BOMBERS AND FIRESETTERS

JOHN M. MACDONALD M.D., F.R.C.P.(E).

Professor of Psychiatry
University of Colorado School of Medicine
Director of Forensic Psychiatry
University of Colorado Medical Center
Denver, Colorado

With Contributions by

CAPTAIN ROBERT B. SHAUGHNESSY
Commanding Officer, Bomb Squad
Denver Police Department

and

JAMES A. V. GALVIN, M.D.
Associate Clinical Professor of Psychiatry
University of Colorado School of Medicine

A comprehensive review of the crimes of bombing and arson, this book explores such subjects as bombs and their effects; bombers, arsonists and their motivations; and victims and targets of these crimes. The urban guerrilla, the bombing campaign in Northern Ireland, a psychiatric study of an airplane bomber, bomb threats and disposal, and the investigation and punishment of these crimes are also examined.

CHARLES C THOMAS • PUBLISHER • SPRINGFIELD • ILLINOIS

BOMBERS
AND
FIRESETTERS

By the Same Author

THE MURDERER AND HIS VICTIM
HOMICIDAL THREATS
INDECENT EXPOSURE
RAPE: OFFENDERS AND THEIR VICTIMS
ARMED ROBBERY: OFFENDERS AND THEIR VICTIMS
PSYCHIATRY AND THE CRIMINAL

BOMBERS AND FIRESETTERS

By

JOHN M. MACDONALD, M.D., F.R.C.P.(E).

Professor of Psychiatry
University of Colorado School of Medicine
Director of Forensic Psychiatry
University of Colorado Medical Center
Denver, Colorado

With Contributions by

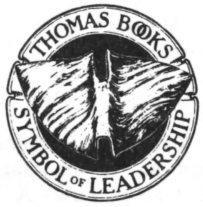
Captain Robert B. Shaughnessy

Commanding Officer, Bomb Squad
Denver Police Department

and

James A. V. Galvin, M.D.

Associate Clinical Professor of Psychiatry
University of Colorado School of Medicine



CHARLES C THOMAS • PUBLISHER
Springfield • Illinois • U.S.A.

Published and Distributed Throughout the World by

CHARLES C THOMAS • PUBLISHER
Bannerstone House
301-327 East Lawrence Avenue, Springfield, Illinois, U.S.A.

ISBN 0-398-03687-X

Library of Congress Catalog Card Number: 77-23504

With THOMAS BOOKS *careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use.* THOMAS BOOKS *will be true to those laws of quality that assure a good name and good will.*

Printed in the United States of America
OO-2

Library of Congress Cataloging in Publication Data

Macdonald, John Marshall, 1920-
Bombers and firesetters.

Bibliography: p.
Includes index.
1. Bombings, 2. Arson. 3. Bombing investigation. 4. Arson investigation. I. Shaughnessy, Robert B., joint author. II. Galvin, James A. V., joint author. III. Title.
HV6640.M3 364.1'64 77-23504
ISBN 0-398-03687-X

PREFACE

BOMBING and arson are two closely related crimes which involve great threat to life and property. One person, acting alone, can bring death to many people and can destroy buildings or planes worth millions of dollars. Terrorist groups across the world have caused significant loss of life and limb with explosives and incendiary devices. No one is safe from the bomber or firesetter, who strikes without warning and without regard for who may become his victims.

Yet little has been written about the bomber and his motives. The arsonist has received more attention, but the results of most studies are either hidden in specialist journals or out of print.

The author has interviewed more than thirty bombers and over one hundred firesetters. He has talked to members of guerrilla groups both in the US and overseas. In Northern Ireland, where at present there are more bombings than in any other country in the world, he gained firsthand experience of this crime, sometimes a little too close for comfort. He saw the bombs explode, talked to the victims, and interviewed leading members of paramilitary groups involved in the bombing campaign.

The information obtained from personal studies of bombers, arsonists, and other sources is the basis for this broad review of these crimes and the persons who commit them. It is hoped that this book will prove useful not only to bomb disposal experts, police officers, and firemen but also to psychiatrists, psychologists, lawyers, and others who may see these offenders in their professional work.

