

## PART 1 - INTRODUCTION

### 1.1 FORWARD

#### 1.1.1 Purpose

Renown Regional Medical Center (RRMC) operates three helistops that provide for aerial transfer of patients to and from our facility. Two of these helistops are on the roof of the hospital medical tower. These helistops are connected directly to the emergency department by two express elevators. The third helistop is at a ground-level location south of the medical tower; north of Mill Street. The standards of practice contained in this document relate to the medical tower's rooftop helistops. A separate document titled *Standards of Practice, Ground-Level Helistop* relates to operations of the helistop which is south of the medical tower.

Renown Regional Medical Center's helistop operations are extraordinary in two respects. First, in addition to Reno-based Care Flight, numerous other emergency medical service (EMS), military and public service helicopter organizations routinely access RRMC's helistops. Second, the frequency of helicopter operations at RRMC, hundreds in an average month, is unusually high. The variety of operators who access our helistops and the frequency with which they do so, are indications of the value of these facilities to the public RRMC serves.

While multiple landing areas, use by a variety of operators and a high frequency of helicopter operations contribute to RRMC's public-service mission, they also raise the potential for operational miscommunication and confusion and thereby the risk of incident or serious accident. Consequently, helicopter operations at RRMC must be carefully planned, coordinated and controlled. Also, we must continually monitor operations and adjust our policies and procedures whenever it is evident that our mission capability can be enhanced or the level of safety can be increased. Continuing focus on helistop operations, vigilance and attention to detail will help RRMC and the numerous EMS operators who use these facilities do so safely and efficiently.

#### 1.1.2 Audience

These policies and procedures are for dissemination to and use by RRMC staff, Regional Emergency Medical Services Authority (REMSA), Care Flight and other helicopter organizations that are authorized to land at RRMC's helistops.

#### 1.1.3 Responsibilities

The director of the Facilities Services Department is responsible for all aspects of helistop operations including implementation of the *RRMC Emergency Response Plan* as it relates to helistop operations, the *RRMC Helistop Safety Program*, helistop access and control procedures, and other environmental and related security and safety programs.

**1.1.4 Comments and suggestions**

Please forward comments and/or suggestions to:

Director, Facilities and Engineering  
Facilities Services Department  
Renown Regional Medical Center  
1155 Mill Street  
Reno, NV 89502  
Phone: (775) 982-4100

## **PART 2 - FACILITIES**

### **2.1 OWNERSHIP AND OPERATIONS**

#### **2.1.1 Helistop owner**

The medical tower helicopter landing areas that are the subject of these standards of practice are owned and operated by:

Renown Regional Medical Center  
1155 Mill Street  
Reno, Nevada 89502

#### **2.1.2 Helistop classification and use**

Helistops at RRMC are classified “private-use” by the Federal Aviation Administration (FAA). The FAA’s definition of private-use helistops states that they are for use of helistop owners and those invited to use them by their owners. To ensure consistency with the FAA’s position, it is RRMC’s policy to extend specific written permission to individual organizations to use our helistops. In order to attain the highest possible level of safety, permission to use RRMC helistops is granted to helicopter operators only after they have met the documentation, familiarization and training requirements of Section 3.1 of this manual.

#### **2.1.3 FAA documentation**

The FAA has jurisdiction over the airspace that is used to access RRMC’s helistops. As required by Title 14 Code of Federal Regulations Part 157, RRMC has submitted FAA Form 7480-1 “Notice of Landing Area Proposal” to the FAA’s Airports District Office. In response, RRMC has received notice from the FAA indicating that the agency does not object to the use of airspace in the vicinity of the medical center. This notice is on file at the Facilities Services Department.

#### **2.1.4 Helistop operating hours and conditions**

RRMC’s helistops are available 24 hours a day, seven days a week except for closures required by maintenance. Heliport closures will be accomplished according to the procedure described in Section 4 of this manual.

### **2.2 FACILITY DESCRIPTION**

#### **2.2.1 General**

RRMC’s rooftop helistops have been designed to conform to recommendations contained in Federal Aviation Administration (FAA) Advisory Circular 5390-2B dated September 30, 2004.

