

# **INTRODUCTION TO TETHER DIVING**

Jack Ryan

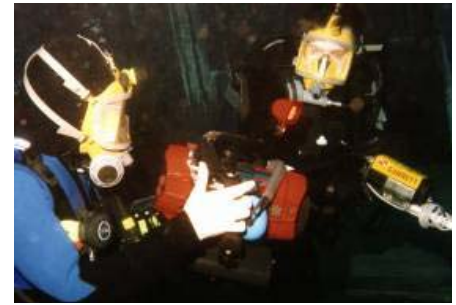
Training Lt.

Travis County Dive Team

February 4, 2009



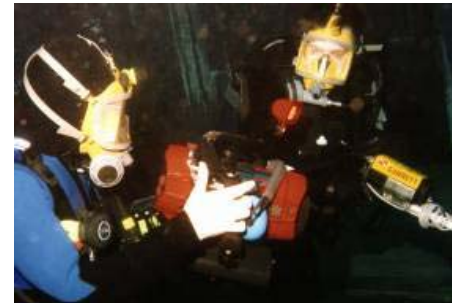
# **TETHER DIVING (Arc Search)**



- **Diver swims a series of arcs of decreasing radius with Tender remaining in one location.**
- **Tender controls reversal locations.**
- **Diver must maintain taut tether.**
- **Diver must constantly be feeling for line signals from Tender.**



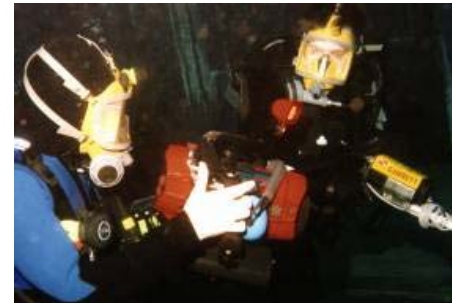
# EQUIPMENT



- **Harness:**
  - Worn under BC
  - Off center chest attachment D-ring
  - Tether line attached with locking carabiner.
- **Tether Line:**
  - No longer than 150 ft.
  - Buoyant swift-water rescue line.
- **Contingency Line:**
  - Attached to Back-up diver's harness
  - Attached to primary diver's tether line
  - 5" to 7" in length with quick release

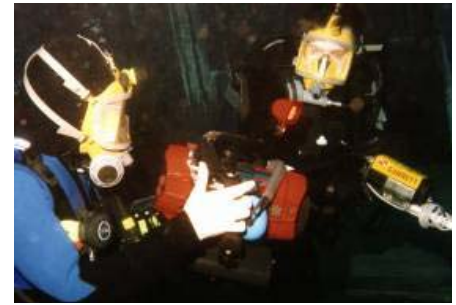


# EQUIPMENT (Tether Harness)





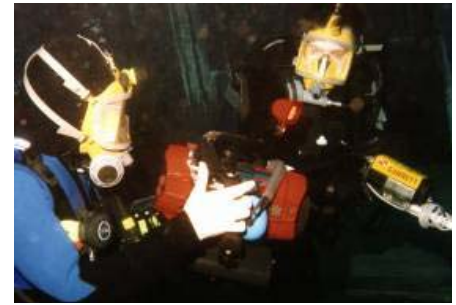
# EQUIPMENT (Rope Attached)





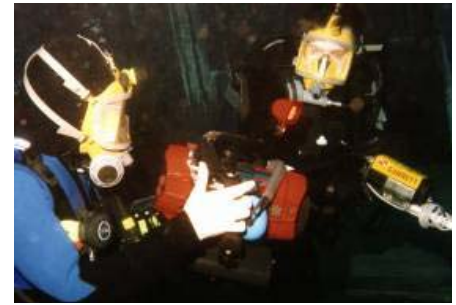


# EQUIPMENT (Contingency Line)





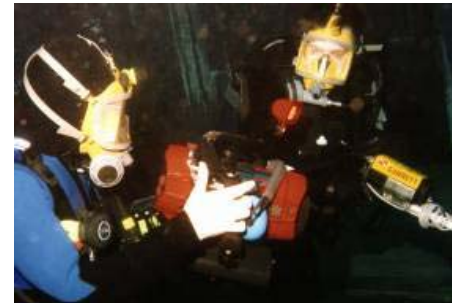
# **LINE SIGNALS (To Diver)**



- **1 Pull – Stop, face line, take up slack and prepare for new signal.**
- **3 Pulls – Go to diver's right**
- **4 Pulls – Go to diver's left**
- **2+2 Pulls – Search immediate area**
- **3+3 Pulls – Standby and prepare to surface.**
- **4+4 Pulls - Surface**



