Runway Safety Checklist

For:

- Air Traffic Controllers (or Air Navigation Service Provider)

Aim

Runway Safety considers three main areas:

- Runway incursions
- Runway excursions
- Runway confusion

There are many organisations who are directly and indirectly involved in the maintenance of runway safety across the globe. In addition to specific actions on individuals and organisations, runway safety relies on all parties to work together:

- at specific geographical locations (eg. airports); 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 was intentionally designed to cover a range of aviation operations (eg. International airline operations at major airports, through to General Aviation operations at non-towered airports). 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.

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 were used, the primary references for the development of the checklist were:

- 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.)

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 user 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)

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)

For more information on runway safety, or for feedback and suggestions on this checklist please contact safety.promotions@airservicesaustralia.com

Local Runway Safety Team

Questions	Y/N/ NA	How can you improve this?
Is there a Local Runway Safety Team (LRST) at your location? If not, is runway safety formally included in the agenda of another airport forum?		
Does the LRST (or equivalent forum) consider Runway Incursions, Runway Excursions and Runway Confusion?		
Does the LRST (or equivalent forum) have the following topics on the agenda[1]: • Local runway safety occurrences • Airport works (Planned/Ongoing) • Aerodrome signage, markings and lights • Low visibility operations • FOD management • Wildlife management • Communications • Local procedures, practices and publications that relate to runway operations or runway safety • Lessons learnt (local and external)		
Do you actively participate in the LRST (or equivalent forum)?		
Do other aerodrome operators (including airside drivers, airlines, airport, ARFF etc) actively participate in the LRST (or equivalent forum)?		
Does the LRST (or equivalent forum) get supported by a national runway safety program?		

Reporting and Learning Environment

Questions	Y/N/ NA	How can you enhance this?
Does the aerodrome have a reporting process and culture that encourages reporting of hazards/issues/occurrences relating to runway safety?		
Does your organisation have a reporting process and culture that encourages reporting of hazards/issues/occurrences relating to runway safety?		
Do you report runway safety hazards/issues/occurrences relating to your own organisation/the aerodrome/aircraft operators?		

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[1] More guidance on establishing a LRST and agenda topics is available at http://www.airservicesaustralia.com/wp-content/uploads/LRST-Guidance.pdf.

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 your location (or elsewhere)?		
Are runway safety occurrences, issues and procedures (local and national) briefed/discussed to all controllers?		
Is runway safety included as a topic in initial and recurrent training?		

Aerodrome Works

Questions	Y/N/ NA	How can you improve this?
Does the aerodrome have consultation and awareness programs relating to planned and/or ongoing aerodrome works?		
Does this program include the maintenance of visibility between the Tower and the manoeuvring area?		
Do you actively participate in these programs?		

Airside Training

Questions	Y/N/ NA	How can you improve this?
Does the aerodrome have airside driver and pilot familiarisation training?		
Do you assist with the content development, or delivery of this training?		
Do you (and your ATC colleagues) complete this training?		

Communications

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

Organisational Programs

Questions	Y/N/ NA	How can you improve this?
Does your organisation (and/or your local unit) consider the use of technology to enhance runway safety?		
Does your organisation include Human Factors (HF), Threat and Error Management (TEM) and Crew Resource Management (CRM) fundamentals in controller training?		
Do you comply with the concepts, lessons and procedures included in your organisational programs?		
Do ATC supervisor and controller roles and responsibilities require monitoring of controller environment, workload, distractions, internal or external pressures?		
Do you always consider safety as your highest priority, or do other factors such as operational efficiency sometimes seem to be prioritised higher? If so, is this generally a 'one-off' or 'regular' occurrence?		
Do you consider the risks associated with any changes thoroughly prior to implementation? Do these considerations include how your change to procedure may impact the pilot from a safety perspective?		

