

CHARLES M. SCHULZ – SONOMA COUNTY AIRPORT

AIRPORT DRIVING PROCEDURES MANUAL



The Airport Driving Procedures Manual was approved by the Sonoma County Aviation Commission at its regular meeting on April 17, 2003

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CHAPTER 1

GENERAL

1.1 - DEFINITIONS

The following definitions shall apply to these Driving Procedures:

Airport means all property including easements and right of ways, belonging to the Charles M. Schulz - Sonoma County Airport including areas not used for aeronautical purposes, hereinafter referred to as "Airport".

Airport Operating Area (AOA) means the areas consisting of all restricted ground areas of the Airport, including taxiways, runways, loading ramps and parking areas. In other words, everything inside of the perimeter fence. The AOA is usually divided into two distinct areas; the movement area and the non-movement area.

Airport Manager means the manager of the Airport or his/her designee, hereinafter referred to as "Manager".

Airport Traffic Control Tower (ATCT) is the facility that provides air traffic control services to aircraft operating in the vicinity of the Airport and aircraft/vehicles operating on the Airport Movement Area.

Airport Traffic Pattern is defined as that airspace in the immediate vicinity of the Airport where certain procedures and altitudes shall apply.

Apron (Ramp) shall mean a defined area on an airport intend to accommodate aircraft for purpose of loading or unloading passengers or cargo, refueling, parking or maintenance.

Critical Area is a specified area around a Navigation Aid (electronic or visual) that is required to be free of all objects, vehicles or equipment unless authorized by the control tower. Entering this area without authorization presents a safety hazard to airborne aircraft.

Driver is any person responsible for the direct control of a vehicle while the vehicle is in operation.

Foreign Object Debris (FOD) is any debris on the airfield that can cause damage to an aircraft.

Emergency Vehicles are vehicles of the sheriff and fire departments, ambulances and Airport vehicles responding to an emergency with visual or audible signals.

Global Position System (GPS) is a space-base radio positioning, navigation and time-transfer system. The system provides highly accurate position and velocity information, precise time, on a continuous global basis. The system is unaffected by weather, and provides a worldwide common grid reference system. The GPSA concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user. The GPS receiver automatically selects appropriate signals from the satellites in view and translates these into three-dimensional position, velocity and time. System accuracy for civil users is normally 100 meters horizontally.

Incursion is an occurrence at an airport involving an aircraft, vehicle, pedestrian, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off, intending to take off, landing or intending to land.

Jet Blast is the jet engine exhaust or the thrust stream turbulence.

Movement Area means the runways, taxiways, and other areas of the Airport, which are utilized for taxiing, hover taxiing, takeoff, and landing of aircraft

Navigation Aid (NAVAID) is any visual or electronic device, airborne or on the surface, that provides point-to-point guidance information or position to aircraft in flight.

Non-Movement Area is aprons and parking areas. Clearance is not required from the ATCT.

Notice to Airmen (NOTAM) is a notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard at the Airport) the timely knowledge of which is essential to personnel concerned with flight operations.

Prop Wash is the movement of air created behind a propeller when the engine is in operation.

Runway is a defined rectangular area on an airport prepared for the landing and takeoff run of aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees.

Runway Safety Area (RSA) is 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.

Safety Areas is a designated area abutting the edges of runways and taxiways intended to reduce the risk of damage to an aircraft inadvertently leaving the runway or taxiway.

Taxilane is the portion of the aircraft parking area used for access between taxiways and aircraft parking.

Taxiway is defined areas on an airport prepared for the movement of aircraft from the non-movement areas to the runways for takeoff and movement of aircraft from the runways to the non-movement area after landing.

Visual Approach Slope Indicator (VASI) is an airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is “on path” if he sees red/white, “above path” if white/white, and “below path” if red/red.

Unicom is a communication facility at an airport that provides airport information to pilots. APEX on 122.95 Mhz

Vehicle is every device, excluding aircraft, by which any person or property may be transported or drawn, including bicycles. Any motorized, self-propelled, street legal, driver-operated unit meeting State Inspection Requirements.

Vehicle Service Road is a designated roadway for vehicles in the non-movement area.

Wind Sock is a device located on an airport and used as a landing direction indicator. The windsock is made of fabric and is cylindrical shaped.

1.2 - ABBREVIATIONS

Airport Operation Area	AOA
Airport Rescue Fire Fighting	ARFF
Automatic Terminal Information Service	ATIS
Airport Traffic Control Tower	ATCT
Common Traffic Advisory Frequency	CTAF
Experimental Aircraft Association	EAA
Federal Aviation Administration	FAA
Federal Aviation Regulations	FAR
Fixed Based Operator	FBO
Foreign Object Damage	FOD
Global Positioning System.....	GPS
High Intensity Runway Lighting	HIRL
Instrument Landing System	ILS
Medium Intensity Approach Light System with Runway Alignment Indicator Lights	MALS
Notice to Airmen.....	NOTAM
Runway End Identifier Lights.....	REIL
Visual Approach Slope Indicator.....	VASI
Visual Flight Rules	VFR
Very High Frequency.....	VHF

1.3 – FREQUENCIES

Santa Rosa Tower (0700 to 2000)	118.5
Santa Rosa Ground (0700 to 2000).....	121.9
CTAF (when Tower is closed).....	118.5
Pilot Controlled Lighting	118.5
ATIS.....	120.55
Unicom.....	122.95

1.4 - SCOPE

Development of an airport driver’s safety course is recommended to provide training to all individuals who operate vehicles and/or equipment on the airfield and to achieve compliance with the requirements of Federal Aviation Regulation (FAR) Part 139, subsection 329 *Ground Vehicles*. FAR Part 139.329(b) requires the Airport “*Establish and implement procedures for the safe and orderly access to, and operation on, the movement and safety areas by ground vehicles, including provisions identifying consequences of noncompliance with procedures by an employee, tenant, or contractor.*”

The intent of this study guide is to supply the reader with information on procedures recommended for safe vehicle operations on the AOA at the Airport. The information in this study guide is extracted from appropriate Airport Rules & Regulations, FAR’s, and Advisory Circulars.

