

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
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# **Runway Safety Checklist**

## **For**

### **Aerodrome Operator**

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
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## Aim

Runway Safety considers three main areas:

- Runway incursions
- Runway excursions
- Runway confusion

The several agencies are involved directly and indirectly in the maintenance and inspection of runway especially at Paro Aerodrome. In addition to specific actions by an individuals and agencies, runway safety relies on all associated agencies to work together:

- at specific geographical locations (eg. airport); and
- within/across organisations
  - ✓ at the tactical level (eg. Pilot, Air Traffic Controller, Airport Operations); and
  - ✓ at the strategic level (eg. Airlines, ANSP, Airport).

The aim of the Runway Safety Checklist is to ask the user a range of questions which will:

- Allow them to assess their level of runway safety
- Ask how they can improve runway safety, and
- Increase their knowledge on factors which are important to runway safety.

The checklist is written for consideration at the tactical level, but can be interpreted to allow runway safety to be considered from a strategic or organisational perspective.

The checklist is divided into sections for Air Traffic Control, Airport and Aircraft Operator, to enable the user to answer specific questions relating to how their particular functions contribute to runway safety. However, users can also review the other sections to gain a better understanding of other functions and/or to informally consider whether any opportunities for improvement exist for the other areas.

The checklist is intentionally designed to cover a range of aviation operations (eg. International airline operations, domestic operations, chartered aircrafts etc):- This means that not all questions will be applicable to all users. Although ‘N/A’ is an option for all questions, users may wish to use the opportunity to research the particular topic in more detail.

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

The checklist cannot be considered a comprehensive source of all questions/topics relating to the maintenance of runway safety, but provides guidance and a ‘starting point’ for future development and research for the user.

### **Reference Information**

There is a wide range of reference and guidance material available on runway safety. Although many sources are used, the primary references for the development of this checklist are:

- The European Action Plan for the Prevention of Runway Incursions (EAPRI),
- The European Action Plan for the Prevention of Runway Excursions (EAPRE),
- The CANSO Runway Safety Maturity Checklist,
- Personal experience, discussions and runway safety forum participation.

### **Resources and Reference Material**

#### **ICAO Runway Safety Toolkit**

[http://cfapp.icao.int/tools/RSP\\_ikit/story.html](http://cfapp.icao.int/tools/RSP_ikit/story.html).)

The ICAO Runway Safety Toolkit is an excellent portal to the range of information and training products available on runway safety. The toolkit enables the users to access specific runway safety material which has been developed by the following organisations:

- Airports Council International (ACI)
- Civil Air Navigation Services Organisation (CANSO)
- Eurocontrol
- European Aviation Safety Agency (EASA)
- Federal Aviation Administration (FAA)
- Flight Safety Foundation (FSF)
- International Air Transport Association (IATA)
- International Business Aviation Council (IBAC)
- International Civil Aviation Organisation (ICAO)
- International Coordinating Council of Aerospace Industries Associations (ICCAIA)
- International Council of Aircraft Owner and Pilots Association (IAOPA)
- International Federation of Airline Pilots’ Associations (IFALPA)
- International Federation of Air Traffic Controllers Associations (IFATCA)

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

### Airservices Australia

Airservices Australia has a range of information on its Runway Safety webpage at <http://www.airservicesaustralia.com/flight-briefing/pilot-and-airside-safety/runway-safety/> including:

- A Pilots Guide to Runway Safety (booklet)
- An Airside Drivers Guide to Runway Safety (booklet)
- Tips to Avoid a Runway Incursion (flyer)
- Establishing a Local Runway Safety Team (flyer)

### Local Runway Safety Team

Questions	Y/N/ NA	How can you improve this?
Is there a Local Runway Safety Team (LRST) at the airport? If not, is runway safety formally included in the agenda of Airport Facilitation Meeting?		
Does the LRST consider Runway Incursions, Runway Excursions and Runway Confusion?		
Does the LRST have the following topics on the agenda: <ul style="list-style-type: none"> <li>➤ Local runway safety occurrences</li> <li>➤ Airport works (Planned/Ongoing)</li> <li>➤ Aerodrome signage, markings</li> <li>➤ Low visibility operations               <ul style="list-style-type: none"> <li>➤ FOD management</li> <li>➤ Wildlife management</li> </ul> </li> </ul>		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

<ul style="list-style-type: none"> <li>➤ Communications</li> <li>➤ procedures, practices and publications that relate to runway operations or runway safety</li> <li>➤ Lessons learnt (local and external)</li> </ul>		
Do you actively participate in the LRST?		
Do other aerodrome users (including airside drivers, airlines, ATC, ARFF etc) actively participate in the LRST		
Does the LRST get supported by a national runway safety program?		

