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SPECIAL REPORT

UPFITTING & FLEET MANAGEMENT

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CONTENTS

POLICE MAGAZINE SPECIAL REPORT: **UPFITTING & FLEET MANAGEMENT**

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Ad Index

UPFITTING: In-House or Outsource?

Whether a public agency upfits its new law enforcement vehicles in-house or sends them out depends on resources, regulations, and more. **Thi Dao**

Should a fleet upfit its new police cars in-house or send the job elsewhere? It depends on staffing, fleet size, and how the fleet operates, as well as external factors such as regulations and vendor availability.

PHOTO COURTESY OF FLORIDA HIGHWAY PATROL

The Florida Highway Patrol's central installation facility can prep and deliver about 12 new police cars a week.

OUTSOURCE UPFITTING

Sean Williams, fleet and procurement manager for Collier County Sheriff's Office in Florida, believes whether an agency keeps or sends out this work depends on the structure of the organization and the complexity of the vehicle. For the Sheriff's Office, outsourcing this work has proven to be the best solution.

"I don't have the staffing levels that allow me to manage it in-house. I do some updating in-house…but new upfitting for me is 100% outsourced just because of the time it takes to do it and the size of my staff," he explains.

Williams, who is president of the Florida Association of Governmental Fleet Administrators (FLAGFA), manages a fleet of 1,060 vehicles, about 450 of which are patrol cars. Up to 90% of vehicles purchased require some form of upfitting, and he has six technician positions at the maintenance facility. He purchased about 100 new vehicles in 2016, and the complexity of many of the upfits and his small staff size means it's more efficient to send the work out.

"How complex are my vehicles? What does a patrol or the agency's requirements call for that goes into the vehicle? Do they have video? Do they have radars, printers, gun locks, or gun boxes? If they have all that, sometimes it's so time-consuming that it's hard for a fleet management operation to do that internally," he says.

He instead set out to find the best vendor for the job, and about five years ago he began using a local vendor in the radio business that wanted to expand to upfitting. This outsourced work also allows in-house technicians to focus on aggressive preventive maintenance to keep vehicles on the road.

For Keith Marian, fleet manager at the City of Orange, CA, moving to outsourced police fleet upfitting eight years ago was a smart decision. Marian oversees a diverse fleet of 418 vehicles—48 of which are black-and-white patrol units and about 20 more police vehicles that require specialized equipment. He purchases between 12 and 15 patrol vehicles each year.

Previously, the fleet dedicated one technician who worked on building out police vehicles about 75% of the time. At the time, workload increased, and it was taking him longer to complete the job; the Police Department didn't want to wait. Rather than invest in additional resources to speed up the process, Marian decided to send it out to a local vendor with a detailed build specification.

Marian said it's a faster method, and the cost is about the same as having fleet staff do the work.

KEEP POLICE CAR UPFITTING IN HOUSE

The Florida Highway Patrol, in contrast, chooses to upfit its fleet of 2,345 vehicles in-house, even though it doesn't do its own maintenance and repairs. It has a central installation facility near Jacksonville that employs 12 technicians and three production support personnel. In 2016, the facility completed

PHOTO COURTESY OF CITY OF ORANGE

The City of Orange, CA communicates with its upfitting vendor about deliveries to make sure the company has all the parts available when new police cars arrive.

355 vehicle installations.

With a land area of nearly 54,000 miles, it's more efficient for the Florida Highway Patrol to leave maintenance and repair to the 13 troops around the state.

"Yet when you talk about upfitting, we found that with a centralized installation facility, we can be more efficient than other shops. Since we specialize in only performing emergency equipment installation, we can do it more efficiently than most other fleet shops [that] include maintenance and repair, "says John Kreiensieck, fleet and property operations manager, Florida Highway Patrol. "We can service the complete state's fleet, where it'd be difficult or impossible for a vendor to accomplish the same task while complying with state statute requirements."

The FHP has been doing its own upfitting for a long time, but it wasn't until about 15 years ago that it opened the central installation facility. Kreiensieck attributes the need for such a facility to the increased use of technology, beginning with the widespread use of laptop computers in patrol cars. As more technology was needed for law enforcement vehicles, it became too difficult for radio technicians at each troop to handle installs. They needed a place to store parts and equipment, leading to the centralized facility.

One of the biggest reasons in-house upfitting works for FHP is volume—finding a single vendor that could house and complete upfits for 350 vehicles per year as efficiently as FHP does would be difficult. Additionally, state statute requires that vehicles be inspected when dropped off, and it would be a challenge to send fleet personnel all over the state to inspect vehicles at upfitting facilities upon delivery.

Kreiensieck also believes centralized, in-house upfitting is just more efficient. "It's for uniformity of installation, consistency of installation, and quality control," he explains.

WORKING WITH A PARTNER

Collier County Sheriff's Office's current upfitter formerly specialized in radios. Williams saw the need for a local upfitter—the one the Sheriff's Office was using was two counties away—and gave the new vendor a chance. He researched the company, looked at the facility, spoke to those responsible for upfitting, started them with simpler work in small quantities, and made sure he was fully comfortable before handing over front-line patrol cars and, eventually, the entire fleet.

In the past three years, they've worked out a system for deliveries.

"We work together to decide when's a good time to order, get them upfitted, and issued in the same fiscal year. Communicating with our upfitter is key to timing our upfit process in order to reduce unnecessary downtime," Williams says.

For example, if the upfitter is fully scheduled with other work in October and November, Williams will schedule deliveries for December.

