SPECIALTY UNITS

Vermont has a number of specialized SAR resources that may called to assist at missions. This session will introduce you to a few of them.

K9 SAR

- **It is quite common to see a K9 response to SAR incidents in Vermont. The state utilizes both volunteer SAR teams and full time law enforcement.**
- **It is helpful to understand the different types of K9 resources and how they affect your response and participation when they are present.**

Dogs can be a very valuable resource for SAR. They use their acute sense of smell in a way that human searchers simply cannot.

This also makes them a far more valuable resource than people for searching at night as they do not rely on sight (and light) to locate a missing subject.

Tracking/Trailing K9

- **Vermont is fortunate to have a very robust law enforcement K9 program that assures consistency in training and competency.**
- **It is often possible to get a tracking dog to a scene relatively quickly to attempt to locate a track and direction of travel.**
- **They may come from the State Police, local law enforcement or Vermont Fish & Wildlife game wardens.**

All law enforcement dogs in Vermont go through the same training and certification process at the Vermont Police Academy. Most are trained in multiple disciplines which may include drug or explosive detection. The game warden K9s are also trained to locate shell casings which can potentially help in locating clues for missing hunters.

Tracking/Trailing K9

- **Function – Respond to the scene, attempt to cut sign and track the individual path of travel.**

<u>Scent specific and work on lead (leash).</u>

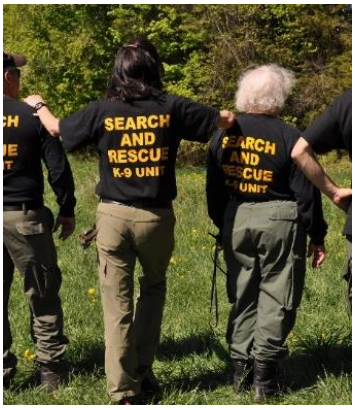
Because these dogs are scent specific It is critically important that initial responders to an incident be very careful not to contaminate or disturb the PLS which will inhibit the ability of the dog to pick up the proper scent.

You should also be sensitive to concerns about contaminating a scent article from the missing person with your own scent.
Usually a handler will want to collect a scent article themselves.

The fresher the scent (sooner since the person went missing) the more effective the dogs are.
Eventually the scent will disappear and tracking dogs will lose their effectiveness.

Air Scent K9

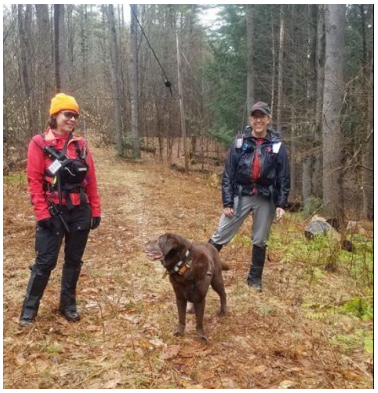
- **There are several highly dedicated volunteer K9 SAR teams that routinely respond to searches in Vermont.**
- **These teams are primarily 'air scent' resources.**
- **This means that the dogs are trained to locate ANY human scent while they are searching as opposed to tracking/trailing dogs that are scent SPECIFIC to the missing person.**
- **As a result these teams do not need to start at the PLS, but can be assigned to search anywhere.**



It is important to understand that other searchers MUST stay out of the search area assigned to the K9 team. The dog will not distinguish between your scent and that of the missing person!