Every year there are accidents and incidents involving aircraft and vehicles on airports that result in property damage, personal injury and sometimes death. With increasing numbers of these incidents reported in recent years, airport operators are being asked to review and evaluate how and when they permit access to aircraft operating areas, and how they conduct training for authorized personnel. This guide is designed to acquaint the reader with basic airport rules and regulations for operating a ground vehicle at the Airport. The information contained in this guide, combined with actual field training provided by designated vehicle driver training personnel, will provide sufficient knowledge and skill to pass an airfield driver’s test and operate vehicles safely at the Airport.

1.5 - APPLICABILITY

The rules and regulations contained in this guide apply to all persons authorized to operate a ground vehicle on the AOA. The AOA consists of both movement and non-movement areas and also includes Vehicle Service Roads and Aircraft Parking Aprons, in other words everything inside the airport perimeter fence. The rules contained in this guide may be in addition to FAR’s and applicable State and local ordinances and laws, which remain in full force and effect. Any vehicle operating in the movement area and non-movement areas of the airport must be

authorized to do so by the Manager and shall have the necessary equipment as indicated in the following instructions.

1.6 – AUTHORITY

The Manager has the authority necessary to make laws, policies, improvements, modifications, etc., for the good and safe operation of the Airport.

CHAPTER 2

AIRPORT COMPONENTS

2.1 – AIRPORT OPERATIONS AREA (AOA)

There are two areas within the fenced area (the airport operations area) that everyone should be concerned about: The Airline Operations Area (ALOA) and the Airport Movement Area (AMA). The Airport Layout Plan depicts the AOA. **(See Attachment 1)**

The Airline Operations Area (AOLA)

The AOLA is set aside for security reasons for exclusive use by commercial airlines. All personnel in that area need to display their security identification badge. Only Airline personnel and authorized support personnel are issued such badges, and only they, or persons under their escort are permitted within the ALOA. Here at the Airport the ALOA is the marked area of ramp west of and adjacent to the terminal area. **(See Attachment 1)**

AT NO TIME MAY YOU ENTER THE ALOA WITHOUT PERMISSION FROM THE AIRLINE, AND UNDER ESCORT.

The Airport Movement Area (AMA)

Since entry into this area without appropriate clearance is a violation of Federal Law, you should take some time to assure that you understand exactly where the AMA is located. The best way to do this is to refer to the AMA graphic. (See Attachment 1)

Ground vehicles, authorized by the Manager, to operate within the AMA at the Airport are limited to those vehicles necessary for Airport operations and is explained in more detail in Section 3.4, Driving on the Movement Area

2.2 - RUNWAYS

Runway designation is based on the magnetic heading (as you would read it on a compass). In designating runways, the last digit as read on the compass is dropped. If the compass reads 180 degrees the zero is dropped and the runway would be called Runway 18. The other end of the runway would be numbered 36.

The Airport has two runways, 14/32 and 1/19.

Runway 14/32	5,121 ft. x 150 ft. Grooved Asphalt
Runway 1/19	5,020 ft. x 100 ft. Asphalt

2.3 - TAXIWAYS

Taxiways look like runways but they are not as wide and they do not have the same markings. The Airport has eight active taxiways. They are lettered Alpha, Bravo, Charlie, Delta, Hotel, X-ray, Yankee, and Zulu. Taxiway Whiskey is closed to aircraft. All of the taxiways are 50 feet wide, except taxiway Yankee, which is 60 feet wide.

Taxiways, except Taxiway Whiskey are meant for aircraft use. Never operate a vehicle on any taxiway unless authorized by the Manager.

2.4- APRONS (RAMPS)

The Airport has six aprons designated Apron A thru Apron F. The ALOA is located on Apron C, west of the main terminal. It is restricted area for Airline personnel only.

In addition to watching out for moving aircraft, caution should be to avoid getting too close to parked aircraft. Care should be taken with all aircraft when engines are in operation. Prop wash and jet blast can be very dangerous to people and ground vehicles.

2.5 - SAFETY AREAS

All pavement surfaces in the AMA are required to have safety areas to provide clear operating areas for aircraft. The Airport has two types of safety areas, which are runway safety areas and taxiway safety areas. The ground surface within these areas must be level and free from any solid or fixed object or structures. Any objects that are located to be in the areas such as lights, signs and instrument devices are mounted on frangible or break-a-way couplings. The runway safety areas are as follows:

Runway 14/32: 250 feet from the centerline, each side, and 900 feet from the northwest (Runway 14) approach end.
 265 feet from the southwest (Runway 32) approach end.

Runway 1/19: 250 feet off the centerline, 1000 feet from the threshold marker.

The taxiway safety area is the area 60 feet from the centerline of all taxiways, except Taxiway Bravo between the runways, which is 40 feet from the centerline.

2.6 - LIGHTING

Lighting is used at an airport as a means for identification and directional control for pilots using the airport during periods of darkness and poor visibility. Lighting at the Airport includes items such as runway lights, taxiway lights, approach lights, obstruction lights and a rotating beacon. In addition to the lighting system, the Airport has a control system to activate the lights when the

Tower is closed. This system is known as Pilot Controlled Lighting and activates all the Airport lighting with the exception of obstruction lights and the rotating beacon.

Pilot Controlled Lighting is available to provide control of the lights by keying the microphone on 118.5 MHz. The control system consists of a 3-step control response to 3, 5 or 7 microphone clicks. All lighting is illuminated for a period of 15 minutes from the most recent time of activation and may not be extinguished prior to end of the 15 minute period.

Pilot Controlled Lighting

Key Microphone	Function
7 times within 5 seconds	Highest Intensity (REIL on)
5 times within 5 seconds	Medium or lower intensity (REIL off)
3 times within 5 seconds	Lowest intensity available

- A. *Runway lighting.* The runway lighting consists of three components, Runway End Identifier Lights (REILS on Runway 14 only), runway edge lighting and threshold lights.
 - i. *The runway end identifier lights* are installed to provide rapid and positive identification of the approach end of the runway. This system consists of a pair of synchronized flashing lights located laterally on each side of the runway threshold
 - ii. *The runway edge lights* are used to outline the edges of the runway. These lights are white but change to yellow for the last 2000 feet to form a caution zone for landings.
 - iii. *The runway threshold lights* are used to indicate the beginning or end of a runway depending on your direction. The lights marking the ends of the runway emit red light toward the runway to indicate the end of the runway and emit green light outward from the runway end to indicate the threshold to landing aircraft.

