



TRANSPORTATION SECURITY

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INTRODUCTION

In 1979 Tony Scotti wrote a White Paper for the International Association of Chief of Police. It was published in their Clandestine Tactics and Technology Series.

The paper focused on the characteristics of automobile ambushes, the paper describes methods for avoiding and thwarting these attacks and for providing automobile security.

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This is an outline of the paper

Travel in automobiles represent a time of high vulnerability to kidnapping or assassination attempts. Victims are placed in situations in which their actions can be predicted and their mobility alternatives are reduced. Ambushes rely on surprise, mobility and speed, planning, and the confidence and decision making ability of the attacker. Potential victims must plan their defense to eliminate surprise, to deny potential attackers the information needed for planning, and to maintain an advantage in speed and mobility to permit escape.

An analysis of the successful ambushes of Aldo Moro and Hans Martin Schleyer indicate the importance of alertness, the use of an armored car, and the use of various travel routes. Armored cars can be designed to absorb gun fire and return it while calling for help, and/or to absorb gun fire and escape. However, increased ability to absorb fire can reduce the capability to maneuver or escape. Security measures for cars should include tire protections, communications capability, protection from bombs, alarm systems, and anti theft devices. Protective driving techniques include ramming, J-turns, and bootlegger turns which allow victims to escape. In addition, security considerations for general travel plans, aircraft security, and special precautions for women are briefly noted. Illustrations and notes are included.

Please keep in mind that this was written **37 years ago**.

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TRANSPORTATION SECURITY



HANNS MARTIN SCHLEYER KIDNAPPING

*Mr. Schleyer knew he was a target. He wrote a memo stating if he was kidnapped he did not want anyone to negotiate his release. On September 5, 1977, Schleyer's car was in front. A follow car with bodyguards was in the rear. As they approached the street where the ambush was to take place, a lookout waved to his accomplice (10 seconds). Schleyer's cars turned into the street. A van with three people in it was parked on the corner. A car drove toward them going the wrong way on a one-way street (20 seconds). It cut in front of them, at the same time a woman rolled a baby carriage in front of the car (30 seconds). Schleyer's car hit the approaching car. The bodyguard's car hit Schleyer's car. One terrorist leaped from the blocking car, opened the doors of Schleyer's car (the doors were unlocked), and killed the bodyguards (40 seconds). The three men from the van opened fire, killing all the bodyguards in the backup car. **Total elapsed time: 100 seconds.***



ALDO MORO KIDNAPPING

*The morning of March 16, 1978. Two cars, both Fiat 130s. Moro was in the lead car, accompanied by a driver and a bodyguard. Following in a separate car were three bodyguards. As they approached an intersection with a stop sign, a small white car pulled up in front of them and the driver jammed on the brakes (10 seconds). Moro's car hit the small white car, which had just passed them, and the security car hit Moro's car. Two men jumped from the white car that had just been hit (15 seconds), looking as though they were about to view the damage to their car. When they approached Moro's car, they fired into the car, killing the driver and the bodyguard. Meanwhile, four men dressed in Alitalia Airline uniforms machine gunned the bodyguards in the following car (20 seconds). They took Moro and put him into a waiting car and drove away. **Total elapsed time: 45 seconds.***

Threats of terrorism and kidnapping pose serious problems involving all aspects of security management. Effective management dictates that available resources be used wisely and concentrated on security weak points. One does not need to be a student of terrorism to realize that assassinations or kidnappings take place where the protection to the victim is most difficult. These acts take place where the risks are relatively low for the terrorist and the possibility for success is relatively high. Although there is a considerable amount of technology developed that offers impregnable protection at the home and place of business, this protection is breached — twice a day — when traveling to and from the home. Over 85 percent of all kidnappings and assassinations occur while the victim is in transit.

During this period of time the risk to the attacker is minimal; the vulnerability of the victim is at its maximum. This chapter focuses on this most dangerous period of time. Transportation security became a serious problem when, in the late 1960s, guerrillas in Latin America and elsewhere shifted their offenses from the countryside to the city, where they could be assured of wide and efficient media coverage for their cause, however small the organization. Ambushes took place in city streets rather than in a remote jungle.

When we consider, for instance, that more than 90 percent of all our personal travel is by car, we can understand why many security experts point to transportation as the weak link in the security chain. Several studies have shown that most kidnappings have occurred while the victim was traveling by car.