# **LINE SIGNALS (From Diver)**

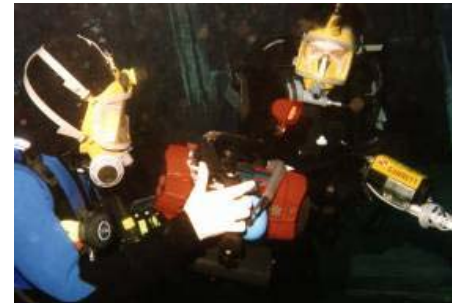


- **1 Pull – I am OK**
- **2 Pulls – Tender make note**
- **6 Pulls – Found target**
- **2+2+2 Pulls – Entangled but OK**
- **3+3+3 Pulls – OK but need help from back up diver.**
- **4+4+4 Pulls – Need help immediately.**





# Layout



- **Tender**
- **Primary Diver**
- **100% Backup Diver**
- **Profiler**
- **90% Backup Diver**

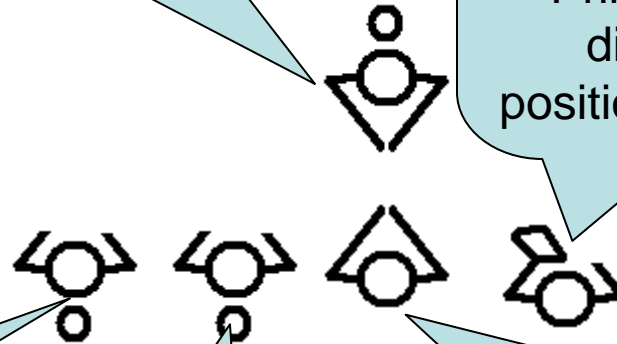
**PRIMARY DIVER**  
Responds to Tender  
and executes search  
pattern

**PROFILER**  
Keeps a record of  
search including  
Primary Diver's  
discoveries,  
position, and status.

**90% BACKUP DIVER**  
Ready to respond if  
problem escalates.  
Ready to go with some  
notice.

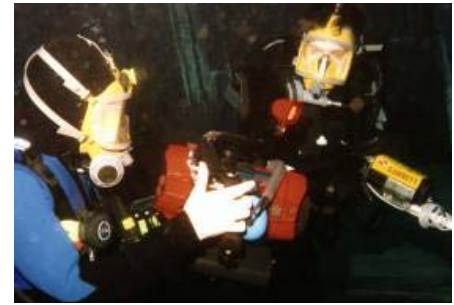
**100% BACKUP DIVER**  
Ready to respond if  
Primary Diver is in  
trouble. Full Gear.

**TENDER**  
Controls and Monitors  
the Diver in the Water  
(Primary Diver's Tender)

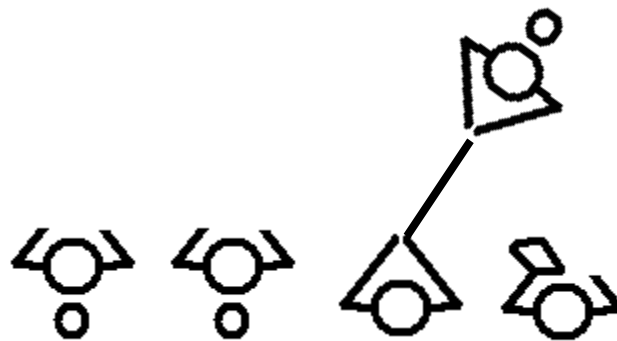




# Deploy

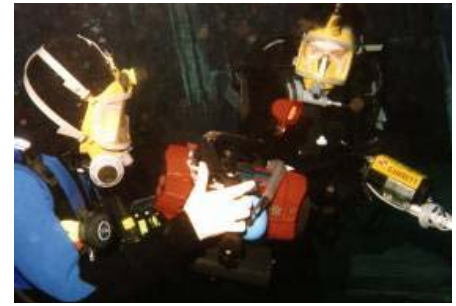


- **Profiler Starts Map of Target Area using fixed landmarks**
- **Tender starts search pattern by paying out rope. Tells profiler amount of rope.**
- **Diver backs into water taking up slack from Tender**
- **Profiler records Divers beginning air and initial position.**
- **Backup Divers Stand By**

