RTA THE FLEET SUCCESS COMPANY

Maximizing Warranty Recovery

A Guide to Getting the Highest Return

An RTA White Paper

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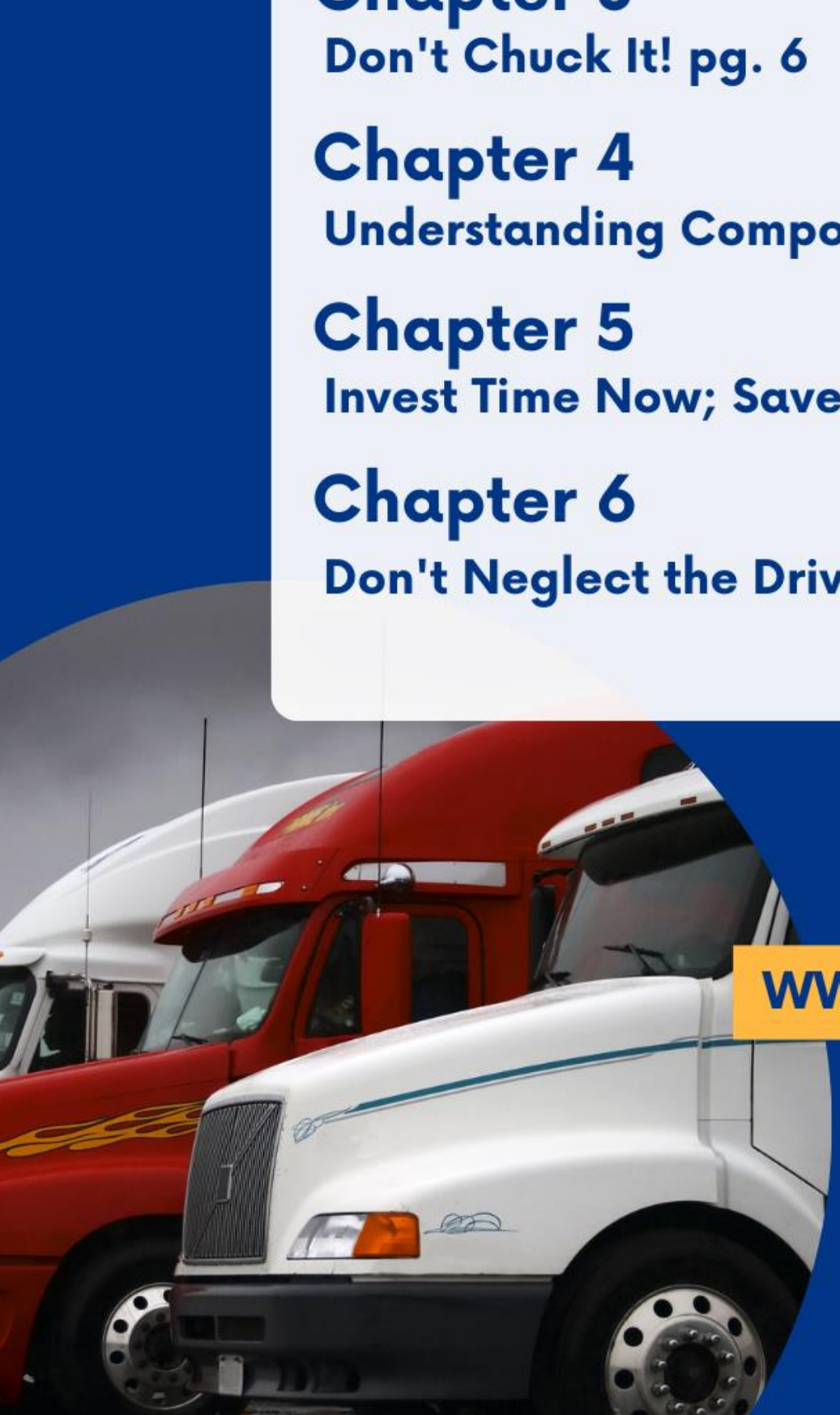

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Introduction

This white paper is a collection of insights, best practices, tips, and tricks that Ron Turley, founder of RTA: The Fleet Success Company, gathered by consulting with thousands of fleet supervisors, managers, mechanics, and drivers over several decades.

