

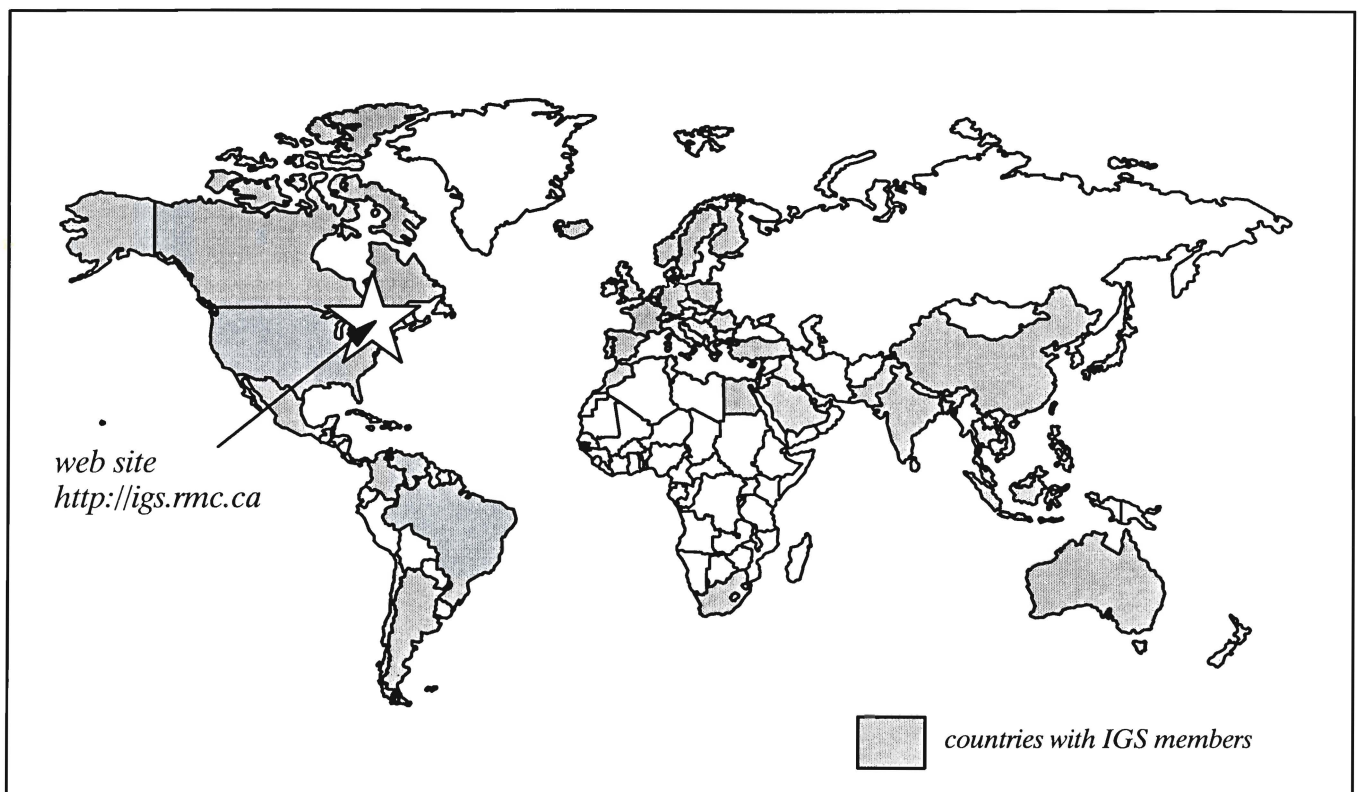
IGS NEWS

NEWSLETTER OF THE INTERNATIONAL GEOSYNTHETICS SOCIETY
*Dedicated to the scientific and engineering development of geotextiles, geomembranes, related products,
and associated technologies*

VOLUME 11 NO. 2

JULY 1995

IGS on the Internet! The Society Creates a World Wide Web Page



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Letter to the Editor - A Challenge for Brazil

I am writing this letter to the IGS News to report on a most enjoyable experience that I had as a guest of the organizers of Geossinteticos'95 held in Sao Paulo, Brazil, from 26-28 June 1995. In addition, this letter contains a challenge to my Brazilian hosts to follow up this successful conference by establishing a Chapter of the IGS.

I will not dwell on the specific technical contents of the conference since Professor Ennio Palmeira has done an excellent job in this regard with his review article on Geossinteticos'95 that can be found on page 10 of this publication. Rather, I would like to focus my comments on several impressions that I gathered during my stay in Sao Paulo. It was a great opportunity to be allowed to address the conference delegates on behalf of the IGS during the opening session and to explain the mission and history of the society to such a large group of geosynthetics enthusiasts (more than 200 delegates attended the conference). The great interest in the activities of the IGS that my talk inspired was extremely encouraging and was followed by several meetings with members of the Brazilian geosynthetics community during which the procedures required to form an IGS Chapter were discussed. I would like to thank Mr. Laerte Maroni, Chairman of the Organizing Committee, for the opportunity to make this address.

The conference was extremely well organized. The technical session leaders were merciless in holding the speakers to their allotted times. Simultaneous translation between English and Portuguese was another indication of the high calibre of the event and the effort that the organizers made to allow all participants to gain as much as possible from presentations made in either language. The quality of the technical papers and presentations was excellent and demonstrated that the geosynthetics community in Brazil is well-informed with our rapidly advancing discipline and indeed making important technical contributions to its development. The conference proceedings contain forty-two pa-

pers and five special lectures. The collection is very well-produced in a bound soft-cover format. This is the second successful regional conference held by the Brazilians (the first conference was held in November 1992, Geossinteticos'92) and provides ample evidence that it is now time for the large geosynthetics community in Brazil and neighboring countries to initiate the formation of a chapter of the IGS. The region clearly has a critical mass of potential members including geosynthetics manufacturers, academics and researchers, consultants and government agency personnel (representatives of which were present at Geossinteticos'95). The essential requirements to form an IGS Chapter are: 1) There must be at least twenty IGS members, and 2) The chapter must propose a set of bylaws that is consistent with the goals and mission of the IGS.

A chapter may include members of one or more countries provided they are in the same geographical area. Brazilian IGS members may wish to consider forming a regional chapter comprised of members from Brazil, Paraguay, Uruguay, Argentina and Chile, for example. Once the bylaws have been passed by the new chapter members and approved by the IGS Council, a chapter is born.

I am delighted to report that Professor Ennio Palmeira at the University of Brasilia together with Mr. L. Maroni of Rhodia-Ster (Corporate Member of the IGS) have agreed to take the initiative to form a Brazilian chapter or regional chapter in the area. They have received the IGS Chapter information package giving all details necessary to launch this initiative.

I challenge IGS members in Brazil and neighboring countries to support their activities.

Dr. R.J. Bathurst
Vice President of the IGS

A MESSAGE FROM THE PRESIDENT Professor Colin J.F.P. Jones

We live in a technological society in which our knowledge base doubles every ten years. This growth in information poses a significant problem to any enterprise or organization, whilst the individual is faced with an impossible task in remaining aware of developments in his field of interest. One of the primary duties of the IGS is to advise members of scientific and technological developments associated with geosynthetics and related technologies. This can only be achieved by good communication and I am pleased that the Society is in the forefront of the information technology revolution in setting up an electronic bulletin board via the World Wide Web on the Internet. Details of this facility are reported in this newsletter by the Vice-President of the IGS, Prof. Richard Bathurst, and the Editor, Dr. David Elton. It is unlikely that the Internet can ever completely fulfill the information needs of members of the Society. A range of sources of information will always be required, and the geotechnical

bulletins, newsletters and special publications produced by many of the IGS Chapters together with IGS News are likely to remain the major communication media within the Society. The publications produced by individual Chapters are most important as they reflect the technological problems of different countries and regions and are therefore of direct relevance. I am privileged to receive many of the newsletters produced by the Chapters and am struck by the strength of the Society reflected in the scope and range of activities and uses of geosynthetics that are reported.

This newsletter contains details of a draft "Code of Ethics" for the Society. This is an important subject and further evidence of the emergence of the IGS as a mature organization. The draft Code has been prepared by Pietro Rimoldi at the request of the Council. I would urge all members to study the proposals and express their views to the Council.

Bibliothek
 LEHRSTUHL UND PRÜFAMT FÜR GRUNDBAU,
 BODENMECHANIK UND TRAGWERKE
 Technische Universität München
 Außenstelle Passau
 Baumgartenstraße 7
 D 81245 München

Announcing the IGS World Wide Web Site (<http://igs.rmc.ca>) Dr. Richard J. Bathurst, Vice President, IGS

The IGS has now joined the electronic information highway with the successful launch of its World Wide Web site (hereafter, Web) in June 1995. This Web site lets anyone in the world with access to the Internet and suitable software (Web browser) obtain easy access to information on the IGS, its activities, announcements, calendar of events, information of general interest to our members and much more. All this without leaving your computer!

What is the Web?