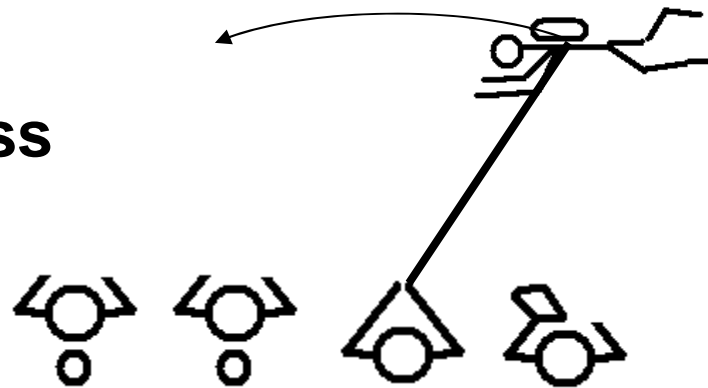




# Begin

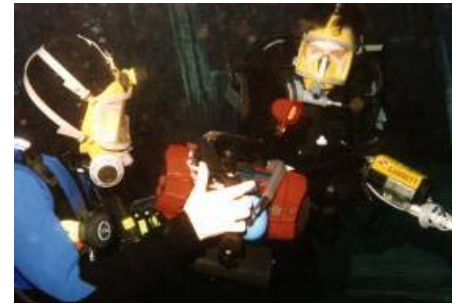


- Diver Descends and starts swimming pattern.
- Tender watches diver.
- Diver Communicates with tender via rope or radio
- Profiler records progress

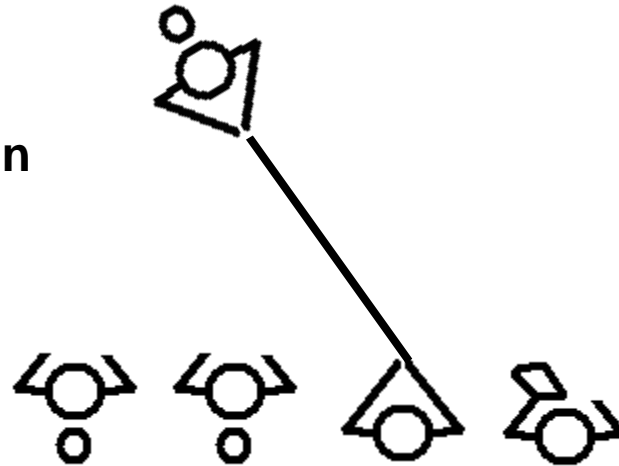




# Turn (Divers left)

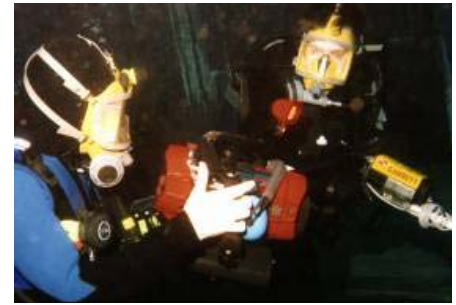


- Tender stops Diver with one pull as arc reaches edge of pattern
- Diver stops and turns to face Tender
- Tender pays out known length of line
- Diver Takes up slack
- Tender gives 4 pulls to signal diver to turn to his left and begin searching again.
- Diver turns to the left and continues pattern
- Profiler records length of line paid out.

