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NORTH AMERICAN COUNCIL FOR FREIGHT EFFICIENCY

PERSPECTIVE ON AUTONOMOUS TRUCKING

AUTONOMOUS TRUCKING IN A FREIGHT RECESSION: STRESS TEST OR STOP SIGN?

When volumes fall and margins tighten, autonomy faces its real-world exam. Can it pay its own way?

Freight's in a Funk

Freight feels slow, not broken. Volumes are light, capacity is wide open, and rates still are fighting to find a floor. The boom-time heat has cooled, and every dollar — from fuel to tech — is earning its keep again. It's a tougher but cleaner market; excess is shaking out, and smart operators are tightening their lanes, not their vision.

So, what happens to autonomy when freight softens? This is the real stress test — a chance to prove whether driverless trucks can deliver value when every mile counts, or if they're still waiting for better days.

Driverless tech doesn't get a free pass anymore. To be relevant, it has to cut cost per mile (CPM), tighten service levels, and run with fewer human touchpoints. The freight recession is a grinder — hype goes in, hard math comes out — and that pressure might be exactly what makes autonomy real.

The Bad News First

Freight isn't just soft — it's struggling. National shipment volumes are down roughly 6% to 8% yearly, spot rates have slipped to multi-year lows, and there is an oversupply of capacity despite a steady wave of small-carriers exiting the industry. It's a market where cost control rules and innovation budgets get a haircut.

That reality hits autonomy squarely. Pilot programs and new-lane launches are often the first to be delayed when cash is tight. Projects without a near-term commercialization plan face steeper investor scrutiny. Hardware sourcing adds another layer of stress. New "connected vehicle" and cybersecurity mandates now require detailed software bills of materials and verified component provenance. For some autonomy developers, that means requalifying sensors or computer systems — extra cost in a market allergic to surprises.

And bureaucracy doesn't help. The federal shutdown — now a month long and counting — has slowed the Federal Motor Carriers Safety Administration (FMCSA) exemptions and Department of Transportation (DOT) pilot reviews, pushing already stretched timelines. In short, the freight downturn isn't just starving autonomy of freight — it's starving it of time and capital.

The Good News: Recessions Sharpen Focus

But soft markets also sharpen priorities. Fleets and AV teams are finally focusing on lanes where autonomy truly pays off — repeatable highway corridors with consistent freight, night operations, and terminal control on both ends. Utilization rises, dwell time drops, and the math starts to work.

> "This recession is the perfect proving ground for fleets just starting to explore autonomy. Autonomy isn't a moonshot; it's an operating tool. But can it make your freight cheaper, safer, or faster?

Consolidation has brought clarity. The weaker players are fading, while survivors emphasize OEM integration, serviceability, and uptime over hype. Simulation tools now carry more of the testing burden, lowering costs and reducing public-road exposure until systems are truly ready.

Even operations are leveling up. Aurora's Dallas-to-Houston corridor now runs day and night without a driver, proving 24/7

cadence is more than marketing copy. The hype cycle is over; execution is in.

The 2025 AV Trucking Scorecard

So, who's still standing — and what do their numbers say?

- **Aurora** leads the pack with driverless runs on Texas corridors and more than 20,000 autonomous miles logged without a safety driver. With $1.3 billion in liquidity and its first freight revenue booked, Aurora is passing the test — real freight, real autonomy, and a long enough runway to outlast the slump.
- **Kodiak Robotics** has proven 24/7 autonomy on private roads and raised $220 million through its public listing. But the real question is whether that performance translates to public highways. This year will decide whether Kodiak graduates or stalls mid-test.
- **Torc Robotics**, backed by Daimler Truck, has the muscle and service network others lack, but its conservative 2027–2028 commercial timeline risks missing this market cycle. Safe, but slow.
- **Waabi** is betting on high-fidelity simulation to speed development and stretch its $200 million venture runway. It is early stage but efficient.
- **Gatik**, focusing on short middle-mile routes, is quietly running commercial driverless operations in Canada and scaling a U.S. fleet of about 50 trucks. It's small, focused, and already delivering.
- **PlusAI** continues its OEM-embedded, driver-in strategy — a bridge technology positioned to go without a driver when regulations allow. It's patient capital, not hype capital.

Together, these companies define the new reality with fewer players, stronger balance sheets, and operations built for trucking — not tech theater.

Washington Watch: Turbulence at the Top

Policy gridlock has become the backdrop of the business. Federal shutdowns and disruptions slow FMCSA exemptions and DOT safety pilot reviews, while election-year politics make budgets and approvals unpredictable. Every delay ripples downstream — build slots slip, pilots drift, and capital waits.

At the same time, sourcing and cybersecurity mandates are tightening. Connected-vehicle rules now require full software bills of materials (SBOMs) and verified component provenance — exposing autonomy stacks that rely on offshore hardware. Add supply-chain strain and energy volatility, and autonomous trucking faces the same fragility as any freight business. The takeaway: budget for delays, insure for disruptions, and contract for compliance. Washington won't move fast — but autonomy is learning to survive despite it.

Making Autonomy Pay

This recession is the perfect proving ground for fleets just starting to explore autonomy. Autonomy isn't a moonshot; it's an operating tool. The only question is can it make your

freight cheaper, safer, or faster than a human-driven rig?

The strongest opportunities lie on long, predictable highway corridors — especially at night — where autonomous trucks can run nearly nonstop. Terminals that you control at both ends make handoffs predictable and straightforward.

Serviceability is critical. Choose OEM-integrated systems that your dealer network actually can maintain. Bring your insurer in early, document incident protocols, and make sure your vendor pays for any requalification costs if rules shift mid-contract.

People still matter. Drivers become "AV chaperones," technicians handle calibration, and dispatchers learn to manage a new equipment class. The fleets that treat this as a skills upgrade — not a replacement — will be the ones that capture the upside.

When evaluating providers, proof matters more than promises. Ask for operational data from lanes like yours, not demo clips. Look for uptime guarantees, clear repair windows, and measurable incident rates. Always model the total cost per mile using your assumptions, not the vendor's. If autonomy can't beat your baseline today, it won't when the market rebounds.

So...What Does the Freight Recession Actually Do to Autonomy?

A freight recession slows expansion but sharpens execution. There will be fewer pilots, but they'll be better. Capital will chase performance, not promises. The survivors will master night-heavy, repeatable lanes that beat human CPM — and the rest will fade into glorified driver-assist.

The freight recession won't kill autonomy — it'll expose it. What survives this stress test won't be hype; it'll be the backbone of the next freight cycle.

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