Runway Safety Checklist

For:

- Pilots (or Airline/Flying Organisation)

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 users (including airside drivers, ATC, other flying organisations, 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 improve this?
Do the aerodromes you operate at 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?		

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

Do you report runway safety hazards/issues/occurrences relating to your organisation/the aerodrome/ATC?		
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 pilots?		
Is runway safety (runway incursions, excursions and confusion) included as a topic in initial and recurrent training? Does this training use realistic scenarios?		
Are you kept up to date with current airport safety information?		

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?		
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 colleagues) complete this training?		

Communication

Questions	Y/N/ NA	How can you improve this?
Do you use standard communications procedures, phraseology and readbacks? Does your organisation conduct training and checking of your radio telephony procedures?		
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?		

Provision of Aerodrome Information

Questions	Y/N/ NA	How can you improve this?
Do the aerodromes you visit have established procedures for the provision of aerodrome information (including surface information) to pilots? (Eg. NOTAM, ATIS or directed transmission) Are these procedures suitable for all hours of aerodrome operation? (Eg. Are you accurately provided information on runway surface conditions if the Aerodrome Safety Officer or ATC are unavailable?) Do you actively participate in this program? (Eg. Do you advise ATC of weather phenomena or runway surface conditions if they differ from that advised to you?)		

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 (including locally) implement systems to ensure the fitness for duty, fatigue management, Occupational Health and Safety (OHS) and the existence of a positive safety culture for pilots to work in?		
Does your organisation have an SMS?		

Does your organisation include Human Factors (HF), Threat and Error Management (TEM) and Crew Resource Management (CRM) fundamentals in training?		
Do you comply with the concepts, lessons and procedures included in your organisational programs?		
Does your organisation enable improvement by providing evidence of reports, analysis, recommendations and implementation of change to procedures/practices/facilities to improve runway safety performance?		
Does your organisation monitor aircraft parameters related to potential runway excursions in their Flight Data Monitoring (FDM) program?		
Has your organisation equipped their aircraft fleet with data-link systems (eg. ACARS) to allow you to obtain the latest weather (D-ATIS) without one pilot leaving the active frequency?		
Do you (or your organisation) report to the ANSP if approach procedures or ATC practices at an airport prevent you from complying with the published approach procedures and stabilised approach criteria?		

Procedures, Processes and Practices

Runway Incursion

Questions	Y/N/ NA	How can you improve this?
Does ATC 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?		
If you have any questions or confusion about an ATC instruction or clearance, will you question it prior to proceeding?		
If you are unsure if you are able to meet an ATC request, instruction or clearance with enough time to safely complete your cockpit tasks and not increase the likelihood of a safety occurrence, will you speak up?		
Do you use any procedures that may lead to confusion or expectation and a subsequent runway safety occurrence? For example do you regularly use runways for taxi?		
At the aerodromes you visit, are all procedures compliant with ICAO (+/or National Regulator) guidelines?		
At all aerodromes that you visit, do you require a specific clearance to enter, cross, line-up, backtrack, takeoff or operate on all runways (including runways that are not in use)?		

Would you enter a runway for departure if not ready to take off?		
Would you advise Air Traffic Control without delay if additional time on the runway is required for operational reasons?		
Do you use aircraft lighting when entering/crossing/operating on a runway or cleared for takeoff?		
During taxi for departure or during approach, would you accept a runway change if time to re-program the FMS/re-brief is not sufficient?		
If you have any doubts about your exact position on the surface of an aerodrome would you stop and contact ATC immediately?		
Would you accept a rapid exit taxiway or oblique or angled taxiway for line-up that limits your ability to see the runway threshold or the final approach area?		
At any of the aerodromes that you visit, do noise mitigation or other environmental programs increase the chances of a runway incursion, excursion or confusion occurrence? (Examples include aerodrome design and alignment based on noise considerations, noise preferred or runway operational mode, time-based runway selection to share noise load, runway specific curfews, arrival/departure curfews etc which may require additional backtrack, runway crossings or other similar and otherwise avoidable risk.)		
Do you request/receive Airways Clearances prior to taxi?		
Do you plan your taxi?		
Do you use an aerodrome chart for reference when taxiing?		
Do you use a sterile cockpit on the ground and in the air?		
Do you keep heads-out when taxiing?		
Are there Low Visibility Procedures at your aerodrome? Are you involved in their development? Are all pilots trained in them?		
Do you know what the signage, markings and lights mean at all of the aerodromes you operate at?		