Vehicles are easy to identify and observe. There are many components on a car that make it easy to distinguish one car from another (license plates, color, body, make). A car is one of the few places where a person can be alone or at least dependent on a fixed number of security personnel, making it possible for the terrorist group to accurately estimate defenses and adjust its manpower accordingly.

Ironically, when we are in a vehicle we feel safe; actually the opposite is true. Vehicles can be easily followed and practice runs of potential ambushes are possible. Automobiles appear to be solid and to offer a great amount of protection because of the steel and safety glass. Although there is some protection, it is minimal — a .22 long rifle can penetrate the car door of a standard American sedan.

Traveling by car near the home, in the morning, is the most dangerous area and time for the VIP because one of the necessary ingredients in a successful ambush is fixing a time and a location. This task becomes increasingly easier near the VIP's home because of the following factors:

1. Most VIPs believe in promptness — especially in the morning.
2. In the area of the home it is difficult, if not impossible, to change routes.
3. About 90 percent of morning travel is by car.

4. We feel secure and confident in a car.
5. Cars are easy to identify.

No wonder that 95 percent of all kidnappings occur near the home. Throughout the world businessmen are becoming targets of kidnappings. Businessmen are chosen because they are believed to be wealthy, powerful and influential, representative of something important, or particularly valuable to someone. Whether a businessman truly fits into one of these categories makes no difference. As long as the terrorist or criminal thinks he does — that's all that counts!

A number of steps can be taken to minimize the danger of transit by vehicle.

They can be categorized as:

1. Countermeasures (e.g., procedures, awareness, route planning, countersurveillance).
2. The automobile (e.g., armoring cars, tire protection, communications).
3. Defensive and offensive driving.

Since the third of these essential elements can only be acquired from actual "hands on" instruction and practice, this chapter discusses only the first two: preventive measures to reduce the possibilities of attack and modifications to automobiles so that they both better protect their occupants and better withstand terrorist assault.

COUNTERMEASURES

Surprise is an essential element to any successful kidnapping. This one element is the key to all the others. In order for a successful ambush to occur, the victim must be totally unaware of what is about to happen. Therefore, it is logical that reducing the element of surprise is of the utmost importance. How can a potential victim protect against surprise? Planning and surprise are inseparable. Analysis of the tactics of surprise points to a definite pattern. This pattern indicates that a successful ambush takes time to develop and actually occurs in stages. This is not to say that every ambush happens in this manner; but it is logical to assume that to use the element of surprise effectively requires planning, and from this planning comes two steps:

Target selection

In the preliminary stages, usually more than one target is selected. Terrorists are not interested in an individual personally — they are interested in what he represents. They will, through meticulous surveillance, gather information about his lifestyle. Once the information is gathered, they will focus on the individual who is the most vulnerable. The Moro kidnapping appears to be a classic illustration of target selection. There is enough evidence to suggest that the Red Brigades had originally selected Berlinguer, the Communist Party leader of Italy, but he was a much harder target and Moro much easier.

Surveillance

The group may employ surveillance on more than one person. Surveillance will take weeks, maybe months. The victim's movements will be analyzed and patterns of habit established. In some cases photographs are taken. Surveillance will continue until the group can predict, with reasonable accuracy, where a person is and when he is going to be there. Therefore it is necessary to develop a before-the-fact awareness program that will eliminate the element of surprise.

Surveillance Awareness

Planning is the essence of surprise and surveillance is the essence of a successful ambush. Surveillance is needed to acquire the necessary information for a successful plan. Therefore, developing a surveillance awareness program around the driving time period is essential. Changing the time of departure plus the driving route is a necessity. But unfortunately, in many cases, especially in the morning, it is impossible to vary time schedules by any great amount. Changing routes is desirable but many times, due to the location of a home or office, it is impossible. In most locations a driver has a 50-50 choice — to go right or left. The pattern of abduction near the home is not coincidental: It is simply hard to change routes near the home, therefore making it easy for a terrorist group to fix a time and location, which in turn makes the terrorists' job much easier.

The best line of defense is unpredictability. It must be made difficult to pinpoint the location of a potential target, though many people are not ready to accept this major change of lifestyle. It is at this surveillance stage of abduction that an early warning system must be developed.