The Web is an international network of computers that are connected through a common communications protocol called TCP/IP. The Web is a distributed network that continues to grow, and functions even when parts of the network go down. The Web owes its origins to a group of scientists at the CERN particle physics laboratory in Switzerland who wished to communicate easily and efficiently with researchers at other laboratories. A prototype of the Web communication protocol was created by CERN personnel in late 1990 and the rest is history.

Where is the IGS Web Site?

The IGS Web site is located on a computer (server) at the Royal Military College of Canada in Kingston, Ontario. This site is transparent to anyone accessing the IGS Web home page, as are all sites on the Internet.

What is the IGS Web home page?


The IGS Web home page contains a number of ASCII files that are annotated using a language called html (hypertext markup language) so that they contain hypertext links and format instructions that are understood by the software used to inspect the document. The hypertext links allow the user to move between pages of the IGS document.

How do I connect to the IGS Web site?

To be able to explore the Web you must: 1) be connected to the Internet and; 2) have appropriate software - a Web browser.

Many academic institutions are already connected to the Internet. Individuals or businesses can connect through companies that provide a link to the Internet. These companies charge the user based on connection time. Many of these companies offer attractive discounts in order to attract

clients. However, before signing up with any company make sure that they offer connection service to the Web, not all companies do at the present time.



International Geosynthetics Society

Dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies

Suggestions and comments are welcome by Richard J. Bathurst

INTRODUCTION

- What is the IGS?
- Milestones of the IGS
- How to become a member of the IGS

Once you are connected to the Internet you will need a software program that will allow you to connect to a Web site and to download the contents of any Web home page to your computer. The software is called a "Web browser" and there are a number of these packages available. The most popular in North America are Netscape Navigator and NSCA Mosaic.

These are available for the Windows operating environment and are simple to use. If you are interested in a comprehensive description of most of the Web browsers available today you may wish to read the February 1995 issue of PC Magazine. Microsoft plans to include a Web browser within its forthcoming Windows 95 operating system, planned for release this August.

Once you have a browser operating on your computer, the IGS Web home page can be accessed by connecting to <http://igs.rmc.ca>.

What is on the IGS home page?

- The IGS home page contains the following:
1. Important announcements.
 2. Information on the goals of the IGS and its history.
 3. How to become a member of the IGS.
 4. Organization of the IGS.
 5. List of names and addresses of Officers and Council Members of the IGS.
 6. List of Corporate Members of the IGS.
 7. List of IGS Chapters, contact persons and their addresses.
 8. Short articles on the recent activities of the IGS Chapters.
 9. List of contents of recent issues of the official journals of the IGS: Geotextiles and Geomembranes; Geosynthetics International. Also, selected abstracts.

10. Instructions on how to submit papers to the official journals of the IGS.
11. Selected articles from recent issues of IGS News, and email contact with the IGS News editor.
12. Calendar of Events.
13. Calls for Papers.

The IGS Web home page also allows the reader to send email messages to IGS Officers or the editor of the IGS News without leaving the document. IGS Members who wish to post a message on the IGS home page can do so by using this

facility to send an email message to the undersigned. The message is then marked up in html and added to the IGS Web home page by this writer, who acts as the IGS Web home page editor.

Finally, it is hoped that the IGS Web home page will provide a convenient single source location for current information on IGS activities, announcements, contents of journals and related events of interest to our membership.

Please do not hesitate to contact the writer (see p.19 for address) if you have any suggestions for the IGS Web home page or if you would like to post an article or announcement.

Web Resources for Geosynthetics Engineers ***by David Elton, Editor, IGS News***

The World Wide Web (Web) is rapidly becoming a part of life and work in the 90's. In the interest of the geosynthetics community, the following article about the Internet will help you get around, suggest where to go, and what to expect. The Web is part of a larger computer communications network called the Internet. The Internet provides computer users with information, communications, video and audio. Typically, a user pays for an Internet provider to connect his computer to the Internet. The provider has a computer that connects to other computers to form the Internet. The Web is that part of the Internet composed of "pages". A page is information that the user has put on the Internet for users to "browse" or peruse. "Home pages" are the first in a series of pages that a user may have placed on the providers server. A home page can contain "links" to subsequent pages put on by the originator of the home page, or links to other home pages.

Once a page is created, any Internet user can view these pages provided he/she has the "address" of that page.

The addresses in this article were current at press time. However, since the Internet is run solely by it's users, the addresses and information on the pages can change at any time.

If you have found a page of interest to the geosynthetics community, please notify the editor (p. 17). The IGS News will publish more on the Web in future issues, including pages of interest.

Help!

One help program is called Roadmap. An html (hypertext markup language) version of Roadmap is now available via Mosaic, Netscape, and through the Auburn University College of Engineering WWW (World Wide Web) server: <http://www.eng.auburn.edu/> Then select the College of Engineering Online Help section. Or access directly:

<http://www.eng.auburn.edu/network/help/roadmap/>

About ROADMAP

ROADMAP '... is an Internet training workshop designed to teach new "Net travelers" ...' <from the first lesson>

Roadmap was produced and is copyrighted by Patrick Crispin of the University of Alabama but can be distributed unaltered freely. Patrick's willingness to share the fruits of his efforts freely is a stroke of good fortune for all Internet travelers.

Another Web site with pointers to all sorts of guides and lists about the Internet is maintained by Neil Enns. If you are interested in finding out more about how to use the Internet, and what is available on the Internet, but don't feel like buying a book, this is the place to begin. You can find the page by pointing your Web browser to:

<http://www.brandonu.ca/~ennsnr/Resources/>

The page currently contains over 100 links, all of which were active as of 25 March 1995. Some of the links include:

- the Internet Hunt;
- the December, Yanoff and Awesome lists;
- Internet guides in English, Italian and Hebrew; and
- a collection of online Internet courses.

There are many, many more links.

Jobs - Envjobs-I

The Internet is also useful in finding job opportunities. This email address/news group lists job opportunities for environmental engineers.

To subscribe to Envjobs-l, send email to

listproc@pan.cedar.univie.ac.at

Leave the subject line blank. The message should read: subscribe ENVJOBS-L [your name]

Pages useful to the Geosynthetics Community

The following are addresses where geosynthetics/civil engineering material can be found.

Civil Commotion - lists 20+ civil engineering related news lists

<http://www.infi.net:80/~xedge/>

ASCE Geotech

<http://www.ce.utexas.edu:3000>

Earthquake Locator

<http://www.geo.ed.ac.uk/quakes/quakes.html>

WWW Virtual Library: Civil Engineering

<http://www.ce.gatech.edu/www-ce/home.html>

CE Calendar

<http://audrey.fagg.uni-lj.si:80/ICARIS/dates.ce/>

U.S. Army Corps of Engineers, at Vicksburg - Waterways Experiment Station

<http://www.wes.army.mil/>

ASCE Geotechnical group- page currently under construction

<http://www.ce.utexas.edu:3000>

Polymer Technology, Delft University of Technology

<http://www.stm.tudelft.nl/tms/tmshome.html>

Environmental

<http://www.vuse.vanderbilt.edu/~ayersmv/envref.htm>

News Groups

Current information and opinions are exchanged in news groups. Network news is delivered via the UNIX-based network known as USENET. USENET is not part of the Internet, but it is widely available to Internet users because so many systems on the Internet are running UNIX. USENET discussion groups are called newsgroups.

Some Internet newsgroups of interest to geosynthetics community include:

sci.engr.geomechanics

sci.engr.civil

Amusement

And finally, the Internet can be just plain fun. There are pages everywhere that are of no use except for entertainment. Here are some of them

NewsPage

<http://www.newspage.com/NEWSPAGE/newspagehome.html/>

Books that Work

<http://www.btw.com>

The Virtual Garden

<http://www.timeinc.com/vg/Welcome/welcome.htmlh>

Welcome To the Little Garden

<http://www.tlg.org/>

Health and fitness

<http://akebono.stanford.edu/yahoo/Health/Fitness/>

Fitness (health info)

gopher://gopher.uiuc.edu/11/UI/CSF/health/heainfo/Fitness

Catalog Request Form (request free catalogs - hundreds of subjects!)

<http://catalog.savvy.com/catalog.html>

The Dilbert Zone (a favorite comic strip)

<http://www.unitedmedia.com/comics/dilbert/>

Internet Resources Meta Index (great place to search)

<http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/MetaIndex.html>

Yahoo (great page to search for other pages; indexed)

<http://www.yahoo.com/>

Hopefully, this article has included some useful addresses. The Internet continues to grow and the Web continues to have more and more information placed on it.

As geosynthetics engineering information continues to spread, the Web will continue to be a source of that information.

Selected Highlights of Recent IGS Council Meeting

The IGS Council met on 19-20 February 1995 at the Opryland Hotel in Nashville, Tennessee, USA.

Members present: President C.J.F.P. Jones, Vice President R. Bathurst, Past President R.K. Rowe, Secretary P.E. Stevenson, Treasurer W. Voskamp, Council Members: T. Akagi, D. Cazzuffi, B. Christopher, J.G. Collin, M. Fukuoka, G. Heerten, R. Holtz, G.P. Karunaratne, C. Lawson, P. Rimoldi, J.-P. Gourc.

