

CONTENTS

<i>Foreword by John Mogford</i>	ix
<i>Acknowledgments</i>	xi
1. INTRODUCTION	1
2. BLIND OPERATIONS	3
Major Airplane Crash at Tenerife Airport, Pan Am 1736/KLM 4805, March 27, 1977	5
MD 83/Shorts 330 Crash at Paris Charles de Gaulle, France, May 25, 2000	10
Three Mile Island Nuclear Reactor Core Meltdown, Pennsylvania, March 28, 1979	17
3. DESIGN	23
Methy Isocyante Release, Bhopal, India, Dec. 3, 1984	25
NASA Challenger Disaster, Florida, USA, January 28, 1986	31
K-Boats - British Steam Powered Submarines in the First World War	38
Loss of Boeing 747-131 TWA Flight 800, July 17, 1996	45
Hindenburg Disaster, Lakehurst, NJ, USA, May 6, 1937	52
4. EXTERNAL CAUSES	57
Mexico City - Pemex LPG Terminal, November 19, 1984	58
Earthquake at Tupras Refinery, Izmit, Turkey, August 17, 1999	64
5. INSPECTION AND MAINTENANCE	69
Fire and Explosion at Whiddy Island, Bantry Bay, Ireland, January 8, 1979	71
Sinking of the "Erika", December 12, 1999	78
Flight TS 236 Loss of Fuel Over the Altantic, August 24, 2001	84
Fire on Board HMS Glasgow, Newcastle-Upon-Tyne, UK, September 23, 1976	91
HF Release at Marathon Oil Refinery, Texas City, USA, October 30, 1987	101
Oil Refinery Explosion and Fire at Texaco Milford Haven, July 24, 1994	105
FCCU Explosion at Total La Mede, France, November 9, 1992	112

6.	KNOWLEDGE AND TRAINING	123
	BLEVE at Elf Refinery, Feyzin, January 4, 1966	125
	Ammonium Nitrate - Dangerous Fertiliser	133
	Massive Dust Explosion at Courrieres Mine, France, March 10, 1906	140
7.	LACK OF HAZID (HAZard IDentification)	149
	Sinking of the Titanic, North Atlantic, April 15, 1912	151
	Sinking of the Petrobras P-36 Semi-Submersible Production Vessel, Roncador Field, Brazil, May 15, 2001	160
	Esso Longford Gas Plant Explosion, Australia, September 25, 1998	167
	Explosion at BP Grangemouth Hydrocracker, March 22, 1987	175
	Reactive Chemicals	184
8.	MANAGEMENT OF CHANGE	193
	Chernobyl, USSR - How a Safety Enhancement Experiment Turned into a World Scale Disaster, April 26, 1986	195
	Dutch State Mines Nypro Plant, Flixborough, UK, June 1, 1974	202
9.	NOT LEARNING FROM NEAR MISSES	209
	The Loss of the Space Shuttle "Columbia," Over Texas, USA, February 1, 2003	211
	The Capsize of the Herald of Free Enterprise, Zeebrugge, Belgium, March 6, 1987	220
	Air France Concorde Crash, Paris, France, July 25, 2000	227
10.	OPERATING PRACTICES	233
	The British R101 Airship Disaster, France, October 5, 1930	235
	Hydrocracker Effluent Pipe Rupture, Tosco, Avon Refinery, California, USA, January 21, 1997	244
	BP Texas City Isomerisation Unit Explosion, Texas, USA, March 23, 2005	251
11.	PERMIT TO WORK SYSTEMS	265
	Motiva Enterprises LLC, Delaware, USA, July 17, 2001	267
	Phillips Pasadena, Texas, October 23, 1989	272
	Piper Alpha Platform, UK, North Sea, July 6, 1988	277
	Shell Port Edouard Herriot Depot, Lyon, France, June 2, 1987	284
	BP Grangemouth Flare Line Fire, Scotland, UK, March 13 1987	287
12.	EMERGENCY RESPONSE	293
	ICMESA Seveso Italy Toxic Cloud Release, July 10, 1976	295
	Sandoz SA Warehouse Fire, Bale, Switzerland, November 1, 1986	300

CONTENTS	vii
Tacoa Power Station Boil Over, Venezuela, December 19, 1982	306
13. HUMAN FACTORS	313
Exxon Valdez, Alaska, July 10, 1976	314
Flash Airlines Boeing 737 Crash, Sharm El Sheikh, Egypt, January 3, 2004	319
GLOSSARY	323
STANDARDS AND REGULATIONS REFERRED TO IN THIS BOOK	325
INDEX	329