

GROUND RULES FOR CONSTRUCTION
AT
TUCSON INTERNATIONAL AIRPORT
AND
RYAN AIRFIELD



PLANNING AND DEVELOPMENT DEPARTMENT
AUGUST 2010



MEMORANDUM

TO: All TAA Tenants, Consultants and Contractors

FROM: Michael F. Johnson
Director of Engineering, Planning and Development Department

RE: Ground Rules for Construction at T.I.A. and Ryan Airfield

DATE: August 2010

Each year facilities on both airports are constructed, renovated, modified or demolished to suit the ever-changing needs of the aviation industry.

The elements of this work are often complex and may impact a variety of operations, security and safety considerations.

Responsibility for the overall coordination of facilities construction, renovation, modification or demolition is charged to the TAA Planning and Development Department.

The Planning and Development Department acts as the central point of coordination between tenant or TAA sponsored construction activities at TIA and the various TAA departments as well as agencies such as FAA, the City of Tucson, Pima County, the State of Arizona and other agencies having jurisdiction over the airports.

Tenant development/improvement coordination will be done by TAA Planning and Development, Design Services Department, Lorraine Behr, Facilities Design Administrator, 520-573-4869. No tenant improvements may be undertaken without the review and approval of TAA.

The "Ground Rules for Construction" booklet provides a source of information to guide tenants, contractors and consultants in this complex process.

Please take the time to carefully review these requirements and insure that they are passed on to all personnel who will be part of your firm's activities.

TAA's goal is to insure that tenant/TAA sponsored development activities progress in a timely manner while insuring that all requirements and standards, including safety and security are complied with.

If you have any questions regarding these requirements or if we may be of further assistance, please call me at 520.573.4856.

MJF/kmm

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PURPOSE OF THIS GUIDE

SCOPE:

This guide is not meant to cover all aspects of airfield construction projects, but is intended to serve as an outline of the major items required by the Federal Aviation Administration, the Arizona Department of Transportation, TAA Fire and Police Departments, the TAA Planning and Development (P&D) Department and other agencies having jurisdiction.

All other matters that apply during the course of construction of TAA projects will be coordinated by the TAA Planning and Development Department (520-573-4811) as required. Any deviation from the instructions contained in this booklet must be coordinated with and approved by the TAA Planning and Development Department.

The operations of engineers, architects and other technical personnel shall also be governed by these guidelines.

PROJECT RESPONSIBILITY:

Project responsibility varies from project to project as follows:

- TAA contracted projects shall be managed by TAA staff who will be responsible for security, safety and access to airport operation areas and facilities.
- All requests for new addresses must be through TAA. Contact TAA's Planning & Development Department, Design and Construction Services Secretary, (520-573-4823) to request a new address.

AIRPORT SECURITY

SECURITY BADGES: When work is required in the restricted areas of the Tucson International Airport and Ryan Airfield, it may be necessary for each worker to display a construction identification badge. This badge is issued by the TAA Planning and Development Department, Construction Services Administrator / Project Officer. The Officer will also monitor entry with a Construction Badge Log showing time in/out, person's name, company and badge number.

It is the contractor's responsibility to insure that the identification badge of each worker shall be displayed on the worker's outer garment while working in the area and badges shall be returned at the end of the work shift. Lost badges must be reported immediately and, if at all possible, accounted for.

The contractor shall be solely responsible for all personnel working on the project and will insure that personnel remain within the assigned work areas. Any person not cooperating with these requirements or the instructions of the TAA Planning and Development Department, Construction Services Administrator / Project Officer will be required to leave the restricted area and their supervisor will be notified.

TAA sponsored projects will be escorted by TAA Planning and Development Department Construction Services Administrator, Project Officer, or other appropriate TAA personnel.

Escorting of contractor personnel working on TENANT IMPROVEMENT SPONSORED PROJECTS within the restricted areas of the airports shall be the responsibility of the tenant unless other arrangements are made with TAA.