These insights represent methods for making fleets more productive by controlling and maintaining fleet resources.

Select Average Warranty Repair Costs Paid by OEMs 2018-21

	2021	2020	2019	2018
Chevrolet				
Blazer	$267	$151	$212	$0
Bolt		$122	$120	$143
Camaro	$457	$301	$280	$224
Colorado	$141	$155	$168	$170
Corvette	$403	$968	$355	$350
Cruze	$0	$0	$101	$149
Equinox	$90	$117	$109	$110
Express	$156	$143	$129	$111
Impala	$0	$177	$115	$147
Malibu	$143	$173	$157	$152
Silverado 1500	$378	$253	$311	$135
Silverado 2500HD	$0	$397	$234	$200
Silverado 3500HD	$0	$455	$310	$243
Silverado 5500HD	$0	$461	$895	$0
Silverado 6500HD	$0	$429	$951	$0
Sonic	$0	$86	$87	$91
Spark	$79	$76	$76	$78
Suburban	$722	$225	$162	$166
Tahoe	$668	$144	$154	$150
Trailblazer	$234	$0	$0	$0
Traverse	$167	$156	$160	$164
Trax	$64	$101	$204	$113
Volt	$0	$0	$200	$157
Chrysler				
300	$0	$102	$121	$116
Pacifica	$0	$177	$175	$221
Dodge				
Challenger	$274	$174	$174	$157
Charger	$229	$230	$173	$173
Durango	$253	$181	$147	$164
Grand Caravan	$0	$131	$178	$144
Journey	$0	$137	$119	$139
GMC				
Acadia	$265	$218	$155	$132
Canyon	$153	$146	$158	$179
Savana	$0	$255	$197	$149
Sierra 1500	$583	$299	$381	$158
Sierra 2500HD	$474	$471	$298	$272
Sierra 3500HD	$507	$537	$322	$269
Terrain	$153	$158	$157	$202
Yukon	$716	$193	$198	$188
Yukon XL	$719	$251	$182	$191
Honda				
Accord	$123	$134	$126	$150
Civic	$141	$110	$112	$102
Clarity	$0	$167	$145	$205
CR-V	$91	$93	$150	$108
Fit	$0	$96	$97	$87
HR-V	$117	$111	$99	$109
Insight	$100	$164	$128	$0
Odyssey	$132	$457	$219	$258
Passport	$154	$239	$253	$0
Pilot	$177	$281	$190	$155
Ridgeline	$0	$165	$226	$168
Hyundai				
Accent	$79	$163	$104	$72
Elantra	$168	$207	$138	$95
Elantra GT	$0	$91	$104	$104
Ioniq	$0	$146	$210	$200
Kona	$212	$180	$127	$95
Palisade	$163	$176	$0	$0
Santa Fe	$109	$101	$142	$116
Santa Fe Sport	$0	$0	$0	$101
Santa Fe XL	$0	$0	$131	
Sonata	$160	$178	$111	$122
Tucson	$130	$113	$93	$86
Veloster	$238	$236	$273	$0
Venue	$155	$158	$0	$0

