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Jacksonville Revs Up Search Engine For Missing Persons Calls

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By John W. Bracey, Community Affairs Officer, Jacksonville Fire and Rescue Department

Let's back up to December 2019 in Jacksonville, Fla.

Two siblings, age 5 and 6, have wandered from their front yard, and their father is depending on the city's public safety personnel to locate the boy and girl. The Jacksonville Sheriff's Office (JSO) and the Jacksonville Fire and Rescue Department (JFRD) launch the search with 150 pairs of boots on the ground, but it's already late afternoon.

As darkness covers Jacksonville, the first day of the search ends. Brian Williams will have to wait until the next day for the search to locate his children to resume.

Several hours into the second day, the commitment to finding the children is full on. Urgency is also on the rise because the mild December temperatures are forecast to plummet. Heavy rain is also looming. Fortunately, the team is operating with a little more information on the probable location of the youngsters.

First responders are traversing a specific wooded and wet area on the recommendation of a search analyst with a fire rescue background and an acquired knowledge of the behavior of missing persons. He encourages them to advance their efforts further down the search line.

Suddenly, the search team discovers the brother and sister seeking refuge in a small structure that one firefighter described as a "doghouse with a flat roof." The children are alert, and after two days of observation at a local hospital, they return to their home and their father. Jacksonville Fire Chief Keith Powers and Sheriff Mike Williams are overjoyed at the results, and so is every person directly invested or just keeping track from the sidelines.

Law enforcement and fire rescue officials then start a conversation about systematically pooling their resources to create a force multiplier that

Jacksonville's Command Van is a capable asset for a variety of missions. It has nine work stations, satellite phone and internet, 14 TV monitors, a weather station, and a 45-foot telescoping mast that is equipped with a thermal imaging camera and a video camera.

Photos by Captain Eric Prosswimmer

could expedite search results and increase the odds of a positive outcome. The discussions lead to a new collaboration in Jacksonville known as MEPSAR, which stands for Missing Endangered Persons Search and Rescue.

"When you have an endangered or missing person or small child, it is time sensitive," Sheriff Williams said during a news conference in May at Jacksonville's City Hall. "The quicker you can get people on the ground, searching in those wood lines and trying to cover those lakes is incredibly important."

Reacting to recent local successful search efforts, Jacksonville Mayor Lenny Curry said, "I am confident that this collaborative, smart approach to missing persons cases will be a national model for agencies and municipalities throughout the country to emulate."

That is precisely Chief Powers' vision beyond Jacksonville: "We want to get this program out to the state and beyond so others can follow suit and adopt."

