

WINTER IS COMING

Advice on care and maintenance of salt spreaders, simple as it might be, should not be overlooked, finds Will Dalrymple

The biggest in-service maintenance instruction from salt spreader OEMs might be the most obvious: run it until it's empty, and wash it out after every shift. "Salt is a fantastic aggregate, but it is corrosive, and it finds its way everywhere, through wiring and metal structures and cabling," says Paddy Hastie, winter equipment manager at Peacock Salt, importer of Hilltip demountable salt spreaders for fitting to LCVs such as pick-up trucks. "Wash away as much as possible; that also prevents the likelihood an obstruction will stop the machine."

This is also the advice of UK manufacturer Econ Engineering, manufacturer of 6m³ and 9m³ hoppers for 18t and 26t rigid-mounted gritters. Sales director Andrew Lupton adds that cleaning the chassis might even be more important, because while components of the salt spreading machinery are treated individually before being assembled, chassis anti-corrosion treatments by their nature protect the as-built structure, which may leave



vulnerabilities at joints. He recommends a high flow of water in preference to a high-pressure spray as from a pressure washer, as that can drive dissolved salt into vulnerable components such as brakes and particularly springs, which weaken in contact with salty water and can be more susceptible to breakage later on.

British rock salt is mined in Carrickfergus, Northern Ireland, in Cheshire and in Cleveland, and is generally 90%-95% pure salt (sodium chloride, NaCl). The remainder of the material is made up of silt or clay that provides pink or brown appearance. Those materials add a useful element of grit, but also leave behind an insoluble sticky residue that is best avoided, points out Andrew Manson, UK sales manager - winter at Bucher Municipal UK.

Another reason to clear out the hopper is the risk of jams. Rock salt left in the bottom of a hopper exposed to the elements - particularly rain, but also very cold weather, down to -7 or -8°C - can

solidify into a solid mass. For that reason, some Scandinavian countries that experience harsher winters choose other de-icer compounds with lower melting points, or give up on melting entirely and just spread chippings to improve grip. Gritting machinery can be adjusted to spread a variety of aggregates.

Despite the obvious nature of the recommendations, Hastie recognises that many customers don't do a daily wash-out, particularly when gritting is continuous. He says: "If you don't do that, it still works, you just get less life out of it. When we service machines during the summer, we can tell those customers that are paying attention to their machines."

SUMMER WORK

Spreader maintenance begins at the end of winter, contends Lupton. After a full wash-down, other jobs include slackening the tension on the rubber conveyor belt. Leaving the belt under tension through the hot summer months

risks disintegration, he contends. Bearing greasing is another important summer job, as is driving the truck five to ten miles every few weeks to keep components lubricated. That's another job that is often left off the list, he observes – at the detriment to the vehicle.

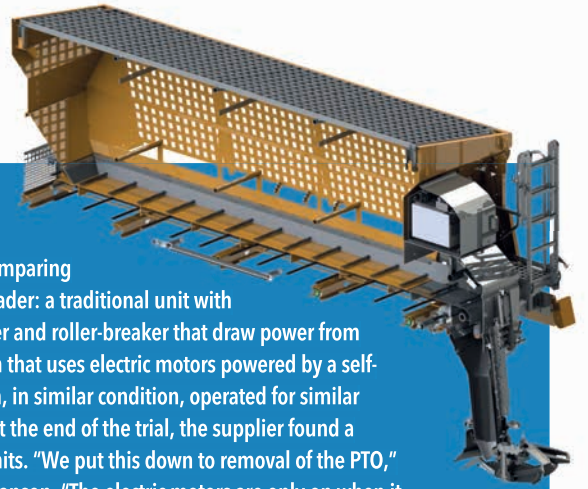
Other designs of spreader have different requirements. Hilltip's range of demountable spreaders use a stainless steel auger whose bearings need greasing. Bucher uses a metal belt connected to drive chains; it also requires de-tensioning and lubrication before being put away in summer, and re-tensioning in autumn.

Although it is possible for the spreader to jam while operating, Hastie points out that the stoppage might actually be due to a mechanical fault, from a gearbox or motor. "Sometimes it looks like a jam, but isn't. Servicing every year will pick up any problems."

He says that it's often not until the October school half term holidays in England before some councils wake up to the fact that winter is coming. Even then, it's not too late to make sure their spreaders are ready for winter. Hilltip has increased its UK stockholding of spare parts; it can now take a week to get less common parts from factories in Finland. "The more prepared people are, the less drama there will be," he observes.

ELECTRIC TRY-OUT

Last winter, Bucher ran a field trial comparing performance of two types of salt spreader: a traditional unit with hydraulically-driven conveyor, spinner and roller-breaker that draw power from the truck PTO, and a design of its own that uses electric motors powered by a self-contained battery. Three units of each, in similar condition, operated for similar lengths of time in similar locations. At the end of the trial, the supplier found a 19.2% fuel saving with the electric units. "We put this down to removal of the PTO," says winter sales manager Andrew Manson. "The electric motors are only on when it is delivering salt, and consume power from the spreader's battery, not from the truck's engine." Bucher offers a rental fleet for customers to try out the electric units.



A key autumn task for gritters employed by councils is calibration, points out Lupton at Econ Engineering. It – along with gritting records – safeguards the operator and customer in the event of an accident. Calibration is also useful as a scheduling check and balance. The gritter can't be operated until it has been calibrated,

and calibration can only take place once the gritter has been restored to full operational configuration.

Lupton explains: "Calibration involves checking the control systems in the cab, and there are three in-cab controls: the discharge rate – how much salt you are required to treat that night – the width of spread – which can be adjusted between 2-12m – and the spread pattern – where it is placing salt. What you are looking to do is make sure that if you have a setting for a 6m wide road, the actuator adjustment is correctly controlling the product's conveyor and spinner motors to achieve that." He adds that one calibration will work for multiple units from the same manufacturer, even if they are mounted on different chassis.

But it's vital to calibrate using the actual salt the vehicle will spread. "When our engineers run tests, they use the salt from the pile," he adds, because the salt's moisture content affects its behaviour. That's why he states that best practice is to recalibrate a machine if you have a new delivery of salt, because it will be drier than older stocks. Although frequency of calibration technically depends on frequency of use, for most of the UK, once per year is sufficient, except Scottish motorway gritters, which are recalibrated in January as well. **TE**

BEST PRACTICE

Earlier this year, the National Winter Service Research Group completed its 13-part Practical Guide for Winter Service. The multi-year project included input from the Institute of Highway Engineers, TRL, 15 councils, Highways England, Transport for London, Transport Scotland and Northern Ireland Department for Infrastructure. The sections are: foreword, planning, de-icer types, treatment methods, salt storage, spreader management, decision making, precautionary salt spreading rates, treatments for snow and ice, treatments for extreme cold, footways and cycleways, weather forecasting, and road weather information systems and route selection and optimisation. Each section is available for free download via www.is.gd/netaka.

