



La Ronge Airport

WINTER MAINTENANCE AND PLANNING

September 2020

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Sources

Information used in the creation of this document has been drawn from the following sources:

Transport Canada, AC 302-013

Transport Canada, AC 302-014

Transport Canada, AC 300-005

Transport Canada, CAR Division IV Airport Winter Maintenance

Grande Prairie Airport, Winter Maintenance Plan

Sudbury Airport, Winter Maintenance Plan

Sudbury Airport, Airport Winter Maintenance Quality Control Checklist

Authors

This document was assembled through the work of the following individuals:

- Carol Gould
- Doug Mark
- Jamie Smith
- Margaret Menczel
- Robert Tyrer
- William Stewart

Commissioned By

This document was commissioned by the Regional Community Airports of Canada (RCAC) to assist in the safe operation of regional airports across Canada. Please visit www.RCACC.ca for more information.



Content of Winter Maintenance Plan

The content of this Winter Maintenance Plan is dictated by CARs 322.411.

322.411 Content

1. The winter maintenance operations for each priority area shall cover:
 - a) for a priority 1 area:
 - I. the full length of the primary runway;
 - II. the width of the primary runway required to support the operational requirement of the aircraft movements at the airport during a storm;
 - III. taxiways, including entrance and exit access areas, to accommodate traffic to and from the primary runway;
 - IV. de-icing pads or areas, including entrance and exit access to accommodate traffic to the primary runway and from the apron;
 - V. apron areas necessary to accommodate aircraft traffic, passengers and cargo;
 - VI. access roads, groundside and airside, to accommodate the movement of emergency vehicles to the runway, taxiways and apron areas referred to in this paragraph;
 - VII. visibility of lights installed as visual aids;
 - VIII. visibility and legibility of signs; and
 - IX. the areas adjacent to the approach aids, including glide path site, that require the removal of snow in order to maintain the signal integrity of the approach aid and as agreed to by the airport operator and owner/operator of the approach aid;
 - b) for a priority 2 area:
 - I. the full length of one or more secondary runway;
 - II. the width of one or more secondary runways required to support the aircraft operations at the airport during inclement weather;
 - III. taxiways, including entrance and exit access areas, to accommodate traffic to and from a secondary runway;
 - IV. visibility of lights installed as visual aids;

- V. visibility and legibility of signs; and
 - c) for a priority 3 area:
 - I. pre-threshold areas;
 - II. in the case of remaining areas:
 - a. runway and taxiway shoulder areas;
 - b. apron shoulder areas;
 - c. airside service roads, including access roads to approaches, emergency vehicle and personnel gates;
 - d. other movement areas identified in the airport's winter maintenance plan; and
 - e. remaining airside signage and lights.
2. The operator of an airport shall set out communication procedures in the winter maintenance plan to:
- a) describe the link between the airport operator and those assigned winter maintenance duties, with the following ground station:
 - I. the air traffic service unit;
 - II. community aerodrome radio station (CARS);
 - III. universal communications (UNICOM); or
 - IV. if no ground station is provided at the airport, the airport traffic frequency (ATF);
 - b) identify the applicable radio frequencies and describe their use;
 - c) ensure a standard terminology is established to transmit information;
 - d) immediately forward Canadian Runway Friction Index (CRFI) readings of 0.40 or less to the ground station referred to in paragraph (a); and
 - e) where the consultation required by paragraph 302.410(1)(a) of the *Canadian Aviation Regulations* has determined that a higher value of CRFI than in paragraph d) is desired by the air operators to be reported, that higher CRFI value will be immediately forwarded to the ground station referred to in paragraph (a).

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Distribution List

Name	Organization	Email Address
Dan Boyer	Nav Canada	dan.boyer@navcanada.ca
Jeff Halstrom	Transwest Air	jhalstrom@transwestair.com
Jeff Halstrom	West Wind Aviation	jhalstrom@transwestair.com
Peter Boniface	Northern Air Operations	peter.boniface@gov.sk.ca
Jim Thompson	Saskatchewan Air Ambulance	jim.thompson@gov.sk.ca

Amendment Distribution Procedure

Amendments for this manual will be emailed to all individuals in the distribution list.