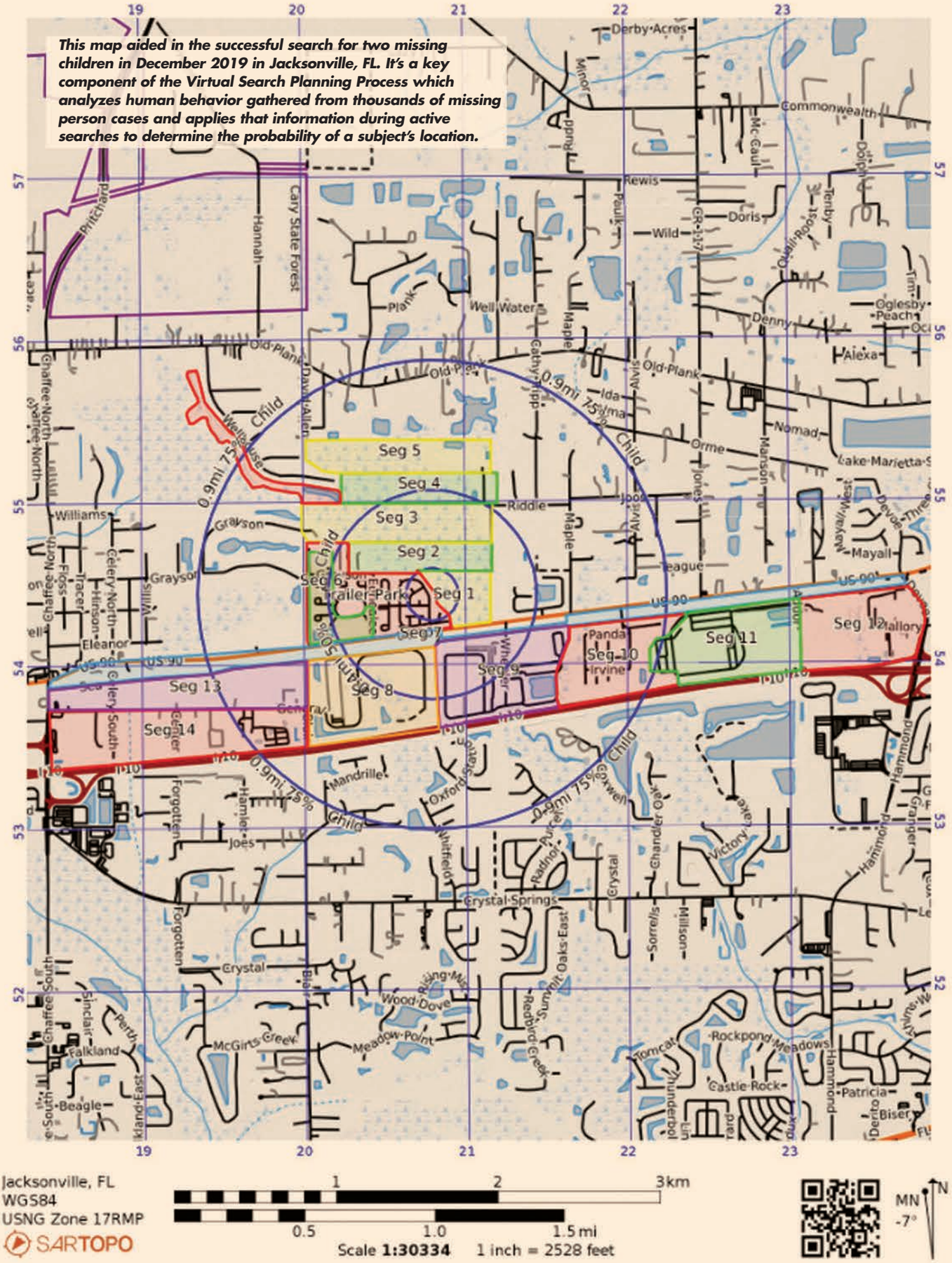
The news conference was the public announcement of MEPSAR, but the early evolution of the program had already yielded numerous positive results, as well as moments of closure for difficult situations. Some of the quickest successful urban and suburban searches occur by simply dispatching in-service companies to ride their territories.

In addition to the success that comes from involving additional personnel with specialized training, MEPSAR also relies upon technology. Both JFRD and JSO have established drone programs with pilots certified through a federal testing program. JFRD also has a sophisticated mobile command center and a separate rehab unit to aid all personnel during operations. JFRD's expertise in urban search and rescue is a technical asset and includes a K-9 team. JSO also has a K-9 team.

JFRD is also using the Virtual Search Planning method which incorporates one or more search analysts and plays a key role in recovering missing persons. That process is covered in the accompanying story, "Virtual Search Planning is Changing SAR Paradigm."

For more information about Jacksonville's MEPSAR SOG, please contact the Jacksonville Fire and Rescue Department's Division Chief of Operations Steve Riska at SRiska@coj.net

There are six certified USAR canines in the Jacksonville Fire and Rescue Department and another dog in training. Lieutenant Pam Ramsdell has been on the team since 2010.



Virtual Search Planning is Changing SAR Paradigm

The Process has Yielded an 85 percent Success Rate

By John W. Bracey, Community Affairs Officer, Jacksonville Fire and Rescue Department

Shane McNeil had been planning his ambitious excursion for several months.

On a warm Saturday morning in September 2010, the high school sophomore finally embarked upon a hike from his home in the Las Vegas desert that would lead to the Colorado River and, ultimately, the Hoover Dam. His endeavor would span nearly 25 miles, not out of the question for the fit 16-year-old.

Shane's biggest challenge would be the terrain and the desert's guaranteed triple-digit heat. His planned route involved elevation changes of 1,000 feet or more, the Hoover Dam's fast-moving cold water which he would have to swim through, and whatever creatures might intersect with his path. Shane's backpack contained bottled water, Bibles, food, and a journal, among other items. He set out at 7 a.m. and was wearing Vans athletic shoes. It's unclear what he used to cover his bright blond head of hair.

