

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium (He) / oxygen (O2), Heliox, while on working depth, and periodically changing between air and oxygen while doing decompression in the chamber.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	---	--------------------------	-------------------------------------	-------------------	-----------------------------------	----------------

1966						
1	July 19 <sup>th</sup> (08:20 hrs.) Oct 10 <sup>th</sup>	Ocean Traveler (Attachment: 1)	Esso Expl. Nor 8/3-1	Ocean Systems (Attachment: 2)	94	The first heliox dive in the North Sea was performed on July 21 <sup>st</sup> by the American diver Lyle Kirlin. It was a surface supplied dive with a Yokohama gas helmet. The onboard diving bell system was not fully operational for the first week, awaiting the installation of a bell-winch. The early OSI divers onboard were Lyle Kirlin (Ops. mgr. Stvgr. - Supervisor), Jim Thompson (Supervisor), Dan Eden, Bob Colomy and Jerry Todd. With the Norwegian divers Odd Gåskjenn and Idar Johnsen (Attachment: 3)
2	Oct 18 <sup>th</sup> July 9 <sup>th</sup>	Ocean Traveler	Esso Expl. Nor 25/11-1	Ocean Systems	127	Idar Johnsen became the first Norwegian diver performing a heliox bell dive in early November 1966, when he completed a bell dive with Jim Thompson as bellman. Odd Gaaskjenn did his first bell dive on heliox in May 1967, with Lyle Kirlin as bellman.

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	-----------------------------------	--------------------------	-------------------------------	-------------------	-----------------------------	----------------

1967						
	Mar 25 <sup>th</sup> July 11 <sup>th</sup>	Ocean Viking	Total 47/05 UK	Sanford Brothers (Attachment: 4)		Ocean Viking's first well drilled in British sector
3	July 11 <sup>th</sup> Aug 9 <sup>th</sup>	Ocean Traveler	Esso Expl. Nor 16/2-1	Ocean Systems	113	
4	July 14 <sup>th</sup> - Oct 31 <sup>th</sup>	Ocean Viking	PPCON 16/11 -1	Sanford Brothers	67	First fatal offshore diving accident on October 3 <sup>rd</sup> 1967, in Norwegian sector. 23 year old British diver Roger John Lyons, while doing water stop decompression, ascended uncontrolled to surface. Rapid decompression, Pulmonary barotraumas resulting in pneumothorax. (Ref.: NPD Paper no 4, Rogaland Avis, Oct. 4 <sup>th</sup> 1967)
5	Aug 11 <sup>th</sup> Sept 24 <sup>th</sup>	Ocean Traveler	Esso Expl. Nor 16/7-1	Ocean Systems	80	OSI divers Randal Green, Craig Marley, Chuck Cooper, John Terrell and William (Bill) Welling joined the OSI Stavanger diving team in 1967.
6	Sept 26 <sup>th</sup> Dec 10 <sup>th</sup>	Ocean Traveler	Esso Expl. Nor 16/1-1	Ocean Systems	115	
7	Nov 7 <sup>th</sup> Jan 19 <sup>th</sup>	Ocean Viking	Elf Petr. Norge 16/6-1	Sanford Brothers	117	
8	Nov 28 <sup>th</sup> July 2 <sup>nd</sup>	Drillship	Amoco Norway 2/8-1	Ocean Systems	69	Some of the OSI divers onboard Drillship was Fred Dietrich (Supervisor), Jerry (?), Idar Johnsen, Odd Gaaskjenn and some unknown British divers. Most of the dives were made using the Yokohama mixed gas diving helmet. Leif-Tore Skjerven had his first trip offshore onboard Drillship on Thursday March 28 <sup>th</sup> 1968. Demobilizing of the onboard OSI bell diving equipment commenced Friday July 19 <sup>th</sup> 1968, prior to the rig transferred to location in the Mediterranean Sea. This equipment was later to be installed onboard Glomar North Sea.