Amendment List

Date	Version	Name (Print)

Document Review

The La Ronge Airport shall review the plan annually prior to Oct 15th and amend it as required. Amendments are made in consultation with a representative sample of air operators that use the airport.

Document Review List

Date of Review	Reason for Review	Name (Print)

INTRODUCTION

Winter operations procedures outlined in this document are published to provide guidance and direction in dealing with winter conditions by establishing priorities, responsibilities and procedures for snow removal and ice control on operational surfaces. The winter operations procedures are generally in effect from October 15th to April 15th.

Prior to the beginning of the Winter Season, Airport Manager (APM) shall present it to a representative sample of air operators that use the airport for the purpose of consulting on the provisions of the Winter Maintenance and Planning document and obtaining comments and feedback from the stakeholders.

The manual is reviewed annually, prior to the winter season before being re-issued.

Following this annual review any changes to the level of service for winter maintenance will be communicated to NAV CANADA for publication in the CFS and the airport operator will amend its AOM as required.

The La Ronge Airport , as an Airport operator has an obligation to keep the airport safe, operational to the maximum extent practical and to preserve its capital investment with effective maintenance.

OBJECTIVES

The objectives of this Winter Maintenance and Planning document is to ensure that all Airport Maintenance Staff are familiar with Winter Operating Standards at this airport.

DEFINITIONS & ABBREVIATIONS

The following **definitions** are used in this document:

- a) **Air transport service:** means a commercial air service that is operated for the purpose of transporting persons, personal belongings, baggage, goods or cargo in an aircraft between two points.
- b) **Aircraft movement surface condition report:** means a report that details the surface conditions of all movement areas at an airport including runways, taxiways and aprons.
- c) **Cleared width:** means the narrowest portion of the runway width that has been cleared of loose contaminants.
- d) **Compacted snow:** means snow that has been compressed into a solid mass that resists further compression.
- e) **Contaminant:** means material on a surface including standing water, slush, snow, compacted snow, ice or frost, sand and ice control chemicals.
- f) **Canadian runway friction index:** means the average of friction measurements taken on runway surfaces with freezing or frozen contaminants present, using a mechanical or electronic decelerometer.
- g) **Frost:** means ice crystals formed from airborne moisture that has condensed on a surface whose temperature is below 0°C.
- h) **Ice control chemicals:** means chemicals used to prevent ice formation, to prevent ice from bonding to a surface or to break up or melt ice on a surface.
- i) **Loose snow:** means fresh falling dry snow or drifting or old standing snow that is neither compacted on nor bonded to a surface.
- j) **NOTAM:** means a notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
- k) **Priority 1 area:** means a primary runway system that is determined by the prevailing wind or operational requirements and is cleared throughout a storm to maintain the operational capability of an airport. It consists of the runway and the associated taxiways that are necessary to ensure the safe flow of traffic in winter storm conditions.

- l) **Priority 2 area:** means a secondary airside area that is cleared as soon as practicable in order to provide additional runway availability should wind conditions or operational requirements change.
- m) **Priority 3 area:** means an airside area that is cleared after a storm in order to return an airport to full operational use.
- n) **Percentage of contaminant:** means the amount of each contaminant present on the estimated surface of the aircraft movement area and reported separately as a percentage (%) of the whole surface.
- o) **Runway surface condition:** means the portion of the Aircraft Movement Surface Condition Report (AMSCR) which reports the surface condition of the runway.
- p) **Sand:** means small particles of crushed angular mineral aggregates or natural sand material used to improve runway surface friction levels.
- q) **Significant change:** means with respect to runway surface condition includes but is not limited to: changes in type of contaminant, such as from dry snow to wet snow; measurable changes in depth of contaminant; following the application or removal of sand or chemicals; following snow removal or sweeping; changes in conditions caused by rapid increases or decreases in temperature.
- r) **Slush:** means partially melted snow or ice, with a high water content, from which water can readily flow.
- s) **SNOWTAM:** A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format.
- t) **SNOWiz:** An internet application for the direct entry of runway surface condition by an accountable source, the output being both a NOTAMJ and a SNOWTAM. The SNOWiz web application is for fixed, airport office use. SNOWiz is also an internet interface that allows dialog between automated reporting systems and the NAV CANADA database.
- u) **UNICOM:** means Universal Communications and is an air-to-ground communications facility operated by a private agency to provide Private Advisory Station service at uncontrolled aerodromes.
- v) **Wet snow:** means snow that will stick together when compressed, but will not readily allow water to flow from it when squeezed.