- B. *Taxiway lighting.* Taxiway lights are used to outline the edges of taxiways and they are blue in color.

- C. *Approach lights.* The Airport has two categories of approach lighting aids. The first is the Approach Light System and the second is a Visual Glideslope Indicator, which is used to provide visual decent guidance information during the approach to a runway.
 - i. *Approach Light Systems* provide the basic means to transition from instrument flight to visual flight for landing. Runway 32, the Precision Instrument Runway

utilizes a Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR). The MALSR is a configuration of signal lights extending into the approach area a distance of 2,400 - 3,000 feet. The Runway 32 system also includes sequenced flashing lights, which appear to the pilot as a ball of light traveling towards the runway at high speed (twice a second).

- ii. *The Visual Glideslope Indicator* installed at the Airport is a Visual Approach Slope Indicator (VASI) located on Runway 14 and is a 2-bar system. The units are arranged in bars referred to as near and far. VASIs use a color differentiation between red and white light to provide guidance. Each light unit projects a beam of light having a white segment in the upper part of the beam and a red segment in the lower part of the beam. The light units are arranged so that the pilot using the VASI will see a combination of lights to indicate if they are below, on or above the glide path. These lights are visible from 3-5 miles during the day and up to 20 miles or more during the night.

D. *Obstruction lights.* In addition to the lights found along the ground, there are red lights mounted on top of buildings and objects/structures on or near the Airport that are high enough to meet FAA requirement to be lit. These lights are a warning to pilots that there is an obstacle underneath them.

E. *Airport (Rotating) Beacon.* The Airport has a rotating beacon on top of the ATCT. The beacon flashes a white and green light, which indicates a lighted land airport. This light helps pilots in the air locate the Airport during darkness and low visibility conditions. In control zones, operation of the airport beacon during the hours of daylight often indicates that ground visibility is less than 3 miles and/or the ceiling is less than 1,000 feet.

2.8 - AOA SIGNAGE AND PAVEMENT MARKINGS

Signage and pavement marking is used to provide information that is useful to a pilot during takeoff, landing and taxiing. Uniformity in airport signs and markings from one airport to another enhances safety and improves efficiency. **Attachment 2** shows the location of some signs at the Airport.

A. Taxiway Information

A taxiway is a prepared strip used for the movement of aircraft on the airport surface to transition from the runway to the and vice versa. All taxiways have a yellow centerline stripe and yellow lead in lines. At night and during inclement weather, blue taxiway edge lights and taxiway guidance signs provide assistance in locating and navigating taxiways.

i. *Taxiway Markings*

- a. Taxiway centerline markings provide a visual cue to permit taxiing along a designated path. The taxiway centerline marking is 6 inches wide. It curves onto the runway and extends parallel to the runway centerline marking for a distance of 200 feet. Taxiway centerline marking is shown below.



Taxiway Centerline Marking

- b. Taxiway Edge Markings are used to delineate the edge of the taxiway. The Airport uses continuous taxiway edge markings to delineate the taxiway edge from the shoulder or some other contiguous paved surface not intended for use by aircraft. The taxiway edge marking consist of a continuous double yellow line, with each line being at least 6 inches in width, spaced 6 inches apart. Continuous taxiway edge marking is shown below.



Taxiway Edge Marking

- c. Movement/Non-Movement Markings consist of two yellow lines (one solid and one dashed). The solid line is located on the non-movement side, while the dashed yellow line is located on the movement area side. The Eastern Movement Area boundary at the Airport is 60 feet East of the Taxiway Yankee Centerline. Boundary Marking is shown on the following page, and is marked at each Taxiway Yankee intersection. The Non-Movement side of the marking is the solid yellow line and clearance is required to cross that line. In addition to the movement area boundary marking, STOP CLEARANCE REQ is stenciled on the pavement.

Since entry onto the movement area without appropriate clearance is a violation of Federal Law, you should take some time to assure that you understand exactly where the AMA is located (See Attachment 1).

Remember, only vehicles authorized by the Manager are allowed on the movement area.

Movement/Non-movement Area Boundary Marking



**STOP
CLEARANCE
REQ**

- d. Runway Holding Position Markings or runway hold bars are located across each taxiway that leads directly onto a runway. **ALL AIRCRAFT AND VEHICLES MUST HOLD THEIR POSITION ON THE SOLID SIDE OF THE HOLDING POSITION MARKING AND RECEIVE CLEARANCE FROM THE ATCT PRIOR TO PROCEEDING.** The paired set of parallel yellow lines, two solid and two dashed are depicted below.



Runway Holding Position Marking

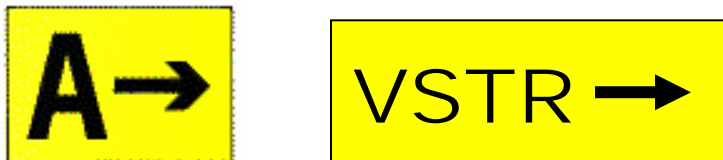
- e. Instrument Landing System (ILS) Critical Area Holding Position Markings are comprised of two parallel yellow lines running perpendicular between the two parallel lines. The marking, which is located on Taxiway Delta is perpendicular to the taxiway centerline and appear similar to a ladder. Under conditions of low visibility, pilots may utilize the (ILS), which provides vertical and horizontal guidance to aircraft on approach to Runway 32. ILS signals can be easily distorted by obstructions and therefore, ILS Critical Areas, are required to protect the signals. ILS Holding Position Markings identify the location where an aircraft or vehicle must stop if it does not have clearance to enter the ILS Critical Area.



ILS Holding Position Marking

ii. *Taxiway Signage*

- a. Taxiway direction signs are yellow with black letters or letter/number combinations and are accompanied by a directional arrow or arrows indicating the direction to that taxiway, runway, or destination.