#### **2.2.2 Rooftop helistops**

##### 2.2.2.1 General

The elevated helistops located on the medical tower are designated ROOFTOP SOUTH and ROOFTOP NORTH.

FAA site numbers for the two rooftop helistops are (to be provided when received).

#### 2.2.2.2 Design helicopter

Use of the design-helicopter concept helps determine clear space around helicopter landing areas as well as the weight-bearing capacity of those areas. The A-Star B3 series helicopter which is manufactured by American Eurocopter, is the design helicopter for spatial clearances related to helistops ROOFTOP SOUTH and ROOFTOP NORTH. These helicopters are operated by Air Methods Corporation through a contract with locally based Care Flight. The A-Star's gross operating weight is approximately 5,000 pounds. ROOFTOP SOUTH and ROOFTOP NORTH have been constructed to accommodate helicopters that weigh up to 12,000 pounds. Helicopters that weigh up to 12,000 pounds may use ROOFTOP SOUTH and ROOFTOP NORTH concurrently.

#### 2.2.2.3 Structure

Elevated helistop surfaces are of broom-textured concrete and are sloped to effect rain-water runoff. Touchdown and lift-off areas (TLOFs) are 40 feet by 40 feet in size.

#### 2.2.2.4 Clearances

Each helistop has its own 65-foot square, final approach and take-off area (FATO) within which is centered the helistops' TLOF. The FATO's do not overlap. This design provides for nearly simultaneous arrivals and departures to and from helistops ROOFTOP SOUTH and ROOFTOP NORTH.

Each helistop has a 90-foot diameter safety area. Safety areas are clear of structures, features and equipment, except for equipment necessary to support helicopter operations, on all sides. Safety areas overlap in between the helistops.

#### 2.2.2.5 Features

Elevated gurneyways connect helistops ROOFTOP SOUTH and ROOFTOP NORTH to a primary north/south gurneyway on the east side of the roof that connects the helistops with elevators at the south side of the facility. Additional pathways connect helistops ROOFTOP SOUTH and ROOFTOP NORTH and both helistops with a stair exit at the northeast corner of the structure.

#### 2.2.2.6 Lighting

Sixteen green, flush-mounted perimeter lights surround each helistop. Perimeter lights define the structural landing area. Three, shielded flood lights provide surface illumination and visual texture to each landing area. A lighted wind indicator is installed at the south edge of the mechanical structure which is located north of helistop ROOFTOP NORTH. All helistop lights activate automatically at dusk and deactivate automatically at dawn. Backup light switches are located in the elevator vestibule south of helistop ROOFTOP SOUTH. Red obstruction lights, which are on at all times, are installed at several locations on all sides of the rooftop.

Amber-colored lights are on both sides of all gurney pathways (gurneyways).

Maintenance floodlights, intended to generally illuminate both helistops, are located on top of the elevator vestibule, south of ROOFTOP SOUTH and on top of the mechanical enclosure, north of ROOFTOP NORTH. These lights are off during routine air operations. They are intended to provide additional illumination for helistop maintenance or helicopter servicing. They are activated by a switch in the elevator vestibule.

#### 2.2.2.7 Markings

Each helistop is marked with a red “H” within a white cross. White, 18” wide perimeter lines define the extents of the structural landing areas.

#### 2.2.2.8 Equipment

Each of the two helistops has 25-amp power service, a hot and cold water connection and imbedded helicopter tie-down mechanisms. A video recording camera provides both RRMC security and REMSA dispatch with 24-hour surveillance of both helistops.

#### 2.2.2.9 Facilities

South of helistop ROOFTOP SOUTH is a vestibule and two elevators that provide service to and from the emergency department. The telephone number in the vestibule is 775-982-2230.

Other facilities and features of the elevator vestibule include:

- A stairwell to floors below
- A lavatory
- A desk and computer terminal
- A telephone
- Storage rooms for medical and mechanical items for use by Care Flight.
- A fire-pull station
- Light switches

Additional stairs to floors below is also located at the northeast corner of the rooftop.