Throughout the day, he texted his mother several progress reports.

Search and Rescue Mapping

The Virtual Search Planning Process uses as many as 14 specific items of information in the analysis of a missing person to determine the probability of their location. This analysis includes human behavior and performance data gathered from thousands of missing person cases which aids in the prediction of how far any subject would travel from their Last Known Position (LKP). This data, which includes age, physical attributes, and other elements unique to the incident, are considered and then mapped and segmented within the map so trained resources can conduct a search with a high likelihood of detecting either a clue of the subject, or the subject.

The facing page is the map that Paul Burke and Ben McMinn developed to aid the Jacksonville, Fla. search resources in locating the Williams children in December 2019. The blue concentric rings indicate the statistical distances from their LKP for children in a given age group, and where certain percentages of them were located. The Williams siblings were located in Segment 2 (Seg2) of the mapping which spans an area 0.4 miles from their home. This is consistent with statistical data of documented cases for missing children 4 to 6 years old, with 50 percent of them found within 0.4 miles or less from where they went missing, and 75 percent found within a distance of 0.9 miles or less.

Around 7 p.m., the sunlight was fading, but Shane had the Colorado River in sight. He would need to climb down a canyon to reach the river, then swim across and take a short hike to the Hoover Dam visitors' center where his mother would meet him and celebrate his accomplishment that evening.

Those details via text message were the last communication between Shane and his mother. She waited about 30 minutes at the visitors' center for her son to arrive before calling for help.

Paul Burke

Several agencies deployed personnel and assets in the area, but after four days, there was no recovery. When Paul Burke first heard about Shane on the local news, he was concerned about the teenager. Burke, a retired Alaska State Trooper, but still a public servant, was also perplexed that no one notified him or his workplace – the Nevada Division of Emergency Management (NDEM), State Emergency Operations Center.

The wheels in Burke's head were moving him toward data analysis of Shane's proximity to the cell tower that allowed his phone to deliver the final text message to his mom. But that was just one component of an emerging search process that Burke had already been developing and discussing with others who were fascinated with the behavior of lost people. The scientific approach involved analysis related to how and where the lost wander based on physical and cognitive attributes as well as patterns that emerge from comparing thousands of missing persons cases from law enforcement, fire and rescue, emergency management and academic research. But more on that in a moment.

Using the data from Shane's phone, Burke got a starting point to guide the search. He also paid attention to Shane's text message which referenced climbing down the canyon and having the Colorado River in sight.

Burke then put himself in Shane's shoes using Google Earth's mapping of the area. He wanted to see what Shane reported seeing, so he began plotting the 3-D imagery in the direction Shane would have to travel to reach the canyon and river. In an hour or so, he located a vantage point that matched Shane's description of the river and canyon. Even better, the space was about the size of a football field, so it narrowed the search area. In Burke's published case study of the search for Shane, he wrote "The fact that he stated he could 'see the river' certainly added to the overall analysis that Shane was somewhere in this small area. This spot, above a location known to the locals as 'Boy Scout Canyon' was less than 100 meters wide, and it was the only location combined with the distance from the cell tower that the river was viewable."

Burke contacted local authorities with the information to pinpoint the search. Because daylight was fading, the search resumed Wednesday morning. Las Vegas Metro Police Department delivered a SAR team to the location Burke recommended. First, they found footprints from a pair of Vans shoes and within two hours they found Shane's body at the foot of a canyon wall some 900 feet tall. Shane's backpack was next to

him, and the water bottles were scattered in front of him. There were no signs of foul play, and Shane did not suffer any broken bones. But the coroner's report could not determine a cause of death. Burke's case study references the extreme heat, which endured into the evening hours, as a contributing factor to fatigue. Burke wishes he would have learned about Shane the moment the boy's mother contacted law enforcement.

"He passed away because, collectively, the system failed him," Burke said in a phone interview from his home in Reno, Nevada.

Though the final hours of Shane's young life remain unclear, quickly locating his body in the high probability area that Burke determined was a moment of clarity for Burke and a rite of passage for the Virtual Search Planning process.

"That's when we knew we had something," Burke said.