Procedures, Processes and Practices

Runway Excursion

Questions	Y/N/ NA	How can you improve this?
Does your organisation ensure the importance of a stabilised approach and compliance with final approach procedures is included in briefing for flight crews?		
If you needed to request a more favourable runway for takeoff or landing for safety reasons, would you advise ATC the safety reason why?		
Do you, shortly before takeoff and landing, verify that the actual weather conditions are similar or conservative compared to the weather data used for the takeoff performance calculations and the in-flight landing distance assessment?		
Does your organisation publish the aircraft's crosswind limitations with specific guidance on the runway condition and the gust component?		
Does your organisation publish specific guidance on takeoff and landing techniques with cross wind (and/or wet or contaminated runway conditions) and the correct use of the nose wheel steering? Do they provide appropriate training?		
Does your organisation ensure their SOP requires the flight crew to perform independent determination of takeoff data and crosscheck the results? Does this include Flight Crew cross-checking the 'load and trim sheet' and performance data input into the Flight Management Computer (FMC).		
Does your organisation publish the rejected takeoff decision making process? Do they provide appropriate training?		
Does your organisation publish and provide training on the company policy regarding in-flight assessment of landing performance? Does company landing distance data relate to unfactored or operational distances? In the case of unfactored distances does the company provide the safety margin to be used in normal and abnormal conditions?		
Does your organisation publish the company policy, procedure and guidance regarding the go-around decision? Does it state that a go-around should be initiated at any time the safe outcome of the landing is not assured? Do they provide appropriate training?		
Does your organisation provide training on go-arounds at different altitudes?		

When accepting the landing runway do you consider the following factors: weather conditions (in particular cross and tailwind), runway condition (dry, wet or contaminated), inoperable equipment and aircraft performance? Would you take a precision approach, except in conditions that may favour a non-precision approach?		
Does your organisation publish Company criteria for stabilised approaches in their Operation Manual? Are you provided guidance and training on this?		
Does your organisation publish an SOP describing the pilot non flying duties of closely monitoring the flight parameters during the approach and landing? Are any deviations from Company stabilised approach criteria announced to the pilot flying using standard call outs?		
Does your organisation publish guidelines on the use of autoland when low visibility procedures (LVP) are not in force? In this scenario, do you take into account the status of the protected area for the Localiser signal? Do you fully brief such practice manoeuvres, in particular, readiness to disconnect the autoland/automatic rollout function and land manually, or go-around?		
Does your organisation publish an SOP regarding a touchdown within the appropriate touchdown zone? Is appropriate training provided?		
Do you use full reverse on wet/contaminated runways irrespective of any noise related restriction on their use, unless this causes controllability issues?		
Does your organisation publish an SOP on the pilot non flying duties of closely monitoring the activation of the stopping devices on landing and call out any omission to the pilot flying? Is appropriate training provided?		
Does your organisation include specific recovery techniques from hard and bounced landings in their training program?		
Does your organisation accept landing long as a practice? Is this practice safety risk assessed, with a published policy and SOP supported by appropriate flight crew training?		
Does your organisation have an SOP indicating the stage of flight that the ATIS should be monitored and require a PIREP/AIREP to be broadcast if the meteorological conditions are different to it?		
Does your organisation have an SOP that requires pilot monitoring of track miles, height or speed on approach (including confirmation with ATC of new track, distance, height or speed information and ATC plans)? Does it include rejection of instructions that are outside the SOPs, including interception above glidepath?		
Does your organisation have an SOP to advise ATC of changes to aircraft type, performance and stable approach criteria?		

Does your organisation have SOPs requiring you to: • Utilise precision approaches where available • Brief appropriately for non-precision/visual approach when precision approaches are not available • Apply airline SOP criteria for use of non-precision and visual approaches • Request appropriate published instrument approach procedure to a runway with visual vertical guidance (eg. PAPI, VASIS etc)?		
Does your organisation have SOPs to ensure cross cockpit communication minimises internal/external pressures and power gradient so that decision to continue can be instantly challenged without recourse?		
Does your organisation support a Just Culture where a go-around or rejected take-off is required? (Eg. Management support for PF decision to initiate a go-around)		
Does your organisation have SOPs detailing energy management on approach and landing phase: • for airspeed, thrust, drag, flight path, braking application etc • standard calls by PNF to alert PF including current automation mode • to ensure correct profile or initiate go-around.		
Does your organisation have SOPs requiring a cross check of information (eg. rad alt Vs distance) and appropriate response to on-board alerts and cross checks including approach aid status?		
Does your organisation have SOPs to assure appropriate use of automation?		
Does your organisation have Pilot procedures which require notification to ATC of runway surface conditions?		
Does your organisation have SOPs prescribing braking settings according to runway surface conditions?		
Does your organisation have SOPs for recovery from: • failure of avionics • failure of undercarriage or braking systems • failure of flight and propulsion systems • FMS indicated gross error check?		
Have you completed all of the SOP-related training listed in this survey? Do you feel appropriately trained in all areas?		
Do you comply with all of the organisation's SOPs listed in this survey? Do you think all of your company policies mentioned in this checklist are sound? If not, have you discussed these policies with your Management or Standards area?		
Do you ever prioritise operational efficiency over safety? For example, accept track shortening to save a few minutes when you know that you might have difficulties correctly preparing yourself, your crew or your aircraft for an approach?		