The following **abbreviations** are used in this document:

- | | |
|---|---|
| a) AC: Advisory Circular | b) AMS: Aerospace Material Specification |
| c) AMSCR: Aircraft Movement Surface Condition Report | d) ASC: Aerodrome Safety Circular |
| e) ATF: Aerodrome Traffic Frequency | f) CAR: Canadian Aviation Regulations |
| g) CARS: Community Aerodrome Radio Station | h) CRFI: Canadian Runway Friction Index |
| i) FOD: Foreign Object Damage | j) NPA: Notice of Proposed Amendment |
| k) O/T: Other Times | l) PNR: Prior Notice Required |
| m) RSC: Runway Surface Condition | n) SAE: Society of Automotive Engineers |

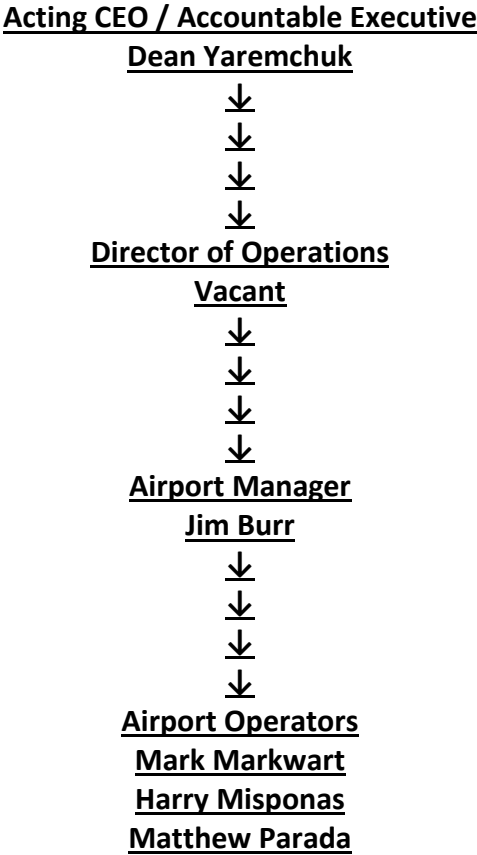
DOCUMENT AMENDMENT

Amendments for this manual will be emailed to all individuals in the distribution list.

COORDINATION OF ACTIVITIES

The La Ronge Airport has established airside priorities for winter maintenance activities. The Airport Manager is responsible for this plan and shall assign personnel and equipment to various work areas in accordance with established priorities, existing or forecast conditions or changing operational requirements.

ORGANIZATIONAL CHART



TRAINING

The following training shall be provided to persons having duties under the operator's airport winter maintenance plan:

- a) the safe use of vehicles;
- b) radio communication;
- c) airport layout;
- d) the inspection, storage and application of airside ice control chemicals and sand;
- e) AMSCR procedures, including the following matters:
 - I. observing;
 - II. recording;
 - III. procedures for forwarding reports to the aeronautical information services provider; and
 - IV. friction testing.
- f) snow and ice control for airside lighting, markers and signage.

RESPONSIBILITIES

Airfield Maintenance

Airfield Maintenance Staff are responsible for ensuring the safe and continuous operation of airside activities during the winter season. This includes the regular monitoring and reporting of runway conditions, snow removal and ice control. The Airport Manager or designate has the responsibility for winter operations and to direct the daily activities.

Airlines and Ground Handlers

Airlines and Ground Handlers are responsible for the preparation of their work areas prior to snow or ice conditions becoming prevalent in preparation of winter conditions. Airlines and Ground Handlers must ensure they are aware of current and forecasted conditions and ensure they maintain their work areas in such a manner to expedite snow and ice control by Airfield Maintenance. Airlines and Ground Handlers must also maintain a clear line of communication with the Airport Manager or designate for airfield maintenance (306-425-8289). Airlines and

Ground Handlers are also responsible for regularly inspecting all airside areas utilized by airline passengers to ensure safety during the loading or unloading of aircraft. When necessary, airline and ground handler personnel may apply sand or chemical to the pedestrian walkways using the materials supplied by the La Ronge Airport. If Airline and Ground Handlers areas are not properly maintained maintenance shall be performed at the request of the Airport Manager or designate.