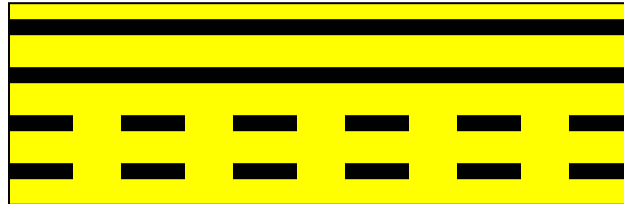
Taxiway Direction Signs

- b. Taxiway location signs are black with yellow letters or letter/number combinations and are oriented to identify the taxiway that an aircraft or vehicle is operating on.



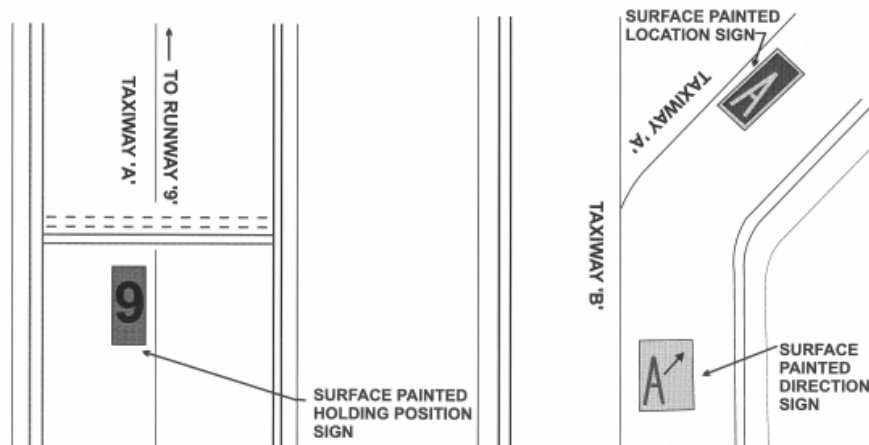
Taxiway Location Sign

- c. Runway safety area and runway approach boundary signs identify the boundary of the Runway Safety Area or the runway approach area to pilots and vehicle operators. The driver can use these signs to identify when the vehicle is clear of the runway environment. It has black inscription that depicts the holdline marking on yellow background.



Runway Safety area and Runway Approach Boundary sign

- d. Surface painted signs holding position signs supplement the signs located at the holding position. The Airport has surface hold position signs located at the run up areas, Taxiway D and Taxiway B.



Surface Painted Signs

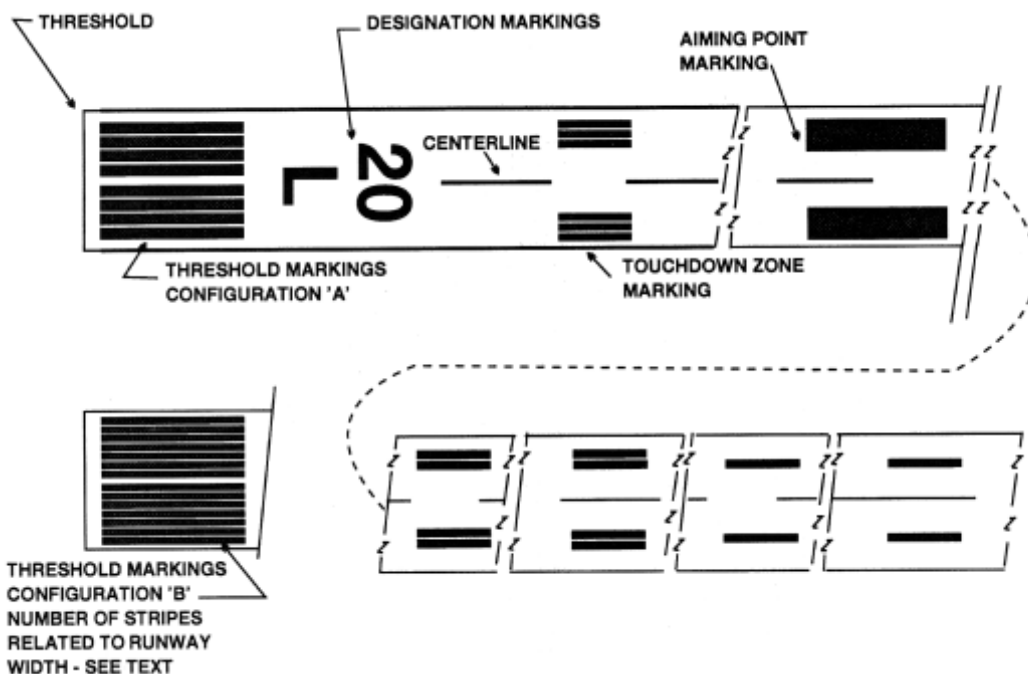
B. Runway Information

Runways are defined rectangular areas on a land airport utilized for the landing and takeoff of aircraft. Runways have white markings including a centerline, numbers indicating the runway's magnetic heading and in some cases threshold markings and/or aiming point markings. At night and during inclement weather white and/or amber lights illuminate the runway edges. The

runway ends have bi-directional red/green lights. Red and white runway mandatory signs state the designation of the runway and its directional orientation.

i. *Runway Markings*

- a. Runway numbers are determined from the approach direction. The runway number or designation is the whole number nearest one-tenth of the magnetic azimuth when viewed from the direction of approach.
- b. Runway centerline marking identifies the center of the runway and provides alignment guidance during takeoff and landing operations. The centerline consists of a line of uniformly spaced stripes and gaps.
- c. Runway aiming point markings serves as a visual aiming point for landing operations. These two rectangular markings consist of a broad white stripe located on each side of the runway centerline and approximately 1,000 feet from the landing threshold.
- d. Runway touchdown zone markers identify the touchdown zone for landing operations and are coded to provide distance information in 500 feet increments. These markings consist of one, two and three rectangular bars symmetrically arranged in pairs about the runway centerline.
- e. Runway side stripe marking delineates the edges of the runway. They provide a visual contrast between the runway and the surrounding terrain or shoulders. Side stripes consist of continuous white stripes located on each side of the runway.
- f. Runway threshold marking identifies the beginning of the runway that is available for landing.



