Royal Flying Doctor Service (Queensland Section)

Standard Aerodrome Requirements

Site selection

Good site selection including soil composition and drainage, is most important as boggy airstrips prevent more landings than any other factor.

Look for areas that:

- are naturally well drained and not subject to flooding or water ponding
- are without frequent surface undulations
- ideally have a gentle fall along the length of the airstrip and a very slight camber on the runway (pronounced one-way slopes across the runway should be avoided as they can cause surface scouring)
- have soil types that, from local experience, remain smooth and compact when trafficked.

Avoid:

- very sandy soils
- rocky terrain
- soils that become boggy or slippery when wet.

Make sure that the selected site:

- can comfortably accommodate required airstrip dimensions and physical characteristics and is aligned into the stronger prevailing surface winds
- avoids penetration of the approach and take-off surfaces and the lateral transitional surfaces (where required) by immovable objects
- remains accessible to normal surface transport when the airstrip is not in use.

Endeavour to select a site where:

- there are no hills (or terrain) or man-made objects (masts, buildings, etc.) more than 45 metres above airstrip elevation exist within 2,500 metres (ideally 4,000 metres) of the site
- aircraft will not fly close to or over residential or built up areas, particularly during normal landing and take-off phases of flight
- future use of the airstrip is not likely to be compromised by the growth of obstacles around it.

Minimum requirements

Our pilots are happy to advise on airstrip standards and we look forward to your full cooperation in this regard. As a guide, the following information should assist in identifying how you can develop and maintain your airstrip so that the Royal Flying Doctor Service (Queensland Section) (RFDS) can always attend in an emergency.

The minimum requirements listed in the table below are for the RFDS (Queensland Section).

Standard Aerodrome Requirements

Royal Flying Doctor Service
QUEENSLAND SECTION

REQUIREMENT	DESCRIPTION	NOTATION
Preferred runway size	1,500 metres in length (1,300m min) The distance required for landing and take off varies considerably with the strip surface type, wind, temperature, elevation above sea level and the weight of the aircraft at the time. For reliable service, strips should be at least 1,500 metres long adding an additional 90 metres for every 1,000 feet above sea level.	The RFDS in Queensland can operate out of shorter runways but may be operationally restricted consequently e.g. reduced fuel load restricting range. While landing on shorter strips is possible, it cannot always be guaranteed.
Runway direction	Aligned with the prevailing wind direction	
Runway width	Preferably 23 metres (18m min)	
Runway strip width (for day and night operations)	Minimum of 90 metres. These 90 metres should be clear of trees, stumps, saplings, ant hills or any other obstacles.	
Runway strip width (for day operations only)	Width can be reduced to 45 metres in this instance	This is not recommended unless there is a night-capable airstrip nearby that can be used in a medical emergency.
Surface	The centre 23 metres which is used by the aircraft under normal operations must be a firm smooth surface which a fully laden three-tonne vehicle can be driven over at a speed no less than 80 kph without undue discomfort to the occupant. The best surface is sealed bitumen and the worst surface is long, wet grass. **You can help by following the below guidelines:** • Grass surfaces should have the strip width slashed on a regular basis and cleared of any saplings, fallen logs or ant and termite mounds. Remember to trim around cone markers or white-painted tyres used as strip markers so they are clearly visible to the pilot. • Gravel/clay surfaces should be clear of ruts, undulations, large rocks, ant and termite mounds and where possible regularly graded to remove livestock hoof prints and tyre ruts, especially after heavy rain.	As mentioned above, the surface of the strip affects the length required for take off and landing. Sealing a strip with bitumen is expensive and unless your airstrip is used for regular community access, the RFDS would not expect you to go to that expense. The presence of holes, cracks and ruts will degrade the aircraft's performance and handling and will increase the possibility of structural damage.

