Tim Quinn, left, and Anthony Manns are considered Buffalo Trace's top leak hunters. Opposite, a leak hunter's tools: 3-pound hammer, head puller, and head driver.

The Kentucky Leak Hunters!

Tirelessly prowling the great bourbon warehouses, hammer and cedar pegs in hand, these are the men who plug the leaks that would waste our whiskey.

WRITTEN AND PHOTOGRAPHED BY FRED MINNICK

Barrels are an integral part of whiskey making. While there are modern additions to the aging process — barcode tracking, powered drills for samples, and such — the heart of aging whiskey remains a 5,000 year old technology, made mostly of wood, and wood...leaks. To find and stop those leaks, some Kentucky distillers still employ a special kind of person: the leak hunter.

A leak hunter's tool belt today contains the same gear as hunters before him. The most used are the small 8-ounce hammer with a sharp edge to scrape the wood fibers, smoothing a clean patching surface for a cedar peg; and the stainless steel punch with its round bar stock and pointed tip for maximum precision to crush the cedar deep into the oak stave to stop the leaking. Without these three simple tools — the hammer, steel punch, and cedar pegs — the leaking barrel drains dry.

Some gaping leaks require the beating of the heftier 3-pound hammer for driving hoops back into place. Leak hunters use specialty crowbars to pry open barrel heads, burlap to repair bungs, and chalk to mark repairs so the next hunter can see their handiwork. But, perhaps the most important tool is the one piece of technology leak hunters a century ago did not carry — the headlamp affixed just above the eyes with several light intensities.

"I can't imagine what it was like back in the old days," says Buffalo Trace warehouse worker Anthony Manns, who's been leak hunting for six years. "They walked through here with lanterns; it must have been hard to see."

Every Barrel Counts

Manns and his leak-hunting colleagues save about 3,000 barrels a year, says Patrick Clouse, warehouse manager at Buffalo Trace. The average leaking barrel's angels' share is 15 to 20 percent a year compared to a regular barrel's 3 to 5 percent. That means when dumping 6 year old bourbon, a wounded barrel rattled with cracks would be completely empty. "We will pump [barrels] with millions of dollars of

distillate," Clouse says. "We don't want that whiskey spilling out onto the warehouse floor."

At Buffalo Trace, leak hunting begins at barrel entry. Depending on whether the semi-truck came from the cooper at Lebanon, Mo., or Lebanon, Ky., the trailers hold 288 or 258 barrels each. Casks clank as they roll off the trailer, down the line, and into the hands of the first leak inspector. He analyzes the fresh American oak, overhead fluorescent light illuminating every inch, searching for any crack, wormhole, or irregularity that might cause this newly-charred barrel to leak whiskey. Pressurization tests took place after the barrel was first created at the cooper, but he still finds flaws that might lead to whiskey pouring out. If the inspector spots a problem, he culls bad barrels to either be fixed on the spot or sent back to the cooperage for repair.

Once whiskey is inside the barrel, the opening is plugged with a poplarwood bung, and it will spend its remaining time aging in a Buffalo Trace warehouse. At the Frankfort facility, 300,000 barrels age everything from corn whiskey to blend into the Ancient Age Preferred, to 23 year old Pappy Van Winkle bourbon. Even one empty barrel negatively impacts the total inventory, no matter the brand, Clouse says. That's why Manns and his partner, Tim Quinn, cinch up their black tool belts hung with those barrel-saving tools and head to Warehouse K to inspect prone-to-leak corn whiskey barrels. "To us, every drop of whiskey counts," Manns says.

As Manns and Quinn walk through Warehouse K, they have a spreadsheet of what rows need inspecting. The aisles between some racks are so narrow that, "I can't fit," a bulky Manns says, leaving some aisles to a thinner Quinn. "You can't be claustrophobic in this job."

They speed walk through the thin aisles, scanning the headlamps up and down the barrels, giving each barrel an eyeball look for about five to ten seconds.

They speed walk through the thin aisles, scanning the headlamps up and down the barrels, giving each barrel an eyeball look for about five to ten seconds. "You'll see the leaking and smell the whiskey," Quinn says, as he spots an apparent wormhole in corn whiskey barrel No. K958.

"These corn whiskey barrels are always leaking," because they're used barrels, Quinn says. An oily sheen, the whiskey, reflects off his light. He hammers and scrapes a peg in the hole. If the leak were coming from a streak, a hairline fracture in the stave, Quinn would place wooden edges in the stave joints to pinch the wood together. But the wormhole was the only leak found in a quick 136-barrel check.

On his inventory sheet, Manns noticed two barrels needing head changes. Buffalo Trace has faced issues with the dowel pin-connected barrel heads. They bend and warp during extreme summer heat, leading workers to frequently replace the heads — the equivalent of barrel surgery. The problem was so bad that the distillery discontinued ordering dowel-pin heads in 2003 and started ordering only tongue-and-groove heads. But the newer heads still need changing from time to time.

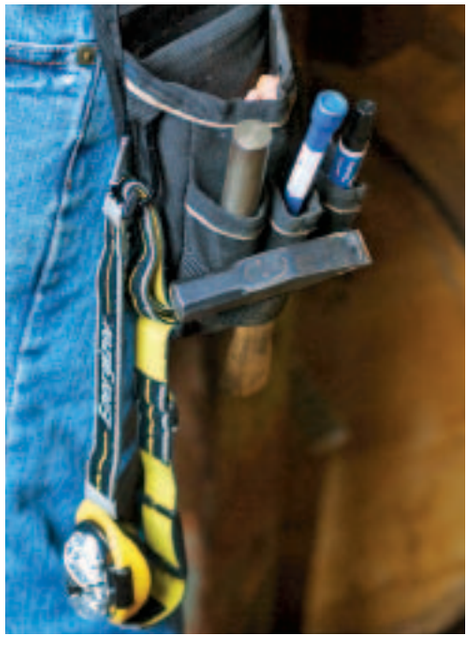
Manns and Quinn loosened the hoops, but the first barrel's fresh whiskey started spraying out like a kinked garden hose. Had this been their first barrel head change, the pressure might have been more than they could handle. But they understood the barrel's nuances and kept the staves from splaying out like a Blooming Onion, replacing the faulty head with a new one and sketching lettering on it for tax-check purposes.

