

The Fleet We Couldn't See: What Joining Three Data Systems Revealed About the Trailer Inventory

The fleet system of record appears to be missing 20–25% of the physical trailer fleet. Every number below is traceable to a public tool and open to challenge.

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The Situation

Element, the fleet management system of record, lists **2,242 trailers**. The RIM system — where chapter teams record trailers during physical inspections — held **2,099 records (2,016 unique trailers)** as of June 5. When the two lists were joined by VIN — and every decodable VIN run through the federal NHTSA vehicle database, free and requiring no new data collection — only **1,208 trailers appeared on both lists**. The combined unique inventory is at most 3,050. The gap between what the system of record knows and what physically exists is the central finding of this study.

Five Findings

NUMBER	FINDING	EVIDENCE
600–800	Trailers unknown to the system of record — roughly 20–25% of the physical fleet.	237 RIM trailers carry valid VINs that do not exist in Element — hard evidence. Up to 571 more were entered in RIM with no VIN recorded; after duplicate review, most appear genuinely absent from Element.
1,034	Element trailers never physically verified — 46% of the system of record.	In Element, but no matching RIM record. Condition, location, and existence unconfirmed by human eyes.
13	Trailers reported missing or stolen still carry ACTIVE status.	Field staff wrote "missing" or "stolen" in RIM notes; the official Element status was never updated. The two fields do not sync.
131	License plates expired or expiring — 39 already expired, 92 within 90 days.	Element registration data. (A further 802 trailers hold permanent plates that never expire — excluded from these counts.)
207	Possible double-counts under adjudication. True fleet size: ~2,843–3,050.	VIN-less RIM records within 0.1 mile of an Element-only trailer. An evidence-based review process is running; 5 pairs are already confirmed by VIN-fragment or plate matches found in RIM notes.

Why the Headline Number Kept Growing

Over the study, the count rose from ~1,600 to 3,050. **The fleet never grew — visibility did.** Element said ~2,242 the entire time (2,229 in March, 2,242 in June). Each jump was another layer of the fleet becoming visible:

1,597 MARCH — RIM ENTRY UNDERWAY	2,099 JUNE — RIM ENTRY CURRENT	2,479 JOINED TO ELEMENT BY VIN	3,050 + RIM TRAILERS WITH NO VIN RECORDED (UPPER BOUND)
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Method — Built to Be Challenged

Three sources, one join key. **Element** (administrative record: VIN, plate, registration, driver, status), the **RIM system** (chapter-entered physical record: condition, measurements, GPS location; June 5 extract), and the **federal NHTSA VIN database** (manufacturer, model year, axle count, length — free, public, no authentication). Records were matched by VIN; RIM records without VINs were retained separately and flagged, never silently merged or dropped. Red Cross chapter, region, and division were assigned to every record via ZIP and point-in-polygon geography. The unified master table holds 3,050 records across 81 columns; nothing in this paper required new data collection — only the willingness to join data that already existed.

Verify Any Number Yourself

CLAIM	WHERE TO CHECK
The 3,050 total and how it decomposes (1,034 + 1,208 + 237 + 571)	trailer-ops.jbf.com → "Data Notes" → Venn diagram
237 RIM trailers with VINs absent from Element	trailer-ops.jbf.com → query "Survey Only" → export CSV
13 missing/stolen still ACTIVE; 39 expired plates	trailer-ops.jbf.com → queries "Missing / Stolen", "Expired Plates"
The 207 candidate duplicates, with evidence, pair by pair	trailer-ops.jbf.com → Data Notes → Match Review workbook
Every record, every column, with data-lineage highlighting	trailer-ops.jbf.com → "Download Excel" (3,050 rows × 87 cols)
Fleet distribution, variance, and scenario modeling by chapter	trailer-study.jbf.com → Map & Analysis (Red Cross sign-in)

What This Does Not Say

This is not a finding of negligence. Element and RIM measure different things — an administrative ledger and a physical census — and neither was ever wrong about what it measured. The gap between them was invisible precisely because the two systems were never joined. It is also not a final count: 207 records await human adjudication, and the honest answer today is a range, **2,843–3,050**, not a single number.