This close communication allows the upfitter time to purchase parts and also allows Williams to warn the vendor if there are delays, such as instances when he doesn't get vehicle funding until mid-year. In this case, the vendor would have to prepare to upfit 100 vehicles in six months.

In return, Williams will be flexible as well—he went with a new lightbar brand because the new vendor wasn't selling the same product. This was a change he was willing to make for better customer support of a vendor in the area.

"Folks have to decide what's most critical for them—if service is more important than the brand of lights. Is that vendor

PHOTO COURTESY OF FLORIDA HIGHWAY PATROL

Due to the increasing amount of technology in vehicles, the Florida Highway Patrol built a central installation facility where its technicians work on upfitting new police cars in one location.

able to provide after-upfit support? If we have a programming issue in the lightbar that's acting up, can they come and fix it quickly and efficiently or is it something that you have to tackle yourself? The support element is the most important key for us," says Williams.

The vendor can upfit up to five cars a week for the Sheriff's Office, or two weeks from start to finish.

To expedite the procurement progress, Marian at the City of Orange uses cooperative contracts for services including upfitting. His current upfit contract for patrol vehicles comes from a neighboring agency.

He gets police vehicle deliveries all at the same time, and a vendor can usually complete two vehicles per week. He communicates with the vendor so its staff can order parts ahead of time to start builds right away.

"If we had to do it in-house, it'd probably be hard for us to get one [complete] a week based on other priorities," Marian says.

To ensure vehicles are being upfitted correctly, fleet and police staff members sometimes make visits to the vendor location. They also have multiple meetings with the upfitter once the purchase order has been issued, Marian says. This is to ensure the technical aspects and quality requirements are being met.

PHOTO COURTESY OF COLLIER COUNTY SHERIFF'S OFFICE

Collier County (FL) Sheriff's Office purchases about 100 new police cars each year, all of which are upfitted by an outside vendor.

STREAMLINING THE UPFITTING PROCESS

FHP orders vehicles in three waves, and it takes six to eight weeks after delivery for vehicles to arrive, plus an additional two weeks for painting. The dealer agrees to deliver a set number of vehicles to the central installation facility per week, depending on the facility's production goals, Kreiensieck says.

With three teams—one prepping and two installing—staff can finish about 12 units per week. The build season takes anywhere from seven to 10 months, and the rest of the time is spent prepping for the next year's deliveries and performing repairs on lights and equipment.

"We preassemble everything we can, so when the cars do

The City of Orange, CA has been outsourcing upfitting of its new police cars for about eight years.

PHOTO COURTESY OF CITY OF ORANGE

come in for the next year's orders, we can just plug and play, putting them in, bolting them down, and moving on," he says. Pre-assembled parts include center consoles and partitions.

As for repairs, officers in the area and anyone in transit can bring their vehicles to the facility during this downtime, allowing the state to reduce its outsourcing costs for this period of time.

One of the keys to success for FHP is having a dedicated parts person, Kreiensieck says. This person makes sure parts arrive early in time for pre-assembly, and that there's extra in case of a delivery delay for the next batch.

"I can't stress how important the supply chain and supply management is to a production facility," Kreiensieck says. "Without the [parts personnel], you just cannot operate efficiently, or you'll never hit your goals."

Kreiensieck has honed the process through trial and error—as well as through research. He researched common industries and learned about pre-assembly from another state highway patrol facility. He reaches out for training opportunities from other agencies and private sector shops, which can conduct training events to demonstrate upfit building techniques.

"We then take the good and bad and implement what works into our processes. Process improvement is always a continuous thing," he says.

He thinks creating a sense of buy-in with technicians is essential, as well as holding staff members accountable to their production goals from the top down.

Finally, he believes sworn officers need to be involved in every aspect of vehicle decisions. Kreiensieck runs the installation facility from a different city, but he makes sure to have a lieutenant that runs the facility on the grounds there. He also manages contracts used for procurement, and another sworn officer is always available to test and check compliance for anything new.

"I want it to be officer tested, officer approved. If he thinks it's a good idea, then I feel good about rolling it out," he explains. ■

Thi Dao is executive editor of **POLICE** *sister publication Government Fleet.*

7 STEPS TO BRING MAINTENANCE IN HOUSE

Shelley Ernst

The City of Fort Wayne, IN, ended a 22-year period of outsourced vehicle maintenance. Here's how fleet management brought it all in house.

On the first day the City of Fort Wayne, IN, launched its in-house maintenance program, a colleague approached Director of Fleet Operations Larry Campbell, CPFP, and said, "Well, you just launched a business. How does it feel?" In just one sentence, Campbell's coworker summarized the massive effort leading up to the city's new in-house maintenance program for its more than 2,340 vehicles. "He was correct," Campbell said. "It was a major undertaking."

This was the first time in 22 years the city had handled maintenance in house, following the end of an 18-year contract with its previous maintenance provider. The shift to in-house maintenance is projected to yield a significant cost savings to the city. "We're projected to save $300,000 right off the bat," Campbell said.

How did they do it? Campbell said it was an effort involving extensive planning and countless decisions, large and small. But, boiling it down, he cited these seven steps.

KNOW YOUR CURRENT FLEET

Even before bringing maintenance in house, the City of Fort Wayne fleet team knew a lot about its fleet. For instance, staff members knew they needed very specific turnaround times to improve fleet availability. They even set specific turnaround times for each division and equipment type. So, for instance, an SUV, sedan, and hybrid might all have their own time frames for service.

But the maintenance provider struggled to meet the agreed-upon time frames—and fleet staff spent far too much time checking turnaround times, fleet availability, and percentages to assess penalties.

