



Newsletter

Official Newsletter of the European Structural Integrity Society (formerly EGF)

Nr. 13, Autumn 1990

Torino

Here we come

**Contents
on page 3**

The European Conference of Fracture (ECF) was the major, biennial event of the European Group on Fracture. Two years ago ECF7 was organized at Budapest, Hungary. When this successful event closed it was not known yet that it was the last one under the banner of EGF, because it was just recently decided that this organization changes its name to European Structural Integrity Society (ESIS). However, ESIS will continue with the ECF series, and the 8th edition is organized by the Italian Group on Fracture at Torino, Italy, from 1 to 5 October 1990.

During the conference, there will be several other meetings. The ESIS Council will meet for the first time, and also several Task Groups and Working Parties take the opportunity to have a meeting. A summary of what is going to happen follows below.

ESIS Council Meeting

The EGF Council always met during the ECF, and also this tradition will be continued by ESIS. The Council meeting is scheduled for *Thursday October 4, 17.00 h.* The major point on the Agenda will be the approval of the Statutes, as these were prepared by the Executive Committee during the last two years. Also a decision will be made about the location of ECF10 (ECF9 will be organized in 1992 at Dubrovnik, Yugoslavia, as was decided at Budapest).

The Conference

The ECF8 Conference will be held in the Politecnico di Torino, one of the two leading Italian Technical Universities. The City of Torino, the ancient capital of Italy in the core of Piemonte, one of the European industrial heartlands, will welcome the delegates with its

magnificent royal architecture and beautiful surrounding. Furthermore, the Mont Blanc, the Matterhorn, as well as the Riviera are only a couple of hours away.

Many authors have again submitted an abstract for the Conference. Although the organisation of the technical sessions in three parallel sessions allow for 200 oral presentations and 50 poster presentations, some of them had to be disappointed. All technical contributions are grouped into the following sessions:

- Mechanics and Mechanisms of Brittle Fracture;
- Elastic-Plastic Fracture Mechanics;
- Fatigue Crack Growth;
- Creep Crack Growth;
- Fracture Dynamics;
- Stress/Strain Analysis;

- Failure Analysis and Integrity Assessment of Structures;
- Environmental effects on Fracture and Fatigue of Metals;
- Fracture and Fatigue Behaviour and Design of Welded Structures;
- Fracture Behaviour and Design of:
 - Metals,
 - Polymers,
 - Polymer Matrix Composites,
 - Metal Matrix Composites,
 - Concrete and Concrete Structures,
 - Ceramics and Ceramic Matrix Composites,

The proceedings will again be printed by EMAS (UK) in a three-volume set, which will be distributed to all ECF8 delegates at registration.

Cont'd on page 3

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Cont'd from page 1

There will also be 11 plenary sessions, during which the following invited contributions will be presented:

Invited Lectures on technical/scientific subjects

- J.A. Begley** Quantitative prediction of environmental effect on crack growth and fracture.
- V. Bicego** Creep damage assessment and residual life estimation by mechanical testing.
- D. François** New materials for improved fracture and fatigue resistance.
- J.F. Knott** The structural integrity of high-duty materials
- A.R. Rosenfield** Mixed-mode fracture of steel and ceramics.
- C.E. Turner** A re-assessment of ductile tearing resistance. Part I: the geometry dependence of J R-curves in fully plastic bending. Part II: energy dissipation rate and associated R-curves on normalized axes.
- R.J.H. Wanhill** Fracture and fatigue evaluation of damage tolerant Al-Li alloys for aerospace applications.

Invited lectures on policy subjects

- L. Faria** Economic effects of fracture.
- H.H. Kausch** Is now the time for a global terminology in fracture?
- H.-P. Rossmannith** How to teach fracture mechanics?
- L. Faria** Engineering requires continuing education on fracture.

There will be a special plenary event on:

EGF procedure P1-90 for determining the fracture resistance of ductile materials: analysis of the validation round robin, with the following presentations:

- B. Hayes** Part A: Evaluation of curve fit
- B. Voss** Part B: Single specimen methods
- A. Cornec et al.** Part C: Blunting line and Initiation.

Meetings of ESIS Task Groups

Monday, October 1, 17.00 h.

TG Polymers & Composites and Committee on FM Nomenclature - *Sala del Consiglio di Facoltà*

Tuesday, October 2, 15.00 h.

TG Micromechanisms - *Aula 5*

Tuesday, October 2, 18.00 h.

TG EPFM - *Aula Magna*

TG Fracture Dynamics - *Sala del Consiglio di Facoltà*

TG Ceramics - *Aula 5*

Thursday, October 4, 9.30 h.

Fatigue - *Aula Magna*)

Numerical Methods - *Sala del Consiglio di Facoltà*

Concrete - *Aula 5*

Meetings of ESIS Working Parties

Thursday, October 4, 15.45 h.

EPFM Working Parties - *Aula Magna*

Fracture Dynamics* - *Sala del Consiglio di Facoltà*

Micromechanisms - *Aula 5*

Fatigue - *Aula Denina*

*) The Working Parties "Crack Arrest" and "High-Rate Impact" will meet at Torino, the Working Party "Conventional Impact Testing" (chaired by Dr. D. Canon - see page 2) will meet one week later, i.e. October 12 in Paris at 10.30 a.m.: Centre Materiaux Pierre-Marie Fourt Ecole Nat. Supérieure des Mines de Paris 60, Boulevard Saint Michel 75272 PARIS Cedex 06

CONTENTS

Articles

- Torino, here we come (ECF8) 1
- Workshop on Fracture Mechanics Approach to Corrosion Assisted Cracking - a report by W. Dietzel 7
- Draft EGF Guidelines for the Selection and Use of Methods for Assessment of the Integrity of Structures and Components Containing Defects 8