The chapters on bombs, bomb disposal, and criminal investigation are not directed to the experts in these fields but are for

the benefit of the general reader who would like to know something of the dangerous and difficult work of these officers.

JOHN M. MACDONALD

ACKNOWLEDGMENTS

MANY bomb disposal experts across the United States have provided helpful information. I am particularly grateful to many persons in Northern Ireland, including police officers, government officials, physicians, officers, and men of Number One Section 321 Explosive Ordnance Disposal Unit of the Royal Army Ordnance Corps, and many others who responded so generously to my requests for information or other assistance. Because of the violent strife in that country, the people who provided help would probably prefer not to be named in this book.

I would like to thank the following bomb disposal experts: Stephen Kern, Robert Scheer, Joseph Erhart, David Haley, Frederick Stephenson, Robert Weyand, Charles Rowland, James Jordan, Michael Southworth, David Couling, Alan Findlay, Nigel Woodman, Ronald McCracken, and William Poe. Fire investigators Donald Searcy, Frederick King, James Persichitte, and Donald Lopezi were most helpful.

Doctor Stuart Boyd of St. John's College, Santa Fe, New Mexico provided editorial help. Mrs. Carolyn Zwibecker typed several drafts of this book, and I deeply appreciate her forbearance.

J.M.M.

CONTENTS

BOMBERS
AND
FIRESETTERS

Chapter 1

BOMBING AND FIRESETTING

Another, yet the same.
— ALEXANDER POPE, *The Dunciad.*

THE reader may well demand an explanation for a book on two different crimes, bombing and arson. What do these crimes, and the offenders who commit them, have in common? Many firesetters would not think of resorting to the use of bombs, and there are bombers who have never set fires. Nevertheless, the following similarities between the bomber and the arsonist and between the crimes they commit surely justify their consideration together in the same volume.

SIMILARITIES

The Bomber and the Arsonist

Motives

Motives such as anger, hatred, revenge, envy, jealousy, and financial gain contribute to many different crimes, and it is not remarkable that these are among the motives underlying bombing and arson. These two crimes, however, through the destruction of commercial buildings and homes, offer unusual opportunities for very great financial gain from fraudulent insurance claims. Bombers and firesetters have been employed by organized crime to intimidate or punish witnesses and by unions to intimidate contractors who employ nonunion labor. Bombing and arson provide unusual opportunities for the concealment of other crimes such as murder and burglary.

Revolutionary groups have resorted to widespread bombing and firesetting to destroy public buildings, to disrupt the economy, to harm multinational corporations, to intimidate oppo-

nents, and to extort money from business owners and other citizens.

Many crimes provide an element of excitement and daring, especially for the offender who needs to prove his manhood. Sexual excitement is usually considered to be present only in sexual crimes. However, it has long been known that firesetting provides sexual excitement for some offenders. This author has also encountered a number of bombers who have experienced sexual gratification through explosions. This unusual motive in a nonsexual crime is not infrequently encountered in the compulsive bomber and compulsive firesetter.

The Compulsive Offender

The term *pyromania* has been used to refer to a morbid compulsion to set fires. The fires may be set without any wish to harm a specific individual or business, and without any prospect of financial gain. In the childhood backgrounds of these persons there is often found the triad of firesetting, cruelty to animals, and bedwetting. Strong sadistic trends (not confined to cruelty to animals) and sexual gratification from the arson have also been noted. Similar features are sometimes present in compulsive bombers, who may also be firesetters.

Return to the Scene of the Crime

Bombers and firesetters who derive sexual or other excitement from the explosion or the blaze are tempted to remain at the scene and, like many other kinds of criminals (especially murderers), they may return to the scene of the crime. Detectives, aware of this phenomenon, take photographs of spectators at these disasters.

Reluctance to Discuss the Crimes

A certain reticence is to be expected from any criminal under investigation by the police, yet in the company of their friends and associates, some offenders will often take pleasure in de-

scribing their exploits. Bombers, firesetters, and sex offenders are less eager to reveal their felonious activities, especially when they sense disapproval in the listener.

There is a widespread public interest in explosions. In England, Guy Fawkes, who sought to blow up the house of parliament, has become a national hero. On Guy Fawkes Day, the fifth of November, an effigy of Fawkes is burned and blown up amidst scenes of extraordinary, Bosch-like violence and revelry. There is the curious twist that the villain is now the hero and is seen as the only man who ever entered parliament with good intentions!