Early Warning System

An early warning system requires that a close watch be kept for abnormal activity near the home and office. It is important to point out that it does not require much effort to be security conscious. In fact, most people are security conscious and do not realize it. As an example, when someone leaves his home in the morning, he could probably write a couple of pages of notes concerning the activities around it, such as types of vehicles in the neighborhood, children going to school, even new faces. In fact, most people can tell whether they are late or early by what they see when they leave the house.

Careful questions can be raised by a businessman such as: Isn't that a strange car parked across the street? The phone company must be working early this morning because they have a van parked nearby. Or, as he drives down the street, he should notice unfamiliar people in the area, an unfamiliar car, or a vehicle that just does not belong in the neighborhood. Most businessmen who are potential kidnap victims live in affluent areas — which usually dictate the type of vehicle that will be present in the area.

What has happened? A mental picture of what should be there and what should not be

there has been presented; and when an object or person comes into the picture that doesn't belong, a signal is received that causes a question to be raised — what is it or he doing here? The key to an effective surveillance awareness program is alertness. The philosophy should be adopted that once is happenstance, twice is coincidence, and three times is enemy action.

The level of awareness must be raised to a point where:

- Strange vehicles parked near the residence or place of employment are noticed and reported to the authorities.
- People standing, walking, or sitting in cars near the residence or place of employment are noticed.
- An individual can recognize that he is being followed. If he feels he is being followed, he can simply drive around the block and notice if the suspected vehicle is still there.

An important point is to keep track of any unusual sightings. A small tape recorder can be used to register any unusual activity. From the tape a log can be made describing any strange vehicles.

It should include:

- Make
- Model
- Year
- Color
- License number
- General condition
- Number of people in vehicle

And, if possible, a description of its occupants, such as their sex, age, size, hair color or style, and ethnic background, should also be noted.

A reporting system is mandatory if chauffeurs are used and drivers are changed often: It creates a useful information bank that the new driver can draw on. In addition, if the driver is not sure he has seen the same thing twice, he can check back into the log to make certain. If the log indicates a definite pattern is developing, then this pattern should be brought to the attention of the local authorities. Any information discovered should be relayed to the driver as quickly as possible. The driver should not be made to feel he is paranoid; in fact, he should be told he is doing a good job. A good way of doing that is to get information discovered back to him as soon as possible. What follows can be the best advice you can give a driver. "If he feels something is wrong, it is better to suffer a little embarrassment in the event you are wrong, than suffer the consequences if you are right!"

Test Program

A surveillance awareness test program can be developed to check on the alertness of those involved. Some simple methods to use are:

- Rent a car or van and park it near the residence. Then measure how long it takes before the strange vehicle is noticed.
- Follow in a rent-a-car or another unfamiliar vehicle and again notice if the surveillance is detected.
- Plant strangers around the residence and measure that response time.

An ongoing test program is beneficial if the threat level is high enough.

Route Planning

Route planning should be premeditated — not haphazard. It is easy to develop a rather scientific method of route planning. Using a map, lay out a number of different routes. If possible, vary the routes near the home and office. Then assign each route a number, let's say seven routes have been selected.

Using the seven routes, make a table to assign each route to a day, but leave out two routes.

	Monday	Tuesday	Wednesday	Thursday	Friday
Route #	1	7	5	6	2

On Monday route 1 is taken, Tuesday route 7, and so forth. Then you can develop a table of random routes by changing the sequence of numbers and assigning them to a day.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	1	7	5	6	2
Week 2	3	4	7	1	5
Week 3	6	3	2	5	1
Week 4	2	1	4	7	3

On week six you can change the sequence of routes by starting off at week three and taking route 6 on Monday, route 3 on Tuesday, then on Wednesday move up to week two and take route 7, Thursday route 1 and Friday route 5. What has been done is a set of dates have been blocked off in the table.

Example:

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	1	7	5	6	2
Week 2	3	4	7	1	5
Week 3	6	3	2	5	1
Week 4	2	1	4	7	3
Week 5	5	3	6	2	4

You can work any number of combinations — or add more routes. Although working with seven numbers is not a complete random sequence, it is better than driving the same route constantly.

Knowledge of the Terrain

This simply means knowledge of the area. Most vehicle ambushes occur near the home; therefore if an ambush does occur, there is a good chance it will happen in a terrain the victim knows as well as the terrorists. Careful scrutiny of the area near the residence and the place of employment can establish areas designated as danger zones. A danger zone is a location where terrorists will find it easy to fix the time a person will be there. A danger zone can be an intersection near your home that cannot be avoided, it can be an exit from an airport after you have arrived on a scheduled flight, or an exit or entrance ramp to a highway. At the danger zone area safe havens should be established. A safe haven is defined as an area that will afford you some safety, an area that the attackers would be reluctant to follow you into.

