

❖ G-4 NEWS ❖

Volume 4 Issue 2

The Newsletter for Oxygen Compatibility Practitioners

Fall 1997

WOW!

Record Smashing Symposium

The Eighth International Symposium on Flammability and Sensitivity of Materials in Oxygen-Enriched Atmospheres (*8IS*) is now history—and it *made* history.

Records fell as our chairmen William Royals, Ting Chou and Ted Steinberg achieved something that has been G-4's penultimate goal for more than a decade: to host a symposium at which a new Special Technical Publication is distributed

that contains papers from that same symposium. And this they did, indeed. Job well done!

And yet, that is not all. Under their leadership *STP 1319* is the largest book G-4 has ever sponsored containing thirty-five papers (surpassing the previous record of thirty-four papers in *STP 1111*). It may be ordered now from ASTM, (610) 832-9585, \$89 (\$80 Members).

The symposium itself was spirited, informative and everything one could want in the age of information. Attendance was about 53, buoyed by many SAE Committee A-10 members. And it

was in beautiful (but rainy?) San Diego. It doesn't get much better.

Indeed, this monumental success sets a standard (G-4 is in the standards business, after all), but it wasn't without its cost. Mountains had to be moved, unreasonable demands had to be made, heads butted, and a couple of papers were lost among other compromises. Therefore, G-4 will be studying whether an attempt to repeat this stunning accomplishment is appropriate and achievable for the next *STP* and symposium currently set for 2000.

Stay tuned.

G4N

Progress at San Diego:

.....*Lots of Meetings and 8IS, As well*

Excitement was the keyword in San Diego. A TPT Course, regular meetings of G-4, a Summit with SAE A-10, *8IS*, and an early preview of El Niño. WOW! Indeed.

To be brief:

The **Main Committee, G4.00** settled (for now) on Paris as the site for *9IS*. A new slate of officers was nominated (John Cronk, Bill Royals, and Ron Epstein, respectively). The full Committee met with SAE Committee A-10 for an entire afternoon to explore common interests (See article p. 2).

Test Methods G4.01 resolved a ballot of the new G 86 standard which now includes ambient pressure LOX tests, and it is being rewritten for submittal to ISO TC 20/SC14 as an ISO test method.

Practices G4.02 reported on its two Industry Sponsored Test Programs. Thick stainless steel testing is currently

underway. Solicitations to study metals at high temperatures are about to be mailed.

Education G4.05 reported that 43 students attended the TPT course at San Diego and 103 students attended other sessions since the Spring meeting. Another revision of the reference bibliogra-

phy file: **G4Ref12.Doc** was released (See article p.2). There were two seminar presentations: Phil Nolen spoke on new equipment at Southbank Poly to study AIT at high pressures (to 69 MPa), and John Cronk reviewed the status of a CGA Task Force on *Definition and Requirements for Oxygen-Enriched Systems*. G-4 will be re-considering its own definition of oxygen enrichment based on this work.

An error was reported in the TPT Course book *Fire Hazards in Oxygen Service*, (p. 5-36 in the second edition), in which the coefficient of 51,000 in the SI criteria for the CGA velocity curve appears to be wrong. Do not use this equation! This is under study, and more will follow in the next issue of *G4News*.

Symposia G4.06 conducted the associated *Eighth International Symposium* during the week and in California-speak: It was "awesome."

Terminology G4.03, Long Range Planning G4.04, Research G4.92 met and conducted routine business.

Executive G4.94 kept this ship on course.

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New: G-4 Utilities V1.1 Disks

After a few false starts, new utilities disks are complete. These disks include expanded files for both the **G-4Math12.Exe** algorithm (see below) and the **G-4Ref12.Doc** file (see below) and may now be installed or run directly off the disk on IBM-compatible PCs.

No longer present is the G-4People database of oxygen compatibility practitioners.

These disks were finalized and distribution was begun at the San Diego meeting, and they will be used in future G-4 TPT courses. Copies may be downloaded from the **G-4 Web Site** (see below). **G4N**

Where Were You on 10/9/56?

That's how far back Ken McIlroy has traced the CGA Pamphlet G-4.4 velocity criteria. He will present his findings on the elusive history of this curve at the Spring 1998 G-4 meeting in Atlanta. Welcome all.