FACILITY CLOSURES FOR MAINTENANCE

During any event that it becomes necessary to close a maneuvering surface by voice advisory or NOTAM due to existing conditions, the Airport Manager or designate shall do so. A runway or taxiway closure may be made for up to 59 minutes during a weather event to permit snow removal or ice control operations to take place without interruption. For a closure more than 59 minutes a NOTAM is required and will be issued by the Airport Manager or designate.

Closure of Air Navigation facilities is the responsibility of NAV CANADA. Closure of aircraft movement surfaces is the responsibility of the Airport Manager or designate.

The Criteria used for deciding to close an aircraft movement surface is as follows :

Safety of Operations	When the condition of the runway or taxiway (e.g.: CRFI reading of 0.2 or less) is considered to be a safety risk, the surface will be closed until mitigation can be completed.
Aircraft Movements	When unnecessary aircraft movements (e.g.: training circuits) are being conducted that interfere with snow and ice removal operations the surface will be closed.
Personnel	When sufficient personnel and equipment are unavailable to ensure snow and ice control can be conducted in a safe and efficient manner.
Air Carrier Operations	Air Carrier schedules will not be seriously disrupted
Consultation	FSS Operations personnel have been consulted to determine operational impact on existing operations.
Length of closure	Closure is to be in effect only until aircraft operations can safely resume.

NOTIFICATION BY NAV CANADA FLIGHT SERVICE STATION

Outside of scheduled maintenance hours, the FSS shall notify the on standby operator (306-425-8289) of the following conditions:

- a) any major change in weather condition;
- b) the onset of freezing rain; and

- c) any item mentioned in the APOA with the airport operator and NAV CANADA.

WINTER MAINTENANCE PRIORITIES

The La Ronge Airport winter maintenance priorities are:

- a) priority 1 areas;
- b) priority 2 areas to the extent that doing so does not compromise the operator's ability to keep priority 1 areas operational; and
- c) priority 3 areas after the winter storm conditions have ended.

If the La Ronge Airport does not remove contaminants from a priority area in accordance with its airport winter maintenance plan, the operator shall report it using a Safety Management System Occurrence Report Form and develop and complete corrective actions . (See Appendix D)

ESTABLISHING PRIORITIES

The airport surfaces shall be cleared of contaminants on a priority basis beginning with Airside. The following is the order in which areas shall be cleared:

Priority 1 areas include:

- a) The active runway 18 36 has the highest priority (minimum 75' centerline). Ice in the centre 75' of runway 18 36 shall be controlled through the use of sand, chemical and mechanical treatment.
- b) Taxiway Alpha and as much of Apron I shall be cleared to allow for aircraft to taxi off the runway with sufficient room to maneuver on Apron I to the ATB.
- c) Visual navigation aids such as runway edge lights, ODALS and PAPIS are made visible.
- d) A partial clearing of Apron IV and V may be performed as soon as possible to allow aircraft to taxi from hangars to Apron I.

Priority 2 will be determined by the Airport Manager or designate taking into account operational requirements for the secondary runway, other taxiways and aprons. Priority 2 areas include:

- a) Complete clearing of runway 18 36, Taxi Bravo and Charlie and all aprons.
- b) Clearing of deicing areas.
- c) Clearing of mandatory airfield signage.
- d) Service areas at ATB and maintenance lane.

Priority 3 will be determined by the *Airport Manager or designate* taking into account all remaining areas not included in priority 1 or 2. Priority 3 areas include:

- a) Essential access roads and parking areas on groundside are cleared.
- b) Remaining airside movement surfaces are cleared.

- c) All airside graded areas are cleared (as needed) a minimum of 7.5 m (25') outside edge lights and on pre-threshold areas 60 m (200').
- d) Airside service roads.
- e) All other areas as needed.

SNOW AND ICE REMOVAL ON LEASED AREAS

Tenants are fully responsible for snow and ice control on their leased areas. However, tenants may arrange with the La Ronge Airport to have their areas cleared on a cost recovery basis. In these cases, tenant areas are normally treated as Priority 3 areas and cleared after all other airside work has been completed. Airport staff must record times spent and the equipment and materials used to clear tenant areas. Tenants shall be invoiced for all work done by the airport on leased areas.