They include:

- Police stations
- Hospitals
- Fire stations
- Large shopping areas
- Military bases

It is important to know where the safe havens are and how to get there. In the event of an ambush, there is no time to stop and ask for directions. The shortest possible route

to safe havens should be known. If the driver of the vehicle is not capable of computing the danger zone areas, a member of the security department should develop a danger zone log. This log can be reviewed by the driver on a periodic basis and can be updated if necessary.

Preparation for Ambushes

Now that the planning stages of an ambush have been discussed, let's talk about how the actual ambush develops and the two driving tactics — moving and stationary — used to accomplish it.

Moving Ambush

In a moving ambush a car pulls along the victim's car and fires into the vehicle. In many cases a second car is used to slow down the victim's vehicle in order to give the attackers an easier target. The International Association of Chiefs of Police developed a set of statistics from information provided by numerous attacks and from studies of the sites of the attacks.

These statistics indicate the following driver errors:

- The attack was completely unexpected. (Driver wasn't alert.) The driver suddenly found himself "boxed in" and unable to take defensive or evasive action. (Driver was not alert, observant, or driving defensively.)
- When the attack was launched, the driver attempted to veer to the right, away from the attacking vehicle, and in doing so, trapped his vehicle against the curb line of parked cars. This action gave the attackers more maneuvering room and enabled them to more effectively bring their guns to bear on the target vehicle. (Driver not alert; driver reacted to induce panic caused by the attackers' actions instead of acting defensively or offensively.)
- In one case, the driver attached no significance to or saw no danger in a vehicle full of young men following him. He thought they were "just young smart alecks out for a joy ride." (Driver not alert or trained.) In all cases the failure appears to be in one major area, inattentiveness!

Stationary Ambush

The stationary ambush seems to be the most popular. Basically a stationary ambush can be described as an action carried out by the terrorists that will force the victim's vehicle to a stop. They will try to stop the car in an area in which they have computed firing angles, which more than likely are designed to disable the driver. In a stationary ambush it is essential that the driver reverse direction and drive out of the firing area. No matter what type of an ambush it is, the first few moments are critical. It is important that some action be taken by the victim.

Anatomy of an Ambush

The Moro incident referred to at the beginning of this chapter is a perfect example of the perfect ambush. It was so well planned and executed that one can only speculate whether the incident could have been avoided at all. But some issues are nevertheless noteworthy.

- **Predictability.** The terrorists knew exactly where Moro was going to be. They had a location and a time. Moro's security people gave him five possible routes to take. The terrorists predicted the time and location with incredible accuracy.
- **Surprise.** The guards were not alert. Speculation is that perhaps they were relaxed by the fact the car that cut in front of them had diplomatic plates. But, at the same time, it is doubtful they ever saw the plates.
- **Car.** The car was not armored. In a country where vehicle ambushes are the national pastime and everyone of importance is driving an armored car, it was foolhardy not to use one.

Similarly, the Schleyer assault also was well planned and executed. His abduction was facilitated by the same factors: predictable schedule, even though Schleyer knew he was a target; the follow-up car was caught completely off guard; and no armored car! These two incidents bring up an excellent point about follow-up cars and bodyguards. If an individual feels that the threat level requires a backup car with bodyguards — then the vehicle should be a virtual gun-ship. The bodyguards in the car should be alert to possible dangers, and their weapons should be on their laps ready to be used. It is foolish to have a back-up car with armed men in the vehicle if the men take two minutes to react.

Using hindsight, one can speculate on how these events could have been prevented. The obvious elements are (a) unpredictability, (b) alertness, and use of an armored car.

ARMORED CARS

The subject of armored cars is confusing, though it appears that in most incidents an armored car gives a driver those few seconds that can make the difference. The first major obstacle concerning armored cars is determining if one is necessary. Answering this question is difficult. But if there has been an incident that has prompted thought about an armored car — then one is probably needed.

The next step is to determine the level of protection needed. Most car armorers talk in terms of specifications established by underwriter laboratories (UL). Underwriter Labs has established ratings for bulletproof material. These standards are established by testing material at a close firing range (15 feet or less), firing at 12-inch-square samples. Indicators are placed behind the samples to catch any fragments. The lower ratings (I, II, III)

must resist four shots placed three inches apart in a triangle in the center of the material. At the highest level (IV), the material must be able to resist one shot from a high-powered rifle at the center of the sample. Materials are also tested for flying fragments (spelling) and how they will perform in extreme temperatures.