	2021	2020	2019	2018
Ford				
Bronco Sport	$246	$0	$0	$0
C-Max	$0	$0	$0	$101
E-350	$0	$0	$184	$154
E-450	$0	$0	$274	$274
Ecosport	$0	$109	$127	$144
Edge	$0	$156	$161	$135
Escape	$0	$262	$175	$170
Expedition	$0	$258	$182	$275
Expedition Max	$0	$256	$210	$306
Explorer	$211	$412	$184	$140
F-150	$234	$211	$191	$205
F-250	$296	$298	$277	$236
F-350	$433	$403	$341	$315
F-450	$0	$381	$368	$300
F-550	$0	$439	$332	$315
F-650	$0	$0	$330	$552
F-750	$0	$0	$405	$583
Fiesta	$0	$0	$83	$79
Flex	$0	$0	$168	$143
Ram				
1500	$202	$170	$194	$161
2500	$0	$467	$400	$294
3500	$0	$762	$529	$354
4500	$0	$725	$308	$291
5500	$0	$658	$617	$331
ProMaster 1500	$141	$187	$160	$196
ProMaster 2500	$120	$166	$233	$257
ProMaster 3500	$212	$481	$344	$272
ProMaster City	$0	$127	$116	$134
Toyota				
4-Runner	$141	$134	$133	$131
86	$0	$163	$158	$154
Avalon	$142	$158	$208	$109
Camry	$169	$175	$166	$176
C-HR	$146	$112	$117	$166
Corolla	$151	$137	$164	$109
Corolla iM	$0	$0	$0	$111
GR Supra	$362	$0	$0	$0
Highlander	$169	$181	$176	$156
Land Cruiser	$210	$154	$188	$231
Mirai	$0	$0	$385	$244
Prius	$134	$107	$131	$184
Prius C	$0	$0	$119	$115
Prius Prime	$111	$109	$108	$138
RAV4	$128	$148	$145	$116
RAV4 Prime	$157	$0	$0	$0
Sequoia	$209	$183	$202	$285
Sienna	$182	$129	$160	$178
Tacoma	$146	$139	$165	$227
Tundra	$222	$208	$245	$325
Yaris	$0	$141	$143	$132

