

Ground Operations Notice (GON)



2024/03

Applicability:	All	Issued	23/11/2024
		Effective	23/11/2024

Subject: HOLD-OVER TIME (HOT) TABLES FOR WINTER 2024-2025

1. Introduction

1.1 The purpose of this Ground Operations Notice is to notify all departments and/or stations about the revised De-icing/Anti-icing Holdover Time Tables for winter 2024-2025.

1.2 Based on the recommendations of EASA Safety Information Bulletin (SIB 2017-11), FAA published HOT timetables are adopted with the most conservative values for the coming winter season. While respecting the recommendations of EASA Safety Information Bulletin, SIB 2017-11, the HOT tables are extracted such that:

- They contain the most conservative outputs with SAE type fluids only. Operations to aerodromes where SAE fluid is not available are considered as special operations during which applicable HOT tables will be provided to flight crews.
- Tables which require the pilot to distinguish between different precipitation intensities are reconstructed in the format that Freebird Airlines flight crews are familiar, i.e., some table columns are merged while the most conservative values are provided in the applicable table cell(s).
- In line with the conservative approach, the decision is to not use the provisions of 'Allowance Times' and 'Adjusted Holdover Times'.
- HOTs for Nonstandard Dilutions of Types II, III, and IV Fluids. Use of Type II, III, or IV fluids diluted to other than the standard published 100/0, 75/25, or 50/50 dilutions, is not authorized as HOTs for other concentrations do not exist, and the relationship between fluid concentrations and HOT are not linear. It is not possible to interpolate or extrapolate the HOTs and Lowest Operational Use Temperature (LOUT).

2. References

2.1 According to FHY GOM Chapter 3.8.15, please see following pages for the revised HOT tables:

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TABLE 1 – ACTIVE FROST HOLDOVER TIMES FOR SAE TYPE I, TYPE II, TYPE III, AND TYPE IV FLUIDS						
Type 1	OAT		Type II, III and IV			
Holdover Time (h:mm)	Degrees Celsius (°C) (See notes 1, 2 & 3)	Degrees Fahrenheit (°F) (See notes 1, 2 & 3)	Concentration Fluid/Water By % Volume	Holdover Time (h:mm)		
				Type II (See note 3)	Type III (See note 4)	Type IV
0:35	-1 and above	30 and above	100/0	8:00	2:00	12:00
			75/25	5:00	1:00	5:00
			50/50	2:00	0:30	3:00
	below -1 to -3	below 30 to 27	100/0	8:00	2:00	12:00
			75/25	5:00	1:00	5:00
			50/50	1:30	0:30	3:00
	below -3 to -10	below 27 to 14	100/0	8:00	2:00	10:00
			75/25	4:00	1:00	5:00
	below -10 to -14	below 14 to 7	100/0	6:00	2:00	6:00
			75/25	1:00	1:00	1:00
	below -14 to -21	(below 7 to -6)	100/0	3:00	2:00	6:00
	below -21 to -25	below -6 to -13	100/0	2:00	2:00	4:00
	below -25 to LOU	below -13 to LOU	100/0	No Holdover Time Guidelines Exist		

Notes:

1. Type I Fluid / Water Mixture must be selected so that the freezing point of the mixture is at least 10 °C (18 °F) below outside air temperature.
2. Ensure that the lowest operational use temperature (LOU), specific for the fluid manufacturer, is respected.
3. Changes in outside air temperature (OAT) over the course of longer frost events can be significant; the appropriate holdover time to use is the one provided for the coldest OAT that has occurred in the time between the de/anti-icing fluid application and takeoff.
4. To use the Type III fluid frost holdover times, the fluid brand being used must be known. AllClear AeroClear MAX must be applied unheated.