The meeting was convened at 0800 in the Houston Room by President Jones.

1. A proposal to change the format of the meeting was discussed and adopted. Most agenda items were to be accepted as read. Only those items requiring in-depth exploration would be raised in the council meeting in order to provide time for the afternoon of 19 February to be devoted to discussions on the mission of education for the IGS.

2. Minutes of previous meeting(s) were approved.

3. Copies of the IGS Handbook were distributed. Revisions to the Handbook were discussed.

4. Each council member was challenged to identify two companies that he would invite to join IGS. President Jones will draft a letter of introduction to the IGS and the Secretary will provide information on corporate membership benefits to the council member or the candidate upon request.

5. IS Kyushu '96 to be included in the schedule of officers meetings.

6. The UK Seminar on Landfills was approved as "under the auspices of the IGS".

7. The R.K. Rowe and J.P. Giroud requests for the moral support of the IGS for their seminars to be held at Sardinia '95 were approved.

8. The proposed Code of Ethics was discussed in depth. The next step will be to publish the document in IGS News and distribute copies to all corporate members. A final draft will be presented to the membership in the form of a postal ballot. (See this issue page 7.)

9. The discussion of the role of the IGS in geosynthetics education was very productive. R. Holtz departed the council meeting with a wealth of material and the mandate to formulate a plan for the council to adopt at the next council meeting. (See article on page 8 of this issue).

10. The decision was taken to proceed with the "Roads" video, which will follow the excellent IGS-ASCE

"Geosynthetics in Landfills" video.

11. The decision was taken to put the IGS on the Internet. (See articles on page 3 and 4 of this issue).

12. Dr. Giroud's book on failures was approved "under the auspices of the IGS" pending review by R. Bathurst (see IGS News, Vol. 11, no. 1, p. 7).

13. D. Cazzuffi's draft list of test standards to be completed by September. Publication plan to be developed at next council meeting.

14. The decision was taken to investigate the publication of several documents (Directory, Handbook) in 3.5 inch disc or CD-ROM format.

15. A draft program for the awards committee was presented to the council and adopted. It was decided to include the Giroud Lecture in the responsibilities of the awards committee and the committee is expected to nominate a candidate for the Giroud Lecture. Rules for the selection are:

1. Recognized international expert
2. Good public speaker
3. Technically knowledgeable
4. Significant contributor to the discipline
5. Significant contributor to the IGS

16. B. Myles is to be invited to draft a guideline for organizers on methods to meet the needs and interests of exhibitors at IGS and other conferences.

Support was voiced for the concept of commercial presentations to be made within the exhibit arena and separate from the technical sessions. Past council member and corporate committee member S. Warner and council members G. Heerten, B. Christopher, J. Collin and W. Voskamp will review and correspond with B. Myles on this issue.

contributed by Mr. Peter Stevenson
Secretary of the IGS



***Strengthen the
Society***

**Invite a friend to
join IGS!**

IGS Proposes a Code of Ethics

President's Introduction

The IGS is growing rapidly. It has been suggested that the Society should have a voluntary Code of Ethics. This is a contentious issue. It is important that all IGS members have the opportunity to express their opinions, both on whether the Society should have a Code of Ethics, and, if so, what it should contain.

P. Rimoldi prepared the following draft, to initiate discussion. The draft was presented at the IGS Council meeting in February 1995, in Nashville, TN, USA. The Council and I invite members to express their views by writing to me or the Secretary (p. 19).

*Prof. C.J.F.P. Jones
President, IGS*

DRAFT CODE OF ETHICS

1. General Principles

1.1 Each Member of the IGS agrees that the aims of the Society are:

*to collect, evaluate and disseminate knowledge on all matters relevant to geosynthetics, related products and associated technologies;

*to promote seminars, symposia, conferences, etc.;

*to publish or sponsor papers or books;

*to maintain reference libraries and collections which relate to the scientific and technological objectives of the Society;

*to improve communication and understanding regarding geosynthetics and their applications;

*to provide, through its meetings and published proceedings, a means of communication and understanding between designers, manufacturers and users of geosynthetics, especially between the textile and civil engineering communities;

*to establish liaisons with other bodies which have or could have an interest in geosynthetics and their applications;

*to promote advancement of the state of the art of geosynthetics and their applications;

*to encourage research and development in industry, universities, laboratories and other organizations;

*to afford recognition of achievement in the advancement of the science and the practical use of geosynthetics;

*to encourage academic institutions to provide courses on geosynthetics and their applications;

*to encourage, through its members, the harmonization of geosynthetics test methods, equipment, and criteria.

1.2 A Member of the IGS has obligations of morality and responsibility to follow the aims of the Society and to be guided by the highest standards of ethics, personal honor and professional conduct.

1.3 This Code of Ethics applies to all Members of the IGS

2. Relation of Members to the Public

2.1 Each Member of the IGS shall avoid and discourage statements and/or participation in unsound practices.

2.2 A Member of the IGS shall not knowingly participate in the publication of any report or document for any unsound or illegitimate undertaking.

2.3 A Member of the IGS shall not give professional opinion or make a recommendation without being as thoroughly informed as might reasonably be expected considering the purpose for which the opinion or recommendation is desired, and the degree of completeness of information upon which it is based shall be made clear.

2.4 In representing the IGS or in the presentation of professional papers at IGS and associated Conferences, a Member shall avoid explicit commercialism of his/her Company or products.

2.5 A Member of the IGS shall not knowingly issue a false statement or false information.

3. Relation of Members to Employer and Client

3.1 A Member of the IGS shall protect, to the fullest extent possible, the interest of his/her employer or client insofar as such interest is consistent with the law and his/her professional obligations and ethics.

A Member of the IGS shall engage, or advise his/her employer or client to engage, and cooperate with other producers, experts and specialists whenever the employer's or client's interests would be best served by such service.

3.2 A Member of the IGS who finds that his/her obligations to their employer or client conflicts with his/her IGS professional obligation or ethics shall try to have such objectionable conditions immediately corrected.

3.3 A Member of the IGS retained by one client shall not accept, without the client's written consent, an engagement by another if the interests of the two are clearly conflicting.

3.4 A Member of the IGS shall not divulge information given in confidence and shall not use, directly or indirectly, any employer's or client's information in any way that would violate the confidence of the employer or client.

4. Relation of Members to Each Other

4.1 A Member of the IGS shall not falsely or maliciously attempt to injure the reputation of another.

4.2 A Member of the IGS shall freely give credit for work done by others to whom the credit is due, shall knowingly refrain from plagiarism in oral and written communications, and not knowingly accept credit rightfully due to others.

4.3 A Member of the IGS shall expect fair compensation for his/her work and shall not compete unfairly with another Member.

4.4 A Member of the IGS shall endeavor to cooperate with others in the profession and encourage the ethical dissemination of technical knowledge.

5. Duties to the Society

5.1 A Member shall not act counter to the aims and interests of the Society, otherwise such Member can be dismissed for cause by a majority decision of the Council. Dismissal for cause cases must formally appear on the Agenda of the Council. Members being considered for dismissal must be afforded an opportunity to comment to and/or appear before the Council before it reaches its decision.

5.2 A Member of the IGS shall uphold this Code of Ethics by precept and example and encourage, by counsel and advice, other Members to do the same.

Prepared by Pietro Rimoldi
IGS Council Member

THE POTENTIAL ROLE OF THE IGS IN GEOSYNTHETICS EDUCATION

by Dr. Robert Holtz, Chair, IGS Education Committee

Introduction

At the last IGS Council meeting in Nashville in February 1995, considerable time was devoted to a discussion of what the IGS should be doing in the area of education. In previous years, the IGS Education Committee correctly concentrated their efforts on activities primarily of interest to student members. Under the leadership of President C.J.F.P. Jones and the new IGS Officers, education is considered in a much broader context, involving a wide range of activities that could help develop the entire geosynthetics discipline, increase IGS membership, and promote IGS activities. An afternoon "brainstorming" session, attended by almost the entire Council, was conducted to identify problems facing the geosynthetics industry and the Society, to see what resources there might be available, and to develop and prioritize methods to help solve some of these problems.

Problems

A number of problems facing the IGS were identified. Probably the most serious is the need to continue the growth of the geosynthetics discipline and thus the IGS. Specific objectives would be to increase the usage of geosynthetics, to attract new members to the IGS, and to increase funding for research and development activities. Improved quality is also needed in order to help protect the integrity of the industry. This can be done through improvements in design, construction, and the geosynthetics products themselves.

Another need is to make geosynthetics the solution or option of choice, rather than, as is often today, an alternate to the traditional solution. For example, "standard" design procedures could be developed to assist engineers and designers and help them have a greater appreciation of the benefits and uses of geosynthetics. There is a need to advance both the state of the art and the state of practice. The state of the art can best be advanced through increased research activity (i.e. funding), while the state of practice is advanced through improved communication between users, manufacturers, owners, and engineers. This is carried out

through technology transfer and continued professional development activities, product availability, technical liaison, and increased availability of information on geosynthetics.

