

MANEUVER OPERATIONS

The team has identified minor security changes in the environment compared to the recon intel collected earlier; some additional security lighting near the loading dock for starters. The team quickly assesses the situation and decides on a mitigation plan.

It's very dark outside and there may be more hidden surprises. Crouching low to keep a low profile, they fall into a tighter vee formation and advance carefully toward the target. Several minutes have passed, but it only seems like seconds. It feels like things are happening too fast. But it always feels this way.

Senses are intensified so much that your ears start to buzz. Eyes dart from here to there, and heads swivel side to side as the target's external facade slowly grows more visible. Is that shadow a newly added security camera? Do I hear a car approaching? Did I forget to pack anything? What if there is an alarm on the door? It seems far too bright. Should we re-route our approach?

Breathing is noticeably more taxing now, but the equipment isn't that heavy. The team's earpieces chirp, and a static-filled radio announcement temporarily breaks their focus. It's a familiar voice. The red team leader announces over the radio that she's reached the rally point and wants a situational report (SITREP) The team prepares to break into two groups and strike.

It is fundamental to any physical red team operation to move swiftly, securely, and confidently to and around a target. In fact, if at any point during the operation the team is going to be compromised, it will likely happen here. This is because the team's actions are often exposed to the public eye and at the same time close enough to be scrutinized by the target facility's cameras and security personnel.

The Maneuver Operations phase has a few key components:

- Environmental Conditions

- Settlement
- Observation
- Cover & Concealment
- Movement

Environmental Conditions

It may seem like most physical red team operations happen in urban settings in moderate climates, but that's not entirely true. Think about data centers, supply warehouses, outposts, and remote offices. Data centers, these days, aren't always located in bustling metropolitan areas. Instead, remote locations are sought out for their mild climate, stable power, and discreet locale.

The important thing to note is that locations and environmental conditions will vary, and it's essential to know how to prepare for some of the challenges they can pose.

To begin, here are a few types of environmental conditions we will cover:

- Dry & Arid
- Wet & Rainy
- Cold & Snowy

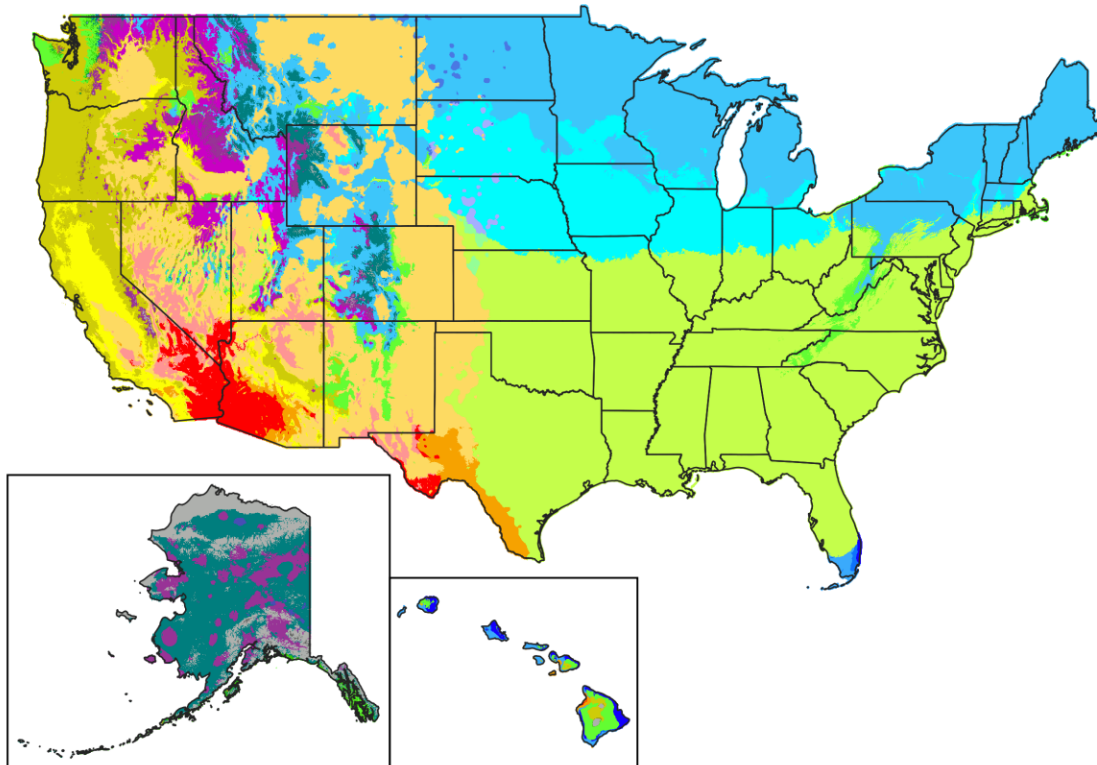
Please note this is a non-scientific approach, but I believe it to be brief and sound enough to cover most of what is important here. The following guidance assumes a rural or semi-rural target location.

