

# **Prevention of Debris-related Risks on the Movement Area**

## **Situation Abroad**

### **1 - Canada**

#### **1.1 History**

In 1974, the Canadian civil aviation authorities, in co-operation with the national airlines, formed a “national committee on prevention of debris-related risks”. This committee was wound up in 1985.

Management of the main Canadian aerodromes is currently franchised to non-government bodies. The operators of these aerodromes must possess an aerodrome certificate issued by Transport Canada and are subject to the regulations in CAR Part III, Aerodromes and Airports.

#### **1.2 Regulations**

The regulations concerning prevention of debris-related risks are included in CAR 302 “Airports”.

Paragraph 302.07, on the operator’s obligations, specifies that the latter must comply with the published norms and recommendations. The latter require a daily infrastructure inspection. Paragraph 302.07 imposes an additional runway inspection in certain cases (accident or incident, works or potentially dangerous conditions).

Paragraph 302.08 states that the operator must publish an operations manual approved by Transport Canada. This manual must describe safety measures, amongst other things. Although the regulations do not specifically require a programme for prevention of debris-related risks, approval of the operations manual implies the description of such a programme in practice.

#### **1.3 Technical documentation**

In 1976, a “Manual for Prevention of Foreign Object Damage” was published by the authorities, which at that time managed the aerodromes. This manual, revised in 1983, contains technical instructions for the prevention of debris-related risks. Although it does not have the power of law, this manual is still the reference document for aerodrome operators.

#### **1.4 Oversight**

In the context of oversight of aerodrome certification, Transport Canada conducts an annual inspection of aerodromes in the course of which an inspection of the movement area is carried out.

#### **1.5 Training**

Since the privatisation of the aerodromes, Transport Canada no longer takes care of training related to airports.

## **1.6 Example: Vancouver International Airport**

Vancouver International Airport has three runways and 370,000 movements per year. There are three infrastructure inspections per day.

The airport is an active participant in the NAFPI (USA). It has an active programme for prevention of debris-related risks based on:

- the active participation of all of the participants working on the airport's movement area,
- the co-ordination of actions on the prevention of debris-related risks by an airport Safety representative,
- training for those who work on the movement area,
- information campaigns (posters, thematic presentations, good conduct prize).

A commission on debris-related risks meets once a quarter. Originally it met once a month, which proved demotivating for the participants. This commission is presided over by a safety representative and groups together the companies working on the movement area. Participation is voluntary.

A symposium was organised in 1996 with the participation of several Canadian airports and industry representatives.

## **2 - United States**

### **2.1 Background**

All aerodromes where aircraft with more than thirty seats are operated must hold an operations certificate issued by the FAA under chapter 14 of the CFR, Part 139. To obtain this the operator must publish an aerodrome certification manual containing procedures and plans in accordance with Part 139. The FAA Airport Certification and Safety Inspectors (ACSI's) carry out annual inspections and oversight inspections of certified aerodromes.

### **2.2 Regulations**

Control of debris on aerodromes is covered by sub-section D Operations, of Part 139.

Paragraphs 139.305 and 139.307 specify that debris of all kinds must be removed immediately from paved and unpaved areas of aerodromes.

Paragraph 139.327 (Self-inspection program) requires that the aerodrome manual describe when and how runway inspections are to be conducted, including extra or special inspections (following an accident or incident, in case of works or specific meteorological conditions).

Inspection reports must be archived for at least six months.

### **2.3 Advisory Circular**

To assist the airport authorities to comply with the regulatory requirements, the FAA published Advisory Circular No. 150/5380-5B "*debris-related risks*".

This circular recommends the establishment of a programme for the prevention of debris-related risks. This puts the accent on the need for co-operation between all of the partners at the airport and on the importance of training and the involvement of all those working on the platform. It recommends a review of the causes and factors contributing to the presence of debris before the development of the programme for prevention of debris-related risks.

The circular also recommends the setting up of a committee for prevention of debris-related risks, grouping together the representatives of all of the organisations working on the movement area.

It suggests several solutions (areas dedicated to collected debris, equipment for cleaning the movement area) and refers to documents and reports by Aerospace FOD Prevention Inc. (NAFPI, non-profit-making association of professionals).

