

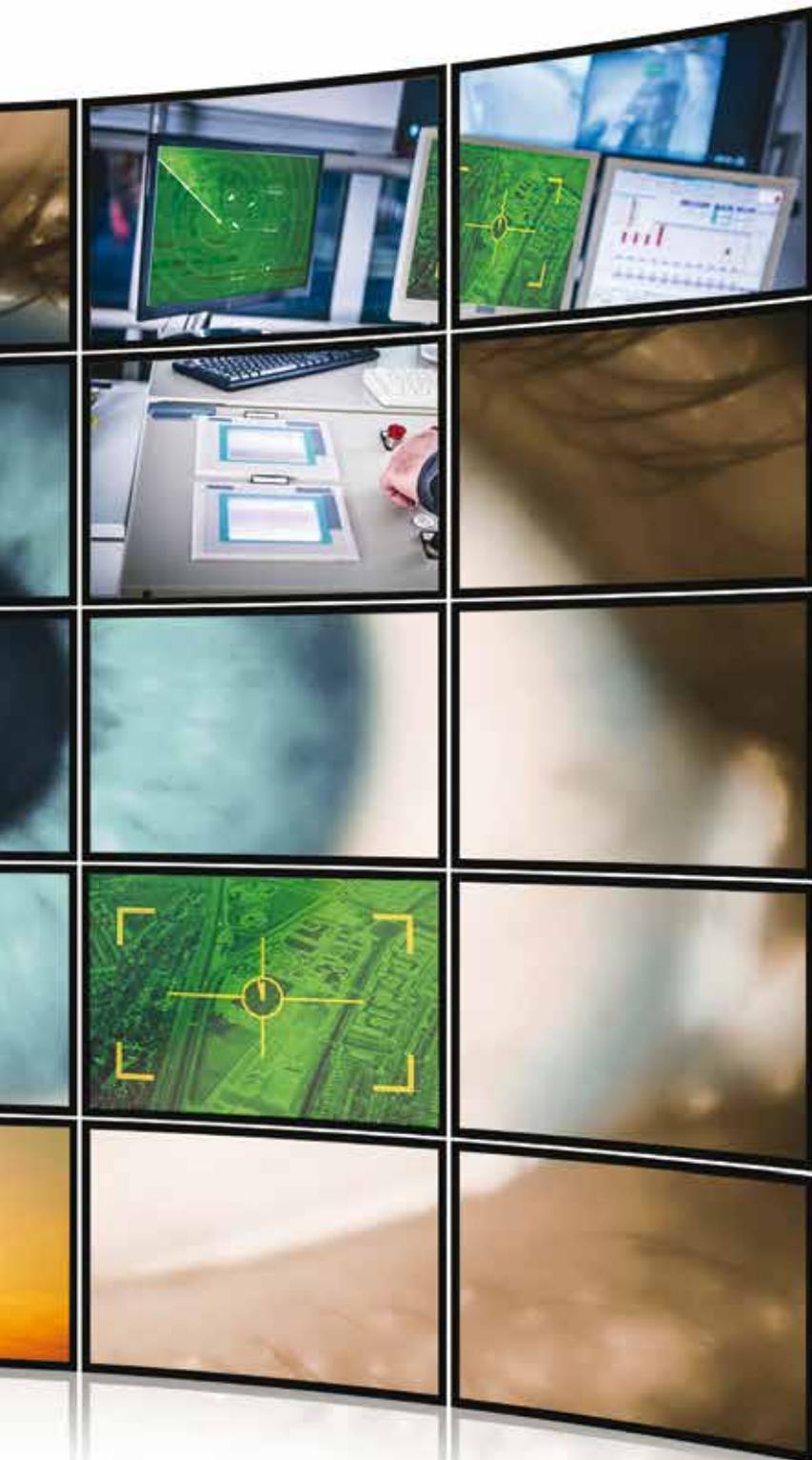
# For Hire:

## Intelligence, Surveillance, Reconnaissance

Small Firms Meet Growing Demand

*France Hoang*





Within seconds of recognizing something out of the ordinary on a real-time video feed from a nearby unmanned aerial vehicle (UAV), an expert analyst was able to identify a problem and rapidly redirect the UAV and sensors toward a sinking ferryboat in the water.

This action, taken by Momentum Aerospace Group, or MAG, tactical UAV operators and analysts supporting United Nations activities in Africa last year, wound up saving lives in Lake Kivu near Goma, a city in the eastern part of the Democratic Republic of the Congo.

