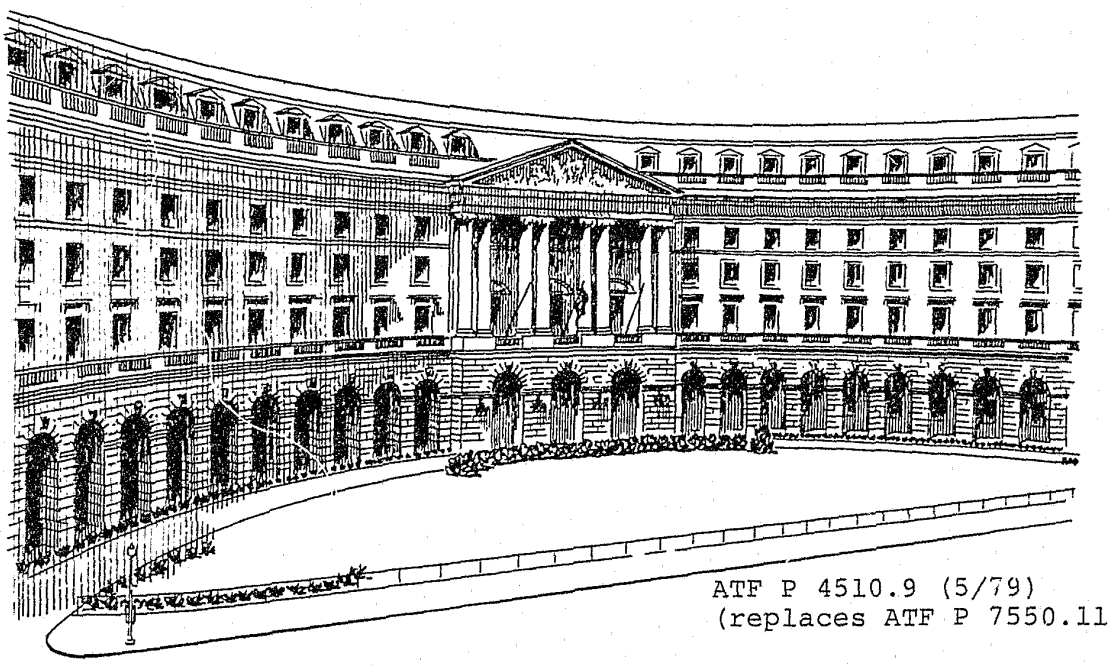
Instructor
Text

DEPARTMENT OF THE TREASURY
Bureau of Alcohol, Tobacco & Firearms

Modular Explosives Training Program

Bomb Scene Procedures
The Protective Response



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To be used in conjunction with
modules 10 & 11 of Instructor Guide

BOMB SCENE PROCEDURES
The Protective Response

04

C. R. NEWHOUSER

CONTENTS

A PUBLICATION OF **The National Bomb Data Center**

Research Division ☐

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BOMB SCENE PROCEDURES

The Protective Response

Experience has clearly demonstrated that bombs and bomb threats are being directed at a wide range of public and private facilities in the United States. During the period from January 1, 1969, to July 9, 1970, statistics on bombings and attempted bombings compiled by the Senate Permanent Subcommittee on Investigations reflected the following target pattern:

Homes and Personal Property	285
Local Small Businesses	253
Schools and Colleges	228
Colleges	148
High Schools	71
Junior High Schools	7
Elementary Schools	5
Industrial, Public Utilities, and Railroads	151
State and Municipal Government Property	126
Federal Government Property	106
Churches and Synagogues	32
Foreign Embassies and Consulates	7
TOTAL	1,188

Due to the diversity in bomb incident targets, it is impossible to establish a single set of procedures that will have universal applicability. However, it is not only possible, but essential, to identify similarities that can serve as the basis for procedural planning. The purpose of this publication is to provide both general and specific guidelines for a protective response to bomb incidents. Since public safety personnel are frequently called upon to advise private firms and institutions regarding bomb matters, this publication also includes many procedures not normally carried out by public safety personnel.

SECTION ONE
BOMB INCIDENT PLANNING

Any institution, either public or private, that hopes to respond effectively to the danger of bomb incidents must develop and implement two separate but related plans.

The Physical Security Plan. Physical security measures, as defined by the United States Army, are steps taken for the protection of property, personnel, material, facilities, and installations against unauthorized entry, trespass, damage, sabotage, or other illegal or criminal act. A physical security plan, therefore, deals with prevention and is designed to protect against not only bombing incidents, but a full range of possible attacks.

The Bomb Incident Plan. In addition to a general physical security plan, a well prepared organization or facility should also have a specific plan for bomb incidents. The bomb incident plan provides detailed procedures to be implemented when a bombing attack is executed or threatened.

Physical security planning will be discussed in a subsequent publication, Procedural Bulletin 08 *Security and Prevention.* This bulletin will provide guidelines for the development and execution of the bomb incident plan. While such plans must be tailored to the particular requirements of each situation, any plan should include the following essential elements:

I. Control

- Who will be in charge of the incident?
- Where will the command center be located?
- How will critical decisions be made?
- Who will man the command center?
- What primary and alternate communications systems will be employed during the incident?
- What reporting system will be in effect to insure that information is promptly transmitted to the command center?
- Who will effect necessary coordination with other public or private agencies?
- Who will deal with news media representatives?

II. Initiation

- What procedures will be followed upon receipt of a bomb threat or notice that a device has been found?

III. Evacuation

- If evacuation is ordered, what procedures will be followed?

IV. Search

- What will be searched?
- What search techniques will be employed?
- Who will search?

V. Damage Control

- What damage control measures will be taken?
- Who will take damage control measures?

VI. Disposal

- How will suspected bombs be processed?

VII. Detonation

- What procedures will be followed if a bomb detonates without warning during search or disposal?
- How will medical, utility, and other support services be obtained and utilized?

Figure 1, based on a model issued by the Hennepin County (Minnesota) Chiefs of Police Association, illustrates a bomb incident plan developed for a public school system. The content and clarity of any plan are more important than the actual format.

Once a bomb incident plan has been developed, it must be periodically reviewed for updating and all personnel responsible for execution of the plan must be thoroughly familiar with its provisions. Rehearsal of the plan by key personnel is essential if delay and confusion are to be avoided during bomb emergencies.

Figure 1

BOMB INCIDENT PLAN

SINGLE UNIT SCHOOL FACILITY

CONFIDENTIAL

TO: All Staff Members

FROM: _____
(Principal)

SUBJECT: Information Concerning Bombs and Bomb Threats

A bomb threat against this school may be received by phone, mail, or message at any time. Phone threats may be received at the administrative offices, over public phones located on school property, or may even be directed at the home phones of staff members. Any staff member receiving a telephone bomb threat should make every effort to follow the procedure outlined below.

I. Bomb Threats

Most bomb-threat calls are very brief. The caller normally states his or her message in a few words and hangs up; however, where possible, every effort should be made to obtain detailed information from the caller, such as:

1. Exact location of the bomb.
2. Time set for detonation.
3. Description of explosive or container.
4. Type of explosive.
5. Reason for call or threat.

The person receiving the call should also note such details about the call as:

1. Date and time of call.
2. Exact language used.
3. Sex of caller.
4. Estimate age of caller.
5. Peculiar or identifiable accent.

6. Possible race.

7. Identifiable background noise such as jukebox music, trucks, street cars, or other conversations.

When the bomb threat call is received, it should be reported immediately to one of the following locations:

1. Normal School Hours	_____ (office)	_____ (phone)
2. Non-school Hours	_____ (individual)	_____ (phone)
3. Emergency, if above reports cannot be made.	_____ (individual)	_____ (phone)

Threats received by letter should be preserved for investigation by the police for possible fingerprints and should not be handled once the letter has been opened.

In the event that a bomb threat is received, a preliminary decision will be made, in coordination with the police, with respect to the necessity for searching and/or evacuating the building. The procedures to be followed for each of two possible courses of action are summarized below.

II. Search of Building Without Evacuation

If the preliminary decision is to search the building without evacuating the students, the following announcement will be made over the public address system: "All staff members are asked to immediately carry out the instructions for checking the building that were outlined in the special bulletin issued earlier this fall". Upon receiving such an announcement, every teacher should make a prompt visual search of the classroom in which he is teaching at the time and use the classroom telephone to report to the main office any items or containers that are unusual or foreign to the normal operation of the school. *Do not handle the item under suspicion.* A representative from the _____ Police Department will come to the room to check it
(Name of City)
immediately upon receipt of the report. In addition, the following people should also make a visual search of the areas indicated below and report any abnormal items to the main office. Selection of staff teachers in Column 2 should be made on the basis of nearness to the locations designated in Column 1.

COLUMN 1 LOCATION	COLUMN 2 Name of Staff or Teacher Personnel Assigned
First Floor	
Corridors and entries	
Cafeteria, dishwashing room, kitchen, and teacher's lunchroom	
Boy's lavatory across from cafeteria	
Girl's lavatory across from cafeteria	
Boy's lavatory near shops	
Empty shops and shop office	
Second Floor	
Corridors and entries	
Boy's gym and locker rooms	
Girl's gym and locker rooms	
Boy's lavatory in art wing	
Girl's lavatory in art wing	
Little Theater	
Boy's lavatory near _____	
Girl's lavatory near _____	
Men's lavatory (teachers')	
Women's lavatory (teachers')	
Third Floor	
Corridors	
Boy's lavatory near _____	
Girl's lavatory near _____	
Miscellaneous Assignments	
Outside perimeter of building	
Janitor closets, fire hose cabinets, disposal room, elevator rooms, boiler room, tunnel, and student store	
Waste containers in corridors and lavatories	
Empty classrooms	

III. Evacuation of Building

If the preliminary decision is to evacuate the building, the following announcement will be made over the public address system: "A report has been received that makes it necessary for everyone to leave the building for a few minutes. Please leave your classrooms immediately and exit from the building in the same manner as you would for a fire drill. Move about 300 feet away from the building and remain there until you receive further instructions". Upon receiving such an announcement, every teacher should first instruct his students as to the proper exit to use in leaving the building. The teacher should then conduct a visual search of his classroom in the manner described above. Those staff members with special assignments identified above should follow through accordingly. Upon completing these assignments, teachers should join their students outside the building until further instructions are received.

In the event of an evacuation, the following persons should report to the office upon completion of their search assignments:

Names of Persons: _____ _____

_____ _____

_____ _____

_____ _____

IV. Command Post

The command post will be established at the communications center of the school. It will be manned by the principal, police official, and such other personnel as the school or police may designate.

The communications center shall be manned by someone who knows how to operate the communications system which sends and receives messages from throughout the school. In the event a message needs to be sent to all personnel, it can be done through this system. If a search team person finds an object, he can step to the nearest class telephone or to the audio speaker in the nearest classroom and give the exact location of the object found. A police official can then go immediately to the scene.

With the principal and the official from the police department at the command post, decisions can be made immediately on search, evacuation, and what to do with objects found.

If a designated area of the building is provided in the threat message, the evacuation procedure may have to be altered immediately through the instructions given by the audio system. This must be considered as a possibility.

Remember to evacuate to a safe distance which is beyond that of the fire drill procedure, preferably up to 300 feet, but as far as possible up to that distance. A detonation, even though the building is evacuated, could still be extremely dangerous to personnel too close to the exterior of the building. Consideration must also be given to the fact that the bomb is on or near the outside of the building rather than the interior.

V. Type of Evacuation Notice

Should an evacuation be necessary, it is preferable that, even though the fire drill signal system is used, it is used in a different tone or system of signals from that of the fire drill. This will designate that, even though fire drill exit procedures will be used to empty the building, it is a bomb threat and the personnel must evacuate a farther distance from the building. The audio system can be used to call for an evacuation instead of the fire drill procedure signal system. Specific instructions as to system of evacuation can then be provided.

Message Transmission

All messages over the audio communications system will be given by the principal who identifies himself, or some other official of the school who is recognizable by the school staff and students. This will provide confidence in the official nature of the transmission. It will also eliminate the risk of false alarms or the evacuation of personnel into an area of detonation.

The message should be calm and as brief as possible. A brief consideration should be given as to content of message, depending on the specific situation at the time of message transmission.

After the evacuation and return of students to the school, an additional message will be given, stating that the school has been searched and that classes will resume as normal and that students will continue their regular daily schedule.

Detonation

In the event of a detonation, *without prior threat or evacuation, or during evacuation,* the situation will be handled as any other disaster or emergency. The police will be notified immediately. Local community police, fire, and rescue procedures will be initiated immediately. If the situation is serious, additional personnel will be called in under mutual aid agreements already in effect in the county or region area.

In addition to the above procedures, the school nurse will be responsible for the following: (Such plans are necessary for immediate treatment, and because there may be multiple detonations within the community in widely divergent areas.)

1. Preparing an advance plan for the designated area of treatment for those who can be moved, and seeking the assistance of other school and student personnel to have them moved there immediately. Alternative plans may have to be devised if the priority area is involved in the area of detonation. Outside areas may be considered if season and weather permits.

2. A team of school personnel will be organized to administer first aid to severe bleeding, shock or burn patients, under the direction of the nurse.

3. A team of school personnel will be organized to go to the explosion area and treatment area.

4. A special box of first aid supplies will be prepared in each school for the treatment of bleeding, shock, burns from explosive materials, and fractures. Materials should consist of items for treatment of the above types of injuries.

5. A plan will be devised for the school district to send the nurse and her first aid kit materials, and possibly a small school team consisting of the nurse and physical education teachers from other schools in the district, to the scene of the detonation in the school or schools affected.

In addition to the above *advance* planning, the school nurse will:

1. Be sure the police, fire, and rescue units were notified.

2. At the scene of the explosion, identify those who are severely injured and *cannot* be moved and those less severely injured who *can* be moved to treatment location designated in the advance plan.

3. At the treatment area, work with assigned personnel trained to administer minor first aid and control panic and/or hysteria. A calm, efficient atmosphere must be maintained.

SECTION TWO
BOMB INCIDENT PROCEDURES

CONTROL

In order to effectively direct all phases of action relating to a bomb threat or search, a point of overall control must be established. From this point of control, frequently referred to as the command center, all major decisions are made and directions given. Evacuation is directed, search assignments are made, requests for assistance or special equipment are coordinated, and directional leadership of the entire operation is maintained.

The command center is generally staffed by two or three highly competent controllers who possess the delegated or direct authority for major decision making in times of crisis. While the elaborateness of the command center may vary from a patrol vehicle in police controlled operations to emergency centers and mobile command trucks in large industrial or military installations, three basic characteristics are essential to any command center:

- Command center personnel *must* have decision making authority.
- The command center must be able to communicate with operational personnel.
- The command center must be mobile.

Authority

Police agencies are normally well organized for response and handling of emergency situations. Lines of communication and command at the scene of crimes, accidents, and disasters are clearly delineated in departmental directives and understood by patrolmen, supervisors, and specialists, as well as command officers. Thus in those cases where police agencies assume control at the bomb incident scene, some degree of formal command and control will probably be built into the response.

There are, however, basic legal and policy differences between police intervention after the commission of a crime, accident, or explosion and their willingness or ability to accept a preventive or protective role in response to bomb threats. While policy differs from place to place, the typical public safety response to bomb threats might include the following actions:

- Patrolman or fireman responds to the complaint and contacts the official in charge of the school, factory, store, or building.
- The police or fire response officer will suggest appropriate courses of action, but will *not* take control or make decisions.
- Police or fire personnel may assist or stand by during any evacuation or search.
- If a bomb or suspicious device is located, a public safety or military bomb technician will be called to the scene.

While some public safety agencies may be willing and able to assume a greater degree of responsibility for bomb threat responses, most public and private facilities will have to plan and prepare to carry out a major portion of bomb threat operations, including control and decision making.

Where police are not in control, management must establish the command center. For example, if the threat is made against a manufacturing concern, management should be represented in the command post by the president or vice-president or their representatives so that high level decision making power is available. Overall supervision of bomb threat response activities may be guided by the corporate security officer who would actually direct the operation and advise management. Another command center member should be a local law enforcement or public safety representative who would coordinate outside support and requests for assistance in addition to acting in an advisory capacity to both management and the security officer.

Mobility and Communication

Command center mobility is important to a smoothly functioning operation. The center must, as illustrated in figure 2, be able to follow the flow of the action. If extended lines of communication and control are allowed to develop, functional control deminishes.

To illustrate the principle of command center mobility and the role of communications, consider the following sequence of events in a large industrial or single occupant business facility:

- A call threatening a bombing action is received by a switchboard operator. While the operator is still on the line with the caller, the security officer is alerted by a prearranged signal and monitors the call.
- The security officer makes an evaluation of the threat and contacts the responsible management official. A decision is made to evacuate and search the threatened building.
- Together, the security officer and the decision making management representatives constitute the command center. Appropriate orders are issued to activate evacuation and search plans in the target building.
- Command center requests that the command center truck, which also contains evacuation and search equipment, be driven to the target building and parked in a predesignated location.
- The security officer alerts law enforcement or public safety agencies and medical teams, picks up his portable radio transceiver, and proceeds to the mobile command center vehicle, where he is joined by management representatives. By the time the control personnel have arrived at the vehicle, the evacuation has been started and the search teams are picking up their equipment.
- After a brief conference with the building search team supervisor, the searching starts. The command center is in radio contact with the search teams.
- As the building search proceeds, the command center, radio equipped, follows the search into the building. After search teams have cleared an appropriate inside space, such as the switchboard area or an office with multiple telephones, the command center moves into this area.
- Communications inside the building may be established by use of telephones if all search team members have been given lists of the telephone numbers or simply instructed to dial the switchboard. Communications with those search teams and support personnel outside the building are conducted by radio, bullhorn, or by a system of runners.

By moving with the search and maintaining communication, the command center is able to have constant contact with all phases of the search and related operations and can keep close control over all personnel and their actions. If the command center had remained in some remote location, poor control and coordination would have resulted.

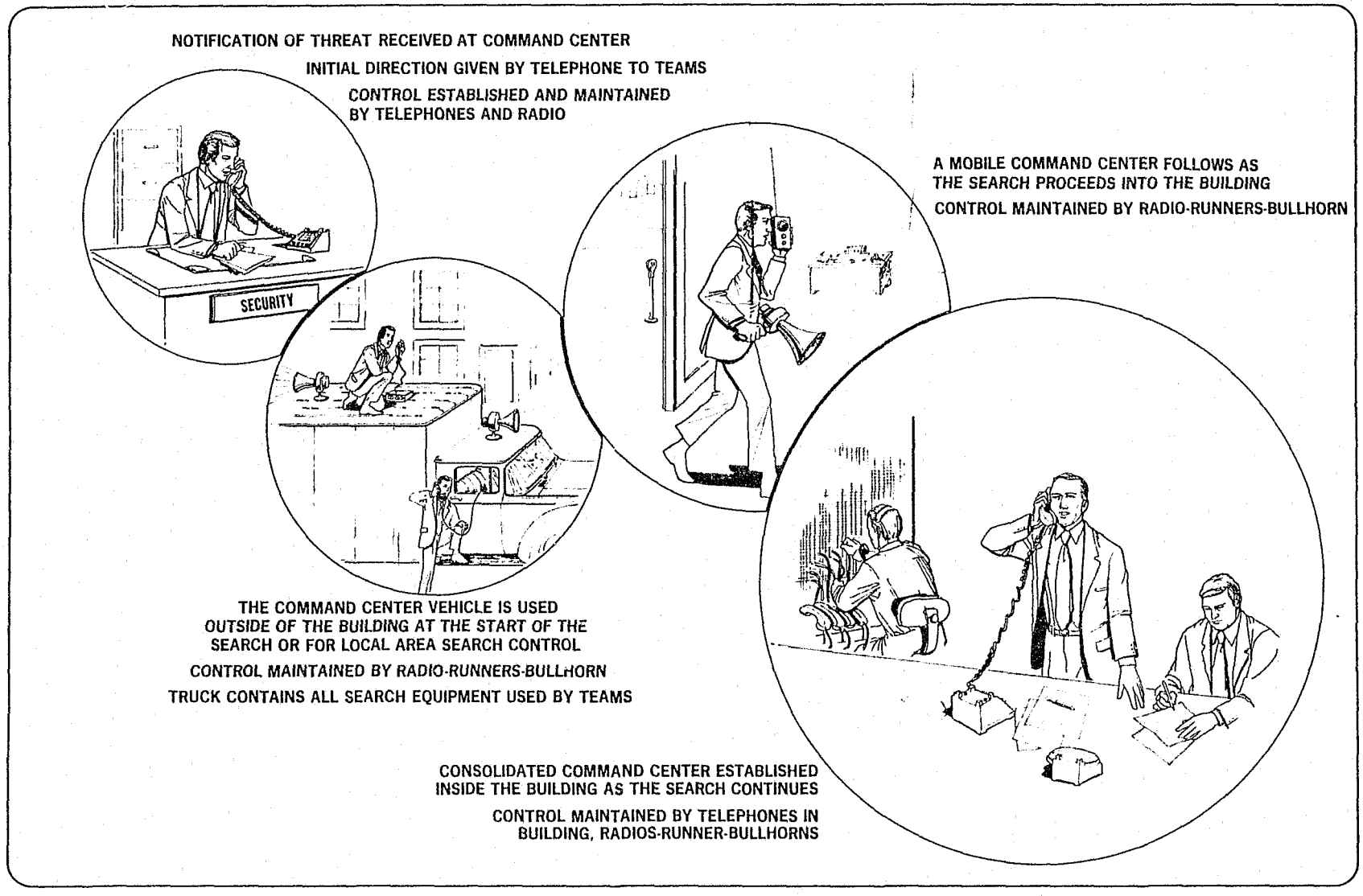

Figure 2–COMMAND CENTER CONTROL MUST MOVE WITH THE SEARCH OPERATION

INITIATION

Bomb incidents are initiated in one of three ways, and planning should provide for each possible situation.

1. Receipt of threat or warning.
2. Location of a device suspected of being a bomb.
3. Actual detonation or ignition of a bomb.