Campbell and team started to dig into the data further and learned the ratio of vehicles to technicians was too low. Fleet team members knew they needed more technicians to achieve the desired turnaround times, but they couldn't add staff without adding dollars to the existing contract.

While Campbell and team knew all of this data, the one thing they didn't actually know was the technical staff. Because the city's fleet team was only allowed to talk to management for the outsourced company and not directly to the workers on the shop floor, they missed out on interactions that could have resulted in improved performance, greater efficiency, and reduced costs.

What did all this knowledge amount to? A compelling case to bring maintenance in house.

WRITE A BUSINESS PLAN

Once the fleet team members started to see the potential benefits to bringing maintenance in house, they began to ask, "How would we do it differently?" To formalize this, they started writing a business plan.

The management team met weekly to map out its "new business" of in-house parts and maintenance. Included on the team were division heads, the city controller, and the deputy controller, who Campbell said were key to gaining buy-in.

Putting together the business plan required an even deeper dive into fleet data to support the need for in-house maintenance.

A key factor of the business plan was costs—both the cash outlay and the potential savings. "We didn't have a huge capital outlay for a new startup," Campbell said. "The city made sure we owned diagnostic software, so we didn't have to go out and spend a bunch of money on top of that to bring it back in house."

CREATE A TRANSITION PLAN

Once the business plan was approved, the team began to plan for the transition. This included establishing new standard operating procedures (SOPs), work rules, budget plans, and pricing. It also included inventorying parts, tools, and shop supplies.

At the end of the day, local and state contract pricing and negotiations with vendors yielded competitive pricing.

PHOTO: GETTY IMAGES

Once the business plan is approved, draft your plan to execute the change. Campbell suggested creating a checklist for what needs to be done and how.

MAKE A PLAN FOR PARTS

Prior to bringing maintenance in house, the contractor owned all of the parts inventory and shop supplies. The city got a leg up on parts by purchasing all inventory currently on the shelf.

Moving forward, however, the fleet management staff is readjusting inventory to ensure high usage parts are in stock and low usage parts are minimized or phased out as needed. This will help the city meet desired turnaround times.

The team has also conducted studies to acquire higher quality parts, which Campbell anticipates will reduce costs and increase vehicle uptime. "For instance, now that we're using higher quality batteries, it decreases towing charges and keeps vehicles on the road longer," he explained.

Determine how you'll purchase parts. Campbell said both pricing and brand selection will take time and research, so plan accordingly.

BUILD FORMS AND WRITE SOPS

When it came to SOPs and shop forms, the team had to start from scratch to customize them for the fleet's specific equipment.

During the first few weeks following the launch, the team will be using the forms and noting their feedback; they will then regroup to discuss desired changes and revise as needed.

Your former provider's forms, like service sheets, may have extraneous information that's not pertinent to your fleet, so build streamlined documents that offer the right fit for your equipment. The same goes for SOPs and standard operating guides.

BUILD THE TEAM

With all the plans in place, the fleet team needed the final piece to the puzzle: the team to execute those plans.

"We gave the contractor's technicians first right to employment by the city," Campbell explained. "Some had been with the contractor for 16 years and they had been loyal employees to the city fleet, so the city wanted to return the favor."

All hourly employees were offered jobs. Only four passed on the offer, leaving a team of 14: two parts room employees and 12 technicians who were already well-versed in shop operations. Fleet management then hired four more technicians.

Although the majority of the team has already worked in the shop, Campbell said it's a brand new dynamic. For one, communication is vastly improved without a layer of management between the fleet team and shop employees.

"It really is nice to be able to address the technicians directly," Campbell said. "We want to make it easier for everybody and let them know they can provide input and make an impact."

Campbell is also putting an increased focus on technician training. "I'd rather train someone and have them leave rather than not train them and have them stay," he often says. Campbell expects that training will assist with turnaround times and keep more of the work in house, reducing subletting costs. "We're building an all-new, No. 1 team," Campbell said.

Building a team that will meet maintenance demands and can be trained to bring more services in house can improve turnaround times and reduce subletting costs.

SET THE VISION

Now that Campbell can communicate directly with technicians and parts room staff, he is also able to set a vision for the shop's success—and can involve the entire team in sharing that vision.

"Every fleet can do better, and we're in a rebuilding phase," Campbell said. "When we had our first shift meeting, I said, 'We're starting out as a new entity now. This is a team effort and we're going to succeed.'"

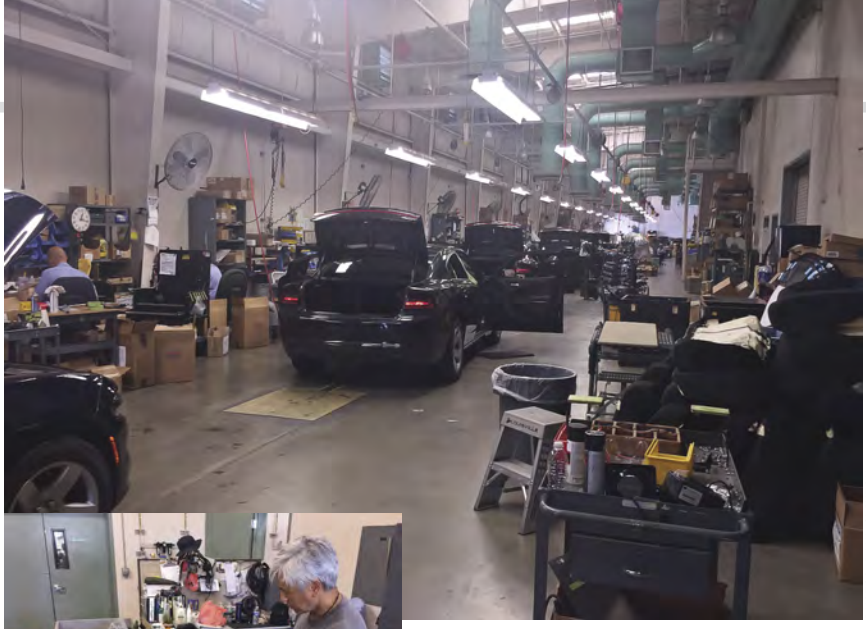
Campbell said it's important to envision the future of your shop. How do you want to run it? What do you expect of your technicians? How do you want them to perform? ■

Shelley Ernst is a freelance writer and frequent contributor to multiple Bobit Business Media publications.

