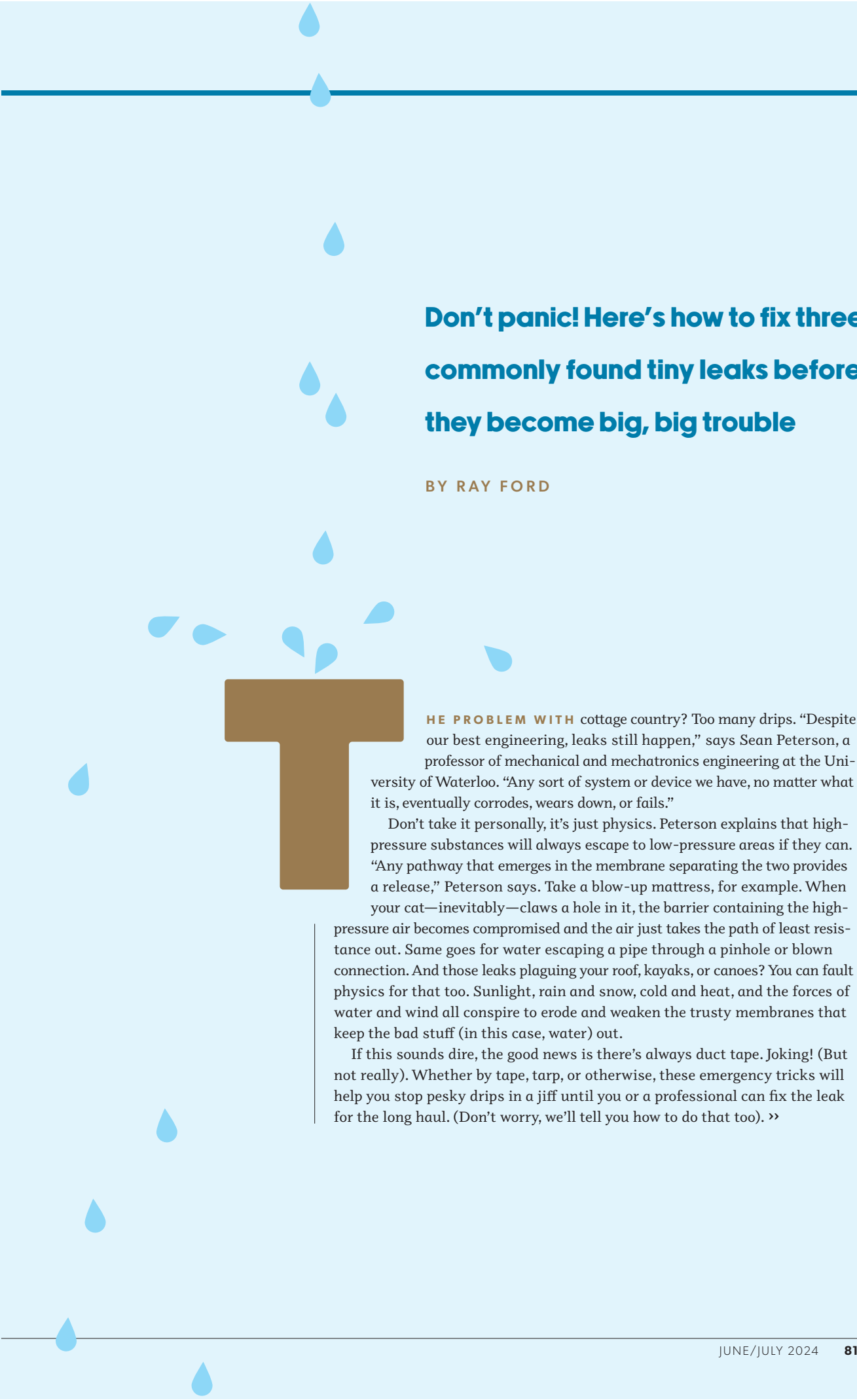


IT'S 8 P.M. ON A
FRIDAY NIGHT. ^{*drip*} YOU'VE
CONQUERED THE TRAFFIC
AND FINALLY ^{*drip*} ARRIVED
AT THE COTTAGE. ^{*drip*} YOU'RE
JUST ABOUT TO POUR
YOURSELF A ^{*drip*} DRINK
WHEN—WAIT A SECOND.
IS SOMETHING LEAKING?