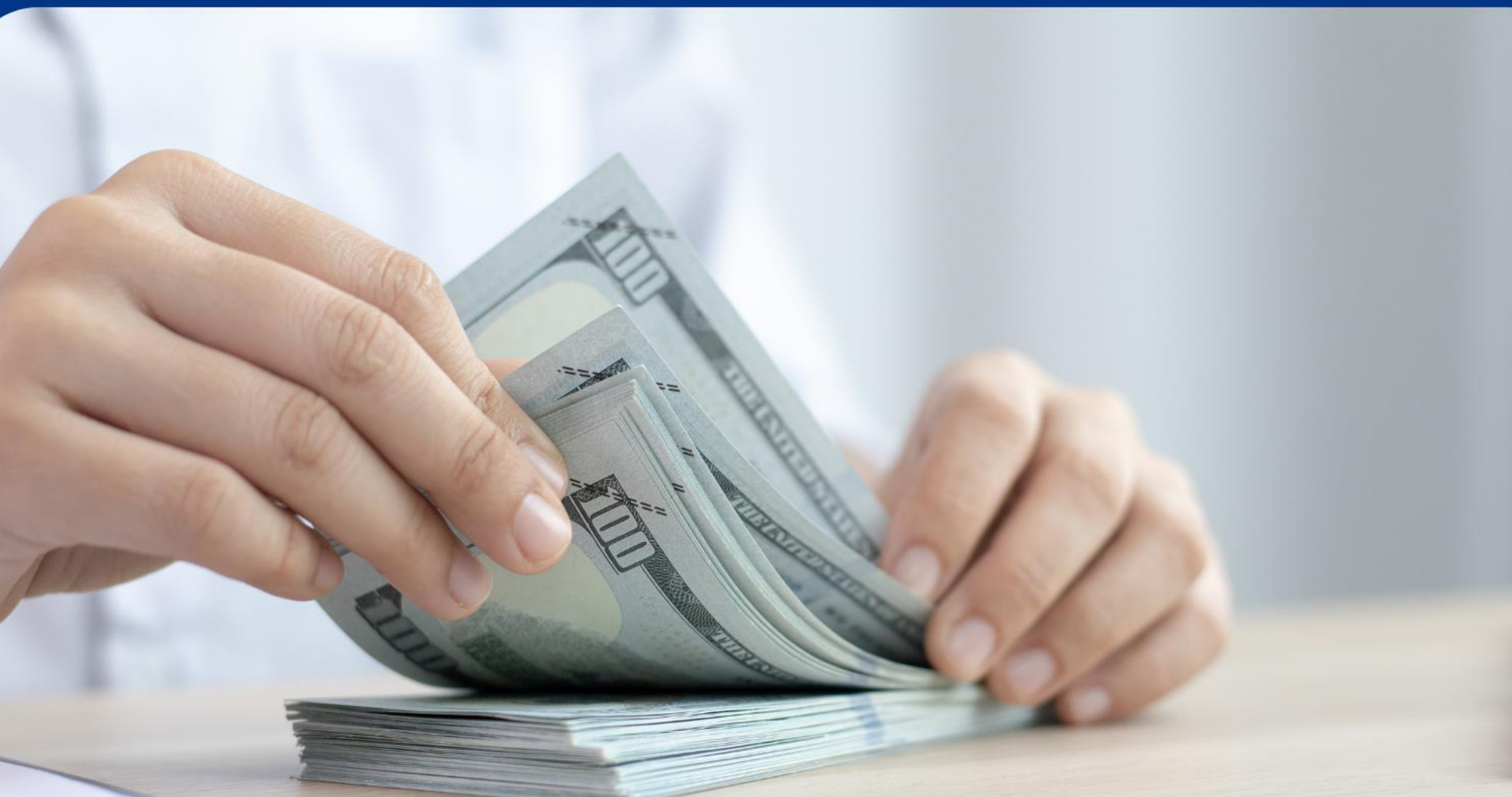
OEM Warranty Dollars Available

Average warranty dollars available may average as much as a $500 or more per repair cost per vehicle.

The fleet manager's fiduciary duty to their organization is to reap the benefits of these available dollars to offset rising fleet expenses.

Chapter 1

Recovering Lost Revenue



Warranty recovery is one of the quickest ways to improve your operational bottom line. Tracking warranties for OEM (such as bumper-to-bumper), extended (such as powertrain), electrical componentry, and component/after-market (parts) can save thousands of dollars from the garbage bin.

Case Study: Warranty Recovery in Medium Fleets

Warranty generally yields $500-$700 per vehicle during the first 7–8 years of life. OEMs build warranty dollars valued around 5-10 percent of acquisition price into their budgets awaiting potential claims.

A fleet of 3,000 vehicles in Canada of medium and mostly heavy vehicles was obtaining nearly $1.26 million in warranty yearly. A similarly sized operation out of Philadelphia with more medium-sized vehicles was getting back $900,000. These vehicles were 1–7 years old, and these fleets likely did not even get all of the warranty due to them.

Fleets of 200 vehicles get nearly nothing in warranty recovery. They should be getting $60,000 to $84,000 annually according to these figures.

The Biggest Obstacle to Recovering Warranty

The largest problem to overcome is the time required to accomplish this task. As a rule of thumb, Ron's study found that 5 minutes of paperwork generally yields $110 of warranty, so $60,000 would be about 45 hours of paperwork.

That 45 hours of paperwork would cost us about $2,800. The return on our $2,800 investment would be over 20:1, which makes it one of the more profitable operations in a shop. Training is the only supervisory activity that would produce a higher result.

Corporate, utilities, cities, states, and counties should put this in their bids. They should state in the bids that in-house warranty will be granted, and that the labor rate will be 2.5 times the hourly rate paid to the class "A" technicians to cover overheads. Private fleets will simply set up the same warranty as they purchase new vehicles, warning that they may not purchase this equipment from the source unless this warranty is granted.

Five minutes of paperwork generally yields $110 of warranty.