Dry & Arid

In parts of the US where it is dry and desert-like, you will usually find some difficulty traversing the ground. Dry, rocky terrain produces uneven earth and plenty of opportunity to slip and slow movement. Furthermore, the threat of exposure is elevated due to a general lack of cover and concealment. At best, scattered knee-high to waist-high bushes provide the most consistent cover.

There are several types of dry and arid environments, the majority of which lie scattered in the western half of the U.S. and focused in the southwestern U.S. A quick study of Koppen climate types overlaid on the U.S. map will provide much more insight here (see Figure 34). Labels ranging from "continental warm summer," like we see in the upper Midwest, to "hot desert" in Arizona, California, and parts of Texas can help prepare teams tremendously.

Köppen Climate Types of the United States



Köppen Climate Type

■ Af (Rainforest)	■ Csc (Cold-summer mediterranean)	■ Dwa (Hot-summer humid continental)
■ Am (Monsoon)	■ Cwa (Humid subtropical)	■ Dwb (Warm-summer humid continental)
■ Aw (Savanna)	■ Cwb (Subtropical highland)	■ Dwc (Dry-winter subarctic)
■ BWh (Hot desert)	■ Cfa (Humid subtropical)	■ Dfa (Hot-summer humid continental)
■ BWk (Cold desert)	■ Cfb (Oceanic)	■ Dfb (Warm-summer humid continental)
■ BSh (Hot semi-arid)	■ Cfc (Subpolar oceanic)	■ Dfc (Subarctic)
■ BSk (Cold semi-arid)	■ Dsa (Hot-summer mediterranean continental)	■ ET (Tundra)
■ Csa (Hot-summer mediterranean)	■ Dsb (Warm-summer mediterranean continental)	■ EF (Ice-cap)
■ Csb (Warm-summer mediterranean)	■ Dsc (Dry-summer subarctic)	

Data sources: Climate normals from PRISM Climate Group, Oregon State University, <https://prism.oregonstate.edu>;
Outline map from US Census Bureau

Data periods: 1991-2020 (Contiguous United States); 1981-2010 (Alaska); 1971-2000 (Hawaii)

Climate Types of the U.S.

Preparing for dry and arid environmental conditions, one should consider the following:

- Sparse vegetation
- Intense heat and sunlight
- Wide temperature ranges

- Possible sandstorms

We've discussed the implications of sparse vegetation providing little cover. To combat this, operators should make use of camouflage clothing, especially if movement is expected during daylight hours. When in doubt, consider desert MARPAT (marine pattern) camouflage. Clothing should be breathable so as not to make the wearer uncomfortable in the heat and intense sunlight.

If the mission calls for spending several hours in the field, the team should be prepared for the hot humid day and the cool and cold night. The drop in temperature at night occurs rapidly, sometimes going from as high as 130° F (55° C) during the day to as low as 50° F (10° C) at night.

Footwear should have ankle support to help prevent rolled ankles and be rugged enough to withstand tough terrain. Be aware of other hazards such as snakes that often live in these dry environments. Carry plenty of water to stay hydrated.

Wet & Rainy

According to Figure 34, humid subtropical climate makes up a great deal of the southeastern United States, and cool, rainy weather makes up the northwestern corner. Weather conditions are fairly moderate in most of these areas, aside from the potential for rain. Wide temperature ranges are not as common unless you traverse into some of the bordering Mediterranean areas of the northwest.

The likelihood of rain and windchill contributes to the potential for hypothermia. In these conditions, rain clothing, warm undergarments, and waterproof equipment are essential. Terrain in most of these areas is often not overly rugged and uneven. Still, combat boots or hiking boots should be worn. Shrubs and thorns are probable in most of these areas. Ripstop pants aid in preventing scratched legs.