Don't panic! Here's how to fix three commonly found tiny leaks before they become big, big trouble

BY RAY FORD

THE PROBLEM WITH cottage country? Too many drips. “Despite our best engineering, leaks still happen,” says Sean Peterson, a professor of mechanical and mechatronics engineering at the University of Waterloo. “Any sort of system or device we have, no matter what it is, eventually corrodes, wears down, or fails.”

Don't take it personally, it's just physics. Peterson explains that high-pressure substances will always escape to low-pressure areas if they can. “Any pathway that emerges in the membrane separating the two provides a release,” Peterson says. Take a blow-up mattress, for example. When your cat—inevitably—claws a hole in it, the barrier containing the high-pressure air becomes compromised and the air just takes the path of least resistance out. Same goes for water escaping a pipe through a pinhole or blown connection. And those leaks plaguing your roof, kayaks, or canoes? You can fault physics for that too. Sunlight, rain and snow, cold and heat, and the forces of water and wind all conspire to erode and weaken the trusty membranes that keep the bad stuff (in this case, water) out.

If this sounds dire, the good news is there's always duct tape. Joking! (But not really). Whether by tape, tarp, or otherwise, these emergency tricks will help you stop pesky drips in a jiff until you or a professional can fix the leak for the long haul. (Don't worry, we'll tell you how to do that too). »

THE LEAKY CULPRIT Your copper pipe, which has burst or developed pinholes.

FINDING THE LEAK Drips often show up a floor beneath their source, typically on the ceiling, says Jeremy Begin, the owner of Bracebridge, Ont.-based Cottage Country Plumbing. If you suspect a leak on your main floor, start searching your basement or crawlspace with a flashlight to find glistening wet spots or water stains. Listen for drips or flows too. On the high-tech side, an infrared thermal imaging camera shows surface

temperatures and can outline leaks hidden within walls, ceilings, or floors. A remote inspection camera, with real-video imaging via its pen-like camera wand, can help identify leaks behind walls as well. (Depending on where the leak is, you can deploy the camera by removing the wall's baseboard.) Slow-dripping leaks are harder to find and may only reveal themselves when a sink or tub is in use. Begin says toilet leaks, typically from a poor seal, are the most stealthy. To detect devious leaks like these, Celeste Carnevale, the owner of 2 Bro's Plumbing in Whitby, Ont., suggests running your shower or faucet for a few minutes (or flushing your toilet a couple of times), waiting five to seven minutes, doing a leak check, and then repeating anywhere from three to five times. Test each fixture separately; one at a time.

STOPPING THE LEAK Properly installed push-to-connect fittings—SharkBite is a popular manufacturer—provide fast and easy (and temporary) pipe-leak relief. But before you do anything, turn off your water, drain any existing water in your pipes, and place a bucket under the leaky pipe for emergency drip-catching. If you're dealing with a burst pipe, Begin recommends using two fittings and a piece of cross-linked polyethylene (PEX) pipe in between. Cleanly cut the burst pipe on either side and attach one fitting on each open end, connecting them via the PEX pipe. The process is less complex for a pinhole leak. "If it's midnight, and I just want to get your water back on, I would cut directly on the pinhole and apply one Shark-Bite fitting," says Begin. Remember to use a deburring tool and sandpaper to smooth out your cuts. This will ensure proper fitting.

FIXING THE LEAK For a burst pipe, remove the push-to-connect fittings and solder sweat adapters (permanent pipe connectors) onto the remaining copper ends, crimping a new piece of PEX in between. If you're not handy with a torch, or don't have one, call a plumber. For a pinhole, replace the push-to-connect fitting with a copper union fitting. Soldering is required here too, so again, call a plumber if you're not experienced with this type of repair. "If your copper pipes are getting one pinhole after the other, I would switch to PEX at that point," says Begin. "It's about half the cost of copper, and takes about a third of the time to install."

SharkBite Max Brass
Push Coupling

the
BUSTED
pipe

the SOPPING wet roof

THE LEAKY CULPRIT Your roof, which is now leaking water into your cottage.

FINDING THE LEAK Roof leaks are vexing. Most hide during fine weather, only springing to life during bouts of precipitation, and, because of this, they can sometimes take weeks to discover. Montreal-based roofing consultant Paul Grizenko recommends looking for wet or stained drywall, bubbling paint, pools on floors, wet insulation, and mould. From there, use a flashlight and a thermal imaging camera to trace your leak to the source. It's often in the attic, says Grizenko. Usual suspects include bad seals or failing caulking on roof penetrations—think vents, plumbing stacks, and chimneys—and cracked or missing shingles atop compromised underlayment. Also common are ice dams (often around roof eaves and valleys), where winter ice buildup causes snowmelt to back up and seep beneath shingles and underlayment.