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	-----------------------------------	--------------------------	-------------------------------	-------------------	-----------------------------	----------------

1968						
<b>Comex</b>		Ocean Viking was alongside Rosenberg Shipyard, Stavanger for repair and strengthening from January 22 <sup>nd</sup> to February 25 <sup>th</sup> . The Sanford Brother equipment was demobilized, and Compagnie Maritime d'Expertises (Comex) was awarded the new diving contract, and mobilized their equipment onboard. This was the first offshore diving contract by Comex in the North Sea.				
9	Feb 25 <sup>th</sup> June 15 <sup>th</sup>	Ocean Viking	PPCON 7/11-1	<b>Comex</b> (Attachment: 5)	78	
10	Mar 31 <sup>st</sup> May 19 <sup>th</sup>	Endeavour	Conoco Norway 9/4-1	<b>Ocean Systems</b>	68	The OSI divers Craig Marley, John Terrell, Bill Welling, Odd Gaaskjenn, and Leif-Tore Skjerven had the first mobilisation onboard Endeavour on Monday April 6 <sup>th</sup> 1968. Later two British divers Pat (?) and Chris (?) joined the OSI diving crew. On Wednesday April 10 <sup>th</sup> Leif-Tore Skjerven had his first observation dive in a diving bell with Bill Welling. Endeavour was the first Jack-Up rig in Norwegian sector.
11	May 8 <sup>th</sup> July 12 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 16/9-1	<b>Ocean Systems</b>	89	OSI commenced mobilisation of the OSI diving system onboard Glomar Grand Isle on Monday April 22 <sup>nd</sup> . The OSI crew was Jim Thompson, Craig Marley, John Terrell, Bill Welling, Odd Gaaskjenn, and Leif-Tore Skjerven. On Friday May 31 <sup>st</sup> Leif did his first heliox bell dive, locking out with Jim Thompson as bell man.
12	May 23 <sup>rd</sup> June 29 <sup>th</sup>	Endeavour	Esso Expl. Nor 9/8-1	<b>Ocean Systems</b>	68	
13	May 24 <sup>th</sup> June 30 <sup>th</sup>	Orion	Norske Shell 17/11-1	<b>Divcon</b> (Attachment: 6)	75	
14	June 17 <sup>th</sup> Aug 26 <sup>th</sup>	Ocean Viking	Elf Petr. Norge 17/4-1	<b>Comex</b>	105	
15	July 6 <sup>th</sup> Nov 11 <sup>th</sup>	Orion	Norske Shell 1/3-1	<b>Divcon</b>	71	

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig  Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
		<b>Divcon</b> Ocean Traveler was alongside Rosenberg Shipyard, Stavanger, for repair and strengthening from December 14 <sup>th</sup> 1967 to July 17 <sup>th</sup> 1968. The Ocean Systems equipment was demobilized, and Divcon was awarded the new diving contract, and mobilized their equipment onboard.				
16	July 21 <sup>th</sup> Oct 14 <sup>th</sup>	Ocean Traveler	PPCON 7/11-2	Divcon	82	Idar Johnsen stayed with the rig, now employed by Divcon.
17	Aug 31 <sup>st</sup> Oct 18 <sup>th</sup>	Gulf Tide	Gulf Expl. 7/12-1	Comex	71	
18	Aug 31 <sup>st</sup> Feb 5 <sup>th</sup> -69	Ocean Viking	PPCON 7/8-1	Comex	82	
19	Oct 17 <sup>th</sup> Feb 7 <sup>th</sup> -69	Ocean Traveler	PPCON 7/11-3	Divcon	79	
		<b>Oceans Systems</b> OSI had the diving contract onboard the drillship "Glomar North Sea" offshore Mauritania and Spanish Sahara from Early-November 1968 to Late-November 1969. This initiated the first agreement with 3X Diving Company (Attachment: 7) for the supply of local divers to an international diving company.				
20	Dec 30 <sup>th</sup> Mar 24 <sup>th</sup> -69	Sedneth 1	Norske Shell 17/10-1	Divcon	88	

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig  Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	---	------------------------------	-------------------------------------	-------------------	-----------------------------------	----------------