How to Frame It

"None of this required new software, new data collection, or new budget. The VIN — a field both systems already hold — is a direct key into a free federal database and into each other. One join revealed several hundred trailers our system of record doesn't know we own, and a thousand more it has never physically confirmed. The question is not how this happened; it is which of our other asset systems would show the same gap if joined."

Recommendations

- **Make VIN capture mandatory** for every RIM entry — the 571 no-VIN records are the single largest source of uncertainty in this study. (1,528 VINs are now captured in RIM — progress is already underway.)
- **Make NHTSA VIN decode a standard enrichment step** for every Element export. It is free and runs in under two minutes for the full fleet.
- **Reconcile the 237 unregistered trailers** — physical assets operating with no administrative record, insurance, or accountability trail.
- **Create a status-sync trigger:** a "missing" or "stolen" note in any field system should force an Element status review.
- **Complete the 207-pair adjudication** using the evidence-based review workbook already in place — each ruling records the reason, the decider, and the date.

The Live Applications

TOOL	WHAT IT IS
trailer-study.jbf.com	The full study. Six tabs: interactive map with Red Cross chapter/region/division/county boundaries, the scenario planner (model fleet reductions with per-chapter overrides and downloadable reports), Fleet Operations, charts, data quality documentation, and the fleet intelligence narrative. Map & Analysis tab requires a Red Cross ArcGIS sign-in; all other tabs are open.
trailer-ops.jbf.com	The operational view. One-click queries (expired plates, missing/stolen, possible duplicates, RIM-only assets), geography drill-down to any of 241 chapters, per-trailer detail cards, CSV export of any filtered result, and the "Data Notes" explainer with the Venn diagram behind every number in this paper. No sign-in required.

The Master Excel Workbook

The single source of truth behind both applications and this paper, downloadable by anyone:

trailer-ops.jbf.com/trailer-master-jun2026.xlsx

All Trailers sheet — 3,050 rows × 87 columns, one row per unique trailer. Column headers are color-banded by origin so every value's lineage is visible at a glance: blue = Element fleet system, green = RIM, purple = NHTSA VIN decode, amber = Red Cross geography assignment. **Yellow-highlighted cells** are values recovered from free-text RIM notes (license plates, unit numbers, phone numbers, capacities) and moved into their proper columns. **Red-flagged cells** mark records where the notes contain a VIN that conflicts with the recorded VIN — 46 candidate corrections for review.

Notes Review sheet — the 358 rows where anything was extracted from notes, isolated for fast human audit. **Legend sheet** — explains every color and flag.

For administrators: the duplicate-adjudication workbook (trailer-ops.jbf.com/match_review.xlsx) holds the 207 candidate pairs with side-by-side evidence and dropdown decision columns. Returned rulings are applied to the master with a permanent audit trail.

Footnotes

1	Permanent plates. 802 trailers show a plate expiration of 2049-12-31. This is Element's internal placeholder for permanent registrations (many states issue never-expiring trailer plates) — not a real date. These trailers are excluded from all expiration alerts.
2	Three undecodable VINs. Three records carry 16-character VINs — one short of the 17-character federal standard. Transcription errors at data entry; the missing character cannot be recovered, so NHTSA fields stay blank for these records.
3	Geocoding corrections. Four records were initially placed in the wrong state because the geocoder matched a city name over the state (e.g., Schofield WV placed in Schofield WI). All were detected by a state-boundary audit and corrected to ZIP-centroid coordinates, marked <code>zip_centroid_corrected</code> in the data.
4	Default map view. The study map hides SOLD and wrecked trailers by default, so the on-screen count is slightly below 3,050 until those filters are switched on.
5	RIM duplicates. 34 VINs appear more than once in the raw RIM data (re-entries); each was collapsed to a single record before joining.
6	Map locations are addresses of record, not live positions. A trailer assigned to a chapter office may be deployed elsewhere during disaster operations.
7	Point-in-time snapshot. All figures reflect the June 2026 extracts. Acquisitions, disposals, and renewals after the extract date appear only after the next data refresh.