Runway Incursion

Questions	Y/N/ NA	How can you improve this?
Do you use any procedures that may lead to pilot/driver confusion or expectation and a subsequent runway safety occurrence? For example do you regularly use runways for taxi?		
Do you have control of/use of/procedures for ground lighting that may influence runway safety? (Eg. Stop bars, lit versus unlit runways and taxiways)		
Do you use Capacity Enhancing Procedures at your aerodrome? (Eg. Conditional clearances, Intersection departures, Multiple line-ups etc) If so, have you considered any potential hazards associated with these procedures when used individually or in combination and developed appropriate mitigation strategies?		
Are there Low Visibility Procedures at your aerodrome? Are you involved in their development? Are all controllers trained in them?		
Do you use stop bars? Do the procedures comply with ICAO (+/or National Regulator) guidance? Are there contingency plans in place for stop bar equipment failure?		
Do you generally give lengthy and/or complicated taxi instructions to pilots or airside drivers, or whenever possible, provide shorter, less complex instructions or even progressive taxi?		
Do you give aircraft Airways Clearances prior to taxi?		
Do you use standard taxi routes? If so, are these routes clearly promulgated and available to pilots?		
Do you have a clear and robust procedure in place to show that a runway is occupied, obstructed or unavailable?		
Do your ATC procedures include a requirement to issue a specific clearance to enter, cross, line-up, backtrack or take-off on any runway? (Including runways not in use?)		
Have you considered the potential safety benefits of carrying out runway inspections in the opposite direction to runway movements at your aerodrome?		
Would you issue a line up clearance if the aircraft will be expected to wait on the runway for more than 90 seconds beyond the time it will normally be expected to depart?		
Do you avoid using oblique or angled taxiways for line-up that limit the ability of the Flight crew to see the runway threshold or the final approach area?		

Runway Excursion

Questions	Y/N/ NA	How can you improve this?
Does your aerodrome have established procedures for the provision of aerodrome information (including surface information) to pilots? (Eg. NOTAM, ATIS or directed transmission) Do you actively participate in this program? 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 Inspection Team are unavailable?)		
Do you have procedures to ensure that the ATIS is updated in a timely manner and the action is recorded and/or directly broadcast? (Eg. including pilot and/or system derived reports such as SPECIs, wind shear reports ,AIREP/PIREP, runway surface conditions, approach aid status)		
Is the importance of a stabilised approach and compliance with final approach procedures included in training and briefing for air traffic control staff?		
Do you have procedures for the provision of timely, accurate and clear instructions to Flight Crew including position, track and distance information based on aircraft type and performance to convey traffic management intentions?		
Do ATC flow control procedures manage ATC capacity? If so, does this consider the prevailing meteorological conditions?		
Do you have procedures for late notice runway changes that reduce track miles? If so, do these consider aircraft type, performance capability, vectoring and resequencing to re-establish aircraft profile, wind effect on profile and approach type?		
Do your procedures require: • Speed control to only be applied outside the final approach fix • Query of pilot speed deviation or other instruction • Effective communication and coordination between Tower and Approach?		
When vectoring to intercept an approach, do you ensure the aircraft captures the glideslope from below?		
Do you visually scan aircraft on approach and alert Flight Crew of significant flight path/profile deviation, and respond to pilot requests?		
Do your procedures detail requirements for protection of critical and sensitive areas of approach aids and runway strip including notifications of obstructions to Flight Crew?		

Do your procedures require monitoring of approach aid status?		
Do you ensure that pilots are informed of the Takeoff Run Available (TORA) or the Landing Distance Available (LDA) if these differ from the published data?		
Do you provide distance to run information to pilots on approach?		
Do you consider aircraft cockpit requirements, descent profile, aircraft configuration management, stabilised approach requirements and environmental conditions (eg. wind) prior to offering track shortening or change of approach?		
In the event of an aircraft go-around, do you minimise transmissions to allow pilots to concentrate on the critical phase of the manoeuvre?		
Do your procedures provide criteria to aid decision making in go-around situations?		
Do you consider pilots' briefing/FMS programming requirements prior to offering a change of runway for departure or landing?		