Standard Aerodrome Requirements

Royal Flying Doctor Service
QUEENSLAND SECTION

REQUIREMENT	DESCRIPTION	NOTATION
Surrounding surface	From the edge of the runway, the area each side out to 22.5 metres from the runway centreline needs to be cleared of any obstacles including ant hills, tree stumps, large rocks or stones and fencing wire.	This is to ensure minimal damage to an aircraft if it were to run off the runway during take off or landing.
Extended surface	The remaining area outside 22.5 metres of each side should be free of tree stumps, large rocks or stones, fencing, wire and any other obstacles above ground but may include ditches or drains below ground level.	This is to ensure clearance for an aircraft in the event of a missed approach or go-around.
Ends of the runway	The areas at the ends of the runways must be clear of any obstructions such as trees, fences or power lines that would otherwise reduce the effective operational length of the runway and pose a safety hazard.	This is to ensure clearance for over-flying aircraft on approach and take off.
Approach and take-off areas	At either end of the landing site, the approach and take-off areas should include an area of 2500 metres which is clear of objects including fences, trees, saplings and windmills above a slope of 3.3%.	This means that a tree 100 metres from the strip end must not be any higher than 3.3 metres. Any obstacle in the approach of take-off areas reduces the length available for landing and take off.
Parking	Off-runway parking is ideal, a parking apron should be constructed in a location which is convenient to the runway and also readily accessible by ground transport, and at a distance from the runway such that aircraft and vehicles do not pose a hazard to any other aircraft using the runway.	This is to avoid interrupting other operations and possible safety concerns.
Windsock	Pilots must be able to identify the wind direction. A windsock is the best method. In emergencies when no windsock is available, other means such as a specially-prepared and contained smoke fire can be used. A windsock is needed adjacent to the parking apron.	This is to indicate the wind strength and direction to the pilots on approach. Windsocks are available from Rocklea Canvas.
Markings	The runway strip, apron and any taxiways need to be marked so that all are clearly visible to pilots, particularly when they are coming into land.	

Standard Aerodrome Requirements

Royal Flying Doctor Service
QUEENSLAND SECTION

REQUIREMENT	DESCRIPTION	NOTATION
Strip marker	Specially made fiberglass cone markers are the best however tractor or truck tyres painted white are sufficient. Cone markers or tyres should be placed at 90 metre intervals along the edges of the landing strip which is 45 metres wide. If white-painted tyres are used, ensure they are clearly visible because collision with them will damage the aircraft.	Strip markers assist the pilot in identifying where it is safe to land.
Lighting	Lighting of the runway, taxiway, windsock and parking apron is also required for night operations.	Lights or flares should be spaced 30 metres apart (width) with 60 metre intervals between lights along the length of the runway.
Fencing	It is preferable that the strip is completely fenced to prevent livestock from wandering onto the surface during landing or take off. If the airstrip is not fenced, clearing of the strip and surrounding area is essential.	Livestock and wild animals are extremely dangerous to aircraft, especially at night where it is difficult for the pilot to see them. They cause considerable damage to the strip surface particularly during heavy rain where their hoofs leave large indents and ruts.

Care & Maintenance

There are more than 2,000 landing strips in the RFDS network across Australia, many of which are used on a regular basis and many others that exist purely for medical visits.

RFDS pilots are continually checked for their proficiency in operating within all kinds of airfields, day and night, in good and bad weather and as such, are highly regarded for their abilities within the aviation industry.

Our pilots always put safety first and will never jeopardise the safety of the aircraft and crew by flying into unknown or poorly maintained airfields.

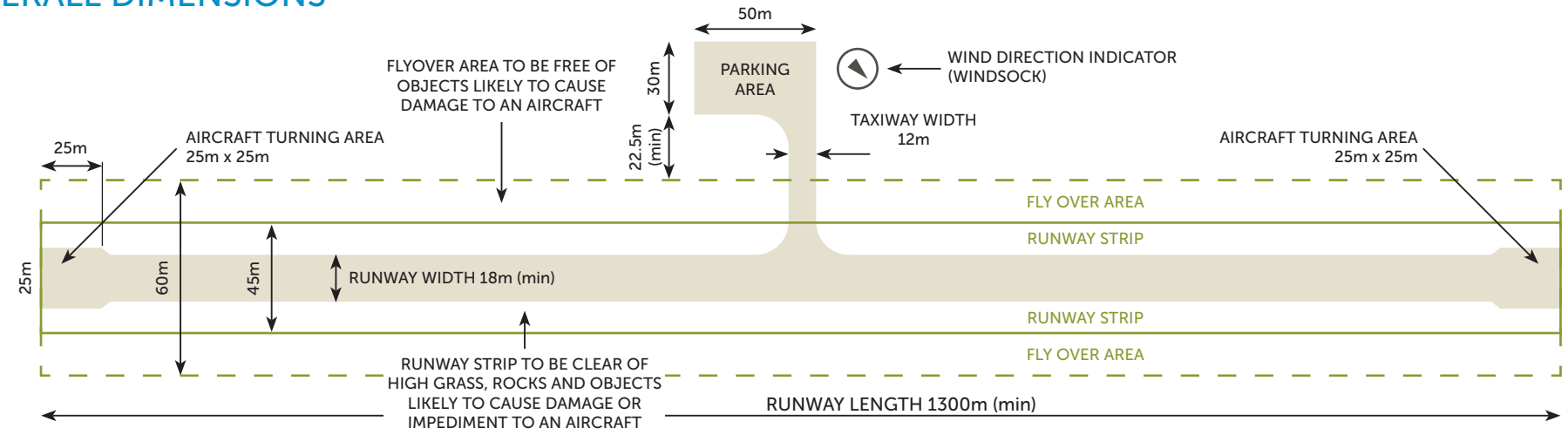
Therefore, it is important that your airstrip is kept well maintained on a regular basis, especially after heavy rain periods. Please do not wait for a medical emergency to occur before you maintain your airstrip. Your failure to do this could result in a tragedy.

