

Federal Aviation Agency



AC NO: AC 150/5380-2A

AIRPORTS

EFFECTIVE :

12/24/64

SUBJECT : SNOW REMOVAL TECHNIQUES WHERE IN-PAVEMENT LIGHTING SYSTEMS ARE INSTALLED

1. PURPOSE. This circular provides information to the aviation community concerning the damage to in-pavement lighting fixtures by snow removal equipment and recommends procedures to avoid such damage.
2. CANCELLATION. This circular cancels AC 150/5380-2 dated 10/1/63.
3. BACKGROUND.
 - a. Runway centerline, exit taxiway turnoff, and touchdown zone light fixtures rise gradually from the periphery of the unit at the pavement level to a height at the center of 3/8-inch for centerline and turnoff and 1/2-inch for touchdown zone light fixtures. While these fixtures were designed to support known loads and to provide a relatively smooth surface which would not readily engage a snowplow blade, evidence indicates that they will not survive the impact of snowplows operating with the sharp blade edge riding the runway surface. Tire chains may also damage the fixtures.
 - b. Recent investigations of in-pavement lighting installations at several "snow belt" airports have revealed varying amounts of damage to light fixtures from snow removal operations. Gouged holes and surface cuts in the top fitting, broken lamps, broken and loose lenses, and misalignment have been attributed to snow removal operations. The extent of damage to in-pavement lighting fixtures is dependent upon a number of factors, including the type of equipment, the operating speed, and the skill and responsibility of the vehicle operator.
 - c. In order to prevent damage, it is necessary to avoid blade contact with the light fixtures. This can be accomplished by either raising the blade in areas of in-pavement lighting or by using snow removal equipment other than snowplows or snow blowers in those areas.

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3. NEW PROBLEMS. Since issuance of AC 150/5380-2 in 1963, a new problem has arisen. According to the recommendations of that circular, the in-pavement lights were to be turned on at the first sign of snow. Last winter's experience with this procedure showed that when the lights were turned on while it was snowing or while snow was on the fixtures, an "igloo" of ice formed above the fixture. A picture of this "igloo" which blocks the light output and is difficult to remove is shown on Figure 1. The recommendations are altered to correct this condition.
4. RECOMMENDATIONS. The following procedures are recommended to avoid snowplow damage to in-pavement lighting installations:
 - a. Leave in-pavement lights off as long as possible consistent with operations to avoid "igloo" buildup around lights.
 - b. As snow starts to accumulate, use rotary brooms to remove snow from all in-pavement light fixtures. Re-brooming of these areas should be accomplished as often as necessary to keep the light fixtures relatively free from snow. This procedure defines the area of in-pavement lights in order that plows and blowers may avoid them and helps prevent buildup of an ice "igloo" when the light is turned on.
 - c. The snow displaced from these areas can then be removed from the runway by use of snow blowers or snowplows. The rounding off of sharp corners of the plow blades will help minimize damage due to inadvertent contact with a light fixture. Segmented snowplow blades, consisting of several spring-loaded segments which will rise on contact with the fixtures, have proved to be less damaging to these fixtures than conventional blades, provided that the sharp corners of each segment are rounded off. Whenever snowplows must traverse in-pavement light fixtures, they should be either traveling at less than 5 m.p.h. or have the blades lifted clear of the fixtures.
 - d. Figure 2 should be detached and placed in a conspicuous place to remind maintenance crews of recommended snow removal procedures where in-pavement lights are installed.
5. HOW TO GET THIS CIRCULAR. Obtain additional copies of this circular, AC 150/5380-2A, "Snow Removal Techniques Where In-Pavement Lighting Systems are Installed," from the Federal Aviation Agency, Distribution Section, HQ-438, Washington, D. C. 20553.

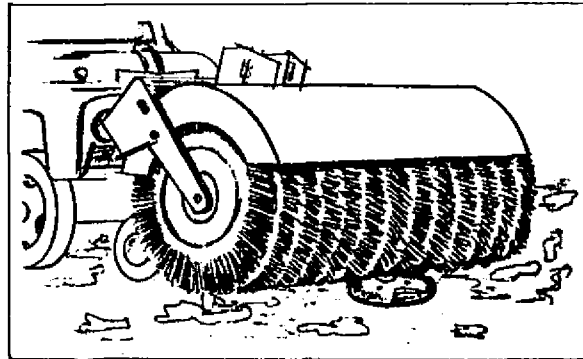

for Cole Morrow, Director
Airports Service



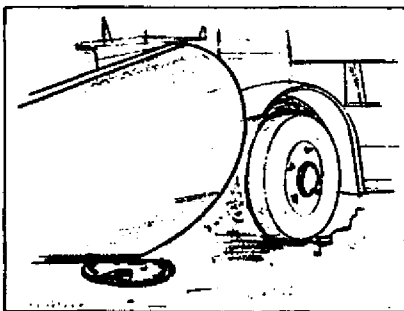
Figure 1.
Photo shows formation of ice "Igloos" over runway centerline lights.

WARNING

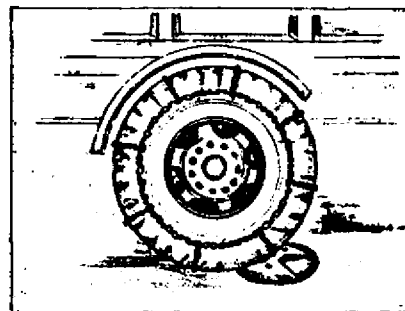
AVOID SNOWPLOW DAMAGE TO IN-PAVEMENT LIGHTS



DO USE ROTARY BROOM IN AREAS OF IN-PAVEMENT LIGHTS



DON'T PERMIT PLOW BLADE TO CONTACT LIGHT FIXTURES



DON'T ALLOW TIRE CHAINS TO CONTACT LIGHT FIXTURES



SNOWPLOW DAMAGE

RECOMMENDATIONS :

1. LEAVE LIGHTS OFF AS LONG AS POSSIBLE CONSISTENT WITH INITIAL SNOW REMOVAL SCHEDULES.
2. USE ROTARY BROOMS TO CLEAR SNOW FROM THE AREAS OF THE LIGHT FIXTURES AS SOON AS POSSIBLE.
3. THE SNOW DISPLACED FROM THE AREAS OF THE LIGHTS CAN THEN BE REMOVED FROM THE RUNWAY BY USE OF CONVENTIONAL SNOWPLOWS OR SNOW BLOWERS.

FIGURE 2