Available Resources

There are considerable resources available to us to help solve some of these problems. A few examples will be given: the geosynthetics manufacturers, IGS Chapters and the entire IGS membership, governmental agencies such as departments of transportation, public works, ports and harbors, etc., contractors, consultants, and universities. Others include trade organizations, related international standards organizations, and other related organizations (including each country's professional civil and geotechnical engineering societies). Finally, there are also available a number of "canned" resources such as videos, slide shows, bibliographies, textbooks, conference proceedings, and journals. All these items should be considered as educational resources currently available to us.

Methods

Twenty-four different available methods were considered and prioritized; the members assessed what specific needs the method addressed, and tried to estimate the costs that might be involved. In the list below, only the "high" priority methods are given, as those are the most likely ones to be implemented in the near future. (Note: they are not given in any particular order.)

1. "Educate the Educators" programs. For example, the Industrial Fabrics Association International Professor Training Courses for Geosynthetics held at Auburn University in 1994 and again in 1995, could be used as a model for teaching university professors how to incorporate geosynthetics into their curricula.

2. Computer programs. The IGS could provide computer programs through a variety of media such as discs, Internet, CD-ROM, games, etc. The only question is how to access

and disseminate these programs. The Internet seems like the most versatile medium for this.

3. Conferences and exhibitions. Our international conferences and the few regional-national conferences are very successful in this regard and provide a valuable education service to the membership and other professionals.

4. Guest lectures and short courses for engineers and others are often very effective. One possibility is for IGS to develop a catalog of available speakers and instructors, topics, and other conditions, and make this catalog available to IGS chapters and the membership.

5. Expert systems that lead design engineers to use

geosynthetics. Development costs could be high, but dissemination costs are very low. IGS involvement probably should be limited to only dissemination, as with computer programs. (See No. 2 above).

6. Finally, the Education Committee should continue to interact with and provide services to the student membership in a meaningful way. This can be done either through contact directly with the student members or through professors who are teaching and doing research on geosynthetics.

The education committee welcomes your comments and suggestions. Please contact R. Holtz, any member of the IGS Education Committee, or an editor of the IGS News (p. 17).

IGS Awards for 1992-95: Call for Submissions (deadline for nominations: 31 January 1996)

Purpose

IGS Awards will be granted in 1996 to individuals or groups of individuals who have made an outstanding contribution to the development and use of geotextiles, geomembranes, related products or associated technologies through their scientific and technological achievements. Awards will be made for the recognition of achievements completed and/or the validity of which has been demonstrated during a four-year period preceding the year of the award (i.e. 1992 through 1995 inclusive).

There are two types of awards: the **Young IGS Member Achievement Award** for IGS members who are less than 36 years of age on 31 December 1995, and the regular **IGS Award** (independent of age). A maximum of five IGS Awards will be granted. Each award will consist of a specially commissioned medal and a diploma. The winning entries will also be featured at the IGS booth at any conference held under the auspices of the IGS and will be publicized in IGS News, in special press releases, the IGS World Wide Web (Internet) page, and in other publications.

Candidates

All candidates must be members of the IGS. All members of the IGS are eligible with the exception of the President of the IGS and the members of the Awards Committee. In the case of a group submission to the Young IGS Member Achievement Award all members of the group must satisfy the age requirement. Any individual or group that is a candidate for the Young IGS Member Achievement Award is automatically considered for both award categories (unless requested otherwise by the candidate). However, a candidate may only receive one award for the 1992-95 period.

Nominations

Nominations of candidates should be typed in English on plain paper (not letterhead) and submitted to the Secretary of

the IGS, Mr. Peter Stevenson at the address given on page 19 of this newsletter. The nomination should include:

- a clear statement of the contribution of the candidate that is to be considered (e.g. if a product - provide a clear definition of the product; if a paper(s) or book, give a full reference of the paper(s)/book; if a report - a full reference to the report; if a construction method - a clear description of the method and any references, etc.),

- a statement indicating the originality, and significance of the candidate's contribution to the field of geotextiles, geomembranes, related products and/or associated technologies.

Nominations may be made by any IGS member, except members of the Awards Committee, including nominating oneself. The Publications Committee, Education Committee, Corporate Members Committee and IGS Chapters will be invited to make nominations. Nominated candidates will be contacted by the IGS Secretary. Candidates will be asked to agree to stand for an award and will be required to submit materials as requested by the Awards Committee. All nominations and award entries will be executed with the strictest confidence by the IGS Secretary and the Awards Committee.

IGS Awards Committee

The Awards Committee will comprise five regular members including its chairman (all members will be selected by the IGS President from a list approved by the IGS Council). The members will be selected so as to represent a broad cross-section of geosynthetic-related technologies and experience. The Secretary of the IGS will attend all meetings of the Committee as an observer and coordinator. Complete IGS Awards rules can be obtained from the Secretary of the IGS, Mr. Peter Stevenson, at the address given on page 19.

reported by R.J. Bathurst
Vice President of the IGS

GEOSINTETICOS'95

2nd BRAZILIAN SYMPOSIUM ON GEOSYNTHETICS

The Brazilian Society of Soil Mechanics and the Brazilian Committee on Geosynthetics held their 2nd Symposium on Geosynthetics in Sao Paulo, 26-28 June 1995. The event was sponsored by government funding agencies and geosynthetic manufacturers. More than 200 professionals attended the symposium from different parts of Brazil, South America, North America and Europe. This shows that the interest in the subject has been increasing significantly since the 1st Brazilian symposium on geosynthetics held in Brasilia, in 1992.

The symposium proceedings contain forty-two papers on the wide range of geosynthetic applications that was covered in the four technical sessions of the symposium. The first session dealt with soil reinforcement, with thirteen papers on the subject. The second session was focused on geosynthetic materials, properties and tests (eleven papers). The third session was devoted to hydraulic applications (six papers). Miscellaneous applications for geosynthetics were discussed in a final session (twelve papers). Two panel sessions were also held to discuss construction methodologies and long-term performance of geosynthetic filters and geosynthetics in environmental protection applications.

Four special lectures were presented by invited speakers: *Evolution of Geosynthetics in Brazil* by Dr. Ennio M. Palmeira, University of Brasilia, Brazil; *Recent Develop-*

ments in Reinforced Segmental Retaining Wall Technology in North America by Professor Richard J. Bathurst, Royal Military College of Canada and Vice-President of the IGS; *Geosynthetics in Dams* by Ing. Daniele Cazzuffi, Enel Spa, Italy; and *Application of Geosynthetics in Landfills*, by Professor J.-P. Gourc, University Joseph Fourier, Grenoble, France. A fifth special lecture is contained in the symposium proceedings with the title *Geosynthetic Application on Environmental Protection in the United States* written by Robert E. Landreth (United States Environmental Protection Agency).

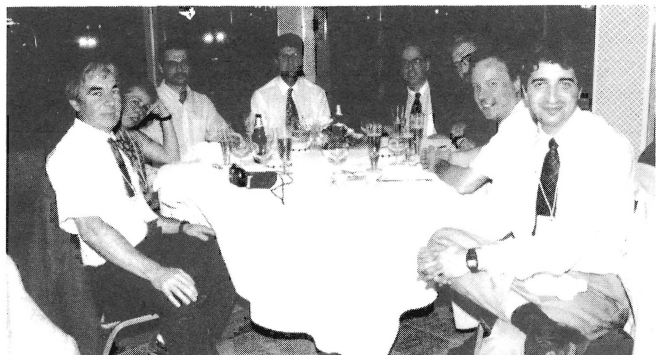
Manufacturers also displayed their geosynthetic products during the event. A lively reception which included a cocktail and a banquet was also held on the first and second days of the symposium, respectively.

The general opinion among the registrants was that the symposium was a great success. The next one is already being planned. The symposium also served to introduce the delegates to the activities of the IGS. It is the hope of the writer that delegates to the symposium will become IGS members and assist with the formation of a Brazilian/South American Chapter of the IGS in the near future.

reported by
Dr. Ennio M. Palmeira



At Geossinteticos '95: L. Maroni, R. Bathurst, M. Abramento, R. Gomes, P. Aguiar, E. Palmeira, F. Montez, A. Farra, D. Vidal



At Geossinteticos '95: J.-P. Gourc, D. Vidal, E. Azambuja, M. Abramento, R. Bathurst, E. Palmeira, D. Cazzuffi, J. Zornberg.

Geosynthetics Bibliography Available

Volume 2 joins Volume 1 of the Geosynthetics Bibliography - now available from the Industrial Fabrics Association International. This comprehensive bibliography contains listings from books on geosynthetics, papers in over 400 different technical publications, research reports, as well as special listings of publications by over 100 prolific authors of geosynthetic literature. Volume 1 and Volume 2 are both available. Each volume costs US\$79.00 for IGS and IFAI members or US\$99.00 for all others. Shipping costs per volume are (\$US):

USA \$5.00
Canada \$10.00
Central America \$17.00
Europe and South America \$30.00
all other locations \$42.00

Orders may be placed with IFAI, 345 Cedar St., Suite 800, Minneapolis, MN, 55101-1088, USA (Fax 1 (612) 222-8215).