Runway Markings

ii. *Runway Signs*

- a. Mandatory holding position signs for runways have white numbering/lettering on a red background. These are located at each entrance to a runway and are co-located with runway holding position markings.



Runway Holding Position Sign

- b. ILS holding position sign located on Taxiway D has white letters on a red background. Under conditions of low visibility, pilots may utilize the (ILS), which provides vertical and horizontal guidance to aircraft on approach to Runway 32. ILS signals can be easily distorted by obstructions and therefore, ILS Critical Areas, are required to protect the signals. ILS holding position signs are co-located with holding position markings. They identify the location where an aircraft or vehicle must stop if it does not have clearance to enter the ILS Critical Area.



ILS Holding Position Sign

- c. Runway distance remaining signs are located along the west side of Runway 14/32, and along the east side of Runway 1/19. They indicate the remaining runway distance in increments of 1000 feet. The signs have white numbers on a black background and Runway 14/32's are lighted.



Runway Distance Remaining Sign

- d. 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/vehicle is expected to exit. The sign has black lettering and a directional arrow on a yellow background.



Runway Exit Sign

- e. A no entry sign is located at Runway 19 and Taxiway Whiskey as an indication for pilots not to enter Taxiway W because it is closed to aircraft. The sign has a round red marking with a white horizontal line through it.



No Entry Sign

CHAPTER 3

DRIVING OPERATIONS AND RESTRICTIONS

3.1 - RIGHT OF WAY REQUIREMENTS

The AOA can be a confusing congested place for a vehicle operator. Many different types of vehicles operate simultaneously to service aircraft as well as maintain the airfield and navigational aids. Vehicle operations could have an adverse impact on aviation safety if a driver does not follow established safety procedures and practices.

When operating a vehicle on the Airport, moving aircraft (including aircraft under tow) shall always have the right of way over vehicular traffic.

3.2 - AUTHORIZED VEHICLES

The AOA is a restricted area. Only those vehicles/persons who are authorized by the Manager may operate in that area. Those persons found in the AOA without authorization are subject to arrest and prosecution for criminal trespassing.

3.3 – DRIVING ON THE NON-MOVEMENT AREA

Non-movement areas include taxilanes, aprons, and other areas **not** under control of the ATCT. The majority of vehicle operations on the AOA occur in this area and most drivers on the AOA are only authorized to operate on the non-movement area. Generally, operators authorized for this area include hangar tenants, tie down tenants, passengers, mechanics and fuel trucks.

Operating within the non-movement areas requires the vehicle driver to exercise extreme caution as aircraft are always moving, passengers are walking to and from aircraft, and noise levels are high. Vehicle drivers should:

- Know and understand the vehicle operating procedures.
- Be patient, observant, and non-assuming.
- Follow the posted speed limit.
- Always know your exact location and be aware of the activity around you.
- Never drive under any part of an aircraft or allow its wing to pass over your vehicle. It is recommended to keep at least one car length away from parked aircraft.
- Pilots have a limited field of view from the cockpit-don't assume they can see you, assume that they can't see you.
- Report any accident, no matter how minor, to the Airport office immediately.

- Never drive between safety cones.
- Avoid jet blast or prop wash.
- Be aware and avoid moving propellers that can cause damage, injury, or death.
- Yield to aircraft, passengers, and emergency vehicles, which **always** have the right-of-way on any portion of the Airport.

3.4– DRIVING ON THE MOVEMENT AREA

The movement area consists of the taxiways and runways. An operator in this area is required to have approval from the Manager to drive in these areas for each use. 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 principles 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 the ATCT and be able to follow their directions.

Ground vehicles, authorized by the Manager, to operate within the AMA at the Airport are limited to those vehicles necessary for airport operations and include the following type vehicles:

- Airport owned vehicles equipped with two-way radio communication with the Tower.
- FAA Airway Facility vehicles authorized for maintenance of NAVAID's.
- Authorized construction vehicles.

All vehicles in the movement area must be marked with the company name and/or logo. Vehicles will be marked/flagged for high daytime visibility and, if appropriate, lighted for nighttime operations. No other vehicles are allowed in the movement area. Those individuals who wish to enter the movement area must either be escorted by a certified driver of an approved vehicle, or,

- Have prior written approval of the Manager, and
- Be capable of two-way radio communication with the ATCT whenever that facility is open on Santa Rosa ground frequency of 121.9 MHz, and
- When the ATCT is not open, monitor the advisory frequency of 118.5 Mhz.
- Have received clearance from the Air Traffic Control Tower to be within the AMA whenever that facility is open.

Navigating on the Movement Area – Driving on the runways and taxiways can be confusing and drivers may easily become disorientated. The following techniques should be followed to avoid becoming disorientated and accidentally encroaching on an active runway:

1. Know your location at all times.
2. Pay attention to all guidance signs and know what each means.

3. Watch for holding position markings with runway identifier signs; do not enter a movement area or safety area without clearance.
4. Use buildings or objects as reference points.
5. Carry an airfield diagram and occasionally locate your position and its relation to your reference points.
6. When in doubt as to your location, ask the tower for progressive instructions, don't try to "fake it."
7. If you are authorized but do not feel capable, ask for additional training from your supervisor and/or an escort from Airport Operations.

3.5 – RADIO COMMUNICATIONS

All vehicles operating on the movement areas and safety areas at the Airport must be equipped with a two-way radio, or be escorted by a properly equipped vehicle, allowing communications with ATCT on ground frequency 121.9 MHz and local tower frequency 118.5 MHz.

The most important thing to keep in mind when operating on runways and taxiways is that they are movement areas, clearance **MUST** be obtained from ATCT, and all instructions obeyed.

ALWAYS VISUALLY CHECK THE MOVEMENT AREA ON WHICH YOU ARE ABOUT TO PROCEED, AFTER RECEIVING CLEARANCE FROM THE ATCT AND BEFORE PROCEEDING. It is a specialized environment where a mistake can easily cause loss of life and property. Adding to the uniqueness of the movement area is the requirement for interacting with the ATCT via a radio capable of transmitting and receiving on aviation band frequencies.

