

Research based on the Technical Warfare of Police UAV in Emergency Disposal

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Abstract: With the continuous improvement of the current level of science and technology, drones have been used in various industries. For police drones, due to their own flexibility characteristics, they can better handle emergency emergencies, and there is no need to invest too much in this, their stability is higher, and the number of personnel is reduced. Casualties are an important method in the current work of public security organs. This article first understands the contents of drones, then explains the specific application of police drones in emergency emergencies, and finally studies the current problems that police drones still need to solve for the use of police drones. Provide corresponding reference.

In order to better improve the emergency response capability of the public security system and take reasonable measures in the shortest time when problems occur, then police drones should be effectively applied. In this way, it is possible to make up for the current problems of insufficient security, low technical content and other related issues, and better improve the coordinated combat capabilities of the police. The emergence of police drones also shows to a certain extent that the current public equipment is being modernized. Through police drones, it can be well involved in tasks such as explosion-proof, catching, and emergency rescue, and also plays a very important role in some large-scale security. Provide corresponding assistance in the development of automation and informatization.

1. The contents of the drone

The full name of unmanned aerial vehicles is unmanned aerial vehicles. It uses corresponding radio technology and remote sensing equipment to contact, set the corresponding procedures in advance, and then let them complete various tasks [1]. The UAV will use the GPS positioning system to convert the picture into a digital signal and transmit it to the designated location in time.

(1) Types of police drones

Currently in public security systems, police drones include helicopters, multi-rotor aircraft, etc. Among them, multi-rotor drones occupy a large proportion, and the number is increasing, and other types of police drones have not changed significantly.

(2) Characteristics of police drones

At present, most of the police drones in our country are multi-rotor types, and this type of drones are more convenient to operate and have a simple structure, can respond to close-range data collection well, and have the function of hovering in the air. The data is clear, and it can also be transmitted in real time. Secondly, China's police drones also have fixed wing types, which are also widely used. This kind of UAV is more suitable for long-distance inspection, its flying height is higher, and it can better achieve high-altitude monitoring.

(3) Requirements for police drones

1. On-site development capabilities

When the public security system is working, its outstanding feature is uncertainty. Such a feature requires the police to be able to respond quickly to problems in a timely manner [2]. Therefore, police drones must have the ability to carry out on the spot, respond quickly and perform the corresponding tasks in the shortest time.

2. Very good concealment ability

In police work, tracking, arresting, etc. are often carried out, so you need to have some hidden ability. It is not possible to expose the target during the tracking process, causing suspicion. Therefore, police drones must have a good hiding ability and be undetected during the tracking process. Furthermore, this imposes stricter requirements on the noise of the drone itself. It needs to add noise reduction technology in time, and its appearance must have low visibility. It is made of special materials to ensure that it can meet the corresponding concealment requirements.

3. High integration

For police drones, as a special equipment, they must have multiple functions and handle multiple tasks. Therefore, they need to have high integration characteristics, not only capable of surveying and patrolling, but also capable of transporting materials, throwing weapons, etc., to meet with the various requirements of public security work.

4. High safety and reliability

Police drones belong to highly professional drones and are used by public security systems, so they need to have higher safety and reliability [3]. For police drones, it has to undergo various tests such as high temperature, corrosion resistance, etc. to ensure that it has strong performance, waterproof and so on. Its standards are carried out according to military-grade standards, which are unmatched by ordinary products .

(4) Development prospects of police drones

At present, with the continuous improvement of the level of science and technology, police drones are more based on science and technology when researching, continuously improving their police level, efficiently completing the corresponding tasks, and actively responding to emergencies To achieve the task of highly difficult monitoring, the police work has achieved good results, and the future development prospects are better.

2. The specific application of police drones in handling emergency emergencies

(1) Application in counter-terrorism

After a violent incident, the police drone can timely understand the situation on the spot, monitor the target in all aspects, and transmit the collected information back to the command center in the form of a picture to ensure the real-time nature of the picture. To fully understand the actual situation of criminals, better help the police to analyze their problems, formulate corresponding arrest plans, and target criminals [4]. In the process of detecting emergencies, the police drone can detect the incident at high altitude, and then obtain the actual situation of the surrounding roads in a timely manner, as well as the distribution of personnel, etc., combined with the actual situation of the road to effectively formulate an arrest plan. And before arresting criminals, the drone can also provide the police with detailed information in time to ensure the accuracy of the arrest. The police drone has its own high-definition recording function, which can record the actual situation on the spot in time, and better increase the recovery capacity of its on-site cases. In the event of an emergency, such as holding a gun or involving violence, the police drone can also carry tear gas, smoke bombs, and other weapons to a designated location, and accurately throw in the air to provide corresponding assistance for disposal.