CHP's Vehicle Assembly Line

The California Highway Patrol handles its own upfitting and maintenance in a West Sacramento facility.

Paul Clinton



PHOTOS: PAUL CLINTON

THE LINE CAN CRANK OUT A CAR IN 39 HOURS, INCLUDING STOPS FOR WIRING, RADIOS, LIGHTING, BRACKETS AND MOUNTS, AND GUN RACKS.

Assembly lines helped automakers in the early days of the industry increase production speed and create an efficient process to achieve standardization. Early cars such as Ford's Model T and Oldsmobile's Curved Dash rolled out of factories with the same parts attached in the same places.

The California Highway Patrol (CHP) has applied this process to its vehicle upfitting in its Fleet Operations facility in West Sacramento—the nerve center for California's largest law enforcement fleet. With approximately 1,000 vehicles per year that need radios, gun mounts, lightbars, and other law enforcement equipment, the agency needs to stay organized.

The assembly line also gives the agency certainty that officer safety will remain a top priority during the set-up of the vehicles. Auxiliary equipment will function the same way for any officer who gets behind any wheel. The agency has been using this process for decades.

While efficiency remains a potent benefit, the process is in place to protect the agency's sworn personnel, said Capt. Steve Mills, who has served as the commander of fleet operations since 2013.

"Every vehicle has to be standard," Mills said. "Every switch needs to be in the same place."

Nearly four years ago, the agency began fine-tuning the assembly line to accommodate its large order of Dodge Charger Pursuit sedans, which would mark a shift from the agency's heavy use of mid-size SUVs. Fiat Chrysler Automobiles (FCA) won a bid in June of 2015 to supply the Dodge Chargers. The agency had ordered 580 Charger Pursuit sedans in 2016 on a two-year contract. The agency had been using Ford's Police Interceptor Utility vehicles since shifting to that vehicle in 2012.

Part of the reason for the change came down to pricing, as the Chargers cost $23,695 per unit versus $27,465 for the Ford SUVs, Mills said. However, FCA was also able to increase the payload rating for the Charger's rear axle to accommodate a bulky tray of radios and other communications equipment that weighs about 246 lbs.

The rear-wheel drive, V-6-powered sedan could carry up to 1,359 lbs. after FCA beefed up the rear end assembly with factory modifications.

With new batches of vehicles arriving in bulk shipments, the agency's assembly line would soon be humming.

The CHP can equip about 100 cars a month to meet the demand for new patrol units by using the line.

The assembly line can crank out a car in 39 hours if needed with 22 workers and 11 stations, which include numerous stops for wiring (3 miles worth for each vehicle), radios, emergency lighting, brackets and mounts, and gun racks.

The shop fabricates initial quantities

of all of the mounts and brackets to secure equipment in the vehicle, and assembles all the wiring harnesses. Once tested, supplies for production are purchased from the California Prison Industry Authority. One technician programs vehicle functions for emergency lighting and other electronic functions. Changing patrol vehicles didn't present too much of a wiring issue because 80% of the wiring in a vehicle is standard even across various makes, Mills said.

Most of the assets in the CHP's fleet move through the line, including all of the 2,501 marked units as well as the undercover vehicles, tactical vehicles, motorcycles, and executive vehicles for the state's elected leaders. The garage set up the governor's black Chevrolet Suburban. Overall, Mills manages 4,533 assets, which doesn't include the 26 planes and helicopters in the CHP air fleet.

Every CHP vehicle that's pressed into duty goes through the operations shop, including the ones used by officers in Southern California. The agency maintains a facility in Torrance where two technicians give vehicles shipped down on a flatbed a final inspection before handing the keys to an officer.

Units are taken out of service when they reach 100,000 miles, which is mandated by the state's procurement agency, the Department of General Services. A black-and-white unit averages about 34,500 miles per year, Mills said. Cars that are taken out of service are sold via auction at the West Sacramento facility.

In the West Sacramento operations center, Mills supervises a staff of 85 fleet technicians and supervisors, who are eligible for a $150-per-month stipend negotiated in an agreement between International Union of Operating Engineers' Unit 12 and the California Department of Human Resources.

Mills was able to scoop up some of the technicians from local dealerships who had to lay off staff during the Great Recession.

"What's key for us is the ability to retain people and get the best that's out there," Mills said.

Several other public service agencies have used the assembly line, including Cal Fire, the California Department of Corrections, and even the Nevada Highway Patrol. The agencies provide Mills with the vehicles and auxiliary equipment, and he runs them through the line. Using the process can save an agency up to four months of downtime. ■

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Telematics for Law Enforcement

PHOTO: VERIZON CONNECT

Agencies are starting to see the benefits of collecting and using data from department vehicles to improve fleet safety and efficiency. MELANIE BASICH

Corporate fleets have been using telematics for years to collect data on everything from a vehicle's fuel consumption to the driver's braking habits. Law enforcement has been much slower to adopt this technology that automatically gathers information about how a vehicle is used. But this is a missed opportunity to harness data to improve fleet operations.