When a bomb is located without warning or detonates, the procedures to be followed are relatively simple and uncomplicated, and will be discussed in detail later in this section. On the other hand, the steps involved in the processing and evaluation of bomb threats are not as well defined, and often require decisions based upon little or no reliable data. It is, therefore, essential that personnel be trained to handle threats in a manner that will provide as much solid information as possible to assist in the evaluation of such warnings.

Telephone Threats

While bomb threats or warnings may be received by mail or message, the most popular method is by telephone. An accurate analysis of the telephone threat can provide public safety personnel with many valuable clues on which to base their recommendations, actions, and subsequent investigations. For example, the caller could reveal personal characteristics such as sex, ethnic or national group origin, or mental state. He may even unwittingly provide a clue to his location by background noises. Bombers often intentionally provide accurate information on the type of bomb and exact location. The natural reaction of an untrained person receiving a threat regarding a bomb is panic. A properly trained individual, however, will remain calm and take full advantage of the situation to improve the likelihood that the incident will be safely and effectively handled.

As a minimum, every telephone operator or receptionist should be trained to respond calmly to a bomb threat call. To assist these key individuals, a bomb threat call checklist of the type illustrated in figure 3 should be developed and kept in the immediate vicinity of their telephones. In addition to the use of a checklist, it is always desirable that more than one person listen in on the bomb threat call. To accomplish this, a system of covert signaling, perhaps a coded buzzer signal to a second reception point, could be considered. This signal would be activated by the first party receiving the threat so that a second party could listen in on the conversation, and provide an additional description of the bomb threat call.

Since a bomb threat could be directed to any extension in a facility, it is advisable to have a checklist at each telephone. An even more effective method is the automatic recording of threats. This can be accomplished by connecting all telephones to a central recorder. If the constant recording of all calls is undesirable, as soon as a call is recognized as a bomb threat, regardless of who receives the call, a button is pushed to activate the recording system. Recording eliminates the possibility of gaps, due to human error, in the information which the bomb threat call will provide and also may serve as evidence to identify the bomber. The recording, coupled with the information provided by the checklist, will often furnish important information necessary for the evaluation of the bomb threat.

If the individual receiving the call remains calm, it is often possible to extract additional information from the caller. This is especially true when the bomber wishes to avoid injuries or death. If told that a building is occupied or that a facility cannot be evacuated in the warning time provided, the bomber may be encouraged to provide more specific information regarding the location of the bomb. The presence of the checklist will suggest additional avenues of inquiry to the person talking with the caller.

Depending upon the nature of the facility involved and the probability of bomb attack, it may be necessary to train all personnel to respond properly to telephone threats. In any event, training should include personnel on duty during periods when the facility is normally closed. Newspaper offices, news services, and television stations are sometimes contacted with bomb threats against local facilities, and it is advisable to solicit their assistance in handling such threats in the most effective manner.

Facilities with a high volume of bomb threat calls may, if located in medium size cities, possibly arrange for a telephone service that permits incoming call circuits to be locked open for tracing. This special service and the possibilities of routine call tracing should be discussed with telephone company security officials.

Figure 3—BOMB THREAT CALL CHECKLIST

ASK:

1. Exact location of the bomb?

2. Time set for detonation?

3. What does it look like?

4. What is the explosive?

5. Why was it placed?

Obtain as much detail as possible about the bomb and its location. Legitimate callers usually wish to avoid injury or death — request *more* data by expressing a desire to save lives.

RECORD:

1. Date _____ and time _____ of call.

2. Exact language used.

_____
_____
_____
_____
_____
_____

3. ☐ Male ☐ Female
   ☐ Adult ☐ Child
   Estimated age _____ Race _____

4. Speech (Check applicable boxes)

☐ Slow	☐ Excited	☐ Disguised
☐ Rapid	☐ Loud	☐ Broken
☐ Normal	☐ Normal	☐ Sincere

   Accent _____

5. Background noises _____
_____
_____
_____
_____
_____

6. Name of person receiving the call

_____

NOTIFY:

Upon receipt of a bomb threat, dial the following number immediately and report the call:

_____ _____
Number Extension

DO NOT DISCUSS THE CALL WITH OTHER PERSONNEL.

1. Report the call 2. Notify your supervisor, and 3. Follow instructions.

Written Threats

If a bomb threat is received in writing, all materials must be saved, including any envelope or container. Once the message is recognized as a bomb threat, further unnecessary handling should be avoided. Every possible effort must be made to retain evidence such as fingerprints, handwriting or typewriting, paper, and postal marks which are essential to tracing the threat and identifying the writer.

While written messages are most often associated with generalized threats and extortion attempts, a written warning of a specific device may occasionally be received and cannot be ignored. With the increasing use of voice print identification techniques to identify and convict telephone callers, there may well be an increase in the use of written warnings and calls to third parties.

Threat Evaluation

Once the bomb threat has been received, immediate action must be taken to analyze the threat and take appropriate response action. To avoid dangerous delay and indecision, pre-incident planning must clearly provide for two important aspects of threat evaluation:

1. Who will evaluate threats?

2. How will threats be evaluated?

Every facility which considers itself a potential bomb threat target must establish a bomb threat decision authority. Generally, this authority is vested in members of the management or supervisory staff. For each individual with primary decision authority appointed, there should be at least one alternate to act during routine and emergency absences and provide twenty-four hour coverage every day of the week. Both should be completely familiar with the scope of authority and responsibility of the assignment.

While owners, managers, or administrators may wish to avoid making difficult decisions regarding bomb threats, in most areas of the country they will find that police and fire personnel will be reluctant to accept the responsibility. As a matter of policy, most public safety agencies will gladly assist in pointing out various courses of action, but the final decision must be made by the individual responsible for the target facility.

Unfortunately, there is very little reliable information to assist in differentiating between the bomb hoax and the legitimate warning. While it has been noted that actual warnings tend to be more detailed than hoax calls, this observation remains pure speculation and is certainly not a valid measure of the seriousness of a bomb threat. It may be equally unprofitable to screen on the basis of age or sex since many legitimate bomb calls are received from females and children. The whole area of evaluation of sincerity an the basis of the content of the message or the characteristics of the caller is largely unexplored. Any assistance along the lines will have to await further research.

In the meantime, there would appear to be at least six or seven hoax threats for every actual or attempted bombing in the United States (figure 4) and estimates from specific major cities place the ratio much higher than the national average. For example, during the first six months of 1970 New York City reported a total of 5620 threats as compared with 74 actual bombings or attempts, a ratio of about 75 to 1. Whatever the collective ratio, it is obvious that any private or public facility can be effectively immobilized if constant threats are permitted to disrupt activity over any period of time. In such cases the attacker may achieve his objectives as effectively with hoax threats as with actual bombs.

Figure 4

Actual Bombings, Attempts, and Threats -- By Regions
January 1, 1969, through April 15, 1970*

	Western	North Atlantic	South-west	South-east	Midwest	Central	Mid-Atlantic	National Totals
Explosive	235	178	113	93	164	124	63	975
Incendiary	550	383	157	437	887	572	369	3,355
Total actual bombings.	785	561	270	530	1,651	698	437	4,330
Bombing attempts	371	290	132	109	273	183	117	1,475
Bombing threats	3,844	14,758	2,855	3,328	2,332	5,390	2,622	35,129

*Exhibit 780, Senate Permanent Subcommittee on Investigations, 91st Congress

Basic bomb threat evaluation will involve assessing the credibility of the message and selecting one of three possible alternatives:

1. To take no action

2. To search without evacuation

3. To evacuate and search

Except for those facilities unable to evacuate because of their size or the critical nature of their activities, the decision making authority must simply weigh the cost of loss of productivity against the risk of injury or death to personnel. When faced with this equation, most decision makers would choose positive action and the protection of human life.

EVACUATION

At first glance, immediate and total evacuation would seem to be the most appropriate response to any bomb threat. However, there are significant economic and safety factors that *may* weigh against the evacuation response. Even where evacuation is possible and desirable, the process itself may not be as simple as it might appear.

Limitations on Total Evacuation

- **Risk of Injury.** As a general rule, the easiest area in which to plant a bomb is often in the shrubbery surrounding a building or in a car in a parking lot. If personnel are evacuated out of a building, they may be increasing rather than decreasing their risk of injury. In the same way, the most likely place to conceal a bomb inside is in an area to which the public has the easiest access. Therefore, any evacuation that requires personnel to move through public areas such as halls near restrooms, waiting rooms, or lobbys might increase the risk of injury during any detonation.

In the case of high-rise office or apartment buildings, the process of evacuation may require that all occupants pass the point of possible detonation. Personnel evacuated from a building in a congested downtown area could be forced to wait on streets or sidewalks where they are vulnerable to any falling glass or other debris resulting from an explosion. In either case the risk of injury may be increased by evacuation.

- **Response Impairment.** Total and prompt evacuation will remove workers and supervisors who might be required to make a comprehensive search or take damage control measures.

- **Panic.** For facilities without bomb incident plans and properly trained personnel, a sudden bomb threat evacuation may cause panic and unpredictable behavior leading to unnecessary risk of injury.

- **Essential Services.** Some evacuations may be precluded by the essential nature of the operations conducted by a facility. Hospitals, utilities, telephone exchanges, and police stations may fall into this category if they are providing critical public safety services that would be disrupted by evacuation.

- **Loss of Production.** Almost all bomb threats are directed at facilities engaged in some form of production. Whether in a manufacturing plant or a high school, total evacuation will result in loss of productivity. While the protection of life usually outweighs any economic loss, repeated threats may pyramid costs to an unacceptable level.

Thus, there are some conditions which make total evacuation an undesirable response to the bomb threat. In such cases a partial evacuation may be more appropriate.

Partial Evacuation

One alternative to total evacuation is a partial evacuation. This response is particularly effective in those instances where the threat includes the specific or general location of the bomb or in those cases where a suspicious device has been located without prior warning.

Partial or selective evacuation can reduce risk of injury by removing personnel who can safely be moved out of the facility. Personnel essential to search or damage control can remain, critical services can be continued, and production loss minimized. On the other hand, partial evacuation requires a far higher degree of planning, training, supervision, and coordination than does a total evacuation response.

The Evacuation Process

Once a decision has been made to evacuate a building, a reason for the action must be given to the occupants. If not specifically provided for in the bomb incident plan, the individual with authority to order evacuation will decide whether or not to announce the true nature of the emergency. If there is reason to believe that occupants will panic if advised of a bomb threat, it may be necessary to order evacuation on some other pretext. It should be noted, however, that employees may resent not being advised of the actual situation and that legal considerations may also preclude evacuation under false pretenses.

If a covert evacuation is decided upon, some pretext other than a fire drill will have to be employed. During fire drills, windows and doors are closed and often locked. For a bomb evacuation doors must be left open so that rooms are readily accessible to search teams, and doors and windows should be open so that if a bomb detonates the blast will not be contained within the

building thereby increasing the extent of damage. When a false explanation is required, a leaking furnace fuel line or gas main is often cited.

Considering the virtual impossibility of concealing the reason for the evacuation and the problems associated with deception, the most desirable course of action would be the establishment of a specific prearranged signal for bomb evacuations. With informed adults, the risk of panic is not great and prior training or explanation, as well as calm leadership at the scene of the evacuation, will further minimize the danger of undesirable behavior.

In any event, a system must be in effect for the transmission of the evacuation order. Even where a covert explanation for the evacuation is employed, the true nature of the emergency must be recognizable to key personnel who have specific functions to perform in the bomb evacuation, search, or damage control operation.

Where the evacuation is open, personnel can be of great assistance by removing personal property and disconnecting all electrical office machines prior to leaving the building. Since electrical equipment, even in a standby condition, produces noises which will interfere with both electronic and nonelectronic stethoscopes used during the building search, all office machines, coffee pots, fans and window air-conditioners, should be unplugged by evacuating occupants. Personal packages, briefcases, lunch boxes, and other student or employee property will delay the search and should, therefore, be carried out of the building by their owners whenever possible.

In addition to asking personnel to disconnect electrical equipment within the building as they depart, consideration should be given to selective termination of certain utilities at master or local control points. All nonvital utilities selected for evacuation shutdown should be indicated on a checklist as well as being permanently marked at the control or shutdown point within the building. Selective utilities shutdown can greatly increase the efficiency of the searchers by eliminating confusing background noise levels and will also contribute to damage control in the event a bomb detonates.

The building maintenance engineer or janitor should be required by the bomb incident plan to report to the command center with master keys to facilitate access to basement storage areas, electrical panels, elevator shafts, and other areas where a search will have to be made. Wherever possible maintenance personnel should be assigned to participate in the search of the facility as they are generally the most knowledgeable employees available regarding the physical layout and utilities services of the buildings in which they work.

Evacuation is often pictured as merely moving the occupants out of a facility as in a fire drill. Evacuation in response to a bomb threat, however, may be considerably more complicated. For example, in instances where the location of the bomb is known or suspected, it may be necessary to alter established routes in favor of an exit pattern that will provide the greatest protection in the event the device detonates during the evacuation. Obviously, greater supervision and control will be required for a bomb evacuation, especially if a decision has been made not to announce the purpose of the evacuation.

The personnel reaction to a bomb threat, as compared to a fire alarm, must also be considered. To the layman, the danger of an unexploded bomb is generally an unknown and highly exaggerated entity. Without proper preparation and supervision, panic can develop during a bomb evacuation, increasing the risk of secondary injury and delaying the clearing of the area. Properly trained evacuation teams, composed of supervisory or security personnel who are thoroughly familiar with the selected routes and possible hazards, can help to deter irrational behavior. These teams must be well trained and, for larger facilities, equipped with communication devices that will facilitate timely changes in evacuation routes or procedures.

Evacuation teams will normally be organized to service a specific building or, for large buildings, a clearly identifiable internal area. All possible evacuation routes should be identified and the responsible evacuation teams should have sufficient personnel to control the most complex route. Because of their primary focus on the evacuation process, the team should consist of personnel not involved in searching assignments.

The evacuation team members and supervisor should, if not uniformed security personnel, wear identifying armbands or badges. By stationing evacuation team members at hall and stairway intersections, occupants can be directed to established evacuation routes and brief explanations offered to reduce the danger of panic from rumors. The calm presence of evacuation team personnel will reduce confusion, speed evacuation, and make possible changes in routes or procedures during the evacuation process.

At a prearranged signal, evacuation team personnel will conduct a rapid patrol of their assigned areas to see that the partial or total evacuation is complete, and then report to positions outside the facility to insure that occupants remain at proper distances, usually at least 300 feet, from the building until the reentry order is received.

An important point frequently overlooked in planning evacuations is the need to select an area or areas where those being evacuated may safely and, if possible, comfortably wait until the search for the bomb has been conducted. The occupant who has to stand two hours in the wind and rain will be far less cooperative when asked to evacuate a second time. The well-developed evacuation plan will not only insure safety but will consider the comfort and morale of those being evacuated.

SEARCH

In the bomb search operation, some individual or group attempts to locate any explosive or incendiary devices that may have been emplaced by potential bombers. Since bombs may or may not look like bombs and may or may not be concealed, the thoroughness of the search and its likelihood of success will depend upon the skill of the searchers and the ingenuity of the bomber. To appreciate the variables involved, it should be noted that the searchers may be police or fire personnel, building occupants, supervisors, maintenance men, or trained search teams and that the bomber may be a psychotic, an enthusiastic amateur revolutionary, a disgruntled employee, a criminal, or a highly trained professional saboteur or assassin.

To further complicate matters, it is not widely recognized that a thorough, detailed search of even a medium size building may consume from twelve to twenty-four hours and result in considerable disorder produced by the movement and partial disassembly of furniture and equipment as well as the search of files and storage areas. Consequently, "thorough" searches of entire buildings or facilities are seldom conducted in response to bomb threats. Even where the "thorough" search is necessary and desirable, it cannot be conducted without prior planning and trained personnel.

The official in charge of the bomb threat response is denied the luxury of an either-or decision. The nature and extent of the search operation will depend upon the evaluation of the threat and the resources available. With no plan, uninformed occupants, and no trained search teams, the manager or administrator will have little option other than to evacuate, close down and either conduct a haphazard search, or wait out the threat for a period of twenty-four to forty-eight hours. However, if prior planning and training have been accomplished, the decision maker will have a much wider range of response options and can model his reaction to meet the threat as he sees it.

Search Responsibility

It should not be assumed that local fire or police agencies will conduct bomb searches. In many jurisdictions, public safety workloads or policy preclude their participation in detailed or even cursory building searches. An advantage to having developed a bomb incident plan is that coordination with public safety agencies will have been arranged with a clear understanding of exactly what services can be provided.

If complete evacuation is decided upon, the search operation will be conducted openly. On the other hand, if the credibility of the threat is questionable, or for some other reason complete evacuation is determined to be inadvisable or unnecessary, a covert search might be directed. Whether covert or overt, searches employing available internal personnel are generally accomplished by assigning search responsibility to one, or some combination of, three basic groups as summarized in figure 5 and discussed briefly below.

- Supervisors
- Occupants
- Special Search Team Personnel

The Supervisory Search. The supervisory search is usually used as a covert technique when occupants are not to be advised of the bomb threat. It is carried out by supervisory personnel who systematically screen their areas of responsibility without notifying occupants. Such searches are estimated to be about 50 to 65% complete and, while they may reduce the loss of productive time, usually result in a superficial search because of the supervisor's unwillingness to probe dirty or out of the way locations. In most cases the covert nature of the search also precludes any degree of thoroughness. Occupants are simply not accustomed to seeing supervisory personnel prowling through refuse containers and rest rooms.

The Occupant Search. The occupant search is, of course, always an overt operation with building occupants searching their own work areas. The advantage of this method is that search personnel are intimately familiar with the area being searched and are able to identify unusual or suspicious objects more rapidly than outsiders. On the other hand, the occupant search involves danger to students or workers and requires at least a minimum degree of prior training and practice.

The Team Search. The team search is carried out by specially trained personnel organized into teams. It is the safest, most thorough technique for bomb searchs, but it is also the slowest and most expensive. Search team members may be security personnel, trained occupants, or law enforcement officers. In any event, team members must be familiar with search techniques and equipment and must have the time and patience necessary for a comprehensive search operation.

There is, of course, no reason why supervisors, occupants, and search team personnel cannot be combined and given specific search responsibilities. For example, in large organizations with high risk of bomb attack, composite search teams can be made up of carefully selected occupants of the areas to which they will be assigned. Figure 6 summarizes a possible division of responsibility for composite search teams. Where resources do not permit the training of search teams, certain occupants may volunteer or be assigned to search while their co-workers evacuate. When search teams are employed, the search process can be accelerated by assigning a supervisor or occupant from the area being searched to accompany the team.

Whatever search system is employed, search personnel must be given special training in systematic search procedures and, to the extent possible, bomb recognition. Their training should emphasize their roles as searchers and not bomb experts. Search personnel must constantly be aware of the great risk involved in touching or moving any suspected explosive device.

Figure 5 — SEARCH SYSTEMS

	SEARCH BY:	ADVANTAGES	DISADVANTAGES	THOROUGHNESS
SUPERVISORY	**BEST** for Covert search **POOR** for thoroughness **POOR** for morale if detected	1. Covert 2. Fairly rapid 3. Loss of working time of supervisor only	1. Unfamiliarity with many areas. 2. Will not look in dirty places 3. Covert search is difficult to maintain 4. Generally results in search of obvious areas, *not* hard-to-reach ones 5. Violation of privacy problems 6. Danger to unevacuated workers	50-65%
OCCUPANT	**BEST** for speed of search **GOOD** for thoroughness **GOOD** for morale (with confidence in training given beforehand)	1. Rapid 2. No privacy violation problem 3. Loss of work time for shorter period of time than for evacuation 4. Personal concern for own safety leads to good search 5. Personnel conducting search are familiar with area	1. Requires training of entire work force 2. Requires several practical training exercises 3. Danger to unevacuated workers	80-90%
TEAM	**BEST** for safety **BEST** for thoroughness **BEST** for morale **POOR** for lost work time	1. Thorough 2. No danger to workers who have been evacuated 3. Workers feel company cares for their safety	1. Loss of production time 2. Very slow operation 3. Requires comprehensive training and practice 4. Privacy violation problems	90-100%

Figure 6 – COMPOSITE SEARCH OPERATION RESPONSIBILITIES

Supervisors

- √ Direct occupants in searching
- √ Search their own office area

Occupants

- √ Search room in which they work

Maintenance Personnel

- √ Unlock secured areas
- √ Search their own storage areas
- √ Assist search teams both inside and outside building

Search Equipment

While there is almost no limit to the number of tools or other pieces of equipment that might at one time or another come in handy in the search of a building or vehicle, experienced searchers have found that almost all searching assignments can be executed with a small number of tools and instruments that can be carried on the person inconspicuously. These items, which are briefly described below, should be considered minimum equipment for each person involved in detailed searching operations.

Flashlight and Light Bending Adapter. A two-cell pencil flashlight will provide sufficient illumination and fits into the shirt or jacket pocket. The usefulness of the pencil flashlight can be increased considerably by the attachment of a light bending adapter for directing light into small openings or around corners. The light bending adapter, illustrated in figure 7, consists of a rubber distributor cap wire protector and a clear plastic or glass stirring rod. The rod is 1/4 or 5/16 inch in diameter, four inches long, and bent about 15° at the first inch. This entire unit can be fabricated from materials available in any locality.

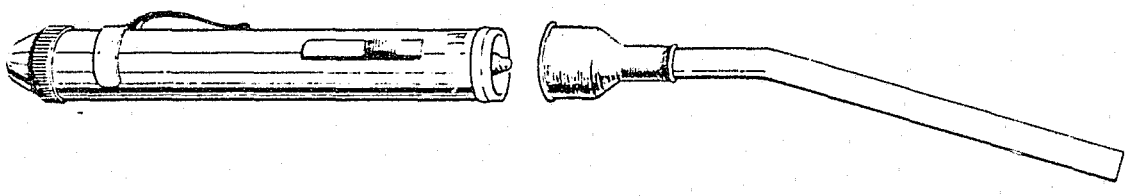

Figure 7 -- FLASHLIGHT AND LIGHT BENDING ADAPTER

Multipurpose Pocket Knife. A variety of operations can be performed with an inexpensive pocket knife with a number of blades and tool ends. These knives are sometimes referred to as "Boy Scout" or "Swiss Army" knives.

