

INTERNATIONAL SOCIETY FOR SOIL MECHANICS AND FOUNDATION ENGINEERING

MINUTES OF THE EXECUTIVE COMMITTEE HELD IN SYDNEY

4th - 5th August, 1971

09.00 - 12.30 and 14.15 - 17.15 each day

PRESENT

President

Prof. R.B. Peck

Vice-Presidents

Mr M.P. dos Santos (Africa)

Prof. T. Mogami (Asia)

Prof. E.H. Davis (Australasia)

Prof. E. de Beer (Europe)

- (North America)

Mr G. Perez Guerra (South America)

Secretary General

Prof. J.K.T. L. Nash

<u>NATIONAL SOCIETY</u>	<u>VOTING DELEGATE</u>	<u>2ND DELEGATE</u>	<u>NAMED REPRESENTATIVE</u>
Argentine			
Australia	Mr. M. Wood	Prof. D.H. Trollope	
Austria	Prof. H. Borowicka		
Belgium			V-P Europe
Brazil			
Bulgaria	Prof. G. Stefanoff		
Canada	Prof. S. Sinclair		
Chile			V-P Sth America
China (People's Republic)			
Colombia			
Czechoslovakia			V-P Europe
Denmark			V-P Europe
Ecuador			
Finland			V-P Europe
France	Mr. J. Florentin		
Germany (W)	Dr. H.W. Koenig		
Greece			V-P Europe
Hungary			Bulgaria
India			V-P Asia
Ireland			V-P Europe
Israel	Prof. J.G. Zeitlen		
Italy			V-P Europe
Japan	Dr. K. Ishihara	Mr. K. Mitami	
Mexico	Mr. A.L. Ramirez		
Morocco			
Netherlands			
New Zealand	Mr. J.H.H. Galloway	Dr. G.R. Martin	
Norway			V-P Europe
Peru			
Poland			U.S.S.R.
Portugal			
Rhodesia			
South Africa	Mr. B.A. Kantey		
South East Asia	Mr. J.D. Nelson	Mr. P. Lumb	
Spain			V-P Europe
Sweden			
Switzerland			
Turkey			
U.K.	Mr. I.K. Nixon		
U.S.A.	Dr. J.W. Hilf	Dr. E. D'Appolonia	
U.S.S.R.	Prof. N.A. Tsytovich	Mr. Yu.G. Trofimenkov	
Venezuela			V-P South America
Yugoslavia	Prof. I. Sovinc		

In addition the following were invited to attend all or part of the meeting as observers:

The Chairmen of the Official Sub-Committees

The President of the International Society for Rock Mechanics (did not attend)

Dr. Za-Chieh Moh (South East Asia)

Mr. Willy Norup (Geodex Retrieval System).

- 1 An apology for absence was received from the Vice-President for North America (Dr. MacDonald).
- 2 A roll was taken of the various countries represented and it was established that there were sufficient for a quorum for general business (one-third necessary), but that there might not be sufficient for changes to be made in the Constitution where representation from two-thirds of the National Societies is needed. It was later established that the required quorum was present.
- 3 It was reported that an application for membership had been received from the following countries:

Ghana	(Africa)	Ghana (Afrique)
Iran	(Asia)	Iran (Asie)
Chile	(South America)	Chili (Amerique du Sud)
- 4 The application from Ghana had not included a copy of their draft Constitution and Dr Hilf (U.S.A.) proposed that we accept Ghana into membership subject to their papers being found in order by the Secretary General as required by By-Law 1. This was seconded by Mr Kantey (South Africa) and was adopted unanimously.
- 5 The application from Iran had not included a copy of their draft Constitution and Professor Sinclair (Canada) proposed that we accept Iran into membership subject to their papers being found in order by the Secretary General as required by By-Law 1. This was seconded by Prof. Zeitlen (Israel) and was adopted unanimously.
- 6 The application from Chile had been found to be in order by the Secretary General and it was proposed by Mr. Ramirez (Mexico) and seconded by Dr Hilf (U.S.A.) that they be accepted into membership. This was unanimously accepted. It was confirmed by the Vice-President for South America that he would be representing Chile forthwith at this meeting.
- 7 Reports on the activity since 1969 of the various National Societies within each region were given by the Vice-Presidents and by Professor Sinclair speaking for the Vice-President of North America. It was agreed that these should be accepted as interim
1. Les excuses pour l'absence du Vice-President de l'Amerique du Nord ont ete reues. (Dr. MacDonald).
2. Apres avoir fait l'appel des differents pays presents, il a ete constate qu'il y en avait suffisamment pour constituer un quorum pour les affaires generales (1/3 etant necessaire), mais qu'il n'y en aurait peut-etre pas suffisamment pour permettre des changements aux statuts quand il faut que les 2/3 des Societes nationales soient representees. Il a ete plus tard etabli qu'un nombre suffisant etait present.
3. Il a ete rapporte que des demandes ont ete reues des pays suivants, desireux de devenir membres:

Ghana (Afrique)
Iran (Asie)
Chili (Amerique du Sud)
4. La demande faite par le Ghana n'etait pas accompagnee d'une copie de leur projet de constitution et Dr. Hilf (U.S.A.) a propose que nous acceptions le Ghana comme pays membre sous la reserve que leurs papiers soient trouves en ordre par le Secretaire General, conformement a au Statut No.1. Cette proposition a ete appuyee par M. Kantey (Afrique du Sud), et a ete adoptee a l'unaninite.
5. La demande faite par l'Iran n'etait pas accompagnee d'une copie de leur projet de constitution et le Professeur Sinclair (Canada) a propose que nous acceptions l'Iran comme pays membre sous reserve que leurs papiers soient trouves en ordre par le Secretaire-General, conformement au Statut No.1. Cette proposition a ete appuyee par le Professeur Zeitlen (Israel) et a ete adoptee a l'unaninite.
6. La demande faite par le Chili a ete trouvee en ordre par le Secretaire-General et M. Ramirez (Mexique) a propose que le Chili soit accepte comme pays membre. Cette proposition a ete appuyee par Dr. Hilf (U.S.A.) et a ete acceptee a l'unaninite. Le Vice-President de l'Amerique du Sud a confirme qu'il allait représenter le Chili durant cette seance.
7. Des rapports sur les activites des differentes Societes nationales dans chaque region depuis 1969 ont ete presentes par les Vice-Presidents, et par le Professeur Sinclair, qui parlait de la part du Vice President de l'Amerique du Nord. Il a ete convenu que ces rapports soient acceptes en tant que rapports interimaire et que des rapports ecrits couvrant la

reports and that written reports for the four year period between International Conferences should be asked for in advance of the Moscow Conference for inclusion in the minutes of the Executive Committee. The Vice-Presidents agreed to supply a list of post-Mexico and pre-Moscow meetings for circulation to National Societies.

