

## **Table of Contents**

Preface	i
Table of Contents	ii
<b>Chapter I: Introduction to Ballistics</b>	<b>1</b>
Overview	1
Definition of Ballistics	2
Early Recorded Firearms Identification	4
Branches of Ballistics	7
Interior Ballistics	7
Exterior Ballistics	9
Terminal Ballistics	11
Forensic Ballistics	11
Shot Ballistics	13
Wound Ballistics	13
Experiment No. 1	17
<b>Chapter II: Scientific Equipment Used in Firearms Identification</b>	<b>21</b>
Introduction	21
Experiment No. 2	28
<b>Chapter III: Firearms</b>	<b>33</b>
History of Firearms	33
Timeline in the Development of Firearms	35
Definition of Firearms	38
General Types of Firearms	39
Specific Types of Firearms	43
Categories of Firearms	44
Parts of Firearms	46
Nomenclature of Firearms	46
Revolver	46
Pistol	48
Shotgun	50
Rifle	52
Experiment No. 3	55

<b>Chapter IV: Ammunition</b>	59
Legal Definition	59
Technical Definition	59
Origin	60
Classification of Cartridges	61
Shotgun Shell	63
Experiment No. 4	66
<b>Chapter V: Bullets</b>	71
Definition	71
Classification of Bullets	72
Different Types of Bullets	74
Parts of a Bullet	76
Experiment No. 5	77
<b>Chapter VI: Cartridge Case</b>	81
Definitions	81
Functions of Cartridge Case	81
Parts of Cartridge Case	81
Types of Crimps	82
Classification According to Case Shape	83
Classification According to Case Rim	83
Experiment No. 6	85
<b>Chapter VII: Primer</b>	89
Definition	89
Origin	89
Parts of a Primer	90
Formula of Different Primers	90
Two Kinds of Primer	92
Experiment No. 7	93
<b>Chapter VIII: Gunpowder</b>	95
Definition	95
Classification and Composition	95
Experiment No. 8	97
Experiment No. 9	100

<b>Chapter IX: Arms Manufacturing</b>	103
Introduction	103
Making of Rifled Barrels	103
Riflings	105
Composition of Riflings	106
Types of Barrel	106
Experiment No. 10	108
 <b>Chapter X: Firearms Identification</b>	 111
Introduction	111
Firearms Identification	112
Significance of Firearms Identification	112
Principles in Firearm Identification	113
Bullet Identification	113
Principles Involved in Bullet Identification	114
Firearms Characteristics Related to Identification	117
Fired Bullet Identification	121
Results of Bullet Identification	122
Cartridge Case Identification	123
Results of Cartridge Case Identification	123
Experiment No. 11	125
 <b>Chapter XI: Bullet Holes on Glass</b>	 129
Glass	129
Nature of Glass	129
Characteristics of Glass Hole Caused by Bullets	130
Radial and Concentric Cracks	130
Experiment No. 12	134
 <b>Chapter XII: Crime Scene Procedure in Firearm - Related Cases</b>	 137
Introduction	137
Physical Evidence	138
Different Methods of Search	138
Collection of Physical Evidence	140
Evidence Collection, Handling & Transportation	141

<b>Chapter XIII: The Integrated Ballistics Identification System (IBIS)</b>	151
Introduction	151
Integrated Ballistics Identification System (IBIS)	153
IBIS: Philippine Setting	153
Capabilities of IBIS	153
The IBIS Database of the PNP	155
The Configuration of the PNP IBIS	155
Experiment No. 13	156
Experiment No. 14	159
<b>Chapter XIV: Salient Features of Republic Act No. 10591</b>	163
References	171
Appendix A - Sample Ballistics Report	177
Appendix B - Ballistic Data in Ammunition	183