

The AAA is fighting for you!



Fleet 101 3 Point Cycle of Care

Fleet Maintenance Management

Do you know what it can do for you?

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emsfleettoolcart



@EMS_Fleet



Who am I?

Fleet Manager Richmond Ambulance Authority

- 20 years EMS Fleet Experience
- **15 Years EMS Fleet Management**

ASE Certified Master Technician









Why are you here today?

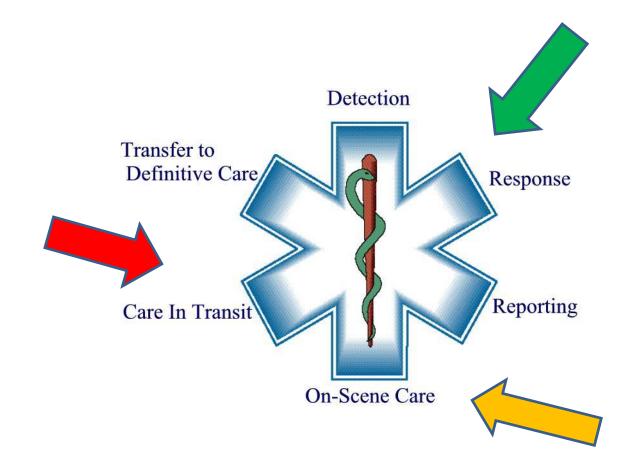




Not to learn how to make them fast, see me after, I have a guy for that.



What are the 3 points in the cycle of care?





Frequent Training Topics

- Clinical standards
- ICD 10 reporting
- Equipment and medical supply use
- Situational awareness
- Customer service



Well, no. We didn't notice the low left front tire, oil leak, fried brake pads, overheated engine, or "low battery" light. But the arm chair rest is a little wiggly and the left side music stereo speaker is a little weaker than the right.



Fleet maintenance is not usually on the top of peoples' minds until a major failure occurs.

How much do you know about maintenance?

• What did you do before managing a fleet?

• Where do you look for information when you do not know the answer?

• Are you willing to listen, learn, and share information to better your fleet?



Where to find information for emergency vehicle maintenance? Fleet blogs

- Owner's manuals
- Body manufacturers
- Other emergency fleet professionals
- Consultants

Why is emergency vehicle maintenance different?

• One size does not fit all.

• Here are three different types to compare.









Emergency Vehicles











Vehicles at work or home







So why are emergency vehicles supposed to be tougher?



Stuck?



Type of vehicle for the need?

