

❖ G-4 NEWS ❖

Volume 1 Issue 2

The Newsletter for Oxygen Compatibility Practitioners

Fall 1994

Yes! Issue No. 2

G-4 Newsletter *LIVES!*...(for now).

The ASTM G-4 Executive Committee has decided to continue this complimentary experimental newsletter *G-4 NEWS* on an issue-by-issue basis. The reception and demand has been encouraging. Now, let's see if it justifies itself.

At present, *G-4 NEWS* will be sent to 175 people, with half of them being

G-4 members. It will issue up to twice a year after the regular G-4 meetings, and its principal hard news will be the highlights of progress at each meeting. Other topics: new related publications, revisions of standards, announcements of symposia, new Committee initiatives and a calendar of events. Certainly we hope readers will forward suggestions.

It is very likely, *G-4 NEWS* will have a large secondary and tertiary readership, so we will continue to include the subscription request coupon for several issues.

At present we hope to provide *G-4 NEWS* to all oxygen compatibility practitioners who request it. Thank you for your interest. We'll do our best to keep you informed. **G4N**

Progress at Slidell:

.....Wrapping Up a Few Things!

The Committee trimmed a significant number of items from its ambitious agenda at Slidell. Two important standards were finished (kudos to Joel Stoltzfus, Amit Jain and Ulrich Koch for these successes). Also, a computer utilities disk was approved. And this newsletter was approved for continued publication.

Efforts were focused on wrapping up current projects to allow extra time next spring when the meetings will be shortened for the 1995 symposium.

So what happened?

The *G4.01 Test Methods* Subcommittee fine-tuned both it promoted metals combustion test method (which has published under the designation G 124-94) and its oxygen index test method (which has published under the designation G 125-94). Both corrected minor structural problems, go to Society ballot and should issue again with a 1995 designation.

A ballot was conducted by the cleaning task force on a test method to

extract specimens using ultrasonics. A negative was persuasive and it will be reballoted.

Haynes Haselmaier reported on progress with the NASA O-ring tester and the Committee saw the apparatus during a tour of Stennis Space Center. A standard practice will be prepared.

The G 72 round robin testing is still advancing but is incomplete.

The standard D 2512 on LOX

Mechanical Impact tests will be submitted to a ballot of its parent committee regarding its transfer to G-4.

The *G4.02 Practices* subcommittee completed a main Committee ballot of its abstract standard that provides an overall introduction to the body of G-4's work It goes to Society ballot and should publish next Spring as a standard.

A ballot of the CFC Replacement Task Force's solvent selection guide was successful. Although there are plans to greatly expand this guide, its present basic structure forms a good starting point, and after one more ballot, should publish next Summer.

Bill Royals' revision of our cleaning standard, G 93, will be balloted before the spring session. This much needed revision will put the entire G-4 package of standards in fine shape for the next revision of the Committee training course.

The committee considered preparation of a standard on shielding of oxygen systems as a protective measure. G4.02 felt unable at present to accomplish this.

The *G4.05 Education* subcommittee conducted a successful letter ballot of

(See *Progress* on page 2)

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G-4 Releases Computer Utilities

G-4 has completed a series of computer utilities. They are in IBM PC format but several of the files can be imported into Macintosh systems. These utilities are nonmandatory, use at your own risk, material but will be useful to some OC practitioners.

Details for distributing the disks are being worked out, but at present, it appears easiest to do a one-time duplication of disks in a few months and to mail copies to all present recipients of *G-4 News*, and to also place the files on the Committee CBBS for others who are interested.

Among the files are **G63Form.DOC**, **G88Form.DOC**, and **G94Form.DOC**. These are MSWord files that can be used for documenting material or system reviews conducted using the respective standards. They employ tables that expand to fit the bases for approvals. Their formats can be changed to suit the users individual preferences.

G-4DB.MDB is a database file in MSAccess format. It lists the names addresses, phone and FAX numbers for all OC enthusiasts and practitioners who are G-4 members or who have requested this newsletter. The names can be accessed in the categories: G-4 members, symposium attendees, TPT students, consultants, commercial test labs, and those just interested in the subject. Consultants and test labs are self-asserted and carry no comment nor recommendation by Committee G-4. Some consultants are associated with companies and may not be available for outside work. **G-4DB.MDB** can be used by people with MSAccess to generate reports and mailing labels, but a file, **G-4DB.EXE**, allows anyone to place an icon on their systems and use it to look up names, addresses, and phone numbers.

G-4Math.EXE is a calculation program. It will calculate theoretical adiabatic compression temperatures per ASTM G 88, allowed gas velocities for steel systems per CGA Pamphlet G-4.4, minimum suggested test pressures for running standard test method G 125 on the

promoted combustion of metals. A set of instructions is provided with the disk and is present as an MSWORD file **G-4MATH.DOC**.

