

Diving the OTS Guardian Full Face Mask

PADI DISTINCTIVE SPECIALTY COURSE

Instructor Outline

Gerald Bayus Jr MSDT #253092



Photo by John Chapa

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Parts of this PADI Distintive Specialty Instructor Outline are based upon the content of the OTS GFFM Owners Manual. This PADI Distinctive Specialty Instructor Outline is intended to be used in conjunction with the OTS GFFM Owners Manual. Additionally, training videos for the OTS GFFM can be used to supplement the material provided in this PADI Distintive Specialty Course Instructor Outline and can be viewed on OTS's website at:

<http://www.oceantechnologysystems.com/full-face-mask-training-videos/>

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Introduction

This PADI Distinctive OTS GFFM Specialty Instructor Outline is designed to provide the Full Face Mask Instructor with the basis of knowledge to safely teach and dive the OTS Guardian Full Face Mask. This PADI Distinctive Specialty Instructor Outline is designed to familiarize the GFFM diver with knowledge, organization, procedures, techniques, skills, problems, hazards as well as the enjoyment of diving with a full face mask. This PADI Distinctive Specialty Instructor Outline includes an addendum introducing underwater communications for the GFFM and its proper usage applicable to the student who is also using an OTS communication system with his/her GFFM. This course is designed to be conducted in a controlled, supervised environment, which emphasizes fun and safety.

With caution and at the full discretion of the FFM Instructor, this PADI Distinctive GFFM Specialty Instructor Outline may be used with similarly designed FFM's, such as those designed by Interspiro.

Course Objectives

The objectives of this PADI Distinctive GFFM Specialty course are:

1. To develop the diver's knowledge of the Guardian FFM, its features and benefits; correct fit and adjustment; correct installation of the regulator; proper adjustment of equalization features of the GFFM, care and maintenance.
2. To develop the diver's mastery of full face mask diving skills
3. To enable the diver to plan, organize and conduct safe and enjoyable dives using the GFFM.

With this course, the GFFM diver will learn:

1. What is a full face mask (FFM)
2. Reasons for diving an FFM
3. Anatomy and features of the Guardian FFM (GFFM)
4. Pre-dive Setup and Inspection
5. Donning the GFFM
6. Diving the GFFM
7. Emergency Procedures
8. Post-dive Procedures
9. Accessories and an introduction to communications

Consider FFM diving an advanced diving skill set. The primary goal of this training is to bring the GFFM diver to a level where the mask is “second nature”. The GFFM diver should become intimately familiar with the basic operation and component configuration. Learning the features of the mask and the details of proper set-up and use will assist the GFFM diver in experiencing a safe and enjoyable dive.

Course Standards

Minimum Instructor Rating:	PADI Distinctive GFFM Specialty Instructor
Student Prerequisites:	PADI Advanced Open Water or equivalent and at least 10 logged dives beyond Open Water certification dives
Minimum Age:	15 years
Instructor/Student Ratio:	8:1 (confined and open water)
Depth:	Maximum Depth, 60 feet / 18 metres Recommended Depth, 25-40 feet / 6-12 metres
Hours recommended, minimum:	10 hrs
Minimum Confined Water Sessions:	1
Minimum Open Water Dives:	2

GFFM Instructor Prerequisites

To qualify to teach the PADI Distinctive GFFM Specialty course, the Instructor must be a “Teaching Status” PADI Specialty Instructor or higher. PADI Specialty Instructors may apply for the PADI Distinctive GFFM Specialty Instructor rating after completing a Specialty Instructor Training Course with a PADI Course Director, or by providing proof of experience and applying directly to PADI. Reference PADI Professional Ratings in the Professional Membership Guide section of your PADI Instructor Manual.

Supervision

A Teaching status PADI Distinctive GFFM Specialty Instructor must be present and in direct control of all activities, confined and open water and must ensure that all performance requirements are met. After all student divers have successfully demonstrated the required skills, the Instructor may exercise indirect supervision over the balance of the dive(s).