CORPORATE PROFILES

The IGS Council has decided that in each issue of the IGS News, up to three Corporate Members will be allocated space to allow them to introduce their company or association and present their achievements. The criteria for selection of corporate profiles were described in IGS News, Vol. 4, No. 2, p. 7. Alternatively, you can get details by writing to the Editor. There is no charge for having a corporate profile published; it is a benefit of corporate membership.

Rhodia-Ster Fibers, Ltd., Sao Paulo, Brazil **by Mr. Laerte G. Maroni, Managing Director**

Rhodia (Rhone-Poulenc Group) was founded in Brazil in 1919. Since then, the company has become an important producer and supplier of chemical, pharmaceutical, and textile products in South America.

Rhodia-Ster was founded in 1994, as a joint venture of Rhodia with Celbras (formerly the Brazilian branch of Celanese). Due to this union, Rhodia-Ster is now a polyester leader in the southern hemisphere. Its main businesses are fibers, films, nonwoven geotextiles, resins and packaging (polyethylene bottle) production.

Bidim Division, now a Division of Rhodia-Ster responsible for geosynthetic products, was established in Brazil in 1971. Since then, our polyester, spun-bonded, needle-punched, nonwoven, geotextiles have been produced for the South American market. The geotextiles are made in a variety of sizes and weights, up to 600 g/m². They are stabilized against ultraviolet radiation. Recently, Rhodia widened its geotextile products to include geogrids, geocells and geocomposites.

Rhodia-Ster is dedicated to environmental protection. Currently, the company is developing a process to incorpo-

rate the use of recycled PET in its geotextiles. Quality is another goal. Rhodia-Ster is in the process of obtaining ISO 9001 certification. This will assure customers of the quality of its products and services.

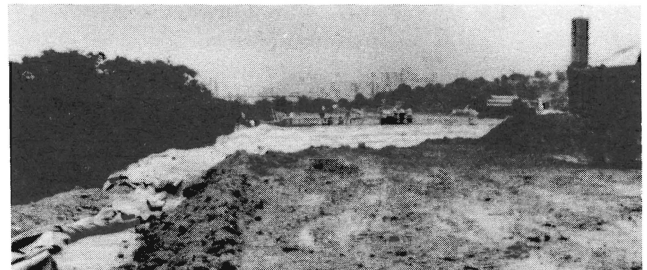
Two recent projects by Rhodia-Ster are shown in the photographs below. The pictures show two embankments over soft soil. The first one is at Lubeca, Sao Paulo, and the second one at Linha Vermelha, Rio de Janeiro, both in Brazil. The geotextiles serve to reinforce the base of the embankments.

Rhone-Poulenc group is one of the original corporate members of IGS. Rhodia-Ster has been a corporate member since 1994. Further information about the Bidim Division can be obtained by contacting:

Rua Antonio das Chagas, 945
Chacara Santo Antonio
Sao Paulo-SP
Cep: 04714-001
Tel.: 55- 011-536-1576
Fax: 55-011-247-2597



Embankment over soft soil at Lubeca, Sao Paulo, Brazil



Embankment over soft soil at Linha Vermelha, Rio de Janeiro, Brazil

The 7th International Conference on Geosynthetics (7IGC) To Be Held In 2002

The IGS invites chapters and interested organizations to express their interest in organizing the Seventh International Conference on Geosynthetics which will be held in 2002. The history of the conferences is as follows:

First IGC, Paris, France 1977
Second IGC, Las Vegas, USA 1982
Third IGC, Vienna, Austria 1986
Fourth IGC, The Hague, The Netherlands 1990
Fifth IGC, Singapore, Singapore 1994

Sixth IGC, Atlanta, USA 1998
Seventh IGC, 2002

The IGS Secretary will provide a detailed information package that informs and instructs interested parties on the proper procedure to prepare a bid to host the conference. Interested chapters and organizations should contact the IGS Secretary, P.O. Box 347, Easley, SC, 29461, USA.

Geogrid Retaining Walls Survive the Great Hanshin Earthquake, 17 January 1995

by F. Tatsuoka, M. Tateyama and J. Koseki

A devastating earthquake measuring 7.2 on the Richter scale hit Kobe City, Japan, and the neighboring urban areas around 5:46 AM on 17 January 1995. The reported death toll is nearly 5,500. Many important civil engineering structures, including reinforced concrete (RC) columns of elevated structures for highways and railways, RC buildings and port and harbor structures were seriously damaged.

Geogrid-reinforced soil retaining walls (GRS-RWs) with full height rigid facings had been constructed for more than 2 km at four locations during 1990-1993 in the affected areas. The construction method followed that proposed by the author and colleagues (Tatsuoka et al., 1992). This method uses a light steel-reinforced concrete facing. The facing is cast in place over a geosynthetic wrap-around wall face. The face, in this case, had been constructed with the help of gravel-filled gabions placed on the front shoulder of each soil layer. This method won a 1994 IGS Award (see Vol 10, no. 3, p. 10, 1994). The walls were designed for earthquakes using a pseudo-static method and a horizontal seismic coefficient of 0.2.

Of particular importance is that a GRS-RW located at Tanata between Ashiya and Setsu-Motoyama Japan Railway (JR) stations performed well despite its location in the most severely shaken and affected area. This wall was part of the reconstruction of an existing railway embankment used to support a new track for one of the most important railways in Japan, Tohokaido Line. The cohesionless backfill included some fines. The reinforcement was a geogrid made of Vinylon coated with soft PVC for protection. The wall moved slightly; the largest outward displacement, which occurred at the tallest part in contact with an RC box structure crossing the railway embankment, was 26 cm at the crest and 10 cm at the ground surface.

Despite these movements, the performance of the wall is fully satisfactory, especially when one considers:

1. In the area surrounding the site, the damage to many new wooden houses as well as many RC buildings and RC elevated structures was particularly severe. In particular, many gravity-type unreinforced concrete or masonry retaining walls moved much more, or totally collapsed. Many modern steel-reinforced cantilever retaining walls moved significantly (Tateyama et al., 1995).
2. The earthquake motion recorded at a short distance from the site was extremely high. It is likely that this GRS-RW experienced the highest seismic load of any modern GRS-RW.
3. RC retaining wall structures had been constructed adjacent to the GRS-RW, supported by a row of 1.2 m diameter RC cast-in-situ piles. The piles were 6 m long, and spaced at 3 m, center-to-center. The GRS-RW did not have such a firm foundation. Despite this difference, the outward displacements of the RC wall and the GRS-RW were similar to each

other; i.e. at the contact with the RC box structure, the outward displacement of the RC wall was 21.5 cm at the crest and 10 cm at the ground surface level.

Because of construction restraints, several of the top reinforcement layers for the GRS-RW could not be extended beyond 3 m, unlike other GRS-RWs at different locations. It is believed that if the several top reinforcement layers had been longer, the tilting of the GRS-RW wall would have been smaller.

The other GRS-RWs located in the affected area are:

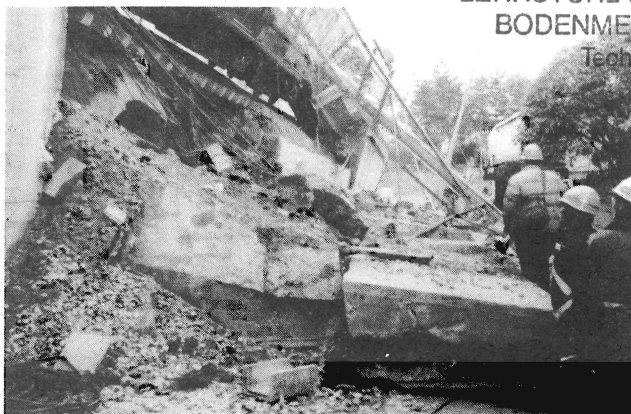
1. A structure supporting the Tokaido Railway Line, 1,000 m in total length and 5 m in average height including several bridge abutments. One was constructed in 1990, and another, 400 m in length and 3-8 m in height, was constructed in 1993 (both at Amagasaki), and
2. A structure for a road embankment, 200 m in length and 5 m in height, located at Tarumi, Akashi. These were located in less affected areas (but not in the damage-free areas), and were not damaged at all.

Based on the satisfactory performance of the GRS-RWs, it was decided to replace more than 1 km of collapsed gravity-type retaining walls and cantilever RC retaining walls with GRS-RWs at three sites (part of the reconstruction has already been completed). More details are reported in Tatsuoka et al. (1995).