DRIVER BEHAVIOR

"Telematics for law enforcement can monitor details like speed, seat belt use, even whether or not the vehicle's flashing lights are engaged. This offers administrators and officers behind the wheel feedback on their driving," says Mark Wallin, vice president, product management at Verizon Connect.

While officers might not like the idea of their driving habits being monitored, Wallin says this data can be used in a positive way as the basis for incentives for officers displaying good driving habits. It can also serve as a starting point for improving driving behavior to increase safety. This includes wearing seat belts and not taking turns too quickly, especially in inclement weather.

Telematics solutions can also report if an emergency vehicle has been involved in a crash, and locate it. This feature allows agencies to quickly bring aid to officers that might otherwise lie injured or dying for hours.

Avoiding a crash if possible is of course always best. The Snohomish County (WA) Sheriff's Office has installed the Verizon Connect telematics platform in more than 300 emergency response and other vehicles at the sheriff's office. Collisions deemed preventable decreased from 40 in 2015, to 32 in 2016, and then fell again in 2017 to 13, Wallin says.

As a result, the agency's litigation expenses dropped year over year from $2 million in 2015, to $32,000 in 2016, then to $5,000 in 2017. According to telematics data, the average speed squad cars and emergency vehicles are traveling when collisions occur decreased 70% since installation of the Verizon Connect platform.

"Telematics-based active tracking is often used as the backbone for efficient first responder field operations and dispatching, helping to improve driver safety and reduce response

Derive Systems

Derive Systems has a different approach to improving driver behavior, fuel economy, and vehicle performance for law enforcement fleets. The company's device plugs into the OBD2 port found under a vehicle's steering column to recalibrate the onboard computer's settings to achieve the agency's desired goals. The whole process takes about 20 minutes per vehicle and can be done at a department facility or by an upfitter.

"This is a really simple and affordable way to add technology to an existing vehicle to get better results," says Charlie Mahoney, business development for Derive Systems. "It's not telematics per se, it's a one-time calibration. And you change nothing about driver behavior or the vehicle itself." The changes take place automatically.

Derive programs its device to recalibrate the vehicle computer to reduce fuel consumption and emissions while the vehicle is idling, which is roughly six to eight hours of the average 12-hour shift. "Derive stands behind its fuel savings guarantee of 6%," says Mahoney. "If we don't deliver, we cover up to the cost of the product in savings."

Other adjustments can improve the performance of the vehicle for times when officers need to get up to speed quickly. This can provide a shorter duration of time from 0-60 mph or 0-100 mph, for example, and provide additional horsepower and torque so the vehicle can perform better in a pursuit situation. Any recalibrations can be reset to the original factory settings using the same device.

Derive's goal is to improve the driving experience for the officer while decreasing costs for the fleet manager. "With telematics, you get data, but you then have to act on it," says Karl Weber, Derive Systems' senior vice president of enterprise sales. We can actively solve many of the concerns with autonomous vehicle operation."

times," says Jean Pilon-Bignell, GeoTab Associate Vice President, Government and Smart City.

GeoTab's Active Tracking allows agencies to view their vehicles in near real-time. While this could be used to track how an officer is driving, it can also help a dispatcher deploy the closest patrol vehicle to a call and reassure a caller that the officer has just exited the highway and is turning onto the caller's street.

Adjusting driving habits through the use of telematics can also reduce fuel costs. According to the U.S. Department of Energy, rapid acceleration and heavy braking can reduce fuel economy by up to 33% for highway driving and 5% in cities.

VEHICLE MAINTENANCE

Fleet managers can document these changes by using telematics data to monitor fuel efficiency. Data allows fleet managers to analyze gas mileage performance in detail and monitor fuel use and fuel economy. They can even compare fuel economy of different makes and models to make a well informed decision as to when vehicles require replacement. They can also use telematics to maintain overall vehicle health, which directly affects vehicle utilization and efficiency.

Check engine light alerts, low battery notices, and routine maintenance reminders sent via telematics solutions help ensure that vehicles get serviced when needed and spend less time stranded on the side of the road. But it's also beneficial to use telematics data to determine when service is actually needed.

If a vehicle has been in operation for a certain number of hours including idle time, it might need to be serviced before reaching the standard mileage shown on the odometer for that service. On the other hand, if a vehicle is brought in for an oil change before it's really needed, that's wasted time when it could have been in service. Reducing unscheduled downtime brings down costs for the agency and allows officers to more quickly get back into the vehicles and respond to more calls.

To aid in fleet management, Ford Commercial Solutions' Data Services product gives fleet managers and telematics service providers direct access to OEM-grade vehicle data. Utilizing Data Services, fleets can gain access to Ford vehicle information such as GPS location, mileage, fuel use data, and vehicle health alerts.

Because telematics can be used to manage vehicle maintenance as well as locate stolen vehicles, Verizon Connect's Wallin says they help reduce the cost of ownership and help organizations understand where they're spending money.

Telematics solutions exist to provide law enforcement agencies with as much or as little data as they like. It's up to departments to determine what they want to know and how they will use that knowledge. ■

Ideas to Improve Your Fleet

Roselynne Reyes

Learn from other fleet managers' experiences to optimize vehicle operations.

One benefit of the fleet community is the ability to learn from each other's good (and bad) experiences. The fleet managers behind these initiatives share what worked, and offer guidance on the challenges they faced along the way.