AIRCRAFT MOVEMENT SURFACE CONDITION REPORTING (AMSCR)

The following requirements shall be met when conducting movement area inspections and reporting the surface conditions of the airport:

- a) conduct daily inspections of the movement areas at the commencement of AMSCR hours and as necessary to identify significant changes in runway surface conditions until the end of AMSCR hours published in the *Canada Flight Supplement*;
- b) when contaminants are present on a movement area, make available the AMSCR during the published AMSCR hours as follows:
 - a. at the commencement of published AMSCR hours;
 - b. every time there is a significant change in runway surface conditions;
 - c. at least once every eight hours;
 - d. following every aircraft incident or accident in which winter conditions may have been a factor;
 - e. whenever the runway is not cleared to full width.

The La Ronge Airport uses the “Airport Movement Surface Condition Report and Canadian Runway Friction Index” AMSCR Form or similar electronic format that includes all of the elements of an AMSCR (more information concerning the AMSCR may be found in AC 300-005);

- c) provide an AMSCR with the Runway Surface Condition (RSC) data section completed for each CRFI measurement provided;
- d) identify, in the remarks column of the form or the remarks section of the electronic format, the time of day that this report is valid to and that this report is the final report for the period; and
- e) the validity period of an AMSCR shall not exceed the published operating hours for the airport, unless the surface conditions are being monitored by an airport operator.

The AMSCR shall be forwarded to the air navigation services provider via SNOWiz in a manner that will permit its prompt dissemination to aircraft operators.

The La Ronge airport shall provide information about the availability of CRFIs and AMSCRs in the *Canada Flight Supplement*.

AMSCR Terminology

The following terminology must be used when describing runway surface conditions in an AMSCR:

- | | |
|---------------------------|--------------------------------------|
| a. compacted snow | b. dry |
| c. dry snow | d. dry snow on top of compacted snow |
| e. dry snow on top of ice | f. frost |
| g. ice | h. slippery when wet |
| i. slush | j. slush on top of ice |
| k. standing water | l. water on top of compacted snow |
| m. wet | n. wet ice |
| o. wet snow | p. wet snow on top of compacted snow |
| q. wet snow on top of ice | r. chemically treated |
| s. loose sand | |

Surface Condition Reporting for Treated Gravel (Chip Seal) Runways

- a) The reporting of surface conditions on a treated gravel runway is more difficult than it is for a paved runway. In the case of treated gravel runways, it is impossible to remove all the winter contaminants from the surface. At the La Ronge Airport the common practice is to prepare a solid snow compacted base on top of the treated gravel whereby the compacted snow becomes the operational surface for winter operations. Thus, throughout most of the fall and winter, the operational base is not a normal treated gravel surface but is rather a compacted snow.
- b) The term that best describes the existing runway condition shall be used for reporting.
- c) In the case of treated gravel runways, the operator should report the top layer of contaminants as one unit or 100%, e.g. *30% compacted-snow base, 70% loose snow*. Any additional layer of contaminants below the surface layer that may affect aircraft braking performance should be defined in the "Remarks" Section.

- d) The Canadian NOTAM Procedures manual has more details concerning reporting surface conditions.

CRFI

The La Ronge Airport shall conduct Canadian Runway Friction Index (CRFI) measurements and provide a CRFI in accordance with its airport winter maintenance plan using a decelerometer.

The La Ronge airport shall check the calibration of each instrument prior to the commencement of each winter season; and shall do the calibration of each instrument in accordance with the manufacturer's recommendation at the time of purchase.

The La Ronge Airport shall immediately report Canadian Runway Friction Index (CFRI) readings of 0.40 or less to FSS. However, if during consultation with air operators it is determined that the reporting of a higher minimum value is desired it must be immediately reported through the same process.

CRFI should be provided when the area within 30 feet of either side of centerline of the runway, has more than 25% of its surface contaminated with any of the following:

- a) ice;
- b) wet ice consisting of a thin film of water on ice;
- c) compacted snow;
- d) slush on ice;
- e) loose snow or wet snow not exceeding 2.5 centimeters (1 inch) in depth;
- f) de-icing chemical solution or sand on ice; or
- g) frost.