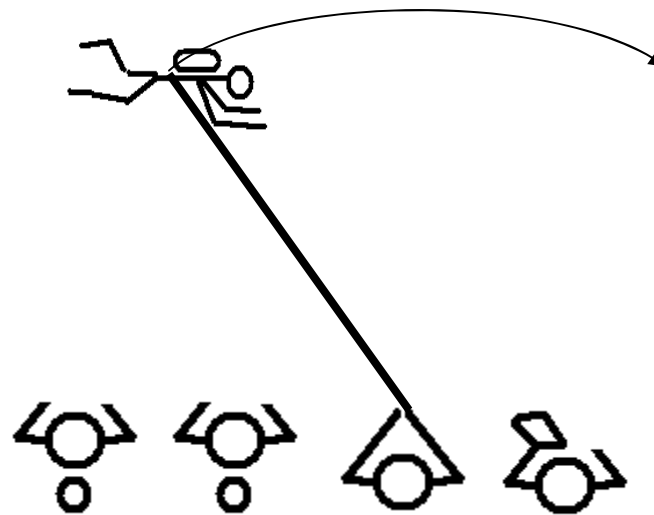




# Continue



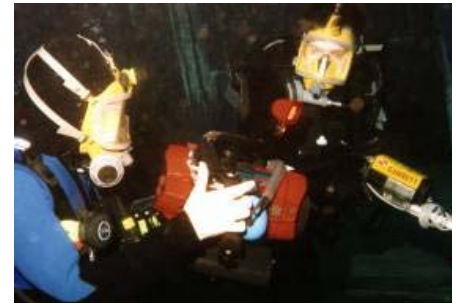
- Pattern continues to the right.
- Diver Searches.
- Tender watches Diver
- Profiler records progress.