Air Scent K9

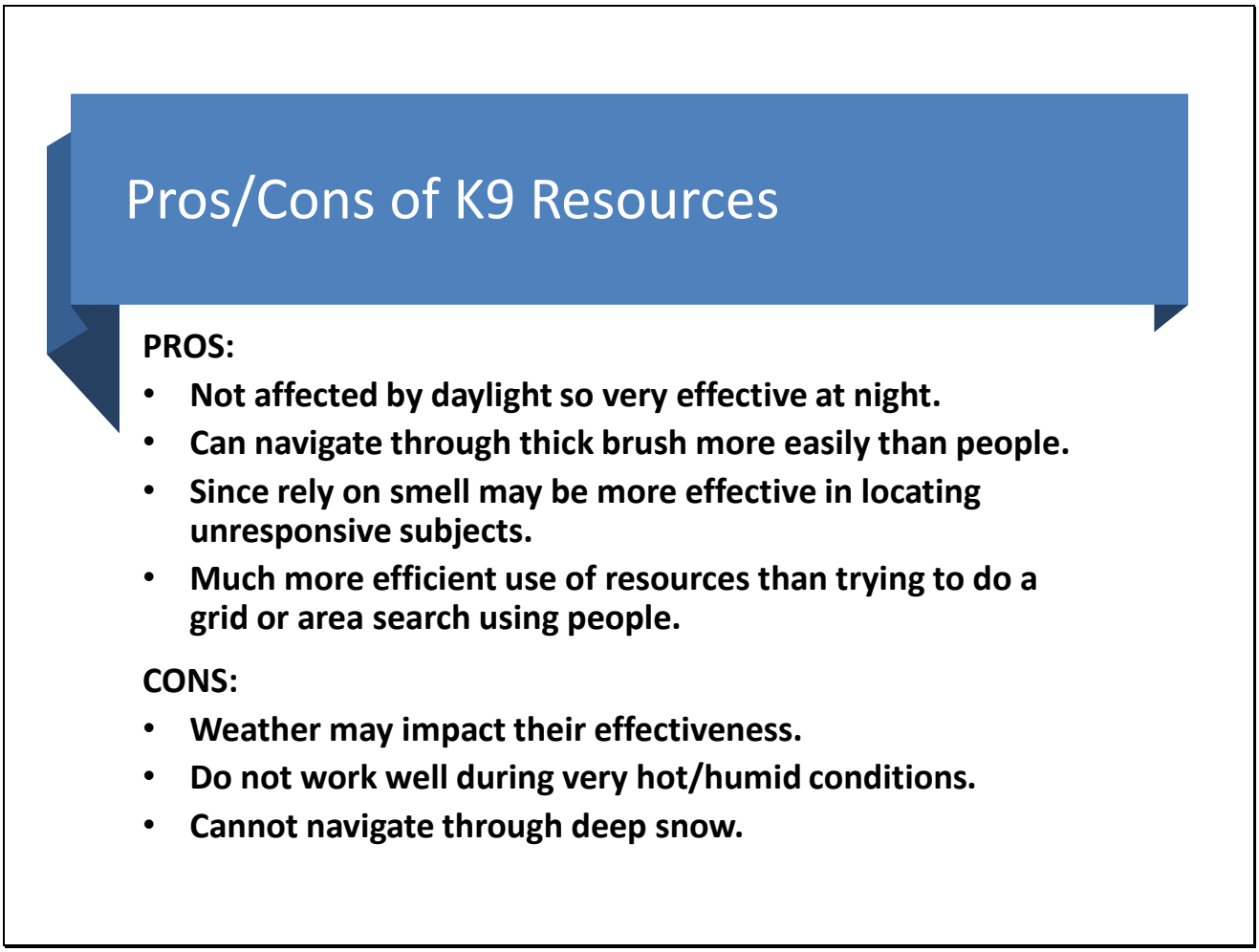
- **Function – Respond to the scene, assist in planning appropriate and high priority search areas for each dog and handler.**
- **Dog, handler and typically a 'flanker' (who assists with navigation and communications) comprise the search team.**



To review:

Tracking dogs work on-lead and follow the specific scent of a missing person from the PLS or LKP to determine a direction of travel and hopefully locate the missing subject. The sooner they can start the track the better the chance of success.

Air scent dogs work off-lead and will do an area search and alert on any human scent in that area.



K9s are another tool in the toolbox for SAR managers. Like all resources, it is important to understand both their capabilities and limitations and utilize them accordingly.

Supporting K9 SAR Teams

DO!

- **Call out any safety issues you see.**
- **Let the handler know if you are uncomfortable or have a fear of dogs.**

DON'T!

- **Approach a SAR dog that is in its crate when the handler is not present**
- **Touch or feed a dog without asking the handler first**

It's possible that you be asked to assist a K9 air scent team when they are deployed in the field, as the handlers will not always bring a 'flanker' or assistant with them. If you are so assigned, keep the following in mind:

- Ask the handler their search strategy and expectations as an assistant.
- Look for visual clues as the handler will be occupied with watching the SAR dog.
- Be prepared to navigate and have appropriate gear for conditions.
- Expect to move more quickly than on a line search and keep the handler within sight.
- Ask handler to explain the dog's alert (the signal the dog gives the handler when it finds the subject or clue).
- Do not touch any clues found or approach the subject unless instructed to do so.

Technical & Rope Rescue

When the going gets rough!

- **Searching high angle areas.**
- **Accessing subject.**
- **High angle rescue.**
- **High angle recovery.**

Technical rescue teams can be an important component of SAR operations.
Highly specialized training is required to be competent in working safely in a high angle environment.