Task Groups/Working Parties news

- 1st Joint Meeting of Task Groups on EPFM & Micromechanisms 5
- Task Group Micromechanisms 6
- Task Group on Polymers & Composites 10
- Task Group Ceramic Materials 9
- EPFM Working Party High Temperature Crack Growth 11
- EPFM Working Party on Ductile Tearing Instability 12

Call for Interests

- New Task Group on Numerical Methods 5

Conferences/Symposia

- 10th Congress on Material Testing 9

Agenda of Events 13

PRODUCTION

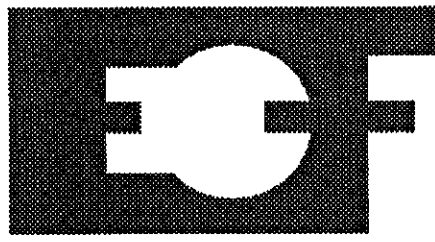
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Still waiting for a facelift

When we decided to change our name from EGF to ESIS, it also became necessary to change the "face" of the Society, like a new logo etc. However, these things take time, and the Summer season is not the most productive one. ESIS Office has placed an order with a design office to design a new logo, new letterheadings, and a possible re-styling of this Newsletter. When this issue was finished these were still not available, so it is still in the old style using the old EGF logo.

At ECF8 I will present the new ESIS face, and if this is approved the next (Winter) issue will be quite different. After all, what's in a logo...

the editor

Task Groups

Elastic-Plastic Fracture Mechanics & Micromechanisms

Minutes of 1st Joint and 19th Plenary Meeting

"Ductile Fracture: Mechanics and Mechanisms"

Berkeley, UK, May 16-18th 1990

The 1st Joint Meeting between the two Task Groups and the 19th Plenary Meeting of the Task Group on EPFM had been hosted by Berkeley Laboratories, Structural Integrity Development Branch. Nearly fifty colleagues, from both the TG's, participated to the two-day meeting. Dr. D.L. Thomas, Manager of the Structural Integrity Development Branch, welcomed the participants and opened the meeting, giving a description of Berkeley Laboratories organization and activities.

Twenty-four works were presented during the nine technical sessions, most of them (13) well tuned on the title of the meeting. Strong links between the two Task Groups emerged during the meeting. In particular:

- Stretch zone development and description,
- Blunting line and initiation criteria,
- Ductile to brittle transition,

seem to be the most important common subjects, where the co-ordinated activity of the two groups should be stimulated.

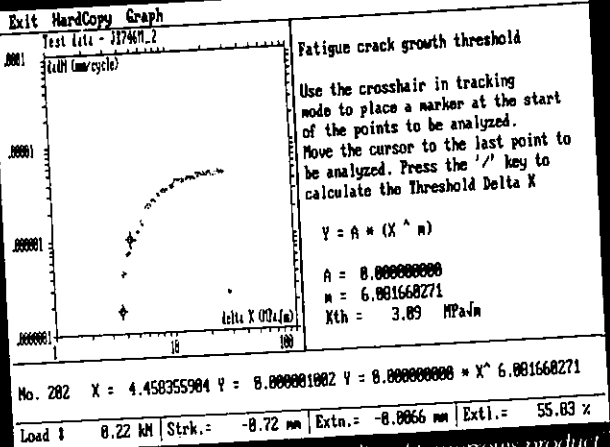
During the business session, the chairmen of TG on EPFM reported about contacts with Prof. Krasovsky, University of Kiev (URRS). The possible actions are:

- organization of a TG Plenary Meeting during October 1991 in Kiev, hosted by the Academy of Sciences of Ukrainian SSR,
- organization of a Soviet Branch of TG on EPFM in USSR.

During the discussion TG members showed interest on both the initiatives, well in line with developments in eastern Europe, but expressed some perplexities about the communication difficulties and travel costs. No final decision has been taken on both actions. The TG chairmen informed the colleagues also about next events (Meetings, Seminars, etc.) and reported that the next Plenary TG Meeting will be held in Torino during ECF8. Colleagues which are interested in attending this meeting are asked to contact Prof. D. Firrao (see page 2).

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QUALITY AUDIT

MATERIAL

STEEL
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COMPOSITE

PROPERTIES

CONSTANT ΔK
INCREASING ΔK
DECREASING ΔK
K THRESHOLD

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500 C
250 C
20 C
0 C
-20 C

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Task Group

Micromechanisms

Chairman: W. Dahl
PROGRESS REPORT

During the 16th - 18th May of 1990 the first joint meeting of the task groups EPFM and Micromechanisms took place in Berkeley, UK, at Berkeley Nuclear Laboratories. The title of the meeting was: "Ductile Fracture - Mechanics and Micromechanisms". Besides several interesting reports presented by participants of both task groups, a very informative visit of the hot cells took place. Due to the success of this first joint meeting, further meetings are planned.

Working Party
Stretched Zone Round Robin
Co-ordinator D. Holland

Some years ago this round robin was launched, because of big uncertainties in defining the extension of the SZW. Photos and specimens were distributed among 15 participants from seven countries. As expected large scatter of SZW-values occurred. After publishing the first results in Engineering Fracture Mechanics in 1988, the final results were presented in May 1990 at the first joint meeting of the task groups EPFM and Micromechanisms in Berkeley, UK. These results will be published soon.

Working Party
Microscopic Cleavage Stress
Co-ordinator Mrs. H. Dünnewald-Arfmann

The aim of the round robin was to compare and to evaluate different methods for determining the microscopic cleavage fracture stress σ_f^* . Nine participants joined the working party and were supplied with a low carbon steel as testing material. Until today five have completed their work, one further participant has promised to forward his results shortly. The results handed in until the end of October 1990 will be reported on and published in one of the following ESIS-Newsletters (probably Winter 1990/91).