(2) Role in traffic accidents

When a traffic accident occurs, the police drone can be used to reach the scene of the traffic accident, and then the scene is transmitted to the command center through data, so that the traffic control personnel can timely understand the traffic accident situation, and according to its content To formulate disposal measures. After a traffic accident occurs, the police drone can step through the accident scene in real time, assist the traffic management department to complete the tracking and recording of the vehicles involved, and provide intuitive data for the identification of traffic accidents [5]. In addition, police drones can also quickly collect on-site information through

high-definition video recording when congestion occurs on highways, and help traffic management departments carry out unblocking work. For police drones, not only can live scenes be transmitted in real time, video information can be retained, but also traffic flow can be recorded, which can provide corresponding help for optimizing traffic management methods and better guarantee the quality of traffic management methods. In 2018, a city's traffic police used police drones to investigate and deal with illegal highways, and used the data collected by police drones as evidence to better supplement some surveillance blind spots in highways and other areas. Specifies the driving behavior of the driver.

(3) Application in handling mass incidents

In the process of dealing with group sudden times, police drones can quickly reach crowded places in a short time, and then real-time monitoring of their scenes, which can help commanders quickly understand the scene and master Event dynamics, find the riotous crowd among them. You can install a voice control device on the police drone to evacuate and guide the crowd in a timely manner. You can project tear gas to disperse the riotous crowd, effectively solve the difficulties of commanding and monitoring in mass incidents, and better use its Function, improve work efficiency.

(4) Application in fire fighting

At the scene of a sudden fire, the police drone can reach the scene in time [6]. For example, if there is a fire in a high-rise building, people cannot know the high-rise fire situation in time, and the police drone can transmit the fire picture to the command center. In this way, firefighters can formulate rescue measures according to the situation. When the materials at the fire site are scarce, police drones can also carry life jackets, ropes and other materials, providing corresponding help for firefighters to better rescue. You can install the thermal imaging acquisition technology on the police drone, find the fire source in the fire site in time, do the control and resolution in advance, and also be able to use the thermal imaging technology of the police drone after the entire fire is extinguished. Let's make a specific search for the secondary ignition point of the fire scene to prevent the problem of reignition.

(5) Application in disaster relief

After the disaster, the police drone can investigate its relevant area according to the specific situation, and clarify the location and situation of the rescued person. In places where vehicles cannot reach, police drones can transport some first aid items to ensure the safety of personnel and provide sufficient time for rescue work. It can also be equipped with life detection technology in police drones, so that large-scale search tasks can be achieved, thereby improving work efficiency and ensuring the safety of personnel's lives.

3. Problems to be solved by the police drones

(1) The need to improve relevant laws and regulations in a timely manner

In 2016, China issued the rules and related laws on the use of civilian drones, but from the perspective of current Chinese laws, there are no laws and regulations on police drones [7]. Therefore, it is necessary to improve this law in a timely manner, and then to restrict the use of police drones, better ensure that police drones can play their role, and provide corresponding help for the work of public security systems.

(2) The manufacturing level of the industry is inconsistent

At present, there are hundreds of enterprises developing police drones in China, among which there are research institutions and some civil enterprises. Because for drones, it is a special existence in the development of the industry. Not only are many companies with strong professional levels manufacturing drones, but also some cross-border companies are studying police drones. Compared with the development of traditional drones, police drones have higher quality

requirements, and the professional level of the enterprise itself leads to inconsistent quality of police drones.

(3) UAV maintenance and training cannot meet actual requirements

At present, police drones lack corresponding operators, and are not comprehensive in training, which leads to problems and certain losses when operating drones. I don't know the reasons for the problems that occur during the use of police drones, and they cannot make the police drones complete the corresponding tasks [8]. In addition, police drones are used as a tool, so they need to be maintained regularly, and currently there is no focus on this content, which will affect the service life of police drones and increase their cost investment.

(4) Police UAV equipment needs to be upgraded

Because of the special nature of police drones, it is also necessary to continuously improve its reliability. Because the unmanned system is not yet perfect, it is inevitable that it will be affected by the external environment when performing the corresponding tasks. Further research is needed in terms of battery life, avoiding obstacles, and so on.

Conclusion

In short, for police drones, it is an important method that can help the public security system to improve the technical level and achieve strategic development. At present, it has become an important means for monitoring and handling emergencies. Therefore, it is necessary to actively establish a drone training plan, formulate rules for the use of police drones, gain an in-depth understanding of the functions of its drones in social management, sensation, etc., better serve the public security system, and ensure the society Development safety.

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