Both G-4DB and G-4Math require an included file, a run-time module named **VBRUN300.DLL**, for use.

Two files provide models (surrogate files) of papers formatted as preferred for G-4's symposia. They are set to a standard higher than is required by ASTM for camera-ready symposia.

G-4SYMP1.DOC is a portrait orientation in MSWord 2.0 format and contains a list of hundreds of references that are commonly cited in papers. **G-4SYMP2.DOC** is a model for landscape tables. Both files have been tested for successful importing into MSWord for MAC software. These two files are also on the disk with **.PUB** and **.WPF** extenders for those using MSPublisher 2.0 or WordPerfect 5.1.

A **ReadMe.TXT** file contains instructions for use of all the files. These files will be periodically expanded and improved upon in the future. **G4N**

(Progress from page 1)

computer files for a G-4 computer utilities disk. These ballots are not as rigorous as those for standards, because these files are not mandatory, and are "use at your own risk." Nonetheless the files were approved and are the subject of an article on page 2. These files will soon be made available through the Committee CBBS or by a direct mailing

The Committee's Technical & Professional Training (TPT) course was held in concert with the meeting and twice during the summer. This course has been renamed from the previous Standards and Technology Training (STT) designation. The three courses contained 59 students and indicate the course is still viable. Four offerings are anticipated through the Spring meeting.

Indeed, a former student has requested the option to "audit" the course a second time. The Committee agreed to recommend to ASTM that a fraction of the students at future offerings be allowed as reduced-fee repeat audits if space allows.

Progress on an advanced TPT course has been slow. It is the subject of an article on page 2. **G4N**

Advanced TPT Course Seeks to Stress Incident Case Studies

Efforts to develop an advanced Technical & Professional Training course to complement G-4's first course *Controlling Fire Hazards In Oxygen Handling Systems* have been thwarted to date.

This effort was begun by Haynes Haselmaier who proposed that an advanced course should focus on actual incidents with analyses of causes that were determined or even surmised, as well as measures taken to prevent recurrences. Currently led by Richard Paciej and Haselmaier, the early problem is collecting an assortment of meaningful incidents in detail that would be instructive to review. So far, 14 case studies have been found, only 4-6 suitable for use (perhaps a one-day course).

The companies which experienced these events will not be named nor will the hardware suppliers (unless permission is granted). However, design details that appeared to be significant to the events will be studied.

G-4 is trying to assemble the present materials into a one-day course with a round-table flavor to allow and encourage class participation and dialog. No decision has been made on whether to require the tutorial TPT course as a prerequisite, but it would be recommended.

However, there is certainly a need for additional case studies and offers would be welcome. Contact Haynes Haselmaier (601) 688-3383 or Rick Paciej (908) 771-6393 to offer case studies. **G4N**

TMS O₂/Materials Seminar

The Minerals Metals Materials Society (TMS) conducted a seminar on Ignition and Combustion of Materials in Enriched Oxygen Atmospheres during the week of 2-6 October 1994 in Chicago.

Many G-4 members presented papers and Joel Stoltzfus chaired one of the sessions.

The full list of titles and authors appears below. These papers are scheduled for publication next March. The publication fee has not been set. Contact TMS at (800) 759-4867 ext. 244 [in the U.S.A.] and (412) 776-9000 [outside the U.S.A.].

List of Papers:

"Keynote Address: An Overview of the Oxygen System Safety Problem and its Solution," Joel Stoltzfus, NASA WSTF, Las Cruces, NM

"Explosion of a LOX Transfer System," Mary Shoemaker, et al., Rocketdyne, Canoga Park, CA.

"Background on GIDEP Alert No. G7-S-91-01: High Pressure Oxygen Valve Cores," Dennis W. Schroll, ASC/ENSC, Wright-Patterson AFB, OH.

"Operating Room Fires," Gerald L. Wolf et al., State University of New York Health Science Center at Brooklyn, New York, NY.

"Oxygen Regulator Ignition Test and Results," Frank J. Gusky, ESAB, Florence, SC.

"A Review of the Promoted Ignition/Combustion Behavior of Engineering Alloys in Oxygen-Enriched Atmospheres," K. McIlroy, et al., Praxair, Inc. Tonawanda, NY.

"Configurational Effects on the Combustion of Copper and Copper Containing Alloys in Oxygen-Enriched Atmospheres," Dwight Janoff, et al., Lockheed ESC, Houston, TX.