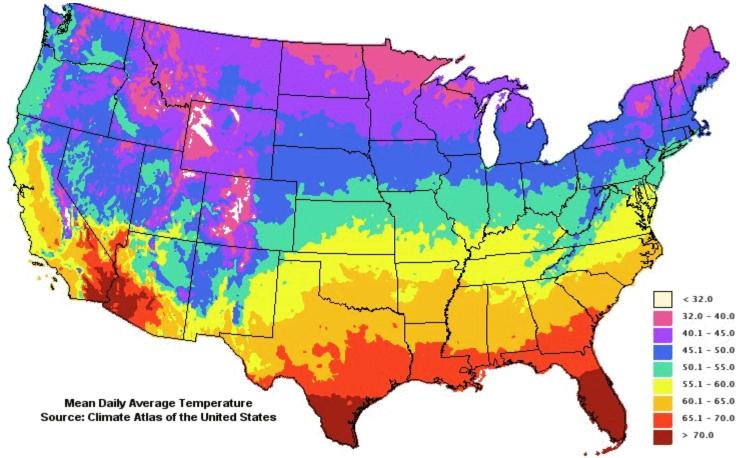




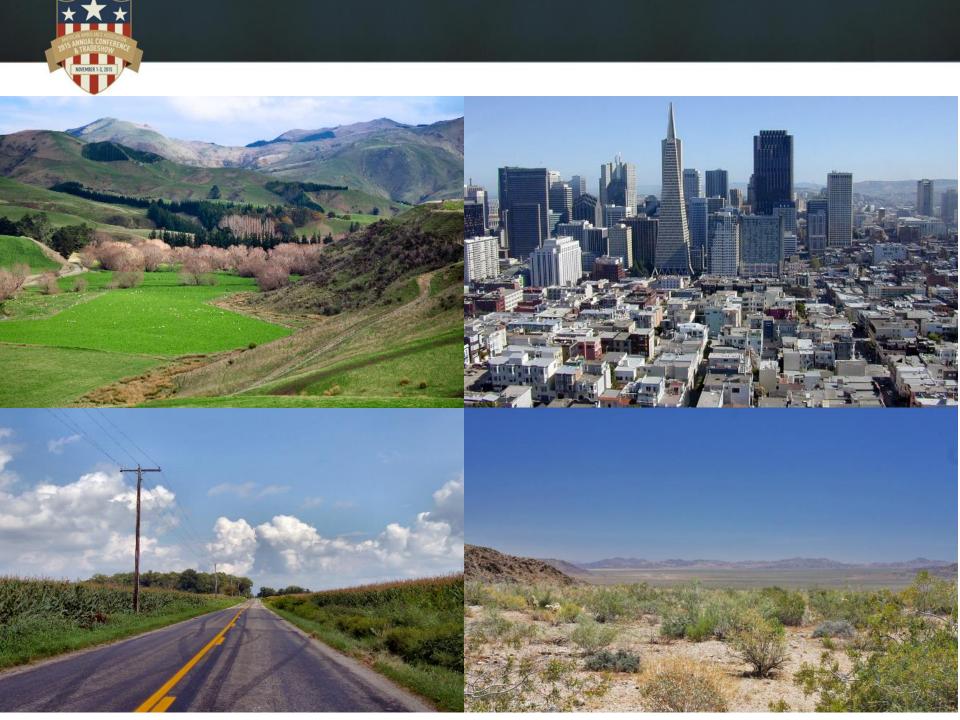
Table 1: Gas vs. Diesel Cost per gallon MPG Cost per mile Gasoline \$3.25 7.1 \$0.47 Diesel \$3.43 5.37 \$0.66

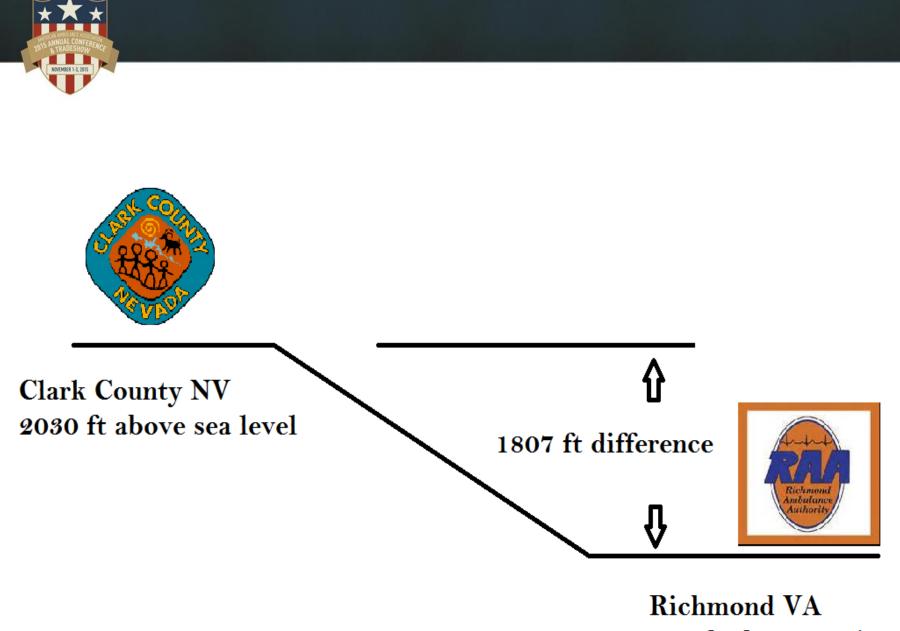


Geography of Maintenance



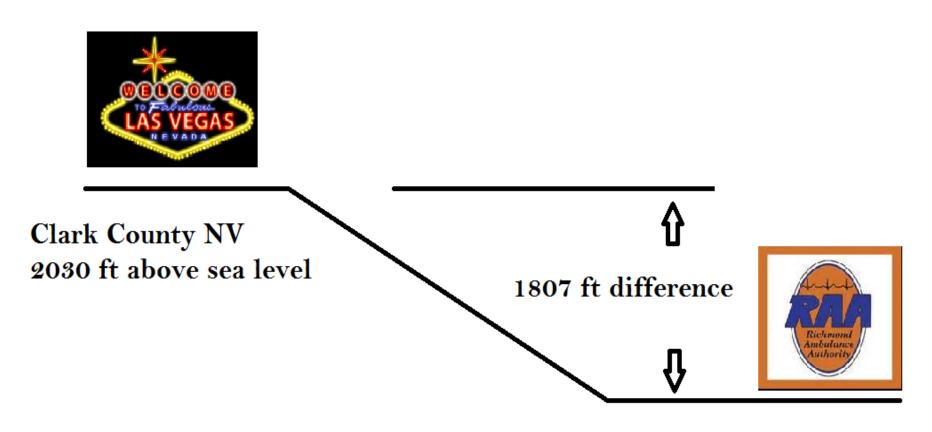
Climate makes a difference in vehicle selection, design and maintenance





223 ft above sea level





Richmond VA 223 ft above sea level













Which Manufacturer?