- 8 Professor Sinclair proposed that the reports of the Vice-Presidents should be submitted in advance of an Executive Committee meeting so as to make for better discussion. This was seconded by Dr Hilf and was accepted unanimously.

- 9 Professor de Beer proposed on behalf of the Swedish Geotechnical Society that the name of the International Society should be changed to the International Geotechnical Society. This was seconded by Dr Hilf in order to permit discussion. A lengthy discussion followed and many delegates expressed the view that the proposed change of name should not be accepted unless there is a union between our Society and the Rock Mechanics and Engineering Geology Societies.

On the vote the motion was lost by a very large majority.

- 10 Professor de Beer proposed on behalf of the Swedish Geotechnical Society that one of the Vice-Presidents be designated as first Vice-President. This was seconded, on behalf of Norway, by Professor de Beer, who also spoke in favour on behalf of Czechoslovakia, Spain and Ireland. There was no other support from the meeting and the motion was lost.

- 11 Professor de Beer proposed on behalf of the Swedish Geotechnical Society that there should be an associate Vice-President elected for each region. The motion was seconded on behalf of Czechoslovakia by Professor de Beer. Professor Sinclair proposed as an amendment to the proposal that the wording be changed to ... "that there may be an associate Vice-President elected for each region at the discretion of the member countries making up that region." This was seconded by Mr. Kantey.

It was agreed that to accept an amendment to the previously circulated motion did not conflict with the Constitution, since the amendment did not contradict the motion. After discussion the

periode de quatre ans entre les conférences internationales soient demandées avant la conférence de Moscou afin d'être les conférences internationales soient demandées avant la conférence de Moscou afin d'être inclus avec le procès-verbal du comité exécutif. Les Vice-Presidents étaient d'accord de fournir, pour distribution aux Sociétés Nationales, une liste des séances qui eurent lieu entre celle à Mexico et celle à Moscou.

8. Le Professeur Sinclair a proposé que les rapports des Vice-Presidents soient soumis avant la séance du comité exécutif afin de permettre une meilleure discussion. Cette proposition a été appuyée par le Dr. Hilf et a été acceptée à l'unanimité.

9. Le Professeur de Beer a proposé, au nom de la Société Géotechnique Suédoise, que le nom de la Société Internationale soit changé en la Société Géotechnique Internationale. Cette proposition a été appuyée par le Dr. Hilf pour permettre la discussion générale. Une longue discussion s'en suivit au cours de laquelle beaucoup de délégués ont exprimé l'opinion que le changement de nom proposé ne soit pas accepté, à moins qu'il n'y ait une union entre notre Société et les Sociétés de Mécanique des Roches et de Géologie de l'Ingénieur.

Lorsque la motion a été mise aux voix, elle a été rejetée à une grande majorité.

10. Le Professeur de Beer a proposé, au nom de la Société Géotechnique Suédoise, qu'un des Vice-Presidents soit nommé premier Vice-Président. Cette proposition a été appuyée, au nom du Norvège, par le Professeur de Beer, qui parlait également en faveur de la proposition au nom de la Tchécoslovaquie, de l'Espagne et de l'Irlande. Il n'y avait aucun autre appui, et la motion a été rejetée.

11. Le Professeur de Beer a proposé, au nom de la Société Géotechnique Suédoise, qu'il soit élu un Vice-Président associé pour chaque région. La motion a été appuyée, au nom de la Tchécoslovaquie, par le Professeur de Beer. Le Professeur Sinclair a proposé comme modification à la proposition, que les termes soient changés comme suit: "qu'un Vice-Président associé puisse être élu pour chaque région à la discrétion des pays-membres constituant cette région". Cette modification a été appuyée par M. Kantey. Il a été convenu que le fait d'accepter une modification à une motion, auparavant mise en circulation, n'était pas en désaccord avec les statuts, puisque la modification ne contredisait pas la motion. Après discussion, la modification n'a pas

amendment was not accepted and the motion was lost.

- 12 The President moved a motion along the lines of that proposed by the Secretary General so that Paragraph 4 of the Constitution should read "The official languages of the Society are English and French, but the English versions of the Constitution, By-Laws and Minutes are to be preferred where there is a difference in meaning." Professor Zeitlen proposed as an amendment to this . . . "but should a difference in meaning arise between the English and French versions of the Constitution, By-Laws and official minutes of meetings, the President will be authorised to decide as to the preferred meaning." The amendment was carried and the President ruled that the English version of By-Law 12 (v) is to be preferred.

- 13 Professor Sinclair proposed the following motion; that By-Law 12 (ii) be deleted and the following substituted:-

"Voting shall in general be by a show of hands. However, for the election of the President, for the selection of the place of the next International Conference, and for other matters specified at the time by the Chairman, a secret preferential ballot shall be used with each eligible voter having a single transferable vote. When more than two choices are available, and none of the choices receives a clear majority on the first ballot count, that choice receiving the fewest first preferences shall be deleted and the corresponding ballots redistributed to the other choices according to the second preferences. The procedure shall be repeated using as many preferences as required to obtain a clear majority." The motion was seconded by Mr Kantey. Much sympathy was expressed for the motion but some felt that changes were desirable, and Professor Sinclair was asked to bring in a revised version for consideration later in the meeting.

- 14 A proposal from the Swedish National Society that the rules of conduct of a meeting be simplified was not accepted.

- 15 Professor de Beer proposed, on behalf of the Swedish National Society, that the Constitution and By-Laws be printed as a single combined document, and he also seconded it on behalf of Czechoslovakia.

ete acceptee et la motion a ete rejete.

12. Le President a propose une motion comparable a celle proposee par le Secretaire-General pour que l'Article 4 des Statuts soit comme suit:

"Les langues officielles de la Societe sont l'anglais et le français, mais la version anglaise des Statuts, Reglements et Proces-verbaux sont preferables lorsqu'il existe une difference dans le sens".

Le Professeur Zeitlen a propose la modification suivante a cette motion :

"mais au cas ou il surviendrait une difference de sens entre la version anglaise et la version française des Statuts, Reglements et Proces-verbaux officiels des reunions, le President sera autorise a choisir l'interpretation preferée".

La modification a ete adoptee et le President a determine que les versions anglaises du Reglement 12 (V) sont a preferer.

13. Le Professeur Sinclair a propose la motion suivante: Que le Reglement 12 (ii) soit supprime et remplace comme suit: "Le mode de votation aura lieu en general a mains levees. Cependant, pour l'election du President, pour le choix de lieu de la prochaine conference internationale, et pour d'autres sujets specifiques a ce moment-la par le President, un scrutin preferential secret sera employe, chaque votant eligible ayant un seul vote transferable. Lorsqu'il existe plus de deux choix et qu'aucun choix ne recoit une majorite nette au premier depouillement de votes, le choix recevant le moins de premieres preferences sera supprime, et les scrutins correspondants seront redistribues aux autres choix selon les deuxiemes preferences. Ce procede sera repete, employant autant de preferences que necessaire afin d'obtenir une majorite nette".

Cette motion a ete appuye par M. Kantey. Elle a ete favorablement reque, mais plusieurs personnes etaient de l'opinion que certains changements etaient souhaitables et le Professeur Sinclair fut prie d'amener une version revisee pour consideration plus tard au cours de la seance.

14. Une proposition emanant de la Societe Nationale Suedoise que les regles de conduite d'une reunion soient simplifiees n'a pas ete acceptee.
15. Le Professeur de Beer a propose, au nom de la Societe Nationale Suedoise, que les Statuts et Reglements soient imprimes en un seul document combine, et il a appuye

It was considered that the important distinction between the two could be blurred, and on the vote the motion was lost.

- 16 Dr Koenig reported on the work undertaken by the German National Society in producing Geotechnical Abstracts on behalf of ISSMFE. He pointed out that the service is now functioning fully and that any subscriber may now receive monthly a series of 144 literature abstracts taken from any of some 500 periodicals, but were it not for the generous underwriting by the Volkswagen Foundation of the loss each year the work would have to come to an end for lack of support. So far, the Foundation have advanced some \$45,000.00 but they have placed the limit of their support at \$90,000.00 or the end of 1972. Dr Koenig requested financial backing from ISSMFE to the extent of \$24,000.00 for the year 1973.

Mr. Norup stated his view that with more vigorous promotion the abstracts should become a viable venture within 4 to 5 years from now. The ASCE(SMFD) has decided to discontinue its own abstract system and to adopt Geotechnical Abstracts and this will undoubtedly be of assistance.

It was agreed that every National Society should try to increase the subscribers within their countries by a direct approach to firms and libraries not at present taking the abstracts. The accounts indicate that if the service is to be continued a rise in price may be necessary after 1972, possibly using a differential price for individuals as opposed to larger organisations.

The Secretary General pointed out that without a drastic rise in dues, the International Society could not possibly fund the Geotechnical Abstracts as requested by Dr Koenig. He had however had discussions with Dr Chamecki, Director of Research at UNESCO, about the possibility of getting support from that body, and it was agreed that a strong request should be made to this end through U.A.T.I.

It was agreed that the Abstracts were very good indeed and Mr Galloway proposed that National Societies should be urged to promote the sale of Geotechnical Abstracts in their countries. This was seconded by Dr Hilf and was carried unanimously.

cette proposition au nom de la Tchécoslovaquie. Il fut décidé que la distinction importante entre les deux pourrait être confuse, et après avoir été mise au vote, la motion a été rejetée.

16. Le Dr. Koenig a présenté son rapport sur les travaux entrepris par la Société Nationale Allemande quant à la présentation des extraits géotechniques pour le compte de la S.I.M.S.T.F. Il a signalé le fait que ce service fonctionne maintenant d'une façon entièrement satisfaisante, et que tout abonné pourra recevoir mensuellement une série de 144 extraits de littérature pris dans quelques 500 périodiques, mais sans la souscription générale annuelle par la Fondation Volkswagen de la perte, les travaux devraient cesser par manque d'appui. Jusqu'à présent, la Fondation a avancé quelques \$45.000, mais elle a placé la limite de son appui, soit \$90.000, soit la fin de 1972. Le Dr. Koenig a demandé à la S.I.M.S.T.F. une garantie financière de \$24.000 pour 1973.

M. Norup a exprimé son avis qu'avec une promotion plus vigoureuse, les extraits devraient devenir une opération viable d'ici 4 ou 5 ans. ASCE(SMFD) a décidé de discontinuer son propre système d'extraits et d'adopter les extraits géotechniques et ceci sera certainement d'aide appréciable.

Il a été convenu que chaque société nationale essaie d'augmenter le nombre des abonnés dans leur pays au moyen d'une approche directe à des sociétés et à des bibliothèques qui ne sont pas actuellement abonnées aux extraits.

L'état des comptes fait ressortir que si ce service doit continuer, une augmentation de prix sera peut-être nécessaire après 1972 - peut-être en employant un prix différentiel pour les individus par opposition à des organisations plus importantes.

Le Secrétaire Général a démontré que sans une augmentation rigoureuse de la cotisation, la Société Internationale ne pourrait certainement pas financer les extraits géotechniques comme l'a demandé le Dr. Koenig. Cependant, il a eu des entretiens avec le Dr. Chamecki, Directeur des Recherches à l'UNESCO, concernant la possibilité d'obtenir de l'aide de la part de cet organisme, et il a été convenu qu'une demande très appuyée soit faite à ces fins par l'intermédiaire de l'UATI.

Il a été convenu que les extraits étaient vraiment excellents et M. Galloway a proposé qu'on insiste auprès des Sociétés Nationales pour qu'elles avancent la vente des extraits géotechniques dans leurs pays. Cette proposition a été appuyée par le Dr. Hilf et a été adoptée à l'unanimité.

The President drew attention to a proposed combined advertisement for the Abstracts and the Geodex Retrieval System which was distributed to delegates and this was given warm endorsement. Those who have used Mr Norup's system have found it to be excellent and it was recognised to be of great service to ISSMFE.

17. The Secretary General presented the accounts for the years ended 28th February, 1970 and 1971, and pointed out that a number of countries were in debt to the Society, one for as much as three years. These accounts are attached as Appendix I. Dr D'Appolonia considered that the Society was running on too fine a margin for the sort of activity which it ought to be undertaking, and the President agreed to set up a committee at the Moscow Conference to review the matter. The President proposed the adoption of the accounts and this was unanimously agreed.

18. The Secretary General introduced the sample page proposed for a new printed list of Members and suggested that the cost be reduced by accepting advertisements. After discussion the President proposed that the principle of advertisements in the list, under careful control, be adopted. This was generally agreed on the understanding that professional cards or advertising by consulting engineers be not included. The aim should be to reduce the costs and not to make a profit. It was further decided that degrees, etc. should not be given and that the address supplied should be the preferred mailing address.

Mr. Lumb said he believed that a considerable saving could be made if the printing were to be done in Hong Kong and it was agreed that this would be desirable if it could be arranged. The Southeast Asian Society offered its assistance in co-ordinating the effort and in proof reading with ISSMFE bearing the out-of-pocket expenses.

The Secretary General agreed to look into the matter in consultation with Mr. Lumb. It was also agreed that if it were found to be not much more expensive, a copy of the list should be mailed direct to each member.

It was also agreed that the list should be available to non-members for the price of \$25.00.

Le President a attire l'attention des delegues sur un projet de publicite combinee pour les extraits et le systeme d'information Geodex. Ce projet a ete distribue aux delegues et a ete entierement approuve. Les personnes ayant deja emprunte le systeme de M. Norup, l'ont trouve excellent et il a ete reconnu comme etant d'une grande utilite a la SIMSTF.

17. Le Secretaire General a presente les comptes pour les exercices se terminant au 28 fevrier 1970 et au 28 fevrier 1971, et a attire l'attention des delegues sur le fait que certaines societes sont en dettes envers la SIMSTF, une d'entre elles pour trois ans. Ces comptes sont donnees ci-joints a l'annexe I. Le Dr. D'Appolonia estime que la Societe joue d'une marge trop etroite pour le genre d'activites qu'elle devrait entreprendre, et le President a consenti a etabli, a la Conference de Moscou, un comite qui sera charge d'examiner cette question. Le President a propose que les comptes soient adoptes, et ceux-ci ont ete acceptes a l'unaninite.

18. Le Secretaire General a presente comme echantillon, une page de la nouvelle liste de membres proposee qui sera imprimee, et a propose que les frais entrees pour cette impression soient diminuees par l'inclusion de pages publicitaires.

Apres discussions, le President a propose que le principe d'inclure des publicites dans la liste soit adopte, sujet a un controle suivi. Les delegues, en general, etaient d'accord avec cette proposition, a condition que ni des cartes professionnelles, ni de la publicite par des ingenieurs-conseils ne soient inclus. Le but doit etre de diminuer les frais et non pas de faire des benefices. Il a ete egalement decide que les diplomes, etc., ne doivent pas etre indiques et que l'adresse y figurant devrait etre l'adresse postale habituelle.

M. Lumb a dit qu'il croyait que des economies considerables pourraient etre effectuees si les listes etaient imprimees a Hong Kong, et il a ete convenu que ceci serait souhaitable s'il etait possible de prendre les dispositions necessaires. La Societe Sud-Est Asiatique a offert son assistance en ce qui concerne la co-ordination de l'effort et la correction des epreuves, tant que ISSMFE subit les frais.

Le Secretaire General a accepte de se renseigner a ce sujet, en consultation avec M. Lumb. Il a ete egalement decide d'envoyer un exemplaire de la liste a chaque membre, a condition que le cout n'en soit pas trop eleve.

En outre, il a ete decide que la liste serait accessible aux non-membres de la societe pour un prix de \$25.00.

19. Professor Davis introduced the report of the Conference Procedure Committee on behalf of its Chairman, Dr. D.H. MacDonald. This major report had been circulated in advance and the Committee, and Dr. MacDonald in particular, were warmly thanked for the work they had done, and the Committee was discharged. It was agreed that Dr Bjerrum's plan to set up this committee was good.

The payment to Authors for State-of-the-Art reports was discussed at length and the U.S. Delegates stated that their National Committee was opposed in principle to such payments and that the honour of being asked to undertake the task should be sufficient reward. Some supported this view but others felt that an honorarium ought to be available to help State-of-the-Art speakers in defraying expenses associated with the collection of information, such as postage, secretarial assistance or other technical help. No decision was taken on this matter.

The President referred to Paragraph 31 of the Constitution and drew attention to the problem of the host country in planning their programme whilst concurring with the wishes of the Executive Committee, which would not be known until rather a late date.

Dr. D'Apponia suggested that a Sessions Programme Committee should be set up by the Executive Committee to plan the topics and introductory speakers for the technical sessions. The Committee would work in conjunction with the Organising Committee of the host country.

Professor Trollope proposed that "this meeting recommends the setting up of a Conference Advisory Committee as outlined in the Report and commends the remaining contents of the Report as a guide to the conduct of future conferences." This was seconded by Professor de Beer and was carried unanimously.

Dr Hilf proposed that the National Societies should be consulted about the topics to be discussed at forthcoming conferences as suggested by the Spanish National Society. This was seconded by Mr. Kantey and the motion was unanimously carried, and it was suggested that this could be done at the Executive Committee meeting taking place at the time of the preceding International Conference.

19. Le Professeur Davis a presente le rapport du Comité de Procédure de la Conférence au nom de son Président, le Dr. D.H. MacDonald. Ce rapport important avait été circulé en avance. Les membres du Comité, et le Dr. MacDonald en particulier, ont été chaleureusement remerciés pour le travail qu'il avaient accompli, et le Comité a été dissous. Il a été convenu que Dr. Bjerrum a eu une excellente idée en créant ce comité.

La rémunération aux auteurs des rapports 'State-of-the Art' a été longuement discutée. Les délégués d'Amérique ont déclaré que leur Comité National s'oppose, en principe, à de tels paiements et que l'honneur d'avoir été invité à entreprendre ce travail devrait suffire en lui-même. Certains, parmi les délégués, étaient de cet avis, mais d'autres considéraient qu'il devrait exister des honoraires pour aider les conférenciers 'State-of-the Art' à couvrir les frais relatifs au rassemblement des renseignements, tels que le port, travaux de bureau ou tout autre aide technique. Aucune décision n'a été prise à ce sujet.

Le Président s'est référé à l'article 31 des Statuts et a attiré l'attention des délégués sur le problème du pays hôte en rédigeant leur programme tout en tenant compte des desirs du comité exécutif des desirs qui seraient inconnus jusqu'à une date assez avancée.

Le Dr. D'Apponia a suggéré qu'un comité de programmes de séances soit établi par le comité exécutif afin de préparer les sujets et de choisir les conférenciers principaux pour les séances techniques. Ce comité travaillerait conjointement avec le comité organisateur du pays hôte.

Le Professeur Trollope a proposé qu'"cette réunion recommande l'établissement d'un comité de conférence consultatif, comme il est indiqué dans le rapport, et que le reste du rapport soit pris comme guide pour les futures conférences".

Cette proposition a été appuyée par le Professeur de Beer, et a été adoptée à l'unanimité.

Le Dr. Hilf a proposé que les sociétés nationales soient consultées au sujet des questions à discuter au cours de prochaines conférences, comme l'a suggéré la société nationale espagnole. Cette proposition a été appuyée par M. Kantey et a été adoptée à l'unanimité. Il a été suggéré que ceci pourrait être fait à la réunion du comité exécutif tenue à la même époque que la conférence internationale précédente.

20. Further to Minute 13 Professor Sinclair laid before the Committee a revised version of the Canadian suggestion for a rewording of By-Law 12(ii) as follows:

"Voting shall in general be by a show of hands. However, for the election of the President, for the selection of the place of the next International Conference or Executive Committee Meeting, and for other matters specified at the time by the Chairman, voting shall be by secret ballot, with each eligible voter voting for one choice. When more than two choices are available, and none of the choices receives a majority of votes on the first ballot count, that choice receiving the fewest votes shall be deleted, and a second ballot conducted. The procedure shall be repeated successively, until one of the choices receives a majority of votes."

This was unanimously agreed.

21. Professor Tsytovich introduced the discussion on the draft Bulletin No.1 and dealt with the arrangements for the Main and Specialty Sessions. He suggested that Professor Peck should speak at the opening of the Conference and should make his Presidential Address at the beginning of the first Main Session. This would be followed by the General Reporter and then by discussion from the floor. There would be no panels. Each of the Past-Presidents would be invited to make a 10-minute comment before the summing up by the General Reporter, at a Session of his own choice.

The following had been invited to act:-

20. Comme suite au paragraphe 13 ci-avant, le Professeur Sinclair a presente au Comite une version revisee de la proposition canadienne concernant le changement du reglement 12 (ii), comme suit: "Le mode de votation aura lieu en general a mains levees. Cependant, pour l'election du President, pour le choix du lieu de la prochaine conference internationale ou d'une reunion du comite executif, et pour d'autres sujets specifiques a ce moment-la par le President, un scrutin secret sera employe, chaque votant eligeable ayant un seul choix. Lorsqu'il existe plus de deux choix et qu'aucun choix ne recoit une majorite nette au premier depouillement de votes, le choix recevant le moins de votes sera supprime et un deuxieme scrutin aura lieu. Ce procede sera repete jusqu'a ce qu'un des choix obtienne une majorite des votes".

Cette modification a ete adoptee a l'unanimité.

21. Le Professeur Tsytovich a ouvert la discussion sur le projet du Bulletin No.1 et a traite des dispositions concernant la seance principale et les seances specialisees. Il a suggere que le Professeur Peck adresse la seance inaugurale et qu'il presente son discours presidentiel au debut de la premiere seance principale. Ce discours serait suivi par celui du Rapporteur General et ensuite par la discussion entre delegues. Il n'y aurait pas de commissions. Chacun des anciens presidents serait invite a faire un commentaire d'une duree de 10 minutes (a la seance du son choix), avant le resume presente par le Rapporteur General.

Les personnes suivantes furent invitees:

<u>MAIN SESSION</u>	<u>CHAIRMAN</u>	<u>GENERAL REPORTER</u>	<u>CO-REPORTER</u>
1.	Prof. Suklje (Yugoslavia)	Prof. Lambe (U.S.A.)	Prof. Vyalov (U.S.S.R.)
2.	Prof. de Beer (Belgium)	Prof. Gorbunov-Posadov (U.S.S.R.) and Prof. Davidov (U.S.S.R.)	Prof. Krosmonovic (Yugoslavia)
3.	Prof. Kézdi (Hungary)	Prof. Zeevaert (Mexico)	Dr. Trofimenkov (U.S.S.R.)
4.	Prof. Leonards (U.S.A.)	Dr. Bjerrum (Norway)	Mr. Tokav (U.S.S.R.)

<u>SPECIALTY SESSION</u>	<u>CHAIRMAN</u>	<u>VICE CHAIRMAN</u>	<u>CO-VICE CHAIRMAN</u>
1.	Mr. S. Wilson (U.S.A.)	Prof. Stefanoff (Bulgaria)	Mr. Baranov (U.S.S.R.)
2.	Dr. Poorooshasb (Iran)	Mr. Zavietski (U.S.S.R.)	-
3.	Prof. Nichiporovich (U.S.S.R.)	Mr. Gaziev (U.S.S.R.)	-
4.	Dr. Broms (Sweden)	Prof. Evdokimov (U.S.S.R.)	-
5.	Dr. Tchegotarioff (U.S.A.)	Prof. Klein (U.S.S.R.)	Prof. Malyshev (U.S.S.R.)
6.	Prof. Maslov (U.S.S.R.)	Prof. Bishop (U.K.)	-
7.	Prof. Cambefort (France)	Prof. Rzhantsyn (U.S.S.R.)	Prof. Adamovich (U.S.S.R.)
8.	Prof. Kalisky (Poland)	Prof. Sinitzyn (U.S.S.R.)	

SPECIAL LECTURES

1.	Prof. Kerisel (France)	Bi-centenary of Coulomb's 1773 paper
2.	Prof. Tsytovich (U.S.S.R.)	Soil and Rock Mechanics in Geomechanics and outer space
3.	Prof. Scott (U.S.A.) Prof. Cherkasov (U.S.S.R.)	Lunar Soil Mechanics
4.	-	

The task of the Co-Reporter for the Main Sessions would be to brief the General Reporter in recent achievements in the field in the Soviet Union.

22. Dr. Trofimenkov reported on the arrangements proposed for the tours in conjunction with Intourist. These were to be to Leningrad (4 days, 96r.), the Black Sea (6 days, 149r.), Baku (7 days, 191r.), Taskent, Samarkand, etc (7 days, 234r.), Kiev (4 days, 100r.), and Bratsk (approx. 240r.). The tours would include visits to sites of soil mechanics interest: the cost in roubles includes shared accommodation, meals and transport.

23. The Secretary General spoke of his recent visit to Moscow and of the fine hall in the Kremlin in which the Opening Session is to take place, and of the assembly halls available in the University where the Technical Sessions are to be held.

He queried whether in reducing the number of Specialty Sessions to two per afternoon it was realised that there might be up to 600 persons attending these sessions and that the informal atmosphere could be lost.

24. Dr Hilf suggested that this could be partially overcome if the Organising Committee could make available a number of rooms where Authors who had submitted papers to the Conference could get together with interested persons to discuss topics of mutual concern. He further suggested that the Conference Advisory Committee referred to in minute 19 should be set up forthwith to discuss the names for General Reporters, etc., proposed by the Organising Committee, since it appeared that the distribution around the soil mechanics centres of the world was not very equitable.
25. Mr Kantey pointed out that no Reporters, etc. had been included from South America, Asia, Australia, New Zealand or Africa, and asked if these had been excluded for any special reason? Professor Tsytoich replied that the Organising Committee now found themselves with six places unfilled and that they would be glad to consider suggestions for speakers.

La tache du Rapporteur-adjoint durant les seances principales serait de renseigner le Rapporteur-General des accomplissements recents (aux U.R.S.S.) dans le domaine en question.

22. Le Dr. Trofimenkov a annonce les dispositions proposees pour les excursions arrangees par l'Intourist. Ces excursions seront a Leningrad (4 jours, 96 r.), a la Mer Noire (7 jours, 149 r.), a Bakou (7 jours, 191 r.), a Taskent, Samarkand etc. (7 jours, 234 r.) a Kiev (4 jour, 100 r.), a Bratsk (environ 240 r.)

Ces excursions comprendraient des visites a des lieux interessants, au point de vue de la mecanique du sol: le prix quote en roubles, comprend l'accommodation partagee, les repas et le transport.

23. Le Secretaire General a parle de sa recente visite a Moscou et de la salle magnifique dans le Kremlin ou la seance inaugurale aura lieu, ainsi que des salles a l'Universite ou les seances techniques auront lieu. Il s'est demande si les delegues se rendaient compte qu'en reduisant a deux, par apres-midi, le nombre de seances specialisees, il pourrait y avoir jusqu'a 600 personnes presentes a chaque seance, ce qui entrainerait l'absence de cette ambiance d'informalite.
24. Le Dr. Hilf a suggere que ce probleme pourrait etre surmonte en partie si le comite d'organisation pourrait mettre plusieurs salles a la disposition des delegues, ou les auteurs ayant soumis des papiers a la conference, pourraient se reunir avec des personnes interessees afin de pouvoir discuter des questions d'un interet mutuel.

Il proposa egalement que le comite de conference consultatif mentionne au paragraphe 19 soit etabli sans delai afin de pouvoir discuter les noms des Rapporteurs-Generaux, etc., proposes par le Comite d'Organisation puisqu'il semble que les centres de la mecanique du sol ne sont pas distribues a travers le monde de facon tres equitable.

25. M. Kantey a attire l'attention sur le fait qu'aucun Rapporteur, etc. de l'Amerique du Sud, de l'Asie, de l'Australie, de la Nouvelle-Zelande ni d'Afrique, n'avait ete nomme, et a demande s'il avaient ete exclus pour une raison speciale. Le Professeur Tsytoich a repondu que le Comite d'organisation se trouvait maintenant avec six places non remplies et que le Comite serait heureux de considerer des suggestions pour des conferenciers.

26. Dr Ishihara asked if the dates by which the summaries were required could be postponed by (say) two months, and many others supported this view. Professor Tsytoovich pointed out that it was planned to distribute the first volumes of the Conference in May 1973 and he did not consider that the initial date for the final papers could be postponed, though the Summaries might be received up to two months later than the date originally stated.
27. Dr Ishihara pointed out that By Law 17 states that these Conferences are primarily intended for members of the International Society, and the Organising Committee were asked to alter the general invitation given in Draft Bulletin No.1 in the light of this By Law
28. Dr D'Appolonia asked if provision was being made for a family of (say) husband and wife and 16-year-old son to attend the Conference and whether the son could participate in the Conference tours, or if there were younger children whether provision could be made for them. Professor Trofimenkov thought that provided the children were old enough this would be in order and there would be functions for persons accompanying members or guests.
29. Professor Sinclair asked if students could be permitted to attend the Conference at reduced rates and not receiving proceedings. Professor Trofimenkov thought this should be possible.
30. The President suggested that he, the Vice-President for Europe and the Secretary General, as the present members of the Conference Advisory Committee, should get together with Professor Tsytoovich and Professor Trofimenkov to discuss the many points which had been raised in the meeting.
31. The progress report of the Sub-Committee on Symbols and Definitions was received and it was agreed that it should be attached to the Minutes as Appendix II.
26. Le Dr. Ishihara a demande si les dates, avant lesquelles les sommaires devraient etre soumis, pouvaient etre ajournes de deux mois peut-etre et beaucoup d'autres delegues ont appuye cette opinion. Le Professeur Tsytoovich a signale qu'il comptait distribuer en mai, 1973, les premiers volumes de la Conference et qu'il ne considerait pas que la premiere date pour les papiers finaux pouvait etre ajournee, bien que les resumes pourraient etre recus jusqu'a deux mois plus tard que la date deja declare.
27. Le Dr. Ishihara a attire l'attention des delegues sur le fait que le reglement 17 declare que ces conferences sont essentiellement a l'intention des membres de la Societe Internationale et les membres du Comite d'Organisation ont ete pries de bien vouloir modifier l'invitation generale lancee dans le projet de bulletin No.1.
28. Le Dr. D'Appolonia a demande si des dispositions avaient ete prises pour qu'une famille comprenant, par exemple, le mari, la femme et un fils de 16 ans, puisse assister a la Conference, et si le fils pourrait participer aux excursions. Il a egalement demande si des dispositions pourraient etre prises en cas d'enfants plus jeunes. Le Professeur Trofimenkov estimait qu'a condition que les enfants soient assez grands, ceci serait acceptable, et il y aurait des fonctions pour les personnes qui accompagnent les invites.
29. Le Professeur Sinclair a demande si des etudiants pourraient assister a la conference a un tarif reduit, sans recevoir les proces-verbaux. Le Professeur Trofimenkov estimait que ceci devrait etre possible.
30. Le President a suggere que lui-meme, le Vice-President de l'Europe et le Secretaire General, comme membres actuels du comite de conference consultatif, devraient se reunir avec le Professeur Tsytoovich et le Professeur Trofimenkov afin de discuter les nombreuses questions soulevees au cours de la reunion.
- 31.. Le rapport de l'etat de travaux du sous-comite sur les symboles et definitions a ete recu et il a ete convenu que ce rapport soit annexe aux proces-verbaux comme l'Annexe II.

The Secretary General reported on discussions which he had had with Dr. Chamecki of UNESCO about the possibility of obtaining financial assistance in the production of a new edition of the Lexicon. He had had a favourable response, and it was agreed that a request should be submitted via U.A.T.I., once a financial estimate

Le Secretaire General a fait un rapport sur les entretiens qu'il a eus avec le Dr. Chamecki de l'UNESCO concernant la possibilite d'obtenir de l'aide financiere pour la production d'une nouvelle edition du Lexique. Il en a eu une reponse favorable et il a ete convenu qu'une demande soit soumise par l'inter-

was available.

32. Dr. Aitchison reported on the work since the Mexico Conference of the Committee on Soil Sampling. The Committee now has the following membership:

Dr G.D. Aitchison	Australia (Convener)
Prof. H. Mori	Japan
Dr B. Broms	Sweden
Prof. J.O.Osterberg	U.S.A.
Dr M.J.Hvorslev	U.S.A. (Adviser)
Mr M. Wood	Australia (Secretary)
Dr Ing. Heinz Muhs	W.Germany

The report of the Specialty Session at the Mexico Conference was now out of print. A further Specialty Session on soil sampling took place at the recent Fourth Asian Regional Conference at Bangkok and the papers from this symposium would be published.

A further symposium was planned to take place about the time of the Moscow Conference.

Dr. Aitchison outlined the relationship between his committee and the larger IGOS (International Group on Soil Sampling) and the President queried whether or not the Sub-Committee ought to be discharged, possibly at the time of the Moscow Conference, in favour of the larger group. Dr Aitchison considered that the focus given by the ISSMFE group was important and considered that the link between IGOS and ISSMFE was essential. In a sense, the Sub-Committee acted as an executive committee for the IGOS group: nevertheless, the Sub-Committee's work was nearing completion and should produce a final report in 4 to 5 years.

Dr Aitchison's report was accepted with thanks.

33. The President mentioned that ancillary conferences were being contemplated in one or two centres prior to the Moscow Conference. In general it was agreed that any opportunity for Soil Mechanics workers to get together should be encouraged. Dr Hilf mentioned that the Texas symposium prior to the Mexico Conference was not found to have detracted in any way from the Mexico Specialty Session and provided the Organising Committee had no objections then any ancillary conference should be encouraged.

34. The President reported that continuing co-operation was taking place between ourselves and other international societies and bodies. We have been

mediaire de l'U.A.T.I., une fois qu'un devis des couts soit disponible.

32. Le Dr. Aitchison a presente un rapport sur le travail du Comite sur l'echantillonnage des sols depuis la Conference de Mexique. Le Comite comprend actuellement les membres suivants:

Dr. G.O. Aitchison	Australie (membre charge de convoquer)
Professeur H. Mori	Japon
Dr. B. Broms	Suede
Professeur J.O. Osterberg	U.S.A.
Dr. M.J. Hvorslev	U.S.A. (Conseiller)
M.M. Wood	Australie (Secrétaire)
Dr. Ingenieur Heinz Muhs	Allemagne Federale

Le rapport de la seance specialisee de la Conference de Mexique etait a l'heure actuelle, hors de circulation. Une autre seance specialisee sur l'echantillonnage des sols a ete tenu recemment au cours de la quatrieme Conference Regionale d'Asie qui a eu lieu a Bangkok, et les papiers resultant de ce colloque seraient imprimes.

Une autre colloque etait projete pour environ l'epoque de la Conference du Moscou.

Le Dr. Aitchison a expose le rapport entre son comite et le plus grand GISES (Groupe International sur l'Echantillonnage des Sols), et le President s'est demande si le sous-comite devrait etre dissous, peut-etre a l'epoque de la Conference de Moscou, en faveur du plus grand groupe.

Le Dr. Aitchison etait de l'avis que l'accent donnee par le groupe SIMSTF est important et le rapport entre le GISES et la SIMSTF, essentiel. Dans un sens, le sous-comite jouait le role de comite executif pour le groupe GISES: neanmoins, les travaux du sous-comite approchaient a leur fin et le comite devrait sortir leur rapport final d'ici 4 a 5 ans.

Le rapport du Dr. Aitchison a ete agree avec remerciements.

33. Le President a mentionne que des conferences ancillaires etaient envisagees dans un ou deux centres avant la conference de Moscou. En general, il etait convenu qu'on devrait favoriser toute occasion a laquelle les specialistes en la mecanique du sol pourraient se reunir.

Le Dr. Hilf a mentionne que le colloque de Texas qui a eu lieu avant la conference de Mexique n'avait pas nuit a la Seance specialisee de Mexique, et a la condition que le comite d'organisation n'y voyait aucun inconvenient, toute conference ancillaire etait a encourager.

34. Le President a declare qu'une cooperation continue existait entre nous-memes et d'autres associations et organismes inter-

represented on two UNESCO working parties (at UNESCO expense). The President had had discussion with Dr Obert of ISRM and the Secretary General had been in correspondence with the Secretary General of the International Association for Engineering Geology.

35. The Secretary General reported that during his recent visit to Moscow he had had discussions with Professor Ganichev concerning any difficulties which might arise over the issue of visas to those planning to attend the Moscow Conference.

The reply was that provided the person was a listed member of the International Society and his country had diplomatic relations with the Soviet Union, then the person would obtain a visa. For other listed members (and other interested persons), provided an invitation was sent to the person to attend the Conference by the Secretary General, with a copy to the Conference organisers, several months in advance of the Conference, then there should be no difficulty in their being granted a visa.

36. Professor Sinclair moved a vote of thanks to our Australian hosts for their generous hospitality and excellent arrangements for this meeting.

The meeting concluded at 18.55 with a vote of thanks to the President and Secretary General.

Signed in and on behalf
of the Executive Committee

Ralph B. Peck
President

nationaux. Nous avons été représentés à deux comités de travail de l'UNESCO (aux frais de l'UNESCO). Le Président a eu des entretiens avec le Dr. Obert de la S.I.M.R. et le Secrétaire Général a été en rapport avec le Secrétaire Général de l'Association Internationale de la Géologie du Génie Civil.

35. Le Secrétaire Général a déclaré qu'au cours de sa récente visite à Moscou il a eu des entretiens avec le Professeur Ganichev au sujet des difficultés qui pourraient surgir quant à l'émission de visas pour ceux qui souhaiteraient assister à la conférence de Moscou.

La réponse était qu'à condition que la personne soit un membre enregistré de la Société Internationale et que son pays ait des relations diplomatiques avec l'Union Soviétique, cette personne obtiendrait un visa. Pour d'autres membres enregistrés (et d'autres personnes intéressées), à la condition qu'une invitation à assister à la Conférence soit envoyée par le Secrétaire Général à cette personne plusieurs mois avant la Conférence, avec une copie aux organisateurs de la Conférence, il n'y aurait aucune difficulté dans l'obtention d'un visa.

36. Le Professeur Sinclair a exprimé un vote de remerciements à nos hôtes australiens pour leur hospitalité généreuse et l'excellente organisation de cette réunion.

La réunion a terminé à 18h.55 avec remerciements au Président et Secrétaire Général

Signé au nom du Comité Exécutif

Ralph B. Peck,
Président

INTERNATIONAL SOCIETY FOR SOIL MECHANICS AND FOUNDATION ENGINEERINGINCOME AND EXPENDITURE 1970 - 1971

Years ended 28th February:

	1970 \$	1971 \$
RECEIPTS:		
Carried forward	9,405.57	9,019.58
Subscriptions (including arrears)	12,956.97	7,641.58
Bank Interest	351.70	-
	<u>\$22,714.24</u>	<u>\$16,661.17</u>
EXPENDITURE:		
List of Members	11,397.11	-
U.A.T.I.	160.54	163.98
Mexico Exec. Committee	1,458.19	-
Central Office	678.81	3,015.51
	<u>\$13,694.66</u>	<u>\$3,179.49</u>
Balance forward	\$9,019.58	\$13,481.67

REPORT OF SUB-COMMITTEE ON SYMBOLS AND DEFINITIONS

1 Introduction

The present sub-committee continues the work of the previous sub-committee which was under the chairmanship of Professor Kerisel. The previous sub-committee completed the list of symbols and definitions which is printed in the 3rd edition (1967) of the eight language lexicon of "Technical Terms, Symbols and Definitions" published by the Swiss Society.

The present members of the sub-committee are:

Dr. L.F. Cooling	- Great Britain
Dr. H.Q. Golder (Chairman)	- Canada
Mr. A.I. Johnson	- U.S.A.
Dr. L. Jurgenson	- U.S.S.R.
Mr. E. Sandegren	- Sweden
Mr. Ch. Schaerer	- Switzerland
Prof. E. Schultze	- W.Germany
Dr. G. Ter-Stepanian	- U.S.S.R.

2 Specialty Session No.11 Mexican Conference

The work of the new sub-committee really started with the organization of the Specialty Session on 'Terminology' at the International Conference in Mexico in 1969. This session was chaired by Prof. Kerisel, the writer acting as secretary.

A very short report on this session was written for inclusion in the Proceedings of the conference. Later a transcript of the tape recording of the session was made and a copy was offered to everyone who was present at the session or who had corresponded with the secretary about the session. Copies of this transcript are still available.

Several matters arising from the session are still to be discussed by the sub-committee. These are listed below under "Future Work".

3 Lexicon

The eight language lexicon, produced through three editions by the Swiss National Society is a major contribution to our subject.

Several workers have pointed out however that some of the translations are not correct in all languages. In many cases this arises because the English word has more than one meaning. One of the tasks of the sub-committee is to correct these ambiguities and at the same time to add further technical words to the word list.

It has been agreed by the members that

- a) words which are non-technical, or which can be found in any general dictionary should be deleted e.g. abrupt, acid.
- b) where related words are listed, they should be listed together and marked as 'noun' 'verb' or 'adjective'
 e.g. absorb - v
 absorption - n
 absorbent - a.
- c) where the English word can be misunderstood or has two or more meanings it should be defined in English. The definition should be translated into the other languages and the appropriate word chosen.
 e.g. aeolian 'a' - formed by wind action
 aggregate 'n' - mineral particles used to make concrete
- d) new words should be considered from closely related disciplines, or arising from new techniques.
 e.g. adobe, argillite, acoustic.

It has taken some time to arrive at these ground rules. The existing word lists are now being circulated letter by letter to all members for their comments. When these are received they are correlated on a special form. The chairman's recommended action based on majority opinion (or on the opinion of the member who speaks a particular language) is added and the list is sent out again for comment or objections. Letter A is practically finished, B, C and D are ready for final circulation. The last letters sent out took us up to L. Now that the method of operation is working it is hoped to proceed more quickly with the remainder of the alphabet.

The executive committee is asked to consider the advisability, timing, finance and organization of a possible fourth edition of the lexicon.

4 S.I. Système International

A matter clearly within the duties of the sub-committee, and which was first raised by Dr. Northey of New Zealand, is which system of units should be used by the International Society. Dr. Northey pointed out that when New Zealand, Australia and Great Britain changed from the foot, pound, second (f.p.s.) system they would use the 'Système International' (S.I.). This is not the same as the centimetre, gram, second (c.g.s.) or the metre, kilogram, second (M.K.S.) systems used by most countries which have used the metric system of units for years. There are two differences. In the S.I. the kilogram is used as a unit of mass, and the Newton is the unit of force (and therefore comes into the units of stress and pressure), a Newton being that force which will give a mass of one kilogram an acceleration of one metre per second per second. The second difference is that the S.I. uses multipliers of 10^3 and 10^{-2} to move from one unit to the next greater or smaller

$$\begin{array}{lll} \text{e.g. } 1 \text{ kilogram} & = & 1 \text{ gram} \times 10^3 \\ 1 \text{ metre} & = & 1 \text{ mm} \times 10^3. \end{array}$$

Our society must adopt some standard (if interim) policy on the use of units.

A letter was circulated to the Chairman of all National Committees asking what the situation was or was likely to be in their country. Sixteen replies were received one of which was simply a formal acknowledgment.

Two countries state unequivocally that they are now using S.I. only. They are Britain and Ireland. Poland states that S.I. will be obligatory after 1972.

Six countries are committed to S.I. but with reservations and six countries which are already 'metric' state that they have no intention of changing their present practice in the near future, i.e. they will continue to use c.g.s. or M.K.S. with force measured in kgf or kiloponds or metric tonnes and pressure in kgf/cm² or tonnes/m².

The reservations referred to above are of interest. Spain says S.I. is legal and is to be taught in schools, but c.g.s. and m.k.p.s units are also compatible with the law. Spain refers to c.g.s. as only "a subsystem of the S.I." I do not think this is basically true. France suggests giving both units on graphs and also expresses a preference for the 'bar' as a unit of pressure, one bar being equal to one decanewton per cm². West Germany says S.I. units must be used by law from 1977, but refers to the difficulty of finding 'handy multipliers for the basic unit 'Newton' which should be such as to give conventional figures in conventional statical computations', and says 'Another point, of course, will be how readily engineers will accept new units'. South Africa is committed to S.I. and "will be completely metricated by the end of 1973", - they say further however "it is considered by the engineering profession that in practice, for the foreseeable future engineers will use kilograms for force and kg/cm² or tonnes/m² for stress". New Zealand agrees that S.I. units should be promoted, but points out that the use of a given system of units is really a matter of personal preference and that all a society can do is to recommend the S.I. units to its members. Portugal says that the tendency in their country is to maintain S.I. and derived units like kilograms force and kgf/cm² and ton/m².

Of those countries which will remain M.K.S. (i.e. NOT S.I.), Turkey does not expect a change in the near future, Hungary is deliberately using c.g.s. and M.K.S. units and awaits the introduction of "Newtons" and everything that has to come along with that. Finland will continue to use the c.g.s. system for the time being but expects the new generation will automatically shift over to S.I. as does U.S.S.R. Czechoslovakia uses S.I. with "one important deviation", which is that supplementary units are used in Civil Engineering practice. These are pond, kilopond and megapond for force and kp/cm² and Mp/m² for pressure, and p/cm² and kp/m² for unit weight. Japan and Greece see no sign

of change from the c.g.s. and M.K.S. systems.

The picture for the future is one of confusion. Clearly we are going to have with us in Civil Engineering both the S.I. and M.K.S. system for some considerable time in the future. One problem is the size of the Newton (which is small), the 10^3 multiplier, which becomes 10^6 for areas and 10^9 for volumes and the need to find a conveniently sized S.I. unit for force and stress. This will probably evolve with practice over a period of years.

One fact is clear; only North America is now using the f.p.s. system and Canada is committed to change to the S.I. Further the metric system has been legal in U.S.A. since 1866 and the metre and kilogram have been the legal standards of length and mass since 1893.

Recommendation

The sub-committee recommends to the executive committee that the f.p.s. system not be used in the activities of the International Society in future, but that all quantities be given in the S.I. or M.K.S. units. In the case of force or pressure, as an interim measure, both S.I. and M.K.S. units be given, but 'Kilogram' should not be used as a unit of force, 'kilogram weight' or 'kilopond' being used. 'Bar' as a unit of pressure is acceptable.

5 Future Work

Listed below are subjects which have been brought to the attention of the sub-committee and with which it is hoped to deal in the next two years.

- a) Ambiguity in the terms 'modulus' and 'co-efficient', 'modulus' having dimensions and 'co-efficient' being a dimensionless number.
- b) Desirability of correlation of terms used with similar terms in other disciplines e.g. heat flow and seepage; rheology.
- c) Standardization of grading curves.
- d) Use of cu and su.
- e) Co-ordination of terminology with other associations.

H.Q. Golder
Chairman
Sub-Committee on Symbols
and Definitions