References

- Tateyama, M., Tatsuoka F. and Koseki, J. (1995) Damage to soil retaining walls for railway embankments during the Great Hanshi-Awaji Earthquake, January 17, 1995, Proc. First International Conference on Earthquake Geotechnical Engineering, Tokyo, Balkema (to appear).
- Tatsuoka, F., Murata, O. and Tateyama, M. (1992) Permanent geosynthetic-reinforced soil retaining walls used for railway embankment in Japan, Geosynthetic-Reinforced Soil Retaining Wall, Wu (ed.), Balkema, pp. 101-130.
- Tatsuoka, F., Tateyama, M. and Koseki, J. (1995) Performance of geogrid-reinforced soil retaining walls for railway embankments during the Great Hanshin-Awaji Earthquake, January 17, 1995, Proc. First International Conference on Earthquake Geotechnical Engineering, Tokyo, Balkema (to appear).
- Tatsuoka, F., (1992) Permanent Geosynthetic Reinforced Soil Retaining Walls for Railway Embankments in Japan, IGS News, Vol. 8, no. 1, p. 7.

Editor's note: F. Tatsuoka is affiliated with the University of Tokyo, M. Tateyama with the Railway Technical Research Institute, and J. Koseki with the University of Tokyo.



Scene in front of the GRS-RW at Tanaka.



Failure of a conventional railway support wall.

IGS Chapter Reports

Editor's note: this article concludes the IGS Chapter reports, begun in the last edition of the IGS News.

The Italian Chapter Report

I. Introduction

The Italian Chapter officially started its activities on 1 January 1993 after the parallel approval of the bylaws during the IGS Council Meeting in Fukuoka and the AGI Council in Roma in November 1992.

II. Membership

In the first two years of activities, membership of AGI-IGS was as following:

1993

Corporate Members:	2
Individual Members:	152
Student Members:	19

1994

Corporate Members:	2
Individual Members:	154
Student Members:	8

III. Activities

In 1994 the main activities of the IGS Italian chapter were:

1. Collaboration with the Italian Minister for Environment for the preparation of specific guidelines on reinforced-vegetative protection systems (incorporating geosynthetics and bioproducts) for cut slopes and embankment slopes.
2. Organization of a field trip for the visit of job sites for construction of vegetated retaining structures reinforced with geosynthetics, that took place on 16 May in the Dolomites area, with an attendance of 42 persons.
3. Survey among the AGI-IGS members to learn their availability to cooperate with the AGI-IGS Council for the different activities (information, standards, education, field trips, conferences, relationship with other national chapters).

4. Preparation with the support of a travel agency, of an offer particularly interesting for the AGI-IGS members, covering the travel plus accommodation, for attendees at the Fifth International Conference on Geotextiles, Geosynthetics, Geomembranes and Related Products in Singapore.

5. Organization, with the support of the Bologna Engineers Association and BolognaFiere, of the Eighth Italian Conference on Geosynthetics (Bologna, 20 October 1994). The conference was structured as a post-Singapore meeting and selected Italian contributions to the SIGC were presented in Italian.

III. Officers and Elections

The President of the Italian Chapter of IGS is Sandro Martinetti, who is President of the Italian Geotechnical Society (AGI) as well. The Vice-Presidents are Daniele Cazzuffi (international coordination) and Piero Sembenelli (national coordination). The Secretary-Treasurer is Sergio Di Maio, who is Secretary-Treasurer of AGI as well. The other officers of the AGI-IGS chapter are Pietro Rimoldi (until 1998) and Ruggiero Jappelli (until 1996).

Presently, a ballot process for the election of three more officers of the IGS Italian chapter is in progress; the candidates are five: E. Baldovin, P. Fantini, A. Ghinelli, F. Nigrelli, and L. Sarti.

The first meeting of the new AGI-IGS Council is scheduled for 1995.

A second technical visit is in the process of being launched for early April 1995.

The UK Chapter Report

I. Membership

An area of disappointment is the relatively static membership numbers. We will be trying to attract more members. Current membership stands at eighty-two. The distribution of members is as follows:

Consulting Engineers:	46%
Manufacturers/distributors:	23%
Academic:	14%
National and Local Government:	9%
Contractors:	4%
Others:	4%

II. Activities

During 1994, a program of evening meetings was held in venues throughout the UK from Exeter to Inverness. Topics included Durability of Geosynthetics, Geomembranes, Geosynthetics in Soil Nailing; Geotextiles in Pavements; Geosynthetics - Applications, Specification, and Testing; and a report on the Singapore Conference. All meetings were organized jointly with a local association of the BGS, IHT, or Geological Society and Geotechnical Groups. This has ensured good local publicity for the event and, in most cases, very good attendance.

In addition, the IGS jointly sponsored, with ERA, a one day symposium on the Durability of Polymers. Because of the practical nature of the event, visiting test facilities, etc., the number was restricted to forty. There were delegates from the USA, Sweden, and Holland.

We look forward to another busy year of events in the UK and involvement with the planning of the European regional conference in Maastricht. All European Chapters will be asked to assist Dutch organizers.

III. Treasurer's Report

We are losing our treasurer after five years. Thanks are due to David Wilson for all his efforts during those five years.

The Chapter took in £5474-74 and has an excess of £620-03.

As reported at the last AGM, we have taken charge of the transfer of fees to the IGS. This procedure has worked smoothly this year and has allowed us to rebuild our relationship with BGS (British Geosynthetics Society).

We are grateful to the BGS for their interest and cooperation in this area. An IGS representative is invited to the BGS committee meetings to report on the activities of the Society.

The Korean Chapter Report

I. Members

The number of members in IGS/KC is as follows:

December 1994	
Individual members:	31
Corporate members:	0
1995	
Individual members:	38
Corporate members:	0
+7 preparing membership applications	

II. Special Lecture

The special lecture and technical meeting was held 10 May 1994 in Seoul. Two keynote addresses were presented:

1. Professor Ochiai Hidetoshi (Kyushu University, Japan) "Earth Reinforcement using Geotextiles"
2. Professor Hayashi Shigenori (Saga University, Japan) "Methods of Test for Geotextiles in Japan"

Many people from universities, research organizations, consulting and construction companies and production companies participated. This seminar was a good opportunity to gain understanding of the state-of-the-art technologies in geosynthetic engineering.

III. The Technical Committee

The major work of the technical committee of IGS/KC in 1994 included:

1. Draft preparation of the Korean standard test method for geotextiles.
2. Feasibility study of QC (quality control) of geotextiles at construction sites.

IV. Growth of the Market

Rapid rise in growth of the geosynthetics market in Korea is noteworthy. Uses include the following: a large amount of geotextiles are being used in two large construction sites - the national industry complex in the Noksan area of Busan metropolitan, and the new international airport on Youngjong island. 42 million square meters of drain board for soil consolidation and 7 million square meters of geotextiles for ground stabilization will be used at the Noksan site.

The Japanese Chapter Report

On 19 January 1995, the JCIGS General Assembly was held in Tokyo. The following items were reported and approved by the membership:

1. Membership as of December 1994:

Honorary member	1
Individual members	200
Student members	45
Corporate members	22
2. Publications in 1994:
 - a. JCIGS Membership Directory, January.
 - b. JCIGS Newsletters: March, July and December.
 - c. Notes for Geomembrane Seminar, March 1994.
 - d. The JCIGS Geotextile Seminar, Tokyo, November.
 - e. Proceedings of the Ninth Geotextile Symposium, Tokyo, December.
3. Programs sponsored by JCIGS in 1994:
 - a. JCIGS General Assembly, Tokyo, 28 January.
 - b. Geomembrane Seminar, Tokyo, 16 March: 100 participants.
 - c. Symposium on Testing of Geotextiles (in cooperation with JSSMFE), Tokyo, 15 June 1994: 100 participants.

d. A group tour was organized for JCIGS members to attend 5IGC in Singapore, 3-10 September: 55 participants. (The Japanese participants during 5IGC totaled approximately 100.)

e. Geotextile Seminar on the Singapore Conference (5IGC), Tokyo, 1 November: 60 participants. M. Fukuoka, F. Tatsuoka, T. Akagi and T. Horiguchi reported on the IGS Council Meetings, General Assembly, Special Lecture, Keynote Lectures, Technical Sessions, etc., during the Conference.

f. The Ninth Geotextile Symposium, Tokyo, 1 December; 12 papers were presented: 80 participants.

g. Contributions to Sessions of Geosynthetics: the Annual Meeting of JSSMFE, Morioka, 24-26 June and the Annual Meeting of JSCE, Sapporo, 15-17 September.

4. Activities of JCIGS Committees

The dates of the Committee meetings held are as follows:

a. Steering Committee: 1/28, 6/15, 9/15, 12/1.

b. Programs Committee: 8/23, 11/15.

c. Editorial Committee for the JCIGS Newsletters: 4/19, 8/25.

d. Geomembrane Technical Committee: 1/28, 2/22, 4/20, 5/17, 7/5, 8/25, 9/28, 11/4, 12/16.

e. Auditing: 1/20.

5. Contacts with the IGS

a. Council Meeting at Singapore: attended by Professors M. Fukuoka, T. Akagi and F. Tatsuoka, 4, 7, and 9 September. (Professor Tatsuoka was elected as a council Member by postal ballot in the summer 1994.)

b. IGS News: The Annual Report of JCIGS published in the March 1994 issue.

c. List of JCIGS Members: Transmitted to IGS.