Every Fourth of July in the US, large crowds gather to watch the fireworks, and a distressing number of persons blow off their hands or otherwise injure themselves. Fires also fascinate many people, and crowd control is a problem for the police at major fires. However, bombers and firesetters correctly sense great public dislike of the do-it-yourself bomber or firesetter who endangers the lives and property of others.

The Agents of Destruction

Fires may result from the use of explosives, and explosions may result from the arsonist's use of incendiary materials. Thus a bomb may cause a fire due to the escape of natural gas from a ruptured pipeline or, rarely, due to the heat of the explosion. A small bomb may be used to ignite a can or drum of gasoline. There may be a slight damage from the explosion itself, and the building may be destroyed by the fire.

The classification of bombs as explosive or incendiary shows one close connection between bombing and arson. A simple firebomb, the Molotov cocktail, is used to set alight persons, vehicles, and buildings.

The use of incendiary materials, such as gasoline, may lead to a major explosion which can destroy a building. Gasoline evaporates quickly, and by the time the arsonist has finished dumping his can of gasoline, there may be sufficient gasoline vapor in the air to result in an explosion when the arsonist throws his match.

Loss of Life and Property

A single bombing or act of arson may cause great loss of life and property damage in the millions of dollars. Twenty or more persons may be killed in an apartment house fire which has been set with little effort or planning. A bomb in a large jet plane can cause hundreds of deaths. Few other crimes can lead to such great destruction.

Danger to the Offenders

Bombers have suffered heavy casualities from the premature explosion of their devices. In 1974, thirteen of the twenty-four persons killed by bombs in the United States were the bombers themselves, and only one of these bombers committed suicide with his device. Between 1972 and 1975, 43 bombers were among the 140 persons who died from bombs in the United States.

Many a firesetter has perished in his own fire because he spilt gasoline over himself or because he has been trapped by the rapid spread of the fire. Arsonists have also been killed by explosions resulting from their firesetting.

Problems in Criminal Investigation

Many bombings and cases of arson are not recognized as being due to criminal acts. Thus, an explosion due to a bomb is attributed to a leaking natural gas pipe, and a case of arson is dismissed as being caused by faulty electrical wiring or a carelessly discarded cigarette. Evidence which might point to bombing or arson may be destroyed in the explosion or fire. The collapse of a building wall may bury such evidence in tons of debris.

Even when crime is suspected, there may be little evidence which points to the offender. Another factor which adds to the difficulty in identifying the offender in these crimes is his use of a time delay device, which enables him to be miles from the

scene, in possession of a good alibi, at the time when the explosion or fire occurs. In most crimes against the person, there is a confrontation with the victim who may be able to identify his assailant, but such confrontation can be avoided in bombing and arson.

Chapter 2

BOMBS AND EXPLOSIONS

He who was prepared to help the escaping murderer or to embrace the impenitent thief, found, to the overthrow of all his logic, that he objected to the use of dynamite.

— ROBERT LOUIS STEVENSON, *The Dynamiter*

FEW crimes arouse the same degree of public horror as the killing and grievous wounding of persons from the explosion of a bomb in a crowded public place. The brutal rape of a young girl in her apartment or even the fatal shooting of a bank clerk in a holdup do not seem to arouse the public outcry that so often follows a bombing incident. Armed robberies and rapes, although universally deplored, are more readily accepted than the act of a bomber who does not know whether the victims of his explosive device will be friend or foe and who seems not to care.

Yet bombing is not an uncommon crime in this restless decade. In Northern Ireland in 1972, there was an average of 3.8 bombings daily. In the United States and Puerto Rico in 1975, the 2,074 bombing incidents resulted in 65 deaths, injuries to 326 persons, and over $27,000,000 in property damage. Sporadic bombings result from the actions of those persons who use explosives to settle private grudges, to intimidate others, or to enrich themselves. There have also been outbreaks of bombing by revolutionary groups through the centuries since the discovery of gunpowder.