For movement during the day, woodland MARPAT is recommended. To account for the presence of trees and grasses, this pattern is green and much darker than desert MARPAT.

Cold & Snowy

Physical red teaming in the winter is treacherous, especially in the northern United States. Keeping warm is crucial. Do not let the objective of a mission jeopardize one's health and safety. My company, RedTeam Security, is headquartered in St. Paul, Minnesota. We experience temperatures of -20° F and windchills of -45° F in the winter. In cold conditions, warmth and safety must be primary. Snow boots, woolen socks, long underwear, thick undergarments, heavy outerwear, gloves, and ear/face protection are a must.

Cold doesn't always mean snow. Depending upon the location, woodland MARPAT might still be a good camouflage pattern to wear. However, where there is ample snow on the ground, white snow camo is preferred. There are many pattern variations. In the upper Midwest, where big game hunting is popular, many sporting goods stores will have them in stock.

Snow boots and clothing alone will add noticeable weight, making it hard to move around with any kind of speed. Snow can drift significantly high, making normally flat ground hard to traverse. Move slowly and carefully; you never really know how deep the snow is and what is underneath.

Of course, the weight of these environmental conditions ultimately depends on where the target location resides. Clearly, we don't need to wear camo if the target is located on State Street in downtown Chicago.

Settlement

How one goes about coordinating the movement of an operation not only depends on the environmental conditions, but also the setting. As I mentioned earlier, not all operations play out in urban areas. My company performs physical red team operations in various settlements, and urban areas make up the least common setting. This is why most of the guidance in this book assumes a non-urban setting.

Let's go over two distinct and common settings, urban and rural, and the nuances of each.

Rural

Rural settings aren't limited to flattened farmland. They also include small towns and communities. Targets in rural settlements have characteristics about them that make them unique. First, let's take a moment and list some of the most notable characteristics, and then I will go on to detail a little bit about them.

- Abundant acreage
- Bystanders on high-alert
- Physical security patterns

In my experience, targets located in rural areas generally have ample acreage surrounding their facilities. This often means more ground to cover before reaching a target's perimeter. The downside is a greater window of exposure on approach, yet the upside is the team can make use of the acreage to setup mini-staging sites. More ground can also mean more cover and concealment opportunities.

The added landscape becomes the backdrop, it's important to choose the right camouflage clothing for concealment. There are certainly pluses and minuses to extra acreage. All in all, plan to traverse more ground and plan for a longer time in the field. Movement at nighttime is ideal compared to daytime.

Wide open spaces mean there is less chance of being visually compromised by passersby. I've often noticed that urban dwellers tend to disregard suspicious behavior slightly more than rural residents .. I recall an incident where my team was literally pulled over by a rural resident who wanted to know who we were and what we were doing in his small town at 3 a.m. His expression proved that he didn't buy the backstory we gave him, and he proceeded to follow our vehicle for the next 20 minutes. In rural areas, it is important to maintain a low profile and travel lightly.

The presence of vehicle headlights in a normally quiet area may be enough to put a bystander on high alert.

I recall another engagement where the project stakeholders warned us about residents near our target who were very liberal about carrying firearms. Understand that any resident, rural or urban, could be carrying a firearm and potentially mistake your intentions as threatening. It's important to maintain sound situational awareness. Again, maneuvering an operation is usually better when done under the cover of darkness.

Physical security controls for rural targets tend to follow certain patterns. The most common security controls include motion activated lights, chain link fencing, and residential door locks. We find these low-grade security controls the only thing protecting some of the most "critical" facilities. Facility owners often feel the rural environment reduces the likelihood of something bad happening. We must teach them this is not true!

Urban

Let me point out some of the ways populated areas are different from rural when it comes to physical red teaming. This is probably one of the most telling from my experience. It seems that urban bystanders have a much higher tolerance for reacting to suspicious behavior.

In one of the more densely populated areas, another operator and I were spotted making a covert approach completely decked out in black tactical gear late one night. We were carrying two ladders and a few tactical bags, yet the group of bystanders didn't give us a second look. We changed our entry point to be on the safe side, but we successfully compromised that location without incident. We've been seen by onlookers a few other times, but none as visually damning as this incident.