Chapter 2

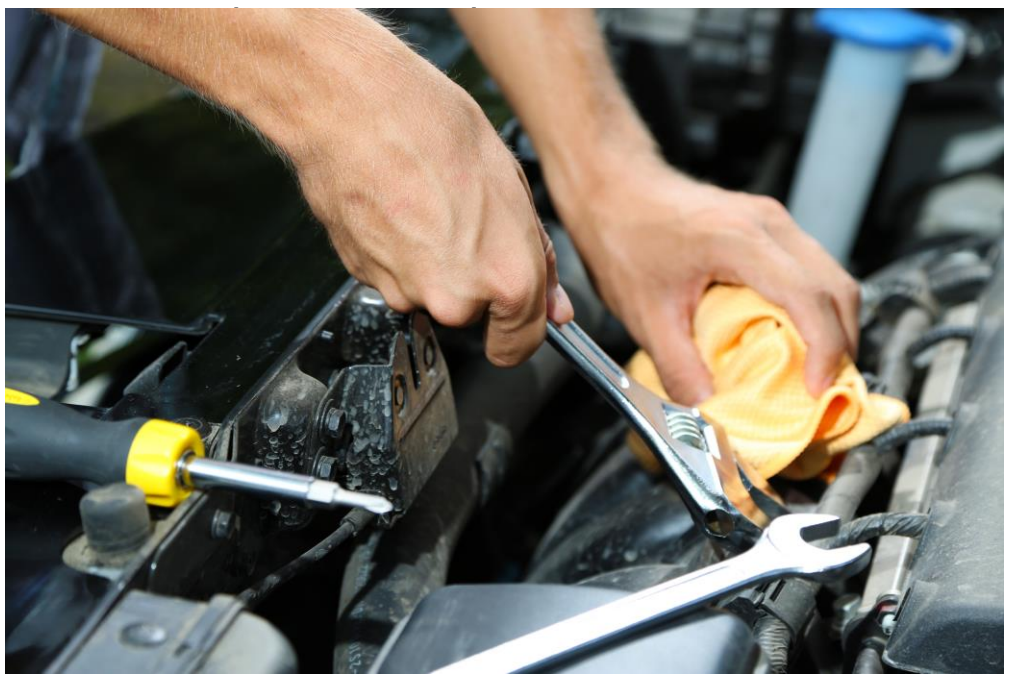
The Missing Link in Warranty Recovery

The largest missing warranty in most fleets is on small parts.

Almost everyone gets the warranty on engines, transmission and rear ends. Literally tens of thousands of dollars are wasted due to the lack of attention to recover small parts warranties. Small components and parts warranties range between 90 to 360 days, should they fail prematurely.

Maximizing Small Parts Warranties

In a paperless environment, the parts tracking system must notify the mechanic on the floor that a specific part is under warranty. Parts tracking software tracks each specific component by an assigned job code. When that specific code is brought up again, the system looks at the last time this code was used on the vehicle and the odometer when that



Technicians are key to maximizing warranty.

The technicians should tag the part with the vehicle number and the odometer and the date of the replacement. The software system should then generate a list of all warranty items replaced that day, and then a parts person or clerk must fill out the form necessary and submit it.

The service manager can help if there is no automated tracking system and the warranty is unclear. Review files for any components over $50 that were placed on the vehicle, then have the technician to tag and save them.

Often, policy adjustment is available if a manufacturer is having problems with a component. The warranty time may be extended because of the failure rate of this particular part.

Go for warranty at 120-130% of warranty miles. You will often get it.

Chapter 3

Don't Chuck It!

Keep Those Failed Components

Many manufacturers require an inspection of the components to redeem your warranty. Try throwing failed components in a box or bin, or on a shelf for 45–60 days before disposal.

Other manufacturers may require proof of purchase of replacement parts of their brand. If you are not using OEM on replacement parts, then you must purchase a replacement part of the same brand as the required replacement. Of course, the vehicle has already been fixed from stock, so the free part purchased will be placed on the next vehicle.

Often, the manufacturer only wants the failed component, not the paperwork. Once you have accumulated 4 or 5 failed components, give them back to the salesperson and the salesperson will bring you back free replacements in the future.

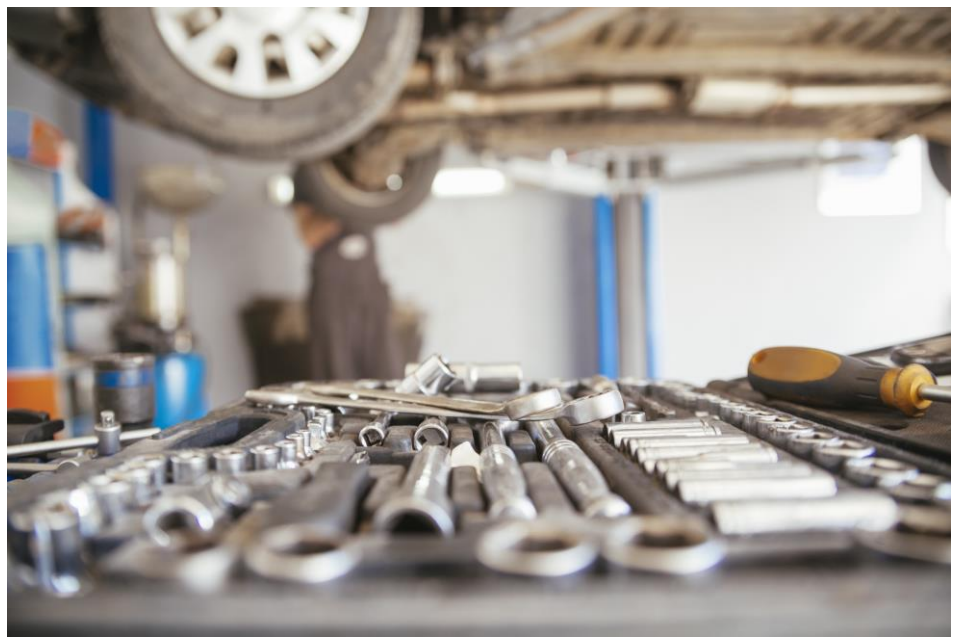
If you are having a particular failure, you can contact the manufacturer. In most cases, they would rather deal directly with you so they don't have to pay the dealership prices for their part.