Workshop on

Fracture Mechanics Approach to

Corrosion Assisted Cracking

Reported by W. Dietzel

The workshop meeting was held on April 4, 1990 at GKSS-Forschungszentrum Geesthacht GmbH. Its main objectives were a discussion of current attempts to apply fracture mechanics based techniques for the investigation of stress corrosion cracking (SCC) of structural materials and an outline of possible further steps towards an EGF/ESIS draft for an SCC test standard.

Eight contributions covered experimental studies of technically relevant SCC systems using fracture mechanics based test and evaluation methods, model predictions of SCC behaviour, and proposals for SCC testing and control strategies:

1. **M.M. Festen**, Billiton Research:
Environmental Cracking Susceptibilities of Pipeline Steels Measured with Pre-Cracked Specimens
2. **M. Tvrdy**, Vitovice Steel and Engineering Works:
Effect of Strength Level and Some Metallurgical Factors on SCC and HE Threshold Values
3. **H.J. Karkosch**, Universität Hannover:
Investigations of the Fracture Behaviour of Steel in H₂S
4. **G. Gabetta**, CISE:
J-R-Curves in Environment at Different Loading Rates
5. **J. Onoro**, Universidad Politecnica de Madrid:
SCC in High Strength Aluminium Alloys
6. **G. Ibe**, Vereinigte Aluminium-Werke:
Fracture Criterion for Stress Corrosion Cracking of Aluminium Alloys
7. **R.J.H. Wanhill**, NLR:
Fracture Control Guidelines for Stress Corrosion
8. **W. Dietzel**, GKSS:
Aspects of SCC Testing Using Fracture Mechanics Techniques

The presentations showed, that in addition to well established SCC test procedures such as constant load (paper 2) and constant deflection (paper 5) dynamic SCC tests like the rising load test, the COD test according to British Standard 5762 (both paper 1), and J-integral/CTOD testing procedures as being derived for elastic-plastic fracture in air have successfully been applied for SCC investigations (papers 3,4 and 8). Moreover, in certain SCC systems such as pipeline steels in wet H₂S and in carbonate/bicarbonate environments dynamic plastic straining conditions appear to be essential for the environmentally induced fracture to occur (paper 1).

Dynamic testing technique using precracked specimens may lead to shorter testing times for the evaluation of parameters such as K_{ISCC} and da/dt and provide additional information concerning the cracking mechanism (papers 3,4, and 8), but, on the other hand, a higher expense of technical equipment and the selection of appropriate loading rates are required.

In any case, the current experience with fracture mechanics based tests and methodologies for verifying the resistance of materials and structures against SCC still remains inadequate. It was agreed that the scope of this problem should therefore be defined to allow systematic investigations of the various categories of materials, environments and types of test. A primary objective of such investigations should be to provide quantitative, fracture mechanics based data that bring environmentally assisted fracture fully within the context of existing fracture control guidelines, or enable the establishment of such guidelines (as suggested in paper 7).

To achieve this goal, two drafting panels were established, one (co-ordinated by W. Dietzel) concerning a future test standard, the second one (co-ordinated by R.J.H. Wanhill) for establishing guidelines for the application of SCC data.

It was agreed to establish a permanent working group which may reach the status of a formal Task Group in the future. The working group is supposed to meet on an annual basis.

Prospective participants not on the mailing list so far should contact the chairman for the next meeting:

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The Working Party on Fracture Mechanics Testing Standards of the Task Group on Elastic-Plastic Fracture has now released the procedure

EGF P1-90 : *EGF RECOMMENDATIONS FOR DETERMINING THE FRACTURE RESISTANCE OF DUCTILE MATERIALS*

In this procedure, the fracture resistance of ductile materials is characterised in either the variation of the J integral or crack tip opening displacement δ with crack growth Δa . From the thus defined crack growth resistance curve three fracture parameters close to the onset of crack initiation can be derived:

1. $J_{0.2/B1}$ and $\delta_{0.2/B1}$ provide an engineering definition of initiation at 0.2 mm of ductile tearing.
2. $J_{0.2}$ and $\delta_{0.2}$ measure the material resistance at 0.2 mm of total crack growth; they are lower bound estimates of $J_{0.2/B1}$ and $\delta_{0.2/B1}$.
3. J_i and d_i are the values of crack growth resistance at crack initiation. Their determination requires the measurement of the critical stretch zone width in a scanning electron microscope.

These material properties can be used to assess the structural integrity of components containing crack-like flaws. Methods for assessing structural integrity are described in the:

EGF GUIDELINES FOR THE SELECTION AND USE OF METHODS FOR ASSESSMENT OF THE INTEGRITY OF STRUCTURES AND COMPONENTS CONTAINING DEFECTS, see report by I. Milne, EGF Newsletter No. 11.

The material properties determined by EGF P1-90 can also be used for material selection and quality assurance or to evaluate the effects of processing and service conditions on fracture properties. The procedure has been validated by a round robin in which 21 European laboratories participated. The evaluation of the round robin was financially supported by BCR (Community Bureau of Reference). The results will be presented at EGF 8 in Torino on Wednesday, October 3 during a 90 minutes plenary meeting.

Dr. Larsson, EGF's President, will now submit EGF P1-90 to CEN for approval as a European Standard.

The procedure in its present formulation deals with ductile materials. Further activities of the Working Party will be focussed on the linear elastic and ductile-to-brittle regimes.

Copies of the procedure can be purchased from the ESIS (formerly EGF) office at Delft (see page 2). The price is Dfl. 30,- for ESIS personal members and members of sponsoring bodies, and Dfl. 40,- for others (incl. Dfl 5,- mailing costs) when paid by Eurocheque or Credit Card (Eurocard, MasterCard or Access). When paid by direct bank transfer or normal cheque, a surcharge of Dfl 15,- must be added to cover bank charges.