Materials and Equipment Required; Instructor and Student

1. PADI Distinctive GFFM Specialty Instructor Outline (Instructor Only)
2. Guardian FFM User Manual (Instructor and Student)
3. Complete kit of SCUBA equipment w/alternate air source (octo) capable of supplying air to another diver
4. First stage regulator w/IP set at 135 psi +/- 5 psi
5. Spare dive mask
6. Read and understand, in its entirety, the GFFM User Manual
7. OTS Guardian Full Face Mask and all required/included accessories
8. FFM must be in safe, working condition with or without communications
9. Student divers log book
10. OPTIONAL; Read and understand, in its entirety, the OTS Buddy Phone User Guide (if taught with course)

Materials and Equipment Recommended

1. OTS GFFM training videos located on OTS's website or training video included with GFFM purchase
2. GFFM recommended repair kit and tools (if GFFM Technician Certified)
3. Scuba Kit spare parts kit
4. Extra weights in small increments for student trim

Assessment Standards

The GFFM student diver must demonstrate adequate knowledge of the material and mastery of required skills during open water dives. Mastery of skills means the student diver must perform skills (procedures and motor skills) fluidly, with little or no difficulty, in a manner that demonstrates minimal or no stress.

Certification Requirements and Procedures

By the completion of the course, GFFM student divers must complete all performance requirements for Guardian FFM Open Water Dives One and Two.

The certifying instructor must ensure that all certification requirements have been met. The certifying instructor obtains a PADI Distinctive GFFM Specialty certification for the student by submitting a completed, signed PIC for each student to the appropriate PADI office.

This PADI Distinctive GFFM Specialty Outline is to be used for Instructor-led presentation of classroom material, confined water skills and open water dives, conduct and sequence, diving the GFFM. GFFM Distinctive Specialty Instructors are advised not to deviate from the format and order in which this material is presented.

Knowledge Development; Learning Objectives

By the end of the Knowledge Development section, student divers should be able to explain:

1. What is a Guardian “Full Face Mask”
2. Reasons to dive a FFM
3. Safety considerations diving a FFM
4. Anatomy of a GFFM, features and benefit
5. Features of the GFFM mask skirt
6. What is the “Ambient Breathing Valve” and describe proper use
7. What are features, cautions and care of the FFM Visor
8. Preparation and use of the “Quick Detachable Second Stage” and its benefits
9. Considerations for choosing a second stage scuba hose and attachment variations
10. What are the features of the five-point strap system of the GFFM
11. Explain the “Air-Flow System” of the GFFM and CO₂ buildup/retention
12. Explain considerations in choosing a first stage regulator
13. Demonstrate operation of the second stage Quick Release
14. Explain pre-dive setup and inspection
15. How to properly don the GFFM
16. Discuss the skills a diver must master diving the GFFM
 - a. Flood and clear the GFFM
 - b. Removing the GFFM mask underwater (ditching exercise)
 - c. Donning the GFFM underwater
 - d. Emergency skills
17. Discuss emergency/bailout procedures diving the GFFM
18. Describe post dive procedures, care and maintenance
19. Discussion of redundant gas supplies and systems
20. Discussion about various alternate air sources, advantages and disadvantages of each
21. Discuss considerations when diving in questionable or contaminated water
22. Discuss considerations when diving in cold water
23. Discuss considerations when diving with neoprene and latex hoods
24. Discuss characteristics of hydrostatic pressure and how it affects diving the GFFM
25. Discuss the misconceptions of diving a FFM
26. Discuss the proper care and maintenance of the GFFM
27. Discussion of Underwater Communications and benefits
28. OPTIONAL: Discuss proper use of the OTS Buddy Phone

CONFINED WATER DIVES; Performance Requirements/Conduct

The confined water session(s) provides the training required for student divers to learn and practice the required FFM skills to mastery. Skills marked with an asterisk (*) below denote skills which the FFM Instructor must demonstrate underwater prior to student divers performing the skill.