Chapter 4

Understanding Component Failure

Failure Analysis

The ultimate goal of any shop operation is to keep vehicles on the road in safe condition at something approaching a reasonable cost. The best way to reach that goal is to reduce failures, especially recurring failures. ***Finding the cause of a failure is the first and most critical step in preventing recurrence of the problem.***



The only way to find the cause of failures is to perform systematic analysis of failed parts.

Few activities are as important to the fleet as failure analysis. Failure analysis is the first thing to consider when you are looking for ways to cut downtime-related expenses, and it can shed light on weaknesses in other areas of an operation.

Failure analysis influences:

Preventative Maintenance: Waiting too long between PM inspections can allow component wear to go undetected until a failure occurs. By revealing the cause of a failure, whether it's a lack of lubrication or overestimating the life expectancy of a part, analysis of failed parts can eventually help establish the most economical intervals for PM inspections.

Vehicle Specifications: Analysis sometimes shows that a failed part was simply not strong enough to withstand typical loads. This should tell the manager to spec a stronger component next time. The extra cost would be more than offset by the elimination of a few breakdowns.

Driver Training: Failure analysis coupled with vehicle history records can pinpoint driver training needs. When the cost of driver-caused failures is calculated, a fleet will likely find that driver training will pay for itself in a short time.

Technician Training: Similarly, because many failures are attributable to technician errors or lack of attention, the benefits of technician training can be evaluated through proper failure analysis.

It's important to understand that every purchased part replaces one that failed. The trash can is a great learning experience for what goes on in the shop floor, as well as the core bin. Thousands of parts are replaced each year that are questionable.

The responsibility of the garage manager is to ascertain what happened to facilitate these failures, and to take corrective action to make sure the failures do not occur again. During scheduling, walk the floor every 45 minutes or less. Examine the parts being taken off and evaluate why, if there is any question as to why.

Case Study: Component Failure

In an operation in Landover, there were 9 starters put on a vehicle in 13 months. At first, it was thought that a re-builder could be at fault, but later it was determined that the vehicle had an improper ground. The engine was replaced 15 months earlier, which started the process.

Consider the cost:

9 starters
+ 13 hours of labor
+ 3 sets of batteries
+ 2 alternators
= nearly $4,200 wasted

That same shop had also been replacing a lot of transmissions. The problem started getting worse after a change to synthetic oil being placed in the transmissions. It was discovered that the garage manager had told the general technicians to flush and change the oil but did not inform them that this was the new product to use. The oil in the units looked like dark grey JELL-O containing a slight amount of water, which was not really water, but the mixture of two incompatible fluids.

The lack of communication resulted in the loss of several transmissions:
7 failed transmissions
at $5,300 each
= $37,000 wasted

The same shop was using Cummins filters on water systems but was not testing to see if the balance of nitrates was correct. Engines were failing in less than half of their anticipated life due to liner cavitation. Total waste was over $420,000 per year in parts and labor.

Case Study: UPS

UPS did a study of light bulb failures. Each vehicle was getting 12 light bulb replacements per year on smaller units and about 18 on larger units. These were costing about $140 in parts and labor per vehicle per year, or about $6.6 million total. After switching to a different brand of sealed, shock-mounted lights, the average replacement per vehicle fell to less than 1.5 light failures per vehicle per year, at a cost of $30 per vehicle per year, or $1.7 million per year.