1969						
21	Feb 10 <sup>th</sup> Apr 3 <sup>rd</sup>	Ocean Traveler	Norske Murphy 2/3-1	Divcon	59	
22	Mar 28 <sup>th</sup> 06 May 6 <sup>th</sup>	Sedneth 1	Norske Shell 9/12-1	Divcon	61	
23	Apr 7 <sup>th</sup> June 10 <sup>th</sup>	Orion	Amoco Norway 7/3-1	Divcon	64	
24	Apr 21 <sup>st</sup> May 30 <sup>th</sup>	Ocean Viking	Elf N. 2/6-1	Comex	69	
25	May 14 <sup>th</sup> July 27 <sup>th</sup>	Sedneth 1	Norske Shell 1/3-2	Divcon	73	
26	May 30 <sup>th</sup> July 1 <sup>st</sup>	Ocean Viking	PPCON 8/10-1	Comex	66	
27	July 2 <sup>nd</sup> July 31 <sup>st</sup>	Ocean Viking	PPCON 7/11-4	Comex	79	Mime Field
28	July 14 <sup>th</sup> Oct 3 <sup>rd</sup>	Orion	Amoco Norway 2/11-1	Divcon	68	Valhall Field)
29	July 26 <sup>th</sup> Aug 31 <sup>st</sup>	Ocean Traveler	Norske Murphy 2/3-2	Divcon	58	Ocean Traveler left the Norwegian sector for South Africa.
30	Aug 2 <sup>nd</sup> Aug 19 <sup>th</sup>	Ocean Viking	Syracuse Oil N 11/10-1	Comex	63	
31	Aug 4 <sup>th</sup> Oct 16 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/10-1	Ocean Systems	124	Balder Field
32	Aug 25 <sup>th</sup> Sept 16 <sup>th</sup>	Ocean Viking	PPCON 2/4-1	Comex	71	
33	Sept 18 <sup>th</sup> Dec 24 <sup>th</sup>	Ocean Viking	PPCON 2/4-2	Comex	70	The Ekofisk discovery well, the date of: October 25 <sup>th</sup> . The Norwegian authorities were informed December 23 <sup>rd</sup> .

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	-----------------------------------	--------------------------	-------------------------------	-------------------	-----------------------------	----------------

1970						
34	Jan 27 <sup>th</sup> May 31 <sup>st</sup>	Ocean Viking	PPCON 2/4-3	Comex	71	Ekofisk Field
35	Apr 28 <sup>th</sup> July 4 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/8-1	Ocean Systems	129	Balder Field
36	June 2 <sup>nd</sup> Aug 1 <sup>st</sup>	Ocean Viking	PPCON 2/4 -4	Comex	71	Ekofisk Field
37	June 21 <sup>st</sup> Aug 27 <sup>th</sup>	Neptune 7	PPCON 2/4-5	Comex	68	Ekofisk Field
38	June 28 <sup>th</sup> July 30 <sup>th</sup>	Orion	Amoco Norway 2/8-2	Divcon	69	
39	July 9 <sup>th</sup> Aug 3 <sup>rd</sup>	Glomar Grand Isle	Esso Expl. Nor 25/10-1 R	Ocean Systems	124	Balder Field
40	July 19 <sup>th</sup> Aug 29 <sup>th</sup>	Gulf Tide	Texaco 9/4-2	Comex	70	
41	Aug 1 <sup>st</sup> Nov 22 <sup>nd</sup>	Orion	Amoco Norway 2/5-1	Divcon	68	Tor Field
42	Aug 3 <sup>rd</sup> Dec 11 <sup>th</sup>	Ocean Viking	PPCON 2/7-1	Comex	71	Eldfisk Field
43	Aug 5 <sup>th</sup> Aug 25 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/10-2	Ocean Systems	121	
44	Aug 27 <sup>th</sup> Sept 13 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/10-3	Ocean Systems	126	
45	Aug 28 <sup>th</sup> Dec 10 <sup>th</sup>	Neptune 7	PPCON 2/4-6	Comex	70	Vest Ekofisk Field
46	Aug 30 <sup>th</sup> Sept 18 <sup>th</sup>	Gulf Tide	Norske Murphy 9/19-1	Comex	59	