- Decision may be limited by budget or bid.
- "Off the shelf" vehicles.
- Creating a vehicle specification.



First: Design Factors







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GSA





U.S. General Services Administration

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Second: EMS Vehicle Safety

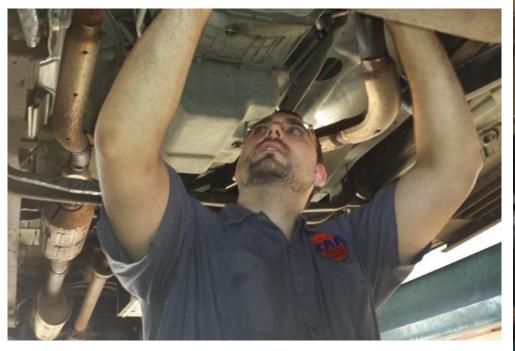
Crew Resource Management







Third: *Maintenance*





Without Maintenance





CHECK EVERY MONTH



Add oil if low, and check for leaks.

HOSES*

Replace if bulging, rotten or brittle.

BELTS*

Replace if worn, frayed or glazed.

TIRE PRESSURE

Add air if too low.



COOLANT OR ANTIFREEZE*

Add if low, and check for leaks.

AIR FILTER Replace if dirty.

INSPECT TIRES

For damage, bulges or uneven wear.

Time Marches On



Times and technology change



10W-30







Management data

- Parts used
- Mileages
- Labor time
- KPI (Key Performance Indicators)
- Repair failure type



Basic Data Management

Vehicle	Date	LUH	Miles	Brakes	Lights	Transmission	Heat	A/C	Suspension	Tires	Interior
45	8/1/15	1	45678	1		1					
356	8/1/15	0.5	76890	1			1	1			
67	8/3/15	1.5	35678				1	1			
32	8/4/15	3	145987	1				1			
6578	8/7/15	2	4565	1				1			
45	8/17/15	2	47658	1							

Technician Intuition

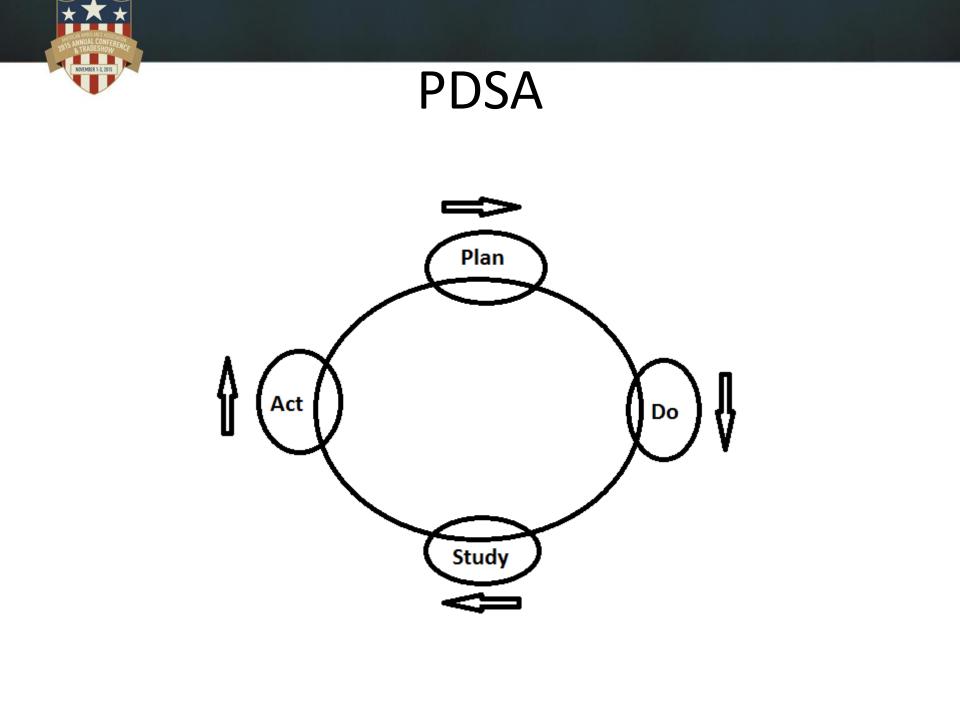




How do we do this?

