NAMIBIA CIVIL AVIATION AUTHORITY

Private Bag 12003 Windhoek Namibia | (Tel) +264 61 702 212 | Web: http://www.dca.com.na

INSPECTION CHECKLIST FOR DE-ICING AND ANTI-ICING

(NOTE: Ground deice/ Anti-ice rule will not apply to a certificate holder who does not operate in ground icing conditions)

CLEAN AIRCRAFT

The concept "CLEAN AIRCRAFT" which is to prevent contamination of the aircraft wing surfaces before – take - off rests with the pilot in command (PIC). Monitoring of weather conditions, temperature changes and visual checks are the first remedy to formation of ice, and when conditions conducive to the formation of frost, ice, or snow on airplane surfaces exist at the time of takeoff, those surfaces should be checked for contamination and be removed using deicing/anti-icing fluids.

Interpretations

Deicing. A procedure by which frost, ice, or snow is removed from the aircraft in order to provide clean surfaces.

Anti-icing. A precautionary procedure that provides protection against the formation of frost or ice and accumulation of snow on treated surfaces of the aircraft for a limited period of time

Deicing/ Anti-icing. A combination of the two procedures, which can be performed in two (2) steps: -

A) One-step deicing/anti-icing is carried out with an anti-icing fluid. The fluid used to deice the aircraft remains on aircraft surfaces to provide limited anti-ice capability.
B) Two-step deicing/anti-icing consists of two distinct steps. The first step (deicing) is followed by the second step (anti-icing) as a separate fluid application. Anti-icing fluid is applied to protect the relevant surfaces, thus providing maximum possible anti-ice capability (hold-overtime).

Deicing of airplanes may be accomplished:

(1) By applying heated water followed by undiluted glycol-based fluid;
(2) By applying a heated water/glycol solution;

(3) By mechanically brushing the snow or ice off; or
(4) By placing the airplane in a hangar until the frost, ice, or snow melts.

What to look for

S/N	Items	Seen (s)/ Not seen (NS)	
		Sat √	Not Sat √
	Cold weather pre-flight inspection procedures. *(Pre-takeoff contamination check is a check to make sure the wings and control surfaces are free of frost, ice, or snow)*		
	Operator's deicing/ anti-icing program (Deicing/Anti-Icing Procedures).		
	1. Methods of deicing (e.g., warm hangar, deicing fluid).		
	2. Safety requirements during fluid application.		
	3. Aircraft-specific considerations		
	4. Location-specific procedures.		
	5. Post deicing/anti-icing check		
	6.Techniques for recognizing contamination on the airplane		
	7.Aircraft deicing/anti-icing procedures, including inspection and check procedures and responsibilities		
	Where certificate holder that uses additional employees *(i.e. maintenance mechanic, ramp agent, service personnel, and contractors) to accomplish deicing and anti-icing procedures, the certificate holder's manuals will contain procedures for those personnel consistent*		
	Deicing/ anti-icing pilot training and pre-takeoff contamination check procedures or an approved alternative to the pre-takeoff contamination check		
	Types and characteristics of deicing/anti-icing fluids, if used by the certificate holder.		
	COMMUNICATIONS: Procedure for timing: Before beginning the De-icing/ anti-icing the PIC should: Co-ordinate with air-traffic- control: -		
	1. Obtain the most current weather information		
	2. When deicing /anti-icing with fluids is accomplished, the PIC should have the following information		
	a. Type of fluid (for example, Type I or Type II)		
	b. Fluid water mix ratio		
	c. Start Time and Final fluid application/ beginning of hold-over time		

	d. Holdover Time. d. Verification that the aircraft is free from contamination		
	Aircraft areas that require special attention during a preflight inspection are mostly: -		
	Wing leading edges, upper and lower surfaces		
	Vertical and horizontal stabilizing devices, leading edges,		
	Upper surfaces, and side panels.		
	Lift//drag devices such as, trailing edge flaps		
	Spoilers and speed brakes		
	All control surfaces and control balance bays		
	Propellers		
	Engine inlets, particle separators, screens and pressure probes		
	Windshields and other windows necessary for visibility		
	Antennas		
	Fuselage		

Inspectors to familiarize themselves with airplane surface contamination as follows: -

-- **Freezing Precipitation**. Snow, sleet, freezing rain, drizzle, or hail which adheres to aircraft surfaces.
-- **Frost, Including Hoarfrost**. Hoarfrost is a deposit of interlocking ice crystals formed by direct sublimation of water vapor on an object or aircraft surface, which is at or below 0" c (32°F).
-- **Freezing Fog**. Clouds of super-cooled water droplets that form a deposit of ice on objects in cold weather conditions.
-- **Snow.** Precipitation in the form of small ice crystals or flakes which may accumulate on or adhere to aircraft surfaces.
-- Freezing Rain. Water condensed from atmospheric vapor falling to earth in super-cooled drops, forming ice on objects.
-- Rain or High Humidity (on Cold-Soaked Wing). Water forming ice or frost on the wing surface when the temperature of the aircraft wing surface is at or below 0°C (32°F).

--Underwing Frost. Takeoff with frost under the wing in the area of the fuel tanks (caused by cold-soaked fuel) within limits established by the aircraft manufacturer, authorized by aircraft certification offices, and stated in aircraft maintenance and flight manuals may be permitted.

Inspector's Comment/ Recommendation		
Inspector's name	**Signature**	**Date**

Chief Airworthiness' Comment/ Conclusion		
Inspector's name	**Signature**	**Date**