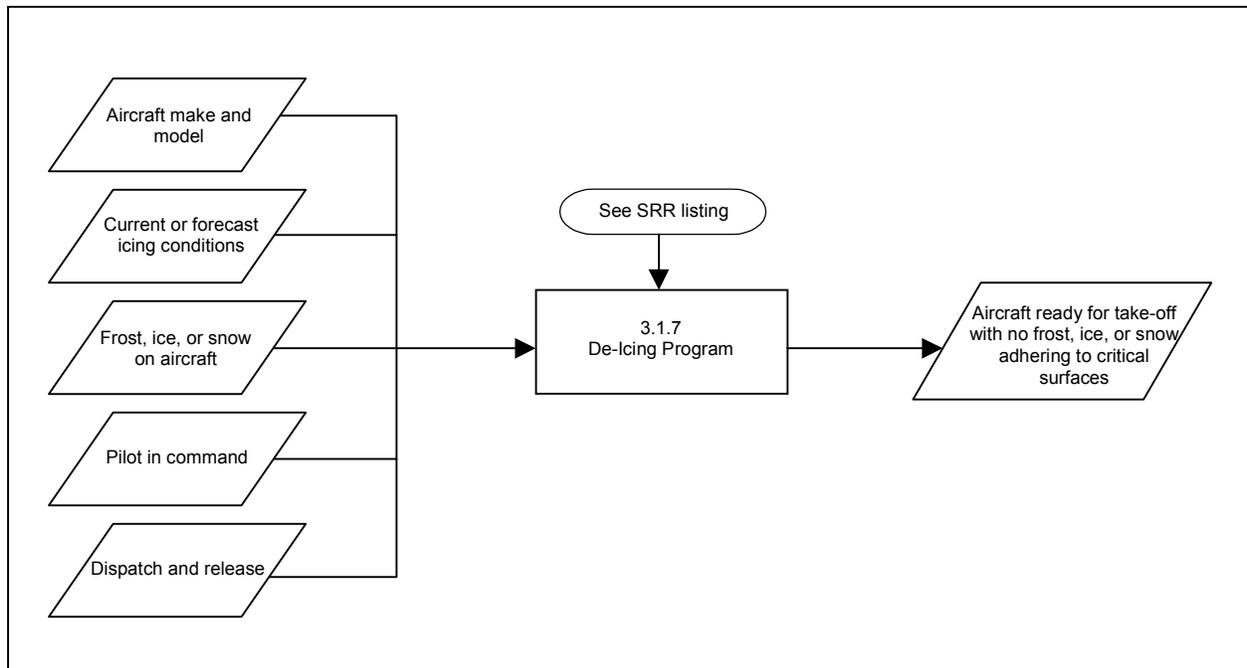


Safety Attribute Inspection (SAI) Job Aid



ELEMENT SUMMARY INFORMATION

Element: 3.1.7 De-Icing Program

Purpose of this Element (Air Carrier's responsibility): To prevent take-off of aircraft with frost, ice, or snow adhering to critical surfaces.

Objective (FAA responsibility): To determine if the Air Carrier adheres to the procedures and controls of its Deicing/Anti-icing Program.

Inputs:

- Aircraft Make and Model
- Current or Forecast Icing Conditions
- Frost, Ice, or Snow on Aircraft
- Pilot in Command
- Dispatch and Release

Outputs:

- Aircraft ready for take-off with no frost, ice, or snow adhering to critical surfaces.

Performance Measures:

- Aircraft ready for take-off with no frost, ice, or snow adhering to critical surfaces.

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SRR:

- 121.629 (a-d): Operation in icing conditions.

Other CFRs and/or FAA Guidance:

- FAA Order 8400.10, Volume 4, Chapter 8: Ground De-Icing/Anti-Icing Programs
- FSAT 97-10B - FAA-Approved De-Icing Program Updates, Winter 1997-98 (AMENDED)
- AC 91-51, "Airplane De-Ice and Anti-Ice Systems"
- Preamble: 57 FR 44924, Volume 57, No. 189; Tuesday, September 29, 1992; Page 44924
- 14 CFR Part 121, [Docket No. 26930; Amendment No. 121-231]
- RIN 212-AE51, Aircraft Ground De-Icing and Anti-Icing Program
- Refer to appropriate Advisory Circulars