A manufacturer of electronic flashers tested flashers taken off and returned for warranty; 95% of the turn signal flashers worked.

Fuel consumption of all drivers was reduced by 15% by a driver training program.

A representative picked up 100 batteries returned for warranty from various fleets in the area. He charged the batteries at a trickle for 24 or 48 hours. Then he charged them at a higher rate according to the manufacturer's requirements. 94 of the batteries accepted a charge and could have been returned to service.

Causes of failure analysis include:

- **Operator misuse/abuse**
- **Normal wear and tear**
- **Mechanic misdiagnosis**
- **Incorrect specifications**
- **Poor parts rebuilding**

Conditions of failure include:

- **Incorrect lubrication**
- **Lack of lubrication**
- **Dirt**
- **Corrosion**
- **Improper alignment**
- **Looseness**

Driver training also paid dividends when it came to increasing the time between wear-out of components. In one instance, the fuel consumption of all drivers was reduced by 15% by a driver training program.

This driver training program was instituted by having a series of four or five short meetings with the drivers and encouraging them to drive with fuel economy in mind. The dollars saved were equal to saving 45% of their maintenance labor expense. The time spent was minimal.

Chapter 5

Invest Time Now; Save More Time Later

Look For Causes, Not Effects

Unfortunately, finding the cause of a failure is not always an easy matter. A failure could result from a combination of abnormal conditions, each of which contributes to the trouble but is not the sole cause.

On the other hand, one out of several possible abnormal conditions might be a sufficient cause to bring on a particular failure. It's the job of the analyst to check each point to detect the abnormality.

The key elements in successful failure analysis are adequate technical knowledge and the systematic procedure through which the analyst applies the knowledge.

The more competent a technician is at analyzing failures on his own, the less time he must spend away from his many other duties.

Remember, a problem—such as crankshaft damage—can be classified in many ways. The damage could have resulted from metal fatigue, from impact of shock loading, from abrasion, or even from corrosion. Each type of damage has a different appearance and each has a different cause. A good analyst knows the difference.

In order to detect abnormal wear in a component, the technician must first know what "normal" wear looks like. Detecting normal wear patterns or rates of wear is an important part of failure analysis, and this should also be highlighted during training.

Chapter 6

Don't Neglect the Driving Environment

Sometimes, the cause is not in the vehicle, but with the driver or the operating environment. Don't assume that the equipment itself is at fault every time a failure occurs. Driver abuse, overloads and rough operating conditions are only a few of the outside influences that can cause component failure.

The Importance of Analyzing Repair History

Repair and service histories are crucial in pinpointing the cause of a failure. Service records will help the mechanic or manager establish whether a specific problem is chronic or isolated.

Three universal joint (U-joint) failures on one vehicle in a month would definitely suggest that thorough inspection and troubleshooting of the drive-line are needed. However, such repair service could go unnoticed without the aid of good vehicle histories. These records should be kept in the vehicle or in an easily accessible location, so they can be consulted when a problem is reported.

Handle Failed Parts Carefully

Another aspect of an effective failure analysis system concerns the treatment and handling of failed parts. Worn or damaged parts should be protected to prevent rusting or deterioration, especially if the parts will require more extensive future evaluation. A damaged crankshaft might show signs of bearing seizure due to oil starvation, but the diagnosis would be made difficult if the components were allowed to rust before analysis.

Similarly, when a technician is changing out many similar parts, such as plugs or connecting rod bearings, and plans to do an analysis, he or she should be careful to record the exact original location of each part because that location will be significant in finding the reason for failure.

For example, if bearing wear is limited to one or two bearings during an engine overhaul, localized problems would be indicated. However, if all bearings show abnormal wear, the problem may be more general. Above all, every part must be saved and analyzed in order to constitute a valid investigation, not just one or two "sample" parts.

Driver Abuse

Any fleet that has kept the same driver on the same vehicle for any length of time will notice operational differences in the equipment that change the cost dramatically. Broken springs, broken drive lines and broken axles are the most evident ones, but tires, brakes and other components can simply wear out early. This can be a major problem.

Driver misuse/abuse is one of the leading causes of all component failures.

