

An underwater photograph showing three divers in silhouette against the blue water. They are positioned around a large, cylindrical metal structure, likely part of a ship's hull or a large pipe. The lighting is dim, with some light rays filtering through the water from above. The divers are wearing full scuba gear, including tanks and fins. The overall scene conveys a sense of industrial work in a hazardous aquatic environment.

K3 PEKERJAAN DALAM AIR

PEKERJA SELAM

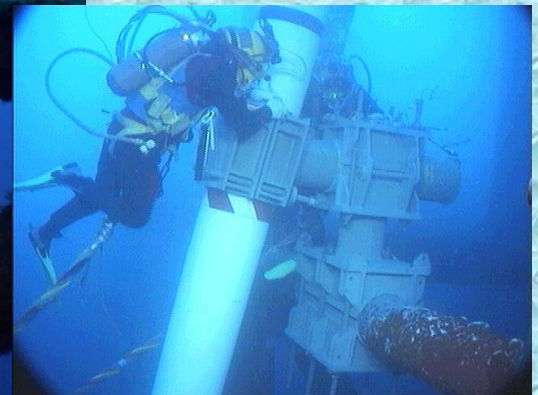
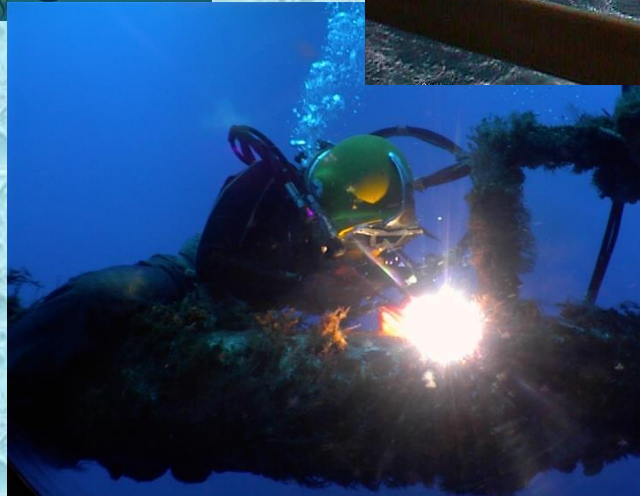
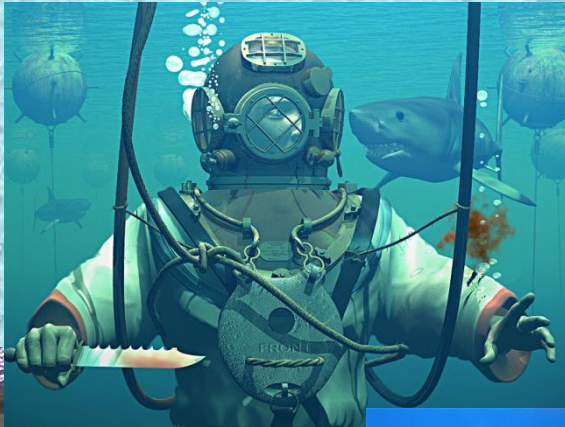
PEKERJA SELAM

- Orang yang bekerja didalam air dan mendapat tekanan atmosphere lebih dari 1 atm



BEKERJA DI DALAM AIR

- BEKERJA DIBAWAH AIR → LINGKUNGAN BERBAHAYA



ESTIMASI RESIKO AKTIVITAS DALAM AIR

Population	Risk	Source	Accuracy
Mortality			
Recreational divers	1/6250 divers/yr	DAN USA ²	Estimation
Sports Divers (UK)	1/5000 divers/yr	HSE/BSAC ⁶⁶	Estimation
Occupational Divers (UK)	1/21000 divers/yr	HSE	Fact
Occupational Divers (Alaska)	1/600 divers/yr	CDC 1989-97 ⁶⁷	Fact
Decompression sickness (DCS and AGE)			
Military Divers (US)	1/76000 dives	Arness ⁶⁸	Estimation
Recreational Divers (Aus)	1/15000 dives	SPUMS ⁶⁹	Estimation
Recreational Divers (USA)	1/2900 dives	Bove ⁷⁰	Fact
Commercial Divers (USA)	1/280 dives	Bove ⁷⁰	Fact
Military Divers (USA)	1/3770 dives	Bove ⁷⁰	Fact
Recreational Divers <-30m (Europe)	1/40228 dives	DAN Europe ⁷¹	Estimation
Recreational Divers (any depth) (Euro)	1/6604 dives	DAN Europe ⁷¹	Estimation
Sports Divers (UK)	1/10500 dives	BSAC ⁶⁶	Estimation
Sports Divers (Cold Water Wrecks)	1/270 dives	DAN USA ²	Fact
Dive Instructors Liveaboard	1/1000 dives	DAN USA ²	Fact
Sports Divers (Cold Water)	1/1250 dives	Trevett et al. ⁷²	Fact