The levels of protection follow:

- No Level I
- Level II—.357 magnum, carb. 9mm
- Level III — Same as above, 44 magnum, 12 gauge, 30 carb.
- Level IV — Same as above, 30.06 military ball

The level of armoring must be determined by the type of weapon you want to protect against. An example is the UL's highest rating, level IV, which is 30.06 24" barrel soft grain, 2,400 ft/sec. A NATO weapon can be as high as 2,900 ft/ sec.

Reading the UL's standardized system, it becomes obvious that in order to establish the degree of protection needed, one must know the type of weapons that may be used in an attack; the method of the attack; and whether the attackers will be firing close or from a distance. Studies indicate 30 percent of all kidnap teams used automatic weapons. Other studies show that attacks are close range. Combining this data we can conclude that the level of protection should be level IV or higher. It is in this stage of the purchase where the armorer can be of great assistance. He will know as much about the levels of protection needed for certain areas of the world as anyone.

Type of Vehicle

The type of vehicle must blend in with the existing cars in that particular country. Also, there should be ample room in the car for four people.

The car selected should:

- Blend into the vehicle environment.
- Be a four-door, which will allow comfort and ease of entering.
- Have a power unit — an engine size and gear ratio that will allow reasonable acceleration.

For example, in Italy, a Lincoln Town Sedan would not be the choice — Fiat would be the likely consideration. The color of the car should blend in with the preferred colors in the country. In most countries big, black cars signify importance.

Vehicle Design

Armored vehicles can be designed to:

- Absorb the attack, take repeated hits, return fire, and call for help.
- Absorb the initial fire and break the ambush.
- A combination of the above.

The first of these armored vehicle designs is commonly used for the threat of assassination. The cost of these cars is directly proportional to how long you want to absorb fire. Cars armored to maximum ballistic levels are very expensive, running as high as \$100,000. For a car to absorb the initial burst and then drive out of the ambush requires characteristics: (a) enough armor to absorb the initial fire, and (b) a design that remains maneuverable.

Whether additional armoring is needed in the engine department depends on where the individual lives. If the car is used mostly in the city, then armoring the engine compartment is usually not necessary. In the event of an ambush and radiator damage, the car need only go a short distance to break the ambush. But if the car is used in the countryside and may have to travel great distances to break free from the ambush, then engine compartment armoring is desirable.

Fuel Tank Armoring

Wrapping a fuel tank in ballistic fiberglass, Kevlar, or ballistic nylon will provide bullet protection up to certain levels. If there is a penetration, there is a chance for explosion. Aside from ignition caused by a bullet or an explosive device, there is the very real danger of being rammed in the rear, which can cause an explosion. The aircraft industry has used foam-filled tanks to reduce the danger of explosion. Foam normally is not applicable for the vehicle field because of fuel displacement and the problem of degradation over a period of time. Aero Tec Labs has come out with an excellent crushable bladder tank with internal foam baffling, which appears to be superior to any other foam application in the security vehicle market.

Perhaps the finest protection available is the Explosive Anti-Explosion System. This metallic (aluminum alloy foil) enclosure displaces but 1 percent of the fuel and has been successfully tested by the Canadian and British military, using tracer rounds and plastic explosives.

Currently, a ballistic "Universal Tank" is being developed, stuffed with Explosafe, which will be ideal for the security car industry.

Body Armoring

The doors, windows, and rear of the passenger seat must be armored to the maximum

threat level. If grenades are a threat, the roof and floor must be armored, which increases the price of the vehicle. The engine compartment is naturally armored. Armoring the battery, engine compartment and radiator requires discussions with the armorer. There are two basic philosophies concerning armoring — lightweight or heavyweight. The heavyweight people feel that in the event of an all-out attack, the car will be forced to stop. The car should be heavily armored so it can absorb as much punishment as possible. Adherents of the lightweight philosophy claim that no matter how heavily the car is armored, it cannot hold up under prolonged attack. Therefore, a lightweight, maneuverable car with a trained driver has a better chance to break the ambush.

