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SOMMAIRE - CONTENTS

2	Editorial	الافتتاحية
4	Notre nouveau Secrétaire Général Nuestro nuevo Secretario General The new Secretary General	كاتبنا العام الجديد
6	What makes Badminton a complete sport	
8	Teeth knocked out during athletic activities can be saved	
10	Brasil acogió la 44a Asamblea General Brazil hosts the 44th General Assembly Le Brésil a accueilli la 44ème Assemblée Générale	البرازيل تستقبل الجمعية العامة الـ 44
16	L'Afrique et le CISM Africa and CISM	
19	Les athlètes satisfaisant aux obligations militaires الحلول التي اتخذتها مختلف الامم تجاه الرياضيين الذين ابدوا استعدادا مرضيا أثناء اداء واجبهم الوطني	
25	L'hypothermie et la survie en milieu aquatique Hypothermia and Survival at Sea	
38	31st Ski week Championship Jericho (USA)	





Amistad a través del deporte

Resulta inútil comentar este lema para los innumerables atletas y cuadros que participaron en uno u otro de los campeonatos organizados por el CISM.

Desgraciadamente, cada año hay naciones miembros que no conocen, por razones diferentes, ese sentimiento maravilloso que es inherente a estas fiestas de la amistad que son nuestros campeonatos.

Pero el corolario de nuestro lema es :

« SOLIDARIDAD EN LA ACCION »

Este es el corolario que tomé personalmente como divisa al entrar en activo en la Secretaría General Permanente el 1º de julio pasado.

Teniendo en cabeza este lema, me esforzaré en reunir las condiciones necesarias con la finalidad de hacer que todas, las naciones miembros participen en nuestras magníficas concentraciones deportivas.

Al elegirme al puesto de Secretario General, me han expresado su confianza. Me toca a mí ahora honorarla y servirles.

Cuando en 1986 el Coronel Kesteloot fue elegido Secretario General, se encontraba frente a una casa un poco vetusta.

Durante 3 años no ha regateado sus esfuerzos para reorganizar y reestructurar la Secretaría General Permanente y esto tanto desde el punto de vista de la implantación y de la organización del trabajo como desde el punto de vista financiero.

Le agradezco hoy por heredar una secretaría, centro nervioso de nuestro Consejo Internacional del Deporte Militar, que ha resurgido y que funciona. Ya no tendré, o mucho menos, que desgastarme en problemas de funcionamiento, pero podré gastar toda mi energía para servir mi lema.

La Asamblea General, en Rio de Janeiro, ha aprobado la nueva « Comisión de Deportes ». Gracias a la reorganización de los contratos con nuestras empresas asociadas, y junto con la Academia, estamos actualmente listos para organizar la promoción del deporte en los países menos favorecidos. Voy a concentrar todos mis esfuerzos para llegar a este fin. Mi objetivo a plazo medio será eliminar de las estadísticas esta rúbrica que hace que me duele el corazón : « Número de naciones que no han participado en ningún campeonato ».

Estoy preparado para este reto porque tengo confianza. Sé que puedo contar con el apoyo del Presidente, del Comité Ejecutivo, de las naciones organizadoras, de los socios y, finalmente, con el apoyo indispensable del personal de la Secretaría General Permanente.

¡ No les decepcionaré !

¡ Viva el CISM !

¡ Viva la Amistad a través del Deporte !

Teniente Coronel François Pilot,
Secretario General.

Friendship through Sport

It is hardly necessary to explain what this motto stands for to the multitude of athletes and officials who have taken part in one or other of the championships organised by CISM over the years.

Unfortunately, every year, for a variety of reasons there is a group of member countries which does not have the opportunity to experience the marvellous feeling prevailing in our championships which are festivities of friendship.

But the corollary of our motto should be :

“SOLIDARITY IN ACTION”

This is the corollary I adopted as my personal motto at the beginning of my tenure at the Permanent General Secretariat on 1st July.

With this motto in mind, I shall strive towards achieving the participation in our magnificent sports events of each and every one of the member countries.

By electing me to the post of Secretary General, you have expressed your confidence in me. It is my turn now to respect this and to serve you.

At the start of his tenure in 1986, Colonel Kesteloot took over a somewhat inadequate infrastructure. For the past three years he has relentlessly worked to restructure the Permanent General Secretariat both from the point of view of the CISM premises and the organisation of the workload as well as from a financial standpoint.

I wish to thank him for the General Secretariat, the International Military Sports Council's nerve centre, that I have inherited, which today has its head above the water and which is functioning well. I will therefore not have to devote my energy (or in any event only to a lesser degree) to management matters but will be able to focus my attention on fulfilling my motto.

In Rio de Janeiro the General Assembly approved the new Commission for Sport. Thanks to the confirmation of the contracts with our partner firms, we are now in a position to undertake the promotion of sport in the less-favoured countries. This is the sector in which I shall concentrate all my efforts. My middle-term objective will be to eliminate that heart-breaking category from the statistics, namely : “Number of nations not having participated in any championship”.

I am ready to take up this challenge with confidence. I know that I can count on the support of the President, the Executive Committee, host nations, partners and, finally, on the essential backing of the members of the Permanent General Secretariat.

I shall not let you down
Long live CISM
Long live Friendship through Sport

Lieutenant-Colonel François PILOT,
Secretary General.



The new CISM Secretary General

Lieutenant-Colonel François Pilot, elected CISM Secretary General by the 44th General Assembly in Rio de Janeiro (Brazil), took up office on 1st July, 1989.

With his military and sports qualifications, this officer from Luxembourg was predisposed for this post. Indeed, in parallel with his military career he has maintained a high interest in sport in various spheres: sports federations, the Luxembourg army and CISM.

His studies from 1962 to 1966 at the Royal Military School in Brussels (Belgium), led to his graduation in social and military science. From 1966 to 1988 he was attached to the NATO battalion in Luxembourg where he successively served as chief of section and company commander. After undertaking studies for promotion to the rank of major at the Infantry School in Arlon (Belgium), he was assigned in 1978 as Intelligence Officer, and later as Operations Officer, Assistant Battalion Commander, and in 1985 as Battalion Commander.

Since 1988, he has been the Commanding Officer of the Diekirch Instruction Centre in Luxembourg.

In the interim, Lt-Colonel Fr. Pilot spent two years at the Joint Forces Staff College in Paris, obtaining the higher military certificate of competency.

Devoting a large part of his leisure time to sport, he earned qualifications one after the other as a physical education monitor, a football coach at the National School for Physical Education and Sport in Luxembourg, a qualified parachuter in the United States and a qualified life-saver in France.

As a sportsman, he concentrated his efforts on shooting and football. In this first discipline he was a member of the Luxembourg national team for four years during which time he competed in two world championships.

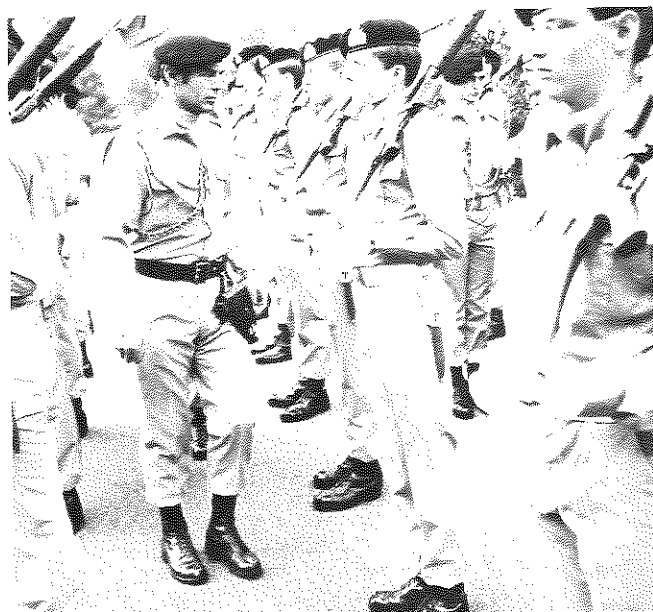
After being a fine football player, he went on to officiate as a coach for 10 years (1969-1979) before involving himself in the management of a club in 1982.

In 1983 he formed sports teams within the Luxembourg army in football, cross country, orienteering, shooting and handball.

He is already a well-known figure in CISM circles, having been appointed in 1983 as Chief of the Luxembourg delegation and member of the Permanent Technical Committee for Football. In 1985, he staged the 1st European Fencing championship and in 1987 the continental Lone/Lose meeting. He represented CISM at the 15th Judo championship (1986) in Belgium and at the 2nd Orienteering championship in Denmark.

At the age of 48, Lt-Colonel Fr. Pilot has thus embarked on a second sports career in the international military sports arena; and it is beyond doubt that in him CISM will find a competent and energetic Secretary General who will devote his efforts towards giving exposure and enhancement to the CISM ideals.

The Sport International editorial committee wish the Colonel every success.



Le Lieutenant-Colonel François Pilot, élu Secrétaire Général du CISM à la 44ème Assemblée Générale de Rio de Janeiro, remplit cette fonction depuis le 1er juillet.

De par ses qualités militaires et sportives, l'officier luxembourgeois était prédisposé à occuper ce poste. En effet, parallèlement à sa carrière militaire, il a manifesté constamment un grand intérêt pour le sport tant au sein de fédérations sportives que de l'armée luxembourgeoise ou au CISM.

Après avoir suivi les cours, de 1962 à 1966, et obtenu le grade de licencié en sciences sociales et militaires à l'École Militaire à Bruxelles (Belgique), Fr. Pilot a été affecté de 1966 à 1988 au bataillon luxembourgeois de l'OTAN où il a d'abord exercé les fonctions de chef de section, de commandant de compagnie ensuite. Après avoir suivi les cours de candidat-major à l'École d'Infanterie à Arlon (Belgique) en 1978, il a accédé successivement aux fonctions de S2, S3, commandant-adjoint de bataillon et en 1985 au poste de commandant de bataillon. Depuis 1988, il commande le Centre d'Instruction Militaire à Diekirch (Luxembourg).

Entretiens, le Lieutenant-Colonel Fr. Pilot avait passé deux ans à l'École Supérieure de Guerre Interarmées de Paris et obtenu le brevet d'études militaires supérieures.

Consacrant une grande partie de ses loisirs au sport, il a acquis « dans la foulée » le brevet de moniteur d'éducation physique et le diplôme d'entraîneur de football à l'École Nationale d'Éducation Physique et des Sports à Luxembourg, le brevet de parachutiste aux États-Unis et le titre de maître nageur-sauveteur en France.

Comme athlète, il a pratiqué plus particulièrement le tir et le football. Dans cette première discipline, il a fait partie de la sélection nationale luxembourgeoise pendant quatre ans et a participé à deux championnats du monde. Après avoir lui-même été un footballeur de talent, il a exercé pendant dix ans (1969-1979) les fonctions d'entraîneur avant de devenir dirigeant de club en 1982.

Au sein de l'armée luxembourgeoise, il a créé en 1983, les équipes militaires de football, de cross, de course d'orientation, de tir et de handball.

Il est déjà bien connu dans les milieux du CISM puisque nous le retrouvons depuis 1983 chef de la délégation luxembourgeoise et membre du comité technique permanent de football. Il a organisé en 1985 le 1er championnat d'Europe d'escrime et en 1987, la réunion continentale Lone/Lose à Luxembourg. Il a représenté le CISM au 15ème championnat de judo (1986) en Belgique et au 22ème championnat d'orientation au Danemark.

A 48 ans, une seconde carrière sportive commence pour le Lieutenant-Colonel Fr. Pilot, dans le milieu militaire sportif international, et personne ne doutera que, avec lui, le CISM aura un Secrétaire Général compétent et dynamique mettant tout en œuvre pour faire rayonner et progresser l'idéal du CISM.

La rédaction de Sport International lui souhaite plein succès.

Notre nouveau Secrétaire Général

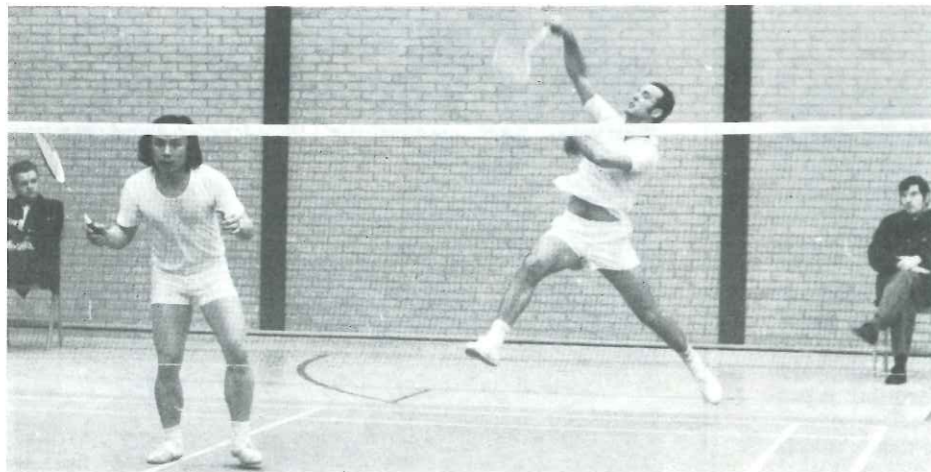
What makes Badminton a complete sport ?

Stamina, speed, strength, skill and strategy are essential ingredients of all sports disciplines, variation of degree in which these ingredients are present mark out special features of any particular sport. For example, strategy is the most important feature in chess, and speed in athletics. But even for a seemingly simple situation of a 100M run, where speed is most essential, strategy is heeded in taking a start, making the final burst, breasting the tape and adjusting the run, keeping in mind the participants one is contending with. Speed of thinking is needed in chess, a game in which we may think that speed has no place.

The most vital ingredient which is equally relevant and most needed in all disciplines is the psychology which in fact gives the final edge and makes all the difference. The participant should have a positive approach, should not be besieged with self doubts and should have no mental blocks. In short one should have the winner's psychology. One who has developed this can draw from the mental reserve when the other reserves like stamina and strength have depleted.

Any individual sport needs only one or two of the ingredients predominantly. For example, the mainstay of a marathon runner is stamina and speed. He does not make intensive use of strategy. A sport is as demanding as the proportion and frequency in which the ingredients are needed by the competitor. For example a golfer whose skill is his main weapon does not draw on stamina and speed and the sport is therefore comparatively "light". The level at which a competitor operates depends on the load imposed on him. The higher the level at which one operates the less is the time available for recovery. To continue to operate at higher level fitness has to be developed by strenuous training. The number of muscles involved in any activity at a given time also decides whether the activity is strenuous.

A Badminton player operates at 140-150 heart beats per minute during the game the count going up to 180



and above in a fast rally. He should recover in a maximum of ten seconds. He has to continue at such a level throughout the match which may be anywhere between half an hour to one hour or even more. Comparatively a fast bowler in cricket takes eight seconds for one delivery and the total work load for one over is only 42-45 seconds. Running between the wickets is also at intervals only. There is plenty of time to recover for all the players in various positions.

Badminton involves use of a large number of muscles most of the time besides calling upon the player to think while on the run, devise a strategy in split-second and execute in instantaneously. In football and basketball you can keep the ball with you or pass it to the team mate for a while to think and plan your move. In volleyball the speed of the ball is comparatively slow and strategy options only a few. In Badminton, the total length of the court being only 44 feet and speed of the shuttle going up to 130 km per hour, when the

shuttle leaves the racket the time available for anticipation and planning of strategy is limited. The behaviour of the shuttle, made of goose feather, adds further uncertainty; tackling of a particular shot by the opponent in a number of ways adds further unpredictability. When two fast players shoot at close range the spectators sometimes cannot even see the shuttle in a baseline to baseline encounter, the shuttle travels a maximum distance of 44 ft from a speed of over 100 kms per hour and comes to zero at the other end in a peculiar flight as unpredictable as the whims of a crazy dame. The reaction time has to be that of a Ben Johnson, clear perception and reflexes razor-sharp. The length of the court makes agility requirement most demanding.

A complete Badminton player should possess the agility of an acrobat, power of a race horse, killer instinct of a panther, accuracy of a marksman, delicacy of a dancer, speed of a sprinter, leap of a high jumper, stamina of a marathon runner, creativity of an artist, agility of a gymnast, and so on. His judgement has to be so sharp and accurate that he should be repeatedly able to send a shuttle to the inner-edge of the line and if a shuttle is likely to fall only an inch outside he should leave it confidently, instant coordination of all the above-mentioned faculties is a must for success. Any wavering can spell his doom.

Today's Badminton players have all these qualities in plenty and that makes things all the more difficult and complicated. The player wishing to come to the top has to have all these and something more; something which he can claim to be his own. For example. Liem Swie King of Indonesia

by J. R. Jyoh



had his explosive power as a special weapon. When King smashed and went for a kill, it was so resounding that it sent shivers through the spectators and could scare a lion. A panther will feel helpless seeing the leap of Yang Yang of China. When Prakash Padukone dribbles at the net a ballet dancer would feel unsure of herself and a trapeze dancer would feel uneasy and jealous. Seeing the perfect stepping of Morton Frost a gymnast would feel tempted to learn a few lessons from him. When Prakash weaves a web at the net tying the opponent in knots a spider will get confused and a chess player perplexed at his moves. Seeing Sugiarto at those never ending rallies a marathon runner may see stars in broad day light.

The variation between shots coupled with tactics and strategy make Badminton more demanding. Side-ways "takes" are encountered in many sports but front and back take is exclusive in Badminton. This makes the player bend like a bow in the front or bend back making an arc to tackle it effectively. A back hand over head is another difficult shot not seen even in tennis.

Basketball demands speed, power, stamina and is very strenuous. The side take is a very prominent ingredient. But there is no front and back movements take. The load is shared amongst team members allowing enough recovery time to bring down the loads.

Table tennis needs very quick reflexes and agility. But the movements are mostly repetitive making anticipation relatively easier. There are



no overhead shots. Amount of running is much less compared to Badminton. Strength and stamina are major requirements in football. The ground being bigger, anticipation except in close encounters is easier. Recovery time is available to all the players. Use of hands is prohibited. In volleyball the back and forth movements are restricted and the level at which a player operates may seldom reach 180 beats. In tennis these days long rallies are not that frequent. Momentary load may equal that encounter in Badminton in explosive service but recovery time is available after every two games when the players go back to their seats and have a quick picnic!

As already mentioned, cricket comes nowhere near Badminton considering the load and demands of agility, reflexes and strategy. That is why it can be comfortably played with full sleeve shirts and full pants. Speed and agility are prime demands of Khokho.

Dodges and side fakes make it very competitive but endurance demand is relatively low.

As far physical parameters go, basketball is very strenuous. Squash is even more strenuous. Sharp reflexes, quick movement of feet, speed of the ball and the closed court make squash the most strenuous game physically. But where Badminton scores even over squash is the net play requiring delicate handling and that is a decisive factor for many a win and nightmare in other cases.

If all the factors are taken together, Badminton emerges at the top scoring over other sports as a clear winner as the most complete sport.

Article from the "World Badminton" March 89, published with the authorisation of the International Badminton Federation.



Bientôt le badminton au CISM

Le CISM a admis maintenant le badminton comme l'un de ses sports. Avant d'avoir un championnat du monde militaire, il faudra patienter un peu et passer par des épreuves régionales et continentales. Nul doute que, bientôt, l'un ou l'autre pays où le badminton est particulièrement populaire et bien introduit dans les milieux militaires en prendra l'initiative. Je m'en réjouis particulièrement parce que j'ai été personnellement lié au jeu du volant pendant 30 ans. D'abord comme joueur (de nombreuses fois champion de Belgique et 50 sélections en équipe nationale) et ensuite comme dirigeant (Président de la Fédération belge de 1984 à 1987). J'ai donc eu l'occasion de suivre de près l'envolée mondiale de l'IBF (International Badminton Federation) qui en 1957 comptait 40 pays membres et maintenant 91.

En 1972, aux Jeux Olympiques, le badminton était déjà sport de démonstration et aux prochains jeux à Barcelone, en 1992, il sera sport olympique à part entière.

Entretiens la popularité du jeu de Poona, origines premières ayant donné lieu aux codifications du badminton, est devenue immense et comparable en de nombreux domaines au tennis. Son grand atout est la facilité avec laquelle un débutant peut réussir plusieurs échanges. Son problème est cependant d'être lié à une infrastructure « indoor ».

Dès Barcelone, les trois sports de raquette principaux seront olympiques : le tennis, le tennis de table et le badminton. A quand le triathlon de la raquette ?

Colonel Roger Vanmeerbeek

TEETH KNOCKED OUT DURING ATHLETIC ACTIVITIES CAN BE SAVED

By Paul R. Krasner, D.D.S.
United States

Tooth avulsion (knocked-out tooth) is a widespread and serious problem. Many tooth avulsions occur at school or during school related activities such as hockey. No one knows how many teeth are knocked out during athletic activities but in the United States there are over 2 million teeth knocked out each year in all types of accidents. One in every 200 children will suffer this injury and be faced with a lifetime of dental treatment and dental bills. Most of these avulsed teeth are needlessly lost because dental research has developed methods and technologies for saving almost all of them.

The American Dental Association has recommended a treatment for an avulsed tooth based on extensive research. This treatment consists of: (1) Replantation of the avulsed tooth into its socket within 30 minutes of the accident, (2) splinting of it to the adjacent teeth, and (3) follow-up root canal treatment.

The cost of replanting a tooth and the follow-up dental treatment is about \$ 350 vs., \$ 1,500.00-10,000.00 over a lifetime for the necessary replacement fixed bridgework. In addition, a replanted tooth looks and feels like a natural tooth. Artificial replacements for a missing front tooth often have compromised esthetics and sensations.

Very often it is not possible to replant an avulsed tooth immediately. Either the accident victim has other, more serious injuries, which require immediate attention, the person at the accident scene doesn't feel competent to replant it, or the victim is in pain, unconscious, and/or uncooperative.

If the tooth is not replanted immediately, then it must be stored in a nurturing environment until a dentist can be located. Because after a few minutes outside of the mouth, the cells of the tooth begin to degenerate and even if the tooth is replanted, it will be rejected by the body.

The key to long-term success for replanted avulsed teeth is to prevent damage to the cells of the avulsed tooth root. Care must be exercised to avoid crushing these cells or allowing them to dry out.

Crushing can be avoided by picking the tooth up by the enamel portion of the tooth and not touching the root. Crushing can also be reduced by placing the avulsed tooth in a soft walled container with a top. In this regard, the use of glass containers to hold an avulsed tooth should be avoided. The container should also have a securely fitting top. This will prevent the preserving medium from spilling out during transportation.

The second way to prevent damage to the avulsed tooth is by storing it in a preserving medium. There are several possible media in which to store an avulsed tooth.

The best storage medium is a pH balanced buffered cell preserving fluid. This fluid contains such ingredients as glucose, calcium, and magnesium which nurture the tooth cells. It is sterile and does not permit bacteria to grow on the tooth. This fluid has been found to preserve and rejuvenate the tooth for up to 12 hours while maintaining the maximal success rate.

This fluid is packaged in a device called the Emergency Tooth Preserving System* which also contains a specially engineered basket and netting that protects the tooth cells from being crushed during transportation.

Other media which can be used to preserved avulsed teeth are, milk, sterile saline, and saliva.

Milk is an acceptable storage medium, but it must be whole milk, not skimmed or powdered, and it must be kept refrigerated. If the milk is sour or

becomes sour (for example, on a hot day), it will become damaging to the avulsed tooth, so milk cannot be kept in pre-made containers and carried in team sports bags.

Saliva can also be used to store the tooth, but it has some serious drawbacks. It becomes damaging to the tooth after one hour and even more of a problem exists if it is placed in the mouth of the victim for storage and the victim is hysterical or unconscious. Under these conditions the tooth can be swallowed.

Sterile saline can also be used for storage but it only preserves the tooth for two hours and is usually not available at an accident scene.

The use of water should be avoided if at all possible. Water is incompatible with the tooth and is as damaging as using tissues.

The avulsed tooth should never be wrapped in drying media such as tissues or cloth. It is not sufficient for the solution to be merely wet; it must also be compatible with the cells of the tooth.

The preserved tooth and the victim should be brought to a dentist as quickly as possible so that proper treatment may be performed. If these steps are followed over 90% of all avulsed teeth can be retained for life.

* Available from Biological Rescue Products, Inc. 800-882-0505 or through many school catalogs.

Brazil hosts the 44th General Assembly

Rio de Janeiro had the honour to give hospitality to the delegates of 55 CISM member countries, 4 observer countries and 6 partner firms who, at the kind invitation of the Brazilian Armed Forces, came from around the world to take part in the 44th General Assembly.

A record participation level was reached with the attendance of all the members of the Executive Committee, all the Liaison Office Chiefs currently in office and 17 out of the 23 Permanent Technical Committee Chairmen.

Marvellous, historic city, the cradle of samba and football, famous for its beaches, the town of Rio was founded in 1567 by Estacio de Sa who gave it the name of Sao Sebastiao do Rio de Janierio. Rio is a sprawling metropolis drawing a constant flow of enchanted tourists throughout the year. Rio's Corcovado, the Maracana stadium, the Carnaval, the Sugar Loaf, Copacabana beach are without doubt its main points of attraction, added to which its legendary tropical climate and human warmth, portray it as a town which stays awake around the clock.

A rendez-vous not to be missed!

As usual, the Permanent General Secretariat staff arrived in the vanguard of the delegates at the Rio Othon Palace Hotel located in the heart of Copacabana, followed a few days later by the Executive Committee members and subsequently by delegations. Brasilia, the administrative capital, was not left out of the programme of festivities as it was from the Presidential Palace of the Republic that the proceedings were initiated on the occasion of the investiture of Dr. J. Sarney, President of the Republic, who received the insignia of the CISM Grand Cordon from Brigadier General J. Duguet, President of CISM, accompanied by Colonel W. Conde Filho, Chief of the Brazilian delegation of CISM.

Some 150 delegates took part in the proceedings of the 44th General Assembly conducted in the Riocentro congress centre located 30 km from the hotel.

The 44th General Assembly was declared open by H.E. Admiral Valbert Lisieux Medeiros de Figueiredo, Brazilian Minister of Defence in the presence of several other national dignitaries.

In his inaugural speech, General Duguet thanked the authorities of the host nation for staging the 44th General Assembly in Rio de Janeiro, adding the special significance of this event. Indeed it was during the General Assembly that a ballot, anticipated to be very close, would determine the appointment of CISM's new Secretary General.

Several other important decisions were taken at this General Assembly, ranging from statutory elections to points of order which kept delegates working relentlessly throughout the proceedings.

We set out below some of the decisions and findings of this outstanding General Assembly.

Permanent General Secretariat

Out of the two friends who stood for election to the office of Secretary General: Colonel W. Conde Filho (Brazil) and Lt-Colonel Fr. Pilot (Luxembourg), the General Assembly voted for the latter. Thus Lt-Colonel Pilot takes over from the incumbent Secretary General, Colonel Kesteloot, psc to whom a rousing tribute was paid for the work he had accomplished during his tenure.

The General Assembly was informed of the decision taken by the Belgian Minister of Defence to maintain the logistical and administrative support it affords CISM. The Minister of Defence also decided to second a Belgian officer to the Permanent General Secretariat in the person of Lt-Colonel W. Libbrecht effective 24th April.

Another detached officer, Lt-Colonel W. Fleischer, was seconded by Germany F.R. on 1st January, 1989.

The recruitment of Mrs M. Van Adorp was confirmed and Mrs M. Moussa was recruited as a result of Mr D. Godfroid's departure to start work on 2nd May.

We wish to draw attention here not only to the departure of Colonel R. Kesteloot but also to that of Commandant-Major Ch.-G. Mandji, recalled to Gabon after serving 4 years at the Permanent General Secretariat.

Nigeria undertook to second Squadron Leader Iweze to the Permanent General Secretariat, effective June 1989.

The United States undertook to second an officer to exercise the function of French-English translator, effective October, 1989.

Academy

Colonel H. Fayala M.D., acting Director of the Academy, presented the different projects for 1989 and 1990 and announced the new orientation to be taken by the Academy.

The Executive Committee coopted Colonel H. Fayala M.D. (Tunisia) as Director of the Academy for one year and also coopted Chief Surgeon Cl. Léon (France) as head of Section 1 until 1990. The General Assembly elected Lt-Colonel G. Gola (Italy) for a 1-year term of office as head of Section 2 and approved the appointment of Dr. Jürgen Kozel, PES (Germany F.R.) as member of Section 2 as well as the nomination of Colonel J. Molinié (Ret.) M.D. as extraordinary member of the Academy.

Within the framework of the launch of the North-South solidarity plan, a programme of technical assistance up to 1990 was approved in several domains for the benefit of various countries.

Sport

The 44th General Assembly approved the merger of the Permanent Commission for the Calendar and Sports Promotion with that of Sports Regulations into a single Permanent Commission henceforth called Permanent Commission for Sport. This new commission, whose aims were approved by the Assembly, will be headed by Colonel A. Zechner.

Information

The Permanent Commission for Information presented its draft strategy for Communication which was adopted by the General Assembly.

It is to be noted that information and communication are clinching factors in giving CISM good exposure.

Executive Committee elections

The following officers were elected to the Executive Committee:

- Vice-President for Europe, replacing Colonel K. Scharenberg: Colonel A. Zechner (Austria), 4-year mandate.
- Member for Europe Colonel S. Borgvald (Sweden), 3-year mandate.
- Member for Europe of Belgian nationality: Colonel R. Vanmeerbeek, psc (Belgium), 4-year mandate.
- Member for Africa: Major General R.L. Makunda (Tanzania) for a 1-year mandate.

Awards

In line with CISM traditions, the President of CISM in his capacity of Grand Master of the Council of Meritorious Order of CISM bestowed the insignia of the CISM awards which had been attributed by the Assembly.

The editorial committee of Sport International extends its sincere congratulations to all concerned.

Before taking the CISM flag from General J. Duguet, President of CISM, Major General T. Fara, Chief of the Zambian delegation, gave a short presentation of the arrangements for the 45th General Assembly to be organised by Zambia in 1990.

The highlight of next year's 45th General Assembly will be the organisation's presidential election, just like the election for the Secretary General was the highlight of this year's Assembly.

Africa and CISM

Commandant-Major Ch.-G. Mandji
Former Representative for Africa at the
CISM Permanent General Secretariat,
Chief of the Gabonese delegation

Despite Africa's tremendous, overflowing, physical potential, the statistics compiled by the Permanent General Secretariat once again highlight the fact that most African countries are still feeling their way in CISM, both in terms of organisation and participation.

How can this altogether paradoxical situation be explained ?

Judging from my experience here in the Permanent General Secretariat as African representative (as compared with my earlier expectations as Chief of my country's delegation) I have ascertained that our partners in the North are not aware – or only superficially – of our zone's fundamental problems.

Who is to be blamed for this state of affairs ?

Have we, the Africans, for our part, given sufficient information to our friends from the North ? For their part, is their perception of our realities a true enough basis to improve the implementation of the policy advocated for Africa ?

As CISM is now embarking on its solidarity plan catering in particular to the needs of African countries, I feel we should realistically take stock of these needs and the aid afforded so as to ensure that this plan satisfies the aspirations and wishes of both parties.

Indeed, as CISM is an international sports organisation assembling the Armed Forces of the world, this infers that the principal aspect of our activity is sport. Thus as it has often been stated : "sport is the backbone of CISM" : I agree with this, but not wholeheartedly.

It is true that sport constitutes the well-known backbone of CISM, but it is nevertheless a fact that without the different compositants, sports promotion within CISM cannot be entirely fulfilled.

By active compositants I refer to the delegations of member countries and the continental and regional CISM authorities, who are the main persons involved, without whom the very existence of CISM would be jeopardised.

Even though in the eyes of the high authorities of CISM, the key objectives are the participation and organisation of activities by delegations (the significance of which is borne out moreover by the "no pay, no play" rule), account must be taken of the fact that the delegations and liaison offices of African countries in particular find it very difficult to satisfy these aspiring objectives.

In this context, I take the liberty of expressing my personal – and I feel pertinent – reflections, intended principally for the countries of the North, which I hope will succeed in enhancing consideration and understanding of African affairs on the part of its partners.

Of course, much has been achieved, but I feel that these actions have been conducted without due respect for the specific actualities of each of the African countries concerned.

The perception by our authorities of the sports phenomenon as a whole, the sports standards and the infrastructure existing in each country and in each zone of Africa, should serve as a basis for the "awakening" of African countries and for all the programmes initiated.

Indeed, although some countries have already reached the development phase of their physical and sports activities, others are undergoing their formation process while the youngest nations are stagnating at the stimulation level.

I have found on a regular basis that each of our countries view these three levels the wrong way round : in other words, we have tried to go too fast in an effort to make up for lost time rather than proceeding progressively. This is why it would be a good idea to analyse the events staged in Africa in retrospect and to pinpoint the real deficiencies prevailing in the countries of this continent in the field of sport within the respective national Armed Forces.

It is true that the continent of Africa as a whole is still feeling its way, due to its lack of resources linked to the present circumstances of underdevelopment, with the result that the priorities are determined by the needs. Infrastructure is insufficient : this is all the more disturbing that there is a shortage of technicians, both in terms of value and volume.

It must also be mentioned that the scientific environment found in the countries of the North is completely lacking, in particular as far as the sports medicine domain is concerned, in Africa.

To all this must be added the problems of transportation rendered difficult by the lack of a road network, the high cost of travel tickets, not to mention the shortage of foreign currency...

As for other international institutions, Africa must have its say in CISM and this must be understood.

The Permanent General Secretariat has an important role to play in the awakening process of African countries ; and the presence of one or several representatives from Africa at the Permanent General Secretariat is a very good thing as the continental Vice-President and the Liaison Office Chiefs invariably exercise other important functions and are not therefore assigned permanently to the development of sport in Africa and in their respective zone.





<p>Sports militaires Military Sports</p>		<p><i>Pentathlon militaire</i> <i>Pentathlon moderne</i> <i>Semaine de la mer</i> <i>Paim</i> <i>Parachutisme</i> <i>Orientation</i> <i>Semaine du ski</i> <i>Tir</i></p>	<p>Military pentathlon Modern pentathlon Sea-week Paim Parachuting Orienteering Ski-week Shooting</p>
<p>Sports Individuels Individual Sports</p>		<p><i>Athletisme</i> <i>Cross-Country</i> <i>Cyclisme</i> <i>Equitation</i> <i>Natation</i></p>	<p>Track & Field Cross Country Cycling Horsemanship Swimming</p>
<p>Sports de Combat Combat Sports</p>		<p><i>Boxe</i> <i>Escrime</i> <i>Judo</i> <i>Lutte</i> <i>Taekwondo</i></p>	<p>Boxing Fencing Judo Wrestling Taekwondo</p>
<p>Sports d'Equipe Team Sports</p>		<p><i>Basketball</i> <i>Volleyball</i> <i>Football</i> <i>Handball</i> <i>Hockey s/Gazon</i></p>	<p>Basketball Volleyball Football Handball Field-Hockey</p>

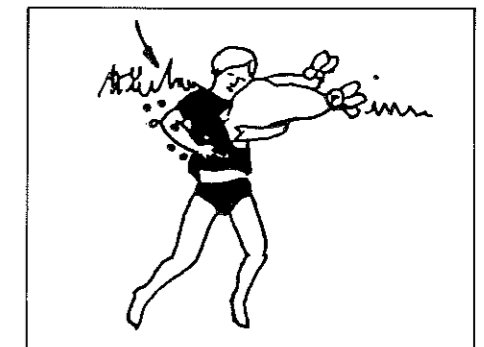
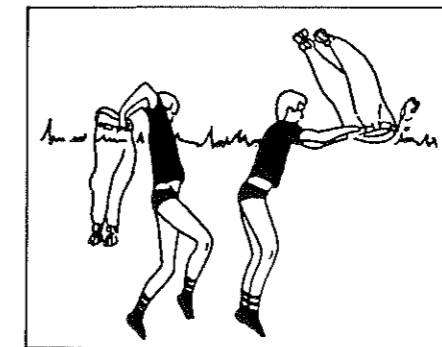
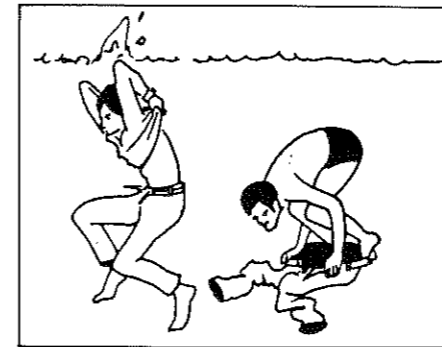
Aviron & Kayak
Badminton
Gymnastique
Haltérophilie
Karaté
Natation avec palmes
Tennis
Triathlon hawaïen
Triathlon militaire

Sports Régionaux
Regional Sports

Rowing & Kayak
Badminton
Gymnastics
Weightlifting
Karate
Fin Swimming
Tennis
Hawaian Triathlon
Military Triathlon

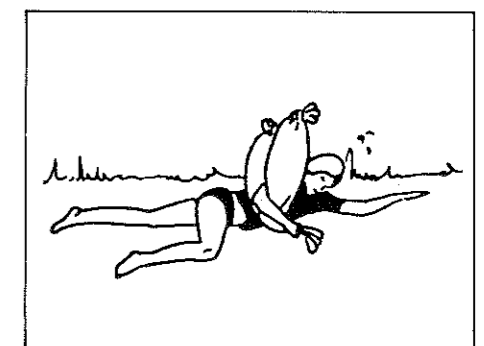
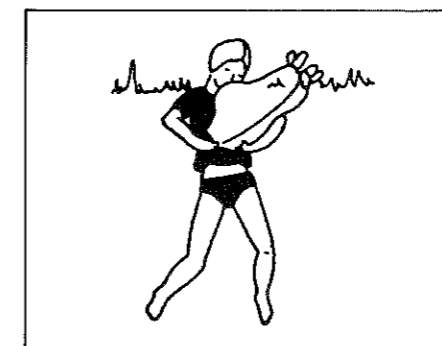
Remplissez vos habits d'air

Fill your clothes with air



Flottez en vous aidant de :

Float with the aid of :

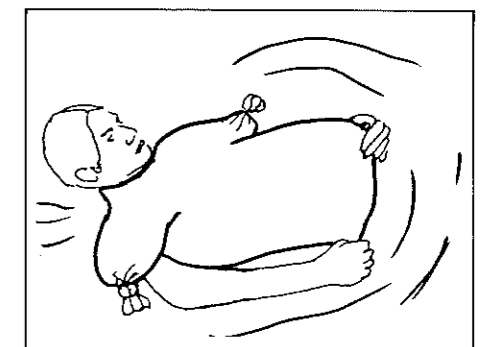
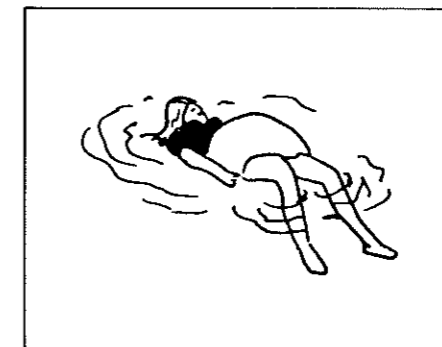
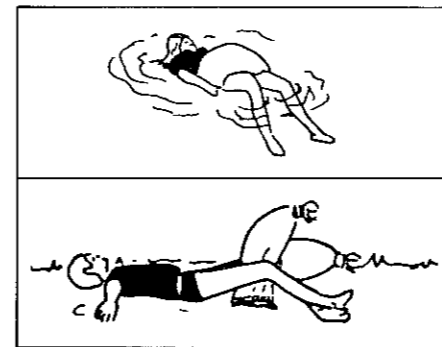


Soufflez

Blow

Pantalon

Panto

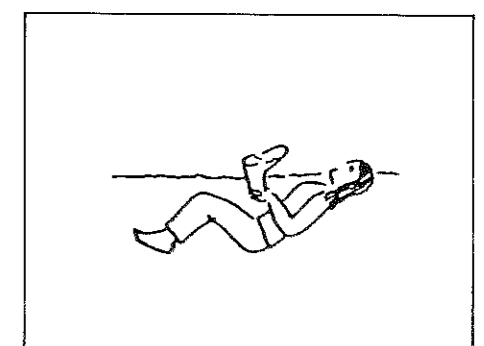
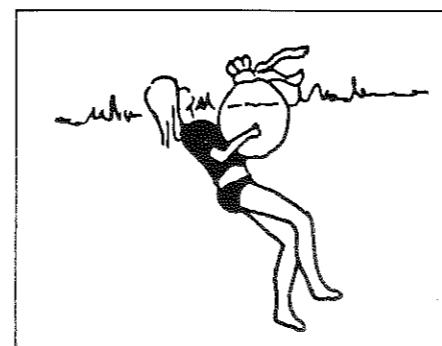


Jupe

Skirt

Chemise

Shirt



Sac en plastique

Plastic bag

Seau

Bucket

Bottes

Boots

Hypothermia and survival at sea

H. Vervaecke
President of the Belgian
National Lifesaving Federation
Member of the CISM Permanent
General Secretariat
Translated by Mr Vandevelde

For a long time the literature dealing with life saving, as well as works of a more scientific nature, have examined the causes and symptoms of drowning and have especially endeavoured to prove that hypothermia is one of the causes of drowning. Many people indeed die by drowning because they are victims of exhaustion and cold after swimming too far from the shore.

A FEW DEFINITIONS

The etymological meaning of "hypothermia" is the lowering of temperature below normal. However, when using this term, a distinction should be made between the internal temperature (or central temperature) and the external temperature (or skin temperature). Let us start by defining these two terms.

Central temperature

"Central temperature" means the internal temperature, which is the temperature of the brain and of the abdominal and thoracic cavities. When the central temperature is subjected to significant variations, complex processes are activated in order to regulate the temperature. A slight lowering in the region of 1 to 1.5 degrees Celsius (referred to hereafter as °C) already leads to a weakening of the functions of the heart, the lungs, the kidneys and the brain.

It is generally accepted that the lower and higher limits of the temperature essential for life are of the order of 25 °C to 43 °C.

Skin temperature

"Skin temperature" means the external temperature, which is the temperature of the extremities (arms and legs) and of the skin. Unlike central temperature, skin temperature can be subjected to much greater variations. In some cases it can be 20 °C below central temperature.

It is accepted that in normal situations the ideal difference between both temperatures is 4 °C for a person at rest. Skin very quickly adopts the ambient temperature.

In the case of hypothermia, there is always a link with the central temperature. At present a distinction is made between simple hypothermia and deep hypothermia.



Lifesaving clinic organised in Finland in 1988 by H. Vervaecke

Stage de sauvetage organisé en Finlande par M. H. Vervaecke en 1988

Simple hypothermia

Simple hypothermia occurs when the body has lost such a quantity of heat that the central temperature falls below 34 °C. Symptoms like mental confusion, drowsiness, reduced sensitivity and a weakening of the motor capacity then appear.

Deep hypothermia

Hypothermia is deep when the temperature has fallen below 32 °C.

The victim is hardly conscious and does not react to the painful stimuli caused by the cold; moreover in most cases, breathing is slow, the heartbeat slows down and the pulse becomes irregular. If the central temperature falls below 30 °C, the drowned person loses consciousness. The body feels cold.

Neck and extremities resist bending and the peripheral pulse is no longer felt. One has the impression that the patient is not breathing anymore and that there is no pupil reflex.

Related disorders of the circulation (significant reduction of the systolic flow, slowing down of the heart rhythm, insufficient filling up of the ventricle and even heart fibrillation) can lead to death at a temperature of 30 °C or lower (Keating, 1977).

BASIC PRINCIPLES CONCERNING THE REGULATION OF BODY TEMPERATURE

The human body is homeothermic; it produces warmth through muscular work, nutrition and various combustion processes. A loss of temperature can be due to radiation and conduction (70 %) (*), transpiration (27 %), perspiration (2 %), urine excretion and defecation (1 %).

The balance between heat production and heat loss determines the body temperature. Many body reactions and enzymatic functions are optimal at a temperature between 36 and 37 °C, the body endeavours as far as possible to reach these temperatures.

The average body temperature of an adult is between 36.5 and 36.9 °C. For a child, it varies between 36.7 and 37.4 °C. Consequently a child's body temperature is slightly higher than an adult's.

When a body is immersed in cold water, a number of thermoregulatory reactions take place in order to limit that loss on the one hand and to speed up heat production on the other hand.

Limitation of heat loss

In order to reduce heat loss, the brain sends stimuli which trigger off a **peripheral vasoconstriction** as well as **gooseflesh phenomenon**.

Vasoconstriction

Vasoconstriction (contraction of the surface vessels) leads to an alteration of thermal regulation; the isolation capacity of the skin is modified in such a way that the isolation is enhanced sixfold (Burton and Edholm, 1955). The skin adopts the ambient temperature fairly quickly whereas the temperature of the more central parts remains higher.

(*) Radiation: heat transfer from one object to another without any contact
Conduction: heat transfer from one object to another with contact

L'HYPOTHERMIE ET LA SURVIE EN MILIEU AQUATIQUE

La vasoconstriction active que subissent les vaisseaux situés autour du crâne est beaucoup moins importante ; il est en effet essentiel que la surfusion trop rapide du cerveau soit prévenue, les couches de graisse isolantes étant peu nombreuses sur la voûte crânienne. Le but de ce « maintien à une température convenable » de la tête consiste manifestement à éviter que le cerveau se refroidisse ce qui est d'importance capitale au niveau du fonctionnement adéquat du corps humain.

Protéger la tête

La peau qui couvre la tête comprend peu de nerfs provoquant la vasoconstriction des vaisseaux situés autour du crâne. Il semble par ailleurs que la réaction directe de ces vaisseaux soit lente à l'égard des stimuli que le froid provoque. En outre, la tête ne donne pas l'impression d'être froide alors que d'autres parties du corps donnent réellement cette impression dans des conditions identiques. En effet, la peau de la tête ne totalise qu'un nombre réduit de récepteurs de froid et c'est la raison pour laquelle une personne qui se noie n'éprouve pas tellement le besoin de se protéger plus particulièrement la tête.

La tête peut donc être considérée comme une zone du corps où la perte de chaleur est très élevée. Certains auteurs prétendent qu'un noyé immergé dans l'eau perd la moitié de la chaleur produite par le corps via la tête, le cou et la nuque, l'autre moitié se perdant via les autres parties de son corps. Il importe par conséquent de mettre au point et de proposer des techniques de nage qui permettent de protéger la tête, le cou et la nuque contre le refroidissement extrême.

Des techniques impliquant l'immersion de la tête ne sont donc pas applicables dans l'eau froide et ne seront donc pas enseignées à de telles fins.

A ne pas faire

Ces dernières techniques comprenant entre autres, le « champignon » (manière de flotter) et les techniques « drown-proofing » tendent essentiellement à faire flotter les noyés sans se préoccuper de maintenir leur tête hors de l'eau. D'après ces techniques, les personnes qui se noient doivent remplir leurs poumons d'un maximum d'air et ensuite, immerger le plus grand nombre de parties du corps (y compris le visage). Ces techniques ont été élaborées principalement dans les piscines où la température de l'eau est relativement plus élevée et où le problème de l'hypothermie ne se pose pas de la même manière.

L'immersion du visage après une inspiration profonde ne provoque pas seulement une perte de chaleur importante mais également un ralentissement du rythme cardiaque (bradycardie) qui peut, à son tour, avoir pour effet l'hypoxie cérébrale (un manque d'oxygène dans le cerveau) et provoquer la perte de conscience. Finalement, personne n'ignore qu'un séjour prolongé dans l'eau froide provoquera l'hyperventilation (inspirer et expirer abondamment) dans la plupart des cas, ce qui implique qu'il devient pratiquement impossible de retenir son souffle comme les techniques « drownproofing » le prévoient.



A faire

En cas d'immersion dans l'eau froide, il est d'importance vitale que le noyé combine ses possibilités de flottaison au maximum avec une conservation optimale de la chaleur. Au cas où l'on applique des techniques de flottaison, impliquant l'immersion de la tête, une telle combinaison devient impossible puisque ces techniques ont pour effet de faire descendre la température essentielle jusqu'à la limite de l'hypothermie (34,4 °C). On est pris de nausées, de maux de tête, de crampes musculaires et de ce que les Anglais qualifient de « spiritual failure ». Ce terme est utilisé pour désigner la perte de la volonté de survivre (une forme d'apathie). Ce phénomène est probablement en relation étroite avec une insuffisance du taux de sucre du sang (hypoglycémie) suite à une production de chaleur trop abondante et de trop longue durée. Elle constitue également une cause de décès au cas où la perte de chaleur est trop importante. Nous répétons donc que la conservation de la chaleur du corps est à considérer comme une priorité dans toute technique de survie préconisée.

La vasoconstriction est maximale lorsque la température de l'eau est inférieure à 20 °C. Si la température de l'eau est inférieure à 12 °C, la vasoconstriction ne s'effectue plus convenablement après un certain temps. Ceci est qualifié de « vasodilatation par le froid » ou « hunting » ; elle est occasionnée par la paralysie des vaisseaux suite au froid. Il s'agit en fait d'un mécanisme de détente du corps qui se met à fonctionner après quelque temps et qui constitue une réaction contre la nécrose des tissus dont l'irrigation a été insuffisante. Jusqu'à ce jour, aucun moyen n'a été découvert qui puisse protéger les vaisseaux contre cette « paralysie par le froid ». Les symptômes sont souvent une peau rouge présentant des taches et une sensation de démangeaison dans les zones atteintes.

Chair de poule

Les stimuli cérébraux provoquent en outre le phénomène connu sous le vocable « chair de poule » à savoir la contraction des muscles horripilateurs provoquant le redressement des poils. Il est admis généralement que ce dernier réflexe est peu important chez l'homme. Par contre, il joue un rôle très important chez les animaux à toison au niveau de la protection contre le froid, les poils redressés conservant l'air chaud.

Augmenter la production de chaleur

La production de chaleur s'intensifie tout d'abord par une augmentation des activités dans les organes (métabolisme accru) ainsi qu'un accroissement du tonus musculaire. Ce dernier phénomène provoquera des fusions, dans un premier stade, et ensuite la personne concernée se mettra à trembler et à claquer les dents. Ces réactions sont de nature à quintupler la production de chaleur (Moinar, 1956).

HYPOTHERMIA AND SURVIVAL AT SEA

The vasoconstriction incurred by the vessels surrounding the skull is much less important; it is indeed essential that too fast a supercooling of the brain should be prevented as there are few insulating grease layers on the dome of the skull.

The aim of "keeping the head at an adequate temperature" is obviously to prevent a cooling of the brain, which is essential as far as the proper functioning of the human body is concerned.

Protection of the head

The skin which covers the head has few nerves able to bring about a vasoconstriction of the vessels surrounding the skull. It seems furthermore that the direct reaction of these vessels is slow with regard to the stimuli brought about by the cold. Moreover the head does not give the impression of being cold when other body parts give this impression under identical circumstances. Indeed, the skin of the head only has a restricted number of cold receptors; this is why people drowning do not especially feel the need to protect their heads.

The head can thus be regarded as a point of the body with very high heat loss. According to several authors, a drowning person immersed in the water loses half of the heat produced by the body through the head, neck and nape while the other half is lost through the other parts of the body. Consequently it is important to develop and to propose swimming techniques which enable the head, neck and nape to be protected against extreme cooling.

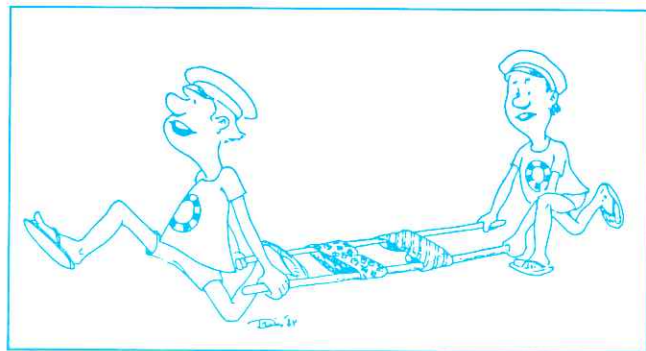
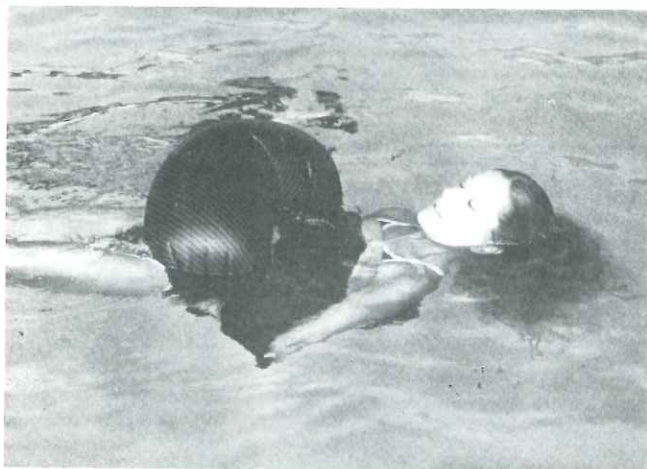
Some techniques involving the immersion of the head do not apply to cold water and should therefore not be taught for this purpose.

Things to avoid

These techniques, which include among others the "mush-room" (way of floating) as well as the "drownproofing" techniques, essentially aim at having the drowning persons floating, without worrying about keeping their heads out of the water.

According to these techniques, the drowning persons must fill their lungs with a maximum amount of air and then immerse the highest possible number of body parts (including the face). These techniques were developed mainly in swimming pools where the water temperature is comparatively higher and where hypothermia does not pose such a problem.

The immersion of the face after a deep aspiration does not only cause a significant heat loss but also a slowing down of the heart rhythm (bradycardia) which, in turn, can lead to cerebral hypoxia (a lack of oxygen in the brain) and cause a loss of consciousness. Finally, it is well known that a prolonged stay in cold water will cause hyperventilation (breathing in and out very heavily) in most cases, which means that it is practically impossible to hold one's breath as advised in the "drownproofing" techniques.

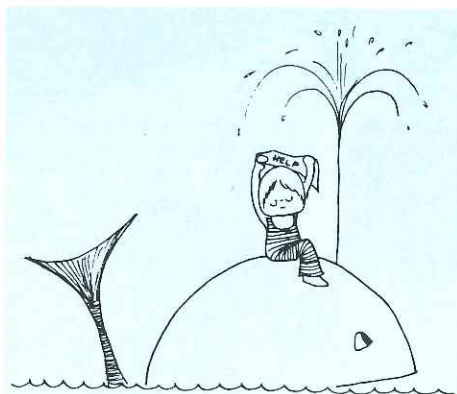


Things to do

In case of immersion in cold water, it is of vital importance for the drowning person to maximise the possibilities for floating while optimising heat preservation. Such a combination becomes impossible when floating techniques involving immersion of the head are used since these techniques bring about a drop of the essential temperature down to the limit of hypothermia (34.4 °C). Nausea occurs, as well as headaches, muscular cramps and "spiritual failure", which means the loss of will to survive (a form of apathy).

This phenomenon is probably closely linked to an insufficiency of the blood sugar level (hypoglycaemia) following too heavy and too long a period of heat production. Death can also occur when heat loss is too high. This preservation of body heat is to be regarded as a priority in every recommended survival technique.

Vasoconstriction is maximal when the water temperature is lower than 20 °C. When the water temperature goes below 12 °C, vasoconstriction becomes deficient after a certain time. This is called "vasodilation caused by the cold" or "hunting", it is brought about by paralysis of the vessels caused by the cold. In fact, it is a body defence mechanism starting after a certain time as a reaction against necrosis of those tissues which have not received sufficient irrigation. To date, nothing has been discovered to protect vessels from this "cold paralysis". The symptoms are often red skin with marks and an itching sensation in the affected areas.



Gooseflesh

Moreover cerebral stimuli cause a phenomenon called "gooseflesh" which is a contraction of the horripilation muscles producing hair bristling. It is generally accepted that this reflex is not very important in man. On the other hand, it plays a very important role in fleeced animals in terms of protection against the cold, as bristled hair retains the warm air.

Increase of heat production

Heat production intensifies first of all by increasing the organs' activities (increased metabolism) as well as by increasing muscular tone. This phenomenon produces fusions at the first stage; then the affected person starts shaking and his/her teeth will start chattering. These reactions can increase heat production fivefold (Molnar, 1956).

FACTEURS DONT LA TEMPERATURE SUBIT L'INFLUENCE

Considérons à présent un certain nombre de facteurs influençant tant la température de la peau que la température essentielle et nous distinguons des « facteurs inhérents à l'individu » et des « facteurs inhérents à l'environnement ».

Facteurs inhérents à l'individu

La masse de tissu adipeux

La masse de tissu adipeux sous-cutané joue un rôle majeur voire même le rôle le plus important dans la résistance vis-à-vis d'un environnement froid.

Comme nous l'avons déjà fait remarquer, l'irrigation de la peau et de la couche de graisse sous-cutanée est bloquée très vite par la vasoconstriction en cas d'immersion dans l'eau froide. Dans le cas où la vasoconstriction sous-cutanée est fort prononcée, la fonction isolante de la couche de graisse sous-cutanée sera d'autant plus efficace que cette couche est importante. En moyenne, les personnes « fortes » survivront donc plus longtemps que les personnes « maigres » en cas d'immersion dans l'eau glacée. Outre sa fonction d'isolation, la graisse a encore une fonction passive en ce sens qu'elle aide la personne à flotter ; en effet, les personnes plus « fortes » ont un poids spécifique moins élevé et flottent donc mieux.

La surface absolue du corps

Les personnes de taille plus grande possèdent un corps dont la surface absolue est plus grande de sorte que la partie du corps en contact avec l'eau froide est plus importante ce qui, apparemment, provoque une perte plus élevée de chaleur. Il faut toutefois prendre en considération la surface relative du corps.

La surface relative du corps

Les personnes de plus petite taille possèdent un corps dont la surface relative (c'est-à-dire la surface absolue du corps divisée par la masse du corps) est plus élevée de sorte que, relativement, elles se refroidissent plus vite.



FACTORS INFLUENCING TEMPERATURE

Now we will consider a number of factors influencing skin temperature as well as essential temperature and will make a distinction between "factors inherent in the individual" and "factors inherent in the environment".

Factors inherent in the individual

Quantity of adipose tissue

The quantity of subcutaneous adipose tissue plays a major part, or perhaps even the most important part, in resistance to a cold environment.

As we pointed out earlier, the irrigation of the skin and of the subcutaneous fat layer is quickly blocked by vasoconstriction in the case of immersion in cold water.

When subcutaneous vasoconstriction is strong, the insulating function of the subcutaneous fat layer is all the more efficient since this layer is thick. On average, stout people will survive longer in ice cold water than thin people.

Besides its insulation function, fat also has a passive function as it helps people to float ; indeed, the specific gravity of stouter people is lower so they float better.

The total body surface area

Taller people's bodies have a higher total surface area so that the immersed part of the body in contact with cold water is greater, which apparently causes a higher heat loss. However, the relative body surface area must be taken into account.

Relative body surface area

Shorter people's bodies have a higher relative surface area (i.e. the absolute body surface area divided by the body mass) so that they cool comparatively quicker.



Le sexe

Les femmes ayant, en règle générale, plus de graisse sous-cutanée que les hommes, leur corps se refroidira moins vite. Toutefois, les femmes ont, dans la plupart des cas, un corps dont la surface relative est plus réduite de sorte qu'elles se refroidissent plus vite.

L'âge

Les personnes plus âgées sont normalement mieux enveloppées que des jeunes enfants. D'autre part, le corps des jeunes enfants a une surface relative plus grande de sorte que, globalement, ils se refroidissent plus vite que des personnes plus âgées.

L'adaptation

Divers auteurs prétendent que l'homme est capable de développer une certaine résistance au froid lorsqu'il prend l'habitude de vivre dans des températures froides. A cet égard, il a été constaté que les nageurs qui tentent de traverser la Manche étaient capables de nager dans une mer dont la température est de 15 °C pendant plus de 20 heures alors que des naufragés ne pouvaient résister que pendant 4 à 6 heures dans des conditions analogues. Le processus d'adaptation se caractérise par une augmentation du métabolisme (la production d'énergie) qui compense la perte de chaleur.

Les zones du corps (voir figure 1)

Il a été constaté que la perte de chaleur est plus élevée dans certaines parties du corps. Nous avons déjà fait remarquer que la tête, le cou et la nuque constituaient de telles zones. D'autres zones sont les aisselles, les épaules (devant, derrière) et l'aîne. Ces données devraient être prises en considération par les créateurs de gilets de natation de surfing et de sauvetage.



Facteurs inhérents à l'environnement

La température de l'eau

- L'individu nage

En règle générale, on peut dire qu'un individu **nageant** dans une eau dont la température atteint 28 à 35 °C produit plus de chaleur qu'il n'en perd. S'il nage dans une eau dont la température est de 24 à 28 °C, il se sentira « à l'aise » dans la plupart des cas.

Lorsque la température de l'eau atteint 21 à 24 °C, il parvient encore à maintenir sa température corporelle à un niveau convenable et même à dépasser ce niveau. Si la température de l'eau est inférieure à 21 °C la production de chaleur ne compense plus la perte et l'individu se refroidit.

- L'individu flotte

Dans le cas d'une personne qui **flotte**, la température idéale de l'eau se caractérise par le fait qu'aucun accroissement métabolique ni réaction vasculaire ne sont suscités. Une température de l'eau de l'ordre de 35 à 36,5 °C est considérée comme une température neutre du point de vue thermique. Tout naufragé est capable d'y survivre très longtemps. Toutefois, il est regrettable que notre planète ne compte que peu d'endroits où l'eau atteint des températures de cet ordre.

Sex

As women usually have more subcutaneous fat than men, their bodies cool less quickly. However, in most cases women's bodies have a smaller relative surface so that they cool quicker.

Age

Adults are usually better "padded" than young children. On the other hand, young children's bodies have a higher relative surface area so that on the whole they cool more quickly than older people.

Adaptation

Various authors maintain that man is able to develop a certain resistance to the cold when he gets used to living in cold temperatures.

In this respect, it was found that swimmers attempting to cross the channel were able to swim for over 20 hours in a sea colder than 15 °C whereas shipwrecked people were only able to survive for 4 to 6 hours under similar conditions. The adaptation process is characterised by a quickening of the metabolism (energy production) which compensates for heat loss.

The parts of the body (see figure 1)

It was found that heat loss is higher in some parts of the body than in others. We have already pointed out that the head, neck and nape are such areas. Other parts are armpits, shoulders (front, rear) and groin. These data should be taken into account by designers of swimming and surfing suits as well as life jackets.

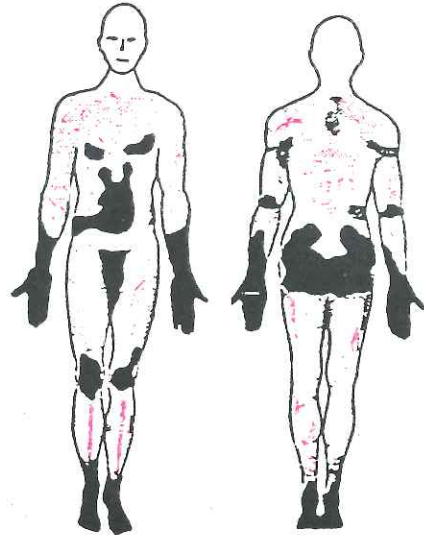


Figure 1. Profil de température (Hayward et al, 1975)

Blanc : endroits où la perte de chaleur est la plus importante
Noir : endroits où la perte de chaleur est la moins élevée

Figure 1. Temperature Profile (Hayward et al, 1975)

White : places with higher heat loss
Black : places with lower heat loss

Factors inherent in the environment

Water temperature

- Swimming

As a general rule people **swimming** in water of temperature ranging between 28 and 35 °C produce more heat than they lose; they will feel "comfortable" in most cases when swimming in water that is between 24 and 28 °C.

When the water temperature ranges between 21 and 24 °C, they still manage to maintain body temperature at an appropriate level and even to exceed this level. When the water temperature is below 21 °C, heat production does not compensate for the loss, and the body therefore cools.

- Floating

For people **floating** the water temperature is ideal when neither a metabolic increase nor a vascular reaction is provoked. A water temperature in the region of 35 to 36.5 °C is regarded as neutral from the thermal point of view. Any shipwrecked person can survive for a very long time in such temperatures. However, it is unfortunate that our planet has few places where temperatures of that order are maintained.

SURVIE EN MILIEU AQUATIQUE – SURVIVAL AT SEA

Si la température de l'eau n'atteint pas 30 °C la plupart des naufragés, et plus particulièrement les individus maigres, deviennent hypothermiques. Celui qui flotte simplement en maillot de bain, la tête immergée se refroidit très vite si la température de l'eau est de 24 °C. Il se met à trembler après 15 à 20 minutes et des crampes musculaires surviennent après 40 à 60 minutes. L'individu qui maintient la tête hors de l'eau par de légers mouvements, est capable de rester pendant une dizaine d'heures dans une eau dont la température est de 24 °C sans que les symptômes précités ne surviennent (Reeves et al., 1964).

La viscosité (degré de fluidité de l'eau)

Lorsque l'eau devient plus froide, son degré de fluidité se réduit (l'eau devient « moins fluide »). Lorsqu'un effort doit être accompli dans l'eau froide, le nageur rencontre une forte résistance de l'eau proprement dite.

Vagues et courant

Un naufragé flottant se refroidit d'autant plus vite que les vagues sont prononcées et que le courant est fort. En effet, l'eau se déplace le long du corps et enlève plus rapidement la chaleur. Un naufragé nageant en subira également les effets négatifs puisqu'il doit surmonter les vagues en nageant et est souvent déporté par le courant.

Vêtements de protection

En portant des vêtements, le corps est mieux protégé contre le refroidissement. D'un point de vue général, il peut être affirmé que c'est surtout dans le cas où le naufragé flotte sur place qu'il importe de porter des vêtements. La question qui se pose de savoir s'il faut garder les vêtements est tributaire de deux éléments à savoir des qualités d'isolation du vêtement d'une part et de son poids d'autre part.

Pour que le vêtement garantisse de bonnes qualités d'isolation il est important en premier lieu qu'il « colle » parfaitement bien au corps sans toutefois gêner trop fortement la liberté de mouvement et d'autre part que le tissu soit serré. Dans un tel cas le vêtement peut augmenter la capacité d'isolation de 50 % (Keating, 1977).

When the temperature is under 30 °C, most shipwrecked people, especially skinny people, suffer from hypothermia. People floating in a swimming suit only, with their head immersed, cool very quickly when the water temperature is 24 °C. They start shaking after 15 to 20 minutes and muscular cramps occur after 40 to 60 minutes. People keeping their heads out of the water with slow movements are able to survive for some ten hours at a water temperature of 24 °C without the above-mentioned symptoms occurring (Reeves and al, 1964).

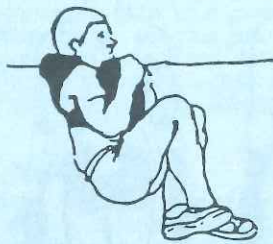


Figure 2 **Position HELP**
Flotter avec gilet de sauvetage

Figure 2 **HELP position**
Floating with a life jacket

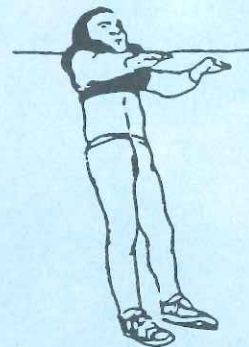


Figure 3 **Position HELP**
Flotter avec bouée de fortune

Figure 3 **HELP position**
Floating with a makeshift buoy

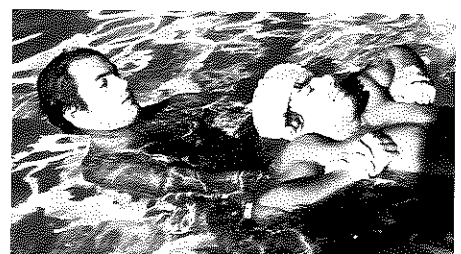
H.E.L.P. constitue l'abréviation de Heat-Escape-Lessening-Posture, c'est-à-dire position permettant de réduire la perte de chaleur.

H.E.L.P. is short for Heat Escape Lessening Posture, i.e. a posture making it possible to reduce heat loss.



Figure 4 **Position HELP**
Plusieurs naufragés (huddling)

Figure 4 **HELP position**
Several shipwrecked people (huddling together)



Viscosity (degree of fluidity of the water)

When the water gets colder, its degree of fluidity is reduced (the water becomes "less fluid"). The swimmer who has to make an effort in cold water meets with a strong resistance from the water itself.

Waves and currents

Shipwrecked people, who are floating, cool all the more quickly when the current is strong. Indeed, the water is displaced along the body and removes the heat more quickly. Shipwrecked people who are swimming are also subjected to the following negative effects: they have to overcome the waves while swimming, and currents may carry them off course.

Protective clothing

The body is better protected against cooling when clothes are worn. From a general point of view, one can say that clothes play a particularly significant role when shipwrecked people are floating on the spot. The question as to whether clothes should be kept on or not depends on two factors, i.e. the insulation quality of the clothes on the one hand and their weight on the other hand.

To guarantee good insulation, clothes should in the first place cling perfectly to the body, without hampering movements however, and they should also be made of closely woven fabric. Under these conditions, clothes can increase the insulation capacity by 50% (Keating, 1977).

Nous sommes de toute manière en mesure d'affirmer qu'en cas d'immersion passive les vêtements parviendront à retarder quelque peu le refroidissement mais l'hypothermie ne sera pas prévenue dans sa totalité. Lorsque le poids des vêtements (par exemple manteau ou bottes) est trop élevé, il est conseillé de les utiliser davantage comme bouée de fortune plutôt que comme moyen d'isolation. Une technique très simple permet en effet de transformer un manteau ou des bottes en bouée de fortune d'excellente qualité.

Il est indiqué qu'un individu en détresse obligé de rester longtemps dans l'eau froide garde le plus de vêtements possibles, tout en tenant compte de la température de l'eau, et bouge le moins possible. Logiquement, il faut dans ce cas pouvoir flotter à l'aide d'une bouée à laquelle on s'agrippe en veillant également à ce que la tête (tout comme les épaules, le cas échéant) soit sortie de l'eau. Si l'on parvient en outre à serrer les bras contre le poitrine et à lever les genoux pour protéger la zone de l'aîne, la perte de chaleur sera réduite au minimum et le temps de survie s'accroîtra de manière considérable. En retenant l'urine dans la vessie, on se procure en outre une source de chaleur qu'il ne faut pas dédaigner. (Voir figures 2-3-4)

Il est généralement déconseillé à la personne qui nage de garder des vêtements gênants. Certaines expériences ont effectivement démontré qu'un naufragé subit un refroidissement plus important de 35% si il nage ou reste simplement sur place. Plus un naufragé nage vite, plus grande est la vitesse à laquelle l'eau réchauffée s'écoule des vêtements, et plus fort est le refroidissement.

Nous pouvons donc conclure qu'en nageant dans l'eau froide, même en étant vêtu, la perte de chaleur s'accélère de manière drastique: d'une part à cause du courant de l'eau le long du corps mais également à cause de la vasodilatation (dilatation des vaisseaux sanguins) allant de pair avec l'activité musculaire.

Les mouvements de celui qui nage en gardant certains vêtements subiront également un effet de freinage et la fatigue se manifesterait plus rapidement. Dans la plupart des cas, les individus ne sont pas entraînés à nager en gardant des vêtements. Il serait peut-être indiqué de promouvoir l'apprentissage de ces formes de nage. De toute manière, il ne faut jamais se défaire d'un moyen quelconque permettant de flotter tels qu'une bouée ou un gilet de sauvetage, pour être en mesure de nager plus vite.

At any rate, we can assert that in cases of passive immersion clothes will help delay cooling somewhat but hypothermia will not be totally prevented.

When clothes are too heavy (in the case of a coat or boots for instance) shipwrecked people are advised to use them as a makeshift buoy, rather than as a means of insulation. Indeed a very simple technique makes it possible to transform a coat or boots into an excellent makeshift buoy.

People in distress, compelled to stay in cold water for a long period, are advised to keep as many clothes on as possible, depending on the water temperature, and to move as little as possible. In theory, one should be able to float by clutching a buoy, making sure that one's head (and possibly shoulders) are out of the water. Moreover, if one manages to clasp one's arms over the chest and to lift one's knees in order to protect the groin area, the heat loss will be reduced to a minimum and the survival time will be prolonged considerably.

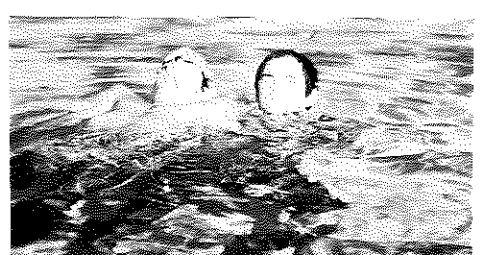
By retaining urine in the bladder, one keeps an appreciable amount of heat. (See figures 2-3-4)

Swimmers are generally advised not to keep cumbersome clothes on. Several experiments have indeed shown that shipwrecked people undergo a 35% greater cooling if they swim than if they just stay put. The faster shipwrecked people swim, the higher the speed at which warmed-up water flows from clothes and the higher the rate of cooling.

Thus we can conclude that heat loss quickens drastically when people swim in cold water, even with clothes on, this is due to the water current floating along the body on the one hand and to vasodilation on the other hand (dilation of the blood vessels), which goes together with muscular activity.

The movements of people swimming with certain clothes on will also be slowed down and fatigue will occur more quickly.

In most cases people have no training in swimming with clothes on. It is perhaps advisable to promote the learning of this style of swimming. In any case one should never get rid of any type of floating aid, such as a buoy or a life jacket, in order to be able to swim faster.



SURVIE EN MILIEU AQUATIQUE - SURVIVAL AT SEA

Tout naufragé doit se rendre compte que le choix qu'il opère, à savoir : flotter sur place et attendre du secours ou nager vers la côte est tributaire de facteurs divers tels que :

1. la température de l'eau
2. la distance à parcourir et par conséquent les capacités en qualité de nageur
3. la présence du moyen permettant de flotter : une règle d'or : N'ABANDONNEZ JAMAIS VOTRE BOUEE
4. porter ou non des vêtements.

Il est par conséquent logique qu'un naufragé s'abstienne de nager vers la côte au cas où :

- la température de l'eau n'atteint pas 21 °C
 - il porte des vêtements isolants
 - il dispose d'un moyen permettant de flotter
 - il parvient à garder la tête hors de l'eau et
 - il sait que la distance à vaincre à la nage est trop importante pour lui.
- S'il décide malgré tout de tenter l'aventure, il faut qu'il sache que la perte de chaleur sera plus élevée que la production et que les effets de l'hypothermie se feront sentir sans tarder : un pur suicide.

Enduire de graisse

La graisse accentue la faculté d'isolation de la peau et l'on constate que les nageurs qui tentent de traverser la Manche s'enduisent volontairement de graisse. Comme un naufragé n'est pas en mesure d'en faire autant nous ne développerons pas cet aspect du problème.

QUELQUES CONSIDERATIONS RELATIVES À DES POSITIONS PERMETTANT DE FLOTTER ET DE SURVIVRE AINSI QU'À DES TECHNIQUES DE DROWNPROOFING

Des études faites en Nouvelle-Zélande ont démontré que la perte de chaleur du corps est beaucoup plus élevée chez les personnes appliquant des positions permettant de flotter et de survivre (la tête étant immergée) ou des techniques de drownproofing par rapport à celles qui nagent calmement en gardant la tête hors de l'eau (Edgar, 1970). L'auteur en a conclu tout naturellement qu'il est préférable de nager calmement plutôt que d'appliquer les techniques de drownproofing.

Il se pourrait que l'application de ces dernières techniques soit indiquée si la température de l'air est beaucoup plus froide que la température de l'eau ou si la température de l'eau est élevée.

L'air étant généralement plus chaud que l'eau et la température de l'eau n'atteignant que rarement 25 °C, il est toujours préférable, dans la mesure du possible, de sortir de l'eau la tête, le cou et la zone de la nuque. (Voir figures 5-6)

Shipwrecked people must all realise that the choice they make, i.e. floating on the spot and waiting for help or swimming towards the coast, is dependent on various factors such as :

1. The water temperature.
2. The distance to be covered in comparison with the swimming ability.
3. The availability of floating aid ; GOLDEN RULE : NEVER LEAVE YOUR BUOY.
4. Whether clothes are worn or not.

Consequently it is logical that shipwrecked people should not swim towards the coast under the following circumstances :

- when the water temperature is lower than 21 °C,
- they wear insulating clothes,
- they have a floating aid on,
- they can manage to keep their heads out of the water,
- they know that the distance to swim is too far for them.

If they decide to try it, in spite of everything, they must be aware that heat loss will be higher than heat production and that they will soon start feeling the effects of hypothermia - it is sheer suicide !

Coating with grease

Grease increases the skin's insulation ability and swimmers attempting to cross the Channel are often seen voluntarily coating themselves with grease. As this is not possible for shipwrecked people we won't elaborate upon this aspect.

A FEW CONSIDERATIONS RELATING TO POSITIONS ALLOWING FLOATING AND SURVIVAL AS WELL AS DROWNPROOFING TECHNIQUES

Surveys conducted in New Zealand have shown that the body heat loss is much higher in people using drownproof techniques or positions helping floating and survival (with the head immersed) than in people swimming slowly with their heads out of the water (Edgar, 1970).

The author naturally concludes that it is preferable to swim slowly than to use drownproofing techniques.

The use of such techniques could be recommended when the air temperature is much cooler than the water temperature or when the water temperature is high. As air is generally hotter than water and water temperature rarely reaches 25 °C, it is always preferable to keep head, neck and nape out of the water as far as possible. (See figures 5-6)

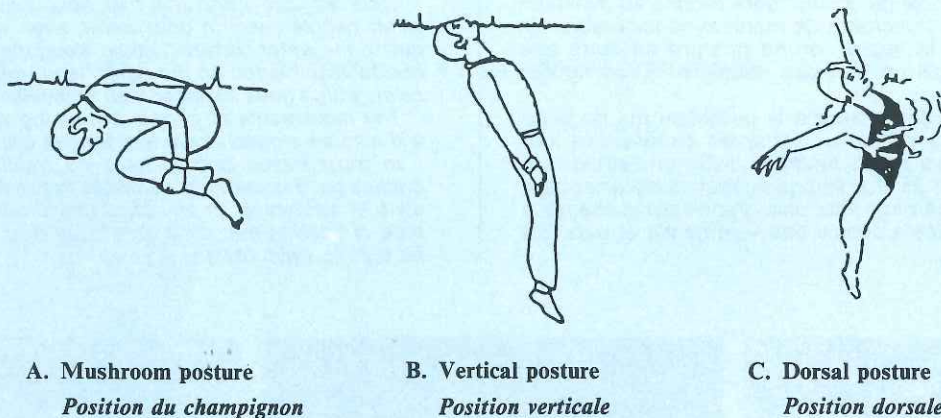


Figure 5 Position permettant de flotter contre-indiquée (lorsque la température de l'eau n'atteint pas 25 °C)

Figure 5 ill-advised floating position (when the water temperature is below 25 °C)

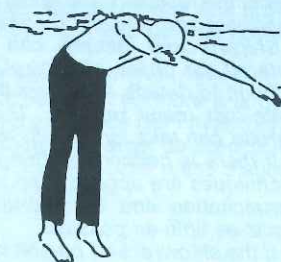


Figure 6 Techniques de drownproofing contre-indiquées (lorsque la température de l'eau n'atteint pas 25 °C)



Figure 6 Ill-advised drownproofing techniques (When the water temperature is below 25 °C)

PREVENIR L'HYPOTHERMIE

En mer, soyez toujours mentalement prêt à être victime d'un accident éventuel. Soyez toujours prêt à affronter un danger quelconque :

- portez des habits à tissu serré
- si vous voyagez en bateau, il est conseillé de porter un gilet de sauvetage doté pour le moins des qualités suivantes :
 - coller au corps
 - être en mesure de développer suffisamment de capacités de flotter pour que le naufragé puisse sortir la tête, le cou et la nuque
 - couvrir au maximum les zones où la perte de chaleur est la plus importante.
- au cas où les gilets de sauvetage font défaut, efforcez-vous de vous munir d'un moyen de fortune vous permettant de flotter (il n'est pas nécessaire qu'il soit prévu spécialement pour un sauvetage) : sac en plastique, planche, bouée.

Lorsque l'on se trouve dans l'eau, il faut veiller à bien reconnaître les signes précurseurs de l'hypothermie tels que :

- sensation de froid
- frissons
- tremblements
- bleuissement des lèvres et des extrémités du corps
- débit de paroles lent
- perturbation de la motricité des doigts et des orteils.

Si ces derniers signes apparaissent, il faut déjà avoir quitté l'eau et avoir veillé à un réchauffement adéquat ; une bonne douche chaude fait parfaitement l'affaire.

SAUVETAGE ET REANIMATION DE NAUFRAGES HYPOTHERMIQUES

Le sauvetage

Le sauveteur tenu de procéder au sauvetage d'un naufragé immergé dans l'eau glacée doit bien se rendre compte du fait que les mêmes lois de la physique s'appliquent également à lui et qu'il éprouvera, lui aussi, les effets de l'aspect « froid ». Un sauvetage « sec » est, par conséquent, toujours préférable à un sauvetage obligeant le sauveteur à se mettre à l'eau.

Au cas où des moyens de secours seraient disponibles, pouvant être jetés vers le naufragé, il ne peut jamais être perdu de vue que la motricité du naufragé est fortement restreinte et qu'il a perdu une partie majeure de ses « forces ». Il est, par exemple, à peine capable de se hisser le long d'une corde. Attirez doucement le naufragé vers vous sans oublier qu'il se pourrait qu'il lâche prise. Il est donc préférable de se servir d'objets dans lesquels le naufragé peut glisser les bras ou sur lesquels il peut s'appuyer en partie comme une bouée de sauvetage et/ou une planche.

Le sauveteur ne se mettra pas à l'eau avant de s'être équipé d'un gilet ou d'une ceinture de sauvetage ou d'avoir à sa disposition un moyen lui permettant de flotter efficacement ou d'être relié à une corde manipulée par un co-sauveteur.

Il importe que le sauveteur se rende compte que ses qualités de nageur seront fortement atténuées par l'eau froide.

PREVENTION OF HYPOTHERMIA

At sea, one should always be mentally ready for a possible accident. Always be prepared to face any danger by :

- wearing clothes made of tightly woven fabric ;
- wearing a life jacket when sailing which :
 - clings to the body,
 - offers sufficient flotation to keep head, neck and nape out of the water,
 - covers as much as possible of the areas where heat loss is more significant ;
- trying to take a makeshift floating aid (not necessarily designed for lifesaving) e.g. plastic bag, board, buoy when there are no life jackets available.

When in water, one should make sure that one recognises the precursory signs of hypothermia, such as :

- feeling cold,
- shivering,
- trembling,
- lips and body extremities turning blue,
- slow delivery of speech,
- reduction in mobility of fingers and toes.

When these last signs appear, one should leave the water and warm oneself completely ; a hot shower would do nicely.

LIFESAVING AND RESUSCITATION OF HYPOTHERMIC SHIPWRECKED PEOPLE

Lifesaving

Those who have to rescue shipwrecked people immersed in ice cold water must realise that the same laws of physics apply to them and that they will also undergo the effects of the cold. Consequently a "dry" rescue is always preferable to a situation where the rescuer has to go into the water himself.

When rescue aids to be thrown to the shipwrecked are available, one should never lose sight of the fact that the mobility of the shipwrecked is strongly impaired and they will have lost a significant part of their "strength". For instance a shipwrecked person is hardly able to haul himself up by means of a rope. Slowly catch hold of the shipwrecked person keeping in mind that he could loosen his grip. Thus it is preferable to use objects into which the shipwrecked person can slip his arms or which he can lean on, e.g. a life belt and/or a board.

The rescuer should not go into the water without having put on a life jacket or life belt or without having an efficient floating aid or being linked up to a rope held by a co-rescuer.

It is important for the rescuer to realise that his ability as a swimmer will be greatly impaired by the cold water.

La réanimation

Dès que le naufragé a été ramené vers un endroit sec, il faut accomplir les gestes de base permettant d'obtenir des battements du cœur convenables et une respiration efficiente.

Les naufragés peuvent donner l'impression d'être entrés dans la phase de la mort clinique, le pouls et la respiration étant difficilement détectables. En outre, ils sont très souvent froids au toucher, pâles ou blêmes et de nombreux réflexes ont disparu. Le diagnostic de la respiration et de la carotide peut prendre plus de temps (jusqu'à une minute).

Si la respiration et le pouls font défaut, les techniques de réanimation normale sont appliquées. La victime sera transportée d'urgence vers une clinique et au cours de la réanimation et du transfert on veillera tout particulièrement à ce que la victime ne se refroidisse pas outre mesure.

Si le naufragé n'a pas perdu conscience, enlevez ses vêtements froids, enveloppez-le d'une couverture chauffante, couvrez-le d'objets chauds (bouillottes – plaques chauffantes...) ou servez-lui des boissons chaudes. Si toute source de chaleur fait défaut, le corps nu d'un secouriste peut constituer une bonne solution (Palm, 1974).

Si le naufragé a perdu conscience, il faut ôter immédiatement les vêtements froids dans un environnement chaud. Il est recommandé (J.A.M.A., 1956) d'insuffler de l'air chaud au cours de la réanimation et d'appliquer des objets chauds sur le corps tels que bouillottes, une couverture chauffante (pas de couverture normale, celle-ci n'étant pas chaude) etc...

TRAITEMENT ULTERIEUR EN MILIEU HOSPITALIER (J.A.M.A., 1986)

Un patient hypothermique n'ayant pas encore subi un arrêt cardiaque fera l'objet de traitements physiques divers :

- intubation endotrachéale permettant d'introduire de l'oxygène chauffé et humidifié dans les poumons d'un patient hypothermique qui ne respire pas.
- le métabolisme basal étant fortement ralenti, il faudra administrer les médicaments, même ceux qui sont absolument nécessaires, avec la plus grande prudence, leur accumulation pouvant atteindre des niveaux toxiques dans des tissus vitaux déterminés.
- le réchauffement progressif sous contrôle convenable est à conseiller pour prévenir le « choc du réchauffement » qui se produit lorsqu'un individu est réchauffé trop vite et partout. Le sang froid se situant dans la peau, les bras et les jambes se met à couler subitement en direction du centre du corps. Il est constaté en effet que la température du noyé ne monte pas mais que, par contre, sa température centrale diminue considérablement de sorte que se produisent tous les effets néfastes inhérents à ce phénomène. Le réchauffement des noyés souffrant d'hypothermie profonde doit donc se faire dans la mesure du possible de l'intérieur vers l'extérieur.
- le traitement d'un arrêt de cœur en cas d'hypothermie diffère souvent du traitement appliqué en cas de normothermie (température normale) ; la défibrillation est en effet très souvent inefficace lorsqu'elle s'applique à des victimes dont la température n'atteint pas 30 °C.

A quelle température la défibrillation s'impose-t-elle et combien de fois peut-on l'appliquer ?

Jusqu'à ce jour, ces questions restent sans réponse formelle.

Il est admis, en règle générale, qu'un noyé hypothermique doit être réchauffé et qu'il faut à cet effet se servir de techniques d'ordre divers comme l'administration d'oxygène réchauffé et humidifié, en infusant un liquide chaud dans le liquide abdominal (dialyse péritonéale), en ouvrant le thorax et en procédant ensuite au massage direct du cœur, en versant sur le cœur des liquides chauds et/ou en réchauffant le sang à l'aide d'un pontage aménagé à l'extérieur du corps et relié à un appareil chauffant.

La norme arrêtée à présent prévoit qu'une victime qui semble être « morte » après un séjour de longue durée dans l'eau froide ne peut être considérée comme étant décédée tant que sa température corporelle n'ait pas été ramenée à un niveau quasi normal.

Un diagnostic précis ne devient possible qu'à ce moment. De nombreux médecins se trouvent ainsi confrontés au problème suivant :

Resuscitation

As soon as the shipwrecked person has been brought to a dry place, the rescuer must apply first aid in order to obtain a normal heartbeat and efficient respiration.

Shipwrecked people can give the impression of having entered the phase of clinical death as pulse and breathing are difficult to detect. Moreover they often feel cold, look pallid and have lost many reflexes. The diagnosis of breathing and the carotid can take longer (up to one minute).

If there is neither breathing nor a pulse, normal resuscitation techniques are applied. The victim is rushed to hospital ; during resuscitation and transportation one ensures that the victim cools as little as possible.

If the shipwrecked person has not lost consciousness, take off his cold clothes, wrap him up in an electric blanket, cover him up with hot items (e.g. a hot water bottle) or give him hot drinks. If no other heat source is available, a rescuer's naked body can be a good solution (Palm, 1974).

If the shipwrecked person has lost consciousness, his clothes should immediately be taken off in a warm environment. It is recommended (J.A.M.A., 1956) to blow warm air into the lungs during resuscitation and to cover up the body with hot items such as hot water bottles or an electric blanket (not an ordinary blanket as it is not hot) etc...

FURTHER TREATMENT IN A HOSPITAL ENVIRONMENT (J.A.M.A., 1986)

A patient suffering from hypothermia who has not yet undergone heart failure will be given various physical treatments :

- endotracheal intubation allowing the introduction of warmed and humidified oxygen into the lungs of a patient suffering from hypothermia who is not breathing ;
- as basal metabolism is considerably slowed down, it will be necessary to administer medications very carefully, even those which are absolutely necessary, as their accumulation can reach toxic levels in some vital tissues ;
- progressive warming under adequate supervision is recommended in order to prevent a "warming shock" which takes place when a person is warmed too quickly in all parts of the body. The cold blood in the skin, arms and legs suddenly starts flowing towards the centre of the body. Indeed it is found that the temperature of drowned people does not rise but their central temperature decreases considerably so that all the harmful effects inherent in this phenomenon occur. Drowned people suffering from hypothermia should thus be warmed as far as possible from the inside towards the outside ;
- the treatment of heart failure in the case of hypothermia often varies from the treatment given in the case of normothermia (normal temperature), indeed, defibrillation very often proves ineffective in victims whose temperature is below 30 °C.

At what temperature is defibrillation vital and how many times can it be applied ?

These questions have not been answered so far.

It is generally accepted that a drowned person suffering from hypothermia must be warmed by means of various techniques such as administering warmed and humidified oxygen, infusing a hot liquid in the abdominal fluid (peritoneal dialysis), opening the thorax and then giving a direct cardiac massage, pouring hot fluids on the heart and/or warming the blood by means of a bypass set up outside the body and linked to a warming appliance.

At present the guiding principle is that a victim who has the symptoms of being "dead" after a long stay in cold water may not be considered as deceased as long as the body temperature has not been brought back to an almost normal level.

Only then is an accurate diagnosis possible. Consequently many doctors are faced with the following problem :

- if hypothermia is the cause of heart failure, the victim must be warmed first to ascertain whether he is really dead, or
- if the drowned person cooled normally because the heart stopped beating, in which case it would be useless to warm the victim.

When no witness of the accident is available, it will always be very difficult to ascertain whether heart failure is caused by hypothermia or whether hypothermia is caused by heart failure. This question however is unimportant for the rescuer on the spot.

SURVIE EN MILIEU AQUATIQUE - SURVIVAL AT SEA

- si l'hypothermie est la cause de l'arrêt de cœur, la victime doit être réchauffée d'abord pour que l'on puisse examiner si elle est réellement morte ou
- si le noyé s'est refroidi normalement parce que son cœur a cessé de battre, il semblerait qu'il soit peu utile de réchauffer la victime.

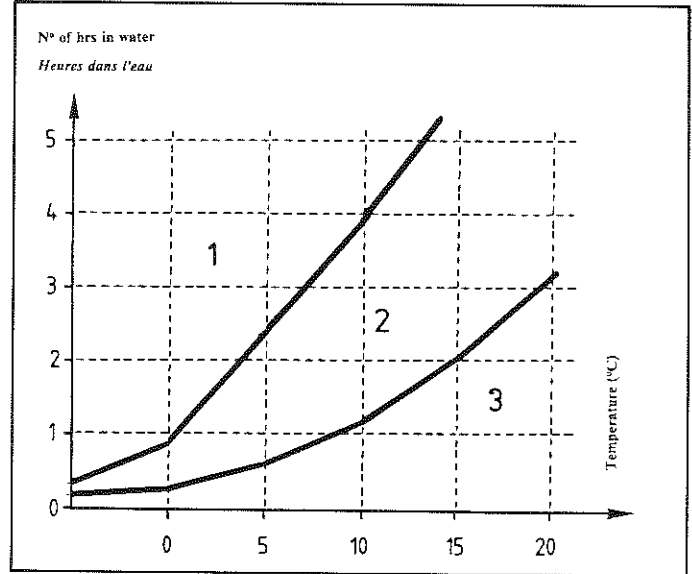
Si aucun témoin n'est présent aux côtés d'un patient hypothermique, il sera toujours très difficile de répondre à la question de savoir si l'arrêt de cœur est provoqué par l'hypothermie ou si l'hypothermie a été provoquée par l'arrêt de cœur. Cette question à laquelle il est difficile de répondre n'est d'aucune importance pour le sauveteur sur le terrain.

SCHEMA GENERALEMENT D'APPLICATION EN MATIERE DE SURVIE EN EAU FROIDE

- 1 - *Survie impossible*
- 2 - *Survie possible*
- 3 - *Survie probable*

- 1 - *Impossible survival*
- 2 - *Possible survival*
- 3 - *Probable survival*

DIAGRAM GENERALLY APPLICABLE TO SURVIVAL IN COLD WATER



TEMPERATURE ESSENTIELLE LIEE AUX SYMPTOMES MOYENS

ESSENTIAL TEMPERATURE AND USUAL SYMPTOMS

TEMP	SYMPTOMES	SYMPTOMS
36.5 °C	<i>Sensation de froid</i>	Feeling cold
	<i>Vasoconstriction de la peau</i>	Vasoconstriction of skin
	<i>Augmentation de la consommation d'oxygène</i>	Increase in oxygen consumption
36.0 °C	<i>Chair de poule</i>	Gooseflesh
35.5 °C	<i>Augmentation de la consommation d'oxygène</i>	Increase in oxygen consumption
	<i>Frissons</i>	Shivering
35.0 °C	<i>Pouls faible</i>	Weak pulse
	<i>Confusion mentale, lourdeur et désorientation</i>	Mental confusion, drowsiness and disorientation
34.5 °C	<i>Capacité motrice affaiblie</i>	Reduction in mobility
	<i>Hypothermie</i>	Hypothermia
	<i>Frissons au maximum</i>	Maximum shivering
34.0 °C	<i>Sensibilité affaiblie</i>	Weakened sensitivity
	<i>Apathie</i>	Apathy
33.5 °C	<i>Consommation d'oxygène diminuée</i>	Reduced oxygen consumption
33.0 °C	<i>Nausées</i>	Nausea
	<i>Arythmie cardiaque (50%)</i> ↓ <i>progressivement</i>	Cardiac arrhythmia (50%) ↓ <i>progressive</i>
	<i>Pouls ralenti</i> ↓ <i>perte</i>	Slow pulse ↓ <i>loss</i>
32.5 °C	<i>Frissons peuvent s'arrêter</i> ↓ <i>de</i>	Shivering can stop and be
	<i>Etre remplacés par raideur</i> ↓ <i>conscience</i>	replaced by muscle stiff-
	<i>musculaire</i>	ness ↓ <i>consciousness</i>
32.0 °C	<i>Hypothermie profonde</i>	Deep hypothermia
31.5 °C	<i>Réaction affaiblie aux stimuli froids</i>	Weakened reaction to cold stimuli
	<i>Respiration réduite</i>	Reduced breathing
31.0 °C	<i>Comportement moteur fort inadéquat</i>	Very inadequate motor behaviour
	<i>Le noyé est pâle et blême</i>	The drowned person is pallid
30.5 °C		
30.0 °C	<i>Perte de conscience</i>	Loss of consciousness
29.5 °C	<i>Réflexes inexistants :</i> - réflexes cutanés	Non-existent reflexes : - cutaneous reflexes
		(reaction to pain)
		- réflexes pupillaires
		- pupil reflexes
29.0 °C	<i>Troubles circulatoires</i>	Circulatory trouble
28.0 °C	<i>Fibrillation cardiaque</i>	Heart fibrillation
27.5 °C		
27.0 °C		
26.5 °C		
26.0 °C		
25.5 °C		
25.0 °C	<i>Mort</i>	Death

31st SKI WEEK CHAMPIONSHIP JERICHO (UNITED STATES) FROM 28/2 TO 4/3 1989

by Cpt Michael Gourlie
Wisconsin National Guard
1Lt Lloyd Godrow

When a location was needed for the CISM 89 Ski Championships, Major General Donald Edwards, the State Adjutant General suggested that the United States host the event. By virtue of its long association with the Biathlon program, the Vermont National Guard was the natural choice to host the event. Since Vermont is traditionally known for its fine skiing, the Vermont National Guard has hosted the National Guard Biathlon team and the United States Olympic Biathlon Team for several years.



entire event. If a competitor tires or falls, his teammates must wait for him to catch up. The team must start together, and finish together. In addition, the course is 25 kilometres long, five kilometres farther than a standard biathlon competition. At the conclusion of the event, the teams must report their finish to a military commander.

This grueling event was won by the Federal Republic of Germany with a time of 1 hour 12.45 minutes. Second place was taken by Finland with a time of 1 hour 14.37 minutes, and third place by a second patrol from Germany, with a time of 1 hour 15.03 minutes. The United States finished 15th with a time of 1 hour 21.20 minutes. United States and Canadian competitors reported to General Joseph Palastra, FORSCOM Commander, at the conclusion of their event.

At the closing ceremonies, the Best Nation Award was presented to the Federal Republic of Germany. Second and Third places went to France and Italy respectively. Although the United States finished overall in Ninth Place, the United States Women's Biathlon team had their best performances ever in the history of their participation in CISM. U.S. Biathletes Andree Frenette, Peg Hunter and Nancy Bell finished in Second Team Place in the Women's 10 kilometre Cross Country. Pamela Nordheim, Helene Arnold, and Nancy Bell proudly accepted Third Team Place for the United States in the overall Women's Biathlon.

CISM 89 is now history. Next year the event goes back to Europe as Austria hosts CISM 90.

Participating countries :

12 - United States, Germany F.R., Austria, Canada, Chile, Finland, France, Italy, the Netherlands, Norway, Sweden, Switzerland

Female participation :

4 - United States, France, Norway, Sweden

Official CISM Representative :

Colonel R. Vanmeerbeek (Belgium)

P.T.C. Chairman :

Lieutenant-Colonel J. Cavaille (France)

Number of participants :

athletes : 172

officials : 79

total : 251

Number of spectators :

500

The first day of competition brought international excitement as world class athletes made their best appearances at the Giant Slalom competition in Stowe and Biathlon in Jericho. Peter Roth, star of the World Cup circuit from the Federal Republic of Germany, set the pace in Stowe, winning the Giant Slalom with a time of 1:53.12 seconds. Second place, with a time of 1:54.32 seconds went to Luca Pesando, of Italy, and third place went to German teammate Marcus Wasmeier, the number three ranked skier in the world, with a time of 1:54.48.

Biathlon competition was keen in Jericho as Hubert Leitgheb of Italy beat Thierry Gerbier of France to take first place in the men's 20-kilometre biathlon. Another Frenchman, Christian Dumont, finished third. Leitgheb had a total time of 1:05:11.4 after missing four missed targets. Gerbier missed four targets, too, for a total time of 1:05:18.1. Dumont's total time was 1:06:01.8, with four misses.

French mastery carried over into the women's 15 kilometre race, with Veronique Claudel in first place, followed by two Norwegians, Sire Grundnes and Synnove Bernsten. The United States' best show was 8th place by Pam Nordheim.

Race announcer and former U.S. Olympic Biathlete Major Lyle Nelson described the skiing conditions as "near perfect", although gusting winds plagued competitors on the rifle range and scores suffered as a result.

The second day, the competition moved to Jericho for the Triathlon and team Cross Country events. The triathlon event proved interesting, as it pitted alpine skiers against nordic skiers in a Biathlon event. Competitors entered based upon their performance in the alpine events at Stowe. France dominated the triathlon, clinching all three medals and four of the top five spots. Patrice Bailly-Salins took the gold medal, followed 11.1 seconds later by teammate Dominique Michaud. Patrick Rassat won the bronze medal with a 1:27.9 finish.

The French triathlon team's strong showing also earned them the team title. Austria finished second at 5:41.3 and the Federal Republic of Germany third at 7:23.1.

The Cross Country Champion of Germany, Jochen Behle, won the men's 15 kilometre cross-country event, leading a field of 41 that included five Olympians. His time was 40:28.7.

Sweden's Anders Bergstrom came in 22.6 seconds behind Behle to take second place. Bergstrom is rated by some as one of the top 20 skiers in the world. Age Skinstad of Norway finished third, slightly more than five seconds behind Bergstrom.

The quality and intensity of the competition was illustrated by the tight finishes. Less than 30 seconds separated the second through sixth place finishers, and the seventh through tenth place finishers were separated by less than two seconds.

The National Cross Country Champion of France, Isabelle Mancini, came in more than two-and-a-half minutes ahead of teammate Veronique Claudel, to make France the commanding power in the women's 10-kilometre race. Mancini's time was 30:56.9; Claudel's, 33:38.6. Venke Istad of Norway was third with a time of 33:58.3.

The last day of competition featured an event that is unique to CISM competition - the Biathlon Patrol Race. Modeled after the military ski border patrols in Europe, competitors compete as a patrol, staying in close proximity to each other throughout the

Discipline	Individual Classification	Team Classification
Biathlon 20 km	1. H. Leitgheb ITA	1. Germany F.R. (T. Linder, H. Fritzenvenger, A. Reiter) 2. Norway (S. Istad, J. Tyldum, T. Olsen) 3. Italy (H. Leitgheb, G. Taschler, S. Demetz)
	2. T. Gerbier FRA	
	3. C. Dumont FRA	
Biathlon 15 km Ladies	1. V. Claudel FRA	1. Norway (S. Grundnes, S. Bernsten, V. Istad) 2. Sweden (R. Louquist, A. Engstrom, T. Persson) 3. United States (P. Nordheim, H. Arnold, N. Bell)
	2. S. Grundnes NOR	
	3. S. Bernsten NOR	
Cross Country 15 km	1. J. Behle FRG	1. Germany F.R. (J. Behle, M. Richter, W. Kuss) 2. Italy (C. Saurer, F. Bormetti, P. Riva) 3. France (C. Pierrat, H. Balland, P. Remy)
	2. A. Bergstrom SWE	
	3. A. Skinstad NOR	
Cross Country 10 km Ladies	1. I. Mancini FRA	1. France (I. Mancini, V. Claudel, M.P. Baby) 2. United States (N. Bell, P. Hunter, A. Frenette) 3. Sweden (A. Engstrom, T. Persson, R. Lowqvist)
	2. V. Claudel FRA	
	3. V. Istad NOR	
Giant Slalom	1. P. Roth FRG	1. Germany F.R. (P. Roth, M. Wasmeier, J. Schick) 2. Italy (L. Pesando, S. Sentiere, I. Tussidor) 3. France (J. Noviant, A. Schiele, Ph. Grand)
	2. L. Pesando ITA	
	3. M. Wasmeier FRG	
Triathlon General Result	1. P. Bailly-Salins FRA	1. France (P. Bailly-Salins, D. Michaud, P. Rassat) 2. Austria (G. Brutscher, R. Kern, W. Perner) 3. Germany F.R. (F. Fischer, J. Laschinger, H. Aschauer)
	2. D. Michaud FRA	
	3. P. Rassat FRA	
25 km Biathlon Patrol	1. Germany F.R. (E. Fischer, E. Reiter, G. Fischer, J. Laschinger) 2. Finland (H. Kivikko, I. Pulkkinen, J. Ahonen, A. Marjetta) 3. Germany F.R. (J. Behle, T. Linder, A. Reiter, H. Fritzenvenger)	
Combined trophy per nation	1. Germany F.R. 2. France 3. Italy 4. Finland	5. Norway 6. Sweden 7. Switzerland 8. Austria



Ce n'est que la troisième fois que ce championnat quittait l'Europe : deux fois pour le Liban en 1967 et en 1972, et maintenant pour l'Etat de Vermont, au Nord-Est des Etats-Unis, tout près du Canada.

C'est dire que traditionnellement les pays européens mènent la danse dans les sports d'hiver au sein du CISM. La liste des participants le prouve. Seul le pays organisateur, le Chili et le Canada étaient opposés aux Nordiques (Suède, Finlande, Norvège) et aux Alpines (France, Italie, Autriche, République Fédérale d'Allemagne) plus les Pays-Bas. Ce dernier pays prouve qu'il ne faut pas nécessairement la haute montagne et la neige pour être skieur. Le champ de recrutement pour le ski reste toutefois fort limité et nous ne verrons jamais 20 pays du CISM au départ de ces compétitions très spécifiques.

Les débutants et les moins forts y sont cependant les bienvenus d'autant plus qu'ils y sont très bien accueillis : il règne une grande camaraderie, beaucoup de simplicité et d'esprit d'entraide au sein des skieurs et des biathlètes.

Nous ne pouvons dès lors qu'encourager d'autres délégations à rejoindre la grande famille des sports d'hiver.

Soulignons la grande disponibilité de toute l'équipe de la National Guard sous la conduite du sympathique Général Edwards qui a réussi un excellent championnat. Tous les participants ont d'ailleurs souhaité renouveler dans le futur l'aventure outre Atlantique.

Colonel Roger Vanmeerbeek