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig  Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
47	Sept 14 <sup>th</sup> Sept 24 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/11-2	Ocean Systems	130	
48	Sept 25 <sup>th</sup> Oct 14 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/11-3	Ocean Systems	127	
49	Oct 15 <sup>th</sup> Nov 20 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/11-4	Ocean Systems	127	
50	Dec 12 <sup>th</sup> Jan 17 <sup>th</sup> -71	Neptune 7	Elf Petr. Norge 10/8-1	Comex	81	
51	Dec 13 <sup>th</sup> Mar 2 <sup>nd</sup> -71	Ocean Viking	PPCON 2/7-2	Comex	71	

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	-----------------------------------	--------------------------	-------------------------------	-------------------	-----------------------------	----------------

1971						
Pipelay barge Hugh W. Gordon		Brown & Root barge with divers from Taylor Diving onboard left Stavanger Jan 12 <sup>th</sup> en route to Ekofisk to commence the first saturation dive in the North Sea.				
52	Jan 15 <sup>th</sup> Apr 20 <sup>th</sup>	Mærsk Explorer	Amoco Norway 2/5-2	Divcon	66	Tor Field
53	Jan 17 <sup>th</sup> Feb 8 <sup>th</sup>	Neptun 7	Elf Petr. Norge 16/5-1	Comex	103	
	Feb 15 <sup>th</sup> Aug 15 <sup>th</sup> - 74	Gulf Tide	PPCON Ekofisk	Ocean Systems	71	Oil Production platform in operation at the Ekofisk field. Production commenced June 15 <sup>th</sup> 1971.
	Mar 9 <sup>th</sup>	Ocean Viking	PPCON Ekofisk Several subsea hook ups to Gulf Tide	Comex	73	Scottish diver Thomas Michael Courtney Lally, 32 years old, second fatal offshore diving accident in Norwegian sector. The bell being out of commission, a SCUBA dive with 3 x 10 liter heliox, two regulators and 41/2 mm neoprene wetsuit was initiated. With 10 minutes bottom time. Decompression stops in water breathing O2 off an umbilical lowered from the rig's dive station. 1 <sup>st</sup> stop at 12 msw for 3 min. 2 <sup>nd</sup> stop at 9 msw for 4 min. At 3 <sup>rd</sup> stop at 6 msw Bjørn Lilleland (3X) got sea sick and surfaced, vomiting. Lally surfaced also, checking how Lilleland was doing. As Lilleland was the worse off, he got recovered to the rig first in the single person seat, welded to a 2" pipe with a pad eye for cackling onto the wire, no basket. Lally, awaiting return of the seat, drowned on surface. Probable hypothermia. (Ref.: Stavanger Aftenblad (SA), 11 March 1971)
54	Mar 30 <sup>th</sup> July 22 <sup>nd</sup>	Neptun 7	Elf Petr. Norge 25/1-1	Comex	101	Frigg field
55	Apr 22 <sup>nd</sup> May 29 <sup>th</sup>	Mærsk Explorer	Conoco Norway 7/9-1		70	



## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
	May 3 <sup>rd</sup>	Ocean Viking	PPCON Ekofisk Subsea hook ups to Gulf Tide	Comex	73	British diver Michael Brushneen, 35 years old, third fatal offshore diving accident in Norwegian sector. Bounce dive in a new design constant volume suit (untested). Diver got positive when locking out of bell, holding on to the top of the bell. No communication rigged to the bellman Arne Jentoft (3X) Diver lost grip and ascended to surface, severing the divers umbilical. Rapid decompression, Pulmonary barotraumas resulting in pneumothorax. (Ref.: SA, 4 May 71)
56	May 31 <sup>st</sup> July 23 <sup>rd</sup>	Mærsk Explorer	Conoco Norway 8/12-1	Divcon	62	
57	July 3 <sup>rd</sup> Aug 19 <sup>th</sup>	Transworld 61	Conoco Norway 9/11-1		65	
58	July 3 <sup>rd</sup> Aug 5 <sup>th</sup>	Mærsk Explorer	Amoco Norway 7/1-1	Divcon	82	
59	July 22 <sup>nd</sup> Aug 25 <sup>th</sup>	Neptun 7	Elf Petr. Norge 25/1-2	Comex	103	Frigg field
60	July 24 <sup>th</sup> Oct 8 <sup>th</sup>	Mærsk Explorer	PPCON 2/4-7	Divcon	68	Tor Field
61	Aug 7 <sup>th</sup> Sept 8 <sup>th</sup>	Glomar Grand Isle	Esso Expl. 15/6-1	Ocean Systems	115.5	
62	Sept 9 <sup>th</sup> Oct 26 <sup>th</sup>	Glomar Grand Isle	Esso Expl. 15/6-2	Ocean Systems	115	
63	Oct 8 <sup>th</sup> Nov 20 <sup>th</sup>	Ocean Tide	Norske Murphy 2/3-3	Sub Sea International	56	
64	Oct 27 <sup>th</sup> Nov 1 <sup>st</sup>	Mærsk Explorer	PPCON 17/12-1	Divcon	115	
65	Nov 14 <sup>th</sup> Jan 27 <sup>th</sup> -72	Neptun 7	Elf Petr. Norge 25/1-3	Comex	105	Frigg field