THE 10th CONGRESS ON MATERIAL TESTING

Budapest, Hungary

7 - 11 October 1991



CALL FOR PAPERS

Organized by the Scientific Society of Mechanical Engineers
co-sponsored by the European Structural Integrity Society (formerly EGF)

OBJECTIVES

The Congress is a traditional occasion for scientists and industrial experts to meet and to discuss matters of common interest related to the important problems of material testing and material sciences. The load bearing capacity of any structure depends on an appropriate material selection, which anticipates the knowledge of relevant material properties. A basic condition to avoid failure of components by plastic deformation or fracture is that these characteristics are well established by suitable testing methods. Stability of a structure is effected also by defects, therefore the detection of defects is not less important.

The coming Congress should continue the tradition of its precessors and should devote time to introduce new ideas and methods, which promote further development in this field.

MAIN TOPICS

Mechanisms of Damage

- accumulation of damage
- crack nucleation and propagation
- static, dynamic and/or cyclic loading
- effect of temp. and environment
- influence of microstructure
- fractography

Fracture Mechanics

- numerical methods
- testing methods
- application of fracture mechanics

Brittle Fracture

- embrittlement of materials
- effect of temperature, stress state and loading rate

Fatigue Problems

- crack nucleation
- crack propagation
- small cracks
- crack closure
- low cycle fatigue
- effect of temp. and environment
- life assessment
- probabilistic approach
- multiaxial fatigue

Creep and High Temp. Failures

- voids and crack nucleation
- interaction of creep and fatigue
- high temperature crack growth
- assessment of residual life

Structural Integrity

- methods of NDT to detect defects
- quantitative assessment of defects
- engineering design codes
- welded structures
- case studies
- life extension

Properties of Materials

- ferrous alloys
- non-ferrous alloys
- polymers
- ceramics
- concrete, rocks, stones
- composites
- glasses

CALL FOR PAPERS

Abstracts in English or Hungarian of about 300 words including not more than 2 figures are kindly invited. The abstracts should be received *not later than September 1990* to:

Dr. Erno Czoboly

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of the Hungarian Academy of Science
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Hungary**

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Telex : 22-4722 KFKI

Fax : (36-1)155-25-30

Contributions for oral or poster presentation will be selected by the Organizing Committee. Authors will be notified of acceptance of the paper till 31st January 1991. They will also be provided with detailed typing instructions. All accepted contributions will be printed in the Proceedings presuming that camera ready manuscripts are submitted before 31st May 1991. The proceedings will be available to the participants at the Conference Office at registration.

LANGUAGE

The working language of the Congress is English and Hungarian. A simultaneous translation is foreseen. The abstracts can be written in English or Hungarian. *The full papers must be written in English.*

Task Group on

Polymers and Composites

Chairmen: J.G. Williams and A. Pavan

Report of meeting in Les Diablerets, Switzerland, 16-18 May 1990

The Task Group met to review progress during the last six months in the areas of 'J' testing, K_{Ic} - G_c testing and composites toughness testing. Two half days were taken up with discussing progress in the recent round robin 'J' tests which had been performed by ten groups using three materials; Nylon, HDPE and PP. All but two groups used the multiple specimen method which is the main emphasis of the current protocol. The nylon and HDPE gave quite consistent results with PP, which had a substantial craze at the crack tip, produced very wide variations in the data depending on what was measured. This highlighted yet again crack measurement as the main difficulty in the present scheme and it was decided to try a sectioning and polishing technique. Some simplifications were also decided and revised protocol will now be circulated together with two new materials; a toughened PVC and an ABS. Two groups reported data from the single specimen method which was in good agreement with that from the multiple specimen method and tended to be a lower bound. This will be pursued with particular emphasis on automation. There is a continued liaison with the ASTM group working with the same scheme.

A new set of K_{Ic} - G_c data using nylon was reported by nine groups using the final version of the protocol. This was done to provide support in adoption procedures with the various standards organisations. The protocol was followed by all the groups and eight sets of results were reported within close limits ($\pm 5\%$ on K_{Ic}). The remaining set were scattered but were invalid according to the protocol. The method is now considered to be complete and will be reviewed at future meetings to see if further work is needed. Good progress on adoption was reported in that Switzerland had proposed the method to ISO and it was now being balloted. It has also been put forward to CEN by EGF and will be considered by them in June.

The proposed appendix on short fibre composites had not been pursued as planned but a draft will be circulated in the next two months together with materials for those taking part in the round-robin. The high rate K_{Ic} tests had also not progressed in the last six months but, after lengthy discussion, it was decided to proceed with a new loose procedure for one material. About ten groups will be taking part.

The final session was devoted to the delamination testing protocols for composite laminates. The meeting in Florida with ASTM and the Japanese Industrial Group went well and it was decided to perform a joint round-robin with them and the EGF. Draft protocols, based on the EGF version, have been agreed for modes I and II tests and two materials have been circulated. There are over twenty groups involved in Europe and twelve in the US. Most will do five specimens of each test but some will do more looking at effects of different foil thicknesses and notching methods. The protocol lays much emphasis on initiation values because ASTM feel strongly that this is the most important parameter but the full R curve will also be measured so that the initiation versus propagation debate can continue. The mode II test will be the ENF version. A meeting with representatives of ASTM and JIS is scheduled for Saturday 29 September 1990 in Les Diablerets to review how the testing have gone. In order to consider the European results prior to this the next task group meeting will be earlier than usual and will be 12-14 September, again in Les Diablerets.