#### 2.2.2.10 Snow and ice protection

Both helistops and their connecting gurneyways are heated to prevent accumulation of snow and ice.

#### 2.2.2.11 Fire protection

Standpipes are located in both stairwells. AAAF fire extinguishers protected by heat blankets are positioned north of helistop ROOFTOP NORTH and south of helistop ROOFTOP SOUTH.

2.2.2.12 Airspace

Approach and departure airspace is clear of structures east and west of both helistops. This allows for “flow through” flight operations. The elevator structure, storage rooms and antennas preclude the use of airspace directly south of the helistops. The mechanical unit precludes the use of airspace directly north of the helistops.

Table 1 recaps primary information about helistops ROOFTOP SOUTH and ROOFTOP NORTH.

Figure 1 indicates the general locations of all three RRMC helistops. Figure 2 depicts primary features of helistops ROOFTOP SOUTH and ROOFTOP NORTH.

**Table 1: Helistop attributes**

<b>Helistop</b>	<b>ROOFTOP SOUTH</b>	<b>ROOFTOP NORTH</b>
<b>Location</b>	Roof of tower (north)	Roof of tower (south)
<b>TLOF Dimension</b>	40' X 40'	40' X 40'
<b>FATO Dimension</b>	65' X 65'	65' X 65'
<b>Safety Area Dimension</b>	90' diameter	90' diameter
<b>Weight Bearing Capacity</b>	12,000 lbs.	12,000 lbs.
<b>Elevation (MSL)</b>	4,654'	4,654'
<b>Latitude</b>	39 deg. 31 min. 31 sec N	39 deg. 31 min. 33 sec N
<b>Longitude</b>	119 deg. 47 min. 41 sec W	119 deg. 47 min. 41 sec W
<b>Magnetic declination</b>	14 deg. 4 min.	14 deg. 4 min.
<b>Primary Approach &amp; Departure Headings</b>	076/284	076/284
<b>Fuel</b>	No	No







## **PART 3 – FLIGHT OPERATIONS**

### **3.1 OPERATOR AUTHORIZATION**

#### **3.1.1 RPMC Responsibilities**

The intent of the private classification of RPMC's helistops is that they are available for use by helicopter operators who have been provided explicit permission to do so. RPMC uses a procedure for granting permission that is intended to generate the highest possible level of safety.

#### **3.1.2 RPMC invitations/acceptance**

Helicopter operators shall obtain written permission from RPMC before conducting flight operations to helistops ROOFTOP SOUTH or ROOFTOP NORTH. Operators that are certified under Federal Aviation Regulation Part 135 (FAR 135) shall provide RPMC with a copy of their FAA-issued operating certificate and certificate of insurance naming Renown Regional Medical Center as additional insured in the amount of 10million dollars.

In addition, all helicopter operators shall provide to the RPMC Director of Facilities Services:

- Names and contact addresses and phone numbers for directors of operations and chief pilots and their dispatch center.

Operators are required to update information required in this section as necessary.

#### **3.1.3 Training requirements**

Helicopter operators shall provide both ground and flight training to each pilot-in-command that they intend to be dispatched to RPMC's helistops. Ground training shall consist of a briefing, a review of this manual in either its printed or electronic version and viewing of a Powerpoint training presentation provided by RPMC which orients pilots to the facility.

Subjects covered in ground training shall, at minimum, include:

- Weight limit of helistops
- Approach and departure procedures
- Radio communications with REMSA dispatch and RPMC
- Noise abatement procedures
- Procedures intended to limit impacts from landing lights
- Security
- Use of the elevator vestibule and elevators
- Use of the computer in the elevator vestibule
- Coordination with RPMC staff for the transfer of patients
- Helistop lighting

- Location and use of emergency equipment
- Location and use of emergency exits
- Location of equipment used to secure helicopters
- Reporting emergencies
- The meaning of X markings used by RRMC to close helistops
- Process for offering suggestions to improve safety and efficiency
- Radio communications with other aircraft

Operators shall provide a letter or a certificate of training indicating that this requirement has been fulfilled. After initial flight orientation, the flight training requirement is fulfilled by actual operations on a per-pilot basis.