### Reporting and Learning Environment

Questions	Y/N/ NA	How can you improve this?
Does aerodrome have an internal reporting process and culture that encourages reporting of hazards/issues/occurrences relating to runway safety?		
Does aerodrome have a reporting process and culture that encourages aerodrome users to report issues/occurrences relating to runway safety?		
Do you report runway safety hazards/issues/occurrences regarding your airport/aircraft operators/ATC?		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

Do runway safety occurrences get investigated to determine why they happened?		
Is the information from runway safety occurrences used in the development and implementation of programs to prevent recurrence or enhance runway safety at aerodrome(or elsewhere)?		
Are runway safety occurrences, issues and procedures (local and national) briefed/discussed with airport staff?		
Is runway safety included as a topic in initial and recurrent training?		

### Consultation

Questions	Y/N/ NA	How can you improve this?
Does aerodrome hold specific joint training and familiarisation in the prevention of runway incursions with Pilots, Air Traffic Controllers and Maneuvering Area Vehicle Drivers? Does this include visits to the maneuvering area to increase awareness of incursions?		
At your location, are there consultation, awareness and training programs for changes to aerodrome facilities to ensure runway safety is considered?		
Do you actively participate in these programs?		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
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Do you adequately disseminate information about temporary work and ensure that temporary signs and markings are clearly visible, adequate and unambiguous in all relevant conditions?		
Do you proactively work together with regulatory authority to develop enhancements to runway safety at the aerodrome?		

### Aerodrome Works

Questions	Y/N/ NA	How can you improve this?
At aerodrome, is new aerodrome infrastructure or changes to existing infrastructure designed to prevent runway safety occurrences?		
When conducting aerodrome works or infrastructure projects, do you avoid infringing lines of sight from the air traffic control tower?		
Does your Aerodrome have consultation and awareness programs relating to planned and/or ongoing aerodrome works?		
Do you actively participate in these programs?		

### Airside Driving

Questions	Y/N/ NA	How can you improve this?
Does aerodrome have airside driver and familiarization training?		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
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Do you assist with the content development or delivery of this training?		
Do you have a formal driver training and assessment program?		
Does aerodrome have formal communications training and assessment for drivers and other personnel who operate on or near the runway?		
Do you (and other airport staff) complete this training?		
Does aerodrome ensure all vehicles on the manoeuvring area are in radio contact with the appropriate air traffic either directly or through an escort?		
At aerodrome, are all Maneuvering Area Vehicle Drivers briefed at the start of a duty and kept updated throughout the duty?		
Are airside vehicle operators trained, checked and assessed on compliant radio phraseology including readback/hearback procedures?		
At aerodrome do you track vehicle movements on the maneuvering area?		



	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

### Communications

Questions	Y/N/ NA	How can you improve this?
Do you use standard communications procedures, phraseology and readbacks at your airport?		
Are communications always in English?		
Do all vehicle movements on the aerodrome use a radio?		
Does English proficiency of ATC, Pilots or aerodrome operators, ground personnels affect runway safety?		
Do your communications systems and procedures improve situational awareness for pilots, drivers and ATC?		

### Aerodrome Facilities

Questions	Y/N/ NA	How can you improve this?
Does aerodrome consider the use of technology to enhance runway safety?		
Does aerodrome have the capability to provide real-time meteorological information? (Eg. ATIS/AWIS /windsock /windshear alerting system/ /runway visibility and range monitoring systems)		
Are runway constructed and refurbished to Bhutan Aerodrome Standard specifications so that effective		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