"Al₂O₃-SiO₂ Coatings That Suppress the Ignition of Stainless Steel in Enriched Oxygen Atmospheres," W. C. Ackerman et al., TPL Inc., Albuquerque, NM.

"Contamination-Free Electrical Discharge Machining," Mary Shoemaker, et al., Rocketdyne, Canoga Park, CA.

"An Overview of Combustion of Metal Powders in Oxygen," Seetharama C. Deevi, R&D Center, Richmond, VA.

"Keynote: Material Combustion Science," D. Bruce Wilson, NASA, Las Cruces NM.

"The Heterogeneous Combustion of Metals," Subhashish Sircar, et al., NASA, Las Cruces, NM.

"Combustion of Titanium Alloys in Oxygen Containing Atmosphere," Seetharama C. Deevi, Philip Morris Co., Richmond, VA.

"Effect of Niobium on Ignition of Titanium Oxygen Processing Equipment," Darryl Amick, et al., Teledyne Wah Chang, Albany OR.

"Regarding Self-Ignition of Hydrocarbons in Liquid Oxygen," Ilya Ioffe, The BOC Group, Inc., Murray Hill, NJ

"Oxide Powder Production Through Direct Combustion," Subhashish Sircar, et al., NASA WSTF, Las Cruces, NM. **G4N**

Lower Cost Fire Hazards in Oxygen Systems Planned

Recent revisions of standards by G-4, NFPA and CGA have dated the CourseBook *Fire Hazards in Oxygen Systems*. A new third edition is in development for 1995. For this edition, the book is being divided into two *independent* sections. Both volumes will be included in the TPT course, but they will be sold both separately and in combination.

Volume one will be a "Tutorial" volume at a much lower price than Volume two. Volume two will be a "Resource" volume and contain all of the pertinent references and standards that have tended to dominate the cost. A Volume-one price below \$100 is targeted to encourage our former students to upgrade and others to stay current, whether they have taken the course or not. Volume 2 would tend to be about \$150.

To make Volume one usable on its own, it will be expanded to include key data from the standards G 63 and G 94, as well as a new chapter abstracting data from the literature. These data have been provided at recent courses as a separate handout. **G4N**



I want G-4 News!

Your name will be listed in our publicly available database of oxygen compatibility enthusiasts, please check *all* boxes that apply to you.



Name _____

G-4 Member

Company _____

G-4 Symposium Attendee

Address _____

G-4 STT Course Student

Consultant

Commercial Testing Source

Phone _____

General Interest in Subject

FAX _____

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G-4 NEWS



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Non-Profit Org.

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G-4 Events and Housekeeping

Regular meetings of the Committee G-4 have been scheduled as follows:

Mar 14-15, 1995Denver, CO
Nov 14-16, 1995Norfolk, VA
Mar 19-21, 1996Orlando FL
Nov 13-14, 1996Seattle, WA
Mar 18-20, 1997.....St. Louis MO
Nov 11-12, 1997.....San Diego CA
Contact Steve Mawn (215) 299-5521 for details or membership data. ASTM Membership is \$65 per year.

The next G-4 Symposia are on:

Mar 16-17, 1995.....Denver, CO
Nov 13-14, 1997.....San Diego, CA
For a Call for Papers or Program, call Steve Mawn (215) 299-5521.

Public offerings of the course: *Controlling Fire Hazards in Oxygen Handling Systems* are on:

Mar 13-14, 1995.....Denver CO
Nov 13-14, 1995.....Norfolk, VA
Mar 18-19 1996.....Orlando FL

Contact Scott Murphy (215) 299-5516 for information or brochure. Cost is

\$675.00 (including text). Can be offered at your site for a negotiated price.

The two-volume course text: *Fire Hazards in Oxygen Systems* may be ordered from Scott Murphy (215) 299-5516. Price is \$195.

The G-4 Videotape *Oxygen Safety* PCN 12-700880-31 may be ordered from ASTM Customer Service at (215) 299-5585. Price \$67.

Recent G-4 Standards actions/revisions:

G 124-94 "Promoted Combustion of Metals.."

G 125-94 "Flammability Limits of Materials (Oxygen Index)..."

G 128-95 "The Hazards and Risks of Oxygen and Their Control..."

All G-4 standards appear in part 14.02 of the Book of Standards or may be ordered individually from ASTM Customer Service (215) 299-5585. Typical standard prices range \$10-30.

Details:

This newsletter is a product of ASTM Committee G-4. The editorial staff is the G-4 Main and Sub-Committee Officers and ASTM Staff:

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G4 Secretary	Joel Stoltzfus
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.02 Practices	Ken McIlroy
.03 Terminology	William Royals
.04 Planning	Richard Paciej
.05 Education	Barry Werley
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