#### **3.1.4 Letters of authorization**

Once the requirements of this section are met, operators, at the discretion of RRMC, will be provided letters authorizing them to land at RRMC.

#### **3.1.5 RRMC documentation**

The Facilities Services Department maintains files related to each of the helicopter operators authorized to use RRMC's helistops.

#### **3.1.6 Withholding/revocation of authorization**

Failure to comply with sections 3.1.2 or 3.1.3 shall constitute justification for RRMC to withhold permission to land at RRMC helistops from either individual pilots or helicopter operators. Failure to comply with procedures established in this manual or in notices related to this manual may result in temporary or permanent revocation of landing authority.

### **3.2 OPERATORS' USE OF FACILITIES**

#### **3.2.1 Care Flight operations**

Care Flight helicopters that are based in Reno have exclusive use of the ground-level heliport.

### **3.3 FLIGHT PROCEDURES**

#### **3.3.1 Arrivals and departures**

##### 3.3.1.1 General

One of the most vital elements of a flight operations safety program is the development of standardized procedures related to aircraft arrivals and departures. Arrival and departure procedures in the vicinity of RRMC will ensure coordination between helicopters and REMSA dispatch, between helicopters operating in close proximity to each other and between helicopters and RRMC. Critical to this process are specific radio call-in times or locations.

### 3.3.1.2 Arriving helicopters

Inbound helicopters must contact REMSA dispatch on channel "Med 5" approximately 10 minutes from landing and provide their approximate location. (For example: vicinity Truckee or 20 miles southwest.)

REMSA dispatch will assign a "Med Channel," provide information about known traffic and available helistops, and provide a patch to RRMC emergency department for a medical report.

Inbound aircraft must remain on the assigned Med Channel through shutdown, and will utilize the previously assigned Med Channel for startup and departure.

Upon landing, pilots must call REMSA dispatch with contact phone number(s). Aircraft may not remain on the RRMC helistops without either radio or cell phone contact with REMSA dispatch. Due to the frequency of operations at RRMC, it may be necessary for pilots to depart without their crews in order to clear helistops for arriving helicopters. Pilots must coordinate arrival and departure of helistops on 123.025 with arriving and departing aircraft or will take direction to clear helistops from REMSA dispatch. If pilots coordinate clearing of helistops among themselves the departing helicopter shall ensure that REMSA dispatch is advised. Aircraft will not orbit RRMC. If helistops cannot be cleared for arriving aircraft, those aircraft will either land at Reno-Tahoe International Airport or orbit for a short time west and south of the I-80 and US 395 junction, avoiding residential areas, with the concurrence of the Reno-Tower International Airport control tower.

### 3.3.1.3 Departing helicopters

Departing helicopters must:

- Notify REMSA dispatch by telephone or radio prior to starting engines.
- Notify REMSA dispatch on the previously assigned Med Channel prior to takeoff of the planned direction of flight.
- Notify REMSA dispatch when clear of the area, at approximately 3-5 miles.

### 3.3.1.4 REMSA procedures

REMSA dispatch must:

- Notify inbound and outbound helicopters of known RRMC-related traffic
- Advise inbound helicopters of availability of ROOFTOP SOUTH and/or ROOFTOP NORTH.
- Announce all incoming flights to hospital security dispatch.

## **3.3.2 Prohibited or restricted practices**

### 3.3.2.1 Hot unloads/loads

Helicopters will generally be shut down and blades stopped prior to unloading patients. Hot unloads are permitted only when the pilot-in-command determines that safety or patient care will be compromised by shutting down a helicopter. Examples of conditions that might warrant hot unloads are high winds and multiple inbound aircraft with critical patients.

Aircraft will not land or takeoff while hot unloading is taking place on an adjacent helistop.

Only RRMC personnel who have received helicopter safety training within the previous year (reference 4.2.10) will participate in hot unloading.