Restricted areas for the airports consists of everything within the Air Operations Area (AOA) which is protected by airport security fencing, and also includes certain utility rooms, operations areas, electrical rooms and terminal building areas not open to the general public. Entrance to these areas will be arranged on a case-by-case basis depending on need.

FIREARMS: Firearms are not permitted in the secured area of the airport. Arrest and confiscation may result. This includes all persons issued a Concealed Weapon Permit by the Arizona Department of Public Safety. Federal Airport Security Regulations supersede all State of Arizona permits, authorizations, etc.

CARTRIDGE ACTIVATED FASTENER DRIVERS: Cartridge activated drivers of any nature require the prior approval of and coordination with TAA Police Department.

ESCORTS AND ACCESS CONTROL: When contractor or other non-badged personnel must have access to the restricted areas, they must be under approved escort at all times.

- **TAA Projects:** All requests for TAA escorts shall be made a MINIMUM of 24-hours in advance of entry. Escorts will be scheduled with the TAA Planning and Development Department, Construction Services Administrator at 520-573-8014.
- **Tenant Improvement Projects:** If desired, the tenant may request that TAA provide escort personnel on a reimbursable basis subject to availability of escort personnel. All requests for TAA escorts shall be made a minimum of three (3) working days in advance of entry to allow the processing of a *Letter of Authorization* for escort charges. Contact TAA's Design and Construction Services Secretary at 520-573-4823 to make the necessary arrangements.

All personnel responsible for escorting or guarding gates shall be TAA employees or tenant personnel who have been approved by the TAA Police Department based on compliance with the Transportation Security Administration (TSA) requirements.

FENCE GATES: Federal Aviation Regulations (FAR) Part 139 and Transportation Security Administration (TSA) 1542.203 requires that the airport take appropriate action to ensure safeguards against purposeful, inadvertent and unauthorized entry of persons, vehicles or large domestic animals onto any airport operations area. Therefore, in compliance with these Federal Regulations, all gates to Tucson International Airport and Ryan Airfield shall be locked at all times. If not locked, a TAA Planning and Development, Construction Services Administrator, Project Officer, or authorized tenant escort will be on duty at the gate. In addition, if, during the course of the construction, it is necessary to dismantle or relocate existing fencing or fence off the construction site from the operational areas, the temporary or interim fencing shall be approved by the TAA Planning and Development Department prior to construction and will be inspected prior to the temporary fencing being used as a secure barrier. Temporary fencing shall be in serviceable condition, free of loose components, holes, excessive gaps between the bottom of the fence and the ground. All removable panels shall be fitted with a locking device to prevent unauthorized removal or access. Padlocks used on temporary fencing or access shall be approved by the TAA Police Department.

All project related modifications or operational change to the security doors or fencing surrounding the airport shall be approved in writing by the TAA Planning and Development Department. All new fencing or modifications shall be in accordance with TAA Fencing Standards that are available at the TAA Planning and Development Department.

SECURITY OF CONTRACTOR YARDS / MATERIALS: TAA is not responsible for the security of areas designated for construction yards or storage / staging areas. The contractor shall provide suitable means of securing these areas. If temporary fences are used, the contractor shall secure all gates before leaving. If TAA personnel discover an open gate after hours, the contractor will be required to respond to the location and secure the gate.

AIRPORT SAFETY

CONTRACTOR'S EMERGENCY CONTACT: Designation of a responsible contractor's representative, available on a 24-hour basis, including telephone number, must be provided to the TAA Planning and Development Department prior to the start of construction. It is required that this person respond in a timely manner to all requests from TAA regarding emergencies connected to the project.

TAA EMERGENCY CONTACTS:

P&D Department Office	520-573-4811 (business hours)
P&D Construction Services Administrator	520-573-8014 (business hours)
TAA Dispatch	520-573-8182 (24 hours) or 911
Police / Fire Departments	520-573-8111 (24 hours) or 911

EMERGENCY DIRECTIONS: In case of any emergency on the airport, personnel will be advised by the TAA Planning and Development Department, Construction Services Administrator, Project Officer, or uniformed personnel of any emergency action to be taken. It is expected that all personnel will follow directions immediately.