Two-Way Aviation Radio Required – All vehicles crossing or operating on runways and taxiways must be equipped with a VHF radio or VHF portable unit, have ATCT clearance and prior permission of the Manager to operate on the airfield. A vehicle equipped with an aviation radio and a beacon is not automatically authorized to operate on the movement area. Permission must be obtained from the Manager. Authorized vehicles may operate in these areas without such radios when accompanied by and under the control of an escort vehicle equipped with the proper radio equipment.

Radio Monitoring and Usage – It is advisable to monitor the Tower and Ground frequencies prior to utilizing them. The frequencies are a fast-paced, busy and abbreviated communication medium; however, it is a tool that must be learned and used. The terminology used on aviation frequencies is unique to this medium. Citizens Band (CB) terminology or police "10-codes" are not to be used when communicating on aviation frequencies. See **Attachment 3** for listings of common aviation terminology.

When contacting the ATCT via VHF radio, a few simple guidelines must be followed:

1. Think before speaking. What exactly is required to be said? How much “air time” will it require? Is there a better communication medium available?
2. Listen before transmitting. Courtesy is essential with so many users on the same frequency. Wait until a conversation is finished before transmitting to avoid “stepping on” others transmissions.
3. Be brief and to the point.
4. Speak clearly with conversational speed and volume.
5. Don’t be intimidated; novices are often unfamiliar and require assistance while learning the finer points of radio communications.

The most important thing to keep in mind when operating on the airfield is that it is a movement area and clearance must be obtained from the ATCT and all instructions obeyed. Crossing active runways and taxiways is the most critical operation on the movement area and should be done as little as possible. It is Airport policy to use the access/perimeter roads to reach your destination whenever possible.

AVOID CROSSING THE ACTIVE RUNWAYS UNLESS ABSOLUTELY NECESSARY. Runway incursions are a major safety hazard. Due to human factors, it is easy to misunderstand instructions and cross active runways/taxiways without permission. For this reason, the Airport discourages crossing active runways.

The airside area is a specialized environment where mistakes can easily lead to an accident resulting in loss of life and property. Because the Tower Ground frequency handles a high volume of traffic, it is good practice to make all transmissions as short as practical. Some of the commonly used phrases a vehicle operator should become familiar with are listed alphabetically in **Attachment 3**.

Sometimes numbers are difficult to understand. They should be annunciated clearly. Single digit numbers are pronounced in the same way as they sound with the exception of the number “nine” which is spoken as “niner”. Two or more digits are spoken as single digit numbers in a series. For example: “21” is spoken as “two one”.

The following are general guidelines for a typical radio conversation with the ATCT and two examples. The same information may be stated a number of different ways, therefore, it is important the user choose terminology they are comfortable using.

1. First, call the controller position and identify yourself by your airport designation or the vehicle number, indicate your location and state your request.

2. The controller will reply to your request with information or a clearance, ask you to stand by momentarily or request clarification of your intentions.
3. Acknowledge the controller's instruction by reading back their instructions and then comply with those instructions.
4. Inform the controller upon completion of the instructions or when clear of his/her area of control.

NOTE: Proper read back of instructions is vital to reducing the possibility of misinterpreted instructions on both ends of the communication. It is the responsibility of the caller, as well as the controller, to know and understand what the caller has requested and understands what they are to do. There may be instances where the controller or caller may not properly receive the transmission or clearly understand the transmission.

NEVER ASSUME WHAT THE RESPONSE IS. IF YOU ARE UNSURE AS TO WHAT WAS SAID OR WHAT YOU ARE TO DO, REQUEST THE ATCT TO "SAY AGAIN".

Example 1

Airport OPS: "Santa Rosa Ground, Airport 5."

ATCT: "Airport 5, Ground."

Airport OPS: "Santa Rosa Ground, Airport 5 is on Taxiway Alpha, request permission to cross runways 14 and 19 to the EAA."

ATCT: "Airport 5, Cross Runways 14 and 19 to EAA."

Airport OPS: "Airport 5 crossing Runways 14 and 19."

Airport OPS: "Santa Rosa Ground, Airport 5 clear of Runways 14 and 19."

Example 2

Apex fuel Truck: "Santa Rosa Ground, Apex 2 is at the shade hangars, request permission to cross Runway 32 to the Gun Club".

ATCT: "Apex 2, proceed up to and hold short of Runway 32 at Taxiway Zulu."

Apex Fuel Truck: "Apex 2, holding short of Runway 32 at Taxiway Zulu, traffic on short final."

Following aircraft landing:

ATCT: “Apex 2, cross Runway 32 to the Gun Club.”

Apex Fuel Truck: “Apex 2 crossing Runway 32”.

Apex Fuel Truck: “Apex 2, clear of Runway 32.”







Loss of Radio Communications – If radio communication with ATCT is lost while on the movement area (usually due to equipment failure), the following procedure must be followed:

If on an active runway, clear immediately at the next available taxiway and move out of the Runway Safety Area. Orient the vehicle and flash the headlights in the direction of the ATCT. Proceed as directed upon receiving light gun signals or wait for an escort to arrive

If on a taxiway, obtain recognition at the hold bar by flashing the vehicle headlights in the direction of the Control Tower and proceed upon receiving light gun signals or an escort.

Light Gun Signals – Light gun signals are intended to permit communication with the ATCT if radio communications are lost. The ATCT will signal using various types and colors of signals, each with their own meaning. All persons driving on the AOA should become familiar with the meaning of each signal and be able to follow light gun signals. Light signal placards for vehicle interiors are available from the Manager.

ATC Light Gun Signals

ATCT LIGHT GUN SIGNALS	
COLOR AND TYPE OF SIGNAL	MOVEMENT OF VEHICLES, EQUIPMENT & PERSONNEL
 STEADY GREEN	CLEARED TO CROSS, PROCEED OR GO
 FLASHING GREEN	NOT APPLICABLE
 STEADY RED	STOP
 FLASHING RED	CLEAR THE TAXIWAY / RUNWAY
 FLASHING WHITE	RETURN TO STARTING POINT ON AIRPORT
 ALTERNATING RED / GREEN	EXERCISE EXTREME CAUTION

Common Traffic Advisory Frequency Procedures – When the Sonoma County Airport ATCT is closed; you should broadcast your intentions on the appropriate Common Traffic Advisory Frequency (CTAF), prior to entering the movement area. The CTAF at the Airport is 118.5, the same frequency as the Tower.