A flight crewmember will exit the aircraft and meet the RRMC team at the elevator vestibule, ensure all personnel have hearing protection, and escort them to the aircraft.

After unloading, a crewmember will escort all personnel to the elevator vestibule.

#### 3.3.2.2 Extended use

Helicopters shall not remain on helistops longer than is necessary to discharge and properly transfer or embark patients.

#### 3.3.2.3 Simultaneous operations

Pilots shall plan approaches and departures to and from ROOFTOP SOUTH and ROOFTOP NORTH so as to avoid simultaneous operations in the direct vicinity of the helistops.

## Part 4 – HELISTOP OPERATIONS

### 4.1 PATIENT TRANSFERS

Arriving helicopters are to be met by two (2) members of RRMC staff with appropriate helicopter training.

### 4.2 SAFETY PROGRAM

#### 4.2.1 Updates and notices

RRMC shall publish updates to this manual and procedural notices that supplement this manual as necessary.

#### 4.2.2 Operator/REMSA safety comments

Vigilance is a key element of the RRMC helistop safety program. All helicopter operators, REMSA and RRMC employees are encouraged to immediately report conditions that are deemed to be unsafe or questionable and to routinely make recommendations intended to increase safety or improve efficiency, patient service or operating conditions. All communications related to RRMC helistops or operations procedures should be directed to:

Director, Facilities and Engineering  
Facilities Services Department  
Renown Regional Medical Center  
1155 Mill Street  
Reno, NV 89502  
Phone: (775) 982-4100

#### 4.2.3 Safety line

A safety line, (775)982-7777 is for the use of any individual who wishes to report or discuss concerns about safety at RRMC's helistops. The line is located at the Public Safety Dispatch Office who will coordinate with the Facilities Department to ensure action is taken. If the caller desires feedback on the issue reported, provisions for a method or response can be made at the time of the initial call.

#### 4.2.4 Helistop safety/security committee

RRMC and REMSA/Care Flight management hold regular meetings of a committee whose purpose is management of a program that seeks to continually improve helistop and flight operations safety and security.

#### 4.2.5 Helistop inspections

Helistop inspections are conducted daily and after particularly inclement weather. Inspection records shall be filled out completely, signed legibly, dated and filed in chronological order by the Facilities Services Department. Checklists to be used for helistops ROOFTOP SOUTH and ROOFTOP NORTH are in the appendix to this manual.

#### **4.2.6 FOD (foreign object damage) control**

All personnel are responsible for watching for and removing items on the rooftop helistops or ground level helistop that may damage turbine engines through ingestion. FOD (foreign object damage) control is an important helistop inspection item.

#### **4.2.7 Monitoring and access control**

Only authorized personnel are allowed on the roof of the medical tower. Non-security RRMC staff and helicopter operator staff shall notify RRMC security of the presence of apparently unauthorized persons on the helistop level. RRMC security shall challenge and remove, as appropriate, unauthorized persons.

#### **4.2.8 Clearing of helistop areas during operations**

RRMC and non-involved helicopter operator staff shall be within the elevator vestibule or inside the north stair door during all landings and takeoffs.

#### **4.2.9 Reporting inoperable equipment**

Helicopter operators shall report any item of inoperable helistop equipment to the Facility Services Department by legibly noting the item(s) on the recordkeeping book located inside the elevator vestibule on the 10<sup>th</sup> floor of the Tahoe Tower. Actions taken to remediate the issue, and resolution dates will be noted by the facilities staff in the log book.

#### **4.2.10 Helicopter Safety Training**

Care Flight shall provide helicopter safety training to RRMC staff members during their initial orientation and annually thereafter.

### **4.3 IRREGULAR OPERATIONS**

#### **4.3.1 Closures**

It may be necessary to temporarily close or limit operations at one or more of RRMC's helistops due to equipment failures or to allow for maintenance.

If closure, REMSA dispatch shall be notified by telephone by Facilities Department.

If it is necessary to close a helistop for more than a 24-hour period, a yellow closing X will be placed over the helistop.

Perimeter and flood lights features will be deactivated at closed helistops.