6. Election of JCIGS officers for 1995

Chairman: Masami FUKUOKA

Advisors: Shigeru TANAKA and Toyotoshi YAMANOUCHI

Secretary General: Komei IWASAKI

Board Members: Hiroshi ABE, Toshinobu AKAGI, Hitoshi ARAI, Sin-ya FUKAI, Fumihiko HASHIZUME, Takashi HOROGUCHI, Shigekazu HORIYA, Yoshimi HOSOYA,

Masao ITOH, Kiyomaro KASAHARA, Hirotaka KAWASAKI, Yoji KIKUCHI, Akikatsu KOBAYASHI, Norio KONISHI, Koji KUMAGAI, Katsuhiko MAKIUCHI, Takayuki MASUO, Kazuo MATSUMOTO, Hiroshi MIKI, Osamu MURATA, Kazuyuki NAKAMURA, Tatsuaki NISHIGATA, Masahiko SAKAGUCHI, Sigeru SUZUKI, Masatoshi TANAKA, Fumio TATSUOKA, Hideki TSUKAMOTO, Tanehide TSURUOKA, Yoshiharu WATARI, Tsuneo YAMASHITA, Shin-ichi YAMATO and Susumu YOSHIKAWA.

Treasurer: Kenkichi MARUYMA

Auditors: Shun-ya FUKAI and Shigekazu HORIYA

Secretaries: Norio YOSHIOKA and Machiko KUMAGAI

7. Programs Proposed for 1995

1. Publication of JCIGS Membership Directory in March, JCIGS Newsletters to be issued in March, July and November. Seminar textbooks, and introductory book on geomembranes and Proceedings of the Tenth Geotextile Symposium to be held in December.

2. Sponsorship of the Geotextile Seminar in March and the Geomembrane Seminars in April and October.

3. Sponsorship of Geotextile Seminars for student members.

4. Sponsorship of the Tenth Geotextile Symposium to be held on 30 November.

5. Committee Activities by Steering Committee, Planning Committee, Programs Committee, Editorial Committee for JCIGS Newsletters and Technical Committees.

6. Participation in the IGS Council: JCIGS will continue to be in close contact with the IGS and send the Japanese Council Members to the IGS Council meetings to be held in Nashville, 19-20 February.

7. Promotion of IGS membership drive with a goal to increase 10% by the end of 1995.

8. Treasurer's Report:

In 1994, the Chapter revenue was 7,634,485 yen, while the expenditures were 7,580,051 yen, resulting in a surplus of 54,432 yen. Without the considerable support provided by the Japanese Society of Soil Mechanics and Foundation Engineering (JSSFME), the balance would surely have been in the red. JCIGS has no office of its own nor full-time employees.

Technical Visits of the Italian Chapter of IGS

The Italian Chapter of the IGS (AGI-IGS) organized a technical visit in April 1995 to some solid waste disposal sites located in the northern part of Italy, nearly fifty kilometers from Venice. Local organization of the visit was provided by GeoNova Society of Veduggio (Province of Treviso), which has been working in the field of environmental engineering for twenty years and was responsible for the design and construction of the landfills. Two other societies contributed to the success of the event: Agru Lining Italia, responsible for the geosynthetics material, and Geoinvest, responsible for the geoelectric controls on the barrier systems.

A total of seventy-nine people, seventy-two from Italy (including Sicily) and seven from Switzerland, participated in the visit. The group had the opportunity to see three waste disposal sites, classified as 2B according to Italian regulations (Special and toxic solid wastes). The first disposal site, situ-

ated in Istrana, has a 2,500,000 m³ capacity and is still operating. The second one, situated in S. Florian, has a 320,000 m³ capacity and is going to be closed. The last one, situated in Riese Pio X, will have 700,000 m³ capacity. It is still under construction. All the disposal sites are situated in an area which was intensively exploited during the 1960's and 1970's for gravel and sand quarries.

All three waste disposal sites are lined with a composite barrier system, formed by a compacted clay liner (0.50 m thick), a HDPE geomembrane (1.5 mm thick), and, finally, a 0.65 m thick layer of topsoil.

contributed by Danielle Cazzuffi
ENEL Spa - CRIS, Mialno
and Marco Pavaretti, University of Padua

THE PRACTICE OF SOIL REINFORCING IN EUROPE

International Symposium in London, UK

A symposium "The Practice of Soil Reinforcing in Europe" was held at the Institution of Civil Engineers in London, UK, on 18 May 1995. Authors were invited from Austria, France, Germany, Italy, Switzerland, The Netherlands, and the United Kingdom, and each unstintingly shared their knowledge of the practice of soil reinforcing in Europe. In total, seventeen invited papers and discussions were presented together with five post symposium papers. The papers dealt with grouted soil nails, ballistic soil nails, geotextiles, geogrids and metallic reinforcement used in slopes, walls, basal reinforcement, landfills and motorway widening works.

The event turned out to be very popular and the venue was over subscribed emphasising the importance of geosynthetics in the field of geotechnical engineering. Delegates came from consulting companies, universities, the UK Department of Transport, public authorities, contractors and manufacturers.

The symposium was held under the auspices of the Inter-

national Geosynthetics Society. The Technical Committee comprised Mr. Steve Corbet of Maunsell & Partners, Dr. Shiram Dikran of Tenax Plastics Ltd., Professor Colin Jones of the University of Newcastle upon Tyne, who is the current President of the International Geosynthetics Society, Dr. Piero Sembenelli of Piero Sembenelli Consultants and Dr. Terry Ingold. The Tenax group was instrumental in organizational details of the symposium. Thanks to the session chairmen, Mr. Steve Corbet and Professor Colin Jones, the presentations were carried out very smoothly. The discussion reporters, Mr. Chris Lawson of Terram Ltd. and Mr. Chris Jenner of Netlon Ltd., provided prompt and accurate reporting.

The Proceedings of the symposium are being published in September 1995. Details may be obtained from Thomas Telford Publications (Thomas Telford House, 1 Heron Quay, London E14 4JD, UK; Tel.: 44 071 987 6999; Fax: 44 071 538 4101).

contributed by Dr. Shiram S. Dikran

Calls For Papers

1. The International Symposium on Earth Reinforcement, IS Kyushu '96 will be held in Fukuoka, Kyushu, Japan, November 12-14, 1996, under the auspices of the Japanese Society of Soil Mechanics and Foundation Engineering, and with the support of the International Geosynthetics Society.

The aims of this symposium are to discuss various problems and topics on earth reinforcement for the benefit of collecting and exchanging knowledge concerning recently developed techniques and to spread this knowledge to all the countries of the world for further development.

The conference will cover earth reinforcement techniques for the following construction practice: embankments, wall structures, foundations, slopes and excavations. Emphasis will be placed on the following topics: standardization of testing methods; standardization of design methods; numerical methods for design; case histories; monitoring systems; performance under earthquakes.

Authors are invited to submit abstracts of about three hundred words in English, on any of the topics relevant to the conference themes. A one page abstract with a paper title, authors' names, mailing address and telephone and facsimile numbers should be provided at the top of the page. Abstracts should clearly state the purpose and conclusions of the full paper. Both abstracts and papers will be reviewed by the technical committee of IS Kyushu '96.

Important Deadlines:
Submissions of abstracts: 30 September 1995
Acceptance of abstracts: 30 November 1995
Submission of papers: 28 February 1996
Final acceptance: 30 April 1996

Correspondence should be directed to :
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Tel.: 81 (92) 641-1101 ext. 5232
Fax: 81 (92) 641-5195
email: iskyushu@civil.kyushu-u.ac.jp

2. The First European Geosynthetics Conference and Exhibition (EuroGeo 1) will be held 30 September - 2 October 1996 in Maastricht, The Netherlands, hosted by the Dutch Chapter of the IGS. Themes are: Erosion Control/Bank Protection; Filter Application; Liners and Landfill Covers; Monitoring; Embankments/Walls; and Roads and Railroads. Abstracts due 1 October 1995 for posters, case studies, short courses, and discussion sessions. Contact: Egbert Beuving (C.R.O.W.) Tel.: 31-8380-20410. Fax: 31-8380-21112. email: 100576.1446@compuserve.com.

3. The Third International RILEM Conference/Exhibition will be held 2-4 October 1996 (following EuroGeo 1) in Maastricht, The Netherlands. Sessions on the prevention of reflective cracking in pavements are: Prevention and Cracking Assessment; Choice and Design of Overlay Systems; Practical Implementation; Case Histories; and Long-term Performance. Abstracts due 15 September 1995. Contact: Egbert Beuving (C.R.O.W.) Tel.: 31-8380-20410. Fax: 31-8380-21112. email: 100576.1446@compuserve.com

4. Geotextiles and Geomembranes, an official journal of the International Geosynthetics Society, is planning an issue dedicated to geofoam. Papers dealing with both material properties as well as applications are solicited. Authors interested in preparing a paper for this special issue should first submit a one-page abstract by 1 September 1995, to:

Prof. John S. Horvath, P.E.
Guest Editor, Geotextiles and Geomembranes
c/o Manhattan College
Civil Engineering Department
Bronx, NY 10471
USA

Tel.: (1) 718-920-0177 Fax: (1) 718-796-9812
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In 1994 the journal increased its frequency from eight issues a year to monthly. This provides subscribers with a more frequent service and authors benefit from greatly improved publication times. The full subscription price for 1995 is UK£330 or US\$510. Members of the IGS may subscribe at an 80% discount, i.e. UK£66 or US\$102. Corporate members of the IGS may subscribe at a 50% discount, i.e. UK£165 or US\$255. Reduced subscriptions are available directly from the publisher and may be paid for by cheque or credit card.

