

SCIENTIFIC DIVING IN FRANCE

Recognition of scientific diving and certification (1979 – to date)

The difficulty was that scientific diving uses mainly sports equipment and diving methods (although some divers use equipment such as dry suits, "narghile" [surface demand], suction dredger,...) and shares responsibilities and employment obligations with professional diving. Colimpha (Association française des plongeurs scientifiques = *French Association of Scientific Divers*) was set-up in 1979 to unit scientific divers. It still provides a specific insurance for sports and scientific diving, day and night, in France and abroad. There were no clear specific rules until 1982, when the decree n° 82-453 of 28th May 1982 stated that the decree n° 74-725 of 1st July 1974 (relating to the particular measures of prevention applicable in the sites or establishments in which work is carried out by divers under pressures higher than the atmospheric pressure) was applicable to the public establishments. However the case of scientific diving remained quite "fuzzy" until 1988, in the case of the C.N.R.S. (Centre national de la recherche scientifique = *National Centre for Scientific Research*) and until 1991 for other research establishments and universities.

Since 1985, two week specific training courses on scientific diving were organised by the "Formation Permanente" (continuing education) of the C.N.R.S., alternatively in 2 marine stations (Banyuls-sur-mer / Mediterranean and Roscoff / Channel). Depending on the candidate's level, the qualification of "plongeur scientifique du C.N.R.S." (= *scientific diver*) or of "chef de plongée scientifique du C.N.R.S." (= *advanced scientific diver*) was delivered, or not. In the C.N.R. S.' laboratories, the diving officer was (and is) promoted by the director. He should be, or should have been, "chef de plongée scientifique".

Between 1991 and 1993, recognition of equivalence based on professional experience in scientific diving has been granted. Since 1993 a special examination (practical and theoretical) is requested at the end of a specific training course to obtain the C.A.H. (Certificat d'aptitude à l'hyperbarie = *hyperbaric capacity certificate*).

Since January 1995, the I.N.S.U. (Institut national des sciences de l'univers / C.N.R.S.) was one of the organisations entitled to train workers for hyperbaric activities. Two week training courses were organised by the "Formation Permanente" (continuing education) of the C.N.R.S., alternatively in the previous 2 marine stations. A jury judges the candidates' ability: *for the C.A.H. mention B, Class 1*. If conditions are fulfilled, the C.A.H. is delivered by the I.N.P.P. (Institut national de la plongée professionnelle = *National Commercial Diving Institute*). The qualification of "chef de plongée scientifique du C.N.R.S." does still exist. If conditions are fulfilled, a certificate is delivered by the C.N.R.S..

Present state

There is a LEGAL STATUS of scientific divers in France. Scientific diving is under official control according to the decree n° 90-277 of 20th March 1990 (relating to the protection of hyperbaric workers) and the decree of application of 28th January 1991 (relating to specifications of security training for personnel involved in hyperbaric activities). French diving regulations stipulate the obligation for scientific divers to have a professional brevet: the C.A.H., which is delivered by the I.N.P.P. and is valid for 10 years, always in the so-called "mention B" ("autres activités subaquatiques" = *other underwater activities*), and generally in "Class I" (air dives, to a maximum depth of 40 m). There is a "Subclass IA" in this "mention B (maximal depth: 12m). "Class 2" (down to 60m) may also be obtained (this

mainly concerns archaeologists and professional divers in the marine stations). There is also a "Class 3" in this mention which concerns *quasi* nobody for scientific diving (mixed gas, bell diving,...).

The **C.N.R.S.** (Centre National de la Recherche Scientifique) has a regulation of its own for scientific diving (instruction of implementation of **March 1999**, n° 980002 IGHS, <http://www.dsi.cnrs.fr/bo/1999/03-99/5238-bo0399-ins980002ighs.htm>). In fact, this instruction is followed by all scientific institutions and scientific divers.

Since 1999, the CNPS* (Comité national de la plongée scientifique: *National Scientific Diving Committee*). It was created by INSU (Institut national des sciences de l'univers). It gathers most of the scientific research institution, including universities. Permanent guests are the director of I.N.P.P., the executive secretary of EMaPS, a representative of the minister of labour and solidarity.