Medical or Electronic Stethoscope. Although medical stethoscopes can be employed for bomb searching, they are not designed to detect sound transmitted through air or nonfluid solids and are not very efficient for general listening. Electronic stethoscopes, figure 8, are more efficient and excellent units can be purchased for hundreds of dollars or built locally for twelve to fifteen dollars. Regardless of how it is acquired, the electronic stethoscope is an invaluable searching instrument.

Screwdrivers. Both standard and Phillips screwdrivers in various sizes are useful for removing heating and cooling duct grillworks and other types of fixtures and plates that might conceal explosive devices. A screwdriver kit containing a single handle and a variety of changeable blades is ideal because it is both lightweight and compact.

Crescent Wrench. A 4 or 6-inch crescent wrench is required for removal of those grillworks and plates which are held in place by bolts or nuts.

Probes. Two types of probes are required for searching. One probe, measuring 1/16 inch in diameter by 12 inches in length, is used for checking overstuffed furniture, automobile seats, and cushions as illustrated in figure 9. The second probe, measuring 1/8 inch in diameter by 12 inches in length, is used to probe earth, flowerpots, and lawn areas. Ideally these probes should be electrically nonconductive, spark-proof, and nonmagnetic. Because of their small diameter, nylon, aluminum, or phenolic plastic knitting needles make excellent furniture probes. Brass, bronze, or stainless steel rods may be used as earth probes. A convenient arrangement is to adapt the probe to the handle contained in the screwdriver kit.

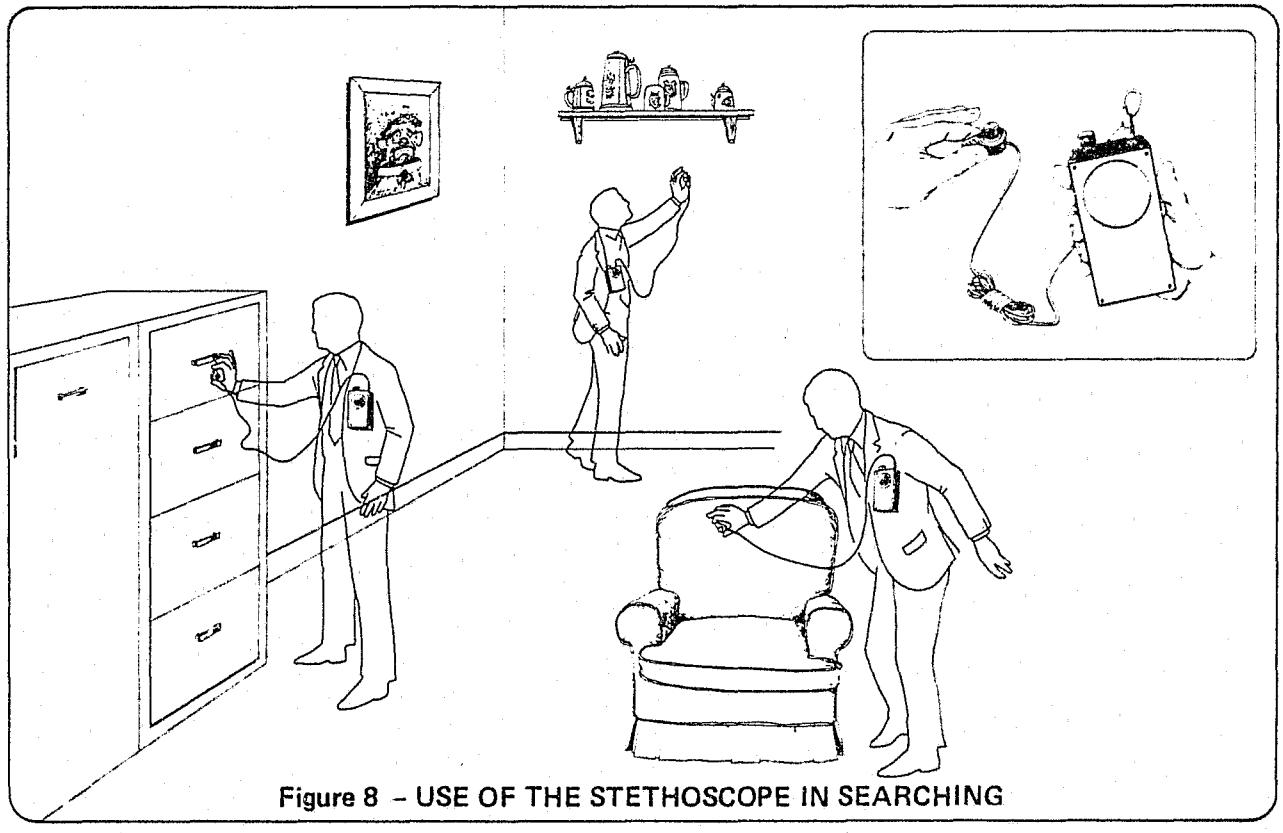

Figure 8 – USE OF THE STETHOSCOPE IN SEARCHING

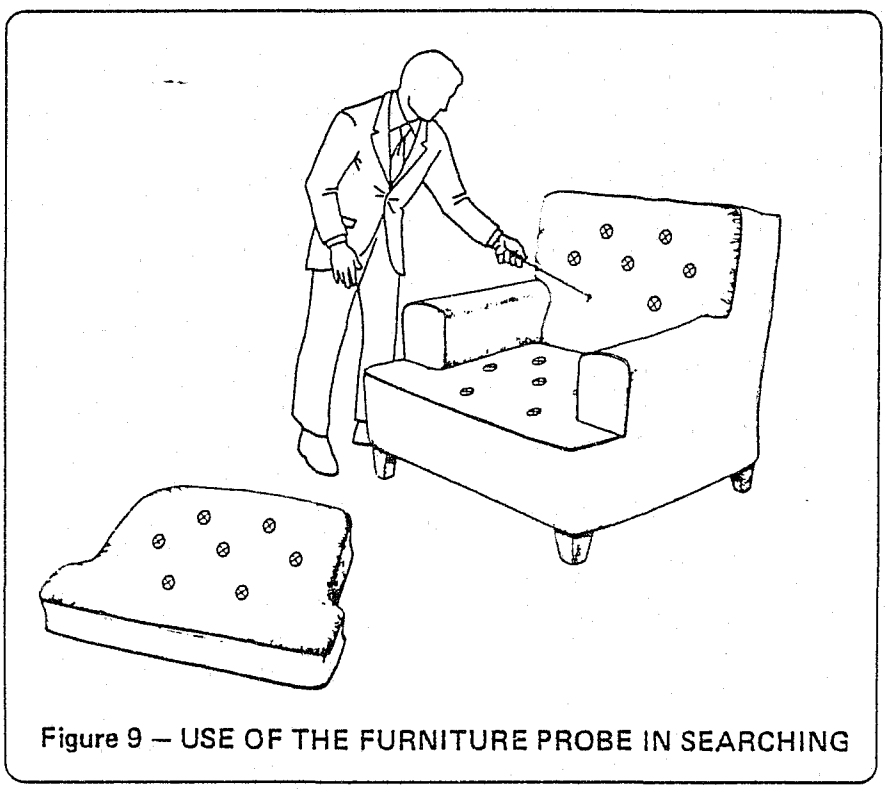

Figure 9 — USE OF THE FURNITURE PROBE IN SEARCHING

Plastic Strip. A 2-inch by 6-inch strip of stiff plastic about 1/32-inch thick is useful for checking doors, windows, drawers, and desks for concealed wires or attachments. The strip can also be used to unlock some simple door, desk, and file cabinet locks.

Roll of Crepe Paper. Crepe paper in 2-inch wide rolls is useful in marking rooms or areas which have been searched by tying a strip of the paper to the doorknob or across doorway. Should a suspected bomb be found, a strip of crepe paper may be placed from the room doorway leading directly to the object. By marking the suspected bomb in this manner, the bomb technician can immediately locate the item without having to be directed by a searcher.

Hand Mirror. A small mirror approximately 2 by 3 inches is useful for aiding the searcher in looking behind and under furniture items as illustrated in figure 10. A strip of tape with a loop or tab placed on the back of the mirror will enable the searcher to hold the mirror more conveniently. The mirror may be attached to the probe for insertion into small openings.

Searching Buildings

While the peculiar characteristics of buildings and situations make it impossible to develop standardized search doctrine applicable to all incidents, it is still possible to formulate general guidelines that will apply in a vast majority of the cases encountered. The procedures that follow are intended as guidelines to serve as a basis for planning when modified to meet local conditions.

As a general rule, building and vehicle searches follow two basic maxims:

- Searching operations start on the outside and work toward the inside.
- Once on the inside, searching starts from the lowest level and works up.

Both principles have evolved from years of experience and the application of common sense. Properly applied, they reduce the risk of injury to both searchers and occupants.

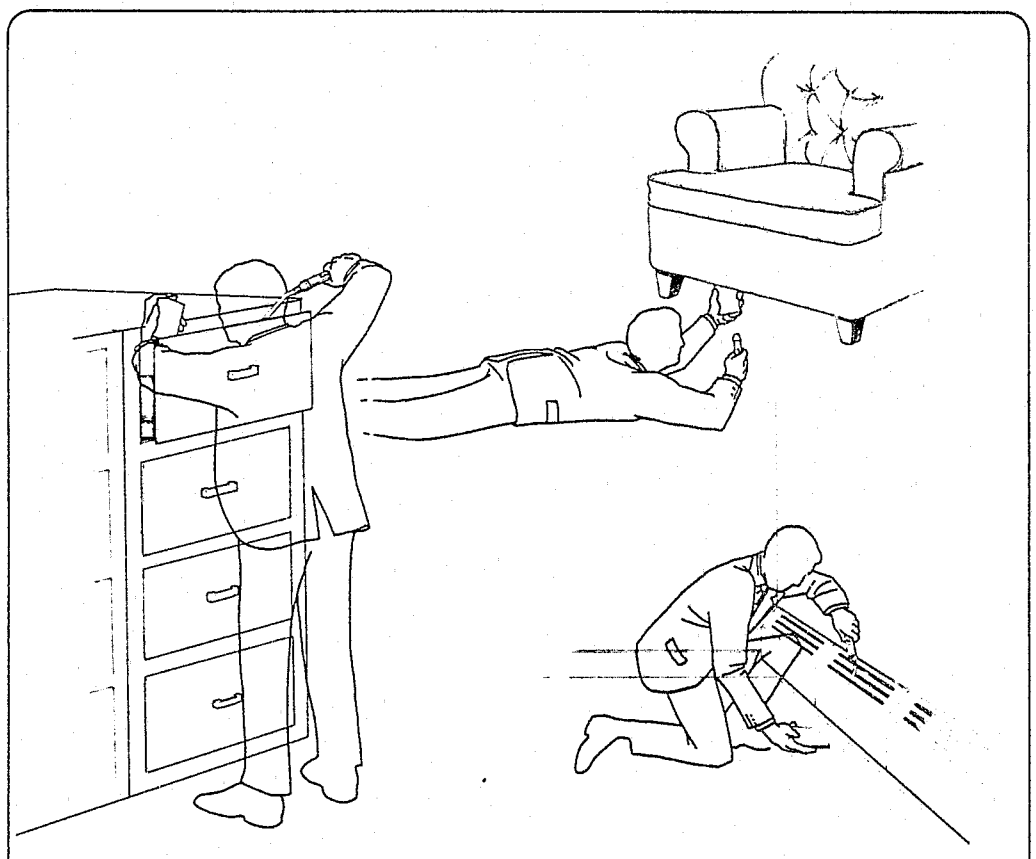

Figure 10 – USE OF THE LIGHT AND MIRROR WHILE SEARCHING

Organization. Assuming that a comprehensive team search will be conducted by trained personnel, the following division of labor has been found effective:

- Exterior search – 25% of available personnel
- Public area search – 25% of available personnel
- Detailed room search – 50% of available personnel

Figure 11 illustrates the manpower distribution for a twenty-man trained search team. Twenty-five percent of the total search force has been assigned to conduct the exterior search of the building. The exterior search team consists of four searchers and one supervisor. The four searchers are formed into two, two-man teams. These teams, under control of the supervisor, have the responsibility of searching all the outside areas adjacent to the building. The smallest search unit should consist of two men. Two men searching together have several psychological and physical advantages over the single searcher. A searcher is more likely to do a thorough job if another person is present, and both men can work together when necessary to move heavy equipment or furniture.

When the exterior search teams complete their search, command center will direct them to join the detailed room search team and assist in that searching operation.

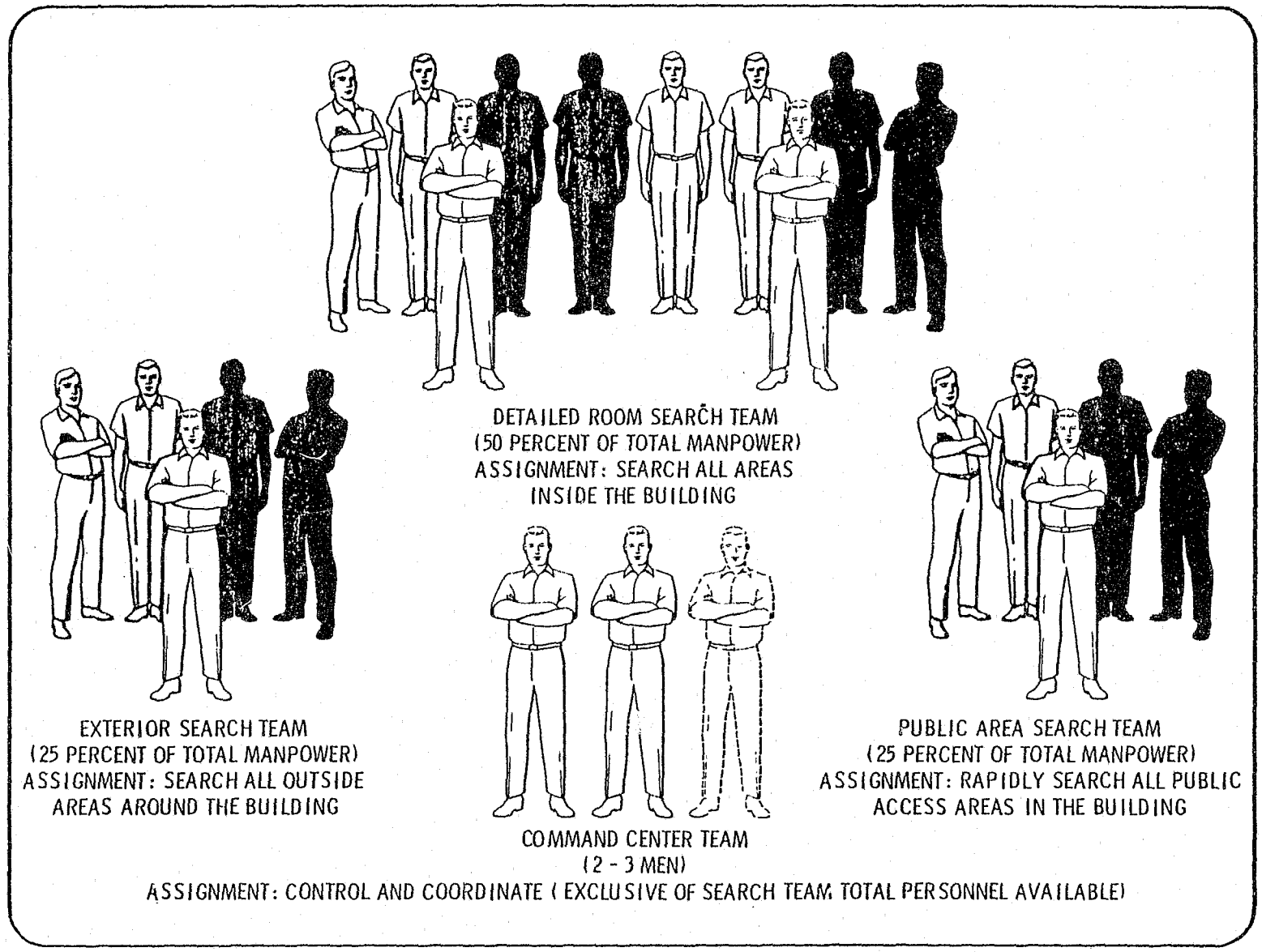

Figure 11 – ORGANIZATION OF A TWENTY-MAN SEARCH UNIT

Another 25 percent of the total search force has been assigned to conduct a search of all areas accessible to the general public within the building. Once again, the concept of two-man search teams with the supervisor directing and coordinating is employed. The public area search team will enter the building and conduct a search of areas such as lobbies, waiting rooms, halls, rest rooms, stairs cleaning equipment closets, and elevator cabs. Their search will take them through the entire building, starting from the ground floor and moving rapidly up through the building. When their search has been completed, command center will direct them to join the detailed room search team and assist in that searching operation.

Fifty percent of the total searching manpower is assigned to the detailed room search team. Once again, searching is performed by small two-man teams under the direction of a supervisor. This results in a total of four two-man searching teams with a supervisor for each two teams. The ratio of one supervisor to two search teams provides an excellent working balance. The role of supervisor entails much more than supervision; he acts as an additional searcher, handles communications with command center, coordinates the searching between his teams, obtains needed equipment or replacements, marks areas which have been searched, and insures that the systematic search proceeds with speed and thoroughness.

The detailed room search team has the responsibility of conducting a detailed room-by-room search of each space in the building not covered by the public area search teams. Their search will start in the basement utility areas and proceed upward, a floor at a time, until the entire building search has been completed.

Thus, at the start of a building search, work is immediately performed in the three areas where a bomb is most likely to be placed: outside the building, inside in a space accessible to the public, or in a utility area.

Team Equipment. In addition to the items of personal equipment described earlier, each of the searching teams will require certain other items of equipment in order to function efficiently within the searching system.

- *Communications Equipment.* Portable radio transceivers for contact with the command center and battery powered bull horns for use when radios cannot be used or when it is necessary to address widely spread search teams, building occupants, or spectators.

- *Battery Powered Auxiliary Illumination.* Lightweight, wide area, fluorescent lights, such as the Burgess Safari Lite, are required to provide adequate searching light for night operations outside and for inside searching of low illumination areas such as utility and storage areas, and elevator shafts.

- *Folding Lightweight Ladders.* Lightweight aluminum ladders will be required by the exterior search teams so that window ledges, trees, sewers, and similar areas may be searched. Inside search teams will use them in the utilities areas, elevators, air shafts, storage rooms, and to inspect false or suspended ceilings.

- *Forcible Entry Tool Set.* This tool set should contain prybars, hacksaws, and heavy duty bolt cutters. The bomber may have replaced an existing lock with one of his own, locking the bomb in a room or control panel.

- *Common Hand Tool Set.* Hammer, saw, pliers, socket wrench set, assorted wrenches, and similar hand tools, as well as quantities of rope and line. Without this tool set valuable time will be lost in any search operation.

- *Three Inch Diameter Extension Mirrors.* This item is very useful in all phases of searching by eliminating a great deal of bending and stooping.

All personal and team search equipment should be stored where it will be rapidly available when required. By utilizing vehicle storage, the necessary equipment may be quickly transported to the

area to be searched and located in an areas which is readily accessible to all search teams and also to the command center in the event that requests for special equipment are received during the search.

Access Problems. Perhaps the most frequent and frustrating problem encountered in the search process is access limitation. It is not uncommon to find hundreds of lockers or desks locked in a building to be searched. Often utility service panels and storage areas are found locked and nobody knows where the keys are located. Even when employees conduct or assist in the search, it is invariably true that a certain number of locked desks, lockers, and briefcases will be the property of employees or students that are absent at the time of the search. No complete search is possible without full access and such access depends heavily upon prior planning. Several procedures can alleviate if not eliminate access problems:

- *Key Control.* Management can implement and maintain a strict key control system that will insure that keys for all rooms, lockers, desks, files, and other containers will be available at a single central location twenty-four hours a day. All keys should be marked for identification and grouped by areas of the facility. Master keying will, of course, assist in reducing the volume of keys required and speed up handling during an emergency.

- *Access Officer.* As an alternative, access officers can be assigned to each area and held responsible for assisting search teams to gain access. Obviously, the absence of the access officer at a critical time will delay search activities.

- *Standby Search.* In some kinds of facilities it may be possible and desirable to require occupants or a supervisor to stand by to unlock containers or high security areas as required by searchers. In such cases the risk of loss of security information or material outweighs the risk of injury from bomb detonation.

- *Unlock/Evacuate.* Perhaps the simplest procedure is to require students or employees to unlock all desks, lockers, and other containers before evacuating the building. If occupants will also remove personal property such as lunch containers, briefcases, and packages, the search will be far smoother and faster.

Unfortunately, no matter what access plan is implemented the search teams will be faced with a certain number of locked doors or containers. A decision will have to be made as to whether or not searchers or search supervisors will be permitted to use force to open locked areas or containers. When the search is being conducted by public safety personnel, any destruction of property will have to be accomplished, or at least approved, by the owner or legal occupant of the property being searched.

The Exterior Search. Personnel assigned to the exterior search are divided into one team or unit for each building or, where insufficient personnel are available, a single exterior search unit will process each building in sequence. A thorough search of exterior areas is extremely important because they are the most accessible areas to the bomber, especially at night when the building is closed.

