



Comex Experimental Dives

Sa Comex

► To cite this version:

| Sa Comex. Comex Experimental Dives. COMEX. 2000. <hal-04679303>

HAL Id: hal-04679303

<https://hal.science/hal-04679303v1>

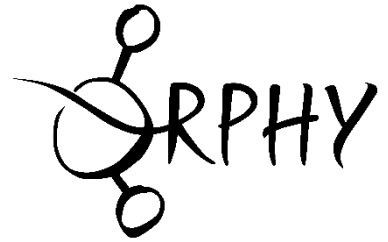
Submitted on 27 Aug 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY-NC-ND 4.0 - Attribution - Non-commercial use - No Derivative Works - International License



The present document is the property of COMEX SAS. It has been entrusted to the ORPHY laboratory, which scanned and uploaded it.

COMEX (Compagnie Maritime d'Expertises), established in 1962, has positioned itself in the offshore activities sector, where it held a leading international position, becoming the world's foremost company in engineering, technology, and human or robotic underwater interventions. Comex designed a Hyperbaric Testing Center in 1969 and developed its own research programs on various breathing mixtures used in deep-sea diving (helium and later hydrogen). These research efforts led to spectacular advancements in this field, including several world records, both in real conditions and simulations. Comex still holds the world record at -701 meters, achieved in its chambers during Operation HYDRA 10.

The ORPHY laboratory focuses on major physiological functions, their regulation, interactions, and their contribution to the development and prevention of certain pathologies. The primary mechanisms studied involve metabolic aspects (oxygen transport and utilization, energetics, etc.) and electrophysiological aspects (contractility and excitability), mainly related to respiratory, vascular, and/or muscular functions. These mechanisms are studied under various physiological and physiopathological conditions, ranging from the cellular and subcellular levels to the entire organism. In Europe, the ORPHY laboratory is one of the leaders in hyperbaric physiology and diving research.

Being a major player in innovation and expertise in the field of pressure, COMEX maintains a scientific archive from its experimental diving campaigns. The value of this archive is both scientific and historical, as it documents a remarkable chapter in the history of marine exploration and contains results obtained during dives that are very unlikely to be replicated in the future.

COMEX EXPERIMENTAL DIVES DEEPER THAN 200 MSW

EXPERIMENT	YEAR	DEPTH (msw)	DIVER	BREATH. GAS	COMPRES.	BOTTOM TIME	DECOMPRES	CHAMBER TOTAL TIME	WORK AT DEPTH
PLC1 COMEX	1968	335	2	TRIMIX	2h00	17 min	94h37	96h57	In water
PLC2 COMEX	1968	266	2	TRIMIX	1h20	30 min	97h45	99h35	In water
PLC3 COMEX	1968	300	2	TRIMIX	1h05	20 min	90h50	92h15	No
PHYSALIE I COMEX	1968	335	2	TRIMIX	1h53	10 min	97h33	99h35	In water
PHYSALIE II COMEX	1968	360	2	HELIOX	1h55	5 min	144h31	146h31	No
PHYSALIE III COMEX	1968	365	2	TRIMIX	2h03	4 min	138h34	140h41	No
PHYSALIE IV COMEX	1968	300	2	TRIMIX	3h00	10 min	103h40	106h50	No
PHYSALIE V COMEX	1970	520	2	HELIOX	74h28	1h37	208h00	284h05	No
PHYSALIE VI COMEX	1972	610	2	HELIOX	176h58	1h20	238h10	411h28	Dry
SAGITTAIRE I COMEX	1971	300	4	HELIOX	163h54	144h00	128h00	435h54	Dry
SAGITTAIRE II COMEX	1972	500	2	HELIOX	49h00	100h00	189h30	338h30	Dry
SWECOM	1972	300	4	HELIOX	77h00	44h20	124h00	245h20	In water
SAGITTAIRE III COMEX	1973	300	4	HELIOX	112h28	360h00	165h00	637h28	Dry
SAGITTAIRE IV COMEX	1974	610	2	HELIOX	268h00	59h00	231h00	544h00	Dry

