



Cypher Environmental's dust suppressant handles the punishment of mining trucks. This year it will be applied for the first time on an unpaved runway in northern Canada.

CLEARING THE AIR

ARE WE OVERDUE TO TRY OTHER DUST PALLIATIVES ON UNPAVED RUNWAYS?

BY CARROLL MCCORMICK

This summer the 5,400-foot runway in Sanirajak (formerly Hall Beach) on Melville Peninsula will receive a dust control treatment developed by Winnipeg-based Cypher Environmental. This Cypher first for a Canadian airport may help overcome what the company argues is an unjustified impediment to considering its product to control runway dust and flying gravel.

Transport Canada, arbiter of most things in Canadian aviation other than air traffic control, offers guidance on runway dust control in Section 8.3 of Advisory Circular (AC) 300-004 – Unpaved Runway Surfaces. The AC “is provided for information and guidance purposes. It describes an example of acceptable means, but not the only means, of demonstrating compliance with regulations and standards.” Calcium chloride and other salt-based materials are not to be used, because they can damage aircraft. Certain asphalt types are acceptable and may be diluted with water. Other, non-corrosive

“dust palliatives,” may also be used.

Dig a little deeper, however, and Transport Canada acknowledges that there are no regulations or standards for Section 8.3 to comply to. “Transport Canada has no specific regulation related to runway dust control suppressant,” other than that, “... chemicals that may have harmful effects on aircraft or pavements are not to be used on the movement area of an aerodrome certified as airport.”

To prove that their products are aircraft-safe, vendors like Cypher and Canton, Ohio-based Midwest Industrial Supply, which makes a dust palliative called EK35, may cite that they are certified to Boeing #D6-17487 Revision T (Airport Approved).

AC 300-004 notwithstanding, dust palliatives in Canada seem not to be chosen solely on their merits; rather, to qualify, they follow a specification borrowed from Alaska, according to Todd Burns, CEO and founder of Cypher Environmental. “All the provinces adopted the specifications, which includes EK35 as the only approved



An aircraft kicking up a huge cloud of dust on an unpaved Canadian Arctic runway.

product. The only concern they have with water is that... the product must be ready-to-use. Our products are specifically designed to be concentrated to reduce the environmental impact [greenhouse gases] and cost of shipping to remote locations.”

This requirement that a dust suppressant must be ready straight out of the jug, as it were, meant that, for example, Cypher did not qualify for a 2019 runway dust suppression contract issued by Manitoba Infrastructure, Northern Airports and Marine Operations for the Red Sucker Lake Airport. “The product must be capable of being applied over a prepared gravel surface without the use of water, other than that needed to bring the surface to optimum moisture content,” reads the Request For Quotation.

EK35 comes ready to use. Cypher’s product, called DUST-BLOKR, is delivered as a concentrate, at about half the volume of

EK35, mixed with water on site, and then applied.

Cypher notes that the successful bid for the Red Sucker Lake project was \$275,255.78 for EK35, but its own bid for DUST/BLOKR was \$125,273.40. Burns also notes that Cypher’s successful bid for the Sanirajak runway treatment came in at about half of the price of the EK35 bid. Are buyers paying a stiff premium simply because a bidder meets a *no-water requirement* that appears to have nothing to do with a dust palliative’s effectiveness or ease of use?

According to an October 30, 2020, policy primer issued under the letterhead of the North American and Arctic Defence and Security Network, 11 airports in the Yukon Territory, the Northwest Territories, and Nunavut have paved runways. The other 75 runways up there are unpaved. Canada-wide, there were 944 airports with unpaved runways as of 2013, according to IndexMundi.

Is there a message here for those paying the bills? And is the cost of dust palliatives under the current rules discouraging airports from using them when needed, or at all?

“There is not a uniform schedule of treating or maintaining unpaved runways throughout Northern Canada,” says Gary Bell, President and CEO of Calm Air International LP. It has scheduled passenger service into eight Nunavut communities and cargo service to eight others. “The dust is actually not our issue (albeit no one wants dust on passengers and aircraft), it is the stones that kick up and damage the aircraft and propellers. Taxiways and aprons are less of an issue as the aircraft is going slower but can also be a greater issue as this is where you have a lot of turning around.”

Unpaved runways develop defects such as frost heave, loss of material, segregation (“... the accumulation on the runway surface of loose, non-cohesive aggregates lacking in fines ...”) rutting, surface and subsurface drainage issues, roughness, and vegetation, according to the Transport Canada Advisory Circular 300-004, Unpaved Runway Surfaces.

“Potholes and washboarding are indeed a huge problem,” Bell confirms.

Based on its use in 40 countries (including in Canada) on public roads and mining operations, Cypher is confident that DUST/BLOKR’s track record in successfully addressing these very problems, particularly impressive where heavy trucks operate, will transfer well to runways.

“As DUST/BLOKR is able to withstand heavy mine traffic and extreme weather conditions, we are confident in extrapolating its superior performance to runway applications,” says Diana Nicholson, Director of Engineering, Cypher.

Despite the headwinds, Cypher’s bona fides are bringing it ever closer to Canadian runways: Nunavut and the Northwest Territories have authorized DUST/BLOKR for use on their roads. Cypher’s product is on several public roads and haul roads in provinces such as Manitoba, Saskatchewan and British Columbia. Cypher has established a solid presence at several Canadian mining sites, including Baffinland. The hamlet of Pond Inlet is one of many in Canada’s North that has used DUST/BLOKR, with more expressing interest, according to Burns. The Trudeau Airport used DUST/BLOKR on a dirt road a few years ago, as did the Bangalore International Airport in 2020. And a Canadian mine is close to a decision about extending its use of DUST/BLOKR to its airstrip, according to Burns.

Burns is in touch with the Standards Council of Canada about developing new dust palliative specifications and has approached the Rural Manitoba Economic Development Corporation (RMED) for help. “My observation in what I think is happening with [Burns] is that the technology is evolving faster than what the traditional procurement [product] adoption is,” says Margo Cathcart, CEO, RMED.

The aviation community should closely follow the Sanirajak runway project. | **W**

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