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig  Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
66	Nov 25 <sup>th</sup> Mar 29 <sup>th</sup> -72	Zapata Explorer	PPCON 2/4-8		66	Tor Field
67	Dec 2 <sup>nd</sup> Feb 7 <sup>th</sup> -72	Ocean Tide	PPCON 8/1-1	<b>Sub Sea Inter.</b>	67	

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
----	-----------------------------------	--------------------------	-------------------------------	-------------------	-----------------------------	----------------

1972						
68	Mar 14 <sup>th</sup> June 21 <sup>st</sup>	Ocean Viking	PPCON 17/12-1R	Comex	115	
69	Apr 2 <sup>nd</sup> June 15 <sup>th</sup>	Zapata Explorer	Amoco Norway 2/5-3		67	Southeast Tor Field
70	Apr 14 <sup>th</sup> Oct 11 <sup>th</sup>	Orion	PPCON 2/7-3		69	
71	May 2 <sup>nd</sup> July 8 <sup>th</sup>	Glomar Grand Isle	Esso Expl. Nor 25/10-2	Ocean Systems	121	
72	May 17 <sup>th</sup> July 29 <sup>th</sup>	Transworld 61	Shell Norge 30/05-1		106	
73	June 16 <sup>th</sup> Sept 3 <sup>rd</sup>	Zapata Explorer	Amoco Norway 2/8-3		69	
74	June 23 <sup>rd</sup> Sept 3 <sup>rd</sup>	Ocean Viking	PPCON 2/7-4	Comex	72	Edda Field
75	July 10 <sup>th</sup> Nov	Zapata Nordic	Norske Shell 1/6-1		69	Albueskjell Field
76	July 1 <sup>st</sup> Dec 9 <sup>th</sup>	Neptun 7	Elf Petr. Norge 25/4-1	Comex	122	The discovery well, Heimdal Field
77	July 14 <sup>th</sup> Aug 19 <sup>th</sup>	Ocean Tide	Conoco Norway 9/4-3	ThreeX (Attachment 7)	72	First 3X offshore rig diving contract.
78	Aug 28 <sup>th</sup> Nov 14 <sup>th</sup>	Ocean Tide	Conoco Norway 2/1-1	ThreeX	66	
79	Sept 3 <sup>rd</sup> Oct 31 <sup>st</sup>	Zapata Explorer	Amoco Norway 2/5-4		68	
80	Sept 3 <sup>rd</sup> Jan 1 <sup>st</sup> -73	Ocean Viking	PPCON 2/7-5	Comex	72	Edda Field

## Listed Norwegian related early diving contractors on drilling rigs 1966 - 1972

The early drilling rigs, or offshore petroleum related facilities, were dependant on divers to intervene when any subsea structures required to be installed, inspected, fixed or recovered. Pioneer offshore diving operations were primarily performed by bounce diving methods, with two-man bell systems, or with surface supplied mixed gas helmets. The divers were mostly breathing a mixture of helium / oxygen (heliox) while on working depth, and periodically air or oxygen while doing decompression.