New: G-4Ref12.Doc Grows

The second revision of G-4's bibliography of references has been expanded from 821 citations to 1,482. This file now contains all of the papers presented at G-4 symposia plus all of the references cited in each of the papers (including the most recent *STP 1319*), and it includes several hundred titles provided

by committee members. A few hundred more references are scheduled for entry before the file goes into a maintenance mode probably next Spring. Several copies were distributed at the meeting. Copies may be downloaded from the **G-4 Web Site** (see report below.) **G4N**

G-4 and A-10 Hold Summit

G-4 and SAE A-10 first met as Committees in Spring, 1996 at Orlando. They met again in San Diego and Burt Parry (A-10 Vice Chairman) moderated.

The two chairs, Ken Warner and John Cronk, described A-10 and G-4 respectively. Then the two committees activities were compared and contrasted.

Cleaning is a major thrust. G-4's Bill Royals overviewed the G-4 cleaning guide, the replacement of CFCs with other agents, and the establishment of cleanliness levels in G 93. A-10's Gene Brown overviewed the development of the corresponding A-10 cleaning standard emphasizing its content on particle counts.

G-4's John Cronk and Joel Stoltzfus reviewed G-4's guides for metals for oxygen service and specifically described testing of thick stainless steels that is underway at NASA and future programs that are planned.

A-10's Jim Cannon described the design and operation of oxygen generators used to produce emergency breathing oxygen on aircraft.

The session highlight was when FAA investigator Dick Hill reviewed the Valujet crash and fire that was attributed to a load of oxygen generators transported in the cargo bay. He reviewed several theories on the cause of the incident and showed photos of FAA efforts to simulate the combustion event.

The joint session was felt to be both informative and worthwhile. It was agreed to make such sessions a regular event, and that the rate of activity in the two committees would warrant such get-togethers about every two years. **G4N**

New: G4Math Algorithm Grows

The G-4Math Algorithm has grown again. A new screen estimates when bypass valves may not be required. It is based on criteria that should be evaluated before using the screen. Other criteria are possible that G-4 will soon identify and publicize. This adds to the first three screens which help estimate compression temperatures, gas velocities,

pressures for G 124, and distance/volume piece sizes.

The file will soon be available for down-loading from the **G-4 Web Site** (see below). Remember! These algorithms are works-in-progress on a Use-at-your-own-risk basis. Report bugs or errors you may find to the G-4.02 chair, Ting Chou (908) 771-6131. **G4N**

New: Standards Compilation

Those attending the Eighth International Symposium received a copy of G-4's new standards compilation. This 210 page book contains 23 standards of interest to oxygen compatibility practitioners, including the most recent guide to studying incidents.

It is more complete, compact and less expensive than Part 14.02 of the *Book of Standards*. It will be used in future G-4 TPT oxygen safety courses. Obtain it from ASTM Customer Service (610) 832-9585 [Stock #: FIRHAZ, \$68 USA, \$75 Elsewhere]. **G4N**

G-4 Web Site

<http://www.wsfn.nasa.gov/labs/oxcompat/>

This issue of *G-4News*, the **Utilities V1.1** disk files, and the separate, **G4Math12** and **G4Ref12** files will soon be available for downloading

from the Web Site.

The site has a new curator: Tom Richie (at NASA-WSTF), who can be contacted at (505) 524-5299. **G4N**

The "OSCG!" What's That?

Since the 1950s, the Oxygen Standardization Coordinating Group (OSCG) has been meeting to promote safe and effective aircraft equipment for military aircraft. Many specifications and standards for oxygen equipment have need for coordination between the Air Force, Navy and Army. The OSCG offers comments on common needs that are often reflected in the resulting common specifications and standards that the military develops.

Originally, the OSCG was a military-only group, but it quickly recognized the need for industry participants, because it is industry that typically manufactures and installs US military equipment. Presently, the OSCG is a coalition of 40 to 50 individuals including participants who come from companies overseas.

The OSCG meets twice a year at various sites. Its last meeting in June 1997 was at Fort Walton Beach Florida, and its next meeting will be in April 1998. Its issues include designing, cleaning and man-rating of oxygen equipment. Mr. Dennis W. Schroll, the Air Force Principal Member is also a liaison to the ASTM Committee G-4. He may be contacted at (937) 255-7953 with questions or by those seeking membership.