By the end of the confined water training session, (under Direct Instructor Supervision) student divers will be able to:

- **Prepare the GFFM (or FFM of similar design) for diving**
 - **Adjust the equalizing assembly for proper equalization**
 - **Assemble the FFM, properly attaching to the scuba kit**
 - **Connect/Disconnect the second stage regulator from the mask body**
- **Demonstrate pre-dive setup and inspection of the FFM**
- **Donn and adjust the FFM to achieve a watertight fit**
 - **Proper pre-dive adjustment and set-up of the 5 point strap system/head harness (buckles and straps)**
 - **Chin firmly seated**
 - **Back of 5 point strap system low on rear of head, centered**
 - **Adjust and tighten jaw strap first**
 - **Adjust and tighten temple strap second**
 - **Adjust top strap last, if at all or only as necessary for smaller faces**
- **Demonstrate proper use of the ABV**
- **Close ABV, look at SPG, take 3 deep breaths and verify no significant movement of the pressure gauge to ensure air is fully turned on**
- **Perform remainder of pre-dive safety check (scuba kit)**
- **Prepare for and enter the water**
- **Underwater, adjust the FFM if necessary to ensure a watertight fit**
- **Practice breathing the FFM form both nose and mouth while under water**
- **Demonstrate the ability to equalize air spaces while diving the FFM**
- ***While acclimating to the FFM in shallow water, note breathing performance at different attitudes (looking up, down, side to side)**
- ***While positioned upright underwater, slide one or two fingers under the side of the skirt to observe positive pressure**
- ***While upright underwater, open and close the ABV to observe there is no leaking**
- ***While underwater, invert position and open and close ABV to observe that the FFM can flood**
- ***Loosen straps, pull out on mask to partially flood and clear the FFM while underwater**
- ***Fully flood and clear the FFM while underwater**
- ***Remove and replace the FFM while under water**

- ***Simulate second stage regulator malfunction; Free-flow or Blockage**
 - Locate and secure personal alternate air source
 - Loosen lower straps and remove FFM
 - Begin breathing for alternate air source
 - Don spare mask
 - Terminate dive and begin normal ascent
- ***Simulate out-of-air emergency; buddy present and close by**
 - Give normal out-of-air signal
 - Locate buddy's alternate air source
 - Loosen lower straps and remove FFM
 - Don spare mask
 - Terminate dive and begin alternate air source ascent
 - Perform a neutrally buoyant alternate air source ascent from the bottom at a rate of no faster than 18metres/60ft per minute (10 metres/30ft per minute recommended)
- ***Simulate out-of-air emergency, buddy not present or close by**
 - FFM's contain a small amount of air, it is possible to make a controlled emergency swimming ascent (CESA) without removing the FFM
 - As you ascend, air remaining inside the mask will expand and make more available
 - At the surface, remove mask and breath normally
- **After exiting the water, have students demonstrate proper post-dive care and maintenance of the FFM**
- **Debrief student divers**
- **OPTIONAL: If taught with this course, student divers must demonstrate proper use of the OTS Buddy Phone**

OPEN WATER DIVES; Performance Requirements/Conduct

General Open Water Considerations

- **Involve students in pre-dive planning activities. Pay attention to student diver anxiety and stress levels. Evaluate and review student diver equipment preparedness.**
- **Conduct a thorough briefing; equipment, objectives, dive site**
- **Assign student diver buddy teams**