EXPERIMENT	YEAR	DEPTH (msw)	DIVER	BREATH. GAS	COMPRES.	BOTTOM TIME	DECOMPRES	CHAMBER TOTAL TIME	WORK AT DEPTH
CORAZ I COMEX	1975	300	3	TRIMIX	4h00	72h00	151h00	227h00	In water
CORAZ II COMEX	1975	300	2	TRIMIX	4h00	81h00	136h35	221h35	In water
CORAZ III COMEX	1975	300	2	TRIMIX	4h00	35h00	136h35	175h35	In water
CORAZ IV COMEX	1975	300	2	HELIOX	4h00	81h00	136h35	221h35	In water
JANUS II-PHASE I COMEX	1970	200/250	3	HELIOX	1h10	192h00	112h00	305h10	In water
JANUS II-PHASE IIA COMEX	1970	200/250	3	HELIOX	5h40	144h00	92h50	242h30	In water
JANUS II-PHASE IIB COMEX	1970	200/250	3	HELIOX	11h38	144h00	95h50	251h28	In water
JANUS II-PHASE III COMEX	1970	200/250	3	HELIOX	7h50	184h00	102h00	293h50	Open sea
JANUS III A COMEX	1974	390	3	HELIOX	49h00	144h00	170h00	363h00	In water
JANUS III B COMEX	1974	395	3	HELIOX	49h00	144h00	205h00	398h00	In water
JANUS IV-PHASE II COMEX/GISMER	1976	400 445/460/480	8	TRIMIX	24h00	216h00	202h00	442h00	In water
JANUS IV-PHASE III COMEX/GISMER	1977	430 460/501	6	TRIMIX	30h00	144h00	185h00	359h00	Open sea
79/131 COMEX/GISMER	1979	450	4	TRIMIX	38h00	48h00	245h00	331h00	Dry
CEH CONSTANZA/COMEX	1981	300	4	HELIOX	21h40	8h00	198h20	228h00	In water
ENTEX 5 GISMER/COMEX	1981	450	4	TRIMIX	38h00	288h00	315h00	641h00	Dry
ENTEX 8 GISMER/COMEX	1982	450	4	TRIMIX	38h00	288h00	315h00	641h00	In water

EXPERIMENT	YEAR	DEPTH (msw)	DIVER	BREATH. GAS	COMPRES.	BOTTOM TIME	DECOMPRES	CHAMBER TOTAL TIME	WORK AT DEPTH
ENTEX 9 GISMER/COMEX	1983	450/610	2	HELIOX	38h00 95h00	144h00 57h00	550h00	984h00	Dry & In water
ENTEX 11 GISMER/COMEX	1986	450	4	HELIOX/TRIMIX	36h00	288h00	315h00	641h00	In water
HYDRA 4/COMEX	1983	240/300	6	HELIOX HYDROX HYDRELIOX	108h00	64h00	256h00	428h00	In water
HYDRA 5/COMEX/GISMER	1985	450	3 + 3 = 6	HYDRELIOX	38h00	120h(3) 192h(3)	465h(3) 348h(3)	660h(3) 681h(3)	Dry & In water
HYDRA 6/COMEX/GISMER	1986	500/520	8	HYDRELIOX	86h00	95h00	429h00	640h00	Dry & In water
HYDRA 7/COMEX	1987	260	4	HYDROX	88h00	63h00	183h00	342h00	No
HYDRA 8/COMEX/GISMER	1988	500/520/534	6	HYDRELIOX	94h00	185h00	419h00	639h00	Open sea
HYDRA 9/COMEX/GISMER	1989	300/225/200	4	HYDROX	264h00	1344h00	144h00	1752h00	Dry & In water
HYDRA 10/COMEX	1992	675/701	3	HYDRELIOX	313h00	744h00	559h00	995h00	Dry & In water
HYDRA 11/COMEX	1994	350/335/365	4	HELIOX HYDRELIOX	47h00	240h00	299h00	586h00	Dry
HYDRA 12/COMEX	1996	200/210	4	HELIOX HYDRELIOX	3h20	128h00	157h00	260h00	Open sea
HYDRA-LUDION 1 / COMEX	1998	200/260/300	2	HELIOX HYDRELIOX	8h00	204h00	216h00	428h00	No
HYDRA-LUDION 2 / COMEX	1999	200/290 100/160	5	HELIOX HYDRELIOX	8h00	442h00	78h00	528h00	No

- 43 EXPERIMENTS
- 26 DIVES WITH IN WATER OR OPEN SEA TESTS
- 143 DIVERS
- 2 668 MAN DAYS UNDER PRESSURE