CRFI is not valid with the following conditions and should not be provided when any of the following runway surface conditions are present:

- wet runway surface (water);
- slush on runway surface;
- loose snow on runway exceeding 2.5cm. (1in.) in depth;
- wet snow (for definition of wet snow refer to AC 302-013).

The La Ronge Airport uses an alternating side method for measuring CRFI done in accordance with CARs 322.416 (3)(b).

Significant Patches

If significant patches of contaminants cause lower readings than the average, their distance from the threshold of one end of the runway shall be reported in the remarks section of the AMSCR.

CRFI Vehicle

The airport operator shall only conduct CRFI testing using vehicles that meet the criteria as stated in CARs 302.416(1).

CONDITIONS FOR WHICH A NOTAM IS APPLICABLE

A NOTAM (Notice to Airmen) provides information to pilots on deviations from published Aviation information involving facility conditions at any aviation facility. Winter Operation conditions are made known to pilots by way of a SNOWTAM/NOTAM J, which is published by NAV CANADA and contains information from the AMSCR. This information will allow a pilot to make an informed decision on whether or not it is safe to use the airport's facilities.

Further information regarding NOTAM's can be found in the Canadian NOTAM Procedures Manual.

La Ronge Airport operators use the online SNOWiz application to submit AMSCR's on the airport's Android tablet or the maintenance shop computer. If the online service is not available the AMSCR shall be phoned in to the FIC at 1-204-983-0304 ext 5.

ICE CONTROL MATERIALS

Ice Control Chemicals

On movement areas, only use ice control chemicals (fluids or compounds) that:

- a) have properties meeting the most current applicable Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS); and
- b) consist of the product commonly known as Urea.

Failure to use ice control chemicals that meet the SAE specifications may result in damage to aircraft components.

Additional information is given in AC 302-014 *Runway Ice Control Chemicals*

Sample Ice Control Product Description

MATERIAL	USE	LIMITATIONS	APPLICATION	REMOVAL
Urea	De-icer/ Anti-icer	Effective to -10 C, Slow Release	Rotary Spreader	Swept when ice is melting
Sand	Provides traction on ice	Below -10 C	Rotary Spreader	Swept as soon as surface is acceptable
Liquid N/A	De-icer Anti-icer	Effective to -30 C	Liquid Sprayer	Swept when ice is melting
Sodium Formate N/A	De-icer Anti-icer	Effective to -20 C	Rotary Spreader	Swept when ice is melting

Sand

Only sand that meets the following criteria should be used on movement areas:

- a) be an abrasive material for airside ice control consisting of either crushed angular mineral aggregated or natural sand;
- b) be free from chlorides and corrosive materials, clays, debris, cementation, organic matter and other non-friction material;
- c) the pH of the water solution containing the material should be approximately neutral (pH 7);
- d) have a stable physical and chemical structure that is unaffected by water or the elements;
- e) not be softer than and including 3.5 up to and including 7 on the MOHS hardness scale; and
- f) be of a granular size that falls within the following parameters:

Minimum specification:	Percent Passing by Weight
Sieve Size (U.S. Standard)	
No. 4 (4.75 millimetres)	100 %
No. 80 (0.180 millimetres)	0 % to 2 %

The minimum specification for sand as noted in the table above will accommodate the majority of locally available sand. However, particle size and application rate of abrasive materials can affect the potential for foreign object damage (FOD) as well as the effectiveness in improving friction levels.

To promote visual awareness and absorption of solar heat, it is preferable to use abrasive material that is dark in colour.

All sand helps improve friction and the main difference between types of sand is in the quantity that needs to be applied. Either natural sand, manufactured sand, or a combination thereof, is acceptable, provided they meet the minimum specification.

Sand on runways may cause FOD to aircraft. Very fine abrasives may cause erosion of turbine blades, and any material that is too coarse can cause damage to propellers or internal components of jet engines. Therefore, limits on the size of the grains of sand are established.

Tests conducted under a wide range of conditions have shown that all of the types of sand tested improved friction once they were applied to the surface. Normally, acceptable improvements in friction levels can be achieved with different types of sand by adjusting the application rate. However, the relative application rates required for different types of sand to achieve the same friction level can be quite large (up to a factor of 5). Thus, sand selection becomes an operational issue that must be resolved by examining costs and the relative quantities of the different types of sand needed to achieve the required friction level. The optimum application rate for locally available sand should be determined through site experimentation.