STOPPING THE LEAK Grizenko recommends roofing cement for small jobs, such as repairing a cracked asphalt shingle. "It's not pretty, but it works as a temporary patch." If you're heading to the roof immediately, Grizenko suggests driving a screw from the attic through the roof deck at the leak area so it's easier to locate from above. Once on the roof, mark the area and remove the screw.

Next, sweep or brush loose asphalt, dust, and debris from the repair zone. Use a putty knife or a trowel to work layers of the sticky cement into the crack, filling it completely while maintaining a fairly thin cover of roofing cement on top. Trowel the outer edges of the patch flush with the surface. For best

results, read directions carefully (cements differ per manufacturer) and choose a mild, dry day. Grizenko says roofing cement is too viscous in the cold and too runny on hot days.

Leaks from faulty seals around flashing (the thin metal sheets on roof seams that direct water away) and roof penetrations will likely require new caulking. "Between ultraviolet exposure and thermal expansion, caulking becomes brittle and pulls away from whatever it's protecting over time," says Grizenko. Use a utility knife to cut away the old caulking and clean off the old residue with acetone. When the surface is dry, apply new, high-quality roof caulking, such as [Through the Roof! sealant](#). If the leak stops, you may have solved the problem, but only for the life of the caulking.

If you can't get to the roof right away—say it's raining or you're preparing to leave—tarping can serve as a short-term stopgap and is best left to professional contractors. "It takes experience to know how to secure a tarp that won't blow off or rip," says Grizenko.

FIXING THE LEAK To properly fix a leak stemming from a broken asphalt shingle on an otherwise-healthy roof, use a flat pry bar to *gently* bend up the shingle(s) covering the one you're replacing. Next, use the pry bar to remove the nails securing the faulty shingle: again, *gently*. Pull out the broken shingle and slide the replacement beneath the upper course, nailing it down using the same nail pattern as the rest of the roof. Apply roofing cement beneath the tabs and on the nail heads of the new shingle, then press the shingles into place. Book the job for a mild day, when asphalt is less likely to crack.

If you notice many lifting, missing, or broken shingles, plan a new roof—and consider everything from the sheathing to the water barrier. Also, don't cheap out: "If the person who is charging more can explain why, and give clear indications of the extra steps they're taking, they may be the cheapest person to hire in the long run." >>

Through the Roof!
Co-polymer rubber sealant



THE LEAKY CULPRIT Your canoe or kayak, which now has water inside *and* out.

FINDING THE LEAK Sometimes your kayak or canoe tumbles off the car and cracks. And sometimes, when you're paddling, you hit stuff. (Who put that dock there?). To detect leaks in canoes, "Put water into the canoe and see where it comes out, or put the canoe in water and see where it comes in," says Beth Peterson, the owner of Ottawa Valley Canoe and Kayak. If you also suspect (or hear) water sloshing around in the craft's sealed bow and stern flotation tanks, Bob Hellman of Hellman Canoes & Kayaks in Nelson, B.C., recommends taking your craft to a professional who can access the sealed (typically with fibreglass) compartments and assess your tanks for leaks.

For enclosed kayaks, "Take the kayak to the beach and get it in the water," says Jillian Conrad, the production manager of Swift Canoe and Kayak in South River, Ont. "One person holds the kayak while another person looks inside with a flashlight and watches for water coming in." Most leaks occur at the glued seam where the deck meets the hull.

STOPPING THE LEAK "Clear Gorilla Tape is your go-to," Conrad says. When the craft is clean, warm, and dry, tape both sides of the leaking area (inside and outside the craft, for example), using multiple layers if necessary. A solid tape job could last months and works on wood, composite, and aluminum surfaces. For leaking flotation tanks, Hellman says a repair shop can replace them, or, you can have the tanks swapped out for float bags.

The best thing about Gorilla Tape? "It leaves less residue behind when it's removed, and it sticks on a cold, wet surface in a pinch," says Conrad. (Peterson, also a fan of Gorilla Tape, once saw a leak successfully plugged with cow manure.) Clingier stopgaps, including silicone sealant, glue, nail polish, and epoxy, are the bane of repair shops. "Even if you can clean all the silicone off, getting something to stick afterwards isn't easy," says Conrad.

