircraft movement areas.

5.4.5. All operators should pick up foreign debris and trash whenever it is detected. Maintain a continuous lookout for, and remove all FOD that may present a safety hazard.

Section 6: Airfield Maps and Diagram



Typical Aircraft
Traffic Pattern



Airport Operations
Area (AOA)

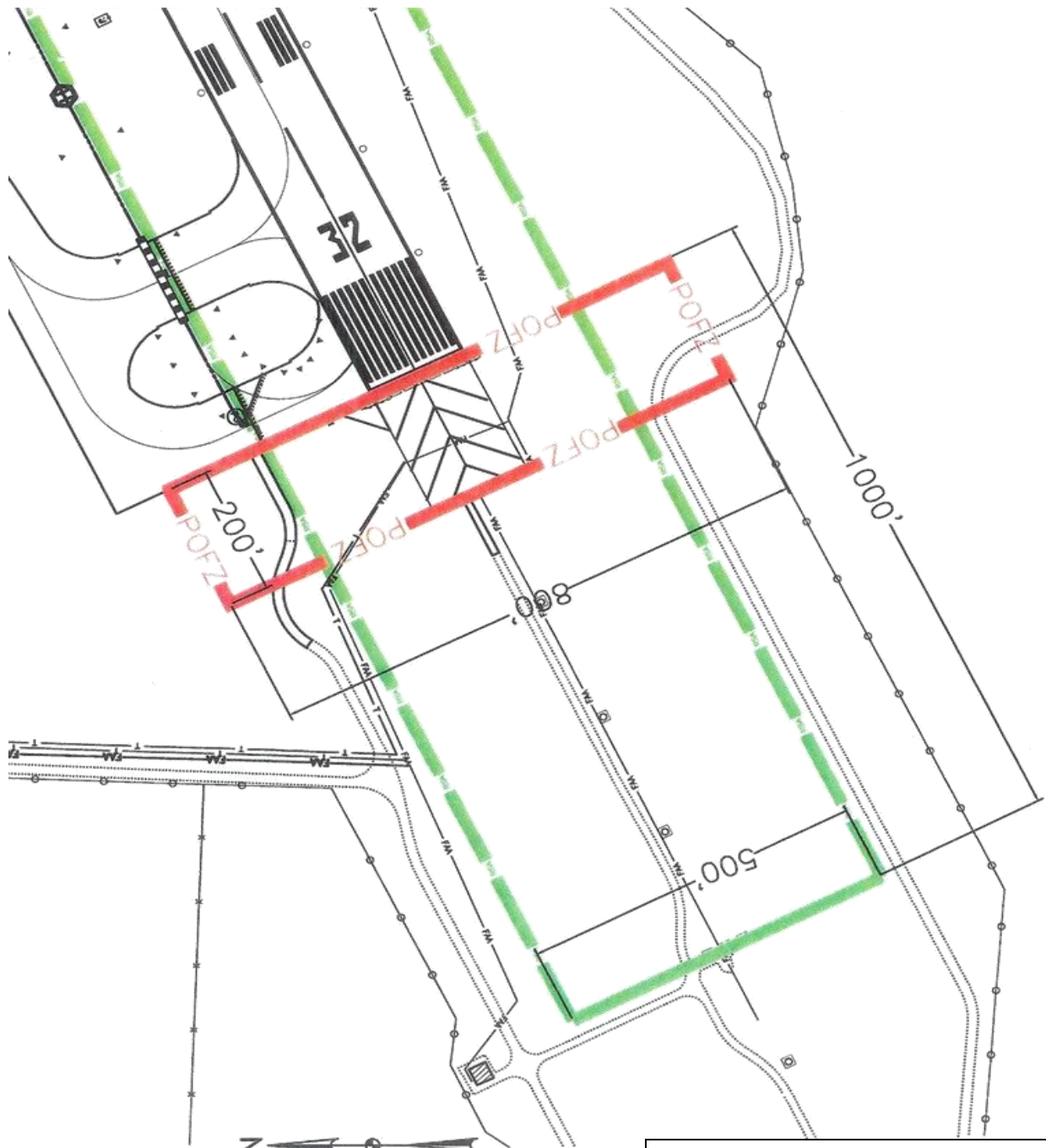


Non-Movement Area
(Shaded Yellow)
Runways and Taxiways (to
the right of Shaded Area)
are the Movement Area



Runway Safety Areas

(Red Shaded Areas)



RUNWAY SAFETY AREA — RSA — RSA
 PRECISION OBSTACLE FREE ZONE — POFZ — POFZ

Precision Obstacle
Free Zone

Section 7: Code of Federal Regulations, Title 14, Part 139.329

Title 14: Aeronautics and Space

PART 139—CERTIFICATION OF AIRPORTS

Subpart D—Operations

§ 139.329 Pedestrians and ground vehicles.

In a manner authorized by the Administrator, each certificate holder must—

- (a) Limit access to movement areas and safety areas only to those pedestrians and ground vehicles necessary for airport operations;
- (b) Establish and implement procedures for the safe and orderly access to, and operation in, movement areas and safety areas by pedestrians and ground vehicles, including provisions identifying the consequences of noncompliance with the procedures by an employee, tenant, or contractor;
- (c) When an air traffic control tower is in operation, ensure that each pedestrian and ground vehicle in movement areas or safety areas is controlled by one of the following:
 - 2) Two-way radio communications between each pedestrian or vehicle and the tower;
 - 3) An escort with two-way radio communications with the tower accompanying any pedestrian or vehicle without a radio; or
 - 4) Measures authorized by the Administrator for controlling pedestrians and vehicles, such as signs, signals, or guards, when it is not operationally practical to have two-way radio communications between the tower and the pedestrian, vehicle, or escort;
- (a) When an air traffic control tower is not in operation, or there is no air traffic control tower, provide adequate procedures to control pedestrians and ground vehicles in movement areas or safety areas through two-way radio communications or prearranged signs or signals;
- (b) Ensure that each employee, tenant, or contractor is trained on procedures required under paragraph (b) of this section, including consequences of noncompliance, prior to moving on foot, or operating a ground vehicle, in movement areas or safety areas; and
- (c) Maintain the following records:
 - 5) A description and date of training completed after June 9, 2004 by each individual in compliance with this section. A record for each individual must be maintained for 24 consecutive months after the termination of an individual's access to movement areas and safety areas.
 - 6) A description and date of any accidents or incidents in the movement areas and safety areas involving air carrier aircraft, a ground vehicle or a pedestrian. Records of each accident or incident occurring after the June 9, 2004 must be maintained for 12 consecutive calendar months from the date of the accident or incident.