Cautions:

- The responsibility for the application of these data remains with the user.
- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with pre-takeoff check procedures.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 1 (August 06 2024)

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TABLE 2 – VARIOUS WEATHER CONDITIONS HOLDOVER TIMES FOR SAE TYPE I FLUID

OAT		Holdover Times (h:mm)						Other (See note 8)
(See notes 1, & 2)		Freezing Fog, Freezing Mist and/or Ice Crystals (see notes 5, & 9)	Snow mixed with Freezing Fog (see note 10)	Snow, Snow Grains or Snow Pellets (See notes 4)	Freezing Drizzle (See note 6)	Light Freezing Rain	Rain on Cold Soaked Wing (See note 7)	
°C	°F							
-3 and above	27 and above	0:09 - 0:16	0:02 - 0:04	0:03 - 0:06	0:08 - 0:13	0:02 - 0:05	0:01 - 0:05	
below -3 to -6	below 27 to 21	0:06 - 0:08	0:02 - 0:04	0:02 - 0:05	0:05 - 0:09	0:02 - 0:05	CAUTION: No holdover time guidelines exist.	
below -6 to -10	below 21 to 14	0:04 - 0:08	0:02 - 0:04	0:02 - 0:05	0:04 - 0:07	0:02 - 0:05		
below -10	below 14	0:04 - 0:07	0:02 - 0:03	0:02 - 0:04				

Notes:

- Type I fluid / water mixture must be selected so that the freezing point of the mixture is at least 10 °C (18 °F) below outside air temperature.
- Ensure that the lowest operational use temperature (LOUT) is respected.
- Holdover times are valid for Very Light to Moderate Snow, Snow Grains or Snow Pellets (see note 8 below for Heavy Snow). To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility (Table 5) is required.
- Use Snow holdover times in conditions of ice crystals mixed with snow.
- Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
- Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
- No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
- Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
- Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below
- These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.

Cautions:

- The responsibility for the application of these data remains with the user.
- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast or blowing snow may reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with Pre-Takeoff Check procedures refer to (OM-A (BOM) 8.2.4)

Reference: FAA Holdover Time Guidelines - Winter 2024-2025, Table 3 (August 06 2024)

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TABLE 3 – GENERIC HOLDOVER TIMES FOR SAE TYPE II FLUID

OAT (see note 1)		% Volume	Holdover Times (h:mm)						
°C	°F	Fluid Concentration Fluid/Water By % Volume	Freezing Fog Freezing Mist and/or Ice Crystals (see note 3, & 11)	Snow mixed with Freezing Fog (see note 12)	Snow, Snow Grains or Snow Pellets (see note 2, 5 & 6)	Freezing Drizzle (see note 7)	Light Freezing Rain	Rain on Cold Soaked Wing (see note 8)	Other (see note 9)
-3 C and above	27 F and above	100/0	0:55 - 1:50	0:20 - 0:40	0:30 - 0:55	0:35 - 1:05	0:20 - 0:35	0:07 - 0:45	CAUTION: No holdover time guidelines exist
		75/25	0:40 - 1:10	0:15 - 0:25	0:15 - 0:30	0:25 - 0:40	0:15 - 0:25	0:04 - 0:25	
		50/50	0:15 - 0:30	0:05 - 0:10	0:07 - 0:15	0:09 - 0:15	0:06 - 0:09		
below -3 to -8	below 27 to 18	100/0	0:30 - 0:45	0:15 - 0:30	0:20 - 0:40	0:20 - 0:45	0:15 - 0:20		
		75/25	0:25 - 0:55	0:09 - 0:15	0:10 - 0:25	0:15 - 0:30	0:08 - 0:15		
below -8 to -14	below 18 to 7	100/0	0:30 - 0:45	0:10 - 0:25	0:15 - 0:30	0:20 - 0:45 (see note 10)	0:15 - 0:20 (see note 10)		
		75/25	0:25 - 0:55	0:07 - 0:15	0:09 - 0:20	0:15 - 0:30 (see note 10)	0:08 - 0:15 (see note 10)		
below -14 to -18	below 7 to 0	100/0	0:15 - 0:20	0:01 - 0:05	0:02 - 0:07				
below -18 to -25	below 0 to -13	100/0	0:15 - 0:20	0:00 - 0:02	0:01 - 0:03				
Below -25 to LOU	-13 to LOU	100/0	0:15 - 0:20	0:00 - 0:00	0:00 - 0:01				