KECELAKAAN KERJA



Oil & Gas Related Offshore Diving Fatalities in the North Sea Since 1971 (21 Primary, Secondary or Contributory Causes Involved)

Nov 2007

Identified Causes	Number Related Accidents	Specific Accidents, identified by chronological ranking where each given cause was a factor
Poor / Inadequate Supervision	21	1-3-10-11-13-16-18-20-21-23-25-29-36-40-42-45-46-49-51-52-53
Poor / Inadequate Diver Training	17	2-5-7-8-10-12-13-14-16-18-20-26-28-32-34-37-44
Poor / Inadequate Equipment Design	17	2-5-7-8-13-21-24-28-33-36-38-39-43-46-47-50-51
Use of SCUBA Technique	15	1-4-6-9-12-17-18-19-22-26-27-29-30-32-41
Diver or Diver Equipment Entanglement	14	2-3-13-14-25-29-34-37-39-40-44-47-51-53
Poor Worksite Management or Organisation	13	15-35-36-39-40-42-45-46-49-50-51-52-53
Poor / Inadequate Communication or Cover up	12	12-13-15-16-18-23-30-36-43-49-50-52
Traumatic Injury other than Asphyxia or Drowning	12	12-15-24-35-42-43-46-47-48-49-50-52
Poor / Incompetent Rescue	7	1-8-20-32-46-48-51
Poor Launching System or Procedure	6	1-24-29-30-42-47
Diver Over-Exertion	6	4-8-16-17-31-48
Wrong Gas Supplied to Diver	5	11-16-23-36-45
Dynamic Positioning	4	37-40-42-49
Mismanagement of Change	4	7-24-25-52
Bad Weather Conditions	4	14-25-29-37
Unappreciated Differential Pressure	3	5-15-19
Poor / Incompetent Medical Management / Treatment	3	3-10-45
Pre-Existing Undetected Medical Condition	3	9-17-48
Transfer Under Pressure Failure or Inadvertant Operation	2	21-43
Hypothermia	2	1-16
Hyperthermia	1	21

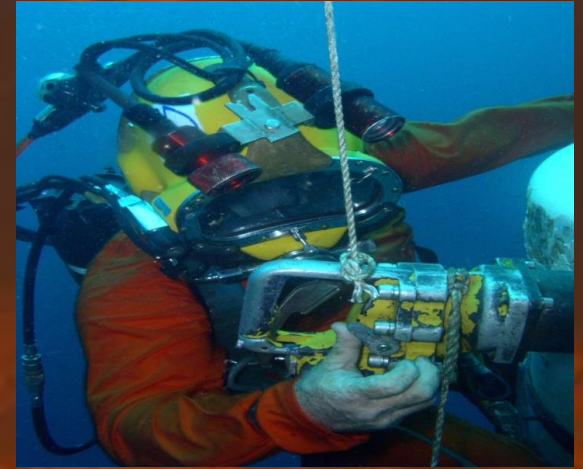
STANDART

- KOMPETENSI PENYELAM
- PERALATAN YANG DIPAKAI
- INSTALASI ALAT YANG DIPERGUNAKAN
- PROSEDUR OPERASI PENYELAMAN



PENGAKUAN KOMPETENSI

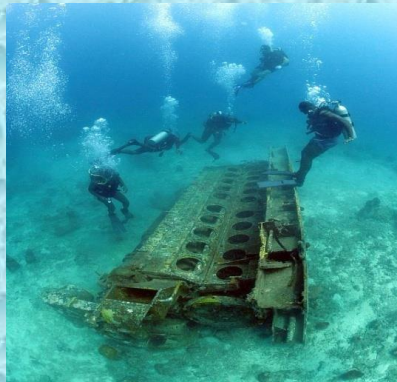
- Diri sendiri
- Perusahaan
- Nasional
- Internasional