Vehicle operators that remain on the movement area for prolonged periods of time as in airfield lighting inspections should continually announce their presence on the movement area every few minutes. When circumstances allow, it may be preferable to NOTAM “closed” the effected area until the work is completed. In all situations, the vehicle operator is ultimately responsible for their safe movement on the movement area.

To properly use CTAF:

- BROADCAST your call sign or vehicle number along with your intentions
- LOOK and LISTEN for other traffic
- CHECK the movement area environment before proceeding

3.6 - VEHICLE OPERATIONS DURING LOW VISIBILITY

Poor weather conditions (fog, rain, etc.) might obscure visual cues, markings and signs. Vehicle operators should remain vigilant of their surroundings and operating boundaries. Watch out for aircraft, other vehicles and equipment operating in the vicinity. When operating on or near taxiways and runways, always communicate your intentions.

3.7 - NIGHTTIME VEHICLE OPERATIONS

Operating a vehicle on the Airport at night is very different than during daylight operations. The Airport is a confusing place with different colored ground lights. In those areas without ground lighting, the apron seems to be an area of emptiness. It is very difficult to see operating aircraft at night on the ramp. Also remembering where you are and how to get from one place to another is very important. In addition, it is very important to remember where your headlights are shining, as night vision required by pilots can take ½ hour to adjust. It is recommended that vehicle operators use their parking lights while in the non-movement area to prevent blinding the pilot.

3.8 - SPEED LIMITS

With the exception of authorized emergency vehicles responding to an emergency, all vehicles operating in the non-movement area are restricted to a speed not to exceed **15** miles per hour. When towing aircraft or equipment the speed is restricted to **5** miles per hour or, as safe as operations will allow. All escort vehicles operating in the AOA shall be in radio contact with the ATCT at all time for authorization to conduct operations. Vehicles shall not be operated between parked aircraft.

3.9 – CONSTRUCTION VEHICLES

Construction vehicles when operating on the AOA should be marked properly with company markings and either an orange and white “checkered” flag or a flashing amber beacon. For nighttime operations the vehicle must be equipped with a flashing amber beacon. Airport personnel must escort vehicles not meeting these requirements.

CHAPTER 4

GENERAL AIRPORT OPERATIONAL INFORMATION

4.1 - AIRPORT OPERATIONS AND SECURITY

The perimeter of the AOA is completely fenced. There are 14 gates in the perimeter fence line. All gates are closed and locked unless directly attended by an authorized person capable of stopping and challenging any person/vehicle wanting to make entry. When accessing or leaving the AOA through an automated gate the driver must wait until the gate is fully closed before leaving. **Failure to wait for the gate to close could result in revocation of airfield driving privileges.** If the gate does not close, notify Airport Personnel.

4.2 – ENFORCEMENT

The Manager shall handle enforcement of ground vehicle regulations, which applies to Airport employees, tenants and contractors. The Manager will take appropriate enforcement action depending on the nature and severity of the offence. The following enforcement actions are available at the discretion of the Manager:

- Oral reprimand.
- Written reprimand or warning letter.
- Recurrent training.
- Loss of authorization to operate a vehicle on the apron or movement area.
- Personnel actions for County Employees.

4.3 - FOREIGN OBJECTS AND DEBRIS

Large objects such as soda cans, trashcans, and softball-sized objects can easily be sucked into a jet engine and cause extensive cost and damage. Small pieces of metal and plastic can puncture tires and dent skin, making an aircraft unsafe to fly. Rocks can also cause serious damage; a rock caught by a propeller can damage a prop and cause serious injury or death. While operating a vehicle on the airfield, keep an eye out for FOD. If it is noticed in small quantities, please stop and pick it up. If found in large quantities, report it to the Airport Office immediately.

4.4 - NOTICE TO AIRMEN

The Airport and the FAA are allowed to issue NOTAMS concerning the conditions at the Airport. The Airport monitors conditions such as construction or any other factors that may affect the usefulness of the Airport. When conditions indicate that the issuance of a NOTAM is necessary, representatives of the Airport will do so. The Oakland Flight Service Station will put the information in the computer network, which has national capabilities. In addition this information will be posted on the Automatic Terminal Information Service (ATIS) and can be heard on 120.55 or by calling (707) 545-2847.

4.5 - VEHICLE/AIRCRAFT ACCIDENTS

In airports across the country several collisions between vehicles and aircraft occur each year. In all cases, accidents can be avoided because aircraft have the right-of-way. When operating a vehicle on the airfield, give any moving aircraft plenty of room. In most aircraft, the pilot has a limited view from the flight deck. Never assume the pilot sees you and wait until the aircraft is in a safe location before moving your vehicle.

The driver of any motor vehicle involved in an accident while on the AOA which results in death or injury to any person or damage to any property must report the incident or accident immediately. Even the smallest incident between a vehicle and an aircraft can have a serious affect on the safety of flight.

Accidents or incidents must be reported by calling Airport Operations Personnel at 484-0236 or the Sonoma County Sheriff at 565-2511.

Person(s) involved in the incident/accident must remain at the scene until Airport Operations Personnel or the Sheriff have finished an on-scene investigation. Often, damage reports will have to be completed by the airport and the airlines or other companies whose vehicles and aircraft were involved. If uninjured and capable or qualified to assist in emergency services, person(s) involved in the incident/accident are required to provide assistance until relieved by responding emergency personnel.

4.6 - AIRCRAFT EMERGENCIES

The Airport ARFF building is located north of the terminal. When an aircraft emergency is declared, emergency vehicles will leave the ARFF building and proceed to the incident or specified staging positions in accordance with standard operating practices. Whenever fire/rescue vehicles are noticed moving on the airfield, it is best to stay clear by moving out of the way. Portions of the Airport will be reopened as they can be cleared or determined that they are not in any danger from vehicles or the incident.