The operator of the airport shall remove sand from movement areas, with the exception of treated gravel runways as soon as;

- a) the sand is no longer required to provide friction for an aircraft and service vehicles; and
- b) there are no higher operational priorities.

COMMUNICATION

Communication on the airside of an airport shall be done via air radio utilizing the proper frequency and standardized terminology as developed by the La Ronge Airport AVOP program. Contacts to be made to FSS at frequency 122.6 for ground vehicles.

AIRSIDE VEHICLE SAFETY PROCEDURE

The La Ronge Airport has established safety procedures for controlling the flow of ground vehicles during winter maintenance operations in order to ensure the safety of persons, other vehicles and aircraft; No person may operate a ground vehicle on airside maneuvering and non-maneuvring areas of the La Ronge Airport unless they have a current La Ronge Airport Airside Vehicle Operators Permit (AVOP) or are being escorted by an operator with an AVOP.

TRACKING ICE CONTROL CHEMICALS

The La Ronge Airport seeks to minimize the risk of ice control chemicals, other than the ice control chemicals specified in this plan from being tracked onto airside. Equipment or vehicles that are contaminated with road salt are not permitted to operate on airfield surfaces.

APPENDIX

APPENDIX B: Signed Agreements and MOU's

Below is a list of signed agreements and MOU's pertaining to winter maintenance at this airport. Copies of the agreements and MOU's are attached behind this page.

Date	Company Name	Service	Expires

APPENDIX C: Record of Failure to Follow the Winter Maintenance Plan

If the operator of the La Ronge Airport does not remove contaminants from a priority area in accordance with its airport winter maintenance plan, the operator shall make a record of that fact and the surrounding circumstances using the La Ronge Airport Occurrence Report form.

La Ronge Airport - CYVC - Occurrence Report and Hazard Identification Form						
Part A: OCCURRENCE REPORT # _____ (Use Date) Name: _____ What type of occurrence? <input type="checkbox"/> Hazard Date: _____ Time: _____ (local) <input type="checkbox"/> Incident Originator of the report: _____ <input type="checkbox"/> Accident Description of Hazard/Incident/Accident: See Part D - Risk Assessment Is an Investigation/Analysis [Part B] necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No (if No go to Part C)			Part C: CORRECTIVE/PREVENTATIVE ACTION PLAN (CAP) Is a Risk Assessment [Part D] required? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(if yes, complete it [Part D] before completing CAP)</i> Short-term corrective/preventative action - (to be completed within 30 days) Submitted by: _____ Initial: _____ Long-term corrective/preventative action - (including due date and follow-up requirements) Submitted by: _____ Initial: _____ Follow-up: Was the CAP effective? <input type="checkbox"/> Yes (if No the CAP remains open * Are further CAPs required) Review Date: _____ APM Initial: _____			
Part B : INCIDENT/ACCIDENT ANALYSIS: Use Root Cause Analysis Tools on next pages - summarize here and/or state root cause 						
Part D: RISK ASSESSMENT / MANAGEMENT WORKSHEET					Complete After Follow-up (Narrative of results)	
Hazard	Risks associated	Initial Rating	Risk Control Strategies	Revised Rating	Implementation of Strategies?	Control Effectiveness?
					APM Signature: _____ Date: _____ Originator of Report notified with follow up results: How? _____ Date: _____	

NOTE: This record must be maintained for a minimum of 2 years after completion

APPENDIX D: Pre Threshold, Runway and Taxiway Edge Diagrams

Runway and Taxiway Edges

The following diagrams depict the profile of maximum height of snow banks beside runways and taxiways.

The snow profiles are created by joining the following points (snow depth and distance from runway / taxiway edge) with straight lines:

Runway and Taxiway Edges Code A and B:

Beginning at the runway / taxiway edge, the maximum snow depth is 0.15 metres;

5 metres from the runway / taxiway edge, the maximum snow depth is 0.5 metres;

10 metres from the runway / taxiway edge, the maximum snow depth is 1.5 metres; and,

15 metres from the runway / taxiway edge, the maximum snow depth is 3.0 metres.