A SAR mission in May of 2017 in Westmore illustrated how technical rescue teams can successfully integrate into a SAR operation.

- The search initially involved ‘traditional’ ground search techniques of hasty searching and K9 area searches.
- The search area had significant cliffs which were searched by qualified resources rappelling over the edge, where the subject was located on a ledge mid-cliff.
- The high-risk recovery was performed by multiple technical rescue units working together after having developed a comprehensive Incident Action Plan.

Technical & Rope Rescue

When the going gets rough!

- **Winter conditions.**

Conditions in the Green Mountains during the winter can be challenging and dangerous for all but the most experienced.

Searching at higher elevations during extreme winter conditions is typically best left to those properly trained and equipped.

Patient evacuations during the winter may also require specialized training and equipment.

Supporting Technical Rescue Teams

DO!

- **Call out any safety issues you see.**
- **Offer to help, but ask before you do anything.**
- **Stay clear of the area unless you have a task.**

DON'T!

- **Step on rope (or any equipment).**
- **Approach the edge unless you are tied in and have appropriate PPE.**
- **Exceed your training.**

Sometimes an extra hand is much appreciated, such as during haul or raising systems, but it's also easy to get in the way of technical teams that are used to training and working together as a unit.

They may not know what your experience and training is so just be as supportive as you can and do as asked.

Water Rescue

When the going gets wet!

- **Searching waterways.**
- **Accessing subject.**
- **Swiftwater rescue.**
- **Recovery.**

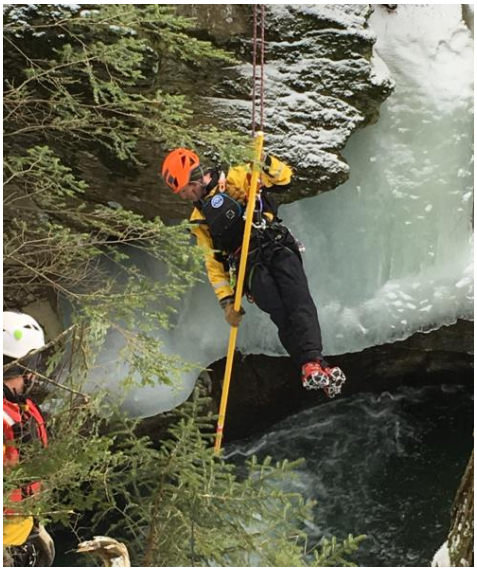
Water creates a unique and dangerous set of circumstances for searchers. Every year people get swept downstream, fall into gorges, have boating accidents or fall through the ice and need to be located by SAR teams.

While some searching can safely be done with minimal training, typically these incidents require specialized units to respond.

Water Rescue

When the going gets wet!

- **Swiftwater rescue.**



Performing SAR missions around water are among the most dangerous missions you may encounter.

While there may be an opportunity to provide some limited shore-based support, typically these incidents are handled only by those with the proper equipment and training.

Water Rescue

When the going gets wet!

- **Ice rescue.**
- **Underwater recovery.**

Fishermen, snowmobilers and others who venture out onto the ice in the winter run the risk of breaking through when the ice is not strong enough.

SAR personnel should NOT attempt to locate or rescue them without proper equipment and training. Remember your safety and that of your teammates always come first!

Often these missions turn into recoveries by the time SAR arrives.

Supporting Water Rescue Teams

DO!

- **Call out any safety issues you see.**
- **Offer to help, but ask before you do anything.**
- **Stay clear of the area (and help keep others away).**

DON'T!