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Instructions to authors are available from Dr. Nigel John.

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Geosynthetics International is an official journal of the IGS. Consequently, each issue of *Geosynthetics International* is published with the IGS logo on the cover.

In recognition of the adoption of *Geosynthetics International* by the IGS, the Industrial Fabrics Association International, publisher of *Geosynthetics International*, has introduced a special reduced subscription rate for individual IGS members. For individual IGS Members the rate is now US\$99 per six issues with the standard rate of US\$225 applying to non-IGS Members, IGS Corporate Members and other corporations or institutions. IGS members are encouraged to use *Geosynthetics International* as an outlet for their technical papers and thus contribute toward the

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Calendar of Events

Workshop: Update on Geosynthetic Clay Liners; Cincinnati, Ohio, USA
9-10 August 1995
Contact: Robert Landreth
Tel.: 1-513-569-7871 Fax: 1-513-569-7879

Canadian Geotechnical Conference - Trends in Geotechnique; Vancouver, British Columbia, Canada
25-27 September 1995
Contact: Bryan D. Watts, Chair, 10200 Shellbridge Way, Richmond, BC V6X 2W7, CANADA
Tel.: 604 279-4325 Fax: 604 279-4300

RETEC '95: Thermoplastic Elastomers: Selection, Processing, and Use; Wilmington, Delaware, USA 26-27 September 1995
Contact: Maurice Sadowsky
Tel.: 1-800-669-2250 ext. 431
Fax: 1-302-478-3793

Rencontres '95 - Geotextiles et Geomembranes; Beaune, France, 27-28 Sep 1995
Contact: Secretariat Rencontres '95, BP 100, 9 rue Marcel Paul, 95873 Bezons Cedex, FRANCE
Tel.: (1) 34 23 53 73 Fax: (1) 34 23 53 70

Sardinia '95 Fifth International Landfill Symposium; Cagliari, Sardinia, Italy, 2-6 Oct 1995
Contact: G.M. Motzo, CISA - Environmental Sanitary Engineering Centre, Via Marengo 34, 09123 CAGLIARI, ITALY
Tel.: 39 (70) 271-652 Fax: 39 (70) 271-371

Shanghai International Nonwovens Conference & Exhibition (SINCE '95); Intex, Shanghai, CHINA
4-6 December 1995
Contact: Wang Yanxi
Tel.: 86-21-372-2651 Fax: 86-21-372-0570

Bengt B. Broms Symposium in Geotechnical Engineering; Singapore, 13-16 Dec 1995
Contact: Ms. Annabel Ooi, Bengt B. Broms Symposium Secretariat, c/o Center for Continuing Education, Nanyang Technological University, Nanyang Avenue SINGAPORE 2263.

Geosynthetics in Infrastructure Enhancement and Remediation; Philadelphia, Pennsylvania, USA
12-13 Dec 1995
Contact: Geosynthetic Research Institute, Drexel University, West Wing - Rush Bldg. Philadelphia, PA, USA

Geofilters '96 Second International Conference on Filtration and Drainage in Geotechnical Engineering; Montreal, Quebec, Canada, 29-31 May 1996
Contact: Conference Secretariat GEOFILTERS '96, c/o Service des Congres, Ecole Polytechnique, Campus de l'Universite de Montreal, C.P. 6079 Succursale Centre Ville, Montreal, Quebec, CANADA
Tel.: 1 (514) 340-3215 Fax: 1 (514) 340-4440

Third International Symposium on Environmental Geotechnology; San Diego, California, USA, 10-12 Jun 1996
Contact: H.Y. Fang, Lehigh University, Department of Civil and Environmental Engineering, Fritz Engineering Laboratory, 13e Packer Ave., Bethlehem, PA 18015-3176, USA
Tel.: 1 (610) 758-3566 Fax: 1 (610) 758-4522

First European Conference on Geosynthetics; Maastricht, The Netherlands, 30 Sep-2 Oct 1996
Contact: EuroGeo 1, c/o Holland Organizing Centre, Parkstraat29, 2514 JD The Hague, THE NETHERLANDS
Fax: 31 (70) 3614846 (see p. 16).

Third International RILEM Conference/Exhibition; Maastricht, The Netherlands, 2-4 October 1996
Contact: Egbert Beuving (C.R.O.W.)
Tel.: 31-8380-20410 Fax: 31-8380-21112
email: 100576.1446@compuserve.com

IS-Osaka '96 Second International Congress on Environmental Geotechnics; Osaka, Japan, 5-8 Nov 1996
Contact: Secretariat IS- Osaka '96, Geomechanics Section, Disaster Prevention Research Institute, Kyoto University, Gokacho, Uji. Kyoto 611, JAPAN
Tel.: 81 (774) 33-3521 Fax: 81 (774) 33-4115

IS- Kyushu '96 Third International Symposium on Earth Reinforcement; Fukuoka, Kyushu, Japan, 12-14 Nov 1996
Contact: Prof. Ochiai, Dept. of Civil Engineering, Kyushu University, 6-10-1 Hakozaki, Hagashi-ku, Fukuoka 812, JAPAN
Tel.: 81 (92) 641-1101 Fax: 81 (92) 641-5195 (see p. 16).

Geo'97; Long Beach, California, USA, 11-13 March 1997
Contact: Joseph Dieltz, IFAI, 345 Cedar St., Suite 800, St. Paul, MN 55101-1088, USA
Tel.: 1 (612) 222-2508 Fax: 1 (612) 222-8215
email: dieltzifai@aol.com

Sixth International Conference on Geosynthetics; Atlanta, Georgia, USA, 25-29 Mar 1998
Contact: Joseph Dieltz, IFAI, 345 Cedar St., Suite 800, St. Paul, MN 55101-1088, USA
Tel.: 1 (612) 222-2508 Fax: 1 (612) 222-8215
email: dieltzifai@aol.com

The 14th International Soil Mechanics and Foundation Engineering Conference; Hamburg, Germany
6-12 September 1997
Abstracts due 1 November 1995.
Contact: Harvey Wahls
Fax: 1 (919) 515-7908 email: wahls@eos.ncsu.edu

Third International RILEM Conference/Exhibition; Maastricht, The Netherlands, 2-4 October 1996
Contact: Egbert Beuving (C.R.O.W.) Tel: 31-8380-20410
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Note: Listings entirely in bold are organized under the auspices of the IGS or with the support of the IGS.

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The International Geosynthetic Society was formed with the following objectives:

- (1) to collect, evaluate and disseminate knowledge on all matters relevant to geotextiles, geomembranes, related products, and associated technologies;
- (2) to improve communication and understanding regarding geotextiles, geomembranes, related products, and associated technologies, as well as their applications;
- (3) to promote advancement of the state of the art of geotextiles, geomembranes, related products, and associated technologies;
- (4) to encourage through its members the harmonization of test methods, equipment and criteria for geotextiles, geomembranes, related products and associated technologies.

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First, to contribute to the development of our profession.

Becoming a member of the International Geosynthetic Society:

- Helps support the aims of the IGS, especially the development of geotextiles, geomembranes, related products, and associated technologies.
- Contributes to the advancement of the art and science of geotextiles, geomembranes, related products, and associated technologies.
- Provides a forum for designers, manufacturers, and users, where new ideas can be exchanged and contacts improved.

Second, to enjoy the benefits.

The following benefits are available now to all IGS members:

- A directory of members, the IGS DIRECTORY, published every year, with addresses, telephone, telex and fax numbers.
- Newsletter, IGS NEWS, published three times a year.
- Reduced purchase price on all documents published by the IGS.
- Reduced registration fee and preferential treatment at all conferences organized under the auspices of the IGS.
- Reduced subscription fees for the journals "Geotextiles and Geomembranes" and "Geosynthetic International".
- A central system for ordering selected publications.
- Possibility of being granted an IGS award.

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Membership of the Society is open to Individuals or Corporations "...engaged in, or associated with, the research, development, teaching, design, manufacture or use of geotextile, geomembranes, and related products or systems and their applications, or otherwise interested in such matters". The annual fee for membership is (US) \$45 for Individual Members and (US) \$1000 for Corporate Members. Individuals or Corporations who voluntarily contribute a minimum of (US) \$200 annually to the Society, in excess of their membership dues, will be mentioned in the IGS Directory in a separate list as benefactors.

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