FIXING THE LEAK For permanent fixes on coin-sized holes or cracks a few inches long, materials and DIY kits are available from suppliers such as the Oshawa, Ont.-based Rayplex. The key is matching the craft's original chemistry or construction. Kevlar or fibreglass won't play nice with plastics such as Royalex. But you *can* use a fibreglass patch on a Kevlar canoe. (Kevlar is nearly impossible to cut without proper shears, but determined DIYers can buy pre-cut patches or get one custom cut.)

If possible, talk to a professional before you do something. Having your craft's make, model, and 12-digit Hull Identification Number (HIN) handy while asking about repairs over the phone, or ordering parts, is helpful. You can find it on the starboard side of the stern. Otherwise, you might end up Frankensteining your craft with materials that just won't jibe.

Repairs require a clean, dry, warm, and well-ventilated workspace, a passing knowledge of chemistry (including resins and hard-eners), and patience. Steps include removing loose and damaged material, sanding and cleaning the repair area, and applying patches made of the right substance. "The patch should always extend two to three inches larger than the area you're repairing, and you need a strong bond around the area where the canoe or kayak has been weakened," says Conrad.

Fixing larger cracks and completing specialized jobs, such as repairing cedarstrip or wood-canvas canoes, as well as welding aluminum ones, should probably be left to the pros. Finding and gluing a leaking seam sounds easy, but it can also be an exercise in frustration for amateurs, warns Conrad. "I've had people try to fix the leaks themselves, and, you know, you're on the phone with them every day."





THIS PAGE: CANOE, SHUTTERSTOCK.COM/MAEKULIASZ. OPPOSITE: GARDEN HOSE, SHUTTERSTOCK.COM/HURSTPHOTO; FLOATIE, SHUTTERSTOCK.COM/OLDMANGEOGE; WATERING CAN AND PLASTIC FITCHER, CLEANING; BLOW-UP MATTRESS, CANADIANPTIRE.CA

the DROWNING watercraft



PATCH IT OR PITCH IT

Silly question: what cottage putterer worth their duct tape isn't going to at least consider patching something before pitching it? But is it a good idea? It depends...

Patch it!			
Easy fix	 <p>FLOATIE If it's a blown seam, or it's leaking from the valve, pitch it. For small holes or tears elsewhere, patch it. (Most floaties come with patches. If not, try a Type B Tear-Aid kit.)</p>		
	 <p>BLOW-UP MATTRESS Similar to floaties, if the tear is on the seam or valve, pitch it. To repair other holes, use a Tear-Aid patching kit. (Type A this time.)</p>	 <p>PLASTIC PITCHER If it's Tupperware, check the warranty. The damage might be covered. If not, don't pitch: give Grandma's pitcher new life as a coin bank or storage container. If the crack is miniscule, use it as a boat bailer.</p>	Trickier Fix
		 <p>WATERING CAN Pitch it and buy a more robust one made of metal or a sturdier plastic. Hardcore DIYers could try using a two-part epoxy (part resin, part hardener), such as J-B Weld.</p>	
Just pitch it			

Crystal Clear
Gorilla Tape

PHYSICS STACKS the deck to favour leaks, how you play those cards still matters. The tendency to rush fixes and cut corners almost guarantees future problems. "It's the 'my brother can do it' factor," says Begin. "If a pipe's not installed correctly or you have a badly soldered joint, it will hold long enough that it feels okay, and then it will let go."

And while SharkBites, roofing cement, and Gorilla Tape all have a place, engineering professor Sean Peterson says the most powerful leak-stopper is likely also the most overlooked: the cottage checklist. "Many industries, including aviation, have checklists because they force people to think about preventative maintenance, which helps avoid catastrophic failures."

So if you're looking to avoid the dreaded cottage drip once and for all, it's time to revise those opening and closing checklists to include scouting for water stains behind walls and in your attic, storing canoes and kayaks safely, and maybe even stocking some just-in-case plumbing supplies. And Gorilla Tape. There are already enough drips around the lake. Why invite more? 🐡

Ray Ford is an award-winning writer and a regular contributor to Cottage Life. He's also a handyman, DIYer, farmer, and fire chief. He wrote "Cold Comfort" in our Winter '22 issue.