## **2.4 Training**

The FAA, in co-operation with the American Association of Airport Executives (AAAE), has set up three or four day training programmes called *airport operation and safety schools*. Debris-related risks are presented by different participants in the field of aviation such as pilots, aircraft manufacturers and airport operators.

## **2.5 Example of Atlanta Hartsfield International Airport**

Atlanta Hartsfield International Airport has four runways and a million aircraft movements a year. There is one infrastructure inspection per day.

The airport has an active programme for prevention of debris-related risks based on:

- the active participation of all of the participants working on the airport's movement area,
- the co-ordination of actions on the prevention of debris-related risks by an airport "Operations" agent,
- training for those who work on the movement area,
- information campaigns for personnel (posters, participation in infrastructure inspections).

A safety commission meets once a month. Questions on debris-related risks are systematically included on the agenda.

A specific commission on debris-related risks met in April 2001 in order to take action in advance of risks related to the work on the aerodrome extension.

## **2.6 Example of Washington National Airport**

Washington National international airport has three runways. There is one infrastructure inspection per day.

The airport has an active programme for prevention of debris-related risks based on:

- the active co-operation of all of the participants working on the airport's movement area,
- surveillance by the aerodrome maintenance and operations personnel and by the various participants at the airport,

- the co-ordination of actions on the prevention of debris-related risks by an airport “Operations” agent,
- training for those who work on the movement area.

There is no specialised commission. There used to be one but the limited number of events and the experience acquired did not justify its continuation. It will be re-established if the circumstances warrant it.

Note: various items of equipment and materials (sweepers, receptacles for debris, magnetic bars) are used in the context of prevention of debris-related risks.

### **3 - Holland**

The Dutch civil aviation authorities apply ICAO Annex 14. There are no specific national regulations relating to the inspection of the movement areas nor, more generally, on the prevention of debris-related risks.

- Example of Amsterdam Schiphol Airport:

In 1995, a pilot safety group was set up at Schiphol and an airport safety management system (ASMS) was created. The Dutch civil aviation authorities approved this system in 1998. The existence of such a system is not yet a requirement.

In 1997, the integrated safety management system (ISMS) was set up. The ISMS brings together the airport authority, the air traffic control authority, and various airlines and companies working at the aerodrome. Co-operation between all those working on the movement area is ensured through participation in working groups.

- The safety rules are defined in the airport manual (Airside Regulation and Rules) and airport officers are responsible for ensuring their application.
- A runway inspection is performed three times a day. Additional inspections are carried out if the runway remains inactive for more than twenty minutes.
- The whole movement area is swept regularly and receptacles for debris are placed at different places on the apron.
- Discoveries of debris are recorded in the database on incidents and accidents on the movement area. The type of debris, the time and place of discovery are noted.
- An information campaign aimed at prevention of debris-related risks is conducted each year. Rewards are given to companies and persons who contribute to prevention.
- The level of awareness of persons working on the movement area is measured via questionnaires and their training includes a section on debris-related risks.

### **4 - United Kingdom**

- National context

The FAA requires that aerodromes, through the certification process, supply details on their inspection policies for movement areas, including on additional inspections following any incident which might lead to the presence of debris in a critical area. The CAA does not define the frequency of inspections nor their objective.

The CAA encourages aerodromes to adopt a policy and safety management system, although this is not a regulatory requirement. The Civil Aviation Publication 642 of March 1995 offers guidance on the setting up of a system of safety management.

The safety management systems developed up to now include all aspects of airport operations, including prevention of debris-related risks. Those responsible for the aerodrome define the policy and procedures that must be applied by persons working on the movement area. This results in training programmes, information programmes, safety committees and certain sanctions.

All of the large aerodromes have a programme for permanent sweeping and publish their policy on prevention of debris-related risks in their aerodrome manual and/or in instructions. Most of the aerodromes supply a brochure entitled the "Apron Safety Code".

- Other regulations and publications

The United Kingdom has set up a system of mandatory notification for events and any damage caused to an aircraft by debris is usually reported through this system. Aerodromes must supply their comments on events that concern them and specify what steps have been taken to avoid any future repetition.

In December 2000, the CAA sent a note to aerodromes to stress the dangers of damage caused to tyres by debris. This note reiterates the requirements in terms of inspections and invites aerodromes to verify their procedures in this area.

The CAA also publishes a guide on works on aerodromes, which sets out steps to eliminate debris or to prevent it from reaching the movement area.