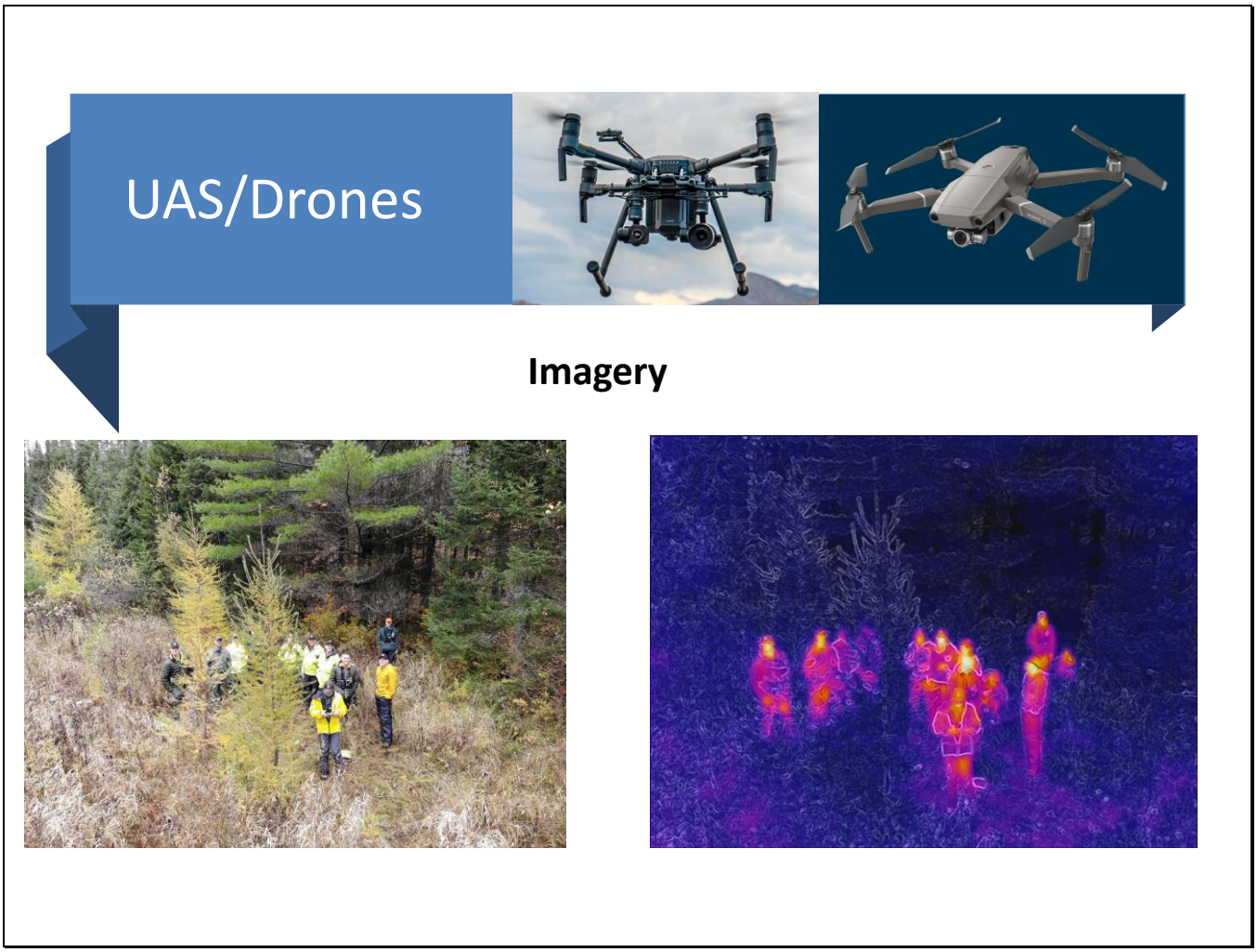
- **Approach the water unless you have a PFD and have been told it's OK to do so.**
- **Exceed your training.**

Similar to working with technical rescue teams, while sometimes an extra hand is much appreciated (helping haul heavy gear for example), generally water rescue teams work as a unit. Always wear a PFD when working around the water!