Overloading

Overloading is the cause of many kinds of cord body breaks and is the most costly of all truck tire abuses. Such breaks are due to abnormal flexing or overworking of the cord body of the tire. Overload flex breaks occur in the sidewall or in the shoulder of a tire and run around the circumference of the tire. They can extend partly around the tire, resulting in either a large blowout or a pinched tube.

Tire Flexing

Normal flexing of a tire can continue indefinitely without causing any damage to the cords, but if the tire is overworked or over-flexed from overload, abnormal heat is generated and the cords break. Under-inflation will cause the same result. This tremendous waste can be avoided if vehicles are equipped with tires and rims of the proper size and type. The rated carrying capacity of a tire cannot be increased.

Over-Inflated Tires

Over-inflation produces costly results. Don't waste your tire money by putting too much air in your tires. Here are some suggestions to avoid over-inflation and get better tire service:

- Inflate to correct pressure when tires are cool.
- If tires are continually carrying less than the recommended maximum load, adjust air pressure downward to correspond to the actual load carried.

- Never "bleed" tires to relieve build-up of pressure. Tire design recognizes that the tire temperature will increase when the tire is in service and allows for the normal build-up in air pressure. Tire temperatures and air pressure will remain within limits that are not harmful to the tire when used according to the industry recommendations for load and air pressure.
- If excessive build-up of air pressure occurs, either load or speed or a combination is responsible, and either load or speed or both must be reduced to obtain normal service.

Under-Inflated Tires

Under-inflation is a primary cause of tire failure. If tire pressure is too low, too much of the tire's surface area touches the street, which causes excessive friction. Increased friction can cause the tires to overheat, which can lead to premature wear, tread separation, and blowouts. Tires are frequently ruined by running them almost flat for a considerable distance. A tire may be run unknowingly with air pressure so low that an excessive amount of heat is generated and the cords on the inside of the tire, on one or both sides, become damaged. This generally happens without the knowledge of the driver when the tire goes entirely flat.

It is the air in the tire that carries the load. With the proper amount of air, the cord body is able to do its job of flexing without injury. Tire temperatures may soar to well over 300°F on any vehicle driven at sustained high speeds, particularly if overloading or under-inflation is present. Tires are vulcanized or cured at the factory at a controlled temperature of approximately 260°F.

When the operating temperature of a tire continuously approaches or exceeds the vulcanizing or curing temperature, it is destructive to the component parts of the tire.

Tire temperatures may soar to well over 300°F on any vehicle driven at sustained high speeds, particularly if overloading or under-inflation is present. Tires are vulcanized or cured at the factory at a controlled temperature of approximately 260°F.

Under-inflation will mean most tire cord fabrics lose strength at high temperatures. Weakened cords plus higher inflation pressures (due to expansion of air in the tube) render the tire highly susceptible to fabric breaks because the cord body is under tension. An impact is usually "the straw that broke the camel's back" in causing the failure, but tires also fail from heat without an impact.

Driving while the tires become overheated can cause permanent damage to the cord fabric.

The original strength does not fully return when the tire is cooled. The second trip or the third trip will further weaken the cord fabric and eventually the heat blowout occurs.

Heat blowouts are usually due to repeated overheating. Tires undergo extremely severe operating conditions, reach such high temperatures that the cords are scorched and thus lose practically all strength. Scorched cords are weaker cords.

Even with the best possible maintenance of vehicle tires and the equipment on which they are used, the service they deliver is largely in the hands of the driver. Careless driving habits can result in serious tire damage. Proper driving can do a lot to save rubber.

Failure analysis takes time, effort and some skill; it requires careful study of manufacturer-supplied material and comparison with your own situation. In the end, there is no guarantee that you will find the actual cause of the failure without a formal system of failure analysis.

Conclusion

Filing paperwork for warranty claims might seem like a hassle and something that you do not have time for at your fleet operation, but it can be one of the most important tasks you do. Filing claims for both large and small parts can put money back into your fleet operation's budget.

Take it from one of RTA's clients.

"Being able to flag parts under a warranty program, that's saved us several thousand dollars this year alone," said Neil Parsons from Granger Waste Services.

To learn more about RTA's software and how our fleet management solution can help you organize your warranty program, contact our Sales team at Sales@RTAFleet.com.