RFDS aircraft have tricycle undercarriages and touch down at nearly 200 kph which calls for a much smoother landing surface than that required for other aircraft, to effectively maintain full steerage control and avoid any possibility of aircraft damage.

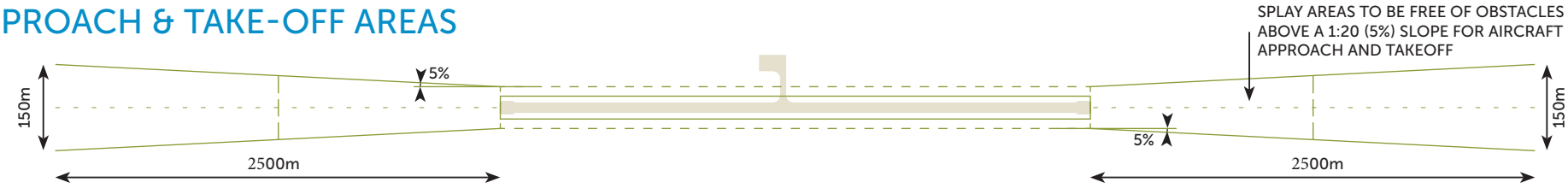
AIRSTRIP STANDARDS SUMMARY – **DAY OPERATIONS**

Royal Flying Doctor Service
QUEENSLAND SECTION

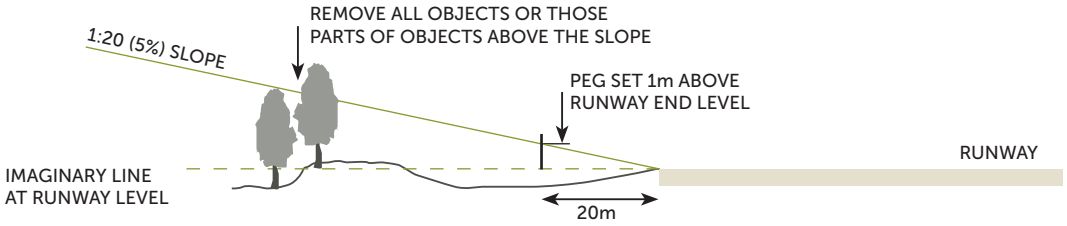
OVERALL DIMENSIONS



APPROACH & TAKE-OFF AREAS



A METHOD FOR MEASURING A 1:20 SLOPE



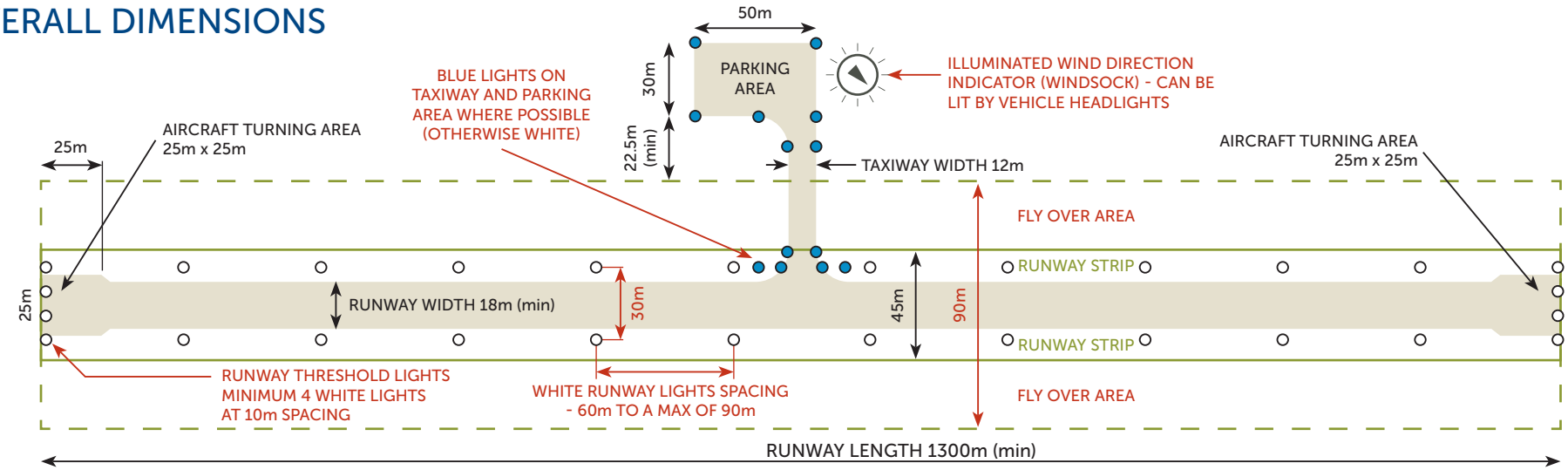
NOTES:
1. PLEASE REFER TO THE RFDS (QUEENSLAND SECTION) OPERATIONS AIRSTRIP STANDARDS & REPORTING ARRANGEMENTS FOR COMPLETE INFORMATION.