"We discovered a capsized ferry boat and were able to call in the marine patrol to rescue 14 of the 21 people due to the awareness that our operators had that were flying over the lake. The analyst noticed something was out of the ordinary and was able to redirect the sensors and task the pilot to bring the aircraft back around to save lives," said Matt Bartlett, MAG executive vice president for business development.

The boat had capsized in waters about 6 miles off the coast of Goma; many passengers were in the water without life jackets. Due to an alert sent

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**Unmanned operations utilize ground control stations.**

Photo by Momentum Aerospace Group

by MAG UAV operators, U.N. officials were quickly able to redirect Uruguayan riverine troops to send speed boats while the UAV provided constant surveillance. That night 14 people spent the evening with their families but without that rescue operation would have perished in the unforgiving waters of one of Africa's Great Lakes.

More and more government entities are increasingly interested in outsourcing to private companies for Intelligence, Surveillance and Reconnaissance (ISR) capability. Outsourcing can reduce acquisition and developmental costs, help sustain a need to keep pace with changing technologies, and work at meeting what has become an insatiable appetite for real-time information and data.

MAG is among the handful of small private companies providing ISR capability to the government. Founded in 2009, MAG deploys more than 400 pilots, UAV operators, sensor operators and ISR professionals across the globe where their aviation expertise is increasingly in demand. MAG professionals operate, maintain, lease and provide training on a range of manned and unmanned aerial assets in a host of locations, including the United States, Africa, Afghanistan, Canada and South America.

ISR companies like MAG recruit seasoned operators and analysts with the expertise needed to account for a wide range of dynamic, fast-moving factors known to influence or affect sensor feeds and ISR information. The idea is to draw from tactical experience and institutional knowledge to quickly provide the government customer an integrated analytical picture of a given scenario in order to enable decision makers to take needed action quickly—as was the case on Lake Kivu in Goma.

MAG is different than most other ISR companies in that it is configured to provide an end-to-end, turnkey, manned aircraft or Unmanned Aerial System (UAS) solution worldwide. It can support aerial ISR by deploying the full spectrum of expertise required to deliver a solution, including operational planners, pilots, sensor operators, ground control station technicians, propulsion mechanics, avionics, logistics, mission directors, collection managers, and all source intelligence expertise; including SIGINT (electronic signal intelligence), GEOINT (geospatial intelligence), HUMINT (human intelligence), TECHINT (technical intelligence) and ELINT (electronic but nonverbal intelligence).

A key benefit of ISR is rapid shortening of the decision-making cycle by providing on-the-spot multi-intelligence analysis of data, imagery and video using the latest software tools and communications equipment.

"We provide customers with information they need to make key decisions in a rapidly changing environment. Often times those decisions are critical to saving lives and resources," said MAG Chief Operating Officer Sam Sblendorio.

Contract ISR operators are familiar with a wide range of broadly used sensors such as the nearly ubiquitous Canadian-manufactured WESCAM MX camera series. They also have the ability, acquired in many cases through years of military and technical experience, to recognize how issues such as weather, proximity, and other key intelligence can impact equipment and operations. This, coupled with a thorough understanding of command critical intelligence requirements, operational priorities, target demographics and the agility to respond quickly to variables, results in a

better understanding of how sensor images therefore can best be collected and interpreted.

For example, properly using the sensor's spatial filter can allow the operator to see through or mitigate dust, fog or other obscuring factors, explained Nathan Smith, MAG deputy program manager for UAS.

"The spatial filter allows you to get rid of some of the haze and dust if some colors are not coming through properly. It tells the processor to enhance colors," he said.

Making needed adjustments to an infrared (IR) sensor in fast-changing conditions is another key attribute of an experienced ISR operator, Smith explained.

"It is harder to manipulate IR because the ground is constantly changing. Manipulating IR is the same as EO (electro-optical sensors)—but because of the constantly changing temperature of the ground you need to constantly change your setting to keep up with the terrain," Smith added.

operations and intelligence plan to effectively connect the dots," said MAG Chief Executive Officer Joe Fluet.

As a result, private ISR operators are able to quickly filter through a range of seemingly disparate sources of information and determine if real-time action is required, as was the case in Africa with the capsized ferry boat.

### **Maritime Patrol**

In another example of the government turning to private companies for ISR capability, MAG professionals also detected and assisted the United States and partner nations in intercepting a half-billion dollars' worth of illicit drugs transiting across international waters in recent years.

By providing contract support to the U.S. Government, MAG operators worked closely with maritime forces to crack down on drug trafficking.

"During our maritime patrol mission in 16 months of operations, MAG flew 334 missions that detected 166 suspected



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For instance, if sensors are following a person who either jumps into water or enters a cave, IR settings will need to be adjusted to allow for temperature changes, Smith said.