KLASIFIKASI KOMPETENSI

KEPUTUSAN DIREKTUR JENDERAL PEMBINAAN PENGAWASAN KETENAGAKERJAAN
NO. KEP. 64 / PPK / XI / 2013

- PEKERJA SELAM KELAS 1 / COMMERCIAL SCUBA
- PEKERJA SELAM KELAS 2 / SSBA DIVER
- PEKERJA SELAM KELAS 3 / SATURATION DIVER

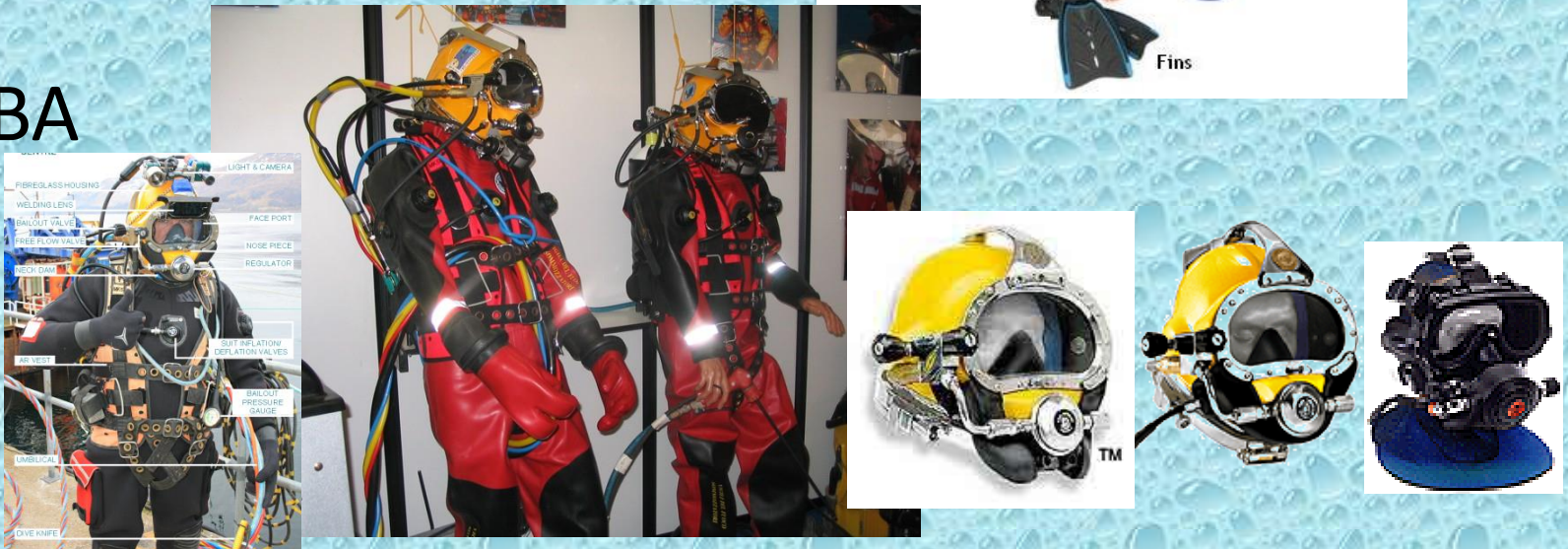


CONTOH PERALATAN

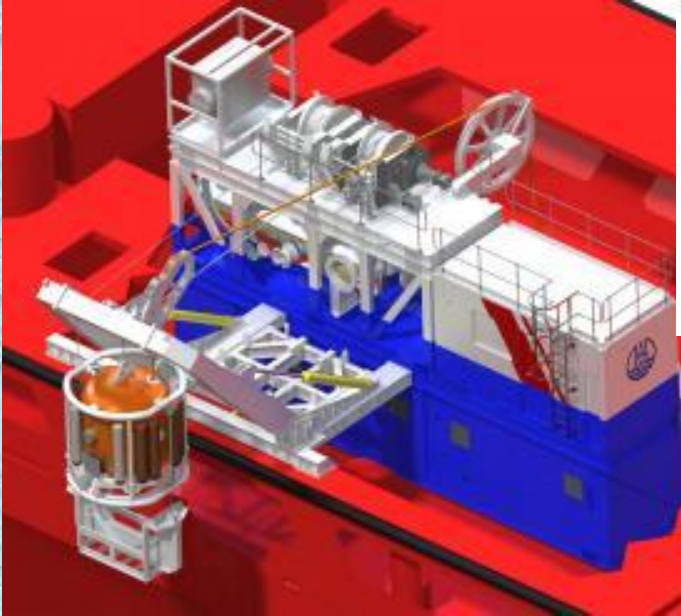
- SCUBA



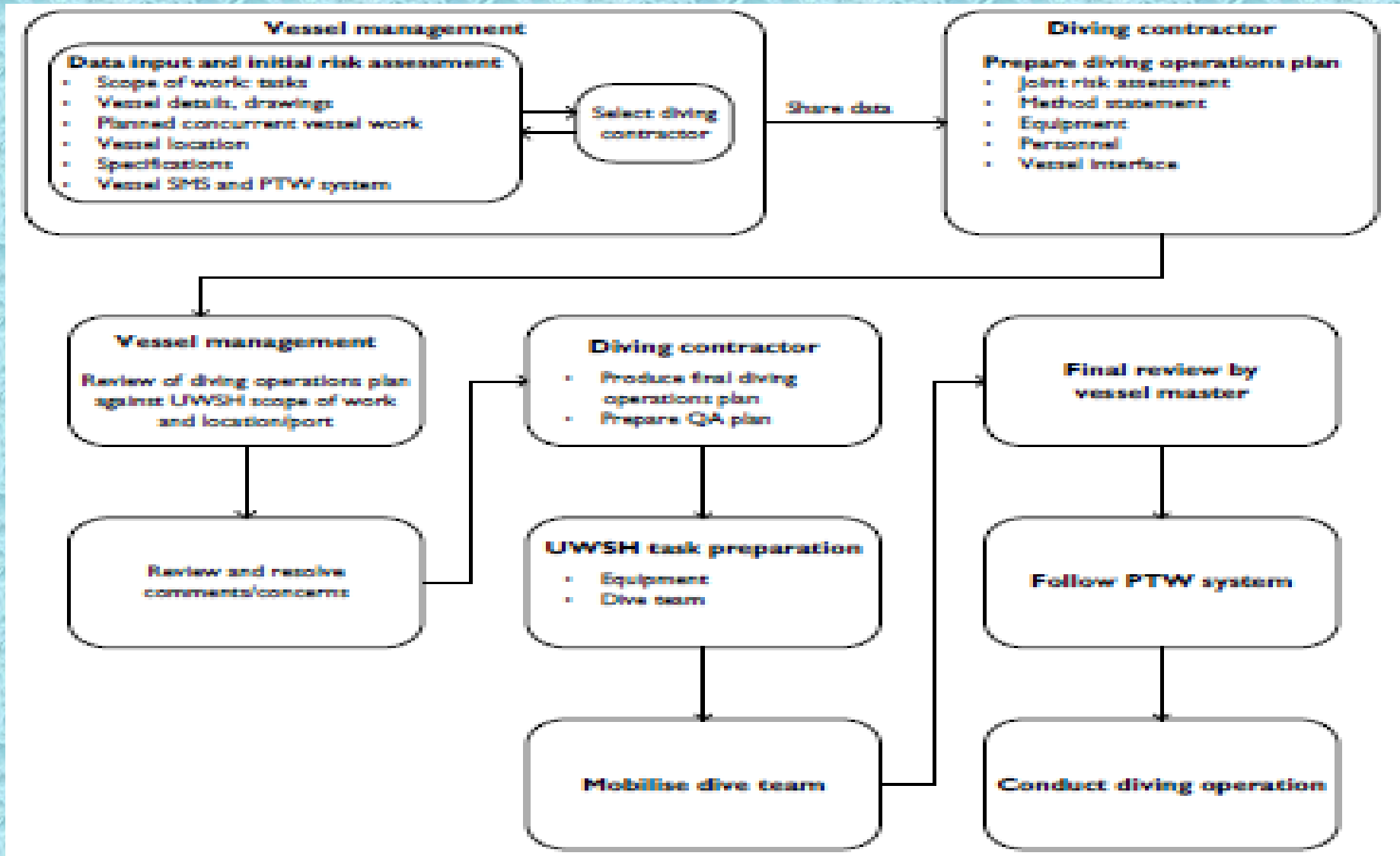
- SSBA



CONTOH INSTALASI PERALATAN



contoh management underwater ship husbandry operation



A large offshore supply vessel is shown at sea. The vessel has a dark hull and a white superstructure. A large crane is mounted on the deck, and a red and white flag is flying from the top. The vessel is moving through the water, leaving a wake. The sky is blue with some clouds.

BE PREPARE

BE SAFE