APPENDIX B AERODROME OPERATOR

Recommendation 3.2.1 Ensure that runways are constructed and refurbished to ICAO specifications, so that effective friction levels and drainage are achieved.

Physical Characteristics

An aerodrome operator can reduce the risk of runway excursions by undertaking some basic steps, to provide a runway suitable for landing and takeoff.

The basic surface elements consist of the slopes – both longitudinal and transverse, which are provided to give as flat a surface as possible for aircraft and drainage properties to remove water. A porous surface or a surface treated with grooves may further reduce the presence of liquid contaminants between the tyre and the runway surface.

Recommendations concerning surface slopes, runway width, lighting, markings, signage etc. are provided in ICAO Annex 14 and in the Aerodrome Design Manual.

Recommendation 3.2.2 An appropriate program should be in place to maintain the runway surface friction characteristics by removal of contaminants.

Maintenance

In addition areas of the runway surface will wear down over time, depending on use, and this needs to be monitored by the airport operator. A smooth or rubber contaminated surface provides less friction than a textured one. Surface assessments or friction readings should be undertaken at adequate intervals to ensure that the runway surface remains suitable for continued operation. This may ultimately lead to runway resurfacing but improvements can be achieved also by improving the texture or removing for example rubber deposits that can build up over time. Should the condition deteriorate too far it may be necessary to advise aircraft operators that parts of the runway may have inadequate friction in certain conditions e.g. slippery when wet.

When constructing or resurfacing a runway the new surface should have an adequate texture to minimise the time window of exposure to slippery conditions after heavy rain showers.

Recommendation 3.2.3 If provided, ensure that appropriate navigation aids (e.g. ILS, AGL, PAPIs), and surface markings are maintained in accordance with ICAO Standards and Recommended Practices, to promote the accurate landing/touchdown point.

Visual Aids

The availability of location information such as signs, lights and markings (for example centreline markings, aiming point markings, edge markings) both along the runway and at the holding points should provide the flight crew with a good situational awareness as to their precise location.

Holding positions should be marked, signed and if required lit as specified in ICAO Annex 14. For example mandatory signs provided at runway-taxiway intersections can assist in reducing the likelihood of runway excursions as their presence will assist flight crew in ensuring the takeoff roll commences at the correct location.

Navigation Aids

Navigation aids e.g. ILS, AGL, PAPIs should also be provided and maintained in accordance with ICAO Standards and Recommended Practices, to promote the accurate landing/touchdown point. When transitioning to visual flight above or at the decision height, the pilot is gradually shifting his or her attention to the visual approach indicator or to the runway and the touchdown point; still using their instruments as a backup.

Recommendation 3.2.4 Ensure that the runway holding points are clearly marked, signed and if required, lit. Consider the use of signage at the runway holding points used for intersection takeoffs to indicate the Takeoff Run Available (TORA).

Recommendation 3.2.5 Ensure robust procedures are in place for calculating temporary reduced declared distances e.g. due to work in progress on the runway. When reduced declared distances are in operation, ensure that the temporary markings, lighting and signs accurately portray the reduced distances and that they are well communicated, and transferred to States aeronautical information services for publication.

Temporary Declared Distances

Should the runway declared distances be temporarily reduced for any reason, for example during maintenance or construction work, the position and nature of the signs, markings and lighting should be carefully planned to ensure the correct temporary information is displayed during any changes. These reduced distances need to be carefully determined as they are used in aircraft performance calculations by the aircraft operators. Temporary or reduced runway lengths must also be carefully communicated to flight crew by NOTAM or AIP entry and to ATS for inclusion in ATIS, flight briefing material or live radio communication. Electronic signs displaying text specific to temporary changes may be a useful addition in certain circumstances. It is clearly very important that such temporary changes are communicated very clearly with adequate advance notice and brought to the attention of all flight crew affected.

An adequate risk assessment should be the basis for procedural and/or infrastructural changes on the manoeuvring area.

Recommendation 3.2.6 If runway contamination occurs or is changing assess the runway conditions.

Changing Runway Conditions

If the runway surface becomes contaminated – for example with large volumes of water or winter contaminants, it is important that the aerodrome operator has a process for promptly assessing or measuring the amount of contamination, or the operational surface friction. This task should be undertaken at any time there is a change in the nature of the contamination – e.g. depth or type of contaminant. The results should be considered by the aerodrome operator as to what action is appropriate e.g. issuing a SNOWTAM, or adequate clearing the runway of snow.

Recommendation 3.2.7 Ensure robust procedures are in place for communicating safety significant information regarding changing surface conditions as frequently as practicable to the appropriate air traffic services.

Recommendation 3.2.8 In accordance with ICAO provisions, wind sensors and wind direction indicators (wind socks) should be sited to give the best practicable indication of conditions along the runway and touchdown zones.

Communication

If the runway is in use, the meteorological observations such as wind speed, direction and variation and the results of runway condition assessments should be passed to flight crew. This can be done in a number of ways, mostly by RTF message from air traffic services, but can also be promulgated by SNOWTAM and ATIS.

This information must be kept up to date – the process should be repeated whenever there is a change in the nature of the contamination, to ensure up to date information is provided. If the conditions are rapidly changing it may be appropriate to consider suspending operations on that runway until the surface conditions can be assessed as stable.

Recommendation 3.2.9 Consider equipping for digital transmission of ATIS, as appropriate.

The aerodrome operator should consider equipping the aerodrome with data-link systems that allow flight crews to obtain the latest weather without one pilot leaving the active frequency e.g. D-ATIS using ACARS.

NOTE:

The FAA has worked with industry and produced the TALPA ARC "Paved Runway Condition Assessment Matrix" for aircraft operators and airport operators to use. This is supported by the FAA although not yet formally adopted.

It is essential the right information is provided to the flight crew