#### **4.3.2 Window washing**

Window washing activity will occur occasionally at RRMC. When window washing is scheduled the Director of Facilities Services shall notify REMSA dispatch of the location where the washing will occur and the washing schedule. During times when window washing personnel are operating adjacent to the upper floors REMSA dispatch and RRMC may decide, depending on wind strength and direction, to limit flight operations

to the opposite side of the structure. Decisions relative to window washing shall be made after discussion and coordination between RPMC, REMSA and Care Flight management.

The Director of Facilities Services is responsible for ensuring that window washing supervisors are briefed about helicopter operations and that those supervisors ensure that employees follow safety procedures.

#### **4.3.3 Deviations to airport**

In the event an aircraft must divert to Reno-Tahoe International Airport due to helistop closure, maintenance, performance, weather, or other unforeseen issues, REMSA dispatch shall be notified. REMSA will then arrange for ground transport of patients to RPMC.

#### **4.3.4 Inoperable helicopters**

Helicopters that are unable to depart ROOFTOP SOUTH or ROOFTOP NORTH due to mechanical issues will be allowed to remain for no more than 48 hours before they must be either repaired or removed using another helicopter that is able to hoist them to an off-site location. All costs associated with removal of helicopters, including security services that may be required, shall be borne by the operator.

#### **4.3.5 Unanticipated wind/weather that prevents departure**

If unanticipated wind or weather prevents helicopters from safely departing ROOFTOP SOUTH or ROOFTOP NORTH rotors will be secured using the manufacturer's standard procedure and helicopters will be secured to the helistop tie-downs. It is the operator's responsibility to secure their aircraft.

### **4.4 RPMC RESPONSIBILITIES**

Renown Regional Medical Center shall provide the following services and support related to its rooftop helistops.

- Production of Powerpoint presentation for operators and hospital staff
- Training of hospital staff
- Staffing – two (2) helicopter trained personnel to attend all landings.
- Equipment – stretcher, gurneys
- Supplies of light bulbs for perimeter, flood and obstruction lights and wind socks
- Yellow marking panels to be used to visually close helistops
- Daily inspections – to be recorded and kept
- Maintenance of approved operator files
- Communication with approved operators
- Processing of safety recommendations from operators and from REMSA
- Conduct of helistop safety meetings

## **PART 5 - EMERGENCY RESPONSE**

### **5.1 HELICOPTER ACCIDENT**

Accidents are, by definition, unpredictable. It is therefore difficult to draft procedures that will identify exact actions if one occurs. This section addresses responsibilities, policies and procedures in several general categories in case an accident occurs on RRMC property.

#### **5.1.1 Response**

RRMC security is the lead response department in case of helicopter accident on RRMC property. In case of accident RRMC security shall:

- Notify fire and police units
- Assist survivors as reasonably possible
- Protect and secure the accident site
- Manage public access and control as necessary

#### **5.1.2 Reporting**

Helicopter operators are responsible for reporting details of accidents and incidents to both the Federal Aviation Administration and the National Transportation Safety Board (NTSB). It is in the best interests of RRMC to ensure that required reports are filed in a timely manner and that they are accurate.

#### **5.1.3 NTSB definitions**

An aircraft accident is defined by the NTSB as an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

An aircraft incident is defined as an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations and requires immediate notification to the NTSB under the provisions of 49 CFR, Part 830, Subpart B.

Serious injury means any injury which:

- Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received
- Results in a fracture of any bone (except simple fractures of fingers, toes, or nose)
- Causes severe hemorrhages, nerve, muscle, or tendon damage
- Involves any internal organ; or
- Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.



Substantial damage means damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small puncture holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, or engine accessories are not considered "substantial damage" for the purpose of accident reporting.

Appropriate National Transportation Safety Board (NTSB) regional office means the NTSB regional office having responsibility for the geographical area in which the accident/incident occurs. For Reno, Nevada this office is:

NTSB Northwest Regional Office  
19518 Pacific Highway South, Suite 201  
Seattle, Washington 98188  
Phone: 206-870-2200  
FAX: 206-870-2219