The chairmen wish to thank all those who came and, as usual, contributed to the lively discussions.

Task Group on

Ceramic Materials

Chairmen: D. Munz and T. Hollstein

During the last meeting of the Task Group on Ceramic Materials it was decided to perform two Round Robins, one on fracture toughness testing and the other on subcritical crack extension. The results should be used for the establishment of guide lines or standards. Fourteen laboratories so far have indicated their interest in a participation for K_{Ic} determination and nine of these for measuring subcritical crack extension.

During the next meeting which will be held at the National Physical Laboratory (NPL) in Teddington/London on 5th/6th November, 1990, it will be decided about materials, testing conditions, number of test specimens etc.

In addition there is time for technical presentations on the general topics of the Task Group:

1. Measurement of fracture toughness K_{Ic} ;
2. Effect of small and large defects on crack growth;
3. Lifetime prediction of components (Weibull statistics, volume effect, tension vs. bending);
4. Clarification of fracture processes;
5. Application of testing methods;
6. Significance of material parameters.

Possible contributions should be sent short abstracts to one of the chairmen not later than 14th September, 1990.

Further participants in the Round Robin exercise and/or in the Task Group activities are welcome. Please contact one of the chairmen (see page 2)

News about the EPFM Working Party

High Temperature Crack Growth Round Robin

The Round Robin has been finalized in 1989 and the final report has been written by T. Hollstein, G.A. Webster and F. Djavanroodi:

Creep Crack Growth in 1% Cr Mo V steel and Alloy 800 H - The Results of an EGF Round Robin

Abstract

The report presents the results of a Creep Crack Growth Round Robin conducted by an EGF Working Party within Task Group 1 "Elastic Plastic Mechanics". The Working Party was set up to consider the "Measurement of Crack Growth under High-Temperature Conditions". Data from twenty-five laboratories are compared, 'as-determined' by the participants and following a unified evaluation. For the two materials tested, Alloy 800 H at 800°C and 1% CrMoV steel at 550°C, it is shown that the most satisfactory correlations of creep crack growth rate are achieved with the creep fracture mechanics parameter C^* when a unified evaluation procedure is adopted. Precautions for obtaining reliable experimental data and interpretations are discussed and supported by numerical analysis and models of the cracking process. Little influence of specimen shape and size is observed and it is demonstrated that all the cracking occurs under plane-stress conditions. In the 1% CrMoV steel, transient effects in the early stages of cracking are shown to be caused by build-up of creep damage at the crack tip.

An oral presentation will be given at the Eighth European Conference on Fracture (ECF 8), Torino, Italy, October 1-5. The full report can be purchased from T. Hollstein, IWM, Freiburg (see page 2).

Task Group EPFM Working Party on

Ductile Tearing Instability

Received from I. Milne

This Working Party last reported in EGF Newsletter 11, following the European Symposium on Elastic Plastic Fracture Mechanics held at Freiburg in May 1989. The report concentrated on the EGF guidelines for the Selection and Use of Methods of Assessment of the Integrity of Structures and Components Containing Defects, a draft of which was published on pages 11 to 15 of Newsletter 11. Comments were invited, but to date only one comment has been received.

Before the Guideline document is finalised, it would be useful to have feedback about its perceived value, and its preferred means of publication. Please send your comments to me by October 31.

The next activities of the Working Party have got to be planned. I shall be looking for guidance on this at ECF8 at Torino.

Call for interest

New Task Group on

Numerical Methods

Received from W. Schmitt

The Working Party "Numerical Round Robin" was founded about a decade ago within the Task Group "Elastic-Plastic Fracture Mechanics" because the members of this TG realized that Numerical Analyses formed an essential part of the work in EPFM and should be linked as closely as possible to the existing experimental activities. The working party was organized and chaired by L.H. Larsson and started out with Round Robin activities.

The success of this WP and the recognition that numerical methods play a role which becomes increasingly important in almost all disciplines within ESIS scope, not only in EPFM, led to the decision to form a new Task Group on Numerical Methods with the current WP as nucleus. The chairmen of this WP, Winfried Schmitt, has agreed to act as one of the newly formed Task Group.

The Task Group on Numerical Methods will aim at strong links with the other ESIS Task Groups. This will be established by joint meetings and in particular in the form of joint Working Parties covering numerical aspects of special topics from the respective Task Groups. In addition to continuation of the EPFM- activities in a new (old) WP the fields currently covered by the Task Groups on:

Fracture Dynamics

Ceramics

Polymers and Composites

Micromechanics (see RR-activities by Mudry)

Fatigue

could call for actions of the new TG.

At ECF8 in Torino Schmitt will outline and discuss the ideas developed so far concerning the new Task Group. To help him with the preparation and to ensure the success of the activities please let him know (by writing before ECF8 or in Torino, address see page 2) your opinion concerning the following:

- who should be asked to act as second Chairman of the TG?
- for which activity (see above, or other) would you be willing to actively co-operate?
- would you volunteer to organize a Working Party?

AGENDA of Fatigue and Fracture Events

Agenda items are placed free of charge.
Inform the editor about any fatigue and/or fracture related meeting of interest for the readers of this Newsletter.

October 1-5, 1990

Eighth European Conference on Fracture (ECF8)

Location : Torino, Italy

Organizer : Italian Group on Fracture, EGF

Deadlines : Sep 15, 1989 - Abstracts (300 words)

Dec 15, 1989 - Acceptance notice

March 15, 1989 - Final manuscripts

Inquiries : IGF c/o prof. D. Firrao, Politecnico di Torino

Dip.di Scienza dei Materiali e Ingegneria Chimica

C.so Duca degli Abruzzi 24

10129 Torino, Italy

Tel.(39)11-556.7777/6763, Telex 220646

Fax (39)11-556.6799/7990

October 4-5, 1990

16.MPA-Seminar: Safety and Reliability of Plant Technology

Location : Stuttgart, FRG

Organizer : MPA Stuttgart

Language : German/English

Inquiries : Dr. R. Gillot

MPA, Univ. of Stuttgart

Pfaffenwaldring 32

7000 Stuttgart 80, FRG

Tel. 711-685 3043, Fax 711-685 2635

October 15-17, 1990

Pipeline Technology

Location : Ostend, Belgium

Organizer : Royal Flemish Society of Engineers

Laboratory Soete of Gent University

Deadlines : Feb. 1, 1990 - Abstracts (200 words)

June 30, 1990 - Final texts

Inquiries : Rudi Denys

Lab. Soete, Rijksuniversiteit Gent

St. Pietersnieuwstraat 41

9000 Gent, Belgium, Fax (32) 91-237326

October 22-24, 1990

WELDING-90 - Technology, Material, Fracture

Location : Geesthacht, FRG

Organizer : Inst. for Ind. Technology Transfer

Deadlines : Dec. 15, 1989 - Abstracts (300-400 words)

Jul. 1, 1990 - Full manuscripts

Inquiries : Dr. M. Koçak

GKSS-Research Centre

Institute of Materials Research

2054 Geesthacht, FRG

Tel. (49)4152/87-2611 Fax (49)4152/87-1618

October 24-26, 1990

Int. Conf. on High Temperature Dstructural Design

Location : Venice, Italy

Organizer : CEC in co-op. with ENEL/ENEA

Inquiries : Mr. F. Corsi

ENEA, Centro Ricerche Energia della Casaccia

Via Anguillarese, 301, Roma, Italy

Tel. (06)30483422 Fax (06)30486308

November 12-13, 1990

Symp. on Cyclic Deformation, Fracture and Nondestructive Evaluation of Advanced Materials

Location : San Antonio, Texas, USA

Sponsors : ASTM Committee E-9

Deadlines : Feb 1, 1990 - Abstracts (300-500 words)

Sep 15, 1990 - Full manuscripts

Inquiries : Dr. Helmi Attia, Symposium Chairman

Ontario Hydro Research Division

KB 214, 800 Kipling Avenue

Toronto, Ontario, Canada M8Z 4S4

Tel. 416/231-4111 ext. 6852

November 12-13, 1990

Symp. on Standardization of Fretting Fatigue Test Methods and Equipment

Location : San Antonio, Texas, USA

Sponsors : ASTM Committees E-9, D-30, E-24

Deadlines : Dec 15, 1989 - Abstracts (300-500 words)

Sep 15, 1990 - Full manuscripts

Inquiries : Dr. M.R. Mitchell, Symposium Chairman

Rockwell Int. Science Center

1049 Camino Dos Rios

Thousand Oaks, CA 91360, USA

Tel. 805/373-4450

November 13-14, 1990

Damage Detection and Quality Assurance in Composites

Location : San Antonio, Texas, USA

Sponsors : ASTM Committees D-30, E-9, E-24 and E-7

Deadlines : Feb 15, 1990 - Abstracts (300-500 words)

Sep 15, 1990 - Full manuscripts

Inquiries : John E. Masters, Symposium Chairman

American Cynamid Co.

1937 West Main Street

Stamford, CT 06904, USA

November 28-30, 1990

Int. Conference on High Performance Electronic Packaging

Location : Cambridge UK

Sponsors : The Welding Institute, UK

Inquiries : The Meetings Department

The Welding Institute

Abington Hall

Abington, Cambridge CB1 6AL, UK

Tel 0223-891162 Fax 0223-892588

January 2-4, 1991

Seminar on Dynamic Failure of Materials

Location : Vienna, Austria

Organizer : TU Vienna

Remarks : Participation upon invitation. Contact

Dr. Rossmanith below.

Inquiries : Dr. H.P. Rossmanith

Institute of Mechanics, TU Vienna

Wiedner Hauptstr. 8-10/325

1040 Vienna, Austria

Tel. (222)58801-5514 or 5519

Telex (61)3222467=TUW

AGENDA cont'd

February 4-7, 1991

Probabilistic Safety Assessment and Management (PSAM)

Location : Beverly Hills, CA, USA

Sponsor : Society for Risk Analysis

Deadlines : Apr. 6, 1990 - Abstracts (800-1200 words)
Aug. 15, 1990 - Full papers

Inquiries : Prof. G. Apostolakis
Mech., Aerospace & Nuclear Engng. Dept.
University of California
405 Hilgard Avenue
Los Angeles, CA 90024-1597 USA
Tel. (213)825-1300, fax (213)825-0761
Telex 3716012 UCLA LSA

April 8-11, 1991

8th International Conference on Deformation, Yield and Fracture of Polymers

Location : Cambridge, UK

Organizer : Plastics and Rubber Institute, UK

Deadlines : Sep 1, 1990 - abstracts (200-300 words)
Jan 1, 1991 - extended abstracts (2500 words)

Inquiries : Conference Department
Plastics and Rubber Institute
11 Hobart Place, London SW1W 0HL
Tel 01-245 9555 Fax 01-823 1379

April 9, 1991

15. Sitzung der SVMT-Fachgruppe Bruchmechanik und Ermüdung. Themes: Failure; Mixed-Mode Loading; Damage Mechanics

Location : Alusuisse S.A., Neuhausen am Rheinfall

Organizer : SVMT

Language : German and French, others ask Dr. Prodan

Deadlines : March 1, 1991 - announcements of contributions and registration

Inquiries : Dr. M. Prodan
Alusuisse-Lonza Services Ltd.
8212 Neuhausen am Rheinfall, Switzerland

April 21-25, 1991

Int. Conference on Computational Engineering Science - ICES '91

Location : Patras, Greece

Deadlines : May 1, 1990 - Abstracts (250 words)
Nov. 1, 1990 - Full papers

Inquiries : ICES '91 Secretariat
c/o Prof. S.N. Atluri
Computational Mechanics Center
Georgia Institute of Technology
Atlanta, Georgia 30 332-0356, USA

April 22-23, 1991

Symposium on Constraint Effects in Fracture

Location : Indianapolis, Indiana, USA

Sponsors : ASTM D-30, E-9, E-24

Deadlines : May 15, 1990 - Abstract (300-500 words)
Feb 15, 1991 - Full manuscripts

Inquiries : Prof. K.-H. Schwalbe
GKSS-Forschungszentrum Geesthacht
Max Planckstraße, 2054 Geesthacht, FRG
Fax 4152-872500

May 6, 1991

Chevron-Notch Fracture Test Experience, Metals and Non-Metals

Location : Indianapolis, Indiana, USA

Sponsors : ASTM E-24, E-9, D-30

Deadlines : July 31, 1990 - Abstract (300-500 words)
Aug 15, 1990 - notification of acceptance
March 6, 1991 - full manuscripts

Inquiries : K.R. Brown
Kaisel Al. and Chemical Corp.
Center for Technology
P.O.Box 870
Pleasanton, CA 94566, USA
Tel 415/847-4526 Fax 415/484-2472

May 6-7, 1991

4th ASTM Symposium on Composite Materials: Fatigue and Fracture

Location : Indianapolis, Indiana, USA

Sponsors : ASTM E-24, EGF

Deadlines : May 15, 1990 - Abstract (300-500 words)
Feb 15, 1991 - Full manuscripts

Inquiries : Dr. Wayne Stinchcomb
Eng. Science & Mechanics Department
227 Norris Hall, Virginia Polytechnic Inst.
Blacksburg, VA 24061
Tel 703/231-5316 Fax 703/231-9452

May 13-17, 1991

XIth Intern. Colloquium on Mechanical Fatigue of Metals

Location : Kiev, USSR

Organizer : Ac. of Sciences, USSR, Ukrainian SSR

Deadlines : March 30, 1990 - Abstracts (300-600 words)
June, 1990 - notification of acceptance

Inquiries : Dr. Khamaza L.A.
Ukr. SSR Academy of Sciences
2, Timiryazevskaya str.
Kiev 14, 252014, USSR
Tel. 295 92 42

June 18-20, 1991

23rd National Symposium on Fracture Mechanics

Location : College Station, Texas, USA

Sponsors : ASTM E-24

Deadlines : Sep 14, 1990 - Abstract (300-500 words)
March 29, 1991 - Full manuscripts

Inquiries : Dr. R. Chona
Dept. of Mech. Engineering
Texas A&M University
College Station, Texas 77843-3123, USA
Tel 409/845-1531

June 19-21, 1991

Fracture Processes in Brittle Disordered Materials (Concrete, Rock, Ceramics)

Location : Noordwijk, The Netherlands

Sponsors : RILEM, EGF, Delft Univ., TNO Building Res.

Deadlines : July 1, 1990 - Abstracts (500 words)
Jan. 1, 1991 - Full manuscripts

Inquiries : Mrs. R. Komen-Zimmerman
Congress Office ASD, P.O. Box 54,
2640 AB Pijnacker, The Netherlands
Tel. (31)1736-5356 Fax (31)1736-2242

AGENDA cont'd

July 15-17, 1991

Mixed-Mode Fracture and Fatigue

Location : Vienna, Austria
Organizer : TU Vienna (A) and Univ. Paderborn (FRG)
Deadlines : Nov 30, 1990 - Abstracts (300 words)
April 30, 1991 - Full papers
Inquiries : Doz. Dr. H.P. Rossmanith
Institute of Mechanics of TU Vienna
Wiedner Hauptstr. 8-10/325
1040 Vienna, Austria
Tel (0222)58801-5514,5519 Fax (0222)5871020

July 15-17, 1991

Fracture Mechanics of Ceramics

Location : JFCC, Atsuta-ku, Nagoya, 456 Japan
Organizer : JFCC, Japan
Deadlines : return request form - Sep 30, 1990
Abstracts (1 page) - March 1, 1991
Full papers - July 15, 1991
Inquiries : Dr. Mototsugu Sakai
Conf. Secretarian Fracture Mechanics
of Ceramics (Nagoya)
Toyohashi Univ. of Technology
Tempaku-cho, Toyohashi 440, Japan
Tel 0532-47 0111 Fax 0532-45 0480

July 24-26, 1991

ICRS-3, International Conference on Residual Stress

Location : Tokushima, Japan
Organizer : Soc. of Materials Science, Japan, and
Foundation for Advancement of Int. Science
Deadlines : Abstracts (1 page) - July 31, 1990
Full papers - June 30, 1991
Inquiries : The Society of Materials Science, Japan
Attn. Prof. K. Tanaka, Sec. General ICRS-3
Yoshida-Izumidono-cho 1-101, Sakyo-ku
606 Kyoto, Japan, Fax 075-761-5325

July 29-August 2, 1991

Sixth International Conference on Mechanical Behaviour of Materials - ICM-6

Location : Kyoto, Japan
Organizer : Society of Materials Science, Japan
Deadlines : June 1, 1990 - Abstracts (500 words)
Jan. 1, 1991 - Full papers
Inquiries : Prof. T. Inoue, Secretary General ICM-6
The Society of Materials Science, Japan
Yoshida-Izumidono-cho 1-101, Sakyo-ku
606 Kyoto, Japan, Fax 075-761-5325