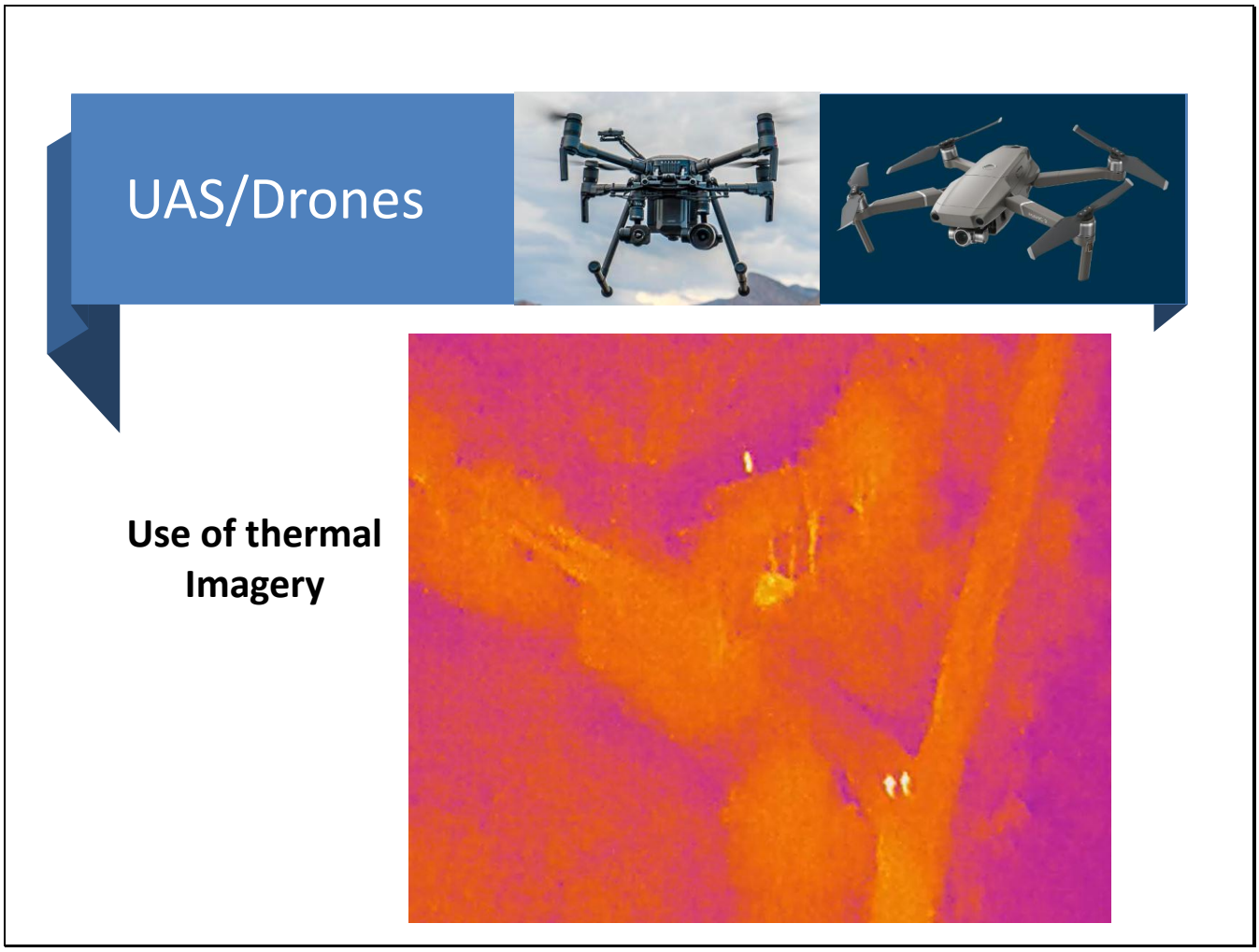
The use of Unmanned Aerial Systems (UAS) is becoming increasingly common in search and rescue. The Vermont Dept. of Public Safety initiated a statewide program in 2019. They currently have 13 drones and licensed pilots.
Pilots flying public safety missions are required to be licensed by the FAA.

UAS have the ability to be quickly deployed and immediately give a birds-eye view of the surroundings.

If you were deployed on a search for an overdue boater in the area in the photo above it could be very helpful to utilize a drone to do a quick overflight of the area and search around the shoreline. This could be accomplished much more quickly than deploying ground or water based resources. Even if it only eliminates certain areas from searching, it can save a lot of time. On the other hand, the heavily wooded areas surrounding the water are not generally as conducive to searching from the air.



Most of the drones used for SAR are equipped with both visual and thermal cameras, and can record both individual images or video simultaneously.
The two images here are of the same scene. What do you notice as the pros and cons for visual vs. thermal imagery? What is harder or easier to see in both formats? Why do you think the subject's faces show as 'hot spots'? (Hint – it is cool out and the people in the photo are warmly dressed.)