If, while working in the operational area, fire trucks leave the fire station and take up positions along the taxiways, all personnel will immediately stop work and be ready to move out of the area if directed to do so by the TAA Planning and Development Department, Construction Services Administrator or Project Officer.

ACCIDENT AND INJURY REPORTING / EMERGENCY AID: Report all injuries and accidents to TAA Dispatch at 520-573-8182 or 911 and to the TAA Planning and Development Department, Construction Services Administrator or Project Officer immediately. A police report will be filed as appropriate. The TAA escort is in radio control with TAA Dispatch and may aid in quickly requesting assistance.

SMOKING: Smoking shall be prohibited at or in the vicinity of hazardous operations and materials, all aircraft parking and fueling areas and inside TAA buildings except where designated smoking areas are provided.

Smoking areas shall be designated by the TAA Planning and Development Department, Construction Services Administrator. Where smoking is permitted, safe receptacles shall be provided by the contractor for smoking materials.

VEHICLE OPERATION WITHIN THE RESTRICTED AREAS OF THE AIRPORT: The use of personal vehicles within the restricted areas of the Tucson International Airport and Ryan Airfield is prohibited. Parking of personal vehicles in and around the terminal area is not permitted. The site for contractor's construction trailer and employee parking will be restricted to a pre-arranged location determined by TAA Planning & Development Department.

All TAA employees, tenants and supervisors of construction crews shall attend and pass the Part 139 Ground Vehicle / Runway Incursion Prevention Driver's Training Program prior to operating vehicles within the movement area of the Airport. This class may be scheduled with the TAA Planning and Development, Construction Services Administrator, 520-573-8014.

The posted speed limit shall be obeyed at all times. Ground vehicles shall be operated within the posted speed limits and always in a reasonable and prudent manner for conditions. Airport Police monitor ground vehicle operations. Failure to obey operating rules could result in revocation of driving / entry privileges. Aircraft always have the right-of-way.

IDENTIFICATION OF CONSTRUCTION VEHICLES AND EQUIPMENT: All contractor / consultant vehicles and equipment shall be identified with permanent lettering that may be easily read from 20' away, on each side of the vehicle, showing the name of the company. Company owned, but not lettered vehicles, shall be marked with magnetic signs with the company name and shall be at least 12" x 24" mounted on each side of the vehicle. Magnetic signs must also be easily readable from 20' away. All company vehicles admitted to the secured area shall have a copy of vehicle registration (or rental / lease contract) and insurance card in the name of the company.

All contractor / consultant vehicles and equipment must bear a flag on a staff attached to the highest part of the vehicle so that the flag will be readily visible. The flag should be not less than three (3) feet square consisting of a checkered pattern of international orange and white squares of not less than one (1) foot on each side and displayed in full view above and waving free of the top of vehicles and equipment.

All consultant / contractor vehicles and equipment operating within the operational area during the hours of darkness shall be equipped with flashing or rotating amber dome-type light on the highest part of the vehicle or equipment.

Vehicles not properly equipped as described above will be denied access. Use of runways and taxiways by vehicles and equipment is prohibited unless escorted by a radio equipped TAA escort vehicle.

SAFETY SETBACKS: Construction work shall remain clear of runway and taxiway safety areas and runway approach areas:

Runway Safety Areas:

TIA, All:	500' wide and 1,000' beyond each end of runway
Ryan:	300' wide and 300' beyond each end of runway 6R-24L
	150' wide and 300' beyond each end of all other runways

Taxiway Safety Areas:

TIA, Commercial:	171' wide
TIA, G.A:	Varies; confirm with Construction Services Administrator

Ryan, All: 79' wide

Note: Widths are centered on referenced facilities.