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SRR SPECIFIC INFORMATION

SRR	Intent	Inspectors
121.629 (a)	To prevent unsafe flight operations in icing conditions.	Certification: <i>Maintenance and Operations</i> Surveillance: <i>ASI</i>
121.629 (b)	To prevent take-off when frost, ice, or snow is adhering to any of the critical surfaces of an aircraft.	Certification: <i>Maintenance and Operations</i> Surveillance: <i>ASI</i>
121.629 (c)	To authorize dispatch, release, or take-off when frost, ice, or snow may be reasonably expected to adhere to the aircraft through the use of an approved ground De-Ice/Anti-Ice Program.	Certification: <i>Maintenance and Operations</i> Surveillance: <i>ASI</i>
121.629 (d)	To provide an alternative to an approved De-Icing Program through the use of Operations Specifications that include an outside-the-aircraft check within five minutes of take-off.	Certification: <i>Operations</i> Surveillance: <i>ASI</i>

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3.1.7 De-Icing Program

SECTION 1 - RESPONSIBILITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who is responsible for the quality of the De-Icing Program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person's qualifications and work experience (or resume', if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the De-Icing Program with the person.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Is there a clearly identifiable person who is answerable for the quality of the De-Icing Program?	<input type="checkbox"/> YES If yes, provide the name: <input type="checkbox"/> NO If no, explain:
2. Does the person understand the procedures associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
3. Does the person understand the controls associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Does the person understand the interfaces associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the person understand the process measurements associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Is the responsibility of this position clearly documented in the air carrier's Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7a Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
9. Does the person acknowledge that he/she has responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
10. Does the person know who has authority to establish and modify the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

Safety Attribute Inspection (SAI) Job Aid

3.1.7 De-Icing Program

SECTION 2 – AUTHORITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person with the authority to establish and modify the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who has the authority to establish or modify the De-Icing Program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person’s qualifications and work experience (or resume’, if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the De-Icing Program with the person.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Is there a clearly identifiable person who has authority to establish and modify the air carrier’s policies for the De-Icing Program?	<input type="checkbox"/> YES If yes, provide the name: <input type="checkbox"/> NO If no, explain:
2. Does the person understand the procedures associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
3. Does the person understand the controls associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Does the person understand the interfaces associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the person understand the process measurements associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Is the authority of this position clearly documented in the air carrier’s Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7a Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
9. Does the person acknowledge that he/she has authority for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
10. Does the individual know who has the responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
11. Are the procedures for delegation of authority clearly documented for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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3.1.7 De-Icing Program

SECTION 3 – PROCEDURES ATTRIBUTE

Objective: To determine if the air carrier has documented procedures for accomplishing the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program to ensure that they contain who, what, where, when, and how.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI.
3. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the procedures.
4. Observe the De-Icing Program to gain an understanding of the procedures.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Do written procedures exist to achieve the desired result of the De-Icing Program:

1.1 Do written procedures exist to empower the person who identifies the need to de-ice to initiate the activity?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.2 Do written procedures exist to initiate, start up, and close down the seasonal De-Icing Program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.3 Do written procedures exist to determine holdover times? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.4 Do written procedures exist for inspecting the de-icing application equipment?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.5 Do written procedures exist to measure the viscosity, specific gravity and temperature of de-icing/anti-icing fluids?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.6 Do written procedures exist for conducting visual inspections of representative surfaces prior to takeoff? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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1.7 Do written procedures exist for communicating between ground personnel and flight crew? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
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2. Do the procedures identify: who, what, where, when and how?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
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3. Are the procedures in compliance with the CFR(s)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
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Safety Attribute Inspection (SAI) Job Aid

3.1.7 De-Icing Program

SECTION 3 – PROCEDURES ATTRIBUTE

4. Do the procedures conform to other written guidance (E.g., Operations Specifications, FAA Orders, Airworthiness Directives, Advisory Circulars, Handbook Bulletins, Directives, and Manufacturer’s Recommendations)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the air carrier have the resources to support the written procedures for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. If alternate procedures exist for use during irregular conditions, do they achieve the same desired results as the primary procedures so that an equivalent level of safety is maintained? (E.g., a manual system used as a result of equipment failure).	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A, No alternate procedures exist for this element
7. Are the procedures published in different manuals relating to the De-Icing Program consistent?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the air carrier have a documented method for assessing the impacts of procedural changes to the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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3.1.7 De-Icing Program

SECTION 4 – CONTROL ATTRIBUTE

Objective: To determine if checks and restraints are designed into the De-Icing Program to ensure a desired result is achieved.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI
3. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the controls.
4. Observe the De-Icing Program to gain an understanding of the controls.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Are the following checks and restraints built into the De-Icing Program:

1.1 Does the air carrier have FAA approval for its De-Icing Program? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.2 Does the air carrier include a visual inspection as part of the procedure for de-icing? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.3 Does the air carrier have a documented requirement for an external visual check of critical surfaces within 5 minutes of take-off when hold over times have been exceeded? [SRR 121.629(c, d)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.4 Does the air carrier perform a check of fluids in storage by use of a refractometer?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.5 Does the air carrier utilize a “ground conditions” monitoring device for current conditions?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.6 Does the air carrier have a documented method to ensure that outsource personnel follow the air carrier’s approved De-Icing Program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.7 Does the air carrier have an acceptance test to ensure delivered de-icing/anti-icing fluids meet the specifications in its approved de-icing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.8 Does the air carrier have a checklist for each station manager to perform seasonal start-up and shut down of the de-icing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:

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3.1.7 De-Icing Program

SECTION 4 – CONTROL ATTRIBUTE

<p>1.9 Does the air carrier have a documented method to ensure that de-icing/anti-icing fluid is not sprayed into prohibited areas?</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>1.10 Does the air carrier have a documented method to ensure personnel involved in de-icing (including outsource personnel) receive annual de-icing training before the beginning of icing season? [SRR 121.629(c)]</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>2. Do the checks and restraints ensure the desired result is achieved for the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
<p>3. Does the air carrier have a documented method for assessing the impacts of any changes made to checks and restraints in the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
<p>4. Does the air carrier have the resources to support the checks and restraints for the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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3.1.7 De-Icing Program

SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE

Objective: To determine if the air carrier measures and assesses the De-Icing Program, to identify and correct problems or potential problems.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the process measures.
3. Observe the De-Icing Program to gain an understanding of the process measures.

To meet this objective, the inspector will determine and record answers to the following questions:

1. <Deleted>

2. Does the air carrier's De-Icing Program include the following process measurements?

2.1 Does the air carrier have a documented method to integrate new technology and chemistry into its approved deicing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.2 Does the air carrier audit outsourced de-icing for compliance with the air carrier's approved de-icing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.3 Does the air carrier perform ongoing independent audits of its own approved de-icing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.4 Does the air carrier record the results of random inspections of de-icing/anti-icing fluid applications?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.5 Does the air carrier solicit feedback from all personnel involved in its de-icing program?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.6 Does the air carrier record instances when employees reported insufficient resources or equipment to adequately de-ice aircraft?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
2.7 Does the air carrier analyze the reasons for turn back related to de-icing?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
3. Does the air carrier document their process measurement methods and results?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:
4. Are the air carrier's process measurement methods effective?	<input type="checkbox"/> YES <input type="checkbox"/> NO	If no, explain:

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3.1.7 De-Icing Program

SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE

5. Does the air carrier use their process measurement results to improve their programs?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Are the process measurement results accessible to the FAA?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Does the organization that conducts the process measurement have direct access to the person with responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the air carrier have the resources to support the process measurement for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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3.1.7 De-Icing Program

SECTION 6 – INTERFACES ATTRIBUTE

Objective: To determine if the air carrier identifies and manages the interactions between the De-Icing Program and the other element processes within the air carrier organization.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the interfaces.
3. Observe the De-Icing Program to gain an understanding of the interfaces.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Are the following interfaces identified for the De-Icing Program:

1.1 Outsource Organization (Element 1.3.7)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.2 De-Icing Program (Element 1.3.18)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.3 Airmen Duties/Flight Deck Procedures (Element 3.1.3)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.4 Dispatch or Flight Release (Element 3.2.1)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.5 Maintenance Training Program (Element 4.2.1)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.6 Training of Flight Crewmembers (Element 4.2.3)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.7 Training of Stations Personnel (Element 4.2.6)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.8 Outsource Crewmember Training (Element 4.2.9)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.9 Line Stations (Servicing and Maintenance) (Element 5.1.1)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A

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3.1.7 De-Icing Program

SECTION 6 – INTERFACES ATTRIBUTE

1.10 Stations Facilities (Element 5.1.5)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.11 Safety Program (Element 7.2.1)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.12 Airports (e.g., where to spray, environmental restrictions, operator's membership on the airport's Snow Committee)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.13 Operations Specifications	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.14 Air Traffic Control	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.15 Manual Currency (Element 2.1.1)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.16 Content Consistency Across Manuals (Element 2.1.2)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.17 (Manual) Distribution (Element 2.1.3)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.18 (Manual) Availability (Element 2.1.4)	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
2. List any additional interfaces identified:	
3. Are there written procedures for the use of air carrier personnel in the application of these interfaces?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Are there controls to ensure that interfaces occur?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Are the interfaces between the De-Icing Program and other processes treated consistently in the Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO