

**ASSOCIATION INTERNATIONALE DES TRAVAUX
EN SOUTERRAIN**

INTERNATIONAL TUNNELLING ASSOCIATION

Compte Rendu de la 31^{ème} Assemblée Générale

ISTANBUL

8 - 11 Mai 2005

Report of the 31st General Assembly

ISTANBUL

8 - 11 May 2005

The 31st meeting of the General Assembly of the Member Nations of ITA was held in Istanbul on 8 and 11 May 2005 under the presidency of Harvey PARKER (USA), assisted by the Executive Members.

VOTING REPRESENTATIVES

SOUTH AFRICA	John CRUISE
ALGERIA	--
GERMANY	Joachim NAUMANN
SAUDI ARABIA	Abdulah A. AL-MOGBEL (Sunday)
AUSTRALIA	Arnold DIX
AUSTRIA	Robert GALLER
BELGIUM	Willy DE LATHAUWER
BRAZIL	Tarcisio B. CELESTINO
BULGARIA	Valentin KETIPOV
CANADA	Rick P. LOVAT
CHILE	--
CHINA	Guo SHANYUN
COLOMBIA	Andrés MARULANDA (Wednesday)
SOUTH KOREA	Chungskik YOO
CROATIA	--
DENMARK	Jorgen HOLST
EGYPT	E. ABDEL SALAM
SPAIN	D. Miguel FERNANDEZ-BOLLO
UNITED STATES OF AMERICA	John REILLY (Sunday) / Henry RUSSELL (Wednesday)
FINLAND	Ilkka VÄHÄÄHO
FRANCE	Jean PHILIPPE
GREECE	Nikolaos KAZILIS
HUNGARY	Pal KOCSONYA
INDIA	G. N. MATHUR
INDONESIA	Agita WIDJAJANTO
IRAN	Mohammad H. SADAGHIANI
ICELAND	--
ISRAEL	Alex SAGY
ITALY	Daniele PEILA
JAPAN	Hiroshi MITANI
LESOTHO	--
MALAYSIA	--
MOROCCO	Asma ZELLAG
MEXICO	--
NORWAY	Jan ROHDE
NEW ZEALAND	--
NETHERLANDS	Henk OUD
POLAND	Wojciech GRODECKI
PORTUGAL	José Luis MACHADO DO VALE
ROMANIA	Sorin CALINESCU
UNITED KINGDOM	Donald LAMONT
RUSSIA	Sergey N. VLASOV
SINGAPORE	Go Yang SAN
SLOVAKIA	Robert TURANSKY
SLOVENIA	--
SWEDEN	Tomas FRANZÉN
SWITZERLAND	Andreas HENKE
CZECH REPUBLIC	Ivan HRDINA
THAILAND	Noppadol PHIEN-WEJ (Wednesday)
TURKEY	Yücel ERDEM
UKRAINIA	Anatoliy P. BUKAN (Wednesday)
VENEZUELA	Manuel Yanez (Wednesday)
VIETNAM	--

Sunday 8 May

1. Opening speech
2. Approval of the agenda
3. Approval of the minutes of the General Assembly 2004
4. Report of activity of the Executive Council – Comments from the Assembly
5. Approval of the new members
6. Report from the Auditor – Comments from the Assembly
7. Report of activity of the Member Nations – Comments from the Assembly
8. Communication from Sister International Organizations
9. Financial report 2004 – Comments and Approval of the Accounts
10. Preparation of the election and of the appointment of the Executive Members
11. Preparation of the other decisions of the General Assembly on Wednesday 11 May 2005
 - 11.1 Creation of the “ITA Committee on Safety”
 - 11.2 Presentation of the invitations received for the General Assembly 2008

Wednesday 11 May

12. Election of the Executive Members
13. Report of the Open Session on Tuesday 10 May 2005
14. Working Groups: Reports and projects of activity
15. Appointment of the Secretary General
16. Appointment of the Honorary Executive Member for the General Assembly 2006
17. Appointment of the members of the Committee of Nomination
18. Appointment of the Auditor on the conformity of the actions of the Executive Council
19. Decision concerning the “ITA Committee on Safety”
20. Budgets: Draft budgets for 2005 and 2006
21. Preparation of the General Assemblies 2006 and 2007
22. Choice of the place of the General Assembly 2008
23. Other business
24. Closing speech

A – ASSEMBLY ON SUNDAY 8 MAY

1 – OPENING SPEECH

1.1 Opening speech

President PARKER welcomed the delegates of the 39 Member Nations represented and the representatives of the two sister associations PIARC and ISRM; he thanked the President of the Turkish Association for the preparation of the 31st annual meeting of ITA.

1.2 Death of Colin J. KIRKLAND

The Past President Einar BROCH presented ITA's homage to its Past President and Auditor ([Encl. 1](#)); the President offered the medal of the Association to his widow Sheila KIRKLAND, invited by the Association to participate in the General Assembly, and the Assembly observed a minute's silence in his memory.

2 – APPROVAL OF THE AGENDA

The President reminded the agenda which was approved without amendments.

3 – APPROVAL OF THE MINUTES OF THE GENERAL ASSEMBLY 2004

The minutes of the General Assembly 2004 were approved without amendments.

4 – REPORT OF ACTIVITY OF THE EXECUTIVE COUNCIL

The President reminded that the report of activity was sent to the Member Nations on 15 April ([Encl. 2](#)) and asked for the comments from the Assembly.

The Secretary General briefly reminded the main items of the report, and gave the latest news concerning the publication of TRIBUNE and the number of visits on the website, news given at the meeting Communication held on Saturday 7 May.

No particular remarks were expressed from the Representatives of the Member Nations.

5 – PROGRESS OF MEMBERSHIP IN THE ASSOCIATION

5.1. Member Nations

The Association did not register any new request for admission.

The number of Member Nations therefore remains at 53. ([Encl. 3](#))

5.2. Affiliates

5.2.1. Requests for membership

a) Corporate Members: 7

189	Przedsiębiorstwo Budowy Kopaln PeBeKa SA	Poland
190	Hagerbach Test Gallery Ltd.	Switzerland
191	Cegelec Centre Est	France
192	NATM	United Kingdom
193	Secegsa	Spain
194	Partner Bauchemie bv	Netherlands
195	Officine Maccaferri SA	Italy

b) Individual Members: 7

333	Mr. Carlos Lopez Carreras	Spain
334	Mr. Jesus M. Rohena Correa	United States of America
335	Mr. Chung Kyungil	South Korea
336	Mr. Robert Palermo	United States of America
337	Mr. Andrew Sloan	United Kingdom
338	Mr. Philip-Alexis Kaplan	Belgium
339	Mr. Andy J. Miller	United Kingdom

c) The voting delegates of the concerned Member Nations and the General Assembly approved these candidatures.

5.2.2. Resignations

a) Corporate Members: 2

48	Consiglio Nazionale delle Ricerche - CNR	Italy
151	SIAAP	France

b) Individual Members: 5

116	Mr. J. A. Berntsson	Sweden
140	Mr. Colin J. Kirkland	United Kingdom
212	Mr. Peter J. Greig	United Kingdom
225	Mr. Ake Malthe	Sweden
289	Mr. Phil Zeni	United States of America

5.2.3. Exclusions

14 exclusions of Individual Affiliate Members were pronounced, for non-payment of the subscription fee:

82	Mr. Henri David	France
110	Mr. Anatoly Shraiman	Israel
138	Mr. Alain Mouchot	France
202	Mr. Francis S. Kendorski	United States of America
265	Mr. Ian Barry	United Kingdom
273	Mr. Wang Ruel Jee	South Korea
275	Mr. Yuri Rocklin	United States of America
276	Mr. Ronald Raymond	United States of America
285	Mr. Mark Bowling	United States of America
286	Mr. John Oldsen	United States of America
288	Mr. Holly W. Sphar Jr.	United States of America
298	Mr. Vytautas P. Lalas	United States of America
299	Mr. Steven McCabe	United States of America
300	Mr. Andrew J. Kotas	United States of America

5.2.4. The number of Affiliate Members therefore reaches 270 (Corporate: 123– Individual: 147) (Encl. 4)

6 – REPORT OF THE AUDITOR ON THE CONFORMITY OF THE ACTIONS OF THE EXECUTIVE COUNCIL

Sorin CALINESCU presented the report of audit.

As decided by the 2000 General Assembly, the Association chose to implement an action plan to reach the goals of the strategic scope of ITA becoming “the unquestioned leader of underground space”.

The strategic plan included the following priority actions to follow:

- creation of the full time secretariat;
- development of the internet site of the association and improvement of communication directed towards decision-makers, towards the general public and within the association;
- development of the role of the association, with special focus on training and education.

By appointing a special internal auditor that has to report to the member nations, the General Assembly constantly followed up the progress made in reaching the strategic goals that were set up. In his monitoring mission the auditor has been in contact with the Secretary General of the Association and was constantly informed about the debates of the Executive Council.

As a general remark, most of the priority actions have been already effectively implemented and the current follow-up involves only further improvement and development tasks.

The secretariat is far now fully installed and functioning in Lausanne but it is still necessary to stabilize the organization of the secretariat in order to improve its activity. The Executive Council is currently working on this task on the basis of the elements that were put forward by the Secretary General.

The Communication capabilities of the Association have been also significantly improved based mostly on the extensive use of the modern technologies of the internet.

The web site of ITA is now set up and running as a major communication vector of the Association. There are still some pages under construction and some areas to be developed to make it an effective information instrument put at the use of the members of the association and the general public. A question that needs to be addressed is to consider the translation of the content in both English and French as the official languages of the Association. No action has yet been taken on this matter.

As remarked by the President in various occasion, further impulse is needed to activate the interactive part of the web site to suit the communication needs of the working groups and the special task forces.

The electronic newsletter *ita@news* is doing quite well as a permanent link and source of fresh information intended for the member nations.

Innovative ideas and actions are still to be waited to approach the problem of communication of the Association with the general public.

Much attention has been drawn by the Executive Council on the development of the role of the association in the world.

The Executive Council members had quite an important number of meetings in the framework of the visits made to the member nations during 2004 and early 2005. Meetings were organized with China, the USA, Spain, Hungary, Mexico, Poland, Romania, Slovakia, India, Thailand, Japan, Vietnam and the UK.

While the Association had a constant growth in terms of member nations, there are still grey spots on the map to be covered in order to reach full world wide coverage.

Further actions are also needed to strengthen the links of the Association with the member nations and the tunnelling professionals in order to come up with the help they need for the promotion of underground use in their countries.

Other strategic directions were the development of the contacts with the UN, the EU and the international financing institutions such as the World Bank, EBRD, EIB, JBIC and similar bodies. This direction also needs constant attention and efforts to explore the cooperation issues, notably in identifying financing possibilities for the ITA training actions.

As a conclusion, the strategy set up in 2000 and the constant follow up of the priority plan proved successful but it is now probably time to review the priorities and to update the tasks for a new medium term program that will address the challenges of the present world in order to further advance and achieve the basic goal of “ITA becoming the unquestioned leader of underground space”.

The President thanked Sorin CALINESCU and reported that the Executive Council will examine the recommendations presented so as to follow them up in the best possible conditions.

The General Assembly unanimously approved the report presented.

7 – REPORT OF ACTIVITY OF THE MEMBER NATIONS

a) The Secretary General reported that he had received so far 34 reports of activity for 2004; these reports are integrated in the annual issue of TRIBUNE distributed in Istanbul; he also reported that all the reports, including those that will be sent to him in the next few weeks, will be integrated in the website.

b) **South Africa:** The South African representative reported that SANCOT has now moved under the supervision of the Mining Association (see website).

In February this year, a two-day tunnelling colloquium was held at the Katse Dam in Lesotho in conjunction with the Lesotho Tunnelling Society.

Civil Tunnelling in southern Africa in the near future comprises a submerged Tunnel across the mouth of Durban harbour, a rapid-transit rail system in Johannesburg and the second phase of the Lesotho Highlands Water Scheme.

c) **Germany:** The German representative reminded that the Congress of STUVA, that will be held for the 1st time in English and in German, will take place in Leipzig from 28 November to 1st December 2005.

d) **Austria:** Peter GOBL reported that the new President of the Austrian Group is Robert GALLER, from Geoconsult.

e) **Brazil:** The Brazilian representative informed the Assembly about the organization on 21 and 22 November, in Sao Paulo, of a seminar on Waterproofing; the main sponsor of this seminar, organised by the Brazilian group of the Association and by ITA itself, will be SIKA.

f) **Egypt:** The Egyptian representative informed the Assembly about the preparation of a conference on the use of underground space in congested urban areas on 6 and 7 November 2006 in Charm-El-Cheikh; the call for papers is in preparation; ITA’s Executive Council should meet on this occasion.

g) **United States of America:** The American representative advises that, for a large highway project in Seattle, the Alaskan Way Viaduct, the choice between an elevated freeway and an underground tunnel along the water front was made by the City for the underground alternative.

This decision was informed by the work of ITA WG 13 “Direct and Indirect benefit of underground structures” and the word of Jean-Paul GODARD “Why Go Underground.”

h) **France:** The French representative reminded that the next Study Day-Sessions, organised jointly by France, Italy, Spain and Switzerland, will take place from 10 to 13 October in Chambéry.

He also indicates that an important exhibition (open to the participants to the Congress of AFTES), concerning underground works, and in particular, the Austrian project of Brenner, the Swiss ones of Gothard and Lötschberg, and the French one of Lyon-Turin, will be organised by the French regional authorities from 8 to 10 October. A seminar will be held on 13 October at the end of the Congress of AFTES with the participation of important people, notably European ones.

- i) **Greece:** The Greek representative reported that several projects are in progress, namely on the Egnatia motorway tunnels, the Kallidrouw railway tunnel, the Athens and Tessaloniki metros as well as hydroelectric projects.
- j) **Hungary:** Gyula GRESCHIK reported that the new President of the Hungarian group is Pal KOCSONYA.
- k) **Iran:** The Iranian representative informed the Assembly of the preparation of the 7th Conference on Tunnels; it will be held in May 2006; he reported that 400 km of Tunnels are under study or in construction, and that 60 km were built over the past few years; the Executive Members will be invited in Iran on this occasion.
- l) **Italy:** The Italian representative reported that the 4th edition of the Master Course post graduation on Mechanized Tunnels gathered 18 participants and that the 5th edition, that will start in 2005, is endorsed by ITA; moreover, he reported that the last EPB machine has just finished to bore the tunnel for the new metro line in Torino.
- m) **Japan:** The Japanese representative reported on the new tunnelling developments in his country.

In order to introduce our state of the art tunnelling technology, we have put a link to the ITA website as a Prime Sponsor. I encourage you to visit our website at <http://wwwsoc.jp/jta/nttj/index.html>.

In terms of mountain tunnels, long tunnel projects are underway for *Shinkansen* (Bullet train), the New Tomei-Mieishin Expressway amidst financial constraints.

Shallow underground space in Tokyo metropolitan area is pretty much tangled and there is not enough room left to accommodate further development, thus the use of deeper underground space is needed. Currently, the Ministry of Land, Infrastructure and Transport is studying the legal and technical frameworks for this purpose.

- n) **United Kingdom:** The representative from the United Kingdom informed the Assembly about the organization by BTS of the training course on Tunnels (27 June to 1 July) and about the Conference on 26 and 27 October.
- o) **Russia:** The Russian representative informed the Assembly about the development of the ceremonies that marked the 15th anniversary of R.T.A. that represents Russia within ITA.
- p) **Switzerland:** The Swiss representative informed the Assembly about the recent breakthrough of the tunnel of Lötschberg, about the progress of the boring of the tunnel of Gothard (40% of the 67 km), about the exhibition IUT'05 that will take place in HAGERBACH on 14 and 15 September, and about the organization of the annual conference AlpTransit in Lucerne on 22 and 23 June.

8 – COMMUNICATION FROM THE SISTER INTERNATIONAL ORGANIZATIONS INVITED

a) World Road Association (PIARC)

On behalf of the World Road Association (PIARC), Willy De LATHAUWER presented the situation of the works of the Committee of Operation of Road Tunnels, and of its relations with ITA.

He reminded in particular that the next Congress of the World Road Association will take place in Paris from 16 to 21 September, 2007, on the occasion of the centenary of the Association, and that PIARC and ITA published, among others, issue 324 of PIARC Journal "Routes-Roads" dealing with the safety of all types of transport tunnels

The Committee of Operation of Road Tunnels is organised with 5 Working Groups dealing with Operation of Tunnels, Safety Management, Human Factors in Safety, Detection, Communication, Safety Equipments, Ventilation and Control of Fire, the last one in close cooperation with ITA

The Committee intends to keep going in the field of seminars in developing countries: the ones that were held in Santiago de Chile and in Beijing were successful, the latter in close cooperation with ITA; the next one will take place in spring 2006, in principle in San Juan in Argentina.

The Secretary General reported that PIARC and ITA had just signed a Memorandum of Understanding (M.O.U.) which officializes the excellent relations that have existed since the creation of ITA, relations which should develop even further in the future if the Committee on Safety is created. (Encl. 5)

b) International Society for Rock Mechanics (ISRM)

Jian ZHAO, Vice-President for Asia of ISRM, brought the greeting from the President of ISRM; he reported that ISRM intends to develop relations with ITA, in particular the Working Groups, and presented the next Seminar of ISRM planned in Singapore in 2006.

9 – FINANCIAL REPORT 2004

9.1. Closing of the Accounts 2004 - Report of the Auditor

- a) The financial elements were sent to the Member Nations on 8 March 2005. (Encl. 6)
- b) The Treasurer and the Secretary General commented the documents sent to the Member Nations, including the balance sheet, the account of results, the appendix, and the report of the Auditor. The Treasurer commented the slight differences between the closing he prepared and the one prepared by the Auditor, which are without appreciable consequences, and reported that the values noted by the Auditor will be the values taken into account.

The Treasurer also pointed out that the deficit noted only comes from the lack of receipts, notably from Member Nations and Sponsors; he reported that some decisions will have to be made to avoid these difficulties in the future.

9.2. Approval of the accounts

The General Assembly unanimously gave their quitus to the Executive Council and to the Secretary General for the financial situation and the management for 2004.

10 – PREPARATION OF THE ELECTIONS OF THE EXECUTIVE MEMBERS

10.1. Offices to be provided and candidatures received

a) Two offices of additional Members, in accordance with the Statutes adopted in 2003.

The Executive Council received in due time the candidatures of:

- Piergiorgio GRASSO presented by Italy
- Weining LIU presented by China

b) The office of Secretary General that must be appointed by the General Assembly on the proposal of the Executive Council.

The Executive Council proposed the appointment of Claude BERENGUIER.

10.2. Procedures

The elections require, as usual, the majority of the votes of Voting Delegates present or represented, even if the number of candidates does not exceed the number of offices to be provided; in the opposite case, the office shall remain vacant until next year.

11 – PREPARATION OF THE OTHER DECISIONS OF THE GENERAL ASSEMBLY ON WEDNESDAY 11 MAY

11.1 Creation of the ITA Committee on Safety

The project of creation of the ITA Committee on Safety was sent to the Member Nations on 15 April; the Past President Alfred HAACK, the expert by the Executive Council for the questions of Safety presented and commented the corresponding document ([Encl. 7](#)).

The Australian representative supported the creation of the Committee.

In reply to a question from the Russian representative, A. HAACK replied that it was about Safety in Operation.

The representative of the United Kingdom, who is also the Animateur of WG 5 "Health and Safety in Construction" pointed out that he also asked the same question and that the reply he got fully satisfied him; he supported the initiative and reported that WG 5 will fully contribute to the works of the Committee.

The corresponding decision will be made at the Assembly on Wednesday 11 May.

11.2 Presentation of the invitations received for the General Assembly 2008

Two candidatures were received in due time from the United States of America and from India.

The representatives from the United States of America and from India presented the candidature of their country for the organization of the annual meeting and of the General Assembly 2008.

B - ASSEMBLY ON WEDNESDAY 11 MAY

12 – ELECTION OF THE EXECUTIVE MEMBERS

- a) Appointment of the Scrutineers
 - Rick LOVAT Delegate from Canada
 - Thomas FRANZEN Delegate from Sweden
- b) Voting Delegates
 - Present: 42
 - Absolute Majority: 22
- c) Result of the election of the additional Executive Members

The 2 candidates obtained the following results and were declared elected:

Piergiorgio GRASSO:	41
Weining LIU:	34

- d) Experts by the Executive Council

The Executive Council asked J.P. GODARD to ensure the duty of Tutor of WG 20: Urban Problems – Underground Solutions for the year 2005.

13 – REPORT ON THE OPEN SESSION HELD ON TUESDAY 10 MAY

Eivind GROV presented the report of the Open Session.

The Open Session of the 2005 World Tunnel Conference in Istanbul focused Major Sub Sea Tunnel projects. Invited speakers presented worldwide projects in the session.

The speakers covered huge projects such as the Nusantara Project that connects Java and Sumatra, across the Sunda Strait. The Nusantara Project was presented by Dr. Sindur Mangkoesobroto of Indonesia. The project was initiated and developed during the 1960's. Dr. Mankoesobroto informed that the construction of the project is urgent since it will replace a ferry connection that will become unsuitable to transport passengers, cargo and goods in the coming decade. A sub sea tunnel to link the infrastructure along with a regional development in order to ease the financial burden and at the same time raise the relevance of the project is being planned.

The Nusantara project is furthermore planned to be constructed at least 40 meters under the seabed. It is planned to be designed to carry electric car trains that move passengers, cars, buses, trucks and trailers. The Nusantara Tunnel is proposed to constitute an interconnected twin tunnel which will be 33 km long and that will be constructed in two phases.

The next project was presented by Dr. Jose Pliego and dealt with the future project crossing the Gibraltar. Dr. Pliego informed that under a bilateral cooperation agreement in 1980 the Governments of Spain and Morocco jointly agreed to carry out a process of studies on the possibility of a fixed link between Europe and Africa. Dr. Pliego described the solution that has currently been subject to studies being an undersea, bored multi-tube rail tunnel. In function it will be serving ordinary rail traffic as well as ordinary road traffic. Dr. Pliego explained thoroughly the different phases of the project. He envisaged three successive construction phases; final design will be done in accordance with the experience gained in the first phased. The last phase is 1 subject to actual evolution on the traffic demand. All tubes are planned to be TBM driven.

Sergey Vlasov, the Vice President of the Russian Tunnelling Association, described several future sub sea tunnelling projects in Russia. Vlasov showed a very interesting map of the main transport routes in Europe, Asia and towards America. Obviously Russia is a hub in the wheel in this network with crossings to the neighbouring continents. Construction of rail tunnels has been considered being a most efficient means for transportation corridors to cross wide water areas like the Nevelsky Strait the Bering Strait and La Perouse Strait. These crossings would lead to tunnel projects from some 10 km in length to a maximum of 90 km crossing the Bering Strait. Such a long tunnel crossing is estimated to take 15 years to complete. The main advantages of these tunnels were mentioned to be sustained year-around transportation, ecological friendly solutions which will neither hamper the navigation nor be influenced by the sometimes rough weather conditions in the area.

Prof. Björn Nilsen was summing up the experiences gained from the construction and operation of nearly 25 sub sea road tunnels in Norway. He was also describing the experiences from sub sea tunnelling for the purpose of landing oil and gas pipelines from the oilfields in the North Atlantic Sea. The deepest landing had an outfall, or break through to the seafloor at 180 meters water depth. The longest sub sea tunnel being currently in use in Norway is 7.9 km long, whilst the deepest has its roof level at 264 meters below sea level. Prof Nilsen also reported from sub sea tunnel projects in some of the other Nordic countries. One project in particular to be mentioned here is the Hvalfjordur project in Iceland. Not only the fact that this was the first ever built sub sea tunnel in Iceland, but the more the fact that the tunnel is constructed in a bedrock which is only 3-5 million years old and the area being geologically and seismically active. Thus, for the Hvalfjordur tunnel a seismic risk analysis was strictly required. In the Faroe Islands, one sub sea tunnel project has recently been put in operation, another one is under construction whilst two more tunnels are under elaboration.

Finally, the open session included a comprehensive description of the Marmaray project. Altogether, 5 speakers under the leadership of Steen Lykke presented different aspects of the project. The Marmaray project was the main attraction of the second part of the Open Session. Sitting right outside the doorstep of the conference venue a mega project is being developed. With only a few lines it is hard to point out particularities of this project. In short, it attracts engineering specialists from around the world and takes into account engineering state of the art on many aspects. However, not only engineering challenges are lying ahead, as also the organisation of such a project is a huge challenge in itself. Being located right underneath a number of historical sites is adding to it. It seems to be a challenging task to forecast the currencies in the waters of Marmaray with the uncertainties that comes along with such circumstances for the design and construction of Immersed tunnels. Risk analysis was reported to a useful tool in this connection.

It is truly believed that the audience obtained a bit of new knowledge and useful information for their own work towards implementing different types of sub sea tunnels around the world. Irrespective the size of these projects, in their own context and due circumstances sub sea tunnelling projects serve the public with reliable and important fixed links to boost many aspects of life where deep or shallow waters constitute natural barriers.

14 – WORKING GROUPS: REPORT AND PROJECT OF ACTIVITY

14.1. – WG 2 – Research: Animateur: Eric LECA (France), Vice-Animateur: Yoshihiro TAKANO (Japan), Tutor: Harald WAGNER (Austria) - Report presented by the Animateur:

The Group met on Sunday May 8 and Monday May 9. These meetings were attended by 13 participants representing 12 member countries.

The first meeting was largely dedicated to the review of the draft recommendation on the “Strategy for site investigations of tunnelling projects”. The document is meant to focus on key principles with additional background material being provided in appendices. The production of the appendices will require the collection of information on guidelines used in member countries, as well as on practices in terms of level of investigation works undertaken for tunnelling projects.

The group also reviewed the outline of the document to be prepared in relation to “Monitoring and Control of Underground Works”, and a plan of action was agreed for the production of a draft recommendation. This document should take account of guidelines produced in other countries, notably in Austria, Korea, the UK and the recommendation on “Monitoring methods for underground structures” recently published by the French Tunnelling Association.

It is expected that the final drafts of the two documents will be produced during the coming year, for review at the Seoul meeting. Another document prepared by the group on “Settlements induced by tunnelling works” is currently under final review and should be ready for publication in the second half of 2005.

During the second meeting, the group also reviewed the “Code of Practice for Risk Management of Tunnelling Works” submitted by the insurance and re-insurance companies to the ITA. The position expressed by WG2 on this document is that a number of issues would tend to make it difficult for this code of practice to be endorsed as currently drafted.

These include:

- The document is perceived as highly demanding on all stakeholders, particularly if it is to be enforced as a code;
- It is primarily based on the practice of one country (UK);
- The document introduces notions such as the concept of “robust design” which definition can be highly subjective;
- The approach does not leave sufficient room to risk sharing considerations.

It has also been suggested that some clarification should be provided on the levels of losses currently carried by insurance companies in tunnel construction projects.

On the other hand, it should be recognized that the document focuses on the implementation of a risk assessment and management approach which principles are in accordance with the “Guidelines for tunneling risk management” prepared by WG2. It is therefore believed that there should be ground, on the basis of this initiative, for establishing a dialogue with insurance companies on the ways to jointly work at managing the risks associated with tunneling projects and improving the quality of project delivery.

The group also discussed communication and working practices and it was agreed that, as far as practicable, more use would be made of the ITA forum to exchange information within the group and progress the activities currently undertaken.

14.2. – WG 3 – Contractual Practices: Animateur: Arnold DIX (Australia), Vice-Animateur: Martin SMITH (Switzerland), Tutor: Yücel ERDEM (Turkey) - Report presented by the Animateur:

Following our meeting in Singapore WG-3 has completed the following tasks:

- a) A review of ITA's 25 contractual propositions to determine their contemporary relevance. The review of the contractual propositions revealed that:
 - i. The propositions were principally drafted to suit conventional project delivery contracts and were not readily translatable to new contractual frameworks.
 - ii. That they were limited to a small range of contractual issues.

This review concluded that although useful in limited circumstances the propositions in their current form needed to be placed within a contractual framework which recognised the broad range of emerging contractual project delivery methods.

- b) Proposition 22 – Health and Safety, is problematic because it deals in detail with the management of health and safety issues during construction but is inconsistent with the specific laws on this subject in a number of countries. Discussions with WG-5 are continuing and it is anticipated a revised and less prescriptive proposition which suggests more onerous standards may be applicable in underground environments than on surface construction sites is anticipated within the next cycle.
- c) As a result of this analysis the recommendations of an interim WG-3 position paper recommending that the working group produce a useful contractual toolkit was adopted. Work has commenced on a tool to be hosted on the ITA website which would provide the international tunnelling community with ready access to systematic information on contractual practices and options.
- d) It is anticipated that the first phase of the internet toolkit will be operational by the time of the Korean conference.
- e) A comparative review of the International Tunnelling Insurance Group ('ITIG') draft International Code of Practice for Tunnelling was undertaken. The review concludes that the Code provides a useful framework for risk management of underground projects – consistent with the ITA propositions so long as it is not indiscriminately applied – and is viewed as a basis for establishing sound risk management practices on a project.

14.3. – WG 5 – Health and Safety: Animateur: Donald LAMONT (United Kingdom), Vice-Animateur: Walter CHROMY (Germany), Tutor: Mikhail BELENKIY (Russia) – Report presented by the Animateur:

Working Group 5, Health and Safety in Works, met once during the 2005 ITA General Assembly in Istanbul. Donald Lamont from UK was Animateur with Walter Chromy from Germany as vice-Animateur. Mikhail Belenkiy from Russia was the ITA Tutor.

In total, nine countries including a number which have not previously attended WG 5, were represented this year – Austria, Canada, Germany, Norway, Portugal, Russia, Sweden, USA, UK. The Working Group reviewed the progress which had been achieved since the Singapore meeting on projects with which it was involved.

ITA publication - Safety in Tunnelling

I am very pleased to report that a number of different language versions of this document have either been completed or are planned. In addition a PowerPoint version of this document in English is also available for training purposes. I would ask any member nation who wishes to translate the document into their own language to contact me and on completion of the translation, to send a copy to the Secretariat.

Database of Health and Safety Authorities and Legislation

The WG are continuing with this project to assist designers and contractors working outside their home countries. Information on a further 21 countries has been entered in the database in addition to the 19 countries already entered and further enquiries will be made in an attempt to increase this number. The database will be posted on the ITA Forum for comment by WG 5 members before it is given to the Secretariat for inclusion on the ITA website.

Guidelines for Good Occupational Health and Safety Practice in Tunnelling.

Following our discussions in Singapore, a significant part of this document was rewritten. Since then a number of further major changes have been suggested and further discussion within the WG is required. This will be done over the coming year by e-mail and the ITA WG5 Forum. Unfortunately because of these developments progress has not been as good as was predicted in Singapore. When completed, this publication should go on the ITA website.

Future work items

I am pleased to inform you that WG 5 is working on guidelines for rescue containers for use as places of safety in a tunnel in the event of a fire or an atmospheric pollution incident. This work item is in keeping with the WG's decision in Singapore to commence guidance on fire safety in tunnels under construction.

Training courses

As Animateur, I welcome the involvement of ITA in the provision of training courses. WG 5 hopes that occupational health and safety will be included where appropriate and WG members are willing to assist with future courses.

14.4. – WG 6 – Maintenance and Repair: Animateur: Henry A. RUSSELL (USA), new Vice-Animateur: Rene van den BOSCH (Netherlands), Tutor: Alfred HAACK (Germany) – Report presented by the Animateur:

The Working Group met on Sunday 8 May, and Monday 9 May 2005. The meetings were attended by 25 representatives from 13 member nations, they were: Belgium, Egypt, Finland, France, Germany, Japan, the Netherlands, South Korea, Sweden, Switzerland, Turkey, the United Kingdom and the United States of America.

The Working Group reviewed the work on the development of *Guidelines for Structural Fire Resistance for Road Tunnels*. This document has been updated earlier this year to reflect the latest test data from the Runhamer Norway and has been reviewed by the ITA Executive Council and their comments were also incorporated. These revisions consisted of the latest information from The World Road Association (PIARC) in regard to the development of new time temperature curves. It is with great pleasure that the Working Group has completed this Guideline and has presented it to the Secretariat and it is on the ITA Website as of 9 May 2005. The Working Group also wishes to extend its appreciation to PIARC, especially to Mr. Didier Lacroix, and Mr Art Bendelius for their extensive efforts to make this Joint effort between the organizations a success.

Presentation was made to the Working Group by Mr. Phillip-Alexis Kaplan of Belgium who provided an excellent presentation on the current state-of-the-art of chemical grouts for tunnel leaks. The Animateur, Mr. Henry Russell of the United States of America provided a presentation on the performance of various materials for fireproofing tunnels. Mr. Jean-Stephane Didier also provided a presentation on the current activities of AFES Working Group 15 in France. Mr. Christian Choquet provided to the Group copies of CETU's latest Guidelines for Tunnel Inspection.

The Working Group in association with Dr. Haack of Germany developed an outline and assigned chapters to the members for writing our next work on fire resistance by having expanding our current work to develop *Guidelines for Structural Fire Resistance of Mass Transit Tunnels*, the Working Group believes that this is an important document to develop since there is very little information available.

Dr. Haack of Germany advised the Working Group that due to his position on the new proposed Working Group, he will be replaced as Tutor after the elections this year. The Working Group was grateful for the assistance that Dr. Haack has provided the Working Group over the years, and wishes him well in his new assignment for the Association.

Dr. Martin Muncke due to project commitments has stepped down from his position as Vice Animateur, and Mr. Rene Vanden Bosch of the Netherlands was elected to the position of Vice Animateur. The Working Group wishes to thank Dr. Muncke for his extensive work over the last year.

The Group wishes to invite any members of the Association who would like to participate in the development of this report to contact the Working Group members or myself.

14.5. – WG 11 – Immersed and Floating Tunnels: New Animateur: Christian INGERSLEV (USA), Vice-Animateur: Jonathan BABER (United Kingdom), Tutor: Yann LEBLAIS (France) – Report presented by the Animateur:

The Working Group met on Sunday, 8th May 2005. The meeting was attended by 16 participants from 8 countries, namely France, Japan, Korea, the Netherlands, Norway, Sweden, the United Kingdom and the USA. A second meeting was held the next day with 8 participants to organize the working group activities.

Jan Saveur (of the Netherlands) stepped down as Animateur. The new Animateur is Christian Ingerslev (of the USA). He was elected by a large majority out of two candidates.

In the first meeting information was exchanged on new projects and developments around the world. Presentations were given on 4 subjects, namely on present construction work for the Bosphorus tunnel; on “crown-seal” joints for very large flexibility; on leakage repair; and on an “Owner’s Guide for Planning, Constructing and operating an Immersed Tunnel”, effectively on how to prepare useful information for publications in a manner, more suitable for the members of the working group. The remainder of the meeting was dedicated to the follow up of this item. Presently available on the ITA’s website is the Catalogue of Transportation Tunnels, the full 1997 State of the Art report, and the contents of the Special Tribune issue of April 1999.

The second meeting was to organize the work. The method is to provide question-based introductory text blocks of 1 to maximum 3 pages on a variety of immersed tunnel subjects. References and maybe “links” will be included to related text blocks and other in-depth material. Together it can be used as a set of guide lines. The working group aims to have at least half a dozen subjects implemented on the website before the end of 2005, and will continue to update and expand the list on an ongoing basis. Meanwhile work will go ahead to add in-depth material.

Working group 11 is the only international platform of expertise on Immersed Tunnels. With the increasing number of projects around the world experience is growing, and also the demand for information. The working group wants to continue its contribution to exchange of information. New members who want to participate actively are very welcome.

The President thanked Jan SAVEUR for the quality and the importance of the work carried out by the Group while he was the Animateur.

14.6. – WG 12 – Shotcrete: New Animateur: Tarcisio CELESTINO (Brazil), Vice-Animateur: Atsumu ISHIDA (Japan), Tutor: Eivind GROV (Norway) – Report presented by the Animateur:

The WG12 met on Sunday 8th of May, from 14:00 to 18:20, and continued on Monday 9th of May, from 14:00 to 16:30. A total of 21 participants from 11 countries, namely Norway, Sweden, Finland, Switzerland, France, the Czech Republic, Luxembourg, Greece, Korea, Japan and Brazil attended the working group meeting.

The group expresses its thankfulness to the previous Animateur, Knut Garshol, for all his work and efforts undertaken for the benefits of the Working Group. Thanks are also given to the former Vice-President of ITA, Jidrich Hess, for his work as a tutor until the last meeting and welcome is given to the new tutor, Eivind Grov.

Four major topics were discussed and decided at the meeting: (1) report and discussion of ongoing tasks, (2) election of new animateur, (3) discussion on future activities, and (4) discussion on how to make the WG run more efficiently.

(a) Report and discussion of ongoing tasks

Task 1: State of the Art Report on Shotcrete; this task had been completed by the former animateur and submitted to the Executive Council. Comments were made by the Executive Council mainly related to the structure of the document. The group decided to complete the task by rearranging the text and including a presentation of the report. The work prepared by the Japanese member about design will be presented as a separate report. The two reports will be completed by this summer and submitted to the Executive Council meeting in September. The French work about design will be cited as a reference, as it is a report already released by AFTES.

Task 2: List of sprayable mortars for fire protection; based on a report from the French member, a decision was made to compile data from other member nations and to summarize the information in form of a table. The final document is expected to be ready for the next WG meeting in Seoul.

Task 3: Compilation of information about existing systems for training and official certification of shotcrete nozzlemen; also based on a preliminary report prepared by the French member, a decision was made to continue the task by sending a questionnaire to all National Groups in order to simplify the analysis and the production of the final report, which is expected to be ready for the next WG meeting in Seoul.

Task 4: Overview report on synthetic structural fibres for shotcrete; a preliminary report was presented by the Norwegian members based on a literature survey on the comparison of data about the properties of shotcrete reinforced with different fibres and at different ages. It was decided to carry out a test programme to check and extend the results under controlled conditions. The test programme is expected to start in September and the preliminary report is expected for the WG meeting in Seoul. It is expected that the fibre suppliers will cover the cost of the test programme.

(b) Election of new WG12 Animateur.

Dr. Tarcisio Celestino from Brazil was elected as the new animateur.

(c) Open discussion about future activities of Working Group 12.

Some new items were proposed for future activities and tasks. One is related to the aspects of durability of shotcrete. The Korean member reported about problems of leaching also affecting the durability of shotcrete. Information will be compiled before the task is formally proposed.

New information is requested by the Swiss member about nozzle men working condition. Photos are welcome for presentation in the Seoul meeting.

(d) Discussion on how to make the WG run more efficiently.

Following suggestions from the ITA President, the use of the discussion forum was encouraged. Progress was achieved in contacts with the ITA webmaster after the meeting.

Another proposal was to increase the frequency of working group meetings. Most of the members feel that meeting only once a year is not enough. A tentative WG meeting has been scheduled for the occasion of tests for the evaluation of shotcrete reinforcing fibres (Task 4 of item 1). Possibility of a post-conference meeting in ITA2006 Seoul is also open. Another possibility is a meeting during the Shotcrete conference scheduled for September 2006 in Whistler Creek, Canada.

The President thanked Knut GARSHOL for the quality and the importance of the work carried out by the Group while he was the Animateur.

14.7. – WG 14 – Mechanization: Animateur: Katsuji FUKUMOTO (Japan), Vice-Animateur: Felix AMBERG (Switzerland), Tutor: Koichi Ono (Japan) - Report presented by the Animateur.

a) WG activities to year 2004

WG-14 has been actively working by e-mail this year. As it was discussed at Singapore in 2004, “TBM Glossary” has been extended to Chinese and Italian, and the English-French-German-Japanese-Chinese-Italian version is posted on the ITA website.

Rough draft of format and suggestions for “ITA Recommendation in Mechanized Tunnelling” was prepared by the Animateur for the meeting in Istanbul.

b) WG activities at Istanbul 2005

The WG-14 met on May 8. We had seventeen (17) participants from nine (9) member nations, namely Canada, Germany, Italy, Japan, the Netherlands, Norway, Spain, Switzerland, and the U.S.A.

Opening announcement is made by the Animateur and necessary information for future communication was gathered from participants.

The following items were discussed and agreed in the meeting:

- It is agreed to put the “Classifications and definition of TBM with recommended keywords”, which was completed in 2004 on the ITA website.
- “TBM Glossary” will be extended to Spanish and Korean. Mr. Lovat (Canada) offers to work on Spanish version. Definitions and/or explanations in French and English have been completed and will be posted on the ITA website.
- It is agreed that since the standards and manuals are so much different by the countries, a reference book will be made to list up related references of the mechanized tunnelling from member nations rather than writing a new “ITA recommendation of mechanized tunnelling”.
- It is decided that the special team is formed to establish “the mission of WG-14”. They will make a proposal and ask WG members for approval.

Special team consists of members from each region.

Europe:	Felix Amberg (Switzerland)
	Martin Herrenknecht (Germany)
North and South America:	Rick Lovat (Canada)
Asia:	Katsuji Fukumoto (Japan)

- After long discussion of our future work, it is decided to make a list of remarkable mechanized tunnelling projects with assessments added by WG-14. The information of challenging, successful, and troublesome projects will be gathered with a contact person's list including owners, contractors, consultants and machine manufacturers. Consents of concerned parties must be obtained to list a project.

Three subgroups are formed and subgroup leaders are nominated.

Europe: Ulrich Maidl (Germany)
North and South America: Brian Felcher (U.S.A.)
Asia: Katsuji Fukumoto (Japan)

Completion of the list is expected by December 2005.

Subgroup leaders will get assistance from machine manufacturers in WG-14. Assessment of a project is maximum 2 pages with keywords. Lessons learned from the projects and future development will be successively worked in the future.

14.8. – WG 15 – Environment: New Animateur: Jan RHODE (Norway), new Vice-Animateur: J. KANESHIRO (USA), Tutor: Harvey PARKER (USA) - Report presented by Rodney CRAIG:

The Working Group met on one occasion and was attended by 9 representatives from eight Member Nations – France, Japan, Norway, Russia, South Africa, Sweden, the United Kingdom and the United States of America.

The main part of the meeting was a review of the final draft of the Working Group's report on "Environmental and Sustainable Development Reasons for Going Underground". The draft currently has 23 illustrations of projects, and to date several members of the Working Group have not yet forwarded their illustrations. It was decided that more illustrations were needed with both before and after showing the benefits of the underground projects. In addition there were no projects from Russia, as there had not been a member on the Working Group, and few from France, which should be added.

There was a discussion on the copyright of each of the illustrations and this is a problem which will continue to occur with the ITA publications etc.

The Working Group discussed how the report should be published. It would not be suitable for TUST as all illustrations would then be in black and white. A separate issue of Tribune would be expensive. There are currently no more copies available of "Why Go Underground?" and the Executive Council will have to decide whether to update that report in which case some of the illustrations in the Working Group report could be used in that update. Whilst acknowledging the importance of having hard copies of reports available for handing out to planners etc, it was decided that the report, when complete and approved by the Executive Council, should be placed on the website with a separate power point presentation.

The programme for the completion of the report is that Working Group members will have until early July to forward any additional material, comments and new illustrations and that the report will be forwarded to the Executive Council by the time of their meeting in Warsaw in September.

The meeting heard two presentations, from the USA and Norway, on projects with water problems which have affected the environment.

The meeting discussed their three other questionnaires and agreed that, as many projects were included in more than one questionnaire, the results should be put into one report. Members of the Working Group will forward any additional information by the end of September and the draft report issued in late November.

The Working Group then elected Jan Rohde (Norway), the Vice Animateur, as the new Animateur and Jon Kaneshiro as the new Vice Animateur. Rodney Craig will continue on the Working Group and see the finalisation of the two reports, allowing Jan Rohde to concentrate on the future topics.

Jan Rohde introduced a table of topic, sub-topics and keywords for discussion on future topics. There are a number of members of the Working Group with detailed knowledge on groundwater – their investigations, modelling, designing and executing and monitoring, and problems that have arisen. The work will be based upon good practice and case histories will be collected and collated.

Two members at the meeting also attended the short meeting on the International Insurance Code of Practice. Underground works may affect the environment with potential insurance claims and the Working Group will assist Working Group 16 – Quality on the ITA comments on the Code.

At a time of change of topics the opportunity will be taken of reviewing the members on the Working Group and to bring in new and younger members. It has always been one of the aims of the Working Group that many more Member Nations should be represented as participants or correspondents.

The President thanked Rodney CRAIG for the quality and the importance of the work carried out by the Group while he was the Animateur.

14.9. – WG 16 – Quality: Animateur: Claudio OGGERI (Italy), new Vice-Animateur: Alex SAGY (Israel), Tutor: Andre ASSIS (Brazil) - Report presented by the Animateur:

After the publication of the final report on Quality, WG16 is reassembling its membership due to a generational change of some members. Two applications from Switzerland and the USA have been received and I solicited the member nations to evaluate their official appointment, because WG16 suffers of very few technical contributions, as it was already emphasised last year.

In this phase we are defining new items to discuss and develop. The first idea was to address our efforts towards the consideration of performances of tunnelling, especially conventional, while trying to understand when the procedures can help to avoid unexpected costs, loss of communications, loss of control during investigations, design and construction. Some contacts with WG19 occurred thanks to the participation to a meeting in Salzburg last October, but after that event the work done has been affected by the few forces of the group, even if feedback from some members has been received.

Now following the suggestions of our Tutor and of our President, the group should try to let us and the external, such as insurance companies, which are the available procedures in the field of tunnelling (technical and contractual).

Working Group 16 met twice during ITA-AITES Congress, registering the participation of five members from Israel, Italy, Japan and Korea. The new vice animateur was appointed thanks to the availability of Dr Sagy from Israel. A short meeting between the tutors and the animateurs of WG2, WG3 and WG16 also took place to co-ordinate common activities in the field of definition of existing code of practices for a reduction of claims due not suitable procedures, both technical and contractual. The activities of the group are now aimed to the preparation of didactical material, a comprehensive poster and the redaction of a new draft regarding the links between assessed technical construction procedures, methods of control,

verification of performances, all addressed to the better knowledge of claims and failures and their reduction in tunnelling activity.

From the operative point of view the WG is asking for the co-operation of the member nations and the other WGs:

- a) to collect and submit short but significant examples of claims due to failures during construction or to insufficient geoinvestigations;
- b) to provide information concerning the percentage of increase of claims and/or failures during the last years;
- c) to submit to WG16 a simple checklist of the critical points as far as each WG is concerned, that have evident influence on the partial or final success or failure of a tunnelling project.

The WG will process this information as its aim is to provide an operative list of procedures that must be applied if existing or adopted, to help the reduction of claims both in the technical activity (investigation, design, construction and monitoring) and contractual practice (mainly the agreement for the facing of the residual risks).

The President also reminded the interest to also collect examples of successful achievements.

14.10. – WG 17 – Long tunnels at great depth: Animateur: Piergiorgio GRASSO (Italy), Vice-Animateur: Minoru SHIMOKAWACHI (Japan), Tutor: François VUILLEUMIER (Switzerland) - Report presented by the Animateur:

The meeting was attended by 12 members from 9 different countries: China, France, Indonesia, Italy, Japan, Korea, Norway, Sweden and Switzerland.

Half of the attendees were new members to the group.

The meeting focused on 3 aspects: review of the activities in the past year, presentation of relevant case histories, and discussion of outline of the Group's next report on long hydraulic tunnel at great depth.

Since the Singapore meeting of last May, the group managed to meet twice even though each time the number of members involved was limited: first in the occasion of the Congress on Mechanized Tunnelling in November 2004 in Torino and the second time in Madrid in January 2005 during the IV ITA-UN Workshop on Gibraltar Strait Crossing.

Four relevant case histories were presented: the experience gained from the 34.7 km long and at great depth Loetschberg tunnel where is approaching the completion and a series of particular problems were encountered during construction, both for conventional and for TBM excavation.

The experience gained for understanding and resolving these problems were also presented generously by the Swiss member for sharing among the others.

The Japanese representative distributed 3 reports summarizing the Japanese experience with long and deep hydraulic and pipeline tunnels and starting the analysis of the peculiarity of these tunnels compared to the traffic tunnels.

The third presentation was summarizing the many years of experience of Norway, where most of the hydraulic tunnels even under pressure are unlined under the prevailing favourable geomechanical condition.

Then the Italian construction experience with the 88km long Yellow River Diversion tunnel project in China, highlighting the key aspects of TBM and backup selections, logistic and site organisations were important for achieving the very high advance rates.

The outline prepared for the group's second report on long hydraulic tunnels was briefly presented, discussed and it was agreed that all members will use extensively the forum on the web to give written feedback.

Finally the group also decided to review its first report under the recent experiences discussed.

14.11. – WG 18 – Training: Animateur: Daniele PEILA (Italy), Vice-Animateur: Nick CHITTENDEN (Switzerland), Tutor: Fritz GRUEBL (Germany) - Report presented by the Animateur:

Here in Istanbul, nine representatives coming from the following countries: China, Korea, France, Italy, Japan, Singapore, Switzerland, Germany and the Netherlands, attended the meeting.

a) We analysed the work done in this year, after Singapore.

- The first training course for young professionals which was chaired by the WG 18 Animateur and by Prof. Ahmet Saglamer of Istanbul Technical University.

The course was carried out, here in Istanbul, in the Senate Room of the Istanbul Technical University and the works were opened by the Rector of ITU University and by our President.

The course lasted 3 days, with 8 hours of lesson a day and it was attended by 84 students coming from twenty nations, especially from Turkey, more than fifty.

The General teaching structure of the course was the following:

- First part, about 10 hours, to give the basic topics of tunnelling construction;
- Second part, for the presentation and discussion of relevant examples.

The need of lessons where the discussion of relevant examples is deeply carried out was highlighted by many students as of the most important aspect of that course.

The didactic material developed by the various teachers in the format that was previously prepared and approved by the WG, will feed the section training of ITA website.

Within the WG Members there was a wide discussion on the feed-back of the course, during this discussion the Animateur, the Vice-Animateur (who took part to the course as one of the students) and some of the teachers summarized the development of the lessons.

As a conclusion the WG strongly suggested that ITA should offer more of such courses around the World since it is a really very good way to diffuse knowledge in tunnelling sector and to make young people aware of ITA.

Finally I want to thank personally as one of the scientific coordinators of the course:

- All the teachers who spent their time and their efforts to prepare the course and who gave the lessons,
- our Turkish friends for the excellent work done in the organizing and managing the course itself.

- The new edition of the post-graduate Master Course on "Tunnelling and Tunnel Boring Machines" endorsed by ITA and which will start November 2006 in Torino. The general structure of the teaching lessons was analysed. The WG Members strongly suggest ITA and all Member Nations to disseminate the news about that course.
- The Animateur reported on the result of the fourth edition of the Master Course in "Mechanized Tunnelling", in Torino which finished last November and which was attended by 18 students.

b) The member from France presented a computer code to be used for teaching purposes. This code is available on two different websites managed by the Louvain University. After a wide discussion the WG Members think that it is an interesting didactic tool and suggest that it could be useful to give the link on ITA website.

c) The WG Members analysed the document provided by WG5. The Group thinks that it is a very interesting didactic tool and it will be made available on our working group web page.

d) The WG Members analysed the proposal of our Tutor, Fritz Gruebl, to start to discuss and to propose a standard, minimum level of education in tunnelling that should be given by various universities to prepare a good tunnel engineer. This discussion will be developed during this year with the use of the forum of ITA website.

This work could be the start for the preparation of the ITA University Network.

e) The Group decided to ask again to the Member Nations to provide examples of important tunnel projects implemented in a PowerPoint presentation and which should be used for teaching purposes.

I suggest the delegates to see some of the presentation which were prepared for the training course for example the good work done by our friend of The Netherlands. This is what we need.

I ask the Member Nations to help us in this activity.

Finally I want to highlight that training is becoming an always growing task for our association and that it needs always more effort and work, which could not be done completely on a voluntary basis. The WG suggests to the Executive Council to take into account this fact in the future discussions about this topic.

Thanking you for your attention I ask to all the Member Nations to indicate their delegate in the Working Group so we will be able to do a better job in the future.

The President thanked Daniele PEILA and his Turkish counterpart M. SAGLAMER for the quality and the importance of the work carried out for the preparation of the Continuous Training Session that took place just before the present General Assembly.

14.12. – WG 19 – Conventional Tunnelling: Animateur: Heinz EHRBAR (Switzerland); Vice-Animateur: Robert GALLER (Austria), Tutor: Andre ASSIS (Brazil) - Report presented by the Animateur:

During the ITA World Tunnel Congress 2005 at Istanbul the WG 19 had two meetings. In both meetings ITA's Past President, Professor Andre Assis, supported the work of WG 19.

1st Meeting, 8th of May, 14:00 to 17:45

The first meeting took place Sunday afternoon, 8th of May from 14:00 to 17:45 at the Grand Cevahir Conventional Centre, Meeting Room Inci.

The meeting was followed by **20 participants** representing **13 nations**.

The basic document for the meeting was the second draft of the WG 19 Report, which was sent to the delegates at the end of April 2005. After a short review of the activities since the last World Tunnel Congress at Singapore the second draft was analyzed.

Thanks to the important work, which has been done by several members of the WG 19 during the last year, the WG 19 is finally able to discuss on the basis of a draft report.

Nevertheless some important topics are still missing and others are mentioned twice in a different way. In some chapters, only general aspects are described. In these cases the specific requirements of conventional tunnelling still have to be highlighted.

The members approved that the future work should be based on the existing structure of the report. In an interesting and helpful discussion several important inputs were given. Mainly the chapters' principles of conventional tunnelling, project development, design, construction methods and monitoring were discussed.

Finally the time schedule until the next world tunnel congress was approved, with the aim to finalize the report until March 2006. It's the aim of the Working Group 19 members to finalize the report until the 32nd World Tunnel Congress at Seoul.

2nd Meeting, 9th of May, 14:00 to 16:40

11 delegates representing **8 nations** were discussing the chapters' construction contract, organization of project execution and the annexes. A reference list on national codes will be included.

Working schedule

Therefore the following general working schedule was agreed:

- Comments and Inputs for the next draft have to be sent to the Animateur until end of June
- 3rd draft, until middle of August 2005
- Comments on the 3rd draft have to be sent to the Animateur until end of October 2004
- Discussion of the 3rd draft around the STUVA-Congress, November 7 and 8, 2005 at Leipzig. The exact meeting date will be given in advance. The German Colleagues will organize the meeting room.
- The final draft will be sent to the members in March 2006

The existing drafts can be found in the ITA WG 19 Forum. All the next drafts and the minutes of meetings will be sent to the Working Group members and put in the Forum for discussion.

14.13. – WG 20 – Urban Problems – Underground Solutions: Animateur: Susan NELSON (USA); Vice-Animateur: Markus THEWES (Germany) and Junji NISHI (ACUUS); Tutor: Jean-Paul GODARD (France) - Report presented by Mohammad SADAGHIANI:

Working Group 20 with the topic "Urban Problems – Underground Solutions" met once during the Istanbul General Assembly. There were 15 attendees from the following 7 countries: Czech Republic, Germany, Iran, Japan, Korea, the Netherlands, and the USA. Unfortunately, due to private and health reasons the Animateur, Susan Nelson, and the Tutor, Jean-Paul Godard, both were not able to attend the Working Group meeting. The meeting was chaired by the two Vice-Animateurs, Junji Nishi from Japan (representing ACUUS) and Markus Thewes from Germany. In addition, the attendance of the former Animateur of WG 20, John Reilly, proved to be very helpful for work achieved during the meeting.

The objectives: WG20 is building a comprehensive database of worldwide examples for unique underground solutions to typical urban problems. The goal of the Working Group is to publish a report on how the subsurface has been used effectively around the world to solve urban problems. The report will be directed to planners and politicians to provide creative and efficient ideas for the solution of urban problems and will serve as a decision aid. The focus of this product will be somewhat less on technical details but more on solution to urban problems, may they be of social, economic, ecological or aesthetical background. Attempting to reach an extended group of contributors to the work of WG 20, a poster was prepared for the poster session of the World Tunnel Congress in Istanbul, depicting the focus and the objectives of the Working Group.

As a result of a questionnaire, which was distributed in 2002, contributions have been received from Australia, Canada, the Czech Republic, Finland, France, Germany, Japan, Norway, Russia, Spain, Sweden, the Netherlands, and the USA. The Animateur has put the results into a database, which includes the various project names, locations, a brief description and information about the use and the type of urban problem solved by this project.

At the beginning of the meeting two very interesting presentations related to the topic of WG 20 were given by Ryuhei Matsumoto (Japan) and John Reilly (USA). In the discussion on the continuation of the work of WG 20 the participants agreed on an extension of the objectives towards including the analysis of the lessons learned from a few chosen examples of underground projects regarding the long term experience with "soft" indirect benefits such as increases in attractiveness, visitor spending and property values. Work on these analyses, however, will be second step in the work of WG 20 in continuation of the first step of work, which is the report and reference collection on worldwide underground solutions to urban problems.

The Working Group, based on the experience with the input received, prepared a revised and very detailed questionnaire which will help to give additional information needed from chosen reference projects. The Group agreed to continue to communicate and work through the forum on the ITA website. All contributions and results will be posted there for committee review. All members of WG 20 are urged to check the forum frequently. It is anticipated that the preliminary choice of projects and thus the content of the reference report will be finalised by the Working Group members at the next meeting during the ITA assembly in 2006 in Seoul.

14.14. – Task Force "Underground Worldwide": Animateur Andre ASSIS

The Animateur reported that one of the main goals of the ITA strategy is the information towards the general public. For this reason, ITA website was designed to include a main brand, called Underground Structures World Wide. In order to prepare information and fill it out, a task force inside the Executive Council was erected. This TF has met in Torino, Caracas and here in Istanbul and established how the information will be organised, collected and subsequently made available through our website.

The web page on Underground Structures World Wide will be divided into three main types of information:

- a) Why Go Underground – Reasons, social benefits, environmental impacts, sustainable development.
- b) How Go Underground – Construction method equipment special and complement services.
- c) Use of the Underground Space – Function

To illustrate all above information, a session of case – histories will also be implemented showing several relevant examples through out the world of the use of the underground space, where the reasons (why) and construction methods (how) will be didactically presented.

At this moment, the Executive Council and this Task Force would like to present these concepts to you and invite the Member Nations to be part of the strategy to collect relevant information and case-histories that illustrate the use of the underground space, the reasons and how they were achieved in terms of decision to be underground and their construction methods.

14.15 – Task Force "Security"

The President reported that the Task Force met in Istanbul and that it was agreed that the Association should continue the study of this important question so as to contribute to held the Tunnelling industry as well as the Member Nations; the study of the creation of a "secured forum" was agreed.

15 – APPOINTMENT OF THE SECRETARY GENERAL

The Assembly unanimously approved the appointment of Claude BERENGUIER as Secretary General for the period 2005-2008.

Claude BERENGUIER thanked the Executive Members as well as the representatives of the Member Nations for their renewed trust since 1986; he pointed out that he will do his best to continue to deserve this trust, but that this term of office should be the last one, and that it would be advisable to look for his successor from now on.

16 – HONORARY EXECUTIVE MEMBERS FOR THE GENERAL ASSEMBLY 2006

The General Assembly noted that the Honorary Executive Member for the preparation of the meeting in 2006 is In-Mo LEE, the President of the Organizing Committee.

The Secretary General of the organizing Committee is Chungsik YOO.

17 – APPOINTMENT OF THE MEMBERS OF THE COMMITTEE OF NOMINATION

In accordance with the procedures approved since the General Assembly 1993, the committee in charge of preparing the future elections is composed with:

- the retiring President A. ASSIS
- the Past President A. HAACK
- the Honorary President A.M. MUIR WOOD

under the chairmanship of the retiring President.

18 – APPOINTMENT OF THE AUDITOR ON THE CONFORMITY OF THE ACTIONS OF THE EXECUTIVE COUNCIL

The General Assembly unanimously confirmed the choice of S. CALINESCU for the year 2005.

19 – DECISION CONCERNING THE "ITA COMMITTEE ON SAFETY"

- a) The following questions were discussed:
- The Dutch representative supported the initiative; he had the precision made that the financing of the Committee will be ensured by the payment of subscription fees from its members, and that its activity will be supervised by the General Assembly of the Member Nations of the Association; the Treasurer explained that the Committee will have at its disposal a specific line of ITA's Budget.
 - The British representative had the precision made that the name of the Committee will be "ITA Committee on Safety in Operation"
 - The Swedish representative had the precision made that the Committee will be only made up of Corporate Members and will not include any Individual Members.
- b) Considering these precisions, the General Assembly unanimously approved the creation of the "ITA Committee on Safety in Operation".

20 – BUDGET: DRAFT BUDGETS FOR 2005 AND 2006

- a) The draft budgets for 2005 and 2006, sent along to the members with the notice to the General Assembly, were presented and commented by the Treasurer ([Encl. 4](#)).

In reply to the questions from the Dutch representative, he pointed out:

- that the grant from Switzerland is obtained until 2006 included;
 - that the budget allowed to the working groups is never entirely used, and that this question will have to be examined at the next meeting of the Animateurs.
- b) The General Assembly unanimously approved the draft budgets thus presented.

21 – PREPARATION OF THE GENERAL ASSEMBLIES 2006 AND 2007

21.1 General Assembly 2006

The President In-Mo LEE and the Secretary General Chungsik YOO of the Korean Organizing Committee presented the main arrangements made, and reported that the protocol between Korea and ITA had just been signed by the two Presidents ([Encl. 8](#)); no remarks were expressed from the Member Nations.

21.2 General Assembly 2007

The President of the Czech Organizing Committee Ivan HRDINA reported about the main arrangements made, and distributed a brochure of presentation; this presentation gave rise to no remarks from the Member Nations.

22 – CHOICE OF THE PLACE FOR THE GENERAL ASSEMBLY 2008

The General Assembly proceeded to the vote; the results were the following:

- United States of America: 16 favourable votes
- India: 24 favourable votes

India will organise the Annual Congress 2008, in New Delhi, in the second half of September.

23 – OTHER BUSINESS

- a) The President reported that the next Executive meetings will be held:
- In Warsaw (Poland), on 3 and 4 September 2005, on the occasion of the organization, on 5 September, of a seminar on the Use of Boring Machines;
 - in Bangkok (Thailand), at the beginning of February 2006, on the occasion of the organization of a seminar on Urban Mechanized Tunnelling;
 - in Seoul (Korea), on Saturday 22 April 2006, on the occasion of the annual meeting 2006 of the Association.

Other ad hoc meetings will be organised according to the offers from the Member Nations, notably in South America at the beginning of June 2005, and in Asia at the beginning of November 2005.

- b) The press release will be available at the beginning of the afternoon at the Secretariat.

24 – CLOSING SPEECHES

The President thanked the national group from Turkey, and more particularly their President Yucel ERDEM for the success of the meeting in 2005.

The President

H. PARKER

The Secretary General

C. BERENGUIER