Runway approach area slope: (Note: slope begins 200' from and at the same elevation as the runway threshold at centerline):

<u>TIA:</u>		<u>Ryan Airfield:</u>	
11R	34:1	6R	34:1
29L	34:1	24L	20:1
11L	50:1	6L	20:1
29R	34:1	24R	20:1
21	34:1	16	20:1
3	34:1	34	20:1

Construction work that is required inside safety areas shall be done at off-peak times when the runway or taxiway may be closed.

All work within these areas requires 48-hours advance notice and the presence of a TAA Planning and Development, Construction Services Administrator / Project Officer escort. TAA will issue any Notice to Airmen (NOTAM) required.

EMERGENCY ACCESS: The Fire Department shall be contacted when construction could alter or block access routes and/or hydrant water supply.

	<u>Non-Emergency</u>	<u>EMERGENCY</u>
Fire Department	520-573-8110	911
Police Business	520-573-8182	911

Access for use of heavy fire equipment shall be provided to the immediate job site at the start of construction and maintained until all construction is completed. Free access from the street to fire hydrants and to outside connections for standpipes, sprinklers, or other fire extinguishing equipment, whether permanent or temporary, shall be provided and maintained at all times. Protective pedestrian walkways shall not be so constructed as to impede access to hydrants.

Arrangements shall be made so that fire fighters will have immediate access to the premises when called. The TAA Fire Department shall be contacted to establish access ways of sufficient dimension to allow maneuvering of fire equipment.

No material or construction shall interfere with access to hydrants, siamese connections, or fire extinguishing equipment. During construction or demolition operations, free access to permanent, temporary or portable first-aid fire equipment shall be maintained at all times.

Shut down of any water supply system on airport properties shall be coordinated with the TAA Fire Department through the TAA Planning and Development, Construction Services Administrator or Project Officer, 520-573-8014, 48-hours prior to interruption of service.

STORAGE OF HAZARDOUS / FLAMMABLE MATERIALS: The use and storage of flammable material must have PRIOR approval of the TAA Fire Department. Combustible waste material and rubbish shall not be stored or allowed to accumulate within the building or in the immediate vicinity, and shall be removed from the premises as rapidly as practicable. All leaks/spills of petroleum products or hazardous materials will be immediately reported to the Fire Department, Director of Environmental Services and the TAA Planning and Development, Construction Services Administrator / Project Officer. It will be the contractor's responsibility to have them cleaned up and properly disposed of off airport property and to provide TAA with disposal records.

Rubbish or debris shall not be burned on TAA properties.

Asphalt or tar kettles shall not be used inside or on the roof of any building. There shall be at least one approved fire extinguisher of a minimum 20-B:C classification within 30 feet of each asphalt kettle during the period such kettle is in use, and one additional 20-B:C classification fire extinguisher on the roof being covered. Kettles will be equipped with tight fitting covers, and an attendant will be available at all times while the kettle is in operation.

THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT): The Contractor shall employ all OSHA requirements for the control of hazardous energy (lockout/tagout) during the execution of the work performed under the Contract Documents. A Pre-event meeting shall be held on site during normal business hours at least 48 hours in advance of the work with the Contractor, TAA, and the Design Professional to review the work to be undertaken, to familiarize all parties with existing system and controls that will be shut down and restarted, and to confirm lockout/tagout procedures to be employed. When feasible, TAA prefers that a joint lockout/tagout procedure be used. The contractor shall provide a multi-position hasp and both the Contractor and TAA will attach their own separate locks. No system shall be energized until such time that both parties have removed their locks, indicating a safe situation to energize. If the work involves the Airfield Lighting system the persons responsible for lockout/tagout will make indicated entries in the logbook located in the Power Vault. In the event that work will be done after hours, TAA will be on site or other arrangements will be made.

OPEN FLAME: Any open flame operation which can include but not limited to welding, or cutting torch operations will require a permit issued by the TAA Fire Department. This no-cost daily permit will be issued following a site inspection. The contractor is responsible for following all safety precautions as stated on the Cutting & Welding permit which includes providing fire safety equipment i.e. a fire extinguisher – minimum size: 10 lb. The permit will be picked up by TAA's Fire Department at the end of the work shift. Request may be placed by calling TAA Dispatch at 520-573-8182 or via the TAA Planning and Development, Construction Services Administrator or Project Officers by radio.