OFFSET COSTS WITH INSOURCING

The City of Conroe, TX, handles maintenance for six other fleets. Insourced work makes up about 20% of the work done in Conroe's shop. "Even if we don't perform the job in house, we will facilitate the sublet then get the unit back to the customer," explained Erik Metzger, CAFS, fleet manager.

Ninety-five percent of the city's insourced work is for light-duty vehicles. Labor is charged out at $70 per hour (compared to $60 for city-owned light-duty vehicles) and parts and sublets have 15% and 5% markups, respectively.

In FY-17, the city billed out more than $88,000, enough to cover one full-time technician. Considering insourced work takes up a small percentage of the shop's operation, Metzger sees this as a huge benefit.

KEEP PURCHASING OPTIONS OPEN

Rather than choosing one purchasing method that works, Osceola County, FL, keeps its options open. When purchasing new vehicles, the county always issues a full solicitation (which is open for 30 days), collects the make and type of the winning vehicle, and compares pricing to the state contract. With this strategy, the county saved $200,000 on procurement in FY-18.

"We found that you do not always get the lowest bid on the solicitation, and also the price on the state contract is not always the lowest one for the same product," said Hector Sierra Morales, fleet manager.

ADD DAILY SHOP MEETINGS

The City of Milwaukee is cutting down its monthly shop meetings and building up the team with daily shop huddles. For about five minutes every morning, the team does a brief team-building exercise, discusses progress on current repair goals, and addresses any issues.

Justin Groeschel, fleet repair supervisor, said the daily meeting is intended to serve as preventive maintenance for the team, rather than "repairing" issues at the end of the month.

The goal is to ultimately phase out monthly meetings. For now, the number of items covered in each monthly meeting has been greatly reduced.

ESTABLISH SERVICE LEVEL AGREEMENTS

When fleets have hands-on customers, it's a good idea to get in writing who decides what. After a new chief of police took office in Wichita, KS, the agency looked for more control over vehicle replacement decisions. The Police Department and Public Works & Utilities developed a service level agreement (SLA) to provide an allowance and establish decision-making authority.

The two departments meet regularly to discuss ideas, issues, or concerns. The increased communication has gone a long way toward addressing service concerns.

Fleet staff calculates an allowance, reserving a portion of the fleet budget for the Police Department, and a fleet employee is assigned to serve as the primary liaison to the Police Department. Spending controls established in the SLA ensure that spending remains at appropriate levels.

This approach will hopefully serve as a model to address the unique issues of other customer groups. But Troy Tillotson, fleet manager, noted that managing SLAs can be time consuming, and the Police Department rotates administrative staff more often than other departments, which can cause a strain in ongoing discussions. In addition, the fleet is considering a new rate model to more transparently communicate fees and rates.

RAISE AWARENESS WITH HARD NUMBERS

Idling is a problem across many types of fleets, but it especially affects those whose drivers use their vehicles as mobile offices. The Ada County Sheriff's Office in Idaho is targeting idling by keeping officers informed. Don Walker, CAFM, fleet manager, continually explains to officers that odometer readings aren't even close to miles based on engine hours.

It's one thing to tell people and another to show them. Walker gives specific numbers so they understand the significance.

PHOTO: GETTY IMAGES

Calculated miles are actually 2.5 times the odometer reading, and one hour with the motor left running equals about 33 miles.

"It makes them much more aware of the need to curb idling and comply with the maintenance schedules I've set," Walker said.

TAKE ON EMISSIONS TESTING

El Paso County, TX, is using two emissions-testing machines at a cost of $15,000 per machine. Before, the county paid between $7 and $40 for each inspection, depending on the type of vehicle or equipment.

The first machine was purchased for the Public Works motor pool in October 2016. A second inspection station was added to the Sheriff's motor pool in January 2018.

Now, 81% of all inspections are conducted in house. The machines paid for themselves within a few months, and the county expects to save $13,000 a year on inspection fees alone, along with $66,000 in fuel costs and $105,000 in maintenance and wear and tear repairs from not having to shuttle vehicles to inspection sites.

PARTNER WITH A SCHOOL

With a technician shortage looming, many fleets are becoming more proactive when recruiting new technicians. The City of Fayetteville, AR, is partnering with a local school to boost its workforce with an intern program.

Six of Fayetteville's fleet staff members attended the same local technical school. When the city's workload increased and it needed more help, the fleet decided to partner with a technical school. Students work 20 hours a week, and their evening schedule allows them to attend school, have lunch, and come in for a five-hour shift at the fleet shop.

Communication with the school is an important aspect of this partnership. Jesse Beeks, fleet operations superintendent, serves on the advisory board for the school's diesel program, and when the fleet is hiring, Beeks can call the instructor, who is able to recommend two or three applicants.

Municipal fleet is not for everyone, Beeks noted. But students gain hands-on experience on a variety of equipment to help them figure out where they would like to end up. "Some want to move to a truck shop or dealership. We usually know this by the time they are ready to move on and allow them more experience in their field of interest," he said.

FUEL RESPONSIBLY

Every fleet operation is different, with its own set of unique problems. Sonoma County, CA, implemented a quick and simple solution to one of its problems: drive offs.

About three times a year, a fleet driver would drive away from a fueling station with a fuel pump still hooked up to the vehicle, causing damage to the fuel site and the vehicle. The fleet noticed an increase in drive offs in one six-month period. To remedy this, the county removed the automatic fill mechanism from its fuel pumps. This took about two minutes per nozzle.

Regular users were not happy with the change because it made fueling less convenient, but some understood the need once fleet staff explained the costs associated with drive offs.