Writers reviewing the history of gunpowder have not always distinguished between its use as an explosive and its use as a propellant in firearms. Thus, there is a tendency to date the development of gunpowder from the invention of firearms early in the fourteenth century. However, Partington, in his *History of Greek Fire and Gunpowder*, cites a Chinese reference in 1044 AD to the use of mixtures containing saltpetre (potas-

sium nitrate), charcoal (carbon), and sulphur in the manufacture of bombs.

Partington also draws attention to a number of early writings on bombs. A 243-page manuscript written in 1405 by Conrad Kyeser, a military engineer, includes illustrations of seven bombs, one of which is bursting. Kyeser describes bombs which were to be used as hand grenades and also hollow bones, filled with explosives and fitted with fuses, which were to be strewn on the floors of dining rooms. He notes that the latter were to be used only against Turks. Apparently it was permissible to use these infernal devices against Moslems but not against Christian foes.

Leonardo da Vinci (1452-1519), who anticipated, among so many other things, the submarine and the army tank, made drawings of mortars for throwing bombs. An Austrian, Wulff von Senfftenberg, in a sixteenth century treatise on the military arts, mentioned explosive letters and infernal machines with a time fuse operated by clockwork. There were also boxes or chests, filled with gunpowder and supposed to contain valuables, which exploded on opening. The author notes that these devices were to be used only against Turks and other infidels and that the explosive letters were to be carried by Jews.

At the siege of Pskow by Polish troops in 1581, the Poles sent a Russian prisoner with a gift chest to Ivan Petrovich Shujski, the Russian defender. The chest was designed to explode when opened, and it did so, killing a few of Shujski's staff. Jean Appier (1596-1647) of Lorraine published two books on military equipment, including infernal machines. He featured such unusual items as an explosive basket of eggs, an explosive chest on a truck, and an explosive cask of wine.

Conspirators in the gunpowder plot of 1605 did not send King James I of England a small chest of explosives. Instead, they planted thirty-six barrels of gunpowder, over one and a half tons, in a cellar under the House of Lords. Iron bars were placed over the barrels to increase the force of the explosion, which was planned for the opening of parliament. The aim of the conspirators was to kill the king for his failure to grant greater religious toleration for English Catholics.

It seemed not to matter that the queen, privy councillors, and members of parliament would be dispatched along with the king. Some concern was expressed for the lives of Catholics, but Robert Catesby, leader of the conspiracy, ruled that no warning should be given to any Catholics who would be present at the opening ceremony. The deed, he said, was lawful even if some innocent men should lose their lives together with the guilty.

A house ajoining the House of Lords was rented in December, 1604, and an attempt was made to dig a tunnel from the cellar through a wall nine feet thick. The work was extremely difficult, and little progress was made. In March, 1605, a house with a coal cellar directly under the House of Lords became available for rent. The gunpowder was hidden in this cellar under heaps of coal and firewood. In September, fresh barrels of gunpowder were brought in to replace any which might have been spoiled by dampness. All was ready for the opening of parliament on November 5, 1605.

On October 26, Lord Monteagle, a Catholic who was to attend the opening of parliament, received an anonymous letter. It is believed that the writer was one of the conspirators, Francis Tresham, a brother-in-law of Lord Monteagle. This letter included the following warning:

> My lord, out of the love I bear to some of your friends, I have a care for your preservation. Therefore I would advise you, as you tender your life, to devise some excuse to shift of your attendance of this Parliament, for God and man have concurred to punish the wickedness of this time. And think not slightly of this advertisement, but retire yourself into your country, where you may expect the event in safety, for though there be no appearance of any stir, yet I say they shall receive a terrible blow the Parliament, and yet they shall not see who hurts them. (Gardiner)

Lord Monteagle took the letter without delay to Lord Salisbury, the king's chief minister. Some mischief by means of gunpowder was suspected, but the decision was made to delay the search as long as possible "in order that the conspirators might not be scared before their plot was fully ripe." The search was made on November 4, and Guy Fawkes, one of the

conspirators, was arrested in the cellar containing the bomb.

Guy Fawkes, a member of a good Yorkshire family and former officer in the Spanish army, was a rather saucy fellow. When asked his reasons for wanting to kill the king, he replied that "dangerous diseases require a desperate remedy," adding fiercely to the Scottish courtiers that one of his objects was "to blow back the Scots into Scotland." It was only under torture that he revealed the names of his fellow conspirators.