Using private companies to deliver ISR capability allows government customers to access tactically relevant expertise and adapt quickly to changing technological trends. Successful private ISR companies such as MAG embrace a "plug and play" philosophy designed to help them integrate their turnkey solutions anchored by their operational and analytical expertise into any potential customer architecture or configuration.

Alongside refining and harvesting the requisite technical expertise needed to properly interpret all source intelligence, contract ISR operations focus intently upon substantial pre-mission planning scenarios in order to provide important context to live sensor feeds.

"Our operators have the expertise to understand the big picture and shorten the intelligence cycle—to take action on information gleaned from live collection and near-real-time analysis. It can be just a guy looking through a soda straw for others, but our operators understand the big-picture

Go-Fasts resulting in 39 positive identifications, 24 boardings, and the seizure, disruption or detection of \$663.7 million of drugs. MAG provides support to each phase of the Find, Fix, Finish cycle regardless of the mission profile," Fluet explained.

MAG operators used their expertise to detect speed boats, known as "go-fasts," that transport drugs under cover of darkness. MAG maritime patrol aircraft (MPA) are equipped with surface search radars that can detect go-fast boats up to 50 miles away. The maritime radar can track several "tracks of interest" simultaneously, while the MAG aircrew uses IR or electro-optical cameras to identify a suspected drug-carrying go-fast boat from a multitude of radar targets over a large area of the ocean. Once the suspected go-fast boat is identified, MAG aircrews use their on-board communications suite of radios and data links to pass the coordinates to operations centers that in turn relay the data to interdiction forces. MAG also can guide maritime interdiction forces to a moving go-fast target at night.

This maritime patrol effort is an example of an emerging trend in the contracting and acquisition world—that of leasing service-oriented expertise on a short-term basis instead



**A Beechcraft King B200T Aircraft.**  
Photo by Momentum Aerospace Group

of investing up front on a longer-term hardware solution. The hardware or technology will need proper ISR-focused interpretive expertise and the systems themselves may become obsolete rather quickly in today's fast-changing global technological landscape, Bartlett said.

While private companies have experience leasing the latest in UAV and fixed-wing surveillance plane technology, their value add resides just as much in the combat-tested tactical experience of the senior operators and trainers they provide.

As a result of this focus, private ISR operators are adept at helping customers learn, master and maximize the value of their equipment and technology, Bartlett said.

"It is way more economical to hire a company like MAG with experienced crews. If you bring in a platform on a short-term contract, you are able to save millions. You are able to try, test, operate and understand the various equipment choices on the market before a long term organizational commitment is made. This way, organizations can understand the best equipment and techniques that are required to solve a problem before committing to a long-term acquisition," Bartlett added.

Bartlett explained that the idea is to afford customers the opportunity to experiment with what they need before formal requests for proposals are issued and major purchases are pursued. Such a strategy can help inform and refine requirements while providing a ready-made on-the-spot solution for pressing ISR needs.

Contract ISR operators often use their experience to train customers on a range of sensors, including a variety of electro-optical/infrared systems. In addition, contract ISR experts also work regularly with equipment provided by customers.

The idea is to blend the science and technical capability of the equipment with the art of human experience, perspective and understanding to create an overall intelligence picture of value for the customer. This includes blending an understanding of historical background information and pertinent recent developments to enable skilled operators to accomplish difficult missions.

"Tactical, operational, and strategic understanding is critical to ensuring the decision maker is receiving the right information at the

right time—with the goal of trying to reduce the time needed between action and information," Bartlett said.

MAG personnel continue to support counter-narcotics operations. They use their ISR-focused tactical expertise to help intelligence collection managers know what to look for.

### **ISR Analysts and Operators**

Many private ISR companies operate manned ISR aircraft, while others focus solely on unmanned operations. MAG operates both types of ISR platforms, from the Falco Unmanned Aerial Vehicle to light aircraft platforms such as Cessna 206 and 337, to Beechcraft King Air series aircraft, to larger DHC-8 aircraft. These surveillance aircraft are configured with cameras, sensors, moving map displays, radios and SIGINT collection technology, among other sensors.

Many contract ISR trainers and tactical operators have spent years operating in combat circumstances similar to those they support, Bartlett explained.

"A guy who has been in the same situation as the supported element before [in a previous career path] is more apt to deliver the appropriate product in the desired format quicker to the end user," he added.

Private companies such as MAG offer to help customers maximize their return on an ISR investment by focusing on acquiring service-oriented expertise rather than acquiring expensive and quickly outdated equipment. This enables customers to get the maximum value out of their platforms, technologies and sensors while minimizing expenses, Bartlett said. "Our goal is to train ourselves out of a job." 

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