The OSCG publishes minutes of its proceedings to its nearly 200 members, many of which cannot attend its regular meetings. Current issues of particular interest to the OSCG include: the development of On Board Oxygen Generating Systems (OBOGS) for military aircraft and the recent phase out of ozone depleting solvents requiring new cleaning substances and methods of cleaning. The group also reviews and studies fire-incidents that occur in oxygen equipment (although few incidents have occurred in military aircraft). **G4N**

The "CEN!" What's That?

The European Committees for Standardization in Brussels (CEN) was formed in 1962 and publishes official standards that can be referenced by European regulation. CEN has more than 200 active technical committees (TC) addressing various features of the European Economic Community. Members on CEN Technical Committees are the official standardization committees of each European country (e.g. AFNOR for France, BSI for UK, DIN for Germany). For each CEN Technical Committee there is a corresponding national committee (in all of the 18 European country members of CEN). This is up to these national committees to designate official country representatives. The Technical Committees meet normally once or twice a year but during these meetings only political or administrative matters are discussed. The real work is prepared by Sub-Committees and working groups in charge of drafting the standards. CEN standards are produced by Ballot, each European country having one vote. This is a weighted vote, the largest countries (Germany, UK, Italy, and France) having more power. There is a qualified majority and for a standard being adopted, it is required to have no more than three countries against. The vote is conducted in two steps. During the first step, technical comments are al-

lowed, they are then treated by the relevant working groups, but for the resulting revision, (second step), only a "yes" or "no" vote is accepted. Within ASTM G-4, only Herve Barthélémy (who prepared this article) is known to be an active CEN member and chairs several CEN Committees and working groups.

Among CEN standards of interest to oxygen compatibility practitioners are: EN 849 on gas cylinders/valves (requirements and testing, especially oxygen compatibility, to become ISO 10297), EN/ISO 11114-1 on gas cylinder and gas cylinder valves, compatibility of metal components, EN/ISO 11114-3 on polymer autoignition temperature testing in oxygen. Standards expected in 1998 and beyond include: EN/ISO 11114-2 on gas-cylinders and valves nonmetallic materials, EN/ISO 11114-1 and 11114-2 listings of gas/material compatibility in particular for oxidizing gases, EN 1797-1 on cryogenic vessel material compatibility, and EN 12300 on cryogenic vessel cleanliness.

CEN may be contacted at:
European Committee for Standardization
rue de Stassart, 36-B-1050 Brussels
Phone: +32 2 550 08 11
Fax: +32 2 550 08 19 **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.

New Request

Correction

Name _____

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Address _____

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FAX _____

E-Mail _____

G-4 Member

G-4 Symposium

G-4 TPT Course Student

Consultant

Commercial Testing Source

General Interest in Subject



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G-4 NEWS



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Non-Profit Org.

Inside This Issue:

- Record Smashing Symposium
- Fall '97 G-4 Progress
- New: Disks, Algorithm, Bibliography
- New Standards Compilation
- The "CEN?" and the "OSCG?"
- G-4 and A-10 Summit

G-4 Events and Housekeeping

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

Apr 22-23, 1998Atlanta, GA
 Sept 23-24, 1998.....Cocoa Beach, FL
 Mar 17-18, 1999.....Seattle, WA
 Sep 15-16, 1999.....Las Cruces, NM
 Mar 15-16, 2000.....Toronto, Canada
 Fall 2000.....Paris

Contact Steve Mawn (610) 832-9726 for details or membership data. ASTM Membership is \$65 per year.

The next G-4 Symposium is on:

Fall 2000.....Paris
 For a Call for Papers or Program, call Steve Mawn (610) 832-9726.

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

Apr 20-21, 1998.....Atlanta, GA

Contact Scott Murphy (610) 832-9685 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 (610) 832-9685 Price is \$195.

The G-4 Videotape *Oxygen Safety* PCN 12-700880-31 may be ordered from ASTM Customer Service at (610) 832-9585. Price \$75 (\$67 for members).

Recent G-4 Standards actions/revisions:

- G 131-96 "Cleaning Materials and Components By Ultrasonic..."
- G 136-96 "Ultrasonic Extraction of Contaminants....."
- G 93-96 "Cleaning Methods (Revision)....."
- G 145-96 "Study of Incidents...."
- G 144-96 "Residual Contamination by Total Carbon Analysis..."
- G 122-96 "Evaluating Cleaning Effectiveness (Revision)..."

All G-4 standards appear in part 14.02 of the Book of Standards or may be ordered individually from ASTM Customer Service (610) 832-9585. Typical standard prices range \$15-30.

Details:

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