Notes:

- Ensure that the lowest operational use temperature (LOUT is respected. Consider use of Type I fluid when Type II fluid cannot be used.
- Holdover times are valid for Very Light to Moderate Snow, Snow Grains or Snow Pellets (see note 9 below for Heavy Snow). To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility (Table 5) is required.
- Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C (32 °F) and below
- If the LOU is unknown, no holdover time guidelines exist below -25 °C (-13 °F).
- Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain.
- Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
- Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
- No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
- No holdover time guidelines for Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
- No holdover time guidelines exist for this condition below -10 °C (14 °F).
- Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.
- These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.

Cautions:

- The responsibility for the application of these data remains with the user.
- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast may **or blowing snow** reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- This table is for departure planning only and should be used in conjunction with Pre-Takeoff Check procedures (refer to (OM-A (BOM) 8.2.4)
- Whenever frost or ice occurs on the lower surface of the wing in the area of the fuel tank, indicating a cold-soaked wing, the 50/50 dilutions of Type II shall not be used for the anti-icing step because fluid freezing may occur.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 4 (August 06 2024)

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TABLE 4 – GENERIC HOLDOVER TIMES FOR SAE TYPE IV FLUID

OAT (see note 1)		% Volume	Holdover Times (h:mm)						
°C	°F	Fluid Concentration Fluid/Water By % Volume	Freezing Fog, Freezing Mist or Ice Crystals (see note 9, & 11)	Snow mixed with Freezing Fog (see note 12)	Snow, Snow Grains or Snow Pellets (see note 2, 3 & 10)	Freezing Drizzle (see note 4)	Light Freezing Rain	Rain on Cold Soaked Wing (see note 5)	Other (see note 6)
-3 C and above	27 F and above	100/0	1:15 - 2:15	0:25 - 0:45	0:30 - 1:00	0:40 - 1:10	0:20 - 0:35	0:08 - 1:05	CAUTION: No holdover time guidelines exist
		75/25	1:25 - 2:40	0:30 - 0:55	0:40 - 1:15	1:00 - 1:20	0:30 - 0:50	0:09 - 1:20	
		50/50	0:30 - 0:55	0:07 - 0:20	0:10 - 0:25	0:15 - 0:40	0:09 - 0:20		
below -3 to -8	below 27 to 18	100/0	0:15 - 0:35	0:20 - 0:40	0:25 - 0:55	0:25 - 1:10	0:20 - 0:25		
		75/25	0:40 - 1:20	0:25 - 0:50	0:30 - 1:05	0:20 - 1:05	0:15 - 0:25		
below -8 to -14	below 18 to 7	100/0	0:15 - 0:35	0:15 - 0:35	0:20 - 0:45	0:25 - 1:10 (see note 7)	0:20 - 0:25 (see note 7)		
		75/25	0:40 - 1:20	0:20 - 0:45	0:25 - 0:55	0:20 - 1:05 (see note 7)	0:15 - 0:25 (see note 7)		
below -14 to -18	below 7 to 0	100/0	0:15 - 0:30	0:01 - 0:06	0:02 - 0:09				
below -18 to -25	below 0 to -13	100/0	0:15 - 0:30	0:00 - 0:02	0:01 - 0:03				
Below -25 to LOU	-13 to LOU	100/0	0:15 - 0:30	0:00 - 0:01	0:00 - 0:02				

Notes:

1. Ensure that the lowest operational use temperature (LOUT), is respected. Consider use of Type I fluid when Type IV fluid cannot be used.
2. Holdover times are valid for Very Light to Moderate Snow, Snow Grains or Snow Pellets (see note 6 below for Heavy Snow). To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility (Table 5) is required.
3. Use snow holdover times in conditions of very light, light, or moderate snow mixed with ice crystals.
4. Includes light, moderate and heavy freezing drizzle. Use light freezing rain holdover times if positive identification of freezing drizzle is not possible.
5. No holdover time guidelines exist for this condition for 0 °C (32 °F) and below.
6. No holdover time guidelines exist for Heavy snow, ice pellets, moderate and heavy freezing rain, small hail and hail.
7. No holdover time guidelines exist for this condition below -10 °C (14 °F).
8. If the LOU is unknown, no holdover time guidelines exist below -25.5 °C (-14 °F).
9. Freezing mist is best confirmed by observation. It is never reported by METAR however it can occur when mist is present at 0 °C and below.
10. To determine snowfall intensity, the Snowfall Intensities as a Function of Prevailing Visibility table (Table 5) is required.
11. Use freezing fog holdover times in conditions of ice crystals mixed with freezing fog or mist.

12. These holdover times are for use in -SNFZFG and SNFZFG. The Snowfall Intensities as a Function of Prevailing Visibility table is required to confirm the precipitation intensity is no greater than "moderate". No holdover times exist if the reported visibility correlates to a "heavy" precipitation intensity.

Important Note: Use light freezing rain holdover times in conditions of very light or light snow mixed with light rain or drizzle. The Snowfall Intensities as a Function of Prevailing Visibility table (Table 5) is required to confirm the precipitation intensity is no greater than "light". No holdover times exist if the reported visibility correlates to a "moderate" or "heavy" precipitation intensity.

Cautions:

- The time of protection will be shortened in heavy weather conditions. Heavy precipitation rates or high moisture content, high wind velocity, or jet blast, or blowing snow may reduce holdover time below the lowest time stated in the range. Holdover time may be reduced when aircraft skin temperature is lower than outside air temperature.
- Fluids used during ground de/anti-icing do not provide in-flight icing protection.
- This table is for departure planning only and should be used in conjunction with pre-takeoff check procedures.
- Whenever frost or ice occurs on the lower surface of the wing in the area of the fuel tank, indicating a cold-soaked wing, the 50/50 dilutions of Type IV shall not be used for the anti-icing step because fluid freezing may occur.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 18 (August 06 2024)

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TABLE 5 – SNOWFALL INTENSITIES AS A FUNCTION OF PREVAILING VISIBILITY

Time of Day	OAT °C / (°F)	Visibility in Meters (m) / Statute Miles(SM)								
		≥ 4000 m (≥ 2 ½ SM)	3200 m (2 SM)	2800 m (1 ¾ SM)	2400 m (1 ½ SM)	2000 m (1 ¼ SM)	1600 m (1 SM)	1200 m (¾ SM)	800 m (½ SM)	≤400 m (≤ ¼ SM)
Day	≤ -1 °C (≤ 30°F)	Very Light	Very Light	Very Light	Light	Light	Light	Moderate	Moderate	Heavy
	> -1 °C (> 30°F)	Very Light	Very Light	Light	Light	Light	Light	Moderate	Heavy	Heavy
Night	≤ -1 °C (≤ 30°F)	Very Light	Light	Light	Moderate	Moderate	Moderate	Moderate	Heavy	Heavy
	> -1 °C (> 30°F)	Very Light	Light	Light	Moderate	Moderate	Moderate	Heavy	Heavy	Heavy

General Notes:

1. The METAR/SPECI reported visibility or flight crew observed visibility will be used with this visibility table to establish snowfall intensity for Type I, II, III and IV holdover time guidelines, during snow, snow grain, or snow pellet precipitation conditions. This visibility table will also be used when snow, snow grains, or snow pellets are accompanied by blowing or drifting snow, or when snow is mixed with ice crystals or freezing fog in the METAR/SPECI.
2. The use of Runway Visual Range (RVR) is not permitted for determining visibility used with the holdover tables.
3. Some METARs contain tower visibility as well as surface visibility. Whenever surface visibility is available from an official source, such as a METAR, in either the main body of the METAR or in the Remarks ("RMK") section, the preferred action is to use the surface visibility value.
4. If the visibility is being reduced by snow along with form(s) of obscuration such as fog, haze, smoke, etc., use of the table above may overestimate the actual snowfall intensity. However, use of the snowfall intensity being reported by the weather observer or automated surface observing system (ASOS), from the FMH-1 Table, may underestimate the actual snowfall intensity as it does not directly correlate to the snowfall intensities used when determining holdover times. Use of the visibility table in all snow conditions with or without obscurations is recommended.
5. Example for how to read and use the table: CYVO 160200Z 15011G17KT 1SM -SN DRSN OVC009 M06/M08 A2948
In the above METAR the snowfall intensity is reported as light. However, based upon the "Snowfall Intensities as a Function of Prevailing Visibility" table, with a visibility of 1 statute mile, at night and a temperature of -6°C, the snowfall intensity is classified as moderate. The snowfall intensity of moderate - not the METAR reported intensity of light - will be used to determine which holdover time guideline value is appropriate for the fluid in use.

CAUTION:

HEAVY = No Holdover Time Guidelines Exist

During snow conditions alone, the use of Table 5 in determining snowfall intensities does not require flight crew and company coordination or company reporting procedures since this table is more conservative than the visibility table used by official weather observers in determining snowfall intensities.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 48,(August 06 2024)

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TABLE 6 – GUIDELINES FOR THE APPLICATION OF SAE TYPE I FLUID

OAT		One-Step Procedure De/Anti-Icing <i>(see note 2)</i>	Two-Step Procedure	
<i>(see note 1)</i>			First Step: De-Icing	Second Step: Anti-Icing <i>(see note 3)</i>
°C	°F			
0 °C and Above	32 °F and Above	Fluid/water mixture heated to at least 60°C (140°F) at the nozzle with a freezing point of at least 10°C (18°F) below OAT	Heated water or a heated fluid/water mixture	Fluid/water mixture heated to at least 60°C (140°F) at the nozzle with a freezing point of at least 10°C (18°F) below OAT
Below 0 °C to LOU	Below 32 °F to LOU		Heated fluid/water mixture with a freezing point at OAT or below	

Notes:

1. Fluids must not be used at temperatures below their lowest operational use temperature (LOU).
2. When anti-icing using the one-step procedure, a minimum quantity of 1 litre/m² (~2 gal./100 sq. ft.) of Type I fluid mixture heated to at least 60°C (140°F) is required after all frozen contamination is removed. This is achieved using a continuous process. This application is necessary to heat the surfaces, as heat contributes significantly to the Type I fluid holdover times.
3. To be applied before first-step fluid freezes, typically within 3 minutes. (This time may be higher than 3 minutes in some conditions, but potentially lower in heavy precipitation, colder temperatures, or for critical surfaces constructed of composite materials. If necessary, the second step shall be applied area by area. (sectionally)

Cautions:

- This table is applicable for the use of Type I holdover time guidelines in all conditions, including active frost. If holdover times are not required, a temperature of 60 °C (140 °F) at the nozzle is desirable.
- If holdover times are required, the temperature of water or fluid/water mixtures shall be at least 60 °C (140 °F) at the nozzle. Upper temperature limit shall not exceed fluid and aircraft manufacturers’ recommendations.
- To use Type I Holdover Times Guidelines in all conditions including active frost, an additional minimum of 1 litre/m² (~2 gal./100 sq. ft.) of heated Type I fluid mixture must be applied to the surfaces after all frozen contamination is removed. This application is necessary to heat the surfaces, as heat contributes significantly to the Type I fluid holdover times. The required protection can be provided using a 1-step method by applying more fluid than is strictly needed to just remove all of the frozen contamination (the same additional amount stated above is required).
- The lowest operational use temperature (LOU) for a given Type I fluid is the higher (warmer) of:
 - a) The lowest temperature at which the fluid meets the aerodynamic acceptance test for a given aircraft type, or
 - b) The actual freezing point of the fluid plus a freezing point buffer of 10 °C (18 °F).
- Wing skin temperatures may differ and, in some cases, be lower than the OAT. A stronger mix (more glycol) may be needed under these conditions.
- When conducting aircraft deicing using a Type I fluid and not using the 10°C/18°F buffer, procedures must be developed and approved to ensure refreezing does not occur prior to takeoff.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 54 (August 06 2024)