The exterior search pattern is illustrated in figures 12, 13, and 14. Searching should begin at ground level, with close attention given to piles of leaves or refuse, shrubbery, entrances, man holes, trash cans, and parked vehicles. The area should extend outward from the building to a distance of 25 to 50 feet or to some natural division line such as a curbing or wall. Areas of recently distrubed loose dirt should be probed to a depth of approximately 12 inches and all window wells and crawl spaces checked. Once the ground level search is completed, a search should be conducted to whatever exterior height could be reached by a bomber. Particular attention should be given to window ledges, air-conditioning units, signs, building ornaments, and fire escapes. If accessible by a

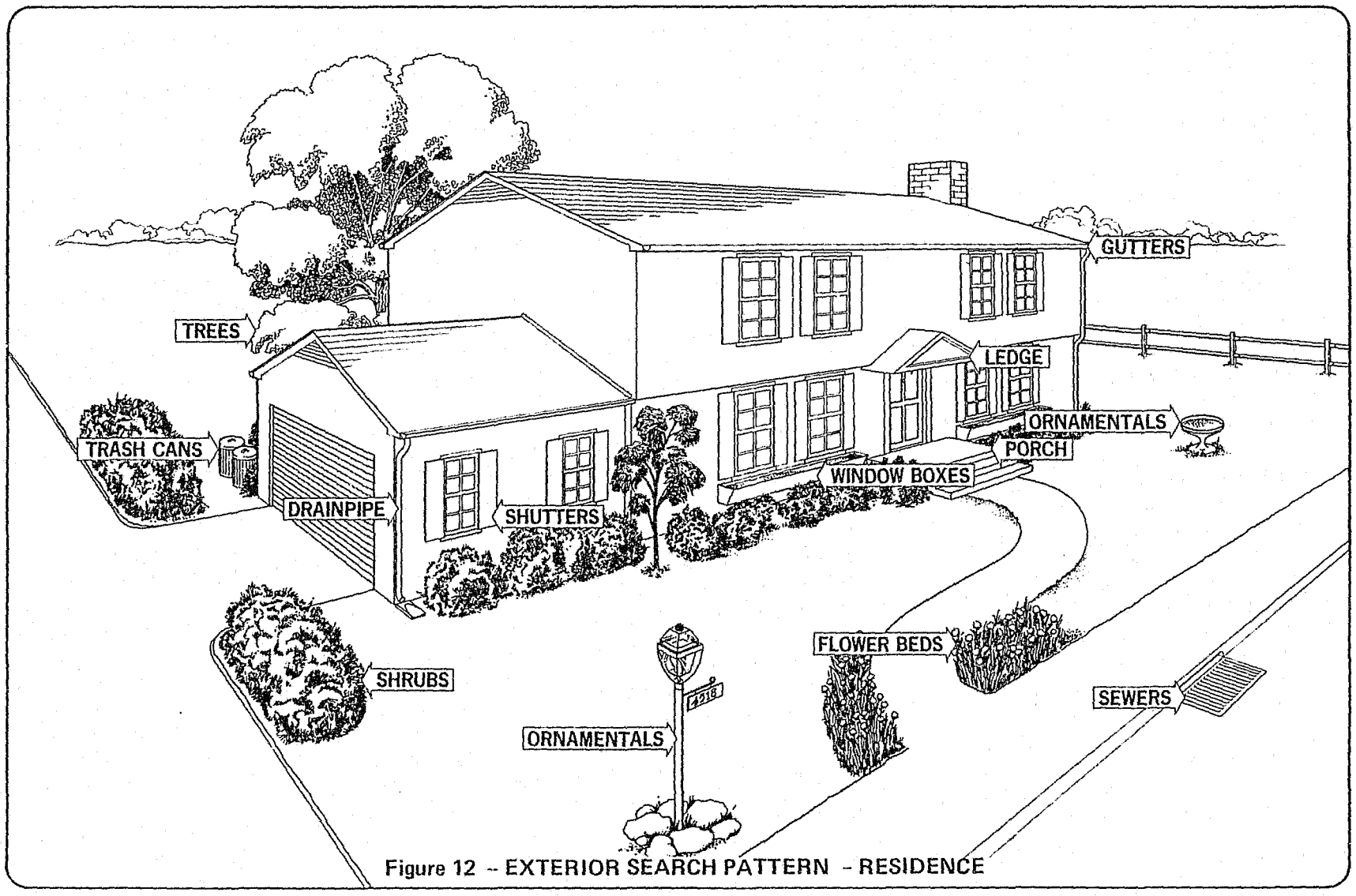

Figure 12 -- EXTERIOR SEARCH PATTERN - RESIDENCE

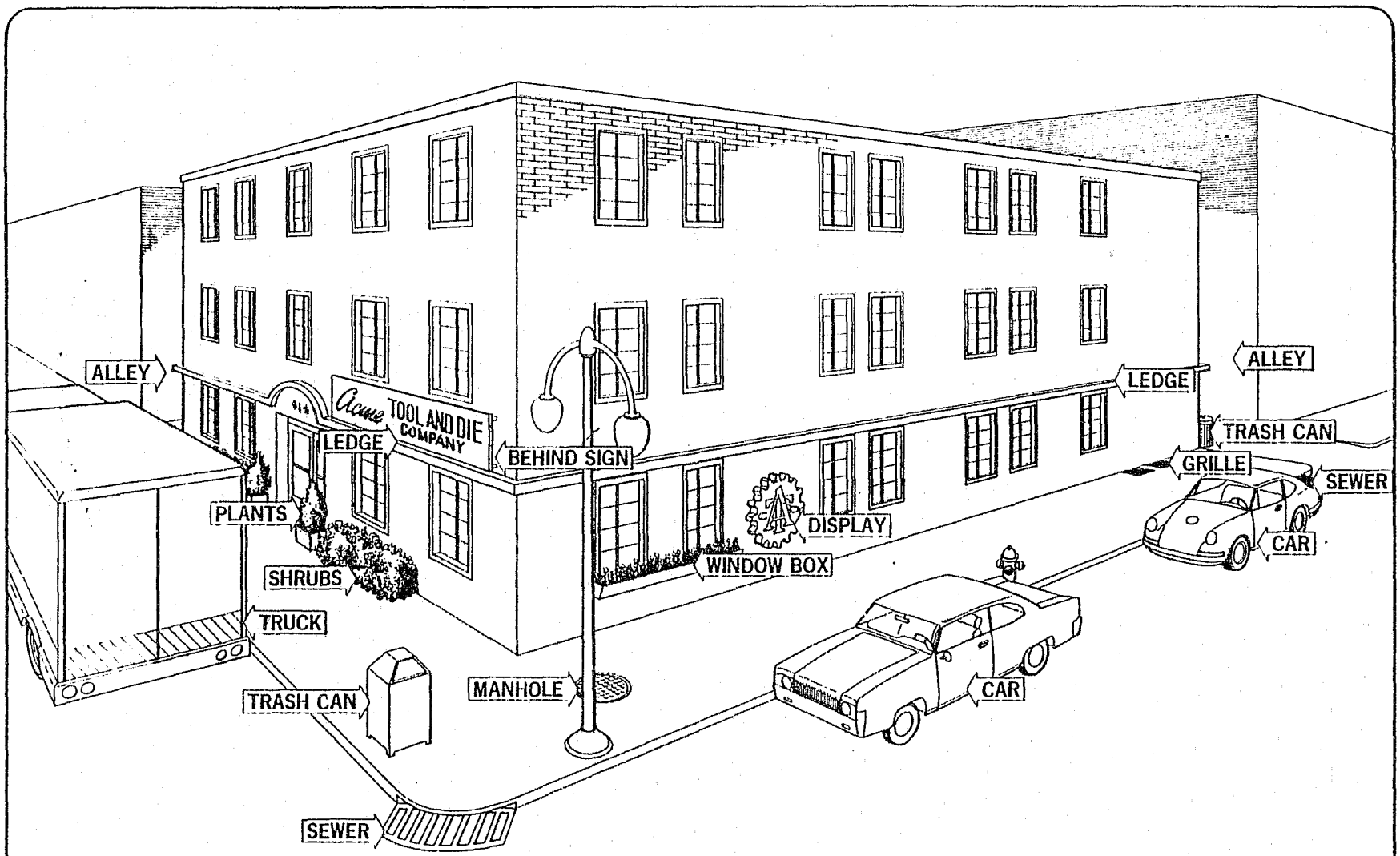

Figure 13 – EXTERIOR SEARCH PATTERN - SMALL BUSINESS

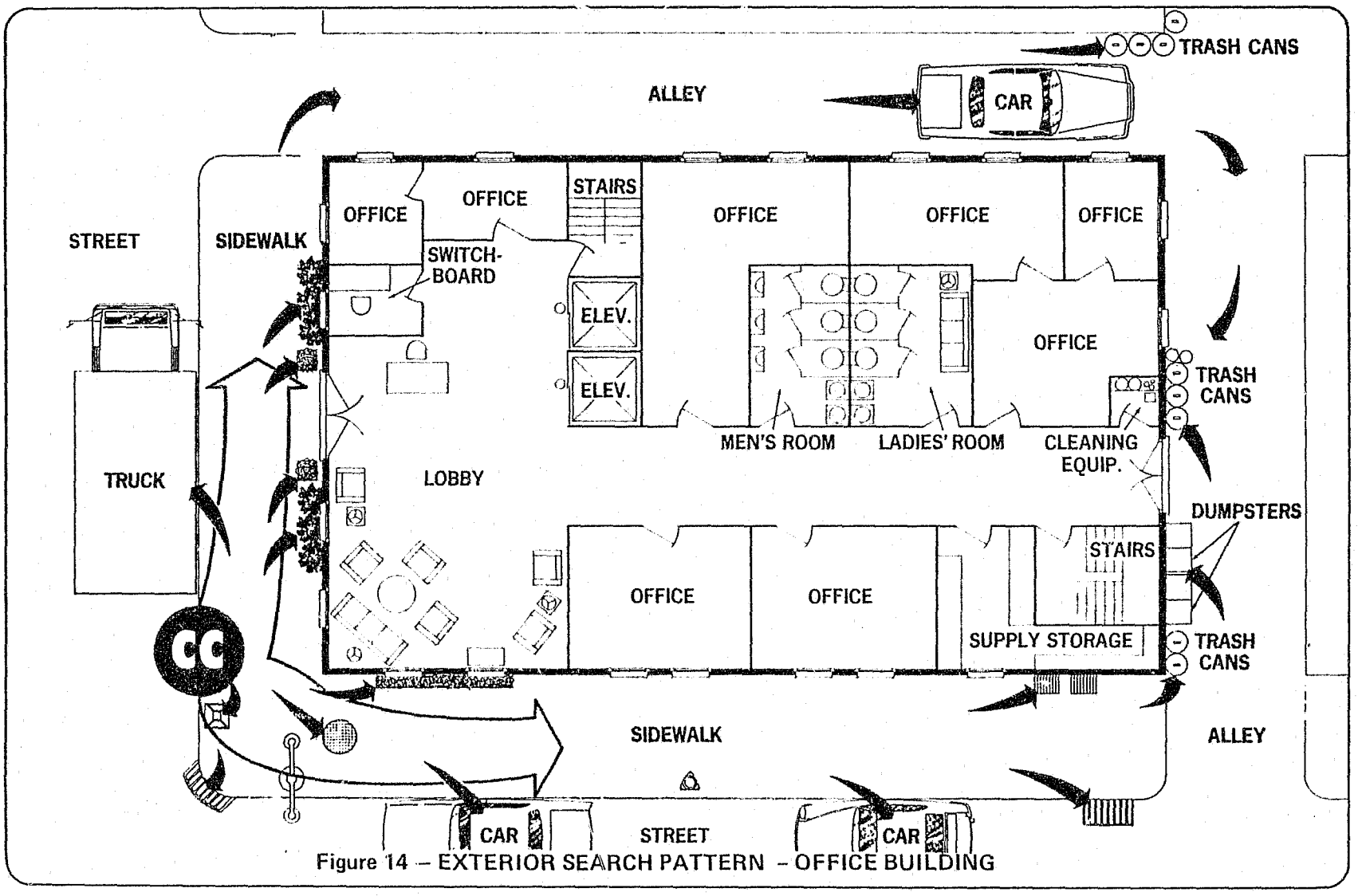

Figure 14 – EXTERIOR SEARCH PATTERN – OFFICE BUILDING

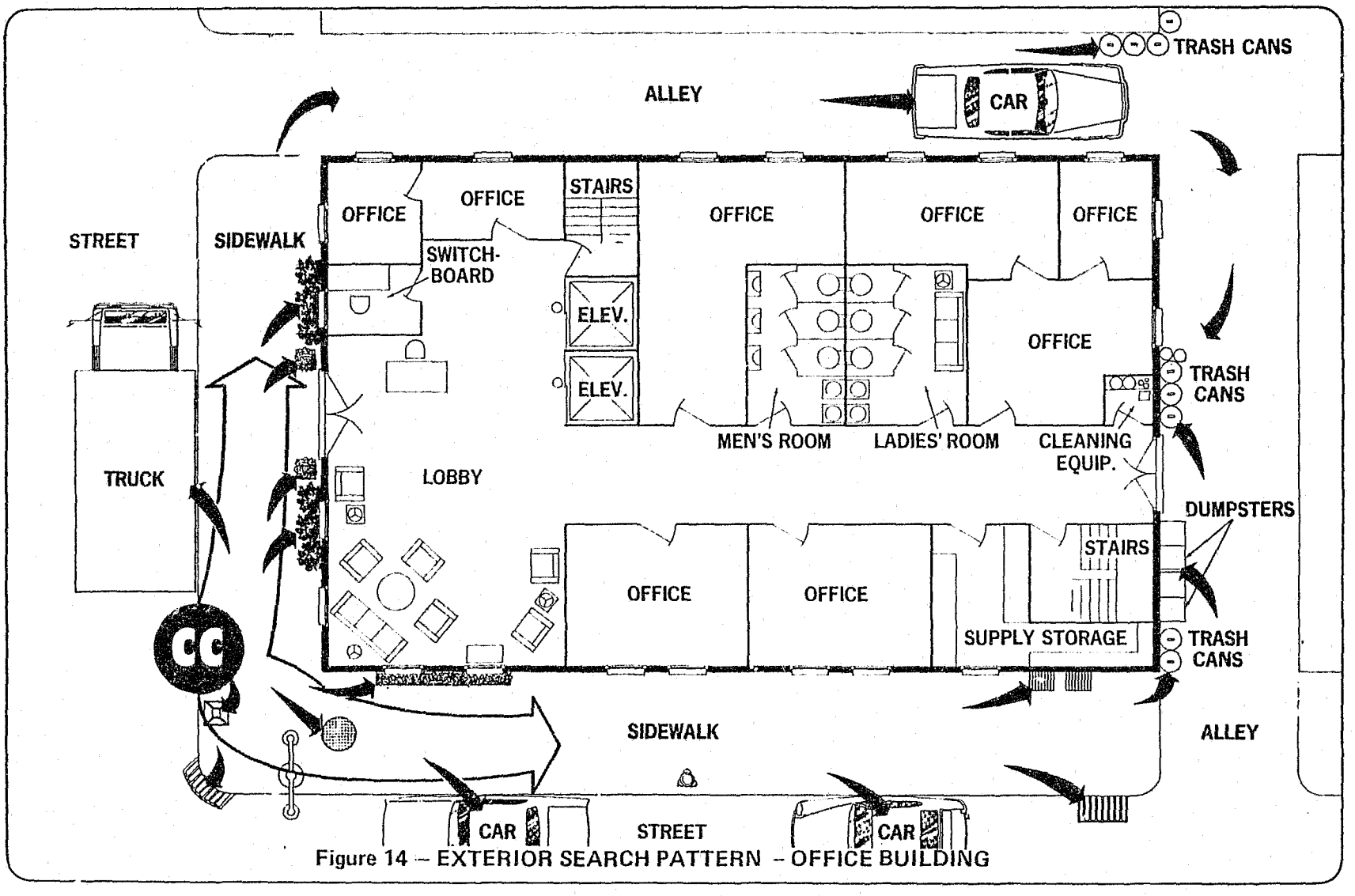

Figure 14 – EXTERIOR SEARCH PATTERN – OFFICE BUILDING

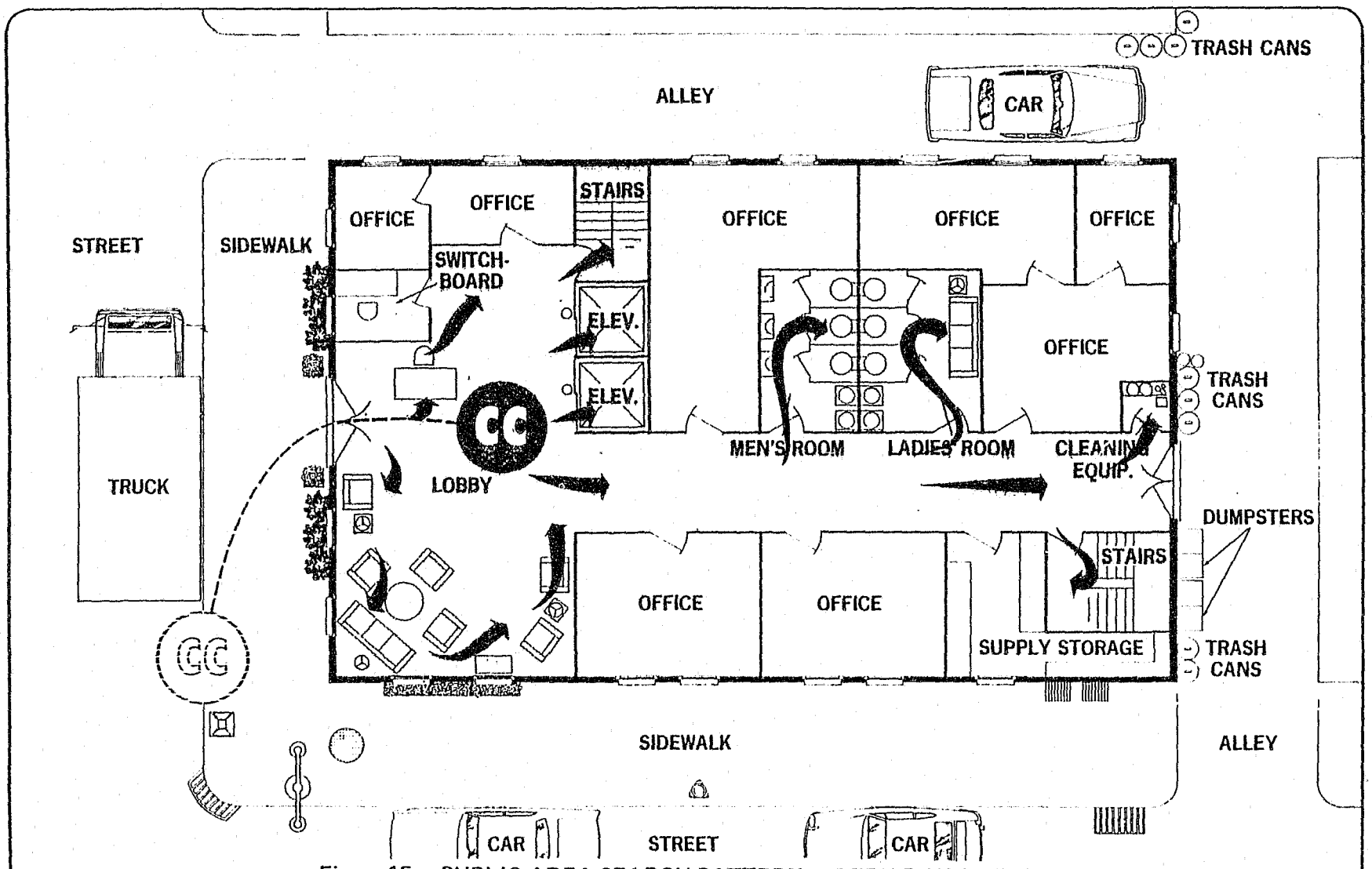

Figure 15 – PUBLIC AREA SEARCH PATTERN – OFFICE BUILDING

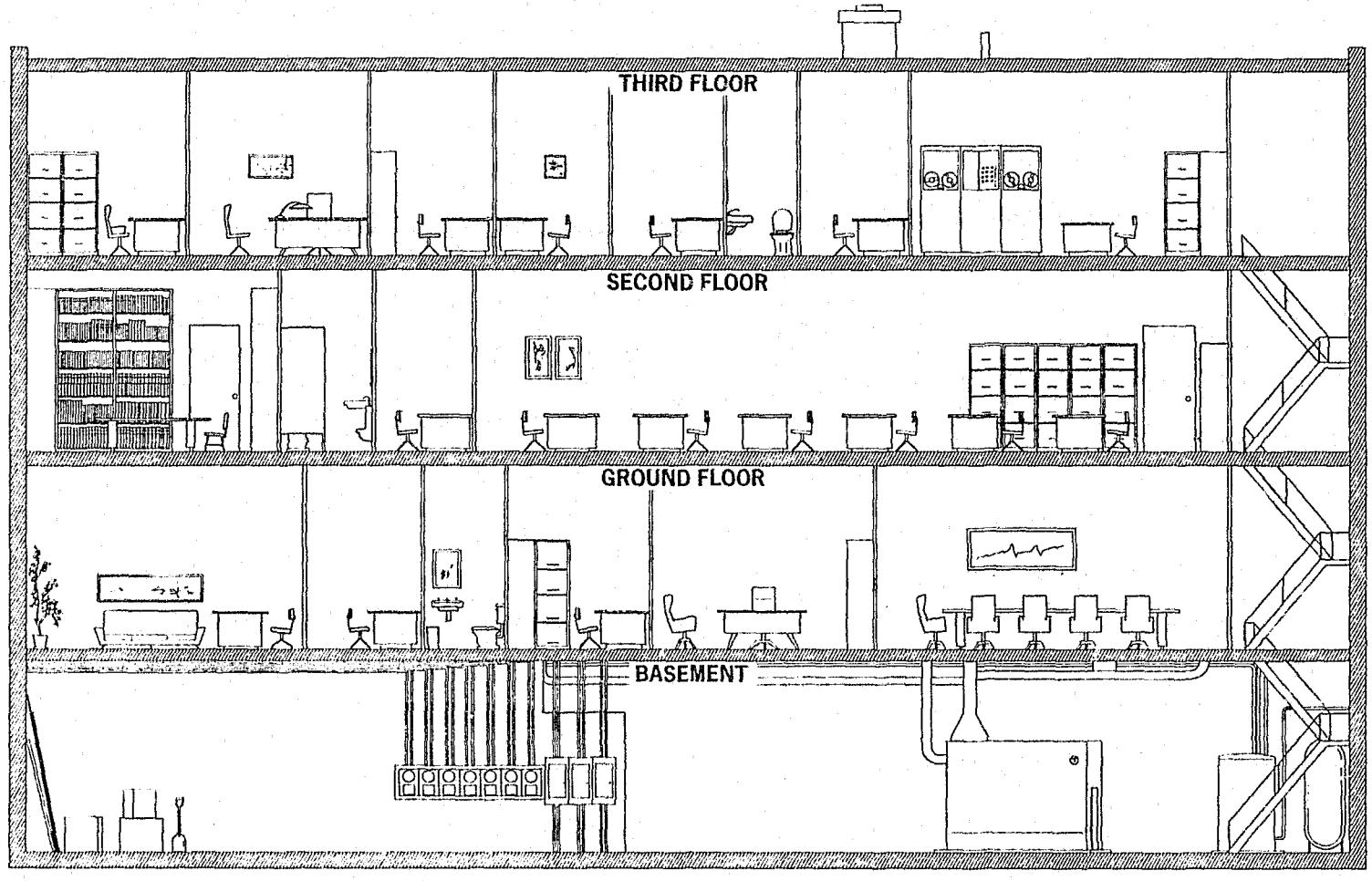

Figure 16 – INTERIOR SEARCH PATTERN

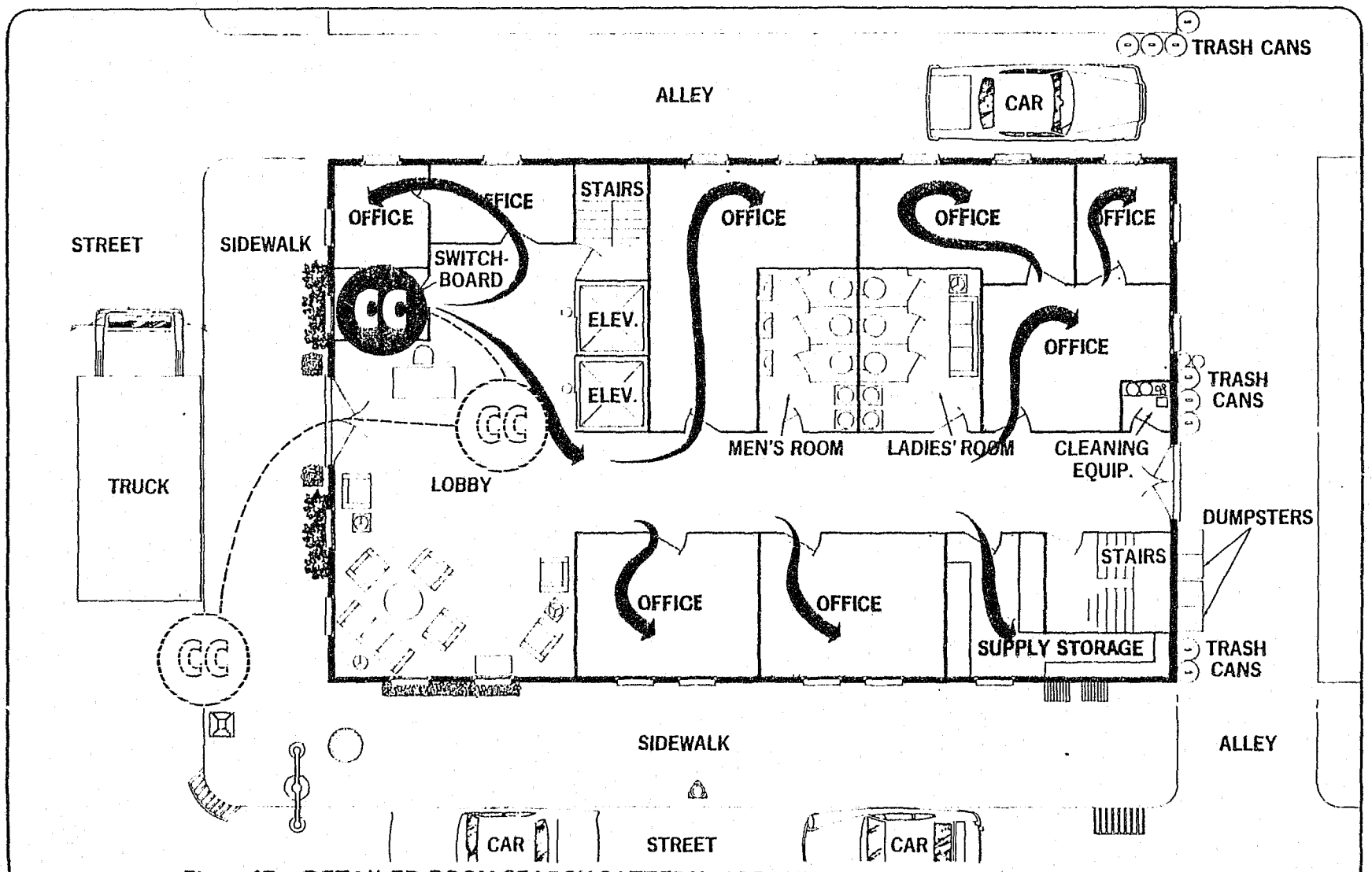

Figure 17 – DETAILED ROOM SEARCH PATTERN – GROUND FLOOR OF OFFICE BUILDING

fire escape or other external means, the exterior search unit will include roof areas in its search pattern.

The Public Area Search. Public area search team personnel make an immediate check of those interior areas most likely to attract the bomber. This includes areas open to the public and areas containing cleaning equipment. The public area search pattern is illustrated in figure 15. Reception rooms, lobbies, elevator cabs, stairs, and rest rooms are frequent bomb targets and must be closely screened. The team should move systematically from floor to floor up through the building as indicated in figure 16. Areas searched by this team will be marked to eliminate duplication or omission or search by other teams.

The Detailed Room Search. This search team will enter the building along with the public area search team but will proceed directly to the basement or subbasement areas of the structure. They will systematically search each room or area of the building not searched by the public area search teams, starting with the utilities areas. Their search team will be augmented by members of the janitorial or maintenance force who will be familiar with their initial areas of search. When all the areas on one level have been searched, the detailed room search teams will move up to the next level and conduct a search of that area. This system of search, illustrated in figure 17, will continue until the entire structure has been searched.

Utility and service areas are generally located in the basement or subbasement and may be prime target areas for the bomber. Destroying a building's utilities area puts the building out of operation with small risk of killing or injuring the occupants. Whenever possible search of utilities areas should be at least guided by maintenance personnel familiar with the facility. Furnace rooms, electrical control centers, telephone switching rooms, auxiliary power plants, central air-conditioning units, and elevator shafts and wells are all searched, as well as any storage or maintenance areas.

Elevator wells and equipment are especially difficult and unpleasant to search, yet these areas are frequently accessible to the public and must be included in any detailed building search. To begin this portion of the search operation, keys should be obtained and the elevator functioned remotely through at least one complete cycle in the event that an explosive device is set to be activated by the action of the elevator. Next, the roof of the elevator car or cars should be searched carefully. Then the well or pit at the base of each elevator shaft should be probed. This may require the use of a stick or rod, as grease, trash, and dirt may have accumulated to the depth of 2 or 3 feet in some older installations.

Once elevator cars and wells have been searched, the shaft should be checked by riding on top of the car while it is moved upward a few feet at a time. It is not unusual to find that elevator shafts contain nooks, ledges, storage rooms, false panels, walk ways, and even empty bottles. As the elevator goes up, the counterweights are coming down and they must also be checked. The elevator machinery, normally found at the top of the shaft, should not be overlooked.

The detailed search of a single room is best carried out in a series of distinct steps that insure thoroughness and minimize confusion and duplication.