No	Date Start Completion Ref. /1/	Drilling Rig  Ref. /1/	Client - Position Ref. /1/	Diving Contractor	Water Depth Msw Ref. /1/	Diving history
81	Nov 3 <sup>rd</sup> Dec 7 <sup>th</sup>	Zapata Explorer	Amoco Norway 2/9-1		67	
82	Nov 28 <sup>th</sup> Jan 12 <sup>th</sup> -73	Zapata Nordic	Norske Shell 1/6-2		69	
83	Dec 9 <sup>th</sup> Feb 9 <sup>th</sup> -73	Zapata Explorer	Amoco Norway 2/5-5		65	Southeast Tor Field

### References:

1: Norwegian Petroleum Directorate's Fact Pages

(<http://factpages.npd.no/FactPages/Default.aspx?nav1=wellbore&nav2=PageView%7CExploration%7CAll&nav3=6821>)

2: The History of Oilfield Diving. An Industrial Adventure. 2007. by Christopher Swann)

## **Attachments:**

### **1. Ocean Traveler**

The semi-submersible drilling rig Ocean Traveler was new from the Avondale Shipyards, New Orleans, as hull 1082. The owner was Ocean Drilling & Exploration Company (ODECO), a pioneering American offshore drilling company.

There is a tale of a local fisherman, who had his lines out early in the morning on June 22<sup>nd</sup> 1966. His boat was by the Tungenes lighthouse, just off the northern tip of the Stavanger peninsula. Later he reported that he had to pinch himself as he suddenly saw an "Illuminated Palace" floating towards him through the morning mist. He thought he was having a vision. It was the Ocean Traveler platform arriving, introducing the changes to come to Norway. Thus, when people got up that morning, Ocean Traveler lay anchored at Dusavika outside Stavanger. The 10,000-ton steel giant had arrived after being towed for 52 days – a 13.000 km long voyage from Grand Isle, Louisiana, U.S.A, by two Dutch tugboats.

Ocean Traveler performed the first exploration drilling in the Norwegian sector of the North Sea. There had been previous drilling offshore in the Dutch, German and British sectors. However, these were drilling in relative shallow waters. Any diving requirement was performed with divers breathing conventional air. Ocean Traveler was the first rig that introducing divers breathing a mixture of helium and oxygen (heliox) and diving with either a diving bell or mixed gas helmet, using bounce diving technique.

Ocean Traveler represented the best of the available technology at the time. However, she was equipped for drilling in the Mexican Gulf. As the weather conditions in the North Sea was rougher by far she was towed to the Rosenberg Ship Yard in Stavanger on several occasions during her stay in the North Sea for the structure to be repaired and strengthened. She left for exploration drilling offshore South Africa on July 26<sup>th</sup> 1969.

### **2. Ocean Systems International Inc.:**

The world's first oilfield heliox dive was performed offshore California on December 9<sup>th</sup> 1962 onboard the drillship "Cuss 1" by Dan Wilson. He was then one of the partners in the diving company "General Offshore Divers". In the late summer of 1964 the company became an affiliate of "Union Carbide", the world's biggest supplier of chemicals and gases, and Dan became the Operations Manager of the world's first industrial diving company Ocean Systems International (OSI). William (Bill) Giannotti later became Manager Foreign Operations.

OSI secured the diving contract onboard Ocean Traveler in 1966. Lyle Kirlin was Manager for the OSI Stavanger office. The early OSI divers in the North Sea were Jim Thompson, Dan Eden, Bob Colomy, Jerry Todd and Randall Green.

OSI made an agreement with Nord Norges Dykker- og Froskemannsservice A/S, a Norwegian diving company based in Tromsø, for supply of local divers to the OSI diving team. Thus Odd Gaaskjenn and Idar Johnsen were on hire as part of

the first diving team onboard Ocean Traveler in 1966. Later Gunnar Møllegaard and Leif-Tore Skjerven were also rented to OSI. When 3X diving company was established in 1968 this company became the new supplier of local divers.

Lyle Kirilin left Stavanger in 1968, to be replaced by Al Worthon. Michael F. Williams replaced Al in 1969, later to become OSI Manager for Europe and Africa. In 1973 Ron Imrie replaced Mike in the management until the OSI office in Norway was closed in 1979.

