



THE
ENCYCLOPEDIA
& GUIDE
TO DIVING

WITH A FULL FACE MASK

Matthew W. Robinson

Diving is an exciting sport as well as a requirement of some vocations such as commercial diving, military diving, public safety diving and scientific diving. In sport diving, most learn to dive with a half mask to cover their eyes and nose. A second stage regulator supplies their breathing gas (air). This method of diving is safe, simple and time tested over the last half century.

The diving scenarios that appear throughout this guide are actual situations that occurred to divers. The author spoke with these divers and recorded their experiences for the educational benefit of the reader. The scenarios are described as the author interpreted each of the experiences. All of the divers and the people that might be associated with their dive experience should not be faulted for any bad situations they came to be in. Every person has had some type of mishap in life and the purpose for sharing these scenarios is to teach and help avoid future incidents that might cost someone their life.

Matthew Robinson lives in Rhode Island, primarily works as a crime scene detective for the City of East Providence Police Department; as a commercial diver for Northeast Diving in Newport, RI; and as a dive instructor with East Bay Dive Center, Warren, RI. Matt has been teaching people to dive since 2008 and has taken part in many diving operations & expeditions over the last decade. Matt has worked under US Coast Guard Cutters and has conducted technical dives to wrecks such as the Empress of Ireland in Canada and the USS Monitor off the coast of North Carolina.

As the police department prepared to institute an underwater search & recovery team, Matt was tasked with developing protocols and identifying required team equipment. These endeavors lead Matt to research full face masks and FFM training for a law enforcement dive team. Matt found that there was little literature in this regard and set about studying full face masks, diving many models, and compiling this text.

 **Trafford**
PUBLISHING®

VD
ILN
BEHNR 4256016522C
KP35
49344889

Prof. Dr. Albrecht
73728 Esslingen am Neckar

Robinson, M: ENCY & GT DIVING W/A FULL F

LIBR
02.08.13
EN 9781466960848
Kt 7

9 781466 960848

00000

10



ISBN 978-1-4669-6084-8

51287



9 781466 960848



THE ENCYCLOPEDIA & GUIDE TO DIVING

WITH A FULL FACE MASK

SSI SCUBA SCHOOLS INT.
® Albrecht Salm
Instructor No. 12653

[Handwritten signature]
02/2012

PADI 
Albrecht Salm
Master Scuba Diver Trainer
PADI MSDT # 33913

Matthew W. Robinson

Contents

Foreword	ix
Acknowledgements	xi
Introduction.....	xvii
Disclaimer	xxi
Chapter 1—What is a full face mask?	1
Features of Full Face Masks	1
Types gas regulation for full face masks	7
Positive pressure vs. non-positive pressure/ semi-positive pressure	8
Breathing gas consumption	11
Full Face Masks vs. Half Masks.....	12
Full Face Masks vs. Commercial FFMs.....	16
Full Face Masks vs. Hard Hats	18
Chapter 2—Evolution of the modern full face mask	20
DESCO Jack Browne mask.....	21
The Aga mask.....	23

Widolf Mask	24	Chapter 5—Catastrophic failures & emergency situations.....	63
Scott Aviation Hydro-pak Diving Mask	25	Face port or mask damage and flood.....	63
The Kirby Morgan BandMask	26	Loss of communications	64
US Divers—Aqua Lung full face mask		Out of breathing gas situations	64
Cressi-Sub & Technisub full face masks	26	Entanglement	66
Kirby Morgan EXO-26	31	Full face mask induced hood or dry suit inflation	67
Double Half Masks Kirby Morgan		Chapter 6—Communications.....	69
SuperMask M48	32	Hand signals	69
Scubapro Full Face Mask	33	Pull Signals.....	71
Continued development	35	Voice communications underwater.....	73
Chapter 3—Additional equipment for		Hardwired communications.....	74
full face mask divers.....	36	Wireless communications.....	77
Spare mask and alternate second stage/octopus.....	37	Chapter 7—Rebreather diving with a full face mask	80
Bail-out breathing gas supply.....	37	Oxygen and the full face mask.....	80
Switch/side block or manifold	38	Adapter kits.....	81
Full Face Mask Quick Disconnect & Swivel	45	Switch blocks & bailouts.....	81
Diver Harness	46	FFM Rebreather Tips.....	82
Chapter 4—General skills for diving in a full face mask.....	49	Chapter 8—Surface supplied diving in FFM.....	83
Pre-dive inspection.....	49	Equipment & personnel necessities	83
Donning a full face mask	53	An introduction to surface supplied.....	84
Entering the water with a full face mask	54	Redundancy	88
Buoyancy characteristics of a full face mask	55	Chapter 9—Contaminated water diving in a FFM	95
Clearing your ears with a full face mask.....	56	What is contaminated water?	95
Clearing a flooded mask.....	59		
Switching to a spare mask and alternate 2nd stage..	60		
Mask removal and replacement underwater.....	61		

Are full face masks appropriate for contaminated water diving?	96
Vehicle recovery	98
Human remains.....	99
Switch blocks for contaminated water diving	99
Decontamination	100
Chapter 10—Equipment cleaning & maintenance.....	103
Appendix A—E-mail from Cressi USA.....	105
Further Reading.....	107
End Notes	111

Foreword

The Encyclopedia & Guide to Diving with a Full Face Mask is the first of its kind and gives a great deal of need to know information on virtually all the full face masks currently in production, as well as those no longer being produced. The guide is packed with pictures and loaded with information presented in a way that can be easily understood by all, from novice recreational, to technical, law enforcement, scientific, military and commercial divers. This guide is a must read for all divers that are contemplating using full face masks, and especially for those currently using full face masks. The guide not only gives information on particular masks but also explains basic full face mask features, attributes, as well as the pros and cons. Matt has done an excellent job!

Mike Ward
President
Dive Lab, Inc.
1415 Moylan Road
Panama City Beach, Florida
32407