The next biggest difference is how drastic the environmental characteristics change from day to night. By day, a given target may be bustling with businesspeople, and by night, it may change into a less desirable location. During one engagement, my team and I literally walked into a small homeless camp with about four or five people. The approach

had been surveilled and cleared during the daytime, but nightfall brought a completely different vibe. Thinking on our toes, we pretended to be building security and they picked up and left without confrontation.

Red teamers should never bet on city folk always being more tolerant of suspicious behavior. I suggest toning things down and using tactical clothing only where reasonable. Substitute all black tactical clothes with dark colored street clothes. Perhaps a mixture of black and gray colors .. Use a dark colored laptop bag instead of a black tactical bag. Put a pair of over-the-ear headphones around your neck to be a little more convincing. By being sensible, you can easily alter your appearance to a less aggressive one.

Urban locations generally mean less acreage to traverse along with more opportunities for cover and concealment. Use this to your advantage and map out a route that places the team along a movement path with less chance for visual identification. Dumpsters and walled off trash inlets are common in cities and can provide good coverage. Alleyways, side streets, parking lots, and parking ramps should be sought out for their benefit of concealment. The image below shows how a team might use adjacent structures to shield their deployment, staging, and rally points to avoid unwanted attention.



Sample Deployment, Staging, Rally Points

Finally, a thorough recon mission of the target location during both daytime and nighttime hours is mandatory. Urban areas change the most during a 24-hour period. If the initial recon is not fresh, within the previous week or so, the Execute Staging and Assess & Acclimate phases will help mitigate any deviation from collected intel.

Observation

From the Execute Staging phase and beyond, the team will be on high alert for individuals and security controls that could potentially spoil the engagement (security guards, staff, bystanders, law enforcement). That is a substantial amount of time to be extra cautious with plenty of opportunity to overlook someone or something.

In urban areas, one usually has less visibility beyond 200 yards due to buildings and other structures. This forces a quicker situational response time from operators. Generally speaking, the opposite is true when in rural

areas. Either way, it is important to know how to cope in these scenarios, and I hope this short section will be of assistance.

Situational Awareness

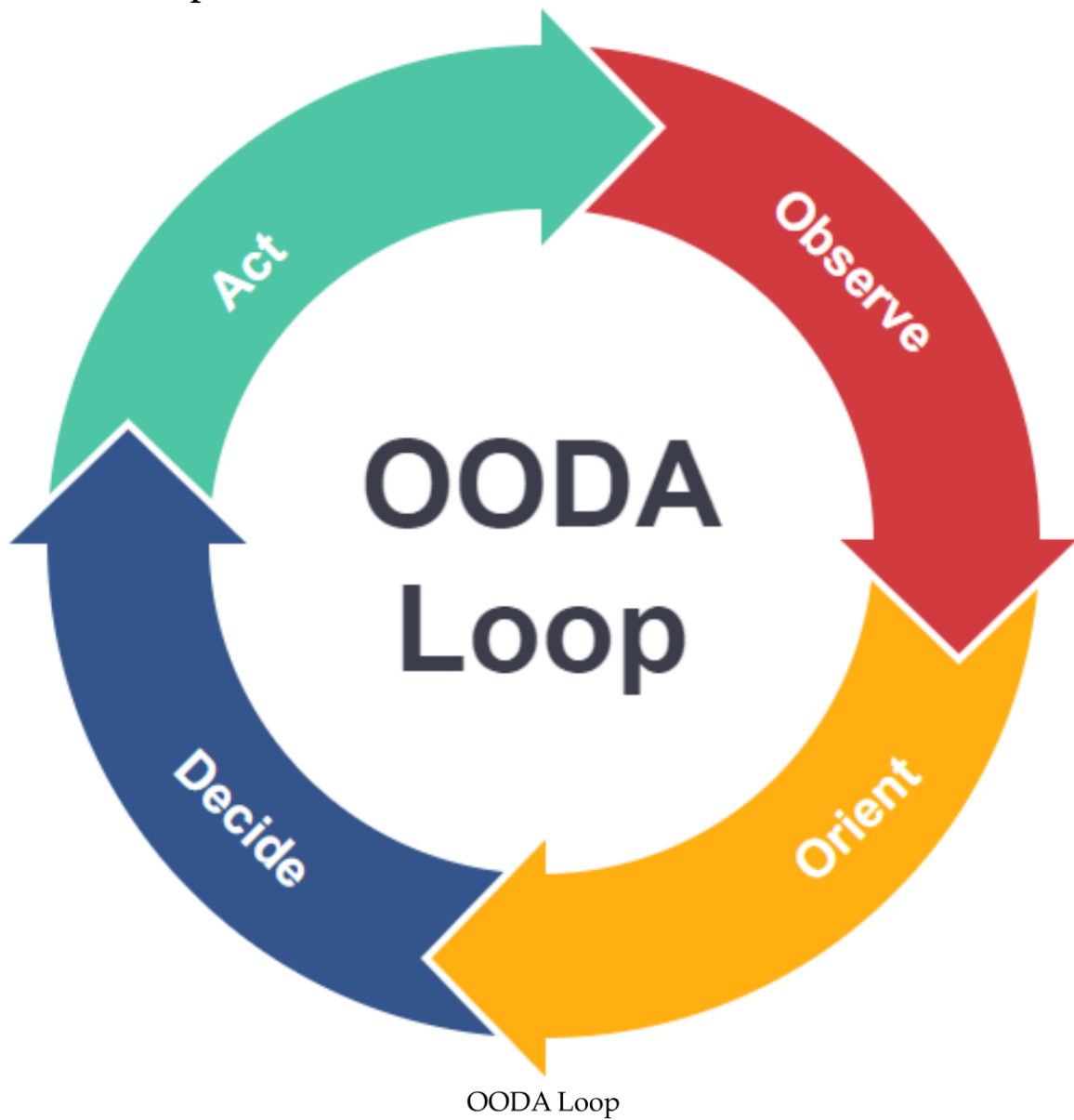
The textbook definition of situational awareness is the perception of environmental elements and events with respect to time or space, the comprehension of their meaning, and the projection of their future status. The term is fairly new, but the concept isn't. Situational awareness tactics are employed by military groups, survivalists, and personal safety advocates, and there have been many adaptations to fit other industries.