OSI became an affiliate of Oceaneering in 1984.

(Ref /2/, Pages 98 – 103, 130, 169 – 187, 283 - 285)

### **3. Diver's work conditions**

In the early years the rig-crews were mostly working on shifts with equal time on and off. For the divers there were no shifts established. They had to be available to go offshore whenever diving was required. The divers were at times nicknamed the “Firemen of the North Sea”, as there would be no assignments for divers during normal rig operations. Only when something malfunctioned, most commonly on the Blow Up Preventer (BOP) valve placed with the base plate on top of the casing at the seabed. Alternatively diving was required to replace any of the 4 guide wires through the moonpool to the base plate, or recovery of any of the normally 8 anchors, which kept the rig / vessel in position. As the ROV did not become a normal issue offshore until the late 70's, the divers would also be expected to make observation dives, making reports to the drill floor of any subsea condition.

The divers could be mobilized with little, or no, warning. If you wanted to work as an oilfield diver in the Norwegian sector you had to live in close proximity to Stavanger. When you were called offshore for a diving assignment you were unable to tell when you would return. Normally it would be “when the job was done”, added decompression and transit time, which is awkward to cross off on a calendar.

Regular crew changes were arranged from the heliport, which at the time was at Forus, located between Stavanger and Sandnes. The Germans made an airport at Forus during the 2<sup>nd</sup> World War. The heliport was actually one of the remaining runways; with one of the typical green painted German build barracks acting as the passengers' lounge. Safety measures were limited to the passengers stepping onto a weight prior to being registered for the flight. Dressing into survival suits or being tested for alcohol content was still a long time coming. On a good day the divers were allowed to travel by helicopter. A quite common alternative was to make the transit to or from the oilfields onboard a supply boat, probably installed in an eight-bed forward cabin. If the weather did not allow the transfer, hanging by your nails outside of a rope-basket, you would have to fight the nausea while riding the waves, waiting on weather.

The size of a bounce diving crew could be varying. If the crew included 6 persons

it was considered great. There could be two in the diving control: the diving supervisor and his assistant. There would be two divers in the diving bell: the diver and his standby diver. The fifth diver would be operating the winch and crane/A-frame, to launch and recover the diving bell. The sixth diver on deck would alternative supervise the launch and recovery of the bell umbilical and operation of any crossover winch, or other support functions. The diving crew would at all times be dependent of extern support by the onboard roustabouts. This to compensate for the manpower required handling the tugging of umbilical, cables or ropes.

#### 4. **Sanford Brothers**

Sanford Brothers Marine Contractors was established in Morgan City, Louisiana, in January 1960 by the brothers Joe and Tom Sanford. They provided diving and other support services to the offshore oil industry in the Gulf of Mexico. A PPCON relation offered the contract onboard Ocean Viking, and the Sanford's had the diving bell equipment constructed from a 60" pipe. This was their only diving contract in the North Sea. In 1966 the brothers had a tax-free exchange were they received a princely chunk of Westinghouse stock. Westinghouse bought the company, renamed it Sanford Marine a few weeks following the mobilization onboard Ocean Viking, and the brothers left the diving industry. (Ref /2/, Pages 34 -36, 143 – 145, 285 – 286)

#### 5. **Comex:**

Henri Delauze started the Compagnie Maritime d'Expertises (Comex) in November 1961 in Marseilles, France. Comex was made a medium size diving company, mostly by foreign (Algeria, Viet Nam, etc.) construction diving. Delauze had a hyperbaric complex established in Marseille in 1965, and had Dr. Xavier Fructus managing experimental diving while altering decompression tables. By introducing new technology with alternative contractual and training methods Comex became the world's leading diving contractor in the best part of the 1970s and -80s.