2. TO CATER FOR POSSIBLE FUTURE OPERATIONS AT NIGHT, CONSIDERATION SHOULD BE GIVEN TO LOCATING THE APRON AREA, WIND DIRECTION INDICATOR AND FENCE EXTERNAL TO A 90-METER-WIDE FLYOVER AREA.

* Not to scale

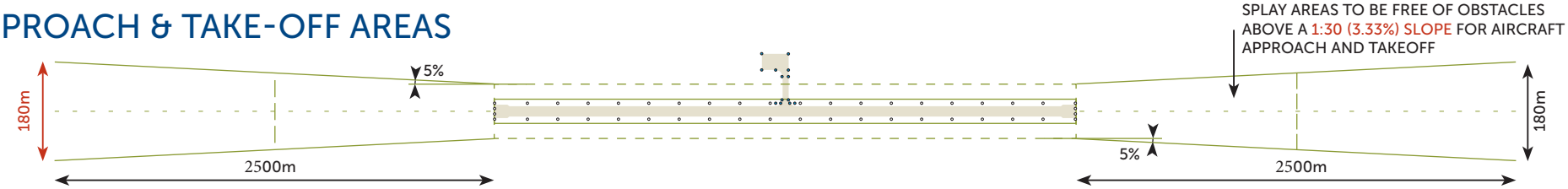
AIRSTRIP STANDARDS SUMMARY – **NIGHT OPERATIONS**

Royal Flying Doctor Service
QUEENSLAND SECTION

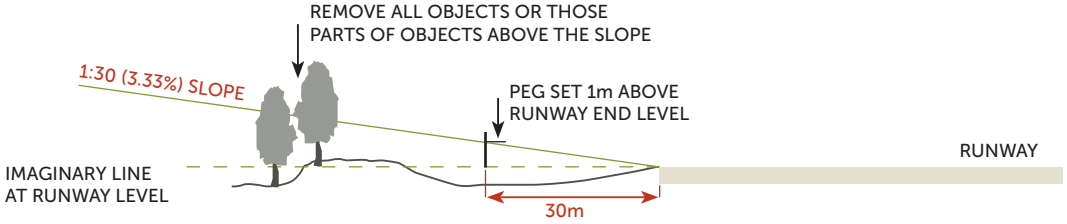
OVERALL DIMENSIONS



APPROACH & TAKE-OFF AREAS



A METHOD FOR MEASURING A 1:30 SLOPE



NOTES:
1. PLEASE REFER TO THE RFDS (QUEENSLAND SECTION) OPERATIONS AIRSTRIP STANDARDS & REPORTING ARRANGEMENTS FOR COMPLETE INFORMATION.
2. RED TEXT DENOTES CHANGES FROM DAY OPERATIONS AIRSTRIP REQUIREMENTS.

* Not to scale