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TABLE 7 – GUIDELINES FOR THE APPLICATION OF SAE TYPE II AND TYPE IV FLUID

OAT		One-Step Procedure	Two-Step Procedure	
(see note 1)		De/Anti-Icing	First Step: De-Icing	Second Step: Anti-Icing (see note 2)
°C	°F			
0 °C and Above	32 °F and Above	100/0, 75/25 or 50/50 Heated (see note 3) Type II or IV fluid/water mixture	Heated water or a heated Type I, II, III, or IV fluid/water mixture	100/0, 75/25 or 50/50 Heated or unheated Type II or IV fluid/water mixture
Below 0 °C to -3 °C	Below 32 °F to 27 °F	100/0, 75/25 or 50/50 Heated (see note 3) Type II or IV fluid/water mixture	Heated Type I, II, III, or IV fluid/water mixture with a freezing point at OAT or below	100/0, 75/25 or 50/50 Heated or unheated Type II or IV fluid/water mixture
Below -3 °C to -14 °C	Below 27 °F to 7 °F	100/0 or 75/25 Heated (see note 3) Type II or IV fluid/water mixture	Heated Type I, II, III, or IV fluid/water mixture with a freezing point at OAT or below	100/0 or 75/25 Heated or unheated Type II or IV fluid/water mixture
Below -14 °C to LOUIT	Below 7 °F to LOUIT	100/0 Heated (see note 3) Type II or IV fluid/water mixture	Heated Type I, II, III, or IV fluid/water mixture with a freezing point at OAT or below	100/0 Heated or unheated Type II or IV fluid

Notes:

- One step or second step fluids must not be used at temperatures below their lowest operational use temperature (LOUIT). First step fluids must not be used below their freezing points. Consideration should be given to the use of Type I/III fluid when Type II/IV fluid cannot be used due to LOUIT limitations (see Table 6, 8, 9). The LOUIT for a given Type II/IV fluid is the higher (warmer) of:
 - The lowest temperature at which the fluid meets the aerodynamic acceptance test for a given aircraft type; or
 - The actual freezing point of the fluid plus its freezing point buffer of 7 °C (13 °F);
 Although some LOUITs are lower than the temperatures stated in the HOT table, holdover times do not apply when anti-icing below the lowest temperature stated in the band.
- To be applied before first step fluid freezes, typically within 3 minutes. (Time may be longer than 3 minutes in some conditions, but potentially shorter in heavy precipitation, in colder temperatures, or for critical surfaces constructed of composite materials. If necessary, the second step shall be applied area by area.)
- Clean aircraft may be anti-iced with unheated fluid.

Cautions:

- For heated fluids, a fluid temperature not less than 60 °C (140 °F) at the nozzle is desirable.
- Upper temperature limit shall not exceed fluid and aircraft manufacturers' recommendations.
- Wing skin temperatures may differ and, in some cases, may be lower than the OAT. A stronger mix (more glycol) may be needed under these conditions.
- Whenever frost or ice occurs on the lower surface of the wing in the area of the fuel tank, indicating a cold soaked wing, the 50/50 dilutions of Type II or IV shall not be used for the anti-icing step because fluid freezing may occur.
- An insufficient amount of anti-icing fluid may cause a substantial loss of holdover time. This is particularly true when using a Type I fluid mixture for the first step in a two-step procedure.
- When conducting aircraft deicing using a Type I fluid and not using the 10 °C/18 °F buffer, procedures must be developed and approved to ensure refreezing does not occur prior to takeoff.

Reference: FAA Holdover Time Guidelines – Winter 2024-2025, Table 55 (August 06 2024)

3. Queries

- Any queries or further guidance required on the content of this GON should be addressed to groundops@freebirdairlines.com.

4. Validity

- This GON shall remain valid until further notice.