The Comex contract onboard the semisub drilling rig Ocean Viking was their first in the North Sea. Comex made an agreement with Skandinavisk Undervanns Service AS on May 1<sup>st</sup> 1968, an Oslo based Norwegian diving company, for rental of their first Norwegian diver Johannes Straumøy. In 1970 an agreement was made with 3X diving company for the supply of local divers. As the market was changing, financial difficulties was introduced and on June 5<sup>th</sup> 1992 the ownership of Comex Services was transferred to Stolt Tankers and Terminals and the new company Stolt Comex Seaway were established. The company was renamed Stolt Offshore S.A. in 2000. Stolt-Nielsen sold its ownership in Stolt Offshore S.A. in 2005. Stolt Offshore S.A. formally changed the name to Acergy S.A. on April 10<sup>th</sup> 2006. The combination between Acergy S.A. and Subsea 7 Inc. was completed, and the first day of trading in the new Subsea 7 Inc. was on Monday January 10<sup>th</sup>, 2011. (Ref /2/ Pages 294, 297 – 309, 381 – 389,)

#### 6. **Divcon**

Divcon was started by Murray Black in August 1962, previously one of the managers in Associated Divers (the biggest diving company offshore California in the early days). Divcon was the global leader in petroleum related diving in

the late 60s. Even when Divcon was growing, had 26 diving contracts in 23 different countries, the company was losing money.

In 1971 Oceaneering became the dominant force in the international diving field as it acquired Divcon, which was approx. 5 times larger than Oceaneering at the time.

(Ref /2/ Pages 286 – 294, 422)

## **7. ThreeX Diving Company (3X)**

With NOK 20.000 in share capital started Odd Gaaskjenn (Manager), Gunnar Moellegaard and Leif-Tore Skjerven Threex Diving Company in September 1968. 3X become the first Norwegian diving company to secure an offshore diving contract.

3X supplied local divers to the international offshore diving companies, as: OSI, Comex, Divco, Sub Sea Divers, Cocéan, CG Doris, in addition to diving on regular construction sites along the Norwegian coast.

In 1969 the 3X divers were: Per Skipnes, Fritz Sørskog, Henning Faddersbøll, Arne Jentoft.

In 1971 the divers that had been engaged by 3X were: Stefan Asgeirsson, Eyolf Assersen, Per Birkeland, Rolf Egil Engebretsen, Erik Evensen, Henning Faddersbøll, Odd Gåskjenn, Georg Hetland, Arne Jentoft, Idar Johnsen, Karl Jørgensen, Sigmund Knutsen, Erling Krange, Thor Laskemoen, Kjell Lilledal, Bjørn Lilleland, Kjell Lindgård, Helge Mortensen, Gunnar Møllegaard, Kjell Olsen, Leif-Tore Skjerven, Per Skipnes, Einar Wold Svendsen, Frits Sørskog, Magne Vågslid.

At the most, more than 100 divers were employees, diving either onboard the drilling rigs Ross Rig, Borgny Dolphin or Deep Sea Saga, the minisub-mother vessel Borgholm, or on one of the many concrete Condeep platforms as built in Stavanger/Stord or at several construction sites along the Norwegian coastline.

Some of the 3X Norwegian firsts was:

- Civilian Norwegian decompression chamber in 1970
- Heliox diving equipment with two Yokohama mixed gas diving helmets in 1970
- Two man bounce diving bell system, built in Stavanger by Brødrene Paulsen, Hinna and Stavanger, Norway, in 1971.
- Offshore diving contract onboard the drilling rig Ocean Tide in 1972
- Belldiving training courses for DnV and the government at Sjøfartskolen i Stavanger, in 1974
- Six man saturation diving system, built by Drass, Italy, in 1974
- Established ThreeX Hybrid Decompression Tables in 1975 at Terrytown Labs.

In 1973, with the intent to expand into saturation diving, 3X accepted an offer from the ship owner Fred Olsen, who also controlled the Dolphin offshore companies.

Odd Gaaskjenn left 3X in September 1974 to start Scan Dive; the diving company which was to be diving off the first purpose built DSV Arctic Surveyor. Gunnar Moellegaard and Leif-Tore Skjerven left in 1979, and the company changed the name to Sub Sea Dolphin.

In December 1998 Stolt Comex Seaway acquired the ROV and diving business of Sub Sea Dolphin for approximately \$17 million, and all traces of 3X disappeared.