These other plotters, aware of Guy Fawkes' arrest, took flight. While crossing the river Stour, their gunpowder came in contact with the water. When they attempted to dry some of it, there was an explosion in which Catesby and other conspirators were injured. Their terror was extreme; they fantasied they saw in the accident the finger of God's providence, bringing vengeance upon them by the same means as that by which they had planned to take away the lives of so many of their fellow creatures (Gardiner).

Although many of the original conspirators escaped the scaffold, Catesby, among others, was shot while trying to escape, and Guy Fawkes, together with seven other men, was executed in a rather unpleasant manner. Williamson has described the execution of one of these conspirators: "The executioner — acting, it is impossible to doubt, upon official instructions — showed no mercy. Instead of allowing him to hang till he was dead, or even till he was partially stupefied by strangling, he cut him down immediately he turned him off the ladder, so that he was fully conscious for the castration and quartering."

Parliament passed an act establishing November 5 as a day of public thanksgiving. Guy Fawkes Day is still celebrated in England with bonfires, fireworks, and the burning of an effigy of Guy Fawkes. The authors of at least two books have claimed that the plot was set up by Lord Salisbury for the purpose of discrediting the Catholics. Their evidence is slim indeed, but those persons who have difficulty believing that civilized men would stoop to the bombing of innocent persons welcome such a defense and readily accept it without careful scrutiny.

Since 1605, the infernal devices available to bombers have multiplied and now range from plastic explosives to nuclear

bombs. But the bombers have not changed. Methods of detonation now include blasting caps and radio-controlled devices, but the motives remain the same: men bent on war, on peace, or on revolution, men in search of financial gain, revenge, or power. The gunpowder plot provides the prototype of revolutionary bombings through the centuries.

Otherwise honorable men lend themselves to callous deeds with no respect for the lives of innocent victims. If they are convinced that their cause has a higher value than their sense of morality, friend and foe alike are sacrificed for the cause. Sustained by belief in the nobility of the revolutionary movement, these bombers are willing to take great risks to achieve their goals. But within their ranks, as so often in the history of all movements or causes, great or small, noble or ignoble, are weak men or informers who bring disaster. Rulers and governments, in their alarm over terrorist activity, continue to resort to forceful methods of interrogation, including even torture, and repressive security measures which affect all citizens.

BOMBS

> *A loud noise and the sudden going away of things from where they have been.*
>
> — JOSEPH STOFFEL, *Explosives and Homemade Bombs*

A bomb may be defined as an explosive weapon which is detonated by impact, flame, electricity, or other means to produce a large volume of rapidly expanding gas in a very brief time. High explosives, such as dynamite and TNT (trinitrotoluene), expand ten thousand to fifteen thousand times their original volume. Low explosives, such as black powder and smokeless powder, explode more slowly than high explosives and have pushing or heaving power rather than the immediate shattering effect of high explosives. Thus, fragments of a pipe bomb filled with high explosive are small, stretched, torn, and thin, whereas in a pipe bomb containing low explosive, the fragments are larger, thicker, and more intact.

Explosives commonly used or readily available for use by bombers will be reviewed briefly.

BLACK POWDER. This explosive, which is approximately 50 percent as powerful as TNT, can be purchased in gun shops and sporting goods stores. Some bombers make their own black powder by mixing potassium or sodium nitrate (75%), charcoal (15%), and sulphur (10%). It is frequently used in pipe bombs, which are easy to make. A small hole is drilled in the center of a length of pipe, and a fuse is placed in the hole. Black powder is placed in the pipe, which is sealed with a cap at each end. A time bomb can be made by adding a battery, blasting cap, watch, and electrical circuit. When the bomb explodes, fragments of the pipe are dispersed, with risk of injury or death to those nearby.

SMOKELESS POWDER. This may also be purchased in gun shops and sporting goods stores. It can be obtained by removing the powder from shotgun shells, and there is enough powder in a box of shotgun shells to make an effective small pipe bomb.