4.7 - AIRCRAFT TRAFFIC PATTERNS

The hours of operation of the ATCT at the Sonoma County Airport is from 0700 to 2000 everyday. When the ATCT is closed, pilots rely on other cues for information for guidance on which runway is in use. In our case, a lighted midfield segmented circle with a windsock is installed to provide visual indications for pilots to determine our traffic patterns. Supplementary windsocks are also located at the approach end of Runways 14 and 19, and the approach end of Runway 32. A traffic pattern is an adopted set of procedures to ensure the safest means of aircraft to land at an airport. The traffic pattern is composed of seven components, which include: Entry Leg, Downwind Leg Base Leg, Final Approach, Upwind Leg and Departure Leg. **(See Attachment 4)**

- A. *Entry Leg.* A flight path towards the Airport, which enters the traffic, pattern abeam the midpoint of the runway, at pattern altitude.
- B. *Crosswind Leg.* A flight path at right angles to the landing runway off its takeoff end.
- C. *Downwind Leg.* A flight path parallel to the landing runway in the opposite direction of landing.
- D. *Base Leg.* A flight path at right angles to the landing runway off its approach end and extending from the downwind leg to the intersection of the extended runway centerline.
- E. *Final Approach.* A flight path in the direction of landing along the extended runway centerline from the base leg to the runway.
- F. *Upwind Leg.* A flight path parallel to the landing runway in the direction of landing
- G. *Departure Leg.* The flight path which being after takeoff and continues straight ahead along the extended runway centerline. The departure climb continues until reaching a point at least ½ mile beyond the departure end of the runway and within 300 feet of the traffic pattern altitude.

The standard for traffic patterns is a left-hand pattern in relation to the runway to be landed on. All the runways at the Sonoma County Airport utilize the standard left hand pattern. This is not to say all pilots will use a left hand pattern when the Tower is closed. Sometimes pilots will make a right hand pattern, while other aircraft will conduct a straight in approach.

When the Tower is not operating vehicle operators must make proper use of the Common Traffic Advisory Frequency, and be vigilant of aircraft in the vicinity of the airport.

PHONETIC ALPHABET & AVIATION PHRASEOLOGY

The following is a listing of the International Civil Aviation Organization phonetic alphabet. This alphabet is standard by which pilots, airport tower personnel and ground personnel must utilize during all radio communications.

A	ALPHA	(AL-FAH)	N	NOVEMBER	(NO-VEM-BER)
B	BRAVO	(BRAH-VOH)	O	OSCAR	(OS-CAH)
C	CHARLIE	(CHAR-LEE)	P	PAPA	(PAH-PAH)
D	DELTA	(DELL-TAH)	Q	QUEBEC	(KEH-BEK)
E	ECHO	(ECK-OH)	R	ROMEO	(ROW-ME-OH)
F	FOXTROT	(FOKS-TROT)	S	SIERRA	(SEE-AIR-RAH)
G	GOLF	(GOLF)	T	TANGO	(TANG-GO)
H	HOTEL	(HOH-TELL)	U	UNIFORM	(YOU-NEE-FORM)
I	INDIA	(IN-DEH-AH)	V	VICTOR	(VIK-TAH)
J	JULIET	(JEW-LEE-ETT)	W	WHISKEY	(WISS-KEY)
K	KILO	(KEY-LOH)	X	X-RAY	(ECKS-RAY)
L	LIMA	(LEE-MAH)	Y	YANKEE	(YANG-KEE)
M	MIKE	(MIKE)	Z	ZULU	(ZOO-LOO)

The following is a partial listing containing most, but not all, commonly used aviation phrases. These phrases are standard by which pilots, airport tower personnel and ground personnel must utilize during all radio communications.

ACKNOWLEDGE *Let me know that you have received and understood my message.*

ACTIVE..... Runway(s) currently used for takeoffs and landings.

AFFIRMATIVE..... Yes.

CLEARED..... Authorized as specified.

CORRECTION..... An error has been made in this transmission.

DISREGARD..... Ignore last instruction or message.

ATTACHMENT 3

<i>EXPEDITE</i>	No delay in compliance.
<i>FINAL</i>	Final approach for landing.
<i>GIVE WAY</i>	Allow traffic to have right-of-way.
<i>GO AHEAD</i>	Proceed with your message (Not to be used for any other purpose).
<i>HOLD/HOLDING</i>	Remain (remaining) in present position, or not to proceed (not proceeding) past a specified point.
<i>HOW DO YOU READ</i>	Let me know how well you hear this transmission.
<i>IMMEDIATELY</i>	Used when compliance is required to avoid imminent situation.
<i>NEGATIVE</i>	No. Permission is not granted, or that is not correct.
<i>OVER</i>	My transmission is ended; I expect a response. (The word “over” is omitted if the message obviously needs a reply).
<i>PROCEED</i>	Authorized to continue.
<i>PROGRESSIVE</i>	Step-by-step directional instructions.
<i>REQUEST</i>	Used when asking for clearance.
<i>ROGER</i>	I have received all of your last transmission. (This word is used to acknowledge receipt and should not be used for other purposes).
<i>SAY AGAIN</i>	A request to repeat the last transmission – Usually specifies transmission or portion thereof not understood or received.
<i>STAND BY</i>	Means the controller must pause for a few seconds to attend to higher priority duties. If delay is lengthy, caller should reestablish contact.
<i>TRAFFIC</i>	Possible conflicting object, vehicle or aircraft.
<i>UNABLE</i>	Indicates an inability to comply with a specific instruction, request or clearance.
<i>URGENT</i>	Requesting immediate attention.
<i>VERIFY</i>	Request confirmation or information.
<i>WHEN ABLE</i>	Expect compliance at the first opportunity.
<i>WILCO</i>	I have received your message, understood it, and will comply.

CHARLES M. SCHULZ – SONOMA COUNTY AIRPORT

AIRPORT DRIVING PROCEDURES MANUAL

CERTIFICATION TRAINING RECORD

This certifies that _____ has read, understands and will comply with the provisions of this Airport Driving Procedures Manual.

Signature _____ Date _____

Address _____

Employer _____

Telephone Number () _____-_____

AIRPORT DIVISION AUTHORIZATION

I certify that the above named individual has satisfactory completed the Driver Training Program.

Instructor's Signature: _____

Title: _____

Date: _____