friction levels and drainage are achieved?		
Does aerodrome ensure that appropriate navigation aids and surface markings are maintained in accordance with Bhutan Aerodrome Standard and Recommended Practices, to promote the accurate landing/touchdown point?		
Are runway holding points clearly marked? Do you use signage at the runway holding points used for intersection takeoffs to indicate the Takeoff Run Available (TORA)?		
Are wind sensors and wind direction indicators (wind socks) sited to give the best practicable indication of conditions along the runway and touchdown zones?		
Has aerodrome considered the Bhutan Aerodrome Standard naming convention for the manoeuvring area to eliminate ground navigation error and communication confusion?		
<p>Is runway and taxiway layout designed to optimise runway safety performance by:</p> <ul style="list-style-type: none"> <li>• being consistent with ICAO (+/or National Regulator) requirements</li> <li>• including RESA and/or other arrestor systems</li> <li>• having appropriate position, length, width, gradient and surface characteristics, friction coatings, grooving, surface texturing and drainage optimised for prevailing conditions, including alternatively aligned runway</li> </ul>		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

<ul style="list-style-type: none"> <li>• providing adequate runway (edge &amp; centreline)</li> </ul>		
<p>Does aerodrome have access to Bhutan Aerodrome Standard compliant aviation rescue and fire fighting service?</p>		
<p>Are there any local phenomena or reports which make airport signs, markings or lights difficult to see or understand by airport users?</p>		

### Procedures, Processes and Practices

Questions	Y/N/ NA	How can you improve this?
<p>Do you use any local procedures, or aerodrome configuration that may lead to pilot/driver confusion or expectation and a subsequent runway safety occurrence? An example would be local procedures to use non-standard markings on the manoeuvring area, or to treat a 'dis-used' runway as a taxiway, without appropriately closing, marking or re-classification.</p>		
<p>Do you have control of/use of/procedures for ground lighting that may influence runway safety?</p>		
<p>Are there Low Visibility Procedures at your aerodrome? Are you involved in their development? Are all airside staff trained in them?</p>		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

<p>Does your airport have established procedures for the provision of aerodrome information (including surface information) to pilots (eg. NOTAM, ATIS or directed transmission)?</p> <p>Do you actively participate in this program?</p> <p>Is the procedure suitable for all hours of aerodrome operation? (Eg. Can you accurately provide pilots information on runway surface conditions if the Aerodrome Safety Officer or ATC are unavailable)?</p>		
<p>At your airport do you have a policy and robust procedure for Runway Inspections?</p>		
<p>At your airport have you considered any potential safety benefits of carrying out runway inspections in the opposite direction to runway movements?</p>		
<p>Do changes to manoeuvring area practices and procedures, including planned works take account of runway safety and include consultation with the local runway safety team?</p> <p>Is an adequate risk assessment conducted (with aerodrome users) for procedural and/or infrastructural changes on the manoeuvring area?</p>		
<p>Does your airport have a robust program in place to maintain the runway surface friction characteristics by removal of contaminants?</p>		
<p>Does your airport have robust procedures in place for calculating temporary reduced declared distances? (Eg. due to work in progress on the runway)</p> <p>If reduced declared distances are in operation, do you have appropriate temporary markings, lighting and signs to accurately portray the reduced distances?</p> <p>Is this information well communicated, and published appropriately?</p>		

	<b>Bhutan Civil Aviation Authority</b>	<b>Advisory Circular(AC)</b> <b>BCAA-AC-AGA-006</b> <b>November 2017</b>
---	--	--

<p>Does your airport have robust procedures in place for communicating safety information regarding aerodrome/surface conditions?</p>		
<p>Have you implemented maintenance programs relating to runway operations? (Eg. markings, lighting and signage) Do you ensure that signs and markings are clearly visible, adequate and unambiguous in all relevant conditions?</p>		
<p>Are all of your airport's infrastructure, practices and procedures relating to runway safety in compliance with ICAO or National Regulator) provisions?</p>		
<p>Do your airport emergency planning arrangements include Airlines, ATC, Aerodrome and emergency services? Does the planning include consideration of runway safety? (Eg. Are external emergency services personnel provided training/guidance material regarding safe operations around your runways?)</p>		
<p>Does your airport have (or need) a Snow and Ice Control Plan?</p>		
<p>Does your airport have procedures for partial and full closure of taxiway and runways in accordance with ICAO (+/or National Regulator) defined criteria including the use of displaced thresholds?</p>		



**Director General**  
**Bhutan Civil Aviation Authority**