For a Hollywood-style dramatization of this, watch the 2009 Sherlock Holmes movie or the 2002 Bourne Identity movie. In short, situational awareness is being keenly hyperaware of environmental elements, how they may (potentially) interrelate to create an incident, and how best to respond accordingly. Entire books have been written on the subject and science, but here are some tips to improve situational awareness:

- Baseline the environment. What is the typical amount of traffic? How busy is it here? What has changed recently? What is the status quo?
- Tune out distractions. Know what to look for; listen for, and smell. Sensory overload can and will happen. Focus on the path forward, the target, and any obstacles preventing mission success. Tune out the rest.
- Prepare to be caught off guard. Mentally prepare for this and you'll be more apt to respond positively. Know your backstory if someone approaches you. Rehearse what you would say in your head. Look for conceal and cover opportunities two or three steps ahead.
- Be spatially aware. Are your teammates directly behind you or 10 yards behind you? What does your position look like from all sides? Are you casting a long shadow? How does your position look from the top floor of your target? How many steps to the target and how long will it take to get there?

- Continually evaluate. What new obstacles are presented as you advance on the target? What risk level do these obstacles bring? What should I change to mitigate the risk?
- Shun complacency. Don't be a cowboy when things seem to be running smoothly. As I said earlier, prepare to be caught off guard. If your heart rate is at a cool 70 bpm, you've probably become too complacent. Be cautious and be hyperaware.

OODA Loop



OODA is an acronym for Observe - Orient - Decide - Act. The OODA Loop is a decision-making model originally developed by military strategist John Boyd to enable quick and sound decision making by troops in the field. According to its creator, decisions are made in a recurring loop, or cycle, which is where part of its name comes from. Allow me to unpack the OODA loop a little more clearly.

Observe

Really, this amounts to taking in the environment and all of its dimensions. Sights, sounds, smells, spatially, situationally, contextually, and emotionally, for example. Observing is the process of taking in all of this raw data, unfiltered, with the intent of transforming it into useful situational information.

Visual observation is extremely vital to this step. Is something out of place? Is someone approaching? Is that a camera? Generally, movement occurs under the cover of night where there are obvious visibility issues. Images become less sharp. Colors are hard to discern. Depth perception is off. And night blindness can set in.