- *Audio Check* – Upon entering the room to be searched, personnel first move to various parts of the room and listen to establish the background noise level of the room as shown in figure 18. By remaining immobile and closing the eyes, it is remarkable how often faint sounds can be detected, even clockwork devices may be detected in some cases. If an electronic stethoscope is used for a general sweep, it should be remembered that ticking sounds can also be made by dripping plumbing, unbalanced air conditioner fans, and a multitude of other background noises. Any unusual sounds detected during the audio check should be investigated immediately.

- *Organization* – Next, the supervisor or senior searcher divides the room into two approximately equal parts on the basis not of size, but of the number of objects to be searched as

illustrated in figure 19. Personnel are assigned to both sectors and instructed as to the number and height of search sweeps, figure 20, to be made.

- *First Sweep* – The first sweep of the room will normally cover all objects resting on the floor or built into the walls up to a selected height, usually about the waist height of an average man. This height will cover everything from the floor to desk or tabletop level, including chair backs. The search begins from one end of the dividing line designated as the starting point as illustrated in figure 21. Searchers move in both directions from the starting point, working along the walls until they meet and then into the center of the room as illustrated in figure 22. The first sweep is usually the most time and effort consuming and should include checking under rugs or carpets. As illustrated in figure 23, rugs should be folded back, not rolled. This lessens the danger of activating electrical or mechanical pressure switches. The electronic stethoscope should be used frequently on walls, furniture, and floors during the first and subsequent sweeps.

- *Second Sweep* – The height of the second sweep will be determined by the individual in charge of the room search, figure 20, and will depend upon the nature of the room. If the second sweep can be extended from waist height to the ceiling, only two sweeps will be required for the room. In a normally furnished room two search sweep heights are usually sufficient because of the small number of furniture items encountered above waist height. In certain types of heavily furnished rooms three or four search sweep heights may be required to effectivly complete the search. Once the height has been decided, the searchers return to the starting point and work outward along the walls in both directions.

- *Third Sweep* – When required, the third sweep will usually cover the area between the top of a standing person's head to the ceiling, including air ducts, window tops, and hanging light fixtures.

- *Fourth Sweep* – When required, the fourth sweep includes an investigation of false or suspended ceilings, indirect lighting fixtures, electrical wiring, and ceiling ducts.

- *Conclusion* – The room search will be terminated only when the individual in charge of the search is satisfied that an adequate search has been made. If the building being searched has a large number of rooms, each room may be marked when the search is complete by placing a piece of crepe paper on the door handle or across the doorway. As an alternative, a small piece of tape can be placed at the lower corner of the door frame on the side opposite the door handle. These markers will prevent duplication of search effort or accidental omission of a room from the search operation.

Searching Vehicles

Like buildings, vehicles are searched by starting on the outside and working into the interior, with the interior search starting on the floor and working up to the roof or top of the vehicle. Since bombs placed in vehicles are almost always directed at individuals rather than just property destruction, vehicle searchers must be especially alert for concealed triggering devices. Vehicle searches should be conducted only by trained personnel.

Motor Vehicles. Bombs placed in automobiles are generally wired into the ignition system to detonate when the car is started or are attached in such a manner that heat generated in normal operation will ignite a simple pyrotechnic fuze. These devices can usually be found in a superficial search of the engine compartment, exhaust system, and area under the dashboard.

Unfortunately, the potential for sophisticated antidisturbance fuzing in automobile bombs is great, and it is dangerous to assume that any search is routine or can be completed by untrained personnel. Without an unusually high level of skill, the average automobile can be rigged to detonate