HAZARD COMMUNICATIONS: Tenants and/or contractors shall comply with all provisions of the OSHA Hazardous Communications Program. Material Safety Data Sheets (MSDS) shall be provided for all required materials used at the site. These shall be placed in a central location at the site in an organized manner. If there are two non-hazardous materials combined into a third hazardous one, specific MSDS sheets shall be provided.

MSDS sheets shall be checked by TAA Planning and Development, Construction Services Administrator or Project Officer prior to any operation in or around buildings to insure that all safeguards have been provided. In no case shall the work interrupt normal business operations unless prior arrangements have been made.

The TAA Fire Department shall be notified by Planning & Development, Construction Services Administrator or Project Officer prior to the start of the application of paints, primers, varnish, sealer, etc. particularly when spray application is used. THIS IS MANDATORY.

BLASTING: Blasting is prohibited on any TAA properties.

HEARING PROTECTION: Protection against the effects of noise exposure should be provided by the contractor to all of the construction personnel when working on airport property. Jet aircraft on take-off, landing and engine run-up, have been measured at a noise level in excess of 100-decibels.

Alert all personnel to the potential danger of jet blasts to persons and property, and emphasize the importance of using caution in operational areas. The velocity of jet blasts at take-off thrust may exceed that of tornadoes and hurricanes.

<u>AIRCRAFT</u>	<u>DISTANCE BEHIND AIRCRAFT</u>		<u>WIND VELOCITY</u>
DC-9	10	FEET	200 MPH
DC-9	100	FEET	100 MPH
727	10	FEET	700 MPH
727	100	FEET	180 MPH
747	10	FEET	700 MPH
747	100	FEET	260 MPH
DC-10	10	FEET	700 MPH
DC-10	100	FEET	260 MPH

SAFETY BARRICADES: Open trenches, excavations and stockpiled material at the construction site shall be prominently marked and barricaded in accordance with FAA Advisory Circular 150/5370-2: *Operational Safety on Airports During Construction*. All barricades used on the airport must be weighted or staked and tied sufficiently to prevent wind or jet blast from blowing the barricades into aircraft, vehicles, pedestrians or adjacent facilities. The contractor shall submit a barricade plan to TAA prior to construction. See: *TAA's Barricade Procedure for Construction and Maintenance on Tucson International Airport and Ryan Airfield* available at TAA Planning and Development Department.

Stockpiled material shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions in excess of 10 m.p.h. The location of stockpiles shall be approved by the TAA Planning and Development Department.

Debris and loose material capable of causing damage to aircraft landing gear, propellers, or being ingested in jet engines, shall not be placed within or allowed to be blown into active operational areas. Material tracked on these areas, such as dirt, mud, etc., will be removed continuously during the work project.

TEMPORARY WIRING AND LIGHTING: All temporary wiring, including extension cords, for construction use shall be effectively grounded in accordance with the National Electrical Code.

Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

Temporary lights shall be equipped with heavy-duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension. Splices shall have insulation equal to that of the cable.

Care shall be taken to insure that all temporary lighting is removed before suspended ceiling systems are installed.

Temporary jumper cabling and light fixtures for airfield use shall be connected and maintained in accordance with the project contract documents and FAA Standards.

EQUIPMENT SERVICE AREAS: Service areas for construction equipment shall not be located within buildings or in the vicinity of hazardous operations or materials or aircraft parking or fueling areas. No disposal of waste oils, grease, fuel, etc., shall be permitted on TAA properties. All spills shall be IMMEDIATELY removed by the contractor and properly disposed of off airport property and disposal records provided to TAA Planning and Development Department.