Here are a few tips to help with visual observation in dark areas:

- Use night vision goggles (NVG) whenever possible
- Allow time for eyes to adjust before moving into a dark area - up to 20 minutes (if time permits)
- In a pinch, shut your eyes briefly when going from a lit to a dark environment
- Conduct staging procedures in a red-light area vs. a white-light area
- Do not stare at objects too long - look to all sides of targeted objects or pathways
- Scan the horizon slowly from right to left for about 3 seconds before going the opposite direction

Orient

To sidestep for a moment, OODA loop purists maintain there are five factors that go into the Orient step: Cultural Traditions, Analysis &

Synthesis, Previous Experience, and Genetic Heritage. In my opinion, some of these factors do not easily translate toward red teaming as much as others. I believe one's own previous experiences and ability to analyze and synthesize situations are what are most adaptable to physical. red teaming.

If an OODA loop were an artificial intelligence engine, the Observe step would be the data model and the Orient step would be where the model is trained. The Orient step is, no doubt, where most of the important magic happens.

Now it comes time to transform the raw data into information. The Orient step involves analyzing and contextualizing observational data collected, using previous experiences and new information, to recognize and orient against potential threats. In a physical red team engagement, being spotted or drawing unwanted attention can be detrimental and requires constant attention. To do this properly, it is important to understand the "norms," or baseline profile, of the area. What is the expected level of traffic for the area? How bright is the area this time of night? Any deviation from baseline expectations should trigger a reaction to reorient.

Decide & Act

In our previous artificial intelligence example, if the Orient step is where the data model is trained, the Decide step is where the ideal result of the analysis is provided. In other words, what is the optimal course of action available to mitigate or prevent the given situation? This process usually happens fast and feels more like a gut reaction than anything.

The decision of how to react to an unexpected approaching car may be to seek cover and avoid being seen. But where? The dumpster in front of you or the structure behind you? Decisions will vary depending upon the factors that go into the Orient step; predominately the decision-maker's own experiences and her ability to situationally analyze.

Once the decision-maker has acted, it becomes important to turn the loop quickly. The quicker one can turn their loop, the odds increase in their favor in evading a sticky situation.

Cover & Concealment

Cover and concealment provide natural or manmade protection from the unwanted attention of staff, guards, bystanders, etc. Trees, bushes, high grass, ravines, and the sort provide natural concealment, preventing operators from being discovered. Buildings, small structures, dumpsters, vehicles, and parking ramps are just a few examples of man-made cover.

Some of the smallest depressions in the ground can help prevent you from being spotted in open areas with little natural cover. I'll get into traversing this kind of environment in the next section. Avoid skylining your silhouette on a hilltop or other high point. This is hard to avoid in areas of flat terrain. So, be spatially aware of your profile everywhere you go, as well as the shadow you cast.

In my experience, man-made cover is often the most used during engagements. Since facilities, large and small, are our targets, there are often other surrounding structures to use as cover. Plan paths of movement with these structures in mind to prevent being spotted.

High grass, bushes, and trees provide the most utilized natural concealment. Concealment will not likely completely shield your profile but may be good enough in the interim. Where natural concealment is the only option, add layers of concealment such as camouflage clothing. As discussed previously, this simply means matching your wardrobe to the color and lighting of your environment. This also means using dark or camouflaged equipment. For example, don't use a flashlight that is colored safety orange.

In any environment, light, noise, and movement discipline all contribute to concealment. Light discipline is defined by the controlled use of lights to avoid drawing unwanted attention. Flashlights, headlamps switched on all the time, leaving vehicle headlights on, and smoking in the

open are all examples of poor light discipline. The same light discipline holds true for infrared-enabled devices (IR) as well. Night vision goggles (NVG) emit a light, much like a spotlight, visible by other NVGs. Be aware of this and utilize NVGs only when necessary. I spoke about this earlier in the book, but use lights sparingly and where applicable. Situate the light only upon the subject of interest.

Binoculars and photo and video cameras all have various size lenses. Similar to light discipline is controlling the glare or shine these lenses may give off. In the right conditions, binocular lenses act like a signaling mirror and reflect light back toward the source. If the light source is coming from the target, this could be enough to grab the attention of security personnel and put the team in jeopardy.