PREPARE FUTURE LEADERS

The City of Long Beach, CA, started a supervisor swap program in February. Every supervisor is moved to a different crew and a new position to provide cross-training and prepare for upcoming retirements.

Supervisors get to know new technicians, new vendors, and new equipment. With a broader knowledge of the fleet operation, supervisors are communicating with each other more often. One challenge, according to Fleet Services Manager Dan Berlenbach, CPFP, was placing the supervisors in roles that prepare them for future growth but also ensure they would be successful.

SPEC FOR TRAINING

When a fleet buys a new vehicle, it is important to train your technicians how to maintain that vehicle. Sussex County, NJ, considers this at the very beginning of the procurement stage.

The county's vehicle bids require the vendor to provide training and an engine software subscription. These added items are to be factored into the price of each vehicle, so the fleet does not have to request funding for training later.

John Bazelewich, fleet manager, said these requirements are specified to bidders in advance and the fleet has not seen any pushback on this initiative. Payment for training is handled between the vendor and trainer, and although the fleet team will provide the names of trainers staff members have worked with in the past, the vendor is not required to stick to the same trainers.

Roselynne Reyes is assistant editor for Government Fleet and Work Truck.

READY FOR PATROL

David Griffith

Hybrid gas-electric vehicles are being used for patrol duties in a number of U.S. cities, including New York.

THIS SUMMER Ford is going to roll out the most innovative police vehicle ever produced, the 2020 Ford Police Interceptor Utility with hybrid powertrain. Based on the 2020 Explorer SUV, the pursuit-rated 2020 PI Utility is not the first purpose-built hybrid patrol vehicle—Ford introduced its Police Responder hybrid sedan in 2017—but it is the first one big enough to accommodate all the gear needed in contemporary police operations. And if the 2020 PI Utility hybrid proves as popular with agencies as Ford expects, it's likely to usher in an era of hybrid patrol vehicles for the next decade or so until most law enforcement vehicles become fully electric.

Despite widespread acceptance of hybrid gas-electric vehicles in the consumer market, the police market is different. Some officers and agencies are reluctant to give up their gas-powered V-8s for this 21st century engine tech. These officers want Ford to prove its hybrid can go fast, stop even faster, and do the job. And their agencies want proof of performance plus economic benefits to offset the additional cost of the hybrid powertrain.

Police vehicles with hybrid gas-electric engines will save law enforcement agencies money and cut emissions. More importantly, they can do the job.

137 MPH

To prove the 2020 PI Utility hybrid's performance to the police audience, Ford took the new SUV to last September's Michigan State Police evaluations. And it made quite an impression.

It goes real fast. The hybrid SUV hit 137 mph in the top speed testing. The only pursuit-rated sedans that hit faster top speeds during the test were the Dodge Charger 5.7-liter Hemi at 149 mph and the Dodge Charger 3.6-liter at 141 mph. The only pursuit-rated SUV that topped the PI Utility hybrid was the Ford 3.0-liter EcoBoost PI Utility at 150 mph.

Of course top speed is not the most important performance issue for a patrol vehicle that is going to be driven in environments ranging from major city streets to rural highways. Most agencies are more concerned with the acceleration and closing speed of the vehicle. The PI Utility hybrid, which comes standard with all-wheel drive (AWD), had a 0-60 mph time of 7.27 seconds at the MSP test. That's better than most standard gasoline engine patrol SUVs. The only patrol-rated SUV that accelerated quicker in MSP's 0-60 mph testing was Ford's PI Utility 3.0-liter EcoBoost SUV with AWD. EcoBoost engines achieve their impressive performance with turbos and direct injection.

The closing speed performance of the PI Utility hybrid as measured by its 0-100 mph time was also impressive at 17.69 seconds. That's not as fast as a Hemi Charger, but it outmatches every pursuit-rated SUV other than that blistering fast 3.0-liter PI Utility EcoBoost, which can hit 100 mph from a standing start in just under 14 seconds.

There was a time when hybrid meant great gas mileage but less than stellar performance and not a lot of cargo space. Not anymore, says Steve Tyler, Ford police brand marketing manager. "With hybrids people are used to making some kind of tradeoff. The most exciting thing about the 2020 Ford Police Interceptor Utility hybrid is there are no tradeoffs. You don't lose any interior passenger or cargo room. You also get greater horsepower, torque, and top speed. In addition, you get significant fuel economy."

Stopping Power

Performance for a patrol vehicle or any vehicle is not just about speed. It's about how quickly the vehicle can be stopped. This is extremely critical for a law enforcement vehicle, which tends to be driven harder than a consumer vehicle.

The new hybrid Ford SUV was also a star in MSP's brake testing. In testing where the vehicles were brought to a stop from a speed of 60 mph, the PI Utility hybrid came to a complete rest at 132.4 feet. That was better than any other pursuit-rated SUVs except the Dodge Durango Pursuit 3.6-liter at 128.8 feet and the Ford Police Interceptor EcoBoost at 131.5 feet.

Hybrid vehicles tend to stop so well because they use a regenerative braking system, which means that the electric motor of a hybrid vehicle reverses its spin, slowing the vehicle when the driver applies the brakes. This braking action turns the motor into a generator that helps keep the vehicle's batteries charged. In addition, the vehicle has anti-lock disc brakes with calipers, pads, and rotors.

Saving Green

One of the reasons that hybrid patrol vehicles will become much more common in the next few years is government environmental (green) initiatives. That's a great benefit of hybrid engine technology. But hybrid patrol vehicles can also be part of another type of green initiative, the type that saves money for law enforcement agencies.