August 6-8, 1991

Int. Conference on Fracture of Engineering Materials and Structures

Location : Singapore
Organizer : National Univ. of Singapore/ICF
Deadlines : Oct 1, 1990 - Abstracts (300 words)
Mar 1, 1991 - Final papers
Inquiries : Dr. S.H. Teoh
Dept of Mech. & Production Engineering
National Univ. of Singapore
10 Kent Ridge Crescent, Singapore 0511
Tel (65)7722212 Fax (65)7791459/7773847
Telex unispore rs 33943

August 11-15, 1991

1st Int. Offshore and Polar Engineering Conference

Location : Edinburgh, UK
Organizer : ISOPE
Deadlines : July 1, 1990 - Abstracts (300-400 words)
Dec. 1, 1990 - Full papers
Inquiries : ISOPE-91 Edinburgh
4 Frederick Sanger Road
Surrey Research Park
Guildford, Surrey GU2 5YJ, UK
Tel +44-483-301219 Fax +44-483-302184

August 18-23, 1991

11th Int. Conf. on Structural Mechanics in Reactor Technology (SMiRT 11)

Location : Tokyo, Japan
Organizer : IA-SMiRT
Deadlines : Aug 31, 1990 - Summary (1 page)
Feb 28, 1991 - Condensed papers (6 p)
Inquiries : Prof. SHIBATA, Heki
SMiRT 11
c/o Komae Research Laboratory
CRIEPI
2-11-1 Iwato Kita, Komae, Tokyo 201, Japan
Tel 81/3-480-2493 Telex 242-3098 criepij

August 28-30, 1991

IX. Symposium on Deformation and Fracture

Location : Magdeburg, GDR
Organizer : Technische Universität "Otto von Guericke"
Inquiries : Prof. Dr. sc. techn. H. Blumenauer
Technische Universität "Otto von Guericke"
PSF 124, 3040 Magdeburg, GDR
Tel. 59 21 22

September 23-26 and November 5-8, 1991

Life Prediction of Corrodible Structures

Location : Cambridge, England (23-26 Sep)
Hawaii (5-8 Nov)
Organizer : Nat. Association of Corrosion Engineers
Deadlines : Sep 30, 1990 - Abstracts (50-100 words)
Jan, 1991 - Notification of acceptance
April, 1991 - Full manuscripts
Inquiries : Prof. R.N. Parkins
Univ. of Newcastle upon Tyne
Newcastle upon Tyne, NE1 7RU, UK
Tel. 091-222 7905 Fax 091-261-1182

October 7-11, 1991

10th Congress on Material Testing

Location : Budapest, Hungary
Organizer : GTE Scientific Society of Mech. Engineers,
co-sponsored by ESIS (formerly EGF)
Deadlines : Sep 30, 1990 - Abstracts (300 words/max 2 fig)
May 31, 1991 - Full papers
Inquiries : Dr. E. Czoboly
Central Research Inst. for Physics of the
Hungarian Academy of Science
1525 Budapest 114, PO Box 49, Hungary
Tel. (36-1)169 94 99 Fax (36-1)155 25 30
Telex 22-4722 kfki

AGENDA cont'd

October 14-15, 1991

Symposium on Multiaxial Fatigue

Location : San Diego, Cal., USA

Sponsors : ASTM E-9, E-24, D-30

Deadlines : Oct. 12, 1990 - Abstract (300-500words)

Inquiries : Prof. D.L. McDowell
Woodruff School of Mech. Engineering
Georgia Institute of Technology
Atlanta, GA 30332-0405, USA
Tel 404/894-5128

October 16, 1991

Symposium on Thermo-Mechanical Fatigue Behaviour of Materials

Location : San Diego, Cal., USA

Sponsors : ASTM E-9

Deadlines : Oct 16, 1990 - Abstract (300-500words)
Aug 16, 1991 - Final manuscripts

Inquiries : Prof. Huseyin Sehitoglu
Dept. of Mech. Engineering
University of Illinois
1206 W. Green, Urbana, IL 61801, USA
Tel 217/333-4112

November 12-13, 1991

Symposium on Cyclic Deformation, Fracture and Non-destructive evaluation of Advanced Materials

Location : San Antonio, Texas, USA

Sponsors : ASTM E-9

Inquiries : Dr. M. R. Mitchell, Rockwell Int. Science Center
1049 Camino dos Rios
Thousand Oaks CA 91360, USA,
Tel 805/373-4450

September 7-11, 1992

3rd International Conference on Low Cycle Fatigue and Elasto-Plastic Behaviour of Materials

Location : Berlin, FRG

Organizer : DVM, Berlin, FRG

Inquiries : Prof. Dr.-Ing. K.-T. Rie
Inst. f. Oberflächentechnik und Plasmatechnische
Werkstoffentwicklung, TU Braunschweig
Bienroder Weg 53, 3300 Braunschweig, FRG
Tel (0531)391-9402 Fax (0531)391-4577

June 1-6, 1993

VIII International Conference on Fracture (ICF8)

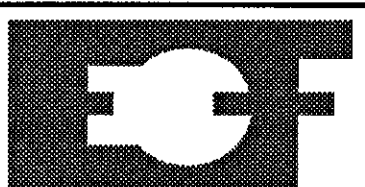
Location : Kiev, USSR

Sponsors : Int. Congress on Fracture

Organizer : Ac. of Sciences of the Ukrainian SSR

Deadlines : to be announced later

Inquiries : ICF8 Secretariat
Karpenko Physico-Mechanical Inst. of the
Academy of Sciences of the Ukrainian SSR
5, Naukova St., 290601 LVIV, USSR



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c/o Laboratory for Materials Science and Engineering
P.O. Box 5025
2600 GA DELFT, The Netherlands**

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