• Root cause analysis.







Key Performance Indicators





Service Schedules

• Most vehicle manufactures have regular and severe duty service recommendations.





The weight of an ambulance body on a chassis is equivalent to towing an 18 to 25 foot trailer all day every day.



• A manufacturer will rarely take exception with providing more service then recommended for the use.

When, Where, and Why?

- Most have a P.M. (Preventative Maintenance) schedule
- Do you let them lapse because of higher repair volume or lack of available vehicles?



*

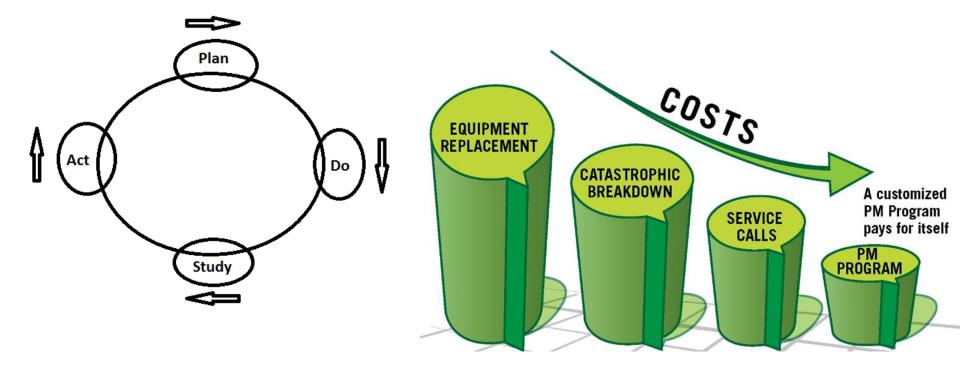
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Service	A		в	A	_	в	A		В	A		C
1000 k			18	24		36		48	54	62	66	7
Change engine oil and oil filter.	х	х	х	х	х	х	х	х	х	х	х	х
Check (clean) air filter, replace if required.	х	х	х	х	х	х	х	х	π	х	х	х
	х	х	х	х	х	х	х	х	ж	х	х	х
 Visually inspect tires (include spare tire): 								I .	I			L
 adjust tire pressure to specification 								I .	I			L
 record pressure of all tires 								I .	I			L
 record tread depth of all tires 								I .	I			L
 check jack, jack handle & wheel wrench (proper location & 												L
operation)												L
Visually check and lubricate all steering, suspension and driveline components.	x	х	х	π	x	х	х	х	π	х	х	,
-	<u> </u>	-			[—	-	
 lubricate components equipped with grease fitting 												
Check operation of all vehicle safety equipment, including:	х	х	х	ж	х	х	х	х	π	х	х	,
a minor unbine lightland												
mirrors vehicle lighting emergency lighting horn								I .	I .			L
 speedometer gauges 								I .	I .			L
 speciormeter gauges windshield wipers and washers seatbelts 								I .	I .			L
 windshield wipers and weathers searcoets 												L
Check exhaust (visual).	х	х	х	π	х	х	х	х	π	х	х	,
Check:	х	х	х	π	х	х	х	х	π	х	х	,
												L
 all belts 												L
 battery terminals (check battery fluid levels) 								I .	I			L
 coolant hoses 								I .	I .			L
 heater and AC controls 								I .	I .			L
 fluid levels, check for leaks (brake fluid, transmission fluid, 		I 1	I .			I		I .	I	I .	I 1	L
powersteering fluid)												
I che desse and based lester. Intelse and blades. Research ell madule blades des	-			-	-	-	-	-	-	-		ł.
Lube doors and hood locks, latches and hinges. (Inspect all module hinges for loose and/or missing rivets)	×	х	×	х	x	х	×	x	х	х	х	2
Clean Interior and exterior if requested (wash and vacuum).	Ŧ	х	х	х	х	х	х	х	π	х	х	,
Check coolant condition and level, pressure test cooling system (check	-	x	x	x	x	x	x	x	T	x	x	,
Supplement Coolant Additive (SCA)(concentration and adjust if necessary).	I^	<u>^</u>	Ľ.	<u>^</u>	Ľ.	r.	î.	L.	<u>^</u>	Ê.	<u>^</u>	Ľ
Complete Manitoba Highways and Transportation Commercial Truck Inspection.	⊢	-	x	-	-	х	⊢	+	π	⊢	-	t
(If expires within following 2 months) (Note - replace brake linings if worn 50% or			<u> </u>			^		I .	<u> </u>			L
greater.)												L
Check and service charging and starting system. (check battery fluid levels)	F		х			х	\vdash	\vdash	х	\vdash		,
												L
 clean battery cases and terminals, 			I 1					I .	I .	I .		L
 perform complete charging system and AVR check 			I 1					I .	I .	I .		L
 load test batteries (record readings) 			I 1					I .	I .	I .		L
 charging system output test (record readings) 			I 1					I .	I .	I .		L
 starter draw test (record readings) 												
Repack and adjust wheel bearings.	┢	\vdash	х	⊢	\vdash	х	⊢	\vdash	ж	⊢	\vdash	,
Replace fuel filter (service crankcase filter and PCV valve if applicable).	Γ		х			х		\square	π			,
Road test.			x			х			π			,
Automatic transmission tune-up (change fluid and filter, adjust linkage and bands												,
If required).												
Check and adjust front-end alignment specifications if required.												,
Replace rear differential fluid.	Γ											,
Flush cooling system and replace coolant, check blockheater operation (use OEM												,
							1					11
recommended coolant and additives).												L