Hybrid vehicles generally cost a little more money at initial purchase. But the economics of running hybrids should more than make up for that initial outlay.

Ford says Fuel savings from the 2020 PI Utility are significant. The combined highway and city MPG is 24 compared with 17 for the 2018, a 40% increase in mileage. But increased MPG is not the only way the hybrid PI Utility can save agencies on fuel costs. The real fuel expenditure in law enforcement patrol operations is leaving the vehicle running while it's parked at a scene so that it can keep the battery charged to run lights, radios, air conditioning, computers, and other stuff that draws current. The PI Utility hybrid can do that without the engine running. It uses the hybrid batteries and if the charge starts to get low on the batteries it will run the engine just long enough to give them a boost. Ford calculates that the savings over idling a gas engine combined with the MPG increase will save agencies that adopt the PI Utility hybrid $3,500 per vehicle per year.

PHOTO: FORD

You can go to https://www.ford.com/police-vehicles/police-interceptor/hybrid-utility/calculator/ for more information.

The New York City Police Department has been running consumer hybrid cars and SUVs as patrol vehicles for almost 10 years. Deputy Commissioner Robert Martinez who commands the NYPD's vehicle fleet operations believes hybrid powertrains are well suited to law enforcement operations because of the amount of time patrol vehicles spend at idle. "Even out in the country, law enforcement vehicles spend as much or more time at idle than they ever do being driven on the highway," he says.

Another way that hybrids save agencies money is that regenerative braking greatly reduces wear and tear on brake components. Martinez says the brake components on the NYPD's hybrid vehicle last the life of the vehicle.

PHOTOS: FORD

Ford's 2020 Police Interceptor Utility hybrid is the nation's first pursuit-rated hybrid SUV.

The 2020 Police Interceptor Utility hybrid comes standard with all-wheel drive and is suited to urban and rural patrol.

1,800 Hybrids

Martinez is probably the nation's most authoritative expert on the use of hybrids as law enforcement vehicles. Out of the approximately 20,000 vehicles in the NYPD's fleet, 1,800 are hybrids. And the department has been running hybrids for 10 years.

It all started with taxi cabs, according to Martinez. He says he noticed that the city's taxi companies were replacing their Ford Crown Victorias with hybrids and had been doing so for a couple of years. So Martinez, who was then the department's director of fleet services, ordered 60 hybrid Nissan Altima sedans for the fleet. "I figured if they could hold up for years as New York City taxis, they could certainly do the job as NYPD patrol cars," he says.

Of course those first hybrids acquired by the NYPD were not designed to be police cars, nor were they pursuit rated. The pursuit capability was not an issue, Martinez says, because the NYPD has a "no pursuit" policy. The Altimas not being designed as police cars was another matter. They required some work.

Martinez says his fleet maintenance crews had to replace the Nissan's seats with vinyl-covered seats and install the police equipment such as lights and sirens, which required additional wiring. In addition, Setina Manufacturing also made special prisoner cages that fit the NYPD's Altimas.

Soon after those first NYPD hybrid Altimas hit the street, Ford started making a hybrid sedan for the consumer market, the Fusion hybrid, that Martinez thought would be a better police car than the Altima. "We started using hybrid Fusions both as marked and unmarked cars," he says.

The NYPD's hybrid fleet grew from there. Martinez says he has acquired Toyota Priuses, hybrid Chevrolet Tahoes, and a wide variety of other hybrid vehicles for the department. He even says his success with the hybrid Fusion in the NYPD's fleet helped convince Ford that the time was right for true pursuit-rated hybrid police vehicles. "I started some dialog with Ford's engineers about the benefits of the hybrid as a patrol car. 'It can do the job, and it can do it well,'" he says he told them.

That discussion has now come full circle as Martinez is acquiring Ford's new pursuit-capable hybrid vehicles for the NYPD fleet. He's even driving a 2019 Police Responder hybrid (based on the Fusion hybrid) sedan that Ford has loaned to the department. "We brought it down to our test track and training facility where one of the trainers drove it and came back with great results," he says.

The NYPD is now buying 160 of the new Police Responder hybrid sedans, and Martinez says he is very excited about the 2020 PI Utility hybrid with AWD. "We get a lot of bad weather here in New York City," he says. "We had Super Storm Sandy, big snowstorms, ice storms, flooding. Years ago during snowstorms I had to open our maintenance shops and call in crews to put chains on the vehicles. Now with all-wheel drive SUVs, I no longer have to do that. The vehicles can handle the weather without chains."

Even though consumer vehicles might be a little cheaper to buy than pursuit-capable patrol vehicles, Martinez has no plans to continue the practice of buying retail hybrids and customizing them into police vehicles. "I haven't really done a price comparison," he says. "These task-built vehicles meet our mission better because they were designed to do so." He points out that purpose-built patrol vehicles already have the wiring for police equipment, vinyl seats, cages, and even their computers are "tweaked for police driving."

The NYPD has 13 fleet shops and 400 employees and it is fully capable of upfitting the new hybrids it has ordered from Ford. But Martinez says it's the department's practice to have its vehicle delivered ready for duty. "We have the upfitter do everything, including the lights, and the markings," he says.

Martinez foresees an NYPD fleet that becomes more and more hybrid and electric in the coming decade. Asked how the officers who use the vehicles feel about that, he tells the following story: "Shortly after we introduced hybrid patrol cars about 10 years ago, the Mayor's Office had staff go out and ask the officers driving them what they thought about driving hybrids. They did not know they were driving hybrids. And that's the way it should be, the hybrid vehicle should perform the same or better than the gas patrol vehicle." ■

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