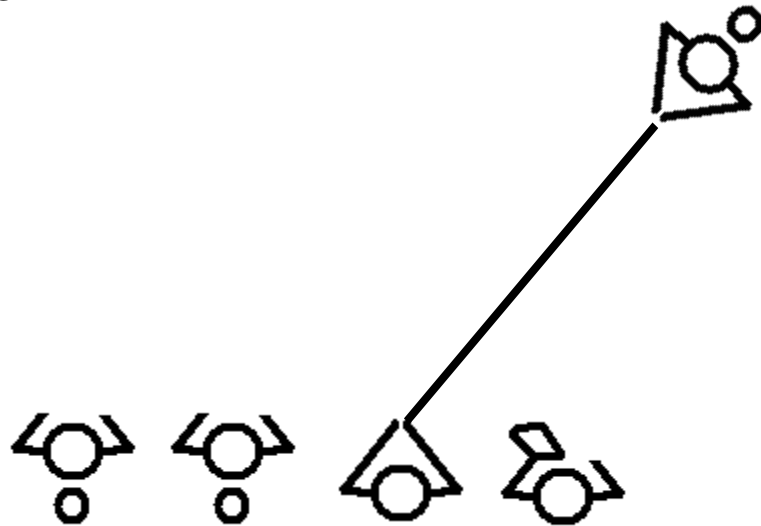




# Turn (Divers Right)

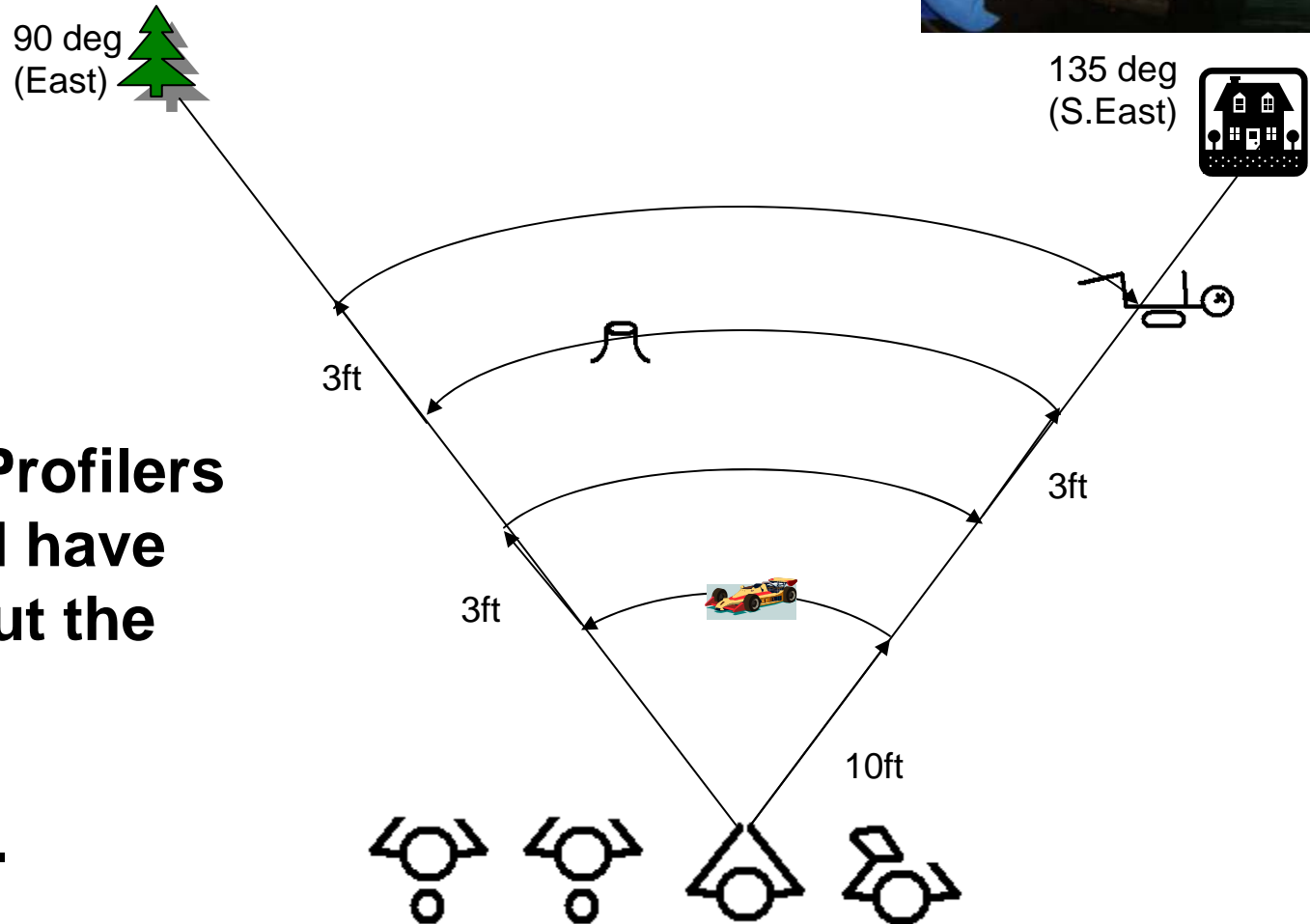
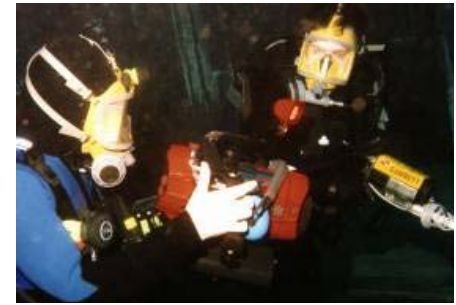


- Tender stops Diver with one pull as arc reaches edge of pattern
- Diver stops and turns to face Tender
- Tender pays out known length of line.
- Diver Takes up slack
- Tender gives 3 pulls to signal diver to turn to his right and begin searching again.
- Diver turns to the right and continues pattern
- Profiler records length of line paid out.





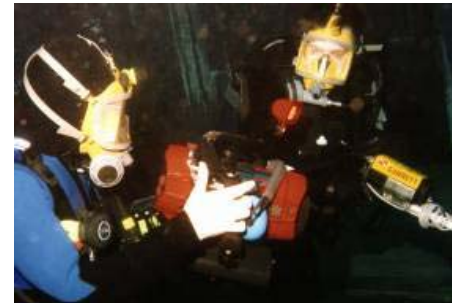
# Profiler's Map



- **After Dive Profilers Map should have details about the search and everything discovered.**



# Questions?



- Jack Ryan
  - PADI OW & Specialty Instructor
- Contact:
  - Home – 496-1976
  - Jack.scuba@gmail.com