Transition

- Gradual reduction in failures.
- Refine process to reduce repairs.





Fixing the Problem

- You must be as proactive with your P.M.'s as you are with payroll.
- If you miss one or hold off you are increasing failure potential.





I'm too far behind

Fresh Start

Next Service Set!





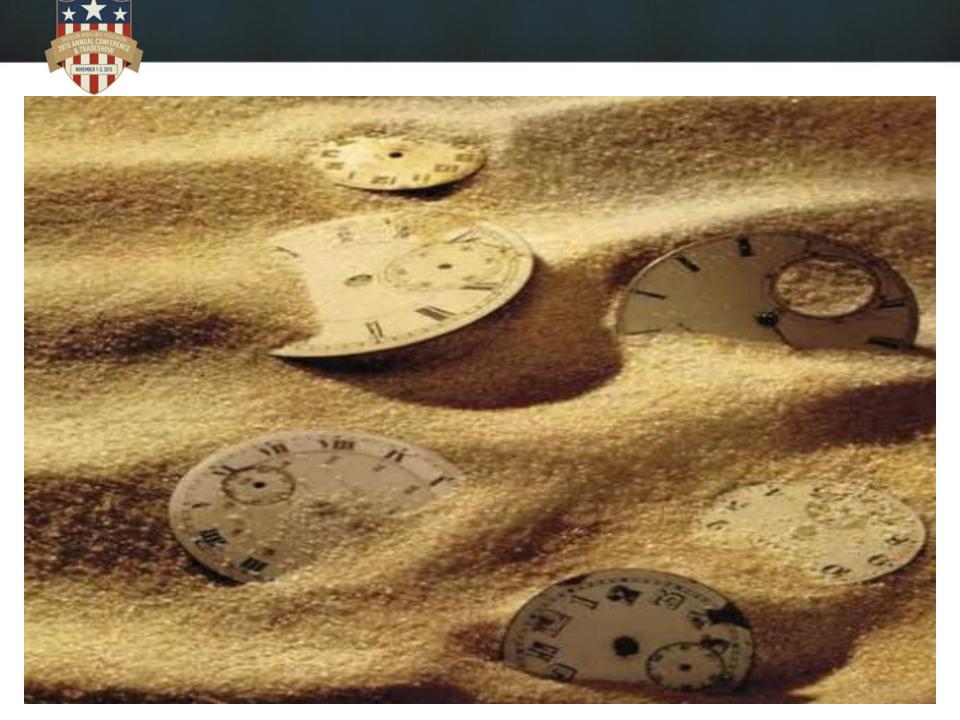


VENDORS











Guidelines for Great Fleet Management

- Work to never leave a crew stranded.
- Work to never leave a patient needing another transport.
- Safety of the vehicle, crew and patient is the top priority.
- Take every issue reported as a real issue regardless.
- Quality over quantity.
- Know your environment.



Illustrations and photos provided by:

- Steve Berry EMS Cartoons
- Ford Fleet.com
- Freightliner.com
- International.com
- Richmond Ambulance Authority

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