Replacing a head, plugging a wormhole, squeezing shut a streak are part art and part science. "It's all trial and error," Quinn says. The hardest part is usually finding the leak.

The Leak

Leaks manifest themselves in different ways and no two barrels leak the same. On average, a whiskey barrel has 36 oak staves, each an inch thick, held together by metal hoops. If any one





Left to right: plugging the drilled hole after taking a sample; hammering the hoops into place after replacing a barrel head; tools of the trade.

Manns loosens the metal hoops around a corn whiskey barrel that needs its head changed.

Working by the light of his headlamp, Quinn scrapes a leak smooth to ready it for repair.

of these staves had a worm moving through the wood during its tree stage, there's a chance the once-microscopic hole could leak. There are also streaks, cracks, narrow bungs, and knots that could expand and retract during the hot summers and cold winters.

Under the most extreme conditions, barrels have actually exploded. One leak-hunting veteran remembers an incident that resulted in raining whiskey. "We were puttin' up new whiskey in Warehouse Q and heard this pop! It's like a gun went off. Whiskey started raining down from above," says Leonard Riddle, a 40-year veteran at Buffalo Trace. "Pressure built up in the barrel and it popped loose."

Once, Manns tracked a constant ringing noise to the warehouse's ninth floor. "Pressure was forcing air out of a barrel so hard it was whistling. I could rock the barrel and it would stop, but could never find the hole," he says. "You'll see whiskey coming out of a barrel and not be able to find the leak, because you can't see the wormhole."

Manns says half the leaks occur on higher floors because heat rises, putting more pressure on the barrels. "We age all our Van Winkles on the lower floors, so there's less leaking in those," he says.

Of course, leaks also happen because of obvious human error. There have been times leak hunters found a bung-side-down barrel in the middle of a rick. The bung could pop off and the barrel would empty within seconds. If they find this misplaced barrel, leak hunters will rotate it bung-side upright even if it means taking every one off a rick.

Sometimes, whole batches of barrels just leak, Quinn says. One bunch of casks aging Eagle Rare 10 year old leaked so badly that they looked like stalactites in a cave, Manns says. And all the barrels in 2007 had heads that frequently cracked and split. "We don't know if there were bad staves that year, but some cracks were so deep you could stick your hand in it," Quinn says.

In addition to plugging holes and changing heads, leak hunters are charged with collecting samples for the lab and trade tastings. They drill holes in the barrel, fill a small flask, and cedar peg the opening. But, when there are hundreds of samples to collect, even the best leak hunter has been known to not properly reseal the hole. The most common mistake is to flatten the cedar peg without scraping it smooth; the whiskey pours out of the peg like a straw. "Fixing that barrel after getting a sample is as important as leak hunting," Clouse says.

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Even in times of human error, the barrel can repair itself. The wood sugars self-plug the leak, creating a sappy, tar-like substance that hangs. "At that point, when the barrel has self-healed, it's better to leave it alone because it's no longer leaking," Manns says. "If we had gotten there six years ago, we could have prevented some lost product."

With their self-healing sappy tentacles, these beat-up barrels sell quite well in Buffalo Trace's single barrel program. Manns has noticed during samplings for liquor store customers, the "crappier" the barrel, the better it sells. "A barrel that looks like hell is a little sweeter and smoother than a pristine barrel," Manns says. "You won't see a lot of people pass up a beat-up barrel."

But master distiller Harlen Wheatley says that does not mean the uglier barrel holds better whiskey. "Overall the leaking barrels do not leak out enough to change the flavor, although there is a threshold where once enough has leaked out that the volume-to-surface area changes enough to affect the flavor," Wheatley says. "If half the barrel leaked out, it would alter the flavor as it aged."

Lost Art

Leak hunters are not as widely employed as they used to be. Before coopers perfected barrel-making, the wood did not always hold whiskey that well, and hunters were the difference between high whiskey yields and several empty barrels. "Back in the old days, we had five or six guys just leak hunting," Riddle says.

Today, the barrels are simply made so well that minor leaks often seal themselves. Four Roses has not deployed leak hunters in fifteen years, says master distiller Jim Rutledge, because it was an inefficient process. Heaven Hill adds leak hunting to general warehouse work, says director of corporate communications Larry Kass. "We empower everybody who deals with barrels to fix leaks as they see them," Kass says. "Even though we all have our own leak procedures, all [distilleries] are not going to let too much whiskey go to waste."

Back at Buffalo Trace, Quinn is leaving Warehouse K when a barrel catches his eye. "Smell that?" he asks, pointing toward barrels a few feet away. Nobody answers as he wedges himself in between the two ricks, walks down another few feet, climbs up two barrels and spots the leak — a wormhole allowing corn whiskey to escape. The headlamp centered on the microscopic hole, Quinn smooths the surface up and smacks the cedar peg with his steel punch, cleaning with his hammer's sharp edge. Once done, he feels the wood grain with his thumb, making sure no leak could survive. "That should do it," he says.

Another barrel saved. ■