DYNAMITE. This high explosive consists of nitroglycerin combined with other ingredients which make it safer to handle. Dynamite is usually packed in cylindrical cartridges, one inch in diameter and eight or ten inches in length. It is a popular commercial explosive which can be stolen from construction sites and mines. Blasting caps are required as a means of detonation. Old, deteriorating dynamite is very dangerous, as it may explode in response to shock, flame, or spark.

NITROGLYCERIN. This very powerful explosive is so sensitive to impact, shock, friction, flame, spark, and increase in temperature that it is not used commercially except in the form of dynamite. Although revolutionary manuals, such as *The Anarchist Cookbook,* provide instructions for its manufacture, terrorist groups have not been willing to risk using this very dangerous explosive in its pure state. Criminals have used it to blow up safes.

TOVEX®: a nonnitroglycerin water gel high explosive made by DuPont. This company, which was the largest producer of dynamite in the United States, ceased all production of dy-

namite in January, 1977. Tovex, which contains monomethylamine nitrate, has many advantages over dynamite. It has less sensitivity to impact shock and fire. The cycle of freezing and thawing does not reduce the safety characteristics. Terrorist bombers as well as commercial users will appreciate both the reduced risk of accidental detonation and the absence of nitroglycerin headaches which affect some users of dynamite. A blasting cap is required.

ASTROLITE® EXPLOSIVES. This liquid explosive may be transported in safety in separate containers for its two nondetonable components. When combined, the explosive mixture can be poured into a container or into a crack and detonated with a blasting cap.

TNT. Trinitrotoluene is used by the military in aircraft bombs, mines, grenades, and artillery shells. It can be obtained by theft from ordnance depots. A blasting cap is required for detonation.

PLASTIC EXPLOSIVES. Composition C3 and Composition C4 are called plastic explosives because of their puttylike consistency. Their shattering power is greater than dynamite. They are used by the military for demolition purposes because of the ease with which they can be wrapped around a bridge support or other object selected for destruction. They are obtained by bombers through burglary of military installations. A blasting cap is required to set them off.

AMMONIUM NITRATE. Bombers have no difficulty in obtaining ammonium nitrate, which is widely used as a fertilizer. It cannot be used alone, but when combined with fuel oil, it can be exploded with the aid of a blasting cap and a boosting explosive.

NATURAL OR PROPANE GAS. If the burners of a gas stove are turned on or a gas line is disconnected, an explosive mixture forms inside a house or building. This mixture can be exploded by a pilot light or candle which is left burning in a room. In an unusual explosion of a large plastic bag filled with propane gas and air, a telephone booth was destroyed and windows were shattered in several adjacent stores. A suspect was injured in the blast.

A young man upset his neighbors by sending up balloons inflated with helium, acetylene gas and oxygen. A fuse attached to the balloon set off the explosion several hundred feet in the air. The resulting explosion caused tremendous noise but no property damage. Frightened neighbors flooded the police department with telephone calls and gathered outside their homes in the early hours of the morning.

OTHER CHEMICALS. Potassium perchlorate, aluminum, sodium, potassium, magnesium, calcium carbide, and potassium permanganate are among the substances which can be used to form explosive mixtures.

BLASTING CAPS. These are small copper or aluminum tubes which contain sensitive high explosives such as RDX (Cyclonite®), PETN, lead azide or mercury fulminate. Nonelectric blasting caps are detonated by a burning fuse. Electric blasting caps are detonated by electricity. Blasting caps are used to detonate relatively insensitive explosives such as dynamite and TNT. Boosters (relatively sensitive high explosives) are sometimes used along with blasting caps to assure detonation of the main explosive.

DETONATING CORD (PRIMACORD®). This is a flexible cord with waterproof wrapping, containing a high explosive such as RDX or PETN. It is used to transmit, at very high velocity, a detonating wave to one or more explosive charges. Thus, it can be used, for example, to blow up a number of school buses, each with its own explosive charge, at the same time. It is available in lengths of up to 1,000 feet.

Nuclear Bombs

The use of a nuclear bomb would be the ultimate terrorist act. Theft of military nuclear weapons seems improbable, but improbable events do occur. Construction of a nuclear bomb is another source of danger. Over a quarter of a million Americans have had access to classified material on nuclear devices. A twenty-one-year-old Princeton University student, John Aristotle Phillips, designed a 125-pound device the size of a beach ball which, he said, would have about one third the power of