Lightweight versus heavyweight armor may become a bigger problem in the future. As our fuel problems get worse, cars get smaller and lighter. The term lightweight armor may have to be redefined. As of this time, the state-of-the-art service appears to be adding 700 to 1,000 pounds to the original weight of the car. The key is not the 700 to 1,000 pounds, but the original weight of the car.

For instance, a 1979 Lincoln Town Coupe weighs 4,843 pounds — by adding 800 pounds of armor you are increasing the weight by 16.5 percent. Change the car to a Ford Granada, which weighs 3,200 pounds, and add the same 800 pounds; the weight goes up by 25 percent — a dramatic difference and an important measurement.

In breaking an ambush, the acceleration and handling capability of the vehicle are very important, and the rate of acceleration will decrease the same percentage the amount of weight increases. In other words, if the increase in weight is 25 percent, the acceleration of the vehicle will decrease by 25 percent, assuming no modifications to the engine or gear box. Table 1 gives you an idea of the percentage increase between various car and armor weights.

		Armor	Weight	Lbs.		
Vehicle Weight	600	700	800	900	1000	1100
3000	20	23.3	26.6	29.9	33.2	36.5
3500	17.1	20	22.8	25.7	28.6	31.3
4000	15	17.5	20	22.5	25	27.5
4500	13.3	15.5	17.7	20	22.2	24.4
5000	12	14	14	18	20	22

The following considerations are necessary when installing the material:

- Retention of panels require the use of high-tensile captive bolts. The design prevents them from becoming projectiles.
- Ballistic seals ensure that missiles cannot penetrate the vehicle at unusual angles. Fabrication of certain materials can reduce the inherent ballistic properties. Care must be exercised in the welding techniques, overlap construction, and general format.

- Sealants used to prevent moisture from entering the layers of armor are sufficiently resistant to contain edge stress. Particular care is given to hinges and locks.

Communications

Along with mobility, a good communication system is vital for survival. The principal's vehicle and all security vehicles should be radio equipped. Select an excellent vehicle radio that is not rugged and can be easily serviced. The vehicle antenna locations depend on the environment. In many areas of the world it is common for an executive or an official sedan to have a protruding antenna; however, when possible, an executive low-profile vehicle should have a hidden antenna if reception and transmission are not affected.

A variety of antenna configurations are commercially available. Some can be hidden in the side view mirrors, others wrap around the interior of the roof, or fit into the commercial AM radio antenna. No matter what the unique configuration is, the prime consideration must be reception and transmission quality, which must not be downgraded for a low-profile appearance.

Purchase and installation of radio gear should be assigned to a qualified communications technician. Installation in the principal's vehicle should be mission designed. The microphone should be within easy reach of both the driver and the occupant of the right-hand seat. If the principal rides in the back seat, he too should have a microphone or at least an activations system or a panic alarm — the latter in instances in which the driver and bodyguard are incapacitated or so totally occupied they cannot utilize the communications system. If the threat level is determined to be high, a danger zone-reporting system should be considered. This is a system whereby the driver radios when he is going into a danger zone and then radios when he is leaving the danger zone.

In the event the attackers gain entry into the vehicle and the driver or passenger cannot use the radios, there should be a concealed microphone and microphone switch in the vehicle. This will allow people at the other end of the radio transmission to hear what's going on in the car without the attackers knowing.

Tire Protection

Unfortunately, some armored car manufacturers and buyers have downgraded the importance of tire protection. The fact is, vehicle mobility is the key to survival. If the tires are shot or blown off, the vehicle is going nowhere, no matter how expensive the radials. The car needs a device that will allow it to move at high speed for at least one or two miles out of the kill zone of an urban ambush.

Although there are a number of runflat devices on the market, the buyer must be careful in the selection of tire protection. With some devices present the possibility in a cornering condition of a pulling away from the metal to expose the wheel rim flange to the

road surface, which can seriously interfere with steering and braking. Foam-filled tires and tires with rigid sidewalls are not the answer, especially in a soft-soil condition. Foam presents a weight problem in terms of unsprung weight, while rigid sidewalls present problems if sharp, high-speed evasive maneuvers are attempted.

The Hutchinson V.P. No Flat tire core is a form of tire protection that is fairly expensive, restricted to Michelin tires, and of good ballistic protection capabilities. The Patecell Safety Wheel (a fairly expensive plastic runflat device) claims a 50 mph speed for 50 miles after the tires have been shot out. This would be excellent for a rural ambush, but urban incidents call for 70 to 90 mph speeds over a short dash of a half mile or until out of line or site of fire. The Patecell should be able to accomplish that requirement.