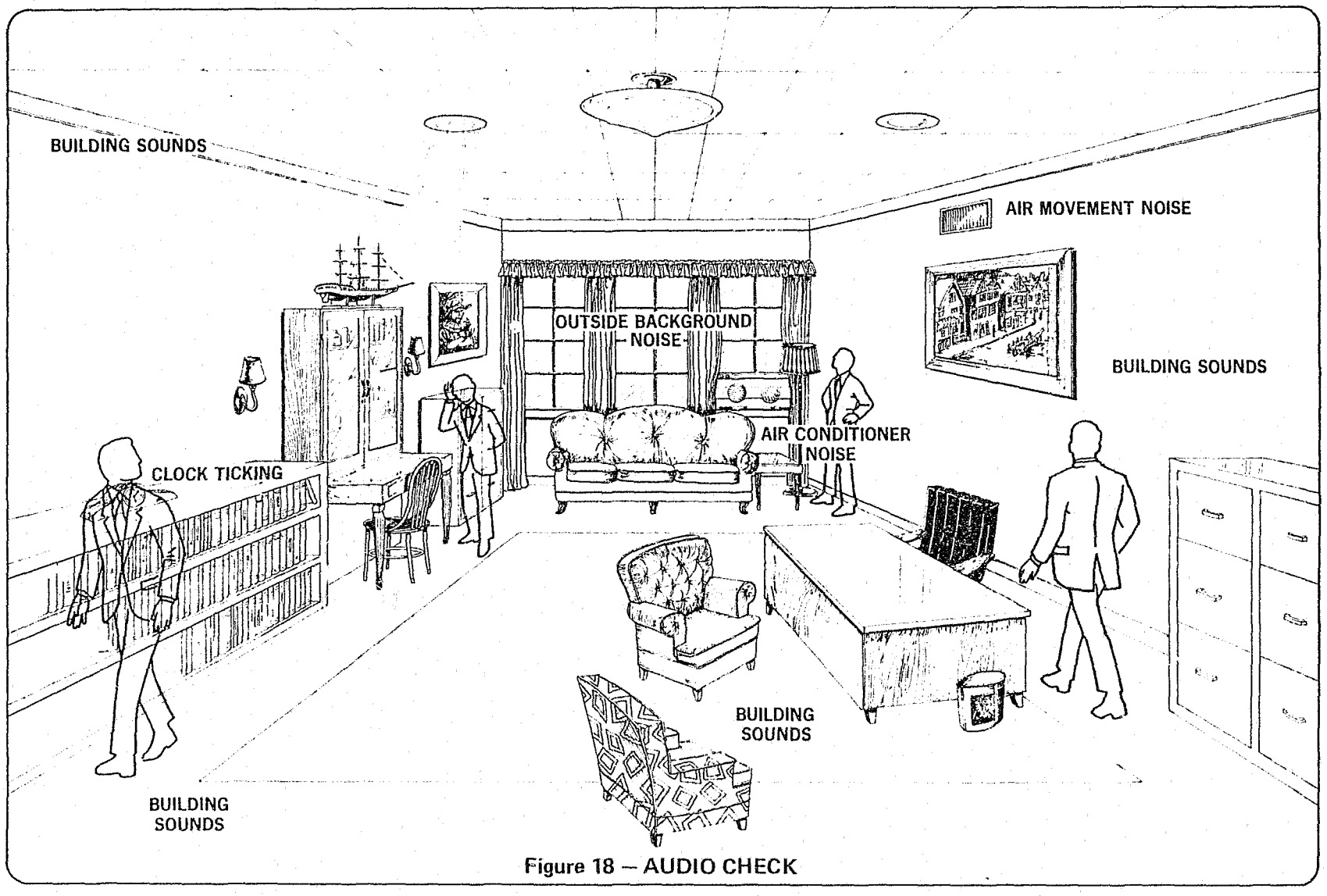

Figure 18 – AUDIO CHECK

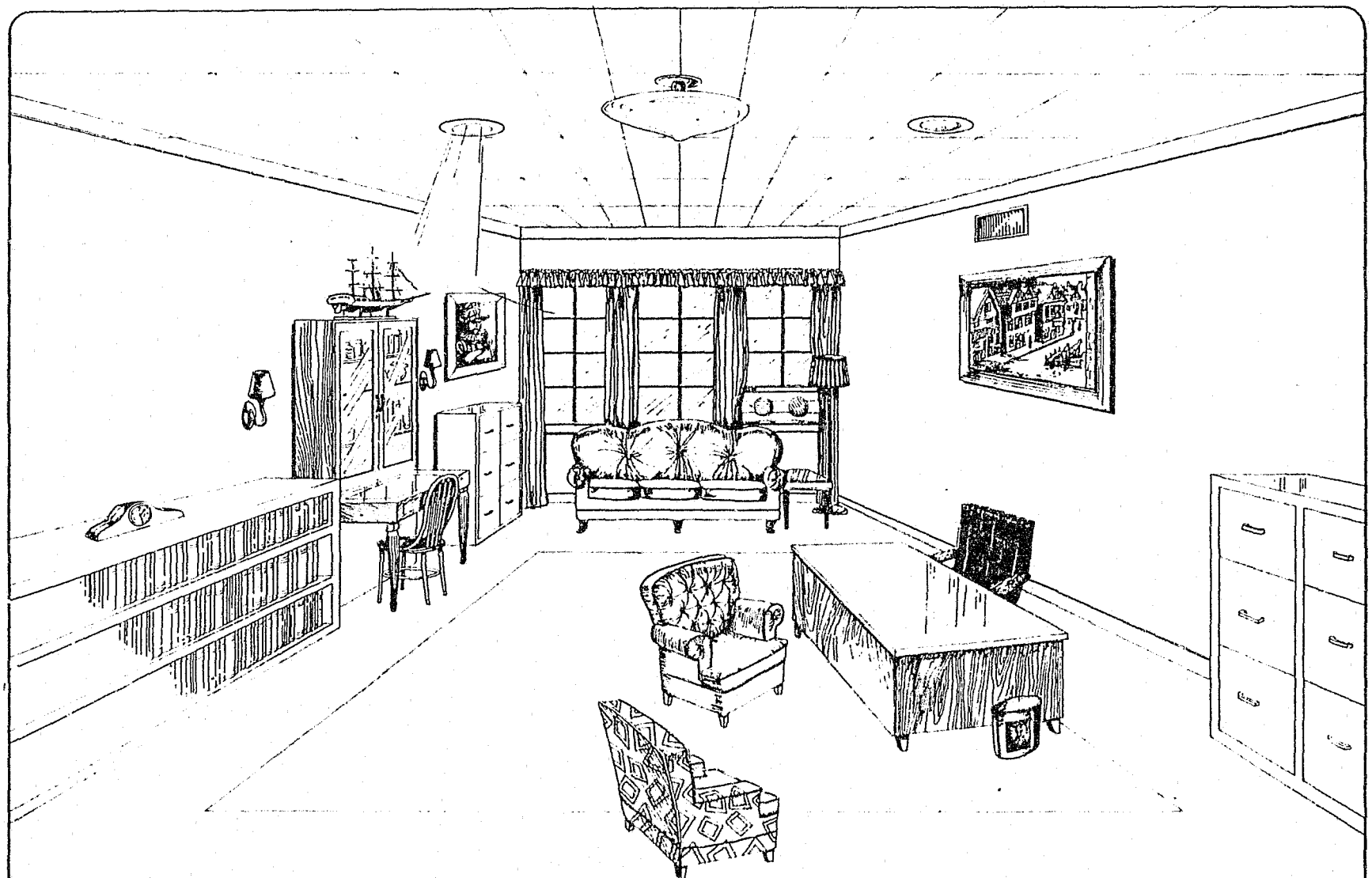

Figure 19 – DIVISION OF A ROOM FOR SEARCH ASSIGNMENT – AREA

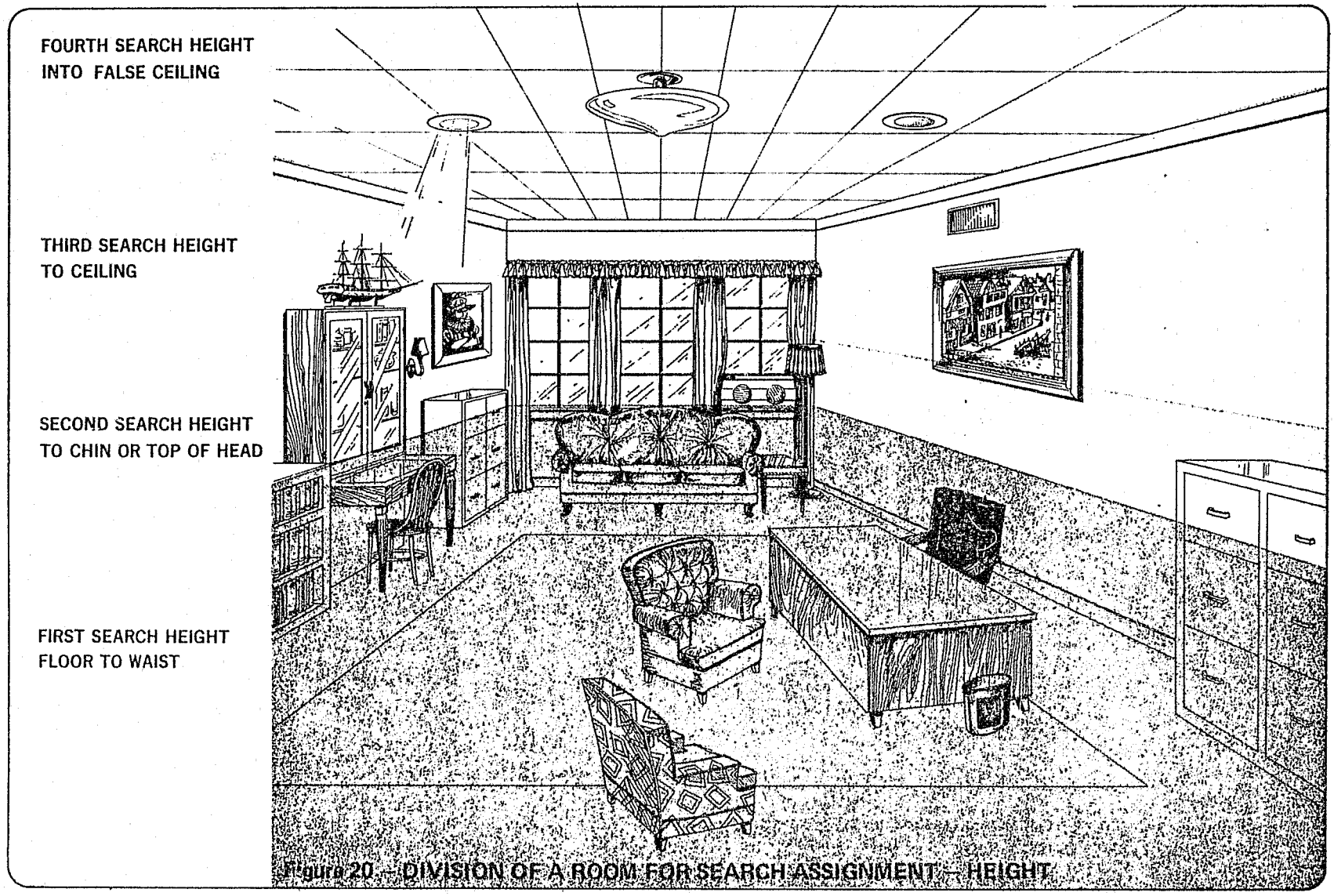

Figure 20 – DIVISION OF A ROOM FOR SEARCH ASSIGNMENT – HEIGHT

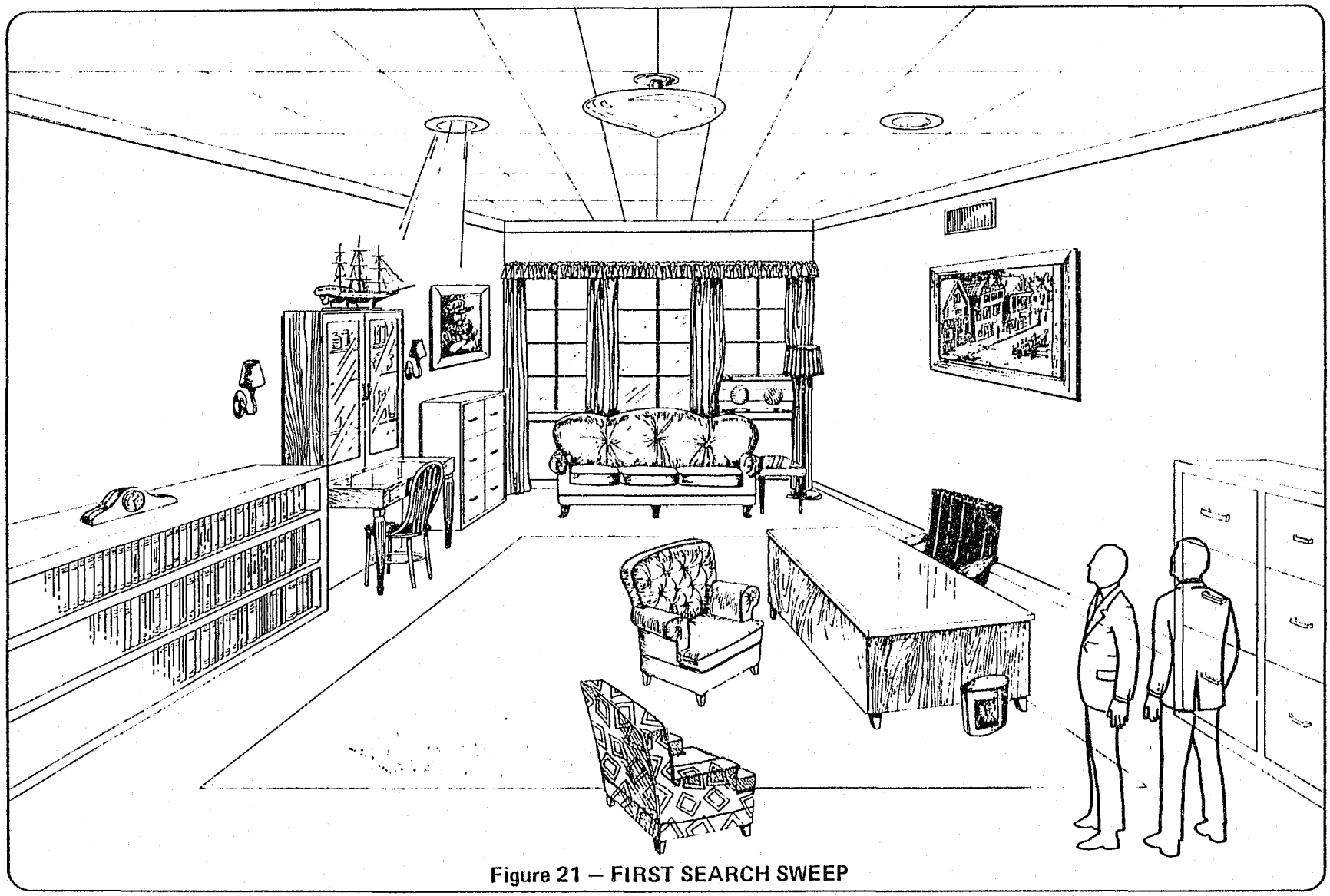

Figure 21 – FIRST SEARCH SWEEP

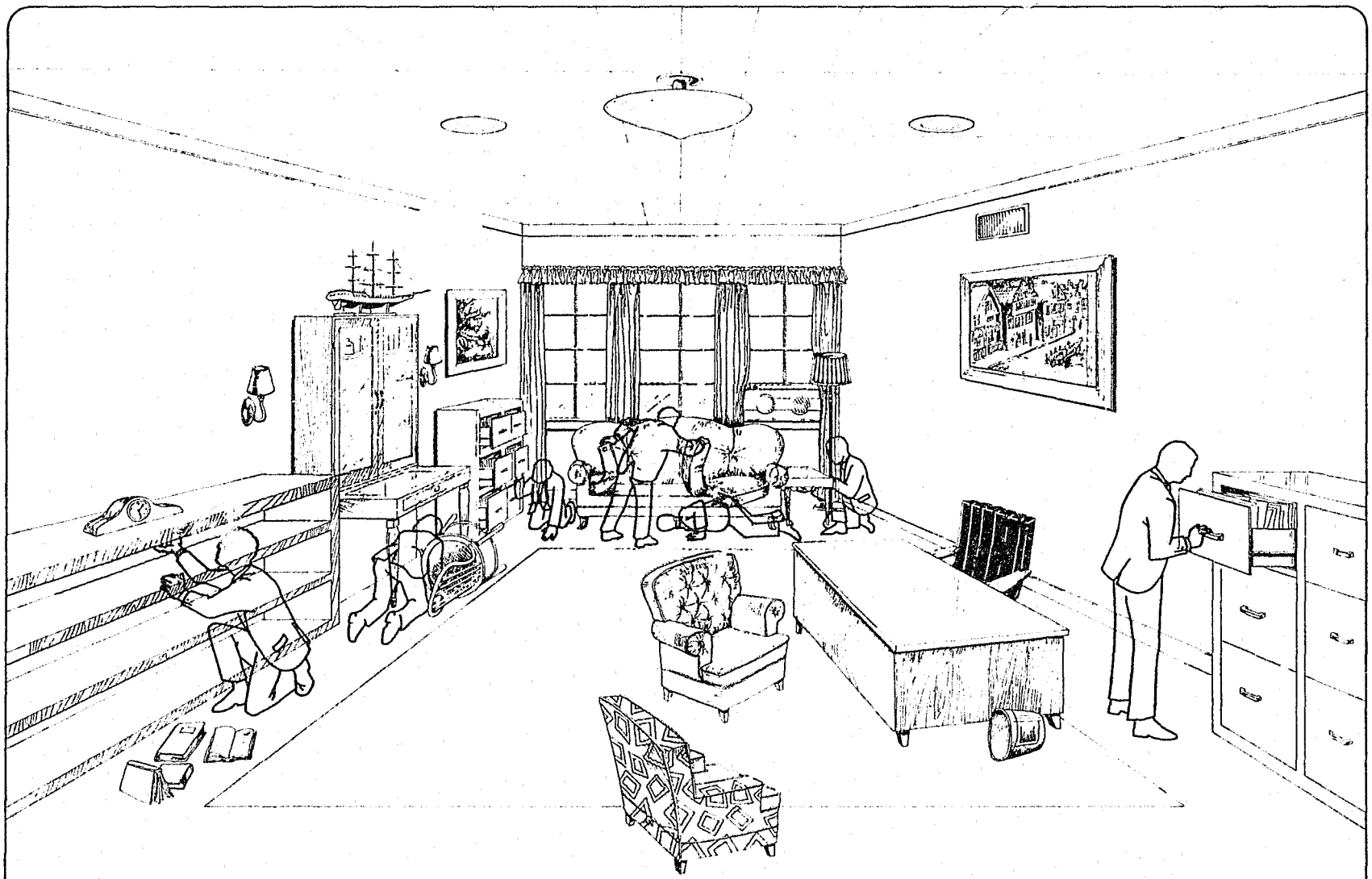

Figure 22 – FIRST SEARCH SWEEP PATTERN

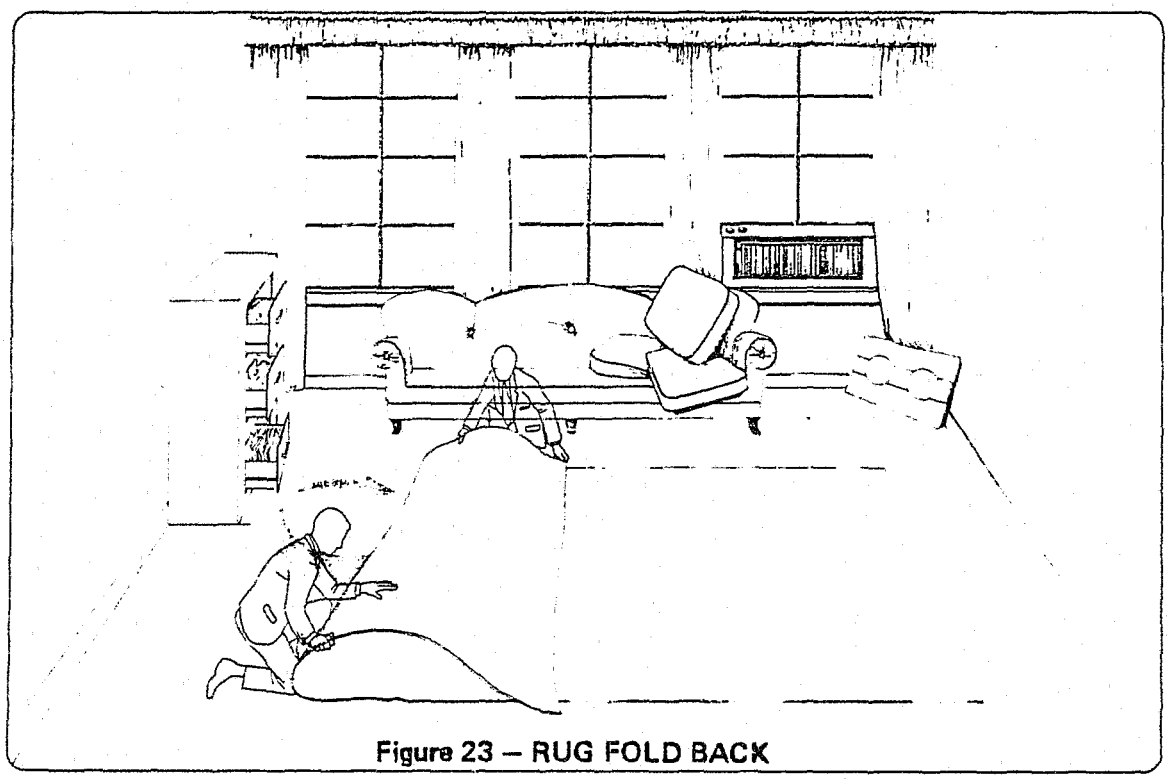

Figure 23 – RUG FOLD BACK

a bomb or incendiary device in response to any number of normal actions from opening the door to turning on the headlights or simply tilting the vehicle when weight is applied to one side during entry.

Experience has shown that a detailed automobile search conducted by two men will take from 2 1/2 to 4 1/2 hours, depending upon the size, make, and accessories of the car. Whether the time and expense of a detailed search can be justified will depend upon the nature of the threat and how it is evaluated. Faster or quick searches can be accomplished, but not without omitting or skimming over certain areas of the vehicle that could conceivably contain a bomb or incendiary device. The following sixteen step procedure for the detailed search of a four door sedan can easily be modified or amplified to cover other kinds of motor vehicles.

1. Collect as much information as possible from the owner/driver.

   - What circumstances, if any, led to the need for search? Threat, tampering, suspicious noise, or object noticed?
   - When was the car last driven? By whom?
   - Is the car locked? Obtain keys.
   - Where has the car been parked? For what periods of time?
   - How full is the gasoline tank?
   - When was the car to be used next? By whom? For how long?
   - What route was to be used on the next trip? What kind of terrain would be driven over? At what speeds?
   - When was the car last worked on by a mechanic or driver?

√ Audio Check of Room

√ Division of Room for Search

√ Selection of Search Height

√ Search Sweep Around Walls and Into Center of Room

√ Additional Sweeps at Remaining Search Heights

√ Mark Room as Searched

Figure 24 – SUMMARY OF STEPS IN ROOM SEARCHING

2. Determine as nearly as possible the intended target.

The identity of the target will suggest the most likely location for placement of a bomb. If the suspected victim is a dignitary using a staff car or limousine, he would normally be riding in the rear seat and this area therefore becomes the principal search area. In such cases it is also unlikely that a bomb would be wired into the ignition system since the device might detonate when the chauffeur starts the car before the victim has even entered the vehicle.

On the other hand, if the intended victim is the operator of the vehicle, chances are good that the bomb will be located in the front section of the vehicle, making this the principal search area.

This is not to say that the identification of a principal search area will preclude a complete search. On the contrary, a detailed search is conducted even when the location of a bomb is obvious at first glance.

3. Check the area around the vehicle.

- Look for marks on the ground, such as footprints, scrapes, bumper or hydraulic jack impressions in the soil, and other indications of tampering.
- Look for bits of tape, wire, or string on the ground around the vehicle.
- Look for chunks of dry dirt that may have been knocked loose by someone crawling under the undercarriage of the car.
- If the car is parked on soft earth, probe under, forward, and to the rear of all four tires.

4. Check the outside of the vehicle.

- Look for signs of forced entry.
- Look for finger or palm marks in dust or wax that would suggest recent opening of hood, trunk, or wheel covers.
- Get under the vehicle and check over the entire underside. If you cannot get under the vehicle, use a long inspection mirror – DO NOT JACK IT UP! From underneath, check:

Engine compartment	Exhaust system and muffler
Box frame members	Wheel wells
Gasoline tank	Other exposed areas

5. Block up all four sides of the vehicle so that it will not tip or tilt when weight is applied to one side.

6. Remove wheel covers remotely.

While wheel covers are extremely difficult to remove remotely, hub caps can be removed with little effort. The technique illustrated in figure 25 works well with hub caps and may be modified to work with wheel covers.

7. Raise the hood remotely.

Do not attempt to raise the hood by hand as there may be a bomb attached to the mercury switch operated hood light. Remote opening of most automobile hoods can be safely accomplished by employing the following techniques, which are illustrated in figure 26.

- Attach a line to the hood latch and pull from a safe distance. The hood should pop open and stop at the safety latch. Check around the partly opened hood using a flashlight and a thin plastic strip.
- Next, open the hood completely. For this operation use the following tools:
  (1) Two suction plungers, with regular handles replaced by broom handles, formed into a bipod. The rubber suction cups will prevent the bipod from slipping off the car and will reduce the risk of damage to the car's finish. See figure 26.
  (2) A hood hook made from two 4 by 1/2-inch stove bolts passed through a large washer, bent into a hook shape, and ground to a tapered point. The bolts should be wrapped with tape to prevent scratching of car paint. See figure 26.
- The bipod is placed on the roof of the car as illustrated in figure 26 and rigged with the hook and line. The line should be given two half hitches around the bipod. A second line is attached to the hood safety catch.
- After withdrawing to a safe distance, the hood is opened by taking up the slack on the bipod line, tripping the hood safety catch with the other line, and pulling the hood open with the bipod line.

8. Thoroughly check the engine compartment.

Check the clutch, brake, accelerator, and steering linkage for actuating devices. Check the air cleaner, the access panels, and equipment mounted on the fire wall for signs of tampering. Also check all power operated equipment such as brakes, steering, air conditioning, windshield wipers, and similiar devices for evidence of electrically initiated bombs.

When necessary, take dip stick and drain plug samples of engine oil and transmission fluid to determine if liquid explosives have been substituted. The same examination should be made of filler cap and petcock samples of engine coolant.

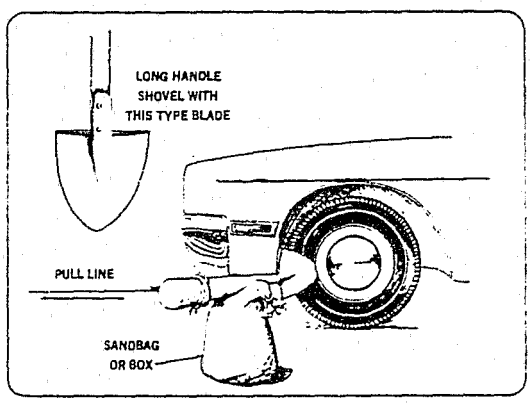

Figure 25 – REMOTE REMOVAL OF HUB CAPS AND WHEEL COVERS

9. Remotely remove battery leads.

Remote removal of battery leads will eliminate the vehicle power supply available to activate a bomb through the dome light, door switches, brake lights, radio, or other electrical components, and will provide a greater margin of safety when entering the vehicle. Remote removal of battery leads is necessary because of the possibility that a bomb could be rigged to detonate when the vehicle power source is cut off.

Automobile batteries can be disconnected at either the battery posts or at the battery ground point. Although some foreign cars, notedly the Volkswagen Beetle, have the battery located inside the car, most vehicle batteries can be disconnected remotely through one of the techniques described below.

(1) Removal at battery posts. The easier of the two disconnect techniques is removal of one of the battery cables at the battery post.

- If the cable clamp is covered with corrosion, clean the connection. Hold the cable clamp firmly in contact with the battery post and loosen the tightening bolt. Then use a screwdriver to slightly spread the clamp.

- Attach a 1-foot length of 1/8-inch nylon cord to the rear of the clamp as close to the post as possible. Tie the other end of the cord around the front of the clamp as illustrated in figure 27.

- Run a line around the raised hood or attach one end of the line to the hood so that it is located directly above the 1-foot cord previously attached to the battery clamp.

- Attach the bipod and hood opening line as previously described for opening the hood. Push the hood down slightly so that a few inches of slack develops between the 1-foot battery clamp line loop and the attached line, as shown in figure 27.

- From a safe distance, pull the hood opening line sharply and the battery cable should be jerked clear of the battery post.

- A modification of this technique is illustrated in figure 28. In this case, a padded broom stick is rested across the fender and rigged so that an upward jerk is applied to the battery cable clamp line.

(2) Removal at Battery Ground Point.

- This remote removal technique is necessary when working on a vehicle having spring loaded battery cable clamps. To remove the battery lead at the battery ground point, a jumper cable must be used. The jumper cable is attached to the spring loaded battery post clamp and to an electrical ground (engine block) creating a second electrical ground for the battery as shown in figure 29.

- Loosen then remove the automobile ground cable at the ground point where it bolts to the engine or frame. See figure 30.

- Attach a line to the jumper cable and, from a safe distance, jerk it clear.

