LESSONS FROM NCDOT FOR DEPARTMENTS THAT ARE SETTING UP DRONE PROGRAMS

For government departments to start a drone program, there are many aspects to consider, such as funding, policy and regulations, manufacturer selection, and technical know-how. Many public officials also mention that convincing leadership and shaping positive public perception of drones can be major challenges when they build a drone program for their department.

What challenges will departments face? And, how can these challenges be overcome to start a successful government drone program? What follows is the advice from the NCDOT Division of Aviation's UAS team who have gone through intensive research and testing before setting up their own UAS program and have helped many other units and departments build drone programs from the scratch. There are a few things that departments need to consider before diving into starting a drone program.

Consideration #1
Identify needs, key applications, and benefits

It is important for a department to do preliminary research and reflection on what drones are capable of and how those capabilities fit into their routine work. For the most part, commercial drones are used for the dirty, tedious, and dangerous work. A department should be able to identify the areas where they need a safer, more comfortable working environment for their employees as well as more efficient or effective outcomes.

Drone technology has progressed exponentially from five years ago when drones were mostly toys and the pilots mostly hobbyists. The hardware improvements have enabled drones to be used in more advanced, data-intensive ways. This has made the current commercial drone market broadly diverse with many different levels of available hardware and software, as well as service solution choices.

It is critical for a department to know their key needs, applications, and benefits they are looking for in order to make the most suitable and cost-effective choice of drone solutions.

Consideration #2
Decide the most suitable type of program

Not all departments need an in-house drone program, even if they determine that drones will substantially improve safety and efficiency in their key areas of work. If funding, staffing, or other possible challenges are holding an agency back from setting up an in-house drone program, there are many service provider companies in the commercial drone ecosystem.

Taking these aspects into consideration, departments should decide for themselves which is the best way for them to structure their programs in the initial phase. And when factors such as funding, resources, or internal skepticism change, departments can always reconsider the situation and let their drone programs evolve naturally.

Many departments in North Carolina did not have their own in-house program at the beginning, relying heavily on NCDOT for drone operation support when certain tasks required. When drone operations proved beneficial and affordable, these departments gradually shifted to setting up their own programs. Some had enough funding and human resources to set up in-house programs with several pilots in active service. Some seek help from external service providers. There are departments that have a mix of both, depending on the mission types and staff a mission needs.

Consideration #3
Get the proper consultancy and training

When a department is taking the possibility of starting a drone program into serious consideration, it is almost always more efficient to seek consultancy from either a more experienced department or from professional consultancy companies specialized in drones for enterprises.

Departments should be familiar with the basics of drones, what major types there are and what they are capable of under current technology and regulation context. These will help consultants provide the most feasible advice in the choices of program structure, hardware, and software selection. Having reliable and knowledgeable consultants will also help departments get through the complexity of policy and regulation process such as getting certain operation waivers and COA from the FAA.

Training is another critical aspect whether starting an in-house, hybrid, or entirely external program relying on service providers. Training a team to become certified and capable pilots is important. But it is equally important to train that team to be able to read, understand, and communicate the data captured by drones, turning data into actionable intelligence.

Consideration #4
Engage leadership and the public

Many departments report that when they first initiate a drone program, they quickly encounter skepticism from leadership or management. As a new technology with less than a decade of visibility in civilian industrial and government work, it can be hard to accept drones into a department's routine work without going through the initial proof of concept phase.

To many people, especially those with no previous experience working with drones, drones are still seen as toys for hobbyists. However, it usually does not take long to convince leadership or management of its possible value in operations. It is helpful to perform demos, and have a unit to showcase-these can be from donations, volunteer pilots in the community, or a loaned unit from a supplier.

Another source of skepticism will come from the public. Communities often relate drones to negative issues such as privacy violations or noise. Make sure the department and drone operation team maintain a constant conversation with local communities about how drones are deployed and what sort of data is captured for which purposes.

The general public is starting to have a more positive perception of drones as the industry matures. They respond especially well to incidents of drones saving lives in search and rescue missions, disaster response, emergency medical situations etc.