However, the problem remains partially unresolved with students (including non granted PhD) and free-lance participants involved in a scientific underwater activity (see below: *temporary diving permit*).

Diving permit

When certified, in order to be allowed to dive, the scientific diver (occupying a permanent position in an institution) have an "administrative" authorisation for one year or six months depending on, by providing the documentation of a specific diving medical examination (every year, or every six months after 40 years old). The decree of 28th March 1991 defines recommendations to the attention of physicians in charge of workers' medical control related to hyperbaric activities. To keep his(her) permit, a scientific diver must train (at least 12 dives in 12 months, 6 of them with scientific purpose). A personal diving log is required. For each dive, an allowance which amount depends on the depth is due by the employer. A record of dive for all dives under institute auspices is also required. The standard air decompression tables that must be used by scientific divers were published in the decree of 15th May 1992 defining the procedures of access, stay, exit and organisation of hyperbaric activities.

Exceptions to diving procedure regulations (Temporary diving permit)

A special permission for unpaid, temporary hyperbaric activities at less than 40 m of depth, in a cultural or scientific context, can be granted to graduate students and PhD students having no income. This permission is given for 1 year and it can be renewed once (decree of 5th March 1993, circular letter from the Ministry of culture and Ministry of labour of 9th March 1993 and decree of 9th March 1996 defining training conditions for security officers involved in hyperbaric activities including modifications and supplements for voluntary and temporary workers). The responsible of the site and other divers involved in such activities must be in possession of a C.A.H.. A PhD student receiving research subsidies or having a grant is considered as employed with salary, and is liable to the legislation of labour. He(she) is no longer considered a voluntary or temporary worker and is obliged to have a C.A.H.. A written request for permission must be done. The list of elements required to accompany such a request is given in the regulation. In particular a CV with specifications on the personal experience in diving, a copy of the highest degree, a medical certificate, and a description of the work program (signed by the responsible) are requested.

Temporary SCUBA diving permit for visitor scientists

There are no defined rules for foreign scientists visiting French laboratories. Their diving must fit with the French regulations. They must be certified by the diving officer of the institute they are visiting. In the CN.R.S.' laboratories, the visiting diver must provide an up to date diving permit from his(her) institution (if it has a formal diving program). Otherwise he(she) must provide:

- documentation of having passed a physical examination (less than one year ago) for diving including at least a statement (signed by the physician) that the candidate is medically qualified for diving,
- a certificate from a nationally recognised diver training agency. The minimal level accepted must be equivalent to the CMAS** (2-stars) qualification,
- his(her) personal log book,
- a personal insurance covering the specific risks of diving or an authorisation to dive as part of his(her) scientific work signed by the president of the university or the director of the institute he(she) depends on, stipulating that it is fully responsible of any kind of accident which may occur during diving.

Jean-Pierre Féral
Banyuls-sur-mer, 30 October 2000

* CNPS : Comité National de la Plongée Scientifique

Delegates (1999-2001)

Jean-Pierre Beurier, Univ. Nantes

Guy Boucher, CNRS Paris, chargé de mission INSU, executive secretary

Alain Couté, MNHN Paris, chairperson, also president of Colimpha

Jean-Pierre Féral, CNRS-SDV Banyuls-sur-mer and IFRTP (French Polar Institute)

Patrick Grandjean, minister of culture, Paris

Philippe Le Bras, IFREMER

Patrice Letellier, Univ. Paris-6

P. Pomey, Univ Aix

Dominique Rambaud, IRD, Paris

Charles Roqueplo, CEMAGREF

Gérard Thouzeau, CNRS-SDU

Permanent guests.

Director of INPP

Executive secretary of EMaPS

Delegate of the minister of labour and solidarity

MNHN: Muséum national d'Histoire naturelle

SDV : département des Sciences de la Vie (CNRS)

SDU : département des Sciences de l'Univers (CNRS)

IFRTP : Institut Français de Recherche et de Technologie Polaires (French polar Institute)

IRD : Institut pour la Recherche et le Développement (ex ORSTOM)

CEMAGREF : Institut de recherche pour l'ingénierie de l'agriculture et de l'environnement.