

Cold Facts: Braking Action Reports



Airport markings can be easily hidden by snow, ice, or slush.

Have you ever tuned in the ATIS at your favorite airport only to hear “. . . braking action fair” and wondered exactly what it meant? These reports highlight one of the hazards of winter flying – taxiways and runways covered in snow, ice and slush. These conditions should not *always* deter pilots from taking to the air in winter. This season offers some of the best days to fly – smooth rides, great visibility and excellent aircraft performance.

The Theory

Braking reports are offered at towered airports via ATIS or ATC when runway and taxiways are covered in ice, snow or water. Pilots or airport maintenance personnel who have used the airport’s runways generate these condition reports.

Runway braking conditions are reported as good, fair, poor and nil, to give you some idea of how controllable your aircraft will be during taxi, takeoff and landing. As helpful as these reports are, it’s always a good idea to take them with the proverbial grain of salt,

since they’re necessarily subjective. In addition, you might not land on the same spot as the pilot who reported “fair” braking action a few minutes before.

GOOD: No degradation of braking action.
FAIR: Somewhat degraded braking conditions.
POOR: Very degraded braking conditions.
NIL: No braking action.

Practical Application

When braking action is reported as less than good, the number of acceptable landing runways may diminish quickly as landing surfaces deteriorate. Under these conditions land into the wind (no crosswind landing here) and make sure there is plenty of extra landing distance available. Doubling the landing distance published in the pilot operating handbook may be a good place to start.

Aerodynamic, not disc, braking is more important when runway conditions have deteriorated enough to necessitate a braking action report. To use the aerodynamic braking action the engineers gave you, first fly at the correct approach speed. Then, once in the landing flare, hold the aircraft’s nose off the runway as long as possible to aid in aerodynamic braking. Finally, when the airplane has settled on the runway use the brakes sparingly – or not at all. This is not the time to slam on the brakes to make the first taxiway. Good rudder and aileron skills will also come in handy – the longitudinal axis of the airplane should be aligned with the runway centerline. This seems rudimentary until one wheel hits the ice first and causes a sudden jolt.

Remember, any braking action report implies that braking action is diminished – the only question pilots have to answer is “by how much?”.

These practices should keep you heading down the runway when braking action reports are good or fair. When the reported braking action falls to poor or nil, you should give serious thought to delaying the flight.

Many cargo and non-scheduled flight operators do not allow their pilots to land if the braking action is

reported as nil. These same operators put restrictions on lower time pilots and do not allow them to be at the controls during landing when braking action is reported as less than good. The point? This is a serious situation that can challenge pilots and equipment at all levels. Running off the runway may cause physical and financial injury (not to mention a hurt ego).

If flying into airports where the braking action is likely to be less than good, plan alternates ahead of time. The airlines have a policy that may help determine when you should plan on an alternate. These aircraft have to be able to land within 60 percent of the available runway length at the destination airport. If the airplane will not be able to stop in 60 percent of the available runway an alternate airport must be filed. The aircraft must be able to stop within 70 percent of the available landing distance at the alternate. Using this as a rule of thumb forces pilots to calculate these numbers before departing to snow covered airports and leaves pilots with a preplanned option should a landing at the destination not be practical.



Watch for snow piles while taxiing.

These same airline operators add 15 percent to the required landing distance if runways are wet or slippery (or forecast weather conditions say they might be). While this may not be enough distance for many general aviation pilots, it does stress the point that all pilots need to plan ahead when landing on slush- or snow-covered runways.

Notam example:

15/33 PTCHY THN SIR BA FAIR
Runway 15/33 patchy thin snow or ice on runway.
Braking action fair.

► [Listen to an ATIS recording using descriptive braking action reports.](#)

MU – Surface Friction Reports

To muddy the waters (or dirty the snow), some airports may report braking action with a MU value (pronounced mew). MU values range from 0 to 100 and are only reported if they are less than 40. MU values are determined by a friction-measuring device (not reported by pilots) and officially there is no direct correlation between these values and the descriptive reports of good, fair, poor, and nil. Because MU reports may be used at towered airports, it is a good idea to have a working knowledge of what they mean.

Rule of thumb:

MU Value	Braking Action
40 or greater	Good
30 to 40	Fair
20 to 30	Poor
20 or less	Nil

► [Listen to Fairbanks, AK MU report.](#)

Don't ruin a successful wintertime landing with a bad taxi. Remember that landing is only half of this battle. The other half is making it from the runway to the ramp unscathed (or vice versa). Expect taxiing to be a challenge as well. Runway and taxiway markings may be hidden under snow and obscured by snowdrifts. Allow extra room to maneuver around high snow piles. Pay close attention to your speed and plan ahead – stomping on the brakes may only help you slide across the ramp.



Snow obscured taxiway information sign.

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