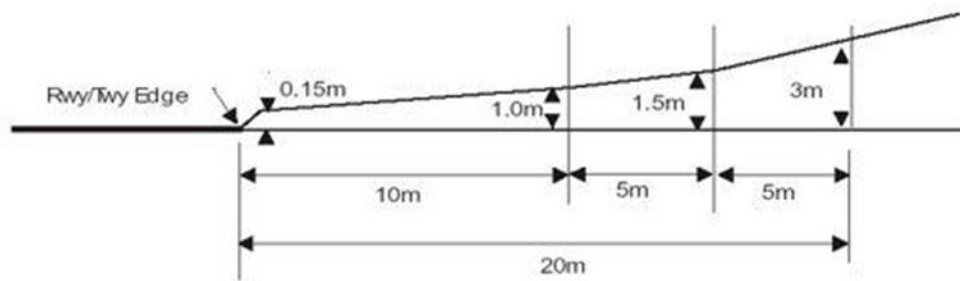
Runway and Taxiway Edges Code C and D:

Beginning at the runway / taxiway edge, the maximum snow depth is 0.15 metres;

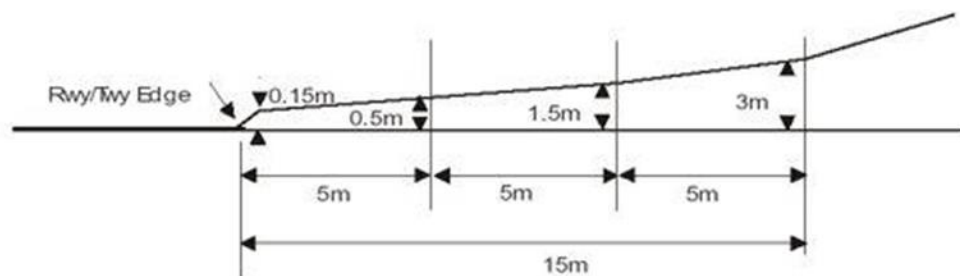
10 metres from the runway / taxiway edge, the maximum snow depth is 1.0 metres;

15 metres from the runway / taxiway edge, the maximum snow depth is 1.5 metres; and,

20 metres from the runway / taxiway edge, the maximum snow depth is 3.0 metres.



Codes C and D



Codes A and B

Pre Threshold Areas

The following diagram depicts the profile of maximum height of snow banks in the pre-threshold area (at the ends of the runway).

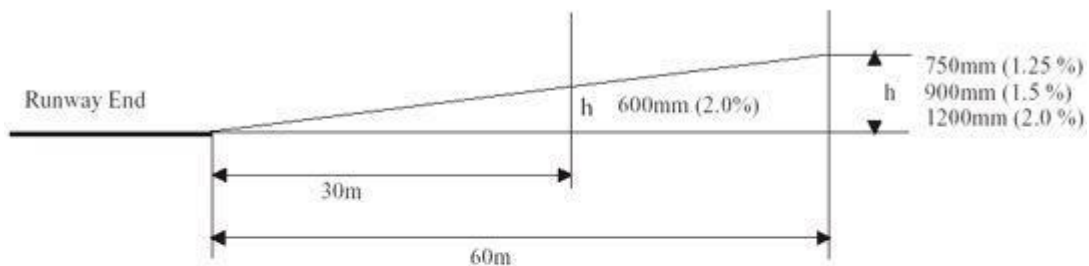
The snow profiles all begin at the end of the runway, at the runway elevation, and slope up at the given slope % to a specified depth at a specified distance from the runway end.

Pre Threshold Areas for runways between 1200 metres and less than 1800 metres in length:

the snow slope is a maximum of 1.5% to 60 metres from the runway end. This equates to a maximum depth of 0.90 metres, 60 metres from the runway end.

Pre Threshold Areas for non-instrument runways less than 800 metres in length:

the snow slope is a maximum of 2.0% to 30 metres from the runway end. This equates to a maximum depth of 0.6 metres, 30 metres from the runway end.



Note 1: Runway Length (m)	Max. Snow Accumulation Slope (%)
1800 and up	1.25
1200 to 1799	1.5
below 1200	2.0

Note 2: Length beyond runway, along extended runway centreline
 (a) 30m for non-instrument runways less than 800m in length
 (b) 60m for all other runways