Noise discipline is another difficult animal to control. We take for granted how much our voices carry and how loud dry leaves crackle under our feet. My team and I have never been too concerned with noise discipline outside in urban areas since noise pollution is common. However, once inside a facility, the audible environment will likely change. Sometimes it becomes quieter, sometimes it becomes noisier. The key thing to remember is to keep the volume of movement lower than the facility's natural ambience.

Movement

Up until now, movement from designated staging and deployment sites, as evident from this chapter, has been far more than just bodies moving from one position to another. There are many things to consider before skipping into a building. But for now, let's concentrate on proper movement for both teams and individuals in the field. In addition to walking, there are a few individual movement techniques to use throughout an engagement - rushing, high crawl, and low crawl.

Low Crawl

The low crawl, often referred to as an Army crawl, provides an operator with the smallest silhouette during movement. This is often used in wide-open rural areas where there is very little cover or opportunities for concealment. When my team has resorted to low crawling, which isn't often, it is only performed for a short distance. This usually happens when within close proximity to guards on tour, security cameras or motion sensors, and with little to no cover / concealment.

With a low crawl, movement is tiring and slow. Lots of gear will make things worse, so try not to overpack and crawl only when necessary. In environments with wide-open spaces and little cover, try not to pack your tactical vest with too much gear on your belly and back. You want to maintain a slim profile when dropping to a low crawl.

High Crawl

A high crawl looks similar to a low crawl, but with the body and rear end in a higher plank position. Where low crawling looks more like dragging your belly, knees and elbows are used in high crawling to move progress forward. High crawling enables a quicker pace and tends to be a little less tiring. However, it increases one's visibility and should only be used where some cover and concealment are present. For example, terrain with high grass, small shrubs, and some tree cover.

If my team is going to resort to crawling, high crawling is usually the technique of choice .. We make it a point to choose routes that involve the most cover and concealment so there isn't a need to hit the deck.

One important note to be made about crawling is that it will get clothes dirty. I recall a mission where two of my team were to change from their tactical clothes at the perimeter and into "staff clothes" so they could blend in with the late-night staff after they scaled the fence. It turned out we all had to hit the deck and high crawl. for a short time in our tactical clothes before reaching the fence. Our clothes were dirty and sweaty. Thankfully, a change of clothes was already in the plan.

Rush

Unlike crawling, the rush is the faster method to get from one point to another. This, however, should not look like a full-on upright run. In appearance, it looks much like a crouched brisk walk. Each rush should last about three to five seconds. Quick rushes make it difficult for potential bystanders to fully track movement. Movement may unintentionally catch their eye but should not hold it long enough to be convinced of movement. Breaking up rushes with at least five seconds between rushes will help avoid unwanted attention.

Each rush must have a designated destination. In other words, an operator should not drop to the ground simply because five seconds have passed. A drop destination providing some level of cover or concealment should be sought out in conjunction. Forethought as to the next drop position is mandatory.

To reiterate, even when the coast seems clear, I highly advise against rushing for more than five seconds. While I've mentioned being aware of one's silhouette and 360° profile during movement, it is quite a difficult skill to master. I've fallen victim to rushing the perimeter of a building for longer than I should have. It's tempting to just want to go for it. Instead, adopt the five-second rule, drop, and take the time to cycle through an OODA loop.

Signaling

The use of hand signals is commonly used by the military and certain branches of law enforcement. They are useful to red teams for communicating movements during periods of an engagement where silence must be maintained in order to conceal the team's presence. Signaling is also a good backup plan when radio communications fail. While they may get little use in the field, they should be learned and practiced.

When signaling is in use, the red team operator who is first in line typically becomes the signal giver. Of course, there is no hard and fast rule, so this role can be given to anyone in the team. What's most important is

that the signal giver takes the point position and the rest of the team is able to clearly view the signals.

There are quite a number of signals to borrow from. However, the following pages illustrate those that I find most relevant to physical red team operations.



Hurry Up



Crouch, Go Prone, or Crawl



Freeze



File Formation



Vee Formation



Go to Rally Point



I Understand



I Do Not Understand

Maneuvering an operation with precision and efficiency requires knowledge about the environment, settlement, and how to leverage surrounding cover/ concealment to one's advantage. Quick decision making, clear communication, and careful movement are all part of what makes this line of the mission important.