DIVE ONE; Performance Requirements

- **Dive Briefing, Evaluate dive site and conditions, entry and exit techniques, maximum depth range for training dives, minimum tank pressure terminating dive**
- **Prepare the GFFM (or FFM of similar design) for diving**
 - **Adjust the equalizing assembly for proper equalization**
 - **Assemble the FFM, properly attaching to the scuba kit**
 - **Connect/Disconnect the second stage regulator from the mask body**
- **Demonstrate pre-dive setup and inspection of the FFM**
- **Donn and adjust the FFM to achieve a watertight fit**
 - **Proper pre-dive adjustment and set-up of the 5 point strap system/head harness (buckles and straps)**
 - **Chin firmly seated**
 - **Back of 5 point strap system low on rear of head, centered**
 - **Adjust and tighten jaw strap first**
 - **Adjust and tighten temple strap second**
 - **Adjust top strap last, if at all or only as necessary for smaller faces**
- **Demonstrate proper use of the ABV**
- **Close ABV, look at SPG, take 3 deep breaths and verify no significant movement of the pressure gauge to ensure air is fully turned on**
- **Perform remainder of pre-dive safety check (scuba kit)**
- **Prepare for and enter the water**
- **Buoyancy check at the surface**
- **Descent and Equalization; Indicate and demonstrate proper descent and equalization procedures**
- **Underwater, adjust the FFM if necessary to ensure a watertight fit**
- **Clear a partially flooded mask; Loosen straps, pull out on mask to partially flood and clear the FFM while underwater**
- **Fully flood and clear the FFM while underwater**
- **Remove and replace the FFM while under water**
- **Demonstrate proper underwater communication skills (hand signals)**
- **Conduct underwater tour while demonstrating proper FFM use**
- **Exit water; Post dive procedures and briefing; log dive; Instructor sign log books**
- **OPTIONAL: If taught with this course, student divers must demonstrate proper use of the OTS Buddy Phone**

DIVE TWO; Performance Requirements

- **Dive Briefing, Evaluate dive site and conditions, entry and exit techniques, maximum depth range for training dives, minimum tank pressure terminating dive**
- **Prepare the GFFM (or FFM of similar design) for diving**
 - **Adjust the equalizing assembly for proper equalization**
 - **Assemble the FFM, properly attaching to the scuba kit**
 - **Connect/Disconnect the second stage regulator from the mask body**
- **Demonstrate pre-dive setup and inspection of the FFM**
- **Donn and adjust the FFM to achieve a watertight fit**
 - **Proper pre-dive adjustment and set-up of the 5 point strap system/head harness (buckles and straps)**
 - **Chin firmly seated**
 - **Back of 5 point strap system low on rear of head, centered**
 - **Adjust and tighten jaw strap first**
 - **Adjust and tighten temple strap second**
 - **Adjust top strap last, if at all or only as necessary for smaller faces**
- **Demonstrate proper use of the ABV**
- **Close ABV, look at SPG, take 3 deep breaths and verify no significant movement of the pressure gauge to ensure air is fully turned on**
- **Perform remainder of pre-dive safety check (scuba kit)**
- **Prepare for and enter the water**

EMERGENCY PROCEDURES

- **Simulate second stage regulator malfunction; Free-flow or Blockage**
 - **Locate and secure personal alternate air source**
 - **Loosen lower straps and remove FFM**
 - **Begin breathing for alternate air source**
 - **Don spare mask**
 - **Terminate dive and begin normal ascent**
- **Simulate out-of-air emergency; buddy present and close by**
 - **Give normal out-of-air signal**
 - **Locate buddy's alternate air source**
 - **Loosen lower straps and remove FFM**
 - **Don spare mask**
 - **Terminate dive and begin alternate air source ascent**
 - **Perform a neutrally buoyant alternate air source ascent from the bottom at a rate of no faster than 18metres/60ft per minute (10 metres/30ft per minute recommended)**
- **Simulate out-of-air emergency, buddy not present or close by**
 - **FFM's contain a small amount of air, it is possible to make a controlled emergency swimming ascent (CESA) without removing the FFM**
 - **As you ascend, air remaining inside the mask will expand and make more available**
 - **At the surface, remove mask and breath normally**

- **Demonstrate proper underwater communication skills (hand signals)**
- **Conduct underwater tour while demonstrating proper FFM use**
- **Exit water; Post dive procedures and briefing; log dive; Instructor sign log books**
- **OPTIONAL: If taught with this course, student divers must demonstrate proper use of the OTS Buddy Phone**