CONFINED SPACE PROGRAM: TAA has a written Confined Space Program. The requirements of this program shall be followed at all times while working in specified areas or conditions. The requirements of the program are available from the TAA Planning and Development Department and shall be incorporated in all construction and consultant contracts as appropriate. A copy is available at TAA Planning and Development Department.

MISCELLANEOUS REQUIREMENTS

TEMPORARY AND PERMANENT UTILITIES: Unless other arrangements are made with TAA, the Contractor shall arrange for and pay for all utilities, i.e., water, electric, phone hookups. A fire hydrant will be designated in writing from the TAA Planning & Development Department for construction water use. A meter shall be obtained from the City of Tucson, Tucson Water, by the contractor. The locations of all service points shall be approved in writing by the TAA Planning & Development Department.

LABOR DISPUTES: If any labor dispute, picketing or demonstrations take place during contract period, notify the TAA Police Department, 520-573-8182 (Dispatch: non-emergency) for a briefing on the rules and regulations concerning picketing and demonstrations at Tucson International Airport and Ryan Airfield. Picketing is authorized only in designated areas and only after permits are obtained from the Police Department.

HAUL ROUTES: Routing of haul traffic shall be coordinated with the TAA Planning and Development, Construction Services Administrator (520-573-8014). All haul routes shall be approved in advance by the TAA Planning and Development Department.

BARRICADES: See: *TAA's Barricade Procedure for Construction and Maintenance on Tucson International Airport and Ryan Airfield*. A copy is available at TAA Planning and Development Department.

CRANES: See: *TAA's Procedures for Notification of Crane Use at Airport or Within Airspace of Airport*. A copy is available at TAA Planning and Development Department. Note that a 30-calendar day notification is required for FAA plus additional 3-business days to allow TAA staff investigation, FAA form 7460-1 preparation, and notification procedures. All cranes will be flagged during the day and lowered during official sunset to sunrise if they are not in use. Cranes must be lighted during night or times of limited visibility. See: *FAA Advisory Circular 70/7460-1, Obstruction Marking and Lighting*.

LOCATIONS OF EXISTING FACILITIES: The tenant/contractor shall insure that all existing utilities and facilities are properly located and marked prior to construction. A "Blue Stake" meet shall be arranged by the tenant/contractor and the TAA Planning and Development, Construction Services Administrator (520-573-8014) advised of the date and time so that arrangements may be made for TAA maintenance and other agencies to locate airport related/owned facilities. TAA maintenance personnel will aid in the location of facilities but are not available to do work on the project, trouble-shoot or loan equipment.

WEEKLY PROGRESS MEETINGS (TAA Contracted Projects): Weekly progress meetings shall be held to insure that all parties are aware of the nature of the upcoming week's construction. TAA Planning & Development personnel may attend these meetings as appropriate to monitor scheduling and operations. TAA Planning & Development Department shall be provided with an updated weekly schedule.

CONSTRUCTION ADJACENT ACTIVE PAVEMENTS: The pavement edges of active pavements (taxiways, runways, aprons) shall not exceed 3-inches difference in elevation between finished pavement grade and adjacent shoulder grades. The pavement open to traffic shall have no holes or humps.

CONSTRUCTION STORM WATER POLLUTANT PREVENTION PROGRAM: TAA participates in the United States Environmental Protection Agency (EPA) construction storm water pollutant protection (SWPPP) permitting program. TAA has a site-wide construction SWPPP program for both Tucson International and Ryan Airfields. All construction projects exceeding one acre must comply with the EPA construction SWPPP permitting requirements.

The Contractor will need to prepare a site-specific construction SWPPP plan and a Notice of Intent (NOI) form and submit them to TAA for review and approval. The approved NOI must be submitted to EPA 72-hours before starting work. A copy of the site-specific construction SWPP plan must be available at the job site.

Required Permit	Time Frame	Information From:	Reference:
Welding	Daily	TAA Fire Department	Page 7
Construction Water	2 working days	TAA P&D	Page 10
SWPPP / NOI	3 working days	TAA P&D	Page 11