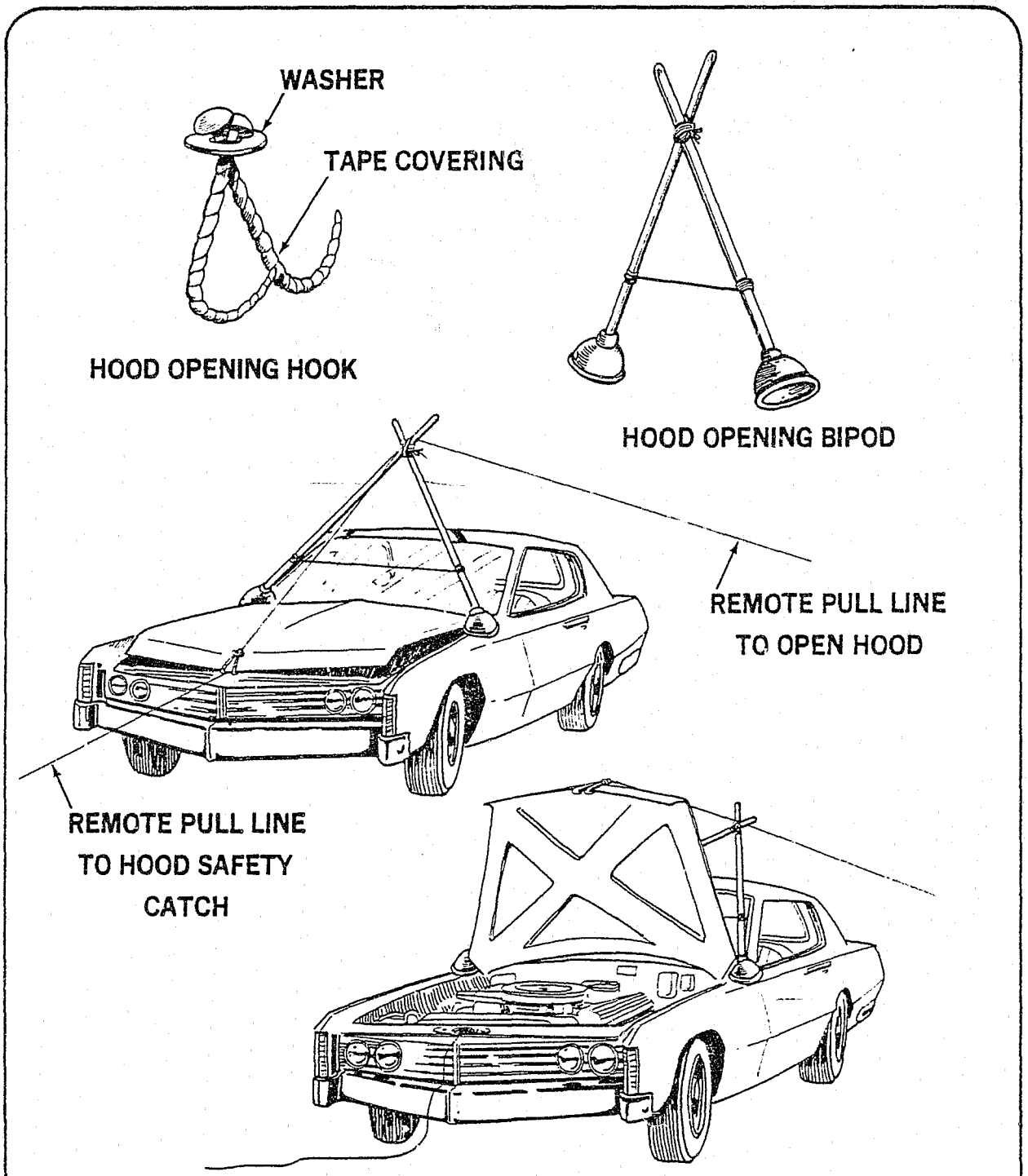

Figure 26 – REMOTE OPENING OF AUTOMOBILE HOOD

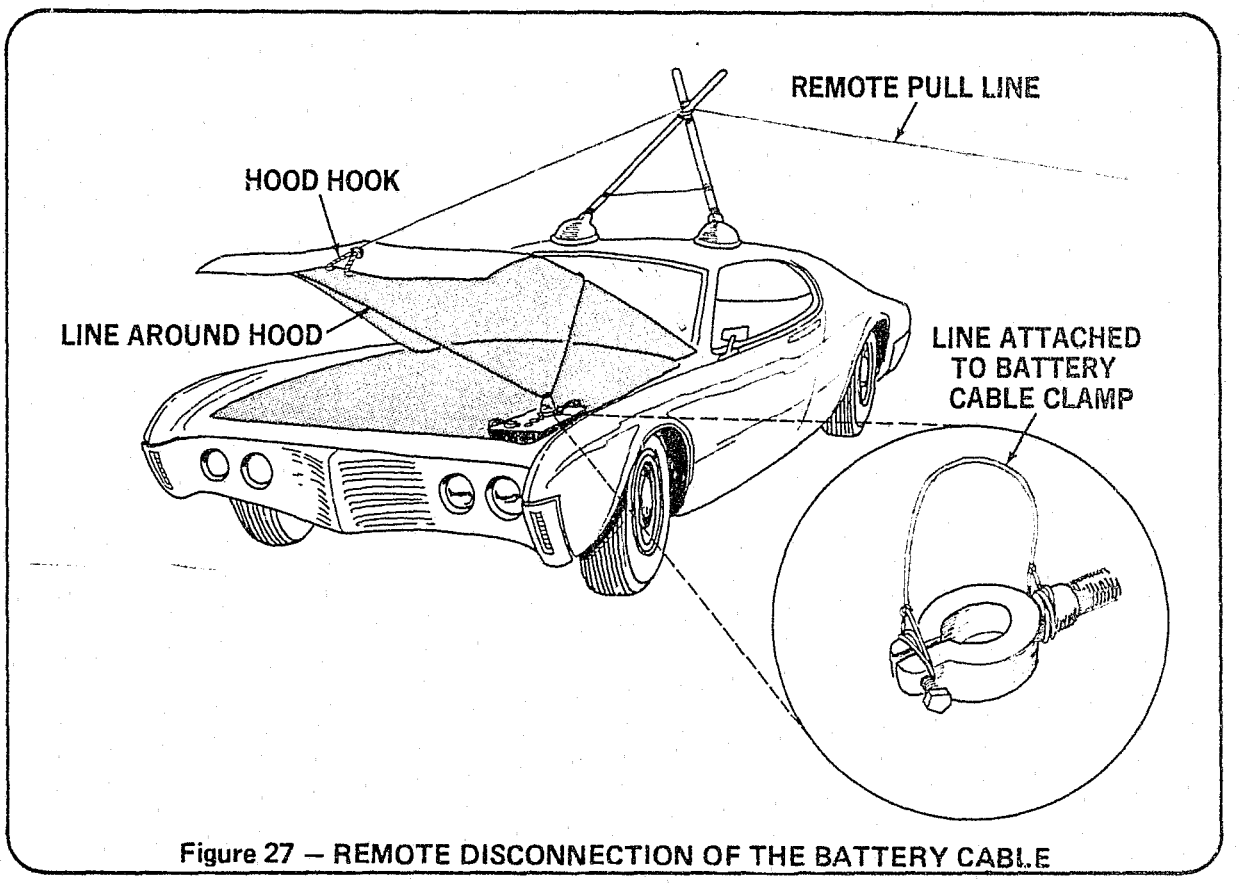

Figure 27 – REMOTE DISCONNECTION OF THE BATTERY CABLE

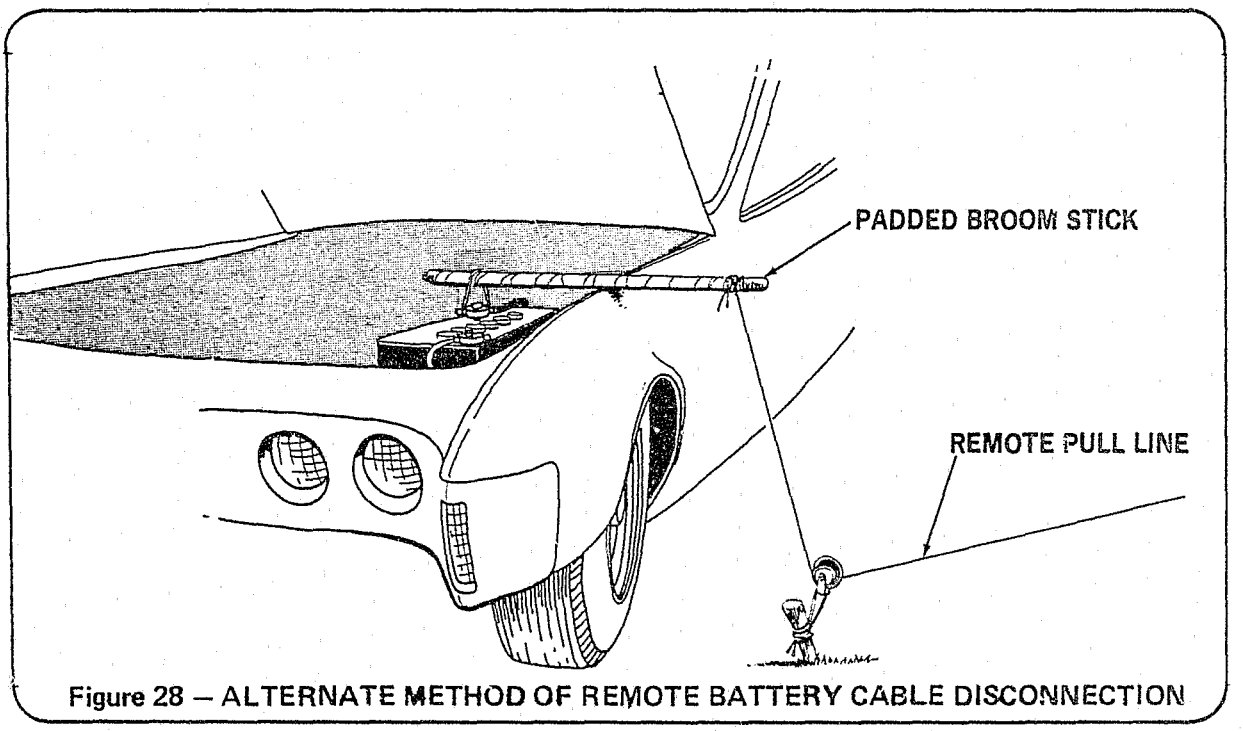

Figure 28 – ALTERNATE METHOD OF REMOTE BATTERY CABLE DISCONNECTION

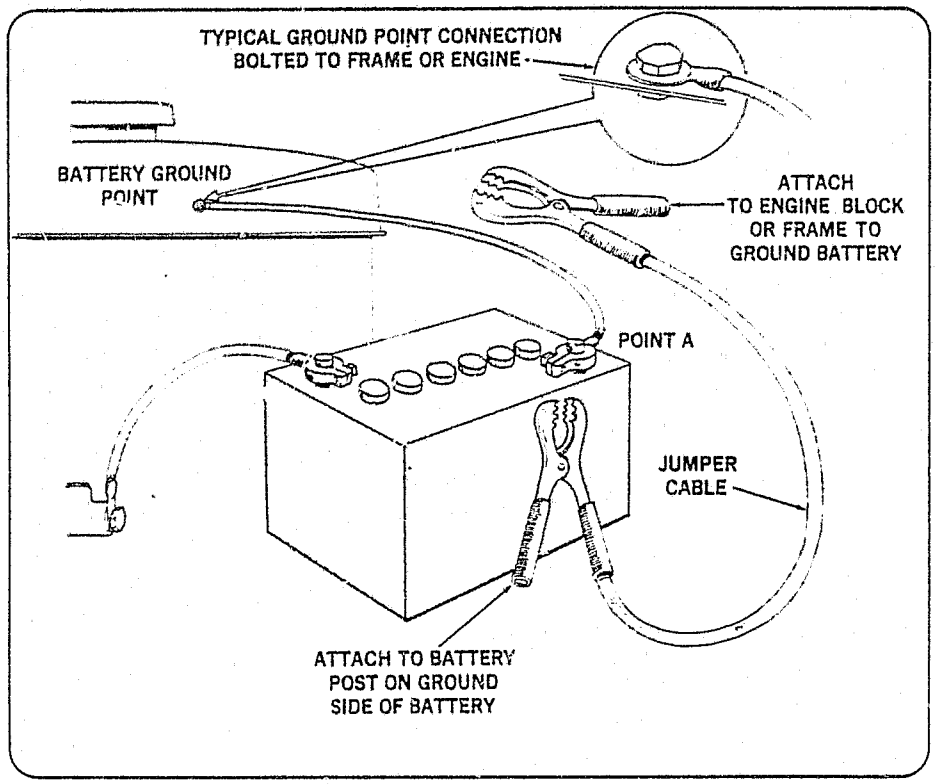

Figure 29 – INSTALLING JUMPER CABLE FOR REMOTE REMOVAL OF BATTERY LEAD AT GROUND POINT

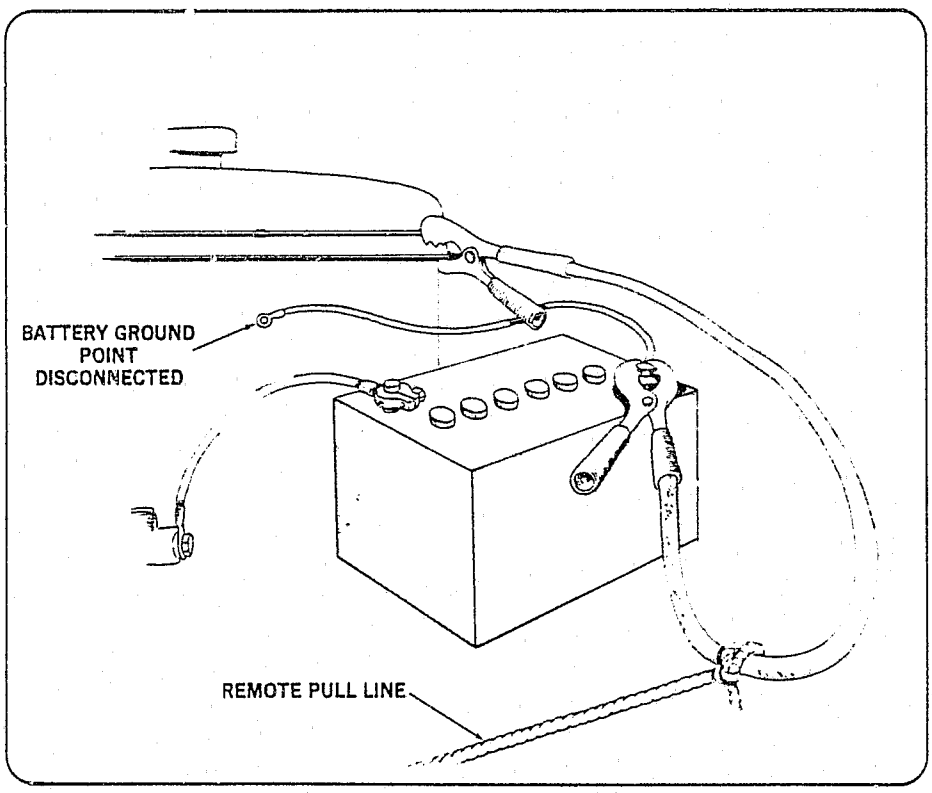

Figure 30 – JUMPER CABLE INSTALLED, BATTERY CABLE DISCONNECTED AT GROUND POINT

10. Gain access to the interior of the vehicle.

Automobile doors should be opened remotely. If the target would normally be seated in the rear or right front seat, access should be gained through the left front door. If the driver is believed to be the target, entry should be made initially through the right rear door. If the target is the driver and all doors but the driver's door are locked, consideration should be given to breaking the rear door window or forcing entry through the rear door. Rear doors generally cannot be unlocked externally with a key.

Remote entry of many cars can be accomplished with a standard 12-inch screwdriver, a roll of 1-inch filament tape, and a remote line.

For Pushbutton Doors:

- Use a 1-foot length of filament tape, secure the screwdriver to the door handle with the flat edge of the blade resting against the thumb push button as illustrated in figure 31.

- Place a 2-inch strip of tape over the screwdriver blade and thumb push button to prevent the screwdriver from sliding free of the button.

- Attach the remote line to the handle of the screwdriver.

- Withdraw to a safe distance and pull on the remote line to open the door. With slight modification this technique can also be used to open glove compartment doors.

For Finger Pull Doors:

- For finger pull operated vehicle door handles, carefully insert the 12-inch screwdriver underneath the handle and secure it in place with a strip of filament tape as illustrated in figure 31.

- Attach a remote line to the handle of the screwdriver.

- Withdraw to a safe distance and pull on the remote line to open the door.

11. Search the interior.

Once access has been gained to the interior of the car, check the door panels on the opened door. Removal or tampering will, in most cases, be easy to detect. Any unidentifiable packages or suspicious objects in the car should be considered as potential explosive devices and handled only by qualified bomb technicians.

When entry is gained through a rear door:

- Start at the floor and work up.

- Check floor mats and rear surface areas.

- Open the other rear door remotely.

- Remove the rear seat remotely by passing a line through the car and under the front edge of the seat. Since most car seats are removed with pushing and lifting motion, pulling on both ends of the remote line from the rear of the vehicle should release the seat.

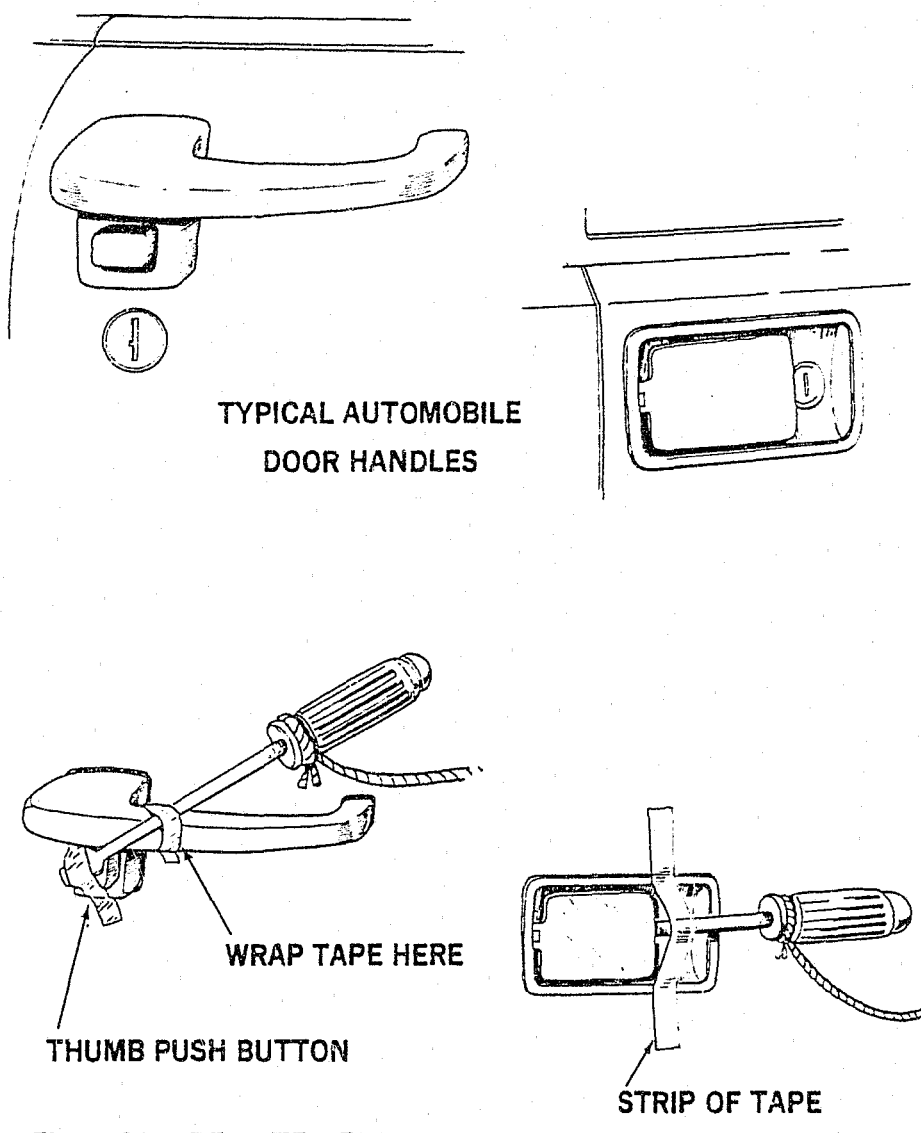

Figure 31 – REMOTE VEHICLE DOOR OPENING TECHNIQUE

- Check arm rests, ash trays, rear seat back, rear deck, rear deck speakers, headliner, and dome lights. Dome light switches should be removed from the door frames and the interior examined.

- Check the front seat areas that can be seen from the back seat. Look under the front seat, checking the back and bottom of the seat. Check and remove the ash tray and inspect the inside of the front seat back. Probe the seat and seat back if necessary.

- Visually check the front doors from the inside.

When entry is gained through a front door:

- Open the door remotely. If the rear of the vehicle has already been searched, entry is usually made through the right front door. Check the door panel and dome light switch.
- Use the same procedure as when searching the rear seat areas, start at the floor and work up.
- Check floor mats, floor pedals, dimmer switch, front seat, heater and air ducts, under the dash area, radio and speaker, ash trays, glove compartment, sun visors, and headliners.

12. Remotely open the trunk lid.

On most cars remote trunk entry can be accomplished by the following procedure:

- Tape the trunk lid to the car body or bumper along the opening edge and attach a remote line to the tape.
- Insert the key in the lock and unlock by hand. Tape key in unlock position.
- Remotely pull the line to remove the retaining tape and allow the trunk to open. Most trunks are spring loaded and will open by themselves when unlocked.

13. Search the trunk.

Check floor mats, inside spare tire, tool compartment, back of rear seat, brake and tail lights, and back up lights. Observe electrical wiring closely.

14. Inspect the gasoline tank.

Checking the gasoline tank can pose difficult problems. Sometimes entry to the tank for visual inspection may be accomplished through the fuel gauge opening in the tank, but even if this can be done, in most cases a visual check will be hampered by gas tank baffles. The safest procedure for a thorough check is to remove the tank from the vehicle.

Difficulties of gasoline tank inspection can be avoided for official vehicles if lock type gas caps and clockspring type antisyphon devices are installed to prevent the insertion of explosives or incendiary chemicals. The gasoline tank is especially vulnerable to sabotage by metallic sodium filled gelatin capsules called "fireflies". After insertion into the gas tank the gelatin capsule will eventually dissolve and, when the metallic sodium comes into contact with the water content of the gas tank, a violent reaction occurs producing flame, shock, and pressure that ruptures the gas tank.

15. Operate the vehicle in position.

Hook up the battery, start the engine, and allow the motor to idle until normal operating temperature is reached, a period of about fifteen minutes. Operate all vehicle equipment such as air-conditioning, heaters, vents, power seats, windows, radios, lights, and horn.

16. Drive the vehicle.

Drive the vehicle at least one mile, achieving all normal operating speeds and gear positions, including reverse.

The use of a checklist of the type illustrated in figure 32 will help to avoid omissions in the complex vehicle search process and will also serve as a record of the search operation.

If the vehicle search fails to locate a bomb, this fact should be reported to the individual in charge of the operation. As with building searches, it should be reported that no bombs were found, NOT that the vehicle is cleared or safe.

DETAILED AUTOMOBILE SEARCH CHECKLIST

TYPE VEHICLE: _____
MAKE BODY STYLE YEAR DOORS COLOR

LICENSE NUMBER: _____ STATE: _____

VEHICLE LOCATION: _____

HUMAN TARGET LOCATION: _____ DATE: _____ TIME: _____

1. _____ Background information from the owner/operator.
2. _____ Identity of intended target.
3. _____ Area around vehicle and under tires.
4. _____ Exterior of the vehicle.
   - _____ Signs of forced entry
   - _____ Signs of tampering
   - _____ Entire underside of vehicle
5. _____ Block up to prevent tilt
6. _____ Remove wheel covers or hub caps REMOTELY.
7. _____ Raise hood REMOTELY.
8. _____ Check entire engine compartment.
9. _____ Remove battery leads REMOTELY.
10. _____ Gain access to interior of vehicle REMOTELY.
11. _____ Search the interior.

Rear

- _____ Open door remotely
- _____ Door panel
- _____ Floor mat
- _____ Other door, remotely
- _____ Other door panel
- _____ Rear seat and arm rests
- _____ Rear seat back
- _____ Rear deck and speakers
- _____ Headliner
- _____ Dome light and dome light switches
- _____ Under front seat
- _____ Back of front seat
- _____ Visual check of front doors.

Front

_____ Open door remotely

_____ Door panel

_____ Floor mats, pedals, and floor switches

_____ Open other door, remotely

_____ Front seats

_____ Dashboard area, vents ducts, and controls

_____ Radio and radio speaker, lighters and ash trays

_____ Glove compartment

_____ Sun visors and headliners

_____ Dome light and Dome light switches

12. _____ Open the trunk lid REMOTELY.

13. _____ Search the trunk area.

_____ Floor mats

_____ Spare tire

_____ Back of rear seats

_____ Tool compartment

_____ Electrical wiring

_____ Underside of rear deck

14. _____ Inspect the gas tank.

15. _____ Operate the vehicle in position.

_____ Start engine

_____ Warm up: Fifteen minutes

_____ Operate all equipment

16. _____ Drive the vehicle.