A device that is in wide use in security vehicles throughout the world is the Lindley Safti-wheel. The original wheel has saved lives, including the life of one of the most prominent leaders of the twentieth century. Because the original wheel was difficult to install, a new Safti-Wheel will soon be in production, which eliminates installation difficulties, is superior all around, and is cost effective. Cost- and performance-wise, the new Safti-Wheel may well be the finest device on the market if it passes further ballistic and driving tests.

Goodyear has announced a new flat-proof radial whose walls are three times thicker than the normal tire; however, at the time of this writing no published ballistic tests are available. There is some debate as to the handling capabilities in severe vehicle movements at high speed, such as sudden sharp turns, especially in soft sand or mud, due to the rigid sidewalls. If the tire passes intensive ballistic testing and handles well, it will be a boon to the security field.

Others of note are a protection package offered by Dunlop and the Tyron Safety Band out of the United Kingdom, which is available for most makes of cars.

Accessories

Accessories can also be confusing. They vary from car to car and what is standard equipment on one car is an additional accessory on others.

Accessories come in several categories:

- Essentials
- Basics
- Functional additions
- Power options

One way of breaking accessories down into these categories follows. There is room for dispute in many of these selections.

Essentials

- Automatic transmission
- Four doors
- Power steering
- Power brakes
- Tilt steering wheel
- Electric window defogger
- Air conditioning

Basics

- **Heavy-Duty Battery.** Better to handle the strain from the multitude of electrical equipment on cars and a necessity for anyone living in a cold climate.
- **Heavy-Duty Radiator.** Increases the engine's cooling capacity. Heat is what destroys engines.
- **Heavy-Duty Suspension.** Will help eliminate body roll but will give a slightly harsher ride. It will make for a better-handling vehicle.

Functional Additions

- Remote side control mirrors
- Intermediate wipers
- Protective side molding
- Power antenna
- Gauge package
- Auxiliary lighting
- Extra insulation
- Power Options
- Six-way power seats
- Power windows
- Electric door locks
- Power trunk (from the glove box)

Most people in the automotive industry feel that the following list of equipment should be placed into the basic categories listed above.

1. **Trauma kit.** Doctors can develop a package designed for treating gunshot wounds, burns, and heart failure. Its basic purpose is to keep someone alive until they can get to a hospital. The trauma kit should not be kept in the trunk; it should be inside the vehicle ready for use.

- 2. Tool kit in the trunk.** In the event of a kidnapping, someone may get stuffed in the trunk.
A simple tool kit can get him out. Or you can make a switch that opens the trunk from the inside.
- 3. Mirrors.** Good rear and side view mirrors should be installed on the car. They should be installed in a manner so the driver does not have to move his head to look to the rear, and he should have good vision to the rear. Good mirrors are defined as mirrors that do not distort the actual distance of the object. Many mirrors make objects seem further away than they really are.
- 4. Public address system.** The driver and occupants should be able to talk to someone outside the car without opening the doors. Also, the driver does not have to drive up to someone to talk to him; they can stay a safe distance away and communicate.
- 5. Optics.** Be sure there is little or no distortion through the windshield. When purchasing a car the ambient temperature of the environment is important. If the window is not designed properly, it can distort the view badly. The old bullet-resistant glass is ineffective against high-powered weapons and repeated hits.

CONCLUSION

Surprise is essential to the success of any terrorist assault or abduction. It is obvious, however, that any such operation requires extensive previous reconnaissance and surveillance; and it is precisely at this stage that an attack can, and must, be thwarted. The potential kidnap victim must develop countersurveillance techniques and preventive measures that can reduce the possibilities of attack. Accordingly, while the victim must learn to recognize a developing ambush, he must also know how to react to and evade an abduction attempt. To this end, the potential victim must analyze beforehand the ingredients necessary for a successful ambush and develop an awareness program to protect against them.

These efforts include route planning, the designation of both danger zones and safe havens, and the realization that, once an assault begins, the vehicle he is traveling in must never stop. First priority is fleeing the attack scene as fast as possible. In this regard, a potential victim must be assured that his automobile is armored and thus strong enough to withstand a fusillade of machine-gun fire and capable of withstanding damage to the engine and tires. The final preventive element is skilled defensive and, when need be, offensive driving — something imparted by actual experience.