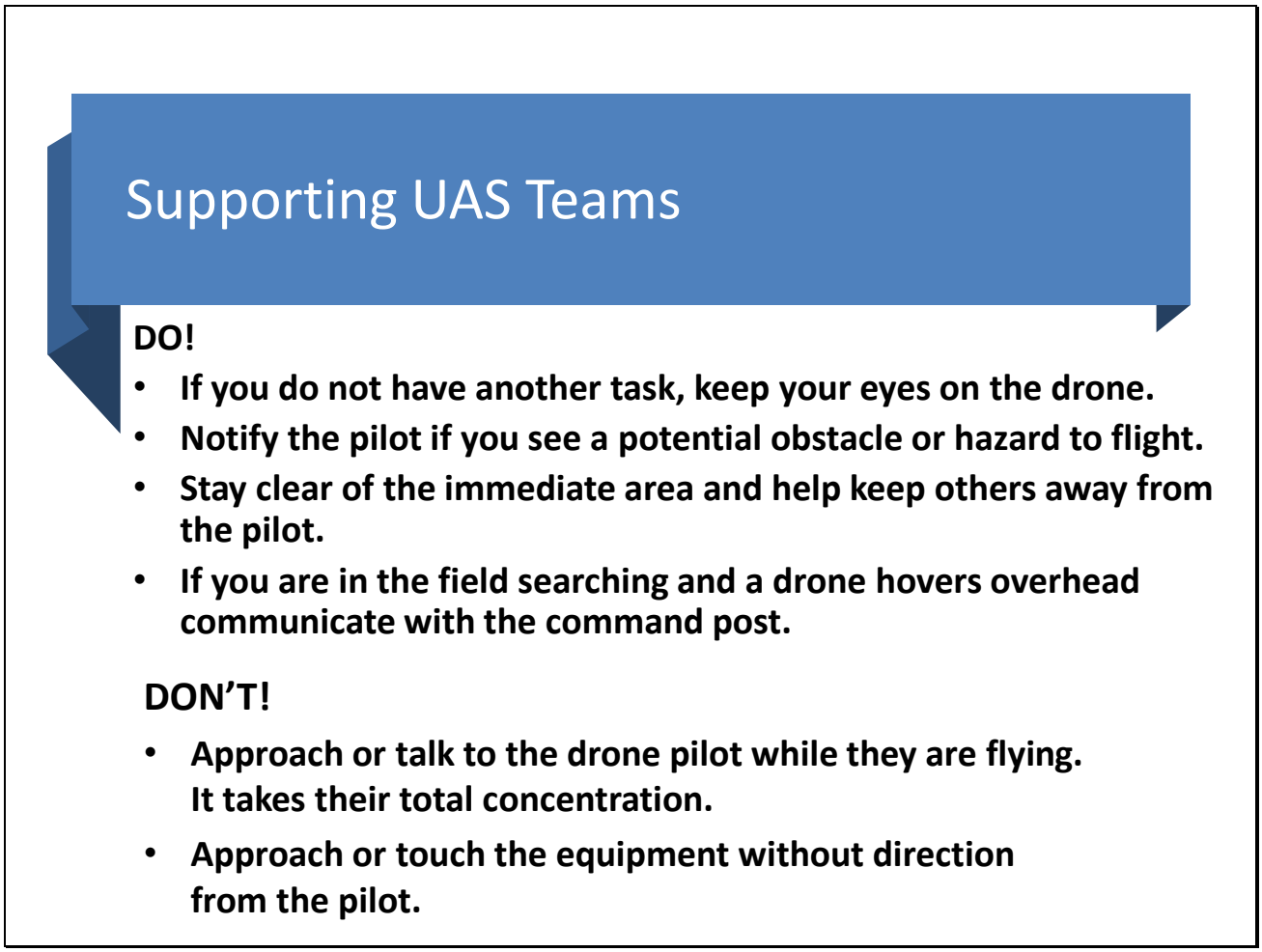


The image above was taken during a night SAR training mission. The drone was able to locate the ‘missing’ subject toward the top center of the photo, and then direct the two searchers in the lower right directly to him.

What do you think this image would have looked like if taken with a visual rather than thermal camera since it was dark out?

Night drone flights are typically not allowed, but the Vermont State Police have received a waiver from the FAA which allows them to do so.

Here is another example of an application for UAS at night. This incident involved two hikers who were stuck on an icy ledge in Smuggler's Notch.
In the thermal image on the left you can see how the body temperatures of the subjects and the rescuers are clearly visible.
On the right you can see that the use of a spot light on the drone helps light up the scene to assist in the rescue.



It is helpful to know some dos and don'ts when operating with UAS teams at a search.
The pilot (and/or a designated 'visual observer') is required to keep the drone in visual sight at all times. You may offer or be asked to assist in keeping your eyes on the drone. Also you can help by scanning the sky for any potential hazards and bringing them to the pilot's attention. Examples might be birds, power lines, another drone or nearby aircraft.

If you are in the field and a drone is operating in the vicinity that you think may have seen you, communicate with the command post or the pilot so that they know you are searchers and not the missing subject.

Congratulations, you have finished this module

You may close this window to return to the main course and select another module to complete.

Be sure you keep track on your course checklist so you know which modules you have completed.