_____ Distance: One mile

_____ Forward

_____ Reverse

I certify that the above checks were made except as otherwise noted below:

_____ (Signature of senior searcher)

_____ (Signature of assistant searcher)

_____ (Date)

_____ (Time search initiated)

_____ (Time search concluded)

Figure 32 – DETAILED AUTOMOBILE CHECKLIST

Aircraft. The complexities of aircraft design make it unlikely that even the trained searcher will locate any but the most obvious explosive or incendiary device. Thus, detailed searches of large aircraft must be conducted by maintenance and crew personnel who are entirely familiar with the construction and equipment of the plane. In emergency situations where searches must be conducted by public safety personnel without the aid of aircraft specialists, the following general procedures should be followed:

- Evacuate the area and have all personal property removed.
- Check the area surrounding the aircraft for bombs, wires, or evidence of tampering.
- Tow the aircraft to a distant area.
- Start on the outside and work toward the interior of the aircraft.
- Inspect the engine intakes, cowlings, and wheel wells.
- Begin searching at the lowest level and progress upward.
- Remove freight and baggage and search cargo areas.
- Check out rest rooms and lounge areas.
- Be alert for small charges placed to rupture the pressure hull or cut control cables. (Control cables usually run underneath the center aisle.)
- Check food preparation and service areas, with special attention to refuse disposal containers.
- Search large cabin areas in two sweeps.
- Check the flight deck.
- Finally, or simultaneously, search the baggage and freight in a safe area under the supervision of airline personnel. If passengers are asked to come forward to identify and open their baggage for inspection, it may be possible to quickly focus in upon unclaimed baggage.

Watercraft. The detailed search of a watercraft can only be accomplished by personnel thoroughly familiar with the craft. In addition, the search of a ship or boat will require the aid of experienced divers for inspection of the hull, propellers, and steering gear. To ignore the underwater portion of the search is extremely risky as the exterior below the water line is the most vulnerable area to bomb attack during periods when the craft is not under way.

Internally, the search should begin with a sweep of the public areas, and then continue with a systematic compartment-by-compartment search starting in the engine room and moving from lower to upper levels in the usual search pattern.

Searching Open Areas

Occasionally it becomes necessary to search large open areas in response to a bomb threat or in securing a route for the movement of dignitaries. When conducting outside area searches, particular attention should be given to drainage systems and manholes in the streets and sidewalks. Trash receptacles, garbage cans, dumpsters, incinerators, and mailboxes should be opened and examined where they are accessible to the bomber. Parked cars and trucks should be searched in the presence of their owners or operators whenever possible.

Streets down which an official party will pass should be thoroughly checked at each intersection, as well as along the route of travel. Bridges should receive special attention. Once route security searches have been completed, the areas cleared must remain under the observation of public safety personnel to prevent the placement of devices subsequent to the search. Key underground drainage

systems may have to be searched and physically secured. Electrical power transformers mounted on poles along the route of travel should be inspected by a power company representative.

Outdoor athletic stadiums should be searched and secured under guard at least twelve hours before any contest, meeting, or performance that may become the target of bomb attack. Shortly prior to the admission of the public the entire seating area should be swept by large numbers of public safety or security personnel moving down each row of seats. However, no amount of prior searching will be effective if the public is allowed to import all variety of packages and containers when the facility is opened.

Bombs and Suspicious Objects

Immediately upon locating an item suspected of being a bomb, search personnel must notify the command post. IN NO CASE SHOULD UNTRAINED SEARCH PERSONNEL ATTEMPT TO TOUCH OR MOVE A SUSPECTED DEVICE! No person other than a bomb technician or trained bomb scene officer should ever touch a suspected item. Upon notification, the command center will assign technical personnel, order damage control measures, and usually will direct that the search continue.

The location of one bomb or suspicious object should not terminate the search. It is not unusual for bombers to plant multiple bombs in an effort to insure success or even to cause death and injury to personnel processing the bomb scene. As many as fifty-two individual bombs have been found in one target area. Also, to delay the search while a suspicious object is checked out may result in unnecessary risk to life and property, especially in those cases involving a clockwork fuze which is steadily approaching detonation.

Logic in Searching

The use of common sense or logic in searching has both advantages and limitations. For example, if a guest speaker at a convention was threatened, common sense would indicate searching the speaker's platform and microphones first. However, the search should always return to the basic search pattern. Searchers should never rely exclusively on random or spot checking of only logical bomb locations as the bomber may not behave in a logical manner.

Fatigue Factors in Searching

The problem of searcher fatigue must be considered in any prolonged searching operation. At the start of the search, supervisors must exert firm control over the teams to insure that nervousness and lack of familiarity do not lead to poor searching. After the first 15 to 30 minutes, the search teams will have settled down into good searching patterns and control may be relaxed somewhat. By starting the three searching teams where indicated previously, the teams enter their most physically fatiguing areas of search first, when they are fresh. After they have searched through the utilities areas, the trash cans and dumpsters, the stairs and elevators, the freshness begins to wear off and by the time all teams have progressed to detailed room searching, fatigue begins to set in.

Search supervisors and the command center should realize that fatigue means reduced efficiency and steps should be taken after 3 or 4 hours to provide brief break periods for each of the two-man search team units. Beyond the 4-hour searching point, breaks should become more frequent, and beyond the fifth hour consideration should be given to replacing the search teams. Six hours of constant searching is close to the maximum time that the average team will be able to perform with any reasonable degree of efficiency.

Reporting Search Results

When the building search has been completed to the satisfaction of the official in charge, an announcement should be made that no explosives or bombs have been found, if this is the case. Public safety officers and officials should avoid stating that an area is "cleared" or "safe" unless they are absolutely positive that there is no chance that the search may have overlooked an explosive device. Considering that it is entirely possible that a sophisticated bomb could be concealed inside walls, contained in pipelines, or fabricated to resemble almost any object. it is highly unlikely that any search of a building of any size could ever be considered 100% effective.

DAMAGE CONTROL

Damage control measures are those steps taken to minimize the damage resulting from the detonation or ignition of a bomb. While it is often difficult to precisely estimate the destructive potential of a bomb, there are available a limited number of procedures that may limit damage to buildings and equipment. Responsibility for damage control can be assigned to search teams, bomb scene officers, or specially trained damage control teams. When sufficient personnel are available, damage control teams are desirable so that search teams will be free to continue their operations.

In considering any type of damage control, the nature of an explosive detonation must be kept in mind. For example, consider the detonation of a pipe bomb filled with high explosive. When the explosive detonates, the pipe bomb containing the explosive is stretched until it tears and breaks violently into fragments. The higher the rate or velocity of the detonation, the more numerous and smaller are these fragments. The fragments move outward in all directions from the point of detonation and precede the blast pressure wave created by the force of the explosion. This blast pressure wave consists of rapidly expanding gases which reach maximum pressure in a fraction of a second and then rush away from the point of detonation at about 7,000 miles per hour. Expansion of these gases reaches from 10,000 to 15,000 times the original volume of the explosive.

The detonation of explosives is also accompanied by extremely high temperatures of 3,000° to 4,000° Centigrade. Because of these temperatures, almost all explosives have an incendiary effect on combustible materials at or near the point of detonation. Thus, when an explosion of a bomb occurs, three separate types of problems must be dealt with:

- Fragmentation
- Blast pressure waves
- Heat

Fragmentation may be handled in two ways, by constructing an armored shield and allowing the fragments to strike this shield and bounce off, or by constructing a shield of absorbent material and allowing the fragments to lose velocity as they penetrate and are eventually captured by the material.

In dealing with the *blast pressure wave*, there are again, two possible courses of action. The blast pressure may be totally confined or it may be directionally vented. Because total confinement would require an extremely large volume container, the common damage control barricades or devices use the directional venting system in one form or another.

The problem of *heat* generated by the detonation is of concern mainly as a possible cause of secondary fires. Protection consists primarily of removing flammable materials from the immediate area of the suspected bomb.

Damage Control Teams

Personnel selected for assignment to damage control teams should be familiar with the physical layout of the facility and the location of utility control centers. Damage control decisions regarding

the full or partial shut down of utilities in a large industrial or business complex can only be made by personnel with an specific knowledge of the mechanics and implications of such actions. In addition, team members should be trained in the effects of explosives and the protective measures which can be taken to limit these effects.

Damage Control Techniques

- **Fire and Medical Service Standby.** Fire and medical teams should be moved into position to provide rapid assistance in the event of detonation.

- **Disconnection of Utilities.** Utility services such as gas and fuel oil that may contribute to the damage of an explosion should be cut off in the bomb area if not already discontinued throughout the facility.

- **Evacuation.** Depending upon the size and nature of the bomb, only the floors above and below the bomb location may have to be evacuated. When any question exists, evacuation should be ordered for a distance of 300 feet from the bomb or suspicious device.

- **Venting.** Windows and doors should be opened in order to vent the blast if detonation should take place.

- **Removal of Flammables.** Any materials that might ignite and contribute to fire damage during detonation should be removed.

- **Barriers.** Protective structures in the form of blast and fragmentation barriers can be erected to minimize damage when the necessary materials are available. A double row of sandbags, mattresses, or even overturned desks can be placed between the suspected bomb and any equipment or walls considered vulnerable. The barrier should not touch the bomb or the surfaces to be protected and should not be made of material that will fragment and contribute to any shrapnel generated by the detonation. The device should *not* be covered with any heavy barrier material.

The bomb blanket, illustrated in figure 33, is an effective blast, fragmentation, and fire barrier against certain types of bombs.

> For example, the Davis blanket (4 by 4 feet square, weighing 25 pounds) will reduce the blast effect and contain the fragmentation of a 1-1/2 by 8-inch pipe bomb or dynamite bombs consisting of two or three sticks of explosive. Even where the containment is incomplete, the fragmentation is reduced. For maximum effect, bomb blankets should not be placed in contact with the bomb, but should be tented over the device with a standoff of about 12 to 18 inches.

Another recent development, the bomb basket, is useful in providing a measure of damage control by directionally controlling blast and fragmentation from certain types and sizes of bombs.

> For example, the Colt-Tabor bomb basket, illustrated in figure 33, is manufactured in two versions, one with an open bottom, the other with a closed bottom. These bomb baskets are constructed of laminated, ballistic fiberglass, and later versions incorporate ceramic armor linings. Both versions of the bomb basket are approximately 24 inches in height and 26 inches in diameter. The cylindrical basket is fitted with moulded in plastic rope handles for ease of handling. The open bottom version of the Colt-Tabor bomb basket can be employed as a damage control device under certain conditions. If a suspicious device is located in a clear area, the open bottom basket can be carefully lowered over the device without disturbing it and would, should the device detonate, serve to directionally vent the blast and fragmentation upwards while reducing the horizontal fragmentation effect.

If a bomb is located in an exterior area, similiar protective measures can be taken to reduce the risk of damage or injury. When the bomb is located on the surface, a sandbag barricade (figure 34)

can be erected surrounding the device. If sufficient material is available, the sandbag barrier should be at least two stacks thick and high enough to contain any fragments that might cause injury or damage. A barricade of approximately 6 feet in diameter should afford protection from most common improvised explosive devices since the accepted rule of thumb calls for barricading a few feet outside the expected diameter of the crater.

When a bomb is located too close to an external wall to allow for the erection of a sandbag barricade between the bomb and the wall, it is sometimes possible to buttress the structure from the inside. In this method the sandbags are stacked inside the building against the wall facing the bomb. The bags should be interlocked as illustrated in figure 35. This technique would be employed only in those cases where the bomb would appear likely to be of a size sufficent to damage the wall of the structure upon detonation.

When probing locates a suspected buried bomb, no effort should be made to dig up the device until bomb technicians are on hand. In the meantime, barricading can be used as with surface bombs so long as care is used to avoid placing the sandbags over the bomb. The bomb blanket can be used to cover the suspected area.

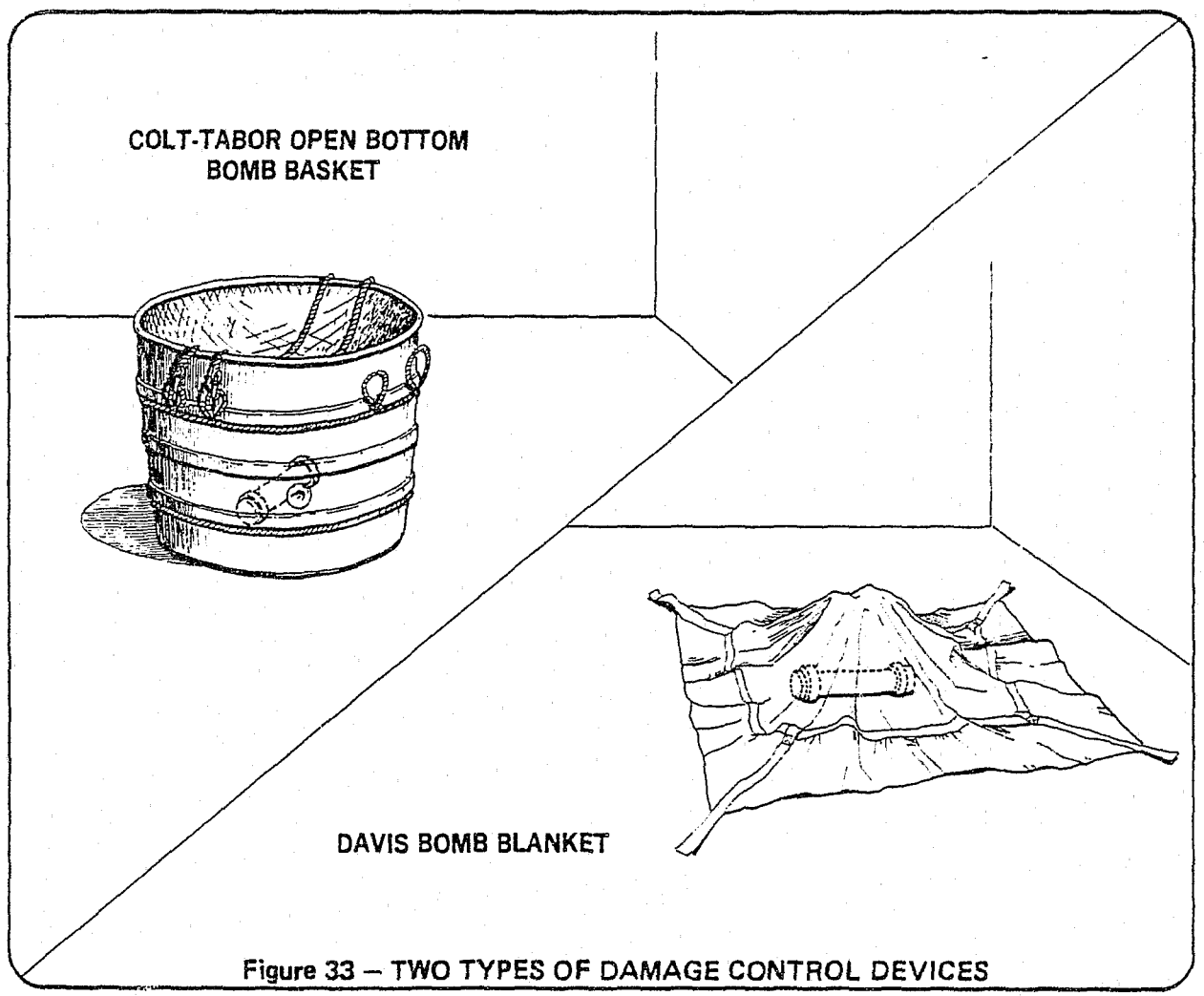

Figure 33 – TWO TYPES OF DAMAGE CONTROL DEVICES

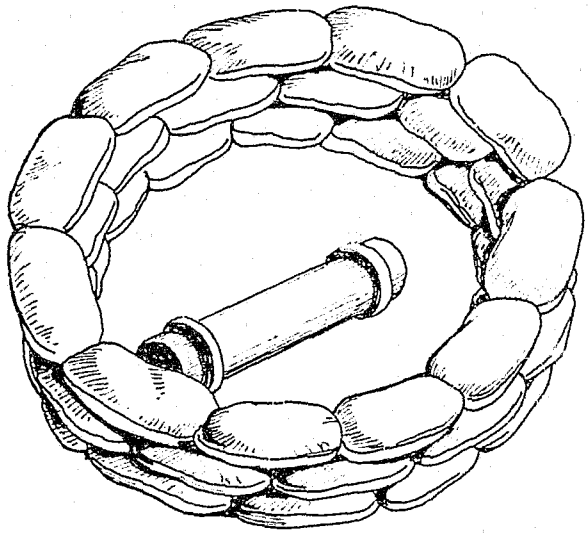

Figure 34 – SANDBAG BARRICADE SURROUNDING SUSPECTED BOMB

REMOVAL

The examination, disarming, transport and destruction of a bomb or suspected bomb is a highly technical and hazardous operation. Removal, disposal, or examination of known or suspected devices is, therefore, normally regarded as a technical rather than a protective function.

SUSPECTED BOMBS SHOULD BE HANDLED ONLY BY TRAINED BOMB DISPOSAL TECHNICIANS.

While it might appear that some bombs are simple in design and can easily be rendered safe by anyone, it is also true that even the simplest bomb can be rigged to detonate if distrubed in any way.

Exceptional Circumstances

Under certain conditions, where evacuation is impossible and trained bomb disposal personnel are not available, it may be necessary for a bomb scene officer to take a series of high-risk steps to remove the device to an exterior holding area. In such cases the following procedure may be followed with the realization that detonation and injury may well result:

- Evacuate the immediate area and out as far as conditions permit.
- Take damage control measures as discussed on page 58.
- Remotely jar the suspected bomb.
- Evacuate the exit route.
- Transport the device to an outside holding area and await the bomb disposal technician.

Remote Jarring. Remote jarring techniques are employed to determine if a bomb is equipped with vibration, mercury, or other switches which will cause it to detonate if moved. Vigorous remote jarring may also disconnect battery connections, disrupt electrical circuits, stop clocks, or jam firing mechanisms. It may also detonate the device.

To be fully effective, the jarring action must tumble and roll the bomb. A sharp, violent pull on a long line, or one stretched around several corners, will probably result in no more than a gentle nudge at the bomb end of the line. Since violent jarring is the objective, the line should be reeled in taut before jarring. It may also be necessary to run a few yards with the line. Again, when jarring a suspected bomb remotely, *expect a detonation*, and take the proper precautions.

Filament tape can be effectively used to attach the remote jarring line to the suspected bomb. As illustrated in figure 36, several turns of 1/2 or 1-inch filament tape are placed around the object and pressed securely on three sides, leaving a loop on the fourth side for the attachment of the remote line. Filament tape is also very useful when attempting to secure a line to an odd shaped or round object such as a pipe bomb.

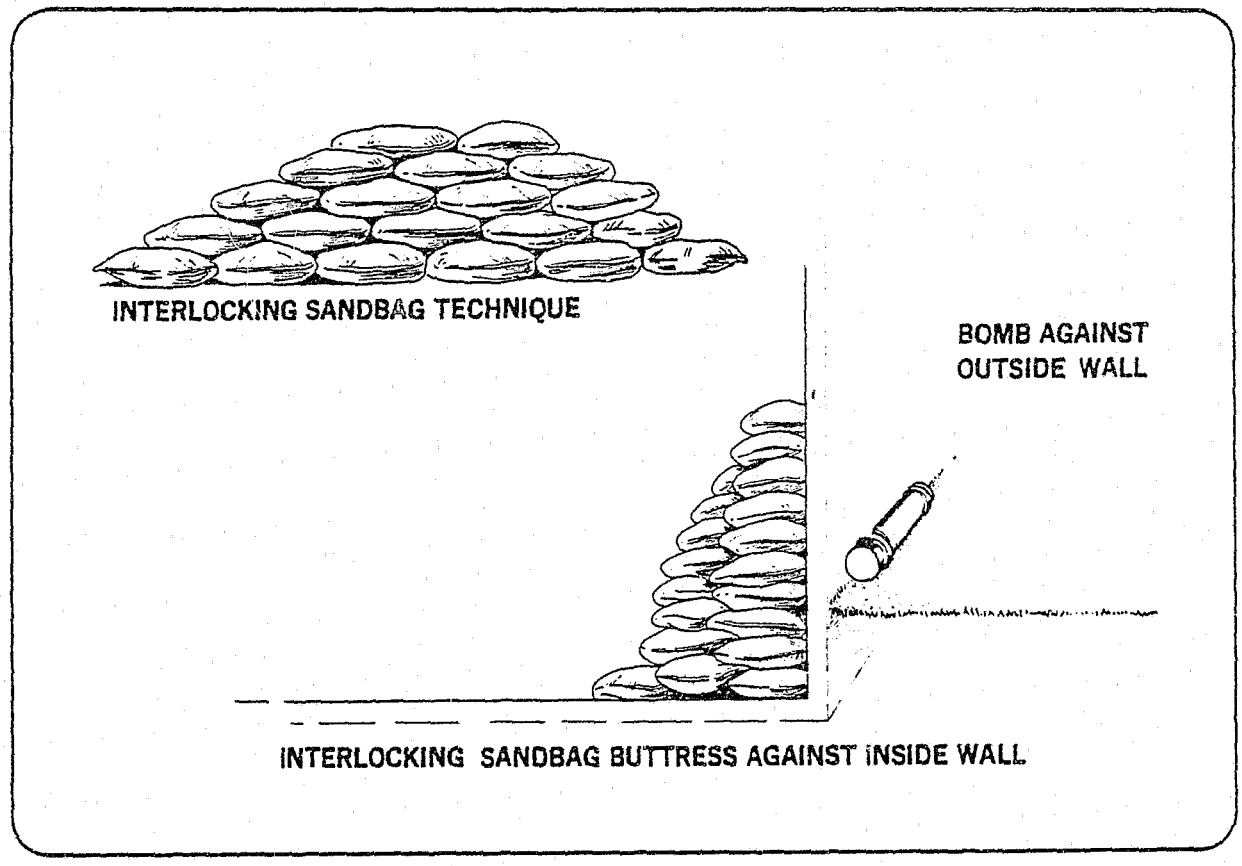

Figure 35 – INTERIOR SANDBAG BUTTRESS

END