In the last decade, Burke has grown his team of search analysts to about 80 nationwide, including Alaska. They think like Burke, they are familiar with the behavior patterns of missing persons, and they focus on the details that narrow the search area, such as the clues in Shane McNeil's final text.

The Virtual Search Planning team are volunteers to local governments and SAR teams. You won't get an invoice from Paul Burke or any of his analysts for their services, but their contribution is proving its value. Combined, the group has worked about 550 cases, and they have located the subjects in 85 percent of those cases. The cost of the search is carried by the agency having jurisdiction, Burke said.

"We don't find people by accident, but on purpose. Our job is to locate them within the first operational period using a process that defines them and their location better than all other methodologies. You work for the missing person, and they deserve your very best," he added.

In May, Burke taught his Virtual Search Planning process to the Jacksonville Fire and Rescue Department (JFRD) in Florida. Several dozen firefighters with SAR experience took the class, and they learned that it's not a computer program, but a process that uses wide-field information and statistical data to model where any subject is likely to be.

"It's a game changer," said JFRD Captain Mark Roberts, a long-time member of the department's special operations team. He is also speaking from personal experience with Virtual Search Planning.

Roberts met one of Burke's analysts, Ben McMinn, when Hurricane Michael impacted Florida's Panhandle as a category 5 storm in October 2018. That's where Roberts first learned about Virtual Search Planning and a search and rescue mapping system known as SARTOPO. The process was relatively new to McMinn, who had met Burke in 2016 when Burke taught Virtual Search Planning to McMinn's USAR team from Mississippi. McMinn's career includes 20 years in the fire service in DeSoto County, MS and 15 years with Mississippi Task Force 1. He was impressed with Burke's methods, so were the rest of McMinn's colleagues.

"This training was the beginning of a shift in the way we managed search operations. The process allowed for a team approach, connecting analysts from across our state and in some cases across the country to develop a search plan for missing subjects."

In December 2019, Roberts was among dozens of firefighters and police searching for two siblings, ages 5 and 6. The brother-sister duo wandered from their front yard in a neighborhood on the west side of Jacksonville, and the massive search didn't locate them the first day. Among the complications, the search was a late afternoon deployment in mid-December so most of the search was by flashlight.

Later that night, Roberts recalled what McMinn had shared with him in the Panhandle, so Roberts contacted McMinn for help. They discussed the situation, the terrain, what they knew about the children and within a few hours, McMinn, working with Burke, produced a plan that illustrated the most probable search area to locate the children.

Jacksonville's police and firefighters pursued the plan the next day, but their initial efforts didn't yield results. The sense of urgency was mounting because the mild December day was about to turn rainy, cold and windy.

"We were within 30 minutes of calling it off," Roberts recalled.

McMinn and Burke urged the search team to take a second look and to go further within the search area. JFRD Engineer Phillip Holden was back in the wooded, wet area with dozens of first responders, including police, conducting another line search. Then something caught his attention.

Voices.

A few steps later, the team found the brother and sister in an abandoned hunting stand. They were dehydrated, but alert. Holden carried the girl, and JFRD's Lieutenant Josh Montoro carried the boy. After two days of observation at local hospital, the children returned home.

"Definitely one of the best outcomes I've seen," said Holden, who joined the department in 2017.

Jacksonville Sheriff's Office Assistant Chief Ellis Burns, III, said "It was the coolest thing I've seen in 21 years on the job. That's the most rewarding moment of my career."

Burke recalled his reaction to the good news: "Oh my God, they listened to us! A lot of people just go out there and kick the dirt. Very few people study it as a science."

By Burke's definition, Jacksonville gained some scientists that December day. And the numbers continue to grow. McMinn credits Captain Roberts and JFRD District Fire Chief Gary Kuehner for rallying support to bring Burke to Jacksonville to teach the Virtual Search Planning class. But there's much more work to do nationally and beyond. Burke estimates that only 5 percent of the nation's fire service and SAR resources have been exposed to Virtual Search Planning. He intends to continue growing his team of analysts, none of whom are paid for their work in Virtual Search Planning.

"This is a breakthrough process that will change lost subject outcomes from here